



Environmental Protection Operations Directorate
Prairie & Northern Region
9250 – 49 Street NW
Edmonton, Alberta T6B 1K5

June 8, 2015

EC File: 5410 000 036/002
MVEIRB File: EA1415-02

Mark Cliffe-Phillips
Executive Director
Mackenzie Valley Environmental Impact Review Board
5102 50th Ave.
P.O. Box 938
Yellowknife, NT X1A 2N7

Via email submission

RE: EA1415-02 – Husky Oil Operations Limited – Chedabucto Mineral Exploration Project – Environment Canada Final Intervention

Attention: Mark Cliffe-Phillips

Environment Canada (EC) has reviewed the information submitted to the Mackenzie Valley Environmental Impact Review Board (MVEIRB) regarding the Chedabucto Mineral Exploration Project Proposed by Husky Oil Operations Limited and is submitting a final intervention via email as requested by the MVEIRB. EC's specialist advice is provided pursuant to the *Canadian Environmental Protection Act, 1999*, the pollution prevention provisions of the *Fisheries Act*, the *Migratory Birds Convention Act, 1994*, and the *Species at Risk Act*.

Should you require further information, please do not hesitate to contact me at (867) 669-4707 or Bradley.Summerfield@ec.gc.ca.

Sincerely,

Susanne Forbrich
Regional Director

Attachment: EC Final Intervention for the Chedabucto Mineral Exploration Project

cc: Loretta Ransom, A/Head, Environmental Assessment North (NT and NU), PNR-EPOD
 Lorna Hendrickson, A/Manager, Environmental Assessment and Marine Programs, PNR-EPOD
 Simon Toogood, Environmental Assessment Officer, MVEIRB



Environment
Canada

Environnement
Canada



ENVIRONMENT CANADA'S
INTERVENTION TO THE MACKENZIE
VALLEY ENVIRONMENTAL IMPACT
REVIEW BOARD

RESPECTING
THE CHEDABUCTO MINERAL
EXPLORATION PROJECT PROPOSED BY
HUSKY OIL OPERATIONS LIMITED

JUNE 8, 2015

1.0 Table of Contents

1.0	Table of Contents.....	2
2.0	List of Acronyms.....	3
3.0	Plain Language Summary.....	4
4.0	Introduction	5
5.0	EC’s Mandate, Roles and Responsibilities.....	7
6.0	EC’s Technical Review Comments	10
7.0	Summary of Recommendations.....	16
	APPENDIX 1: Relevant Legislation, Regulations and Guidelines	18

2.0 List of Acronyms

BATEA – Best Available Technology Economically Achievable
CEPA 1999 – *Canadian Environmental Protection Act 1999*
COESWIC - Committee on the Status of Endangered Wildlife in Canada
DOE – Department of the Environment
EA – Environmental Assessment
EC – Environment Canada
GNWT - Government of the Northwest Territories
IR – Information Request
MBR – Migratory Bird Regulations
MBCA – *Migratory Bird Convention Act*
MVEIRB - Mackenzie Valley Environmental Impact Review Board
MVRMA - Mackenzie Valley Resources Management Act
NWT - Northwest Territories
NWT PAS – Northwest Territories Protected Areas Strategy
SARA – *Species at Risk Act*

3.0 Plain Language Summary

Husky Oil Operations Limited is proposing mineral exploration work on mineral claims held by the company in order to evaluate a high quality silica deposit located on the southwestern shore of the North Arm of Great Slave Lake. The proposed activities consist of the following: use of equipment, storage of fuel, exploration drilling, maintenance and operation of a temporary camp, geophysical surveys and geochemical sampling, trenching for bulk sampling of sand, and clearing of trails for tracked vehicle access for logistical support. The mineral claims overlap the original area of interest that was put forward as Dinàgà Wek'èhodì through the Northwest Territories Protected Areas Strategy (NWT PAS) process. An Interim Land Withdrawal was granted on September 23, 2013, to facilitate the establishment of Dinàgà Wek'èhodì, recognizing existing land and mineral tenures. Upon devolution of land and water management responsibility, the Government of the Northwest Territories (GNWT) mirrored the Interim Land Withdrawal to October 9, 2015.

The recommendations presented in this intervention for consideration by the Mackenzie Valley Environmental Impact Board (MVEIRB) are designed to address outstanding concerns related to EC's mandate. While several of EC's concerns regarding the Project have been addressed, some outstanding concerns remain. EC is of the opinion that the Closure and Reclamation Plans proposed by Husky Oil Operations Limited (the Proponent) with respect to the Chedabucto Mineral Exploration Project (the Project) require further detail and explanation in order to ensure industry best practices are utilized. EC has also provided advice on avoiding negative interactions with migratory birds and species at risk as well as their habitat. Should the MVEIRB decide that the Project proceeds, EC will continue to work with the Proponent, the MVEIRB, and other concerned parties to discuss and review documents in order to continue to ensure that issues within the departmental mandate are addressed accordingly.

4.0 Introduction

4.1 EC's Responsibility

EC is responsible for leading the implementation of the Government of Canada's environmental agenda and is committed to contributing to the realization of sustainable development in Canada's North. EC's mandate covers the preservation and enhancement of the quality of the natural environment, including water, air, soil, flora and fauna, as well as species at risk and migratory birds. Science plays a fundamental role in enabling EC to deliver on the Department's mandate by making informed decisions, creating environmental regulations and by supporting the delivery of services to Canadians. In the Northwest Territories (NWT), EC provides specialist or expert information or knowledge to the MVEIRB, in accordance with the expertise that the Department has available, as required under the *Mackenzie Valley Resources Management Act* (MVRMA).

In addition to EC's mandate to conserve and enhance the quality of the natural environment, the Department administers the pollution prevention provisions of the *Fisheries Act*, which prohibits the deposit of any deleterious substance into fish-bearing waters. EC also participates in the regulation of toxic chemicals and the development and implementation of environmental quality guidelines pursuant to the *Canadian Environmental Protection Act, 1999* (CEPA 1999).

4.2 EC's Intervention

This intervention summarizes the results of EC's review of the information provided throughout the review process. The intervention identifies outstanding concerns related to issues the Department has identified and makes recommendations for consideration by the MVEIRB.

A brief summary of some of the legislation from which EC's mandate is derived is provided in Section 5.0. EC's comments related to these topics are found in Section 6.0 of this intervention and finally, a summary of EC's recommendations can be found in Section 7.0. Appendix 1 provides additional context on this legislation as well as other federal guidelines that helped support the content and recommendations found in this intervention.

EC based its analysis on the principle that the Project should be operated and decommissioned in a manner that ensures the highest level of environmental protection, so that the well-being of Canadians is enhanced and the natural environment is conserved. To that end, EC has undertaken a science-based review of the various issues of interest to the Department with the aim of

assessing if the conclusions and predictions presented by the Proponent are realistic and if the data and analysis upon which they were based are credible.

In the completions of EC's review, EC was guided by a number of over-riding principles or concepts, including:

- The precautionary principle, which recognizes that the absence of full scientific certainty shall not be used as a reason to postpone decisions in the face of the threat of serious or irreversible harm.
- An ecosystem approach to environmental management, which is a method of environmental stewardship that focuses understanding, decision making, and program action on maintaining the capacity of a whole system to produce ecological goods and services by concentrating on the long-term health of ecosystem structure, processes and interactions. The intent is to proactively integrate environmental, economic, and social objectives within ecological scales and timeframes in order to achieve environmental sustainability.
- The use of Best Available Technology Economically Achievable (BATEA) and best management practices to prevent, reduce or eliminate the direct or indirect release of effluents and substances into aquatic, atmospheric and terrestrial ecosystems.

5.0 EC's Mandate, Roles and Responsibilities

5.1 Introduction

EC's mandate is determined by the statutes and regulations under the responsibility of the assigned Minister of the Environment. In delivering this mandate, the Department is responsible for the development and implementation of policies, guidelines, codes of practice, inter-jurisdictional and international agreements, and related programs.

EC is participating in the review of the proposed Chedabucto Mineral Exploration Project in order to provide specialist expertise, information and knowledge to both the MVEIRB under the MVRMA and to regulators.

The scope of specialist or expert information or knowledge provided by EC in this intervention to the MVEIRB is within EC's mandate as defined by the *Department of Environment Act* (DOE Act) and through other legislation under which the Minister of the Environment is authorized. Additional information on EC's mandate is found in Appendix 1.

EC's comments and recommendations in this intervention are intended to provide expert advice to Proponents and decision-makers, in accordance with its program-related responsibilities and associated guidelines and policies. These comments are in no way to be interpreted as any type of acknowledgement, compliance, permission, approval, authorization, or release of liability related to any requirements to comply with federal or territorial statutes and regulations. Responsibility for achieving regulatory compliance and cost-effective risk and liability reduction lies solely with the Proponent.

5.2 *Fisheries Act* – Pollution Prevention Provisions

Subsection 36(3) of the *Fisheries Act* specifies that, unless authorized by federal regulation, no person shall deposit or permit the deposit of deleterious substances of any type in water frequented by fish, or in any place under any conditions where the deleterious substance, or any other deleterious substance that results from the deposit of the deleterious substance, may enter any such water. Subsection 34(1) of the *Fisheries Act* defines a deleterious substance to include “*any water that contains a substance in such quantity or concentration, or that has been so treated, processed or changed, by heat or other means, from a natural state that it would, if added to any other water, degrade or alter or form part of a process of degradation or alteration of the quality of that water so that it is rendered or is likely to be rendered deleterious to fish or fish habitat or to the use by man of fish that frequent that water*”. Subsection 36(3) makes no allowance for a mixing or dilution zone at the point of deposit.

In the absence of a regulation authorizing the release of a substance, and to the extent that the substance is a prescribed substance or that it can be demonstrated that it is a "*deleterious substance*" as defined in Subsection 34(1) of the *Fisheries Act*, any release from the construction, operation, reclamation or decommissioning stages of the Project to any waters frequented by fish, or in any other circumstance set out in Subsection 36(3), may constitute a violation of the *Fisheries Act*.

Compliance with the terms and conditions of any licence or permit does not absolve the Proponent from responsibility for compliance with the requirements of the *Fisheries Act* or other federal legislation. Further, this submission does not constitute an authorization pursuant to Subsection 36(4) of the *Fisheries Act*, and any deposit of a deleterious substance contrary to Subsection 36(3) of the *Fisheries Act* is prohibited and may warrant enforcement action.

5.3 Canadian Environmental Protection Act, 1999

In Canada, the federal government, as well as provincial, territorial and Aboriginal governments, share responsibility for protecting the environment, which demands close collaboration as governments work to support the well-being of Canadians. As a cornerstone of the Government of Canada's environmental legislation, the Canadian Environmental Protection Act (CEPA) is aimed at preventing pollution and protecting the environment and human health.

One of CEPA's major thrusts is the prevention and management of risks posed by harmful substances. CEPA also provides for the assessment and/or management of the environmental and human health impacts of new and existing substances. CEPA manages environmental and human health impacts of products of biotechnology, marine pollution, disposal at sea, vehicle engines and equipment emissions, fuels, hazardous wastes, environmental emergencies, and other sources of pollution.

5.4 Migratory Bird Convention Act

EC's mandate includes the protection of migratory birds and their nests. EC administers and enforces the *Migratory Bird Convention Act* (MBCA) and *Migratory Bird Regulations* (MBR). The MBR contains general prohibitions against the taking of migratory birds, nests and eggs, as well as permitting authorities. Section 5.1 of the MBCA prohibits the deposit of a substance that is harmful to migratory birds in waters or an area frequented by migratory birds or in a place from which the substance may enter such waters or such an area.

Subsection 5(a) of the MBCA prohibits the possession of a migratory bird or nest without lawful excuse or authorization by the regulations. The prohibition against

the disturbance, destruction, or taking of a nest, egg or nest shelter of a migratory bird is set out in Subsection 6(a) of the MBR.

5.5 *Species at Risk Act*

EC also administers and enforces *Species at Risk Act* (SARA). The purpose of SARA is to prevent wildlife species from being extirpated or becoming extinct, to provide for the recovery of wildlife species that are extirpated, endangered or threatened as a result of human activity, and to manage species of special concern to prevent them from becoming endangered or threatened. Subsection 32(1) of SARA states that no person shall kill, harm, harass capture or take an individual of a wildlife species listed as an extirpated, endangered or threatened, and Section 33 states that no person shall damage or destroy the residence of one or more individuals of a wildlife species listed as endangered or threatened or as an extirpated species if a recovery strategy recommends the reintroduction of the species into the wild in Canada (a “*residence*” being defined as a dwelling-place such as a den, nest or other similar area or place that is occupied or habitually occupied by one or more individuals during all or part of the species life-cycle).

SARA provides automatic protection for aquatic species and birds protected by the MBCA, if they are listed as extirpated, endangered or threatened, wherever they are found. This protection applies whether these species are on federal, provincial or territorial lands. These prohibitions also apply to all other species listed as extirpated; endangered or threatened which are located on federal lands and any listed species found on territorial lands under the authority of the Minister of the Environment or the Parks Canada Agency.

Section 79 of SARA states that every person who is required by or under an Act of Parliament to ensure that an assessment of the environmental effects of a project is conducted must ensure that measures are taken to avoid or lessen those effects and monitor the adverse effects of a project on listed wildlife species and their critical habitat if the project is carried out. Schedule 1 of SARA provides a list of wildlife species at risk in Canada that are considered extirpated, endangered, threatened, or of special concern.

6.0 EC's Technical Review Comments

Issue 1: Reclamation of areas overlapping Dinàgà Wek'èhodì

Reference:

- EC screening comment (#3) and Proponent's response
- EC information request (#3) and Proponent's response

Proponent's Conclusion:

The Proponent provided a Closure & Reclamation Plan with the Land-Use permit application that states that "industry best practices" will be used. In response to EC's information request (#3), the Proponent further listed measures that will be employed to minimize environmental impacts.

Environment Canada's Conclusion:

Dinàgà Wek'èhodì (formerly Kwets'oot'àà) contains numerous cultural and ecological resources in addition to important migratory bird habitat. A map of Dinàgà Wek'èhodì and a summary of its importance is summarized on the NWT Protected Areas Strategy website (<http://www.nwtpas.ca/area-dinagawekehodi.asp>).

On 23 September 2013, an Interim Land Withdrawal was granted to facilitate the establishment of Dinàgà Wek'èhodì. Upon devolution of land and water management responsibility, the GNWT mirrored the Interim Land Withdrawal to October 9, 2015. An Interim Land Withdrawal is a tool to protect land from development and other activities for a specific and short period of time and recognizes existing land and mineral tenures in the area.

Several of the Proponent's mineral claims overlap the original area of interest that was put forward as Dinàgà Wek'èhodì through the NWT PAS process.

EC is unclear following the Proponent's response to the information request how the measures described in the Closure & Reclamation Plan represent "industry best practices" in the absence of references to support it. Other intervenors have also expressed similar concerns. EC has concluded that the Proponent has not provided adequate responses to date (NSMA IR1 #3, YKDFN IR1 #9, and Tlìchq, IR2 #7).

Environment Canada’s Recommendation:

The proposed measures in the Closure & Reclamation Plan should relate directly to reclamation literature or guidelines relevant to the location and season of planned activities within the Plan.

- EC recommends that the Proponent’s Closure & Reclamation Plan include a review of reclamation literature or guidelines that reflect current industry best practices and that the Proponent clearly outlines in the Plan how these best practices will be implemented.

Issue 2: Potential disturbance and incidental take of migratory birds

Reference:

- EC screening comments (#4 and #6) and Proponent’s responses
- Wildlife, Archaeological & Environmental Awareness Plan
- Latour, P.B., J. Leger, J.E. Hines, M.L. Mallory, D.L. Mulders, H.G. Gilchrist, P.A. Smith, and D.L. Dickson. 2008. Key Migratory Bird Terrestrial Habitat Sites in the Northwest Territories and Nunavut. 3rd ed. Canadian Wildlife Service Occasional Paper No. 114.
- Canadian Wildlife Service. 2011. Ecological Assessment of the Kwets’oot’ää Candidate Protected Area: Phase II, revised December 2013. Canadian Wildlife Service, Yellowknife, NT. 103 pp.

Proponent’s Conclusion:

The Proponent clarified that to minimize the environmental impact; proposed drilling activities during Phase 1 will only take place in the March to April period, and may reoccur in the same time period in subsequent years to a maximum of 200 exploratory holes. Phase 2, if required, will also take place in the March to April time period. Access trails for Phase 2 will avoid patches of trees to the extent possible and be cleared during the winter to avoid disturbance to migratory birds and their nests or eggs. Additional field mapping and geophysical surveys, if required, will be conducted during the late summer-fall time period. No trees will be cut during this period, so disturbance to nests and eggs will be minimal. The Proponent commits to employing a wildlife monitor, who will assist in the identification nests and nesting areas. If nests containing eggs or young of migratory birds are located or discovered, the crew will be notified and activities in the nesting area will be halted until nesting is completed. The Proponent commits to reviewing Environment Canada's incidental take web page and the fact sheet titled "Planning Ahead to Reduce the Risk of Detrimental Effects to Migratory Birds, and their Nests and Eggs". The Proponent also commits to avoiding crucial nesting and migratory habitats with low-flying aircrafts in the Wildlife, Archaeological & Environmental Awareness Plan.

Environment Canada’s Conclusion:

EC reviewed the Proponent’s response to EC comments during the preliminary screening. The timing of activities for Phase 1 and 2, in which there is potential loss of migratory bird habitat, avoids the sensitive nesting period for migratory birds in the area (beginning of May to mid-August). There is potential for migratory bird disturbance during the field mapping and geophysical surveys, while conducting the work and while ferrying the crew by helicopter. However, the impacts could be minimized with the use of a wildlife monitor familiar with bird behaviors and the implementation of EC flight altitude recommendations, subject to the pilot’s discretion regarding safety.

Environment Canada’s Recommendation:

- EC recommends that the Proponent and its representatives (including contractors) consult and review EC’s incidental take webpage and the fact sheet titled “Planning Ahead to Reduce the Risk of Detrimental Effects to Migratory Birds, and their Nests and Eggs” prior to conducting any field activities for the most current information and advice. This material can be obtained at <http://www.ec.gc.ca/paom-itmb/>.
- EC also recommends the following measures to reduce aircraft disturbance to migratory birds, subject to pilot discretion regarding safety:
 - Fly at times when few birds are present (e.g., early spring, late fall, winter) and minimize flights during particularly sensitive periods (i.e., during migration, nesting, and moulting).
 - If flights cannot be scheduled when few birds are present, plan flight paths that minimize flights over habitat known or likely to have birds and maintain a minimum flight altitude of 650 metres (2,100 feet).
 - Avoid the North Arm, Great Slave Lake Key Habitat Site #20 (Latour et al. 2008) by a lateral distance of at least 1.5 kilometres when birds are present, and increase to 3 kilometres during fall migration. If avoidance is not possible, maintain a minimum flight altitude of 1,100 metres (3,500 feet) over this area. High migratory bird usage of this site occurs between mid-May to mid-October (Canadian Wildlife Service 2011).
 - Avoid excessive hovering or circling over areas known or likely to have birds.
 - Inform pilots of these recommendations and of areas known to have birds.

Issue 3: Species at risk interactions with project components

Reference:

- EC screening comment (#7) and Proponent’s response
- Wildlife, Archaeological & Environmental Awareness Plan
- EC information request (#5) and Proponent’s response

Proponent’s Conclusion:

In the Land-Use permit application, the Proponent did not identify potential species at risk that may interact with the project components. The Wildlife, Archaeological & Environmental Awareness Plan provides buffer distances for a few sensitive wildlife species, including some species at risk. In response to our preliminary screening comments the Proponent did commit to implementing EC recommended mitigation measures for species at risk. In addition, the Proponent committed to providing updated shapefiles of final access routes, staging areas, storage areas, camps and cut areas upon project completion in order to keep track of habitat disturbance within the NT1 boreal woodland caribou range. In response to EC’s information request (#5), the Proponents used the list of potential species at risk outlined by the MVEIRB and discussed potential project impacts including temporary disturbance from visual and audio stimuli during helicopter overflights and drilling, and short term increase in road mortality due to collisions with tracked vehicles. The Proponent concludes that there will not be any long term impacts to wildlife due to the short duration of the field program. Primary mitigations for wildlife and wildlife species at risk include utilizing existing linear corridors and conducting exploration activity outside of the breeding period for most species utilizing the area.

Environment Canada’s Conclusion:

The killing, harming or harassing of listed species; the damage and destruction of their residences; and the destruction of critical habitat is prohibited under SARA. The prohibitions apply to all Threatened, Endangered and Extirpated species listed on Schedule 1 of SARA on federal lands and to migratory birds (as defined under the *Migratory Birds Convention Act*) and aquatic species (as defined under the *Fisheries Act*) everywhere they are found.

Subsection 79 (2) of *Species At Risk Act*, states that during an assessment of a project, the adverse effects of the project on listed wildlife species and their critical habitat must be identified, that measures are taken to avoid or lessen those effects, and that the effects need to be monitored. This subsection applies to all species listed on Schedule 1 of SARA.

To assist the Mackenzie Valley Environmental Impact Review Board and the proponent, EC is providing the following information.

Table 1 lists species that may be encountered in the project area that have been designated as at risk by COSEWIC as well as their current listing on Schedule 1 of SARA. This list may not include all species identified as at risk by the GNWT. It does not include aquatic species, which are under the responsibility of Fisheries and Oceans Canada.

Table 1. Species at risk with ranges that overlap with the proposed project

Terrestrial Species at Risk	COSEWIC Designation	SARA Status	Government Organization with Primary Management Responsibility
Little Brown Myotis	Endangered	Schedule 1, Endangered	GNWT
Common Nighthawk	Threatened	Schedule 1, Threatened	EC
Olive-sided Flycatcher	Threatened	Schedule 1, Threatened	EC
Wood Bison	Special Concern	Schedule 1, Threatened	GNWT
Woodland Caribou (Boreal population)	Threatened	Schedule 1, Threatened	GNWT
Yellow Rail	Special Concern	Schedule 1, Special Concern	EC
Rusty Blackbird	Special Concern	Schedule 1, Special Concern	GNWT
Short-eared Owl	Special Concern	Schedule 1, Special Concern	GNWT
Gypsy Cuckoo Bumble Bee	Endangered	No Status	GNWT
Bank Swallow	Threatened	No Status	EC
Barn Swallow	Threatened	No Status	EC
Horned Grebe (Western population)	Special Concern	No Status	EC
Red-necked Phalarope	Special Concern	No Status	EC
Wolverine	Special Concern	No Status	GNWT

The scoping of this environmental assessment precluded the collection of baseline data to determine environmental effects of the proposed project, including detection surveys for species at risk. EC notes that the March-April timing of most proposed activities greatly reduces potential impacts to species at risk under EC's management responsibility (i.e., migratory birds protected under the *Migratory Bird Convention Act*). However, the timing of the proposed field mapping and geophysical surveys, in late summer-fall, coincides with the presence of migratory birds using the project area. The impacts of the proposed activities in late summer-fall can be mitigated with the use of a wildlife monitor, knowledgeable in bird identification and preferred habitats.

The GNWT has the lead management responsibility for many of these species and could provide detailed advice and information on potential adverse effects, mitigation measures, and monitoring.

Environment Canada’s Recommendation:

- EC recommends the following general mitigation measures for species at risk:
 - If species at risk are encountered or affected, the primary mitigation measure should be avoidance. The Proponent should avoid contact with or disturbance to each species, its habitat and/or its residence.
 - Monitoring should be undertaken by the Proponent to determine the effectiveness of mitigation and/or identify where further mitigation is required. As a minimum, this monitoring should include recording the locations and dates of any observations of species at risk, behaviour or actions taken by the animals when project activities were encountered, and any actions taken by the proponent to avoid contact or disturbance to the species, its habitat, and/or its residence. This information should be submitted to the appropriate regulators and organizations with management responsibility for that species, as requested.
 - The GNWT should be consulted to identify other appropriate mitigation and/or monitoring measures to minimize project effects to species under their management responsibility.
 - Mitigation and monitoring measures must be taken in a way that is consistent with applicable species at risk recovery strategies and action/management plans.
 - All field operations staff, including contractors, be made aware of the Proponent’s commitment to these mitigation measures and provided with appropriate advice and training on how to implement these measures.

- EC recommends that species at risk information, mitigation measures, and any monitoring be included in the Proponent’s Wildlife, Archaeological & Environmental Awareness Plan, or a Wildlife and Wildlife Habitat Protection Plan as recommended by the GNWT.

Schedules of the SARA and COSEWIC assessments are amended on a regular basis so it is important to check the SARA registry (www.sararegistry.gc.ca) to determine the current status of a species.

- EC recommends that the Proponent regularly update their species at risk information in their plan(s) to reflect the current status of species at risk potentially occurring in the project area.

7.0 Summary of Recommendations

The specifics of EC's outstanding issues have been discussed in this intervention; however, for convenience EC's recommendations are listed below:

Issue 1: Closure and Reclamation

- EC recommends that the Proponent's Closure & Reclamation Plan include a review of reclamation literature or guidelines that reflect current industry best practices and that the Proponent clearly outlines in the Plan how these best practices will be implemented.

Issue 2: Disturbance of Migratory Birds

- EC recommends that the Proponent and its representatives (including contractors) consult and review EC's incidental take webpage and the fact sheet titled "Planning Ahead to Reduce the Risk of Detrimental Effects to Migratory Birds, and their Nests and Eggs" prior to conducting any field activities for the most current information and advice. This material can be obtained at <http://www.ec.gc.ca/paom-itmb/>.
- EC also recommends the following measures to reduce aircraft disturbance to migratory birds, subject to pilot discretion regarding safety:
 - Fly at times when few birds are present (e.g., early spring, late fall, winter) and minimize flights during particularly sensitive periods (i.e. during migration, nesting, and moulting).
 - If flights cannot be scheduled when few birds are present, plan flight paths that minimize flights over habitat known or likely to have birds and maintain a minimum flight altitude of 650 metres (2,100 feet).
 - Avoid the North Arm, Great Slave Lake Key Habitat Site #20 (Latour et al. 2008) by a lateral distance of at least 1.5 kilometres when birds are present, and increase to 3 kilometres during fall migration. If avoidance is not possible, maintain a minimum flight altitude of 1,100 metres (3,500 feet) over this area. High migratory bird usage of this site occurs between mid-May to mid-October (Canadian Wildlife Service 2011).
 - Avoid excessive hovering or circling over areas known or likely to have birds.
 - Inform pilots of these recommendations and of areas known to have birds.

Issue 3: Interactions with Species at Risk

- EC recommends the following general mitigation measures for species at risk:
 - If species at risk are encountered or affected, the primary mitigation measure should be avoidance. The Proponent should avoid contact with or disturbance to each species, its habitat and/or its residence.
 - Monitoring should be undertaken by the Proponent to determine the effectiveness of mitigation and/or identify where further mitigation is required. As a minimum, this monitoring should include recording the locations and dates of any observations of species at risk, behaviour or actions taken by the animals when project activities were encountered, and any actions taken by the proponent to avoid contact or disturbance to the species, its habitat, and/or its residence. This information should be submitted to the appropriate regulators and organizations with management responsibility for that species, as requested.
 - The GNWT should be consulted to identify other appropriate mitigation and/or monitoring measures to minimize project effects to species under their management responsibility.
 - Mitigation and monitoring measures must be taken in a way that is consistent with applicable species at risk recovery strategies and action/management plans.
 - All field operations staff, including contractors, be made aware of the Proponent's commitment to these mitigation measures and provided with appropriate advice and training on how to implement these measures.
- EC recommends that species at risk information, mitigation measures, and any monitoring be included in the Proponent's Wildlife, Archaeological & Environmental Awareness Plan, or a Wildlife and Wildlife Habitat Protection Plan as recommended by the GNWT.
- EC recommends that the Proponent regularly update their species at risk information in their plan(s) to reflect the current status of species at risk potentially occurring in the project area.

APPENDIX 1: Relevant Legislation, Regulations and Guidelines

Introduction

The mandate of Environment Canada (EC) is determined by the statutes and regulations assigned to the federal Minister of Environment by Parliament or by the Government of Canada. Delivering this mandate requires EC, among other things, to develop and implement policies, guidelines, codes of practice, inter-jurisdictional and international agreements and related programs. The following lists specific legislation and national environmental policies and programs administered by EC that influence the content of environmental assessment submissions.

For purposes of reliability and accuracy, and for interpreting and applying regulations or policy, it is recommended that the reader refer to the original document. Official versions of legislation can be found on the Department of Justice website (<http://laws.justice.gc.ca/eng/>).

In environmental assessments (EA), EC generally carries out its responsibilities by providing recommendations, advice and information within its mandate. This is provided to both the proponent and decision-makers and may be used in the development of potential conditions that may accompany an EA approval. This document is intended to summarize EC's potential mandate.

Legislation

Department of the Environment Act

General responsibility for environmental management and protection is attributed to EC, through the Minister, under the *Department of the Environment Act* (DOE Act). This responsibility extends to and includes all matters over which Parliament has jurisdiction, which matters have not, by law, been assigned to any other department, board, or agency of the Government of Canada relating to:

- the preservation and enhancement of the quality of the natural environment (e.g., water, air, and soil);
- renewable resources including migratory birds and other non-domestic flora and fauna;
- water;
- meteorology; and
- co-ordination of policies and programs respecting preservation and enhancement of the quality of the natural environment.

The DOE Act requires EC/the Minister to advise heads of federal departments, boards and agencies on matters pertaining to the preservation and enhancement of the quality of the natural environment.

Canadian Environmental Protection Act (1999)

The *Canadian Environmental Protection Act* (CEPA) is an important part of Canada's federal environmental legislation aimed at preventing pollution and protecting the environment and human health. The goal of the Act is to contribute to sustainable development. CEPA shifts the focus away from managing pollution (after it has been created) to preventing pollution. CEPA provides the federal government with tools to protect the environment and human health, establishes strict deadlines for controlling certain toxic substances, and requires the virtual elimination of toxic substances which are bioaccumulative, persistent and result primarily from human activity.

When a substance is declared “toxic” under CEPA and is added to the List of (toxic) Substances set out in Schedule 1, tools are proposed to establish preventive or control actions for managing the substance and to thereby reduce or eliminate its release into the environment. These tools may be used to control any aspect of the substance’s life cycle, from the design and development stage to its manufacture, use, storage, transport and ultimate disposal.

Examples of preventive and control instruments include:

- regulations;
 - pollution prevention plans;
 - environmental emergency plans;
 - environmental codes of practice;
 - environmental release guidelines; and
 - pre-notification and assessment of new substances (chemicals, bio-chemicals, polymers, biopolymers, and animate products of biotechnology).
-
- **Environmental Emergencies**
Part 8 of CEPA 1999 on environmental emergencies (sections 193 to 205) provides various authorities to address the prevention of, preparedness for, response to and recovery from environmental emergencies caused by uncontrolled, unplanned or accidental releases and to reduce any foreseeable likelihood of releases of toxic or other hazardous substances listed in Schedule 1 of the *Environmental Emergency (E2) Regulations*. EC provides advice regarding emergency plans for projects it reviews to ensure they are consistent with the requirements of CEPA 1999.
-
- **National Pollutant Release Inventory Reporting Requirements**
Under the authority of Section 46 of CEPA, the National Pollutant Release Inventory (NPRI) collects information on the quantities of certain substances that are released, disposed of or transferred off-site for recycling by industrial facilities in Canada. Facilities must report quantities of NPRI substances that

are released to air, water or land; that are disposed of on- or off-site, including substances in tailings and waste rock, and that are transferred off-site for treatment prior to final disposal or for recycling. NPRI reporting requirements are published in the Canada Gazette, Part I every two years. Facility reports must be submitted annually by June 1st. Information submitted to the NPRI is published on the NPRI website. EC can provide advice and guidance on NPRI substances and on monitoring and reporting.

- **Disposal at Sea**

In Canada, disposal at sea is prohibited without a permit and is controlled by CEPA. The disposal at sea regulatory process is designed to protect the marine environment from impacts resulting from the dumping of waste at sea. The disposal at sea provisions of CEPA apply when a substance is loaded onto a ship, aircraft, platform or other structure and disposed of into the marine or estuarine environment.

- There are three regulations that further govern requirements for disposal at sea permitting:
 - The *Regulations Respecting Applications for Permits for Disposal at Sea*, under CEPA, set out the application form and information requirements for submitting a permit application;
 - The *Ocean Dumping Permit Fee Regulations* (site monitoring), under *the Financial Administration Act*, set out the permit fee for dredged and excavated materials;
 - The *Disposal at Sea Regulations*, under CEPA, set out the reporting requirements for emergency dumping incidents and the action list for screening of dredged and excavated material.
- EC will issue a permit if the waste material fits Schedule 5, the assessment indicates that disposal at sea is the best management option, and impacts to the marine environment can be prevented or mitigated. EC may inspect disposal activities and/or monitor disposal sites to inform future decision-making.

Fisheries Act - Pollution Prevention Provisions

EC administers Section 36(3) and (4) of the *Fisheries Act*, the purpose of which is to prevent pollution by prohibiting the deposit of harmful substances into waters frequented by fish, unless authorized by regulations under the Act or other federal legislation. The “general prohibition” in this section states, in part, that *no person shall deposit or permit the deposit of a deleterious substance of any type in water frequented by fish, unless authorized by, and deposited in accordance with, regulations under the Fisheries Act or other federal legislation.*

Meeting the requirements of the *Fisheries Act* is mandatory, irrespective of any provincial regulatory or permitting system. The release of substances with the potential to be “deleterious,” as identified in Subsection 34(1) of the *Fisheries*

Act, from the construction, operation, reclamation or decommissioning stages of the Project in any waters frequented by fish, may constitute violations of the *Fisheries Act*. EC will provide advice to proponents on how introducing deleterious substances to fish bearing waters can be avoided.

- ***Metal Mining Effluent Regulations (MMER)***

The *Metal Mining Effluent Regulations* (MMER) authorizes the proponents of metal mines to discharge deleterious substances into waters frequented by fish provided the discharges do not exceed prescribed limits. The MMER, administered by EC, imposes limits on releases of arsenic, copper, cyanide, lead, nickel, zinc, radium-226 and total suspended solids, and prohibits the discharge of effluent that is acutely lethal to fish. All other substances not regulated under the MMER are subject to the general prohibition contained in subsection 36(3) of the *Fisheries Act*.

The MMER includes provisions for the monitoring and reporting of effluent quality and quantity, environmental effects monitoring and reporting, and allows the use of natural, fish-frequented waterbodies for mine waste disposal. At some sites, the disposal of mine waste in such waterbodies may be the preferred disposal option for pollution prevention and reduction of long-term environmental risk. A natural, fish-frequented waterbody can only be used for mine waste disposal if the MMER is amended to add that waterbody to the Regulations.

Migratory Birds Convention Act, 1994

The purpose of the *Migratory Birds Convention Act 1994* (MBCA) and its complementary Regulations is to ensure the conservation of migratory bird populations by regulating potentially harmful human activities. A permit must be issued for all activities affecting migratory birds, with some exceptions detailed in the Regulations. The MBCA implements the Migratory Birds Convention between Canada and the U.S. by protecting and conserving migratory birds, as populations and individual birds and their nests.

Section 5.1 of the MBCA prohibits the deposit of a substance that is harmful to migratory birds in waters or an area frequented by migratory birds or in a place from which the substance may enter such waters or such an area. The MBCA also prohibits the possession of a migratory bird, nest or egg without lawful excuse. EC reviews projects for their potential impacts to migratory birds and provides advice on how impacts could be avoided, mitigated or compensated for.

- ***Migratory Birds Regulations***

The *Migratory Birds Regulations* (MBR) provide for the conservation of migratory birds and for the protection of individuals, their nests and egg. A prohibition against the disturbance, destruction, or taking of a nest, egg or nest shelter of a migratory bird is set out in subsection 6(a) of the MBR.

Species at Risk Act

The purpose of the *Species at Risk Act* (SARA) is to prevent wildlife species from being extirpated or becoming extinct, to provide for the recovery of wildlife species that are extirpated, endangered or threatened as a result of human activity, and to manage species of special concern to prevent them from becoming endangered or threatened. Schedule 1 of SARA provides a list of wildlife species at risk in Canada that are considered extirpated, endangered, threatened, or of special concern. EC administers and enforces SARA, in partnership with the Department of Fisheries and Oceans and the Parks Canada Agency.

SARA provides automatic protection for aquatic species and birds protected by the MBCA, if they are listed as extirpated, endangered or threatened. The prohibitions in Sections 32 and 33 of SARA apply whether these species are on federal, provincial or territorial lands. These automatic prohibitions also apply to all other species listed as extirpated; endangered or threatened which are located on federal lands. As set out in SARA, in certain circumstances the prohibitions could also apply on provincial lands.

Subsection 79(1) requires that every person who is required by or under an Act of Parliament to ensure that an assessment of the environmental effects of a project is conducted must notify the competent minister(s) in writing if the project is likely to affect a listed wildlife species or its critical habitat. Under subsection 79(2), the person must also identify adverse effects on listed species, including species of special concern, and on the critical habitat of extirpated, endangered and threatened species; and, if the project is carried out, ensure that measures are taken to avoid or lessen those effects and to monitor them. These measures must be consistent with best available information including any recovery strategy, action or management plan (in a final or proposed version), respect the terms and conditions of SARA regarding protection of individuals, residences, and critical habitat of extirpated, endangered, or threatened species.

The competent minister's role during an assessment of a project is to provide technical advice and support to assist in addressing these requirements. However, it should be noted that the SARA competent minister also has certain specific obligations relative to species and critical habitat protection stemming from SARA itself, separate from the assessment process. As such, the proponent must also meet any statutory obligations under SARA.

Policies, Guidelines, and Agreements

Federal Policy on Wetland Conservation (1991)

The *Federal Policy on Wetland Conservation* applies to federal departments addressing the potential loss of wetlands and wetland functions. Projects and activities of the Government of Canada are subject to the Policy. For projects on

non-federal lands and waters, such losses are evaluated in terms of the scope of any federal permits, licenses, authorizations and other instruments under federal jurisdiction which may be applicable. The Policy has a no-net-loss of wetland functions objective and, as such, necessitates a consideration of all wetland functions which could be impacted by a project. For EC, functions of specific interest include those important to migratory birds and species at risk.

The Policy recognizes the importance of considering cumulative effects and tailors expected outcomes for wetlands to the level of cumulative effects experienced in the area. EC applies the Policy to ensure that project-related impacts to sensitive wetland/riparian habitats are appropriately addressed. In implementing the Policy, EC advises that impacts to wetlands, related riparian areas, and their associated functions be avoided wherever possible. Where avoidance is not possible, appropriate mitigation measures should be employed to minimize impacts. Where there are residual impacts that cannot be addressed through mitigation measures, compensation is recommended.

Environmental Code of Practice for Metal Mines (2009)

The primary purpose of EC's *Environmental Code of Practice for Metal Mine* is to support the MMER; however, it also includes other subjects not dealt with via the MMER that may influence the environmental impact of mining operations. The Code identifies and promotes recommended best practices to facilitate and encourage continual improvement in environmental performance of mining facilities throughout all phases of the mine life cycle. EC uses the code to guide standard advice on EAs for metal mines.

Guidelines for the Assessment of Alternatives for Mine Waste Disposal

These guidelines describe the process that must be undertaken when a proponent is considering using a natural water body frequented by fish as a tailings impoundment area (TIA) such that a regulatory amendment to the *Metal Mining Effluent Regulations* (MMER) would be required. In the context of these guidelines, the term TIA refers to a natural water body frequented by fish into which deleterious substances (such as tailings, waste rock, low-grade ore, overburden, and any effluent that contains any concentration of the deleterious substances specified in the MMER, and of any pH) are disposed.

Air Quality Management System

The Air Quality Management System (AQMS) is a comprehensive approach for improving air quality in Canada and is the product of unprecedented collaboration by the federal, provincial and territorial governments and stakeholders. It includes: new Canadian Ambient Air Quality Standards (CAAQS) to set the bar for outdoor air quality management across the country, a framework for air zone air management within provinces and territories that enables action tailored to specific sources of air emissions in a given area, regional air sheds that facilitate coordinated action where air pollution crosses a border, industrial emission requirements that set a base level of performance for major industries in Canada,

and improved intergovernmental collaboration to reduce emissions from the transportation sector.

Canadian Ambient Air Quality Standards (CAAQS) are health-based air quality objectives for pollutant concentrations in outdoor air. Under the Air Quality Management System, EC and Health Canada established air quality standards for fine particulate matter and ground-level ozone, two pollutants of concern to human health and the major components of smog. These standards are more stringent and more comprehensive than the previous Canada-wide standards for these pollutants. Furthermore, the CAAQS lower the short-term limits and introduce new limits for long-term exposure for fine particulate matter.

Because of their significant impact on human health, fine particulate matter and ground-level ozone are the first substances targeted by the CAAQS. Canada-wide standards for particulate matter and ozone recommend that proponents incorporate best available technologies and best management practices into the new facilities and activities to reduce emissions and precursor pollutants.

Canadian Environmental Quality Guidelines

The guidelines provide nationally endorsed science based goals for the quality of atmospheric, aquatic, and terrestrial ecosystems. The guidelines provide chemical-specific fact sheets that summarize the key scientific information and rationale for each substance, detailed summary tables of recommended guidelines for the different media and resource uses, and the protocols used in developing the guidelines, along with their associated implementation guidance. Indices of Water Quality, Soil Quality and Sediment Quality are also included.

Environmental Emergencies Science Table

The Environmental Emergencies Science Table (the Science Table) is a new centrally delivered advisory mechanism that brings to bear EC's scientific expertise and abilities to identify environmental protection priorities. During the response to an environmental emergency requiring multi-agency cooperation, the Science Table can be convened to provide advice to the lead agency. The Science Table does not get involved in hands-on spill clean-up operations nor does it own or maintain clean-up equipment.

The Science Table brings together relevant experts in the field of environmental protection in the event of an environmental emergency response. The members of this Science Table can represent response agencies, all levels of government, Aboriginal representatives, local communities, industries, environmental non-government organizations, and academic institutions.

The Science Table of experts is able to develop consensus on protection and clean-up priorities, bring the right expertise, adapt the scale of response to a particular environmental emergency, and provide a forum for rapidly moving information to minimize damage to human life or health, or the environment while

maximizing the use of limited response resources. These discussions can occur on-site, or by telephone or videoconference.

The Science Table supplies the lead agency, responsible party (RP), and response organizations with consolidated scientific and technical advice on environmental concerns, priorities and strategies, thus enabling and optimizing the environmental response.

EC can chair the Science Table when asked by the lead agency and when at least one of following criteria is met:

- the environmental emergency is major in terms of impacts on the environment and/or complexity/severity;
- the incident has an international or cross-jurisdictional component; and
- the need to coordinate information impedes the lead Agency from fulfilling its response monitoring role.

The Science Table will generally include the following steps or procedures:

- an incident/emergency is notified;
- the lead agency asks National Environmental Emergencies Centre (NEEC) to activate and chair the Science Table;
- NEEC advises Science Table members with jurisdiction or vested interest in the environmental emergency;
- Science Table members could be involved in both on- and off-site response and information gathering;
- all information is garnered by on-site response and relevant agencies and reviewed by Science Table members; participating Science Table members have the opportunity to provide input for consideration in developing optimal response advice for the situation; and
- the Science Table conducts a post-incident debrief.