



NIRB File No. 11MN034



OCTOBER
2014

The logo for the Nunavut Impact Review Board (NIRB) features a stylized map of Nunavut in green. Overlaid on the map is a red Canadian maple leaf. Above the leaf, the Inuktitut name "ᑎᓄᓐᓴᓐ ᐃᓄᓕᓴᓐᓴᓐ ᑲᓄᓴᓐᓴᓐ" is written in a curved path. Below the leaf, the acronym "NIRB" is displayed in large, bold, black letters. Underneath "NIRB", the words "NUNAVUT", "IMPACT", "REVIEW", and "BOARD" are written in smaller, black, all-caps letters. At the bottom, the Inuktitut name "ᑎᓄᓐᓴᓐ ᐃᓄᓕᓴᓐᓴᓐ ᑲᓄᓴᓐᓴᓐ" is written in a larger, bold, black font.

In carrying out its functions, the primary objectives of NIRB shall be at all times to protect and promote the existing and future well-being of the residents and communities of the Nunavut Settlement Area, and to protect the ecosystemic integrity of the Nunavut Settlement Area. NIRB shall take into account the well-being of residents of Canada outside the Nunavut Settlement Area.

Nunavut Impact Review Board
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Cambridge Bay, NU X0B 0C0
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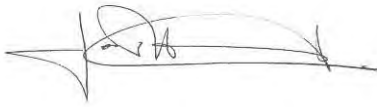
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SIGNATURE PAGE



Photo 1 – Board Members: (from left) Guy Alikut, Jaypootie Aliqatuqtuq, Phillip Kadlun, Elizabeth Copland, Kaviq Kaluraq, Henry Ohokannoak, Joe Ohokannoak

THIS REPORT IS SUBMITTED TO THE HONOURABLE BERNARD VALCOURT, MINISTER OF ABORIGINAL AFFAIRS AND NORTHERN DEVELOPMENT BY THE NUNAVUT IMPACT REVIEW BOARD ON THIS 10TH DAY OF OCTOBER, 2014.

	
Elizabeth Copland, Chairperson	Phillip Kadlun, Board Member
	
Kaviq Kaluraq, Board Member	Henry Ohokannoak, Board Member
	
Guy Alikut, Board Member	Joe Ohokannoak, Board Member
	
Jaypootie Aliqatuqtuq, Board Member	

COVER LETTER



NIRB File No.: 11MN034

October 10, 2014

The Honourable Bernard Valcourt
Minister of Aboriginal Affairs and Northern Development
10 Rue Wellington, 21st Floor
Gatineau, QC K1A 0H4

Sent via email and courier: bernard.valcourt@parl.gc.ca; minister@aandc.gc.ca

Re: Final Hearing Report for Agnico Eagle Mines Ltd.'s Meliadine Gold Project

Dear Bernard Valcourt:

As required under Article 12, Section 12.5.6 of the *Nunavut Land Claims Agreement* (NLCA) please find enclosed the Final Hearing Report of the Nunavut Impact Review Board (NIRB) with respect to Agnico Eagle Mines Ltd.'s Meliadine Gold Project Proposal, NIRB File No.: 11MN034 (the Meliadine Gold Project). The enclosed Final Hearing Report contains the NIRB's assessment of the potential ecosystemic and socio-economic effects of the Meliadine Gold Project and concludes that the Project should proceed. Having concluded that the Project should be allowed to proceed, the NIRB has also provided recommended Terms and Conditions for the Project consistent with the objectives set out in Section 12.2.5 of the NLCA.

The Board provides this Report and recommended Terms and Conditions for your consideration and decision under Article 12, Section 12.5.7 of the NLCA.

Translated versions of the Final Hearing Report are being prepared in Inuktitut and French, and will be available as soon as possible. Please contact the undersigned in writing if you have questions regarding this matter.

Sincerely,



Elizabeth Copland
Chairperson
Nunavut Impact Review Board

cc: The Honourable Gail Shea, Minister of Fisheries and Oceans
 The Honourable Greg Rickford, Minister of Natural Resources
 The Honourable Lisa Raitt, Minister of Transport
 David Ningeonan, President, Kivalliq Inuit Association
 Cathy Towtongie, President, Nunavut Tunngavik Incorporated
 The Honourable Peter Taptuna, Premier, Nunavut
 The Honourable Leona Aglukkaq, MP
 Sean Boyd, Agnico Eagle Mines Ltd.
 Larry Connell, Agnico Eagle Mines Ltd.
 Stéphane Robert, Agnico Eagle Mines Ltd.
 Meliadine Distribution List

RECORD OF PROCEEDINGS

Project Proponent:	Agnico Eagle Mines Ltd. 93, Rue Arseneault Bureau 202 Val d'Or, QC J9P 0E9	
Date Project Description Received from Proponent:	May 4, 2011	
Positive Conformity Determination Received from the Nunavut Planning Commission:	June 8, 2011	
Dates of Hearings	Day 1: August 21, 2014, Rankin Inlet, NU Day 2: August 22, 2014, Rankin Inlet, NU Day 3: August 23, 2014, Rankin Inlet, NU Day 4: August 25, 2014, Rankin Inlet, NU Day 5: August 26, 2014, Rankin Inlet, NU Day 6: August 27, 2014, Rankin Inlet, NU	
Board Members Present:	Elizabeth Copland, Chairperson Guy Alikut Jaypootie Aliqatuqtuq Phillip Kadlun Kaviq (Marjorie) Kaluraq Henry Ohokannoak Joe Ohokannoak	
Board Staff:	Executive Director Director, Technical Services Technical Advisor Technical Advisor Technical Advisor Director, Finance & Administration	R. Barry A. Hanson Main K. Gillard T. Arko K. Benoit M. Ings
Assistant to the Board Staff:	R. Aupilardjuk	
Board Legal Counsel:	T. Meadows	
Interpreters:	Johnny Ayaruaq J. Tucktoo-Lacasse Thomas Tiktak	Inuktitut Inuktitut Inuktitut
Court Reporter:	K. McLeod, Dicta Court Reporting Inc.	
Court Reporter:	T. Rizzoli, Dicta Court Reporting Inc.	

Sound Technician:	R. Dempster, PIDO Productions
Parties:	
Proponent:	Agnico Eagle Mines Ltd.: L. Connell, Corporate Director of Regulatory Affairs S. Robert, Manager of Regulatory Affairs (Nunavut) J. Beliveau, General Manager, Nunavut Operations L. Grondin, Senior Vice President of Environment and Sustainable Development R. Vaneneggen, Environmental Superintendant, Meadowbank K. Mayrand, Human Resources Superintendant A. Vigneault, Human Resources Co-ordinator, Meliadine Project J. Witteman, Consultant D. Walker, Consultant (Golder Associates) G. Ash, Consultant (Golder Associates) V. Bertrand, Consultant (Golder Associates) C. De La Mare, Consultant (Golder Associates) C. Clayton, Consultant (Golder Associates) D. Chorley, Consultant (Golder Associates) C. Prather, Consultant (Golder Associates) M. Rawlings, Consultant (Golder Associates) B. Armstrong, Legal Counsel
Nunavut Tunngavik Inc.:	J. Eetoolook, 2nd Vice President B. Dean, Director of Wildlife
Kivalliq Inuit Association:	D. Nigeongan, President L. Manzo, Director of Lands K. Poole, Technical Advisor, Wildlife J. Higdon, Technical Advisor, Marine Mammals A. Sexton, Technical Advisor, Geology and Mining Development N. Hutchinson, Technical Advisor, Water Quality and Hydrology J. Kikaldy, Consultant, Air Quality R. Nesbitt, Consultant, Water Quality and Hydrology B. Parlee, Consultant, Traditional Knowledge K. Gilson, Legal Counsel
Government of Nunavut:	S. Pinksen, Assistant Deputy Minister, Department of Environment D. Baikie, Project Manager, Impact Assessment, Department of Environment S. Atkinson, Wildlife Consultant, Department of Environment T. Cousins, Environmental Assessment Coordinator, Department of Health L. Kammermans, Environmental Assessment Coordinator, Department of Economic Development and Transportation

	D. LaPierre, Manager of Environmental Assessment and Regulation, Department of Economic Development and Transportation S. LeBlanc, Territorial Archaeologist, Department of Culture and Heritage C. Mallory, Acting Manager of Land Use and Environmental Assessment, Department of Environment D. Albahary, Legal Counsel
Aboriginal Affairs and Northern Development Canada:	K. Costello, Director of Resource Management J. Neary, Manager of Impact Assessment
Environment Canada:	M. Mohammed, Senior Environmental Assessment Coordinator A. Wilson, Head of Water Quality J. Price, Environmental Assessment Officer
Department of Fisheries and Oceans:	M. Janowicz, Acting Manager, Fisheries Protection Program, Mining, Oil and Gas V. D'Amours-Gauthier, Technical Expert
Natural Resources Canada:	K. Cavallaro, Senior Environmental Assessment Officer D. Wright, Earth Sciences Sector R. Johnstone, Director of the Minerals and Metals Sector
Transport Canada:	M. Andrews, Superintendant of Environmental Assessment (Prairie and Northern Region) J. Johtr, Manager of Technical Surveys
Department of Justice (Canada):	S. Muscati, Legal Counsel
Aqiggiq Hunters and Trappers Organization:	L. Mimialik, Representative P. Isiraq, Representative (Baker Lake HTO)
Kangiqliniq Hunters and Trappers Organization	J. Tatty, Representative L. Tatty, Representative
Kivalliq Wildlife Board	L. Muckpah, Regional Coordinator
Community Representatives:	
Rankin Inlet	M. Hickes C. Makpah J. Tattuinee S. Napayok Adams

	C. Kriterdluk
Arviat	O. Tagalik D. Aglukark P. Alareak E. Anoe Jr.
Baker Lake	P. Iksiraq
Coral Harbour	N. Kadlak M. Matoo D. Matoo
Chesterfield Inlet	H. Aggark L. Mimialik E. Kimmaliardjuk S. Kriterdluk G. Thompson
Naujaat (Repulse Bay)	A. Nanordluk N. Kringayark M. Tukturdjuk J. Mapsalak
Whale Cove	M. Nangamalik P. Enuapik L. Teenar
Registered Speaker:	J Audlatnar Ell P. Friesen

For access to complete records of sign-in and attendance at all Hearing venues please visit the NIRB's public registry at <http://ftp.nirb.ca>.

CHAIRPERSON'S FOREWORD

This report has been prepared by the Nunavut Impact Review Board (NIRB or Board) for the review of the Minister of Aboriginal Affairs and Northern Development (the Minister) in fulfillment of the Board's obligations under Article 12, Section 12.5.6 of the Nunavut Land Claims Agreement (NLCA). The report summarizes the results of the Board's assessment of the potential ecosystemic and socio-economic effects of the Meliadine Gold Project proposed by Agnico Eagle Mines Ltd. (the Proponent or Agnico Eagle). In addition to the Minister's consideration of the report, the Board is also mindful of the shared interest in the Board's review of this project for the residents of Rankin Inlet, Chesterfield Inlet and the other communities in Nunavut's Kivalliq region as well as all Nunavummiut and Canadians in general.

During the NIRB's review of the Meliadine Gold Project over the last three and a half years, the Board has received extensive submissions (presented in writing and in person) from the Proponent, a variety of intervenors, community representatives from the seven potentially affected communities and members of the public. The Board's review process concluded with a five day Final Hearing in Rankin Inlet that commenced on August 21 and concluded on August 27, during which time more than 75 people shared their knowledge, experiences, concerns and vision for this area and this project.

The Board heard that, in general, the residents of the Kivalliq communities welcome the employment opportunities that the Meliadine Gold Project represents, provided that it is developed in a responsible and sustainable manner. However, concerns remain regarding the permanent nature of the changes to the landscape that will take place during mine development and the potential for cumulative effects on caribou near the mine site and road, and cumulative effects on marine mammals along the shipping route.

On the basis of the NIRB's consideration of the information provided during this review, the Board has concluded that if the Meliadine Gold Project is undertaken in accordance with the Board's recommended monitoring, management and mitigation measures as set out in the terms and conditions that follow, this project can be carried out in a manner that will both protect and promote the existing and future well-being of the residents and communities of the Nunavut Settlement Area and protect the ecosystemic integrity of the Nunavut Settlement Area.

In developing the recommended terms and conditions for this Project, the Board recognizes that the continued cooperative, constructive and active participation of a number of parties in the development and implementation of the Project's monitoring, management and mitigation measures is critical to achieving the goal of sustainable development in the region. As stated by a resident of Rankin Inlet and researcher, Pallulaaq Friesen, when presenting the results of a study on the attitudes of Rankin Inlet's residents towards the return of mining activities to the community:

Progress means not following [someone] else's path but defining our own path. It is not just following other communities but learning from others' mistakes and making this project our own, seeing the standard, setting the standard.¹

However, the Board notes that as identified during the Pre-hearing Conference and at the Final Hearing, there are significant strains on the financial and human resource capacity of local participants such as the Hamlet of Rankin Inlet, the local Hunters and Trappers Organizations, the Kivalliq Wildlife Management Board and the members of the affected communities. The Board is concerned that these limitations will affect the capacity of these key participants to work with the Proponent and others on an on-going basis over the life of the Project to ensure that community knowledge and concerns continue to inform the project's development. The Board has also noticed that government participants are increasingly identifying financial and human resource constraints as limiting the availability and timeliness of technical input during the project review, licensing and project monitoring stages. As detailed in this report, this lack of stakeholder capacity greatly diminishes the Board's ability to deliver thorough and timely assessments in the short term, and in the longer term, can erode the success and responsiveness of adaptive management measures incorporated into the project. Consequently, the Board urges all those responsible for supporting the capacity of these participants to recognize the critical need for on-going and sustained support to ensure active and effective participation throughout the project life cycle.

In closing, the Board is grateful to all those who contributed to the Board's assessment of this project despite these challenges and particularly notes the sacrifice of the community members who travelled from their homes in Arviat, Baker Lake, Chesterfield Inlet, Coral Harbour, Repulse Bay and Whale Cove to participate at the Pre-Hearing Conference and Final Hearing in Rankin Inlet as well as the residents of Rankin Inlet who hosted and participated in the many meetings and Final Hearing to close out the Board's review. To all who participated in this assessment, the wisdom you shared, the viewpoints you expressed and the constructive and respectful additions to the NIRB's process were truly appreciated. The Board's review has benefitted from this participation to date and will continue to rely on the on-going participation and commitment of all parties to "setting the standard" for this project going forward.

Kind Regards,



Elizabeth Copland
Chairperson
Nunavut Impact Review Board

¹ P. Friesen, Rankin Inlet, NIRB Final Hearing File No. 11MN034 Transcript, August 27, p. 1127, lines 21-26.

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Avant-propos de la Présidente

Ce rapport a été préparé par la Commission du Nunavut chargée de l'examen des répercussions (CNER ou la Commission), dans l'exécution de ses obligations au titre de l'alinéa 12.5.6 de l'article 12 de l'Accord sur les revendications territoriales du Nunavut (ARTN) et aux fins d'examen par le ministre des Affaires autochtones et du Développement du Nord Canada (le Ministre). Les résultats de l'évaluation de la Commission des éventuelles conséquences écosystémiques et socioéconomiques du projet de mine d'or Meliadine d'Agnico Eagle Mines Ltd (le promoteur ou Agnico Eagle) y sont résumés. Outre l'attention que le Ministre accordera à ce rapport, la Commission n'oublie pas l'intérêt mutuel qu'attachent les résidents de Rankin Inlet, Chesterfield Inlet, les autres collectivités de la région de Kivalliq au Nunavut ainsi que tous les Nunavummiut et tous les Canadiens en général, à l'examen de ce projet.

Lors des trois années et demie d'examen du projet aurifère Meliadine, la Commission a reçu de nombreuses soumissions (par écrit et en personne) du promoteur, d'une vaste gamme d'intervenants, de représentants communautaires des sept collectivités potentiellement touchées et des membres de la population. Cet examen s'est achevé par une audience finale de cinq jours à Rankin Inlet. Ainsi, du 21 août au 27 août, plus de soixante-quinze (75) personnes ont partagé leurs connaissances, leurs expériences, leurs préoccupations et leur vision de cette région et de ce projet.

La Commission a notamment entendu les résidents des collectivités de Kivalliq se réjouir des possibilités d'emploi du projet aurifère Meliadine, à condition qu'il soit développé de manière responsable et durable. Mais des inquiétudes demeurent quant à la permanence des transformations qui seront apportées à l'aménagement paysager lors de l'exploitation de la mine; les préoccupations portaient également sur les éventuels effets cumulatifs sur les caribous près du site et de la route de la mine et les conséquences cumulatives sur les mammifères marins le long de la route de navigation.

À partir de l'étude des renseignements fournis au cours de l'examen, la Commission a conclu que si le projet aurifère Meliadine était exécuté conformément aux mesures recommandées de gestion, de surveillance et d'atténuation, stipulées dans les modalités et conditions ci-après, ce projet pourra être réalisé selon une approche qui protègera et encouragera le bien-être actuel et futur des résidents et des collectivités de la Région du Nunavut et protègera l'intégrité écosystémique de ce territoire.

En élaborant les modalités et conditions pour ce projet, la Commission reconnaît qu'une participation constructive, active et collaborative de plusieurs parties à l'élaboration et à l'application des mesures de surveillance, gestion et atténuation, s'impose pour atteindre le but de développement durable dans la région. Comme l'a déclaré Pallulaaq Friesen, chercheur et résident de Rankin Inlet, en présentant les résultats d'une enquête sur les comportements des habitants de ce hameau vis-à-vis de la reprise d'activités minières dans la communauté :

« Progresser signifie ne pas suivre la voie des autres mais trouver sa propre voie. Ce n'est pas épouser les gestes des autres collectivités, c'est apprendre de leurs erreurs, s'approprier le projet, en visualiser le niveau et en fixer les normes³.

Toutefois, la Commission constate que, tel qu'identifié lors de la conférence pré-audience et lors de l'audience finale, la capacité financière/ ressources humaines des participants locaux, à savoir le hameau de Rankin Inlet, les organisations locales de trappeurs et chasseurs, le Kivalliq Wildlife Management Board et les membres des collectivités touchées, est soumise à d'importantes contraintes. La Commission redoute que ces limitations entravent la capacité de ces principaux participants de collaborer sur une base continue avec le promoteur et d'autres, pour s'assurer que le savoir et les connaissances communautaires instruiront la réalisation du projet pendant toute sa durée. La Commission a également constaté que les participants gouvernementaux identifiaient de plus en plus les contraintes financières/ ressources humaines comme des facteurs limitant la disponibilité et l'à-propos des données techniques pendant les phases d'examen, de certification et de surveillance du projet. Tel que détaillé dans ce rapport, l'absence de capacité d'intervention diminue la faculté de la Commission de délivrer des évaluations détaillées à court terme et en temps opportun; cela pourrait, à long terme, éroder le succès et la réceptivité des mesures de gestion adaptative intégrée dans le projet. Par conséquent, la Commission exhorte toutes les personnes chargées de consolider la capacité de ces participants, à reconnaître le besoin crucial d'un appui continu et soutenu afin de garantir une active et efficace participation pendant toute la durée du projet.

En terminant, la Commission remercie toutes celles et ceux qui ont contribué à l'évaluation de ce projet malgré ces défis et tient à souligner le dévouement des membres des collectivités qui se sont déplacés depuis Arviat, Baker Lake, Chesterfield Inlet, Coral Harbour, Repulse Bay et Whale Cove pour participer à la conférence pré-audience et à l'audience finale de Rankin Inlet. Elle tient également à remercier les résidents de Rankin Inlet qui ont accueilli et participé à de nombreuses réunions et à l'audience finale, clôturant l'examen de la Commission. Votre sagesse, vos points de vue et les ajouts constructifs et respectueux dont vous avez enrichi la procédure de la CNER ont été grandement appréciés. Cette participation a été très bénéfique pour l'examen de la Commission qui continuera à s'en prévaloir sur une base continue et comptera aussi sur la détermination de toutes les parties pour « fixer la norme » de la mise en vigueur de ce projet.

³ P. Friesen, résident de Rankin Inlet, transcription du dossier No.11MN034, Audience finale de la CNER, 27 août, p. 1127, lignes 21 à 26.

EXECUTIVE SUMMARY

This report and recommendations are the culmination of the Nunavut Impact Review Board's (NIRB or Board) review of the potential ecosystemic and socio-economic effects of the proposed Meliadine Gold Mine Project Proposal (Meliadine Gold Project) which was submitted by Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) to the Board in May 2011. The Meliadine Gold Project as proposed would involve the construction, operation, closure, and reclamation of five (5) open pit mines and one underground mine and associated infrastructure for the extraction, transportation and shipment of gold from five (5) deposits. The project would include a construction phase of about 3 years, an operational phase of approximately 13 years and closure and decommissioning which is expected to take 3-4 years. The project would be located approximately 24 kilometres (km) northwest of Rankin Inlet, in the Kivalliq Region of Nunavut.

In addition to the construction and operation of the mines, the proposed project activities and infrastructure would include:

- ore transportation, dewatering and diking of water bodies, blasting and quarrying activities, processing of some 27 million tonnes of ore, and waste rock and tailings disposal at the various mine sites;
- warehousing, refuelling, power generation and heat recovery and the operation of administration and personnel accommodations at the main mine site;
- construction and operation of a spud barge or floating dock and adjacent laydown yards;
- use of the existing Itivia dock for unloading and loading of sealift freight, including fuel and materials;
- construction and operation of a fuel tank farm south of the Itivia port site in Rankin Inlet;
- quarrying, construction/expansion of roadways, road maintenance, dust management and traffic management on the all-weather access road, spur roads and a community bypass road;
- ship and/or air transport of supplies, fuel and reagents to Rankin Inlet;
- air transport of Project employees from the Kivalliq communities and points south via the Rankin Inlet Airport and travel from the Airport to the site via all-weather access road; and
- the eventual project abandonment, decommissioning and reclamation, including a period of post-closure monitoring.

Over the course of the past three and a half years during the Board's Screening and Review of the potential environmental and socio-economic effects of the project under Article 12 of the Nunavut Land Claims Agreement (NLCA), the Board heard from Agnico Eagle Mines Ltd., formal intervenors, community representatives and members of the public, reviewed extensive documentation, including the Draft and Final Environmental Impact Statement, information requests and responses and technical

written submissions, and listened to information and questions from more than 75 people who addressed the Board during the course of the five day Final Hearing held in Rankin Inlet on August 21-27. The Board heard that although participants in the NIRB's assessment recognize the potential for the project to provide significant employment (an estimated 1,000 people during construction and 750 people during operations) and economic opportunities for the entire Kivalliq region, and are optimistic that the project will leave a positive legacy if developed correctly, these opportunities are balanced against concern for the potential effects on the environment, the cultural and overall well-being of the communities affected by the project. As summarized by P. Alareak, a community representative from Arviat, in his closing statement to the Board: "Land and wildlife, especially traditional areas and caribou, must be respected and protected. There must be a balance between providing economic opportunities and ensuring environmental protection."⁴

Reflecting these considerations and the factors to be balanced, the Board heard concerns that the project would result in permanent and lasting changes to the landscape at the mine sites and surrounding area, as water bodies will be permanently drained, pits and tailings storage facilities will be carved into the landscape and waste rock will be deposited in structures that are stories high and visible from a considerable distance. Questions were also raised about the potential for the additional marine shipping associated with this project to have cumulative effects on the marine environment and marine mammals in particular, and residents along the shipping route shared with the Board that in recent years they have already noticed effects on marine mammals with the existing levels of shipping in the region. Concerns about the capacity to respond to accidents along the project's roadways as well as during marine shipping and fuel transfer were also identified. Community members and harvesters also voiced their concerns about the potential cumulative and transboundary effects on caribou populations associated with mining and the use of project roads by Agnico Eagle Mines Ltd. and members of the public.

To address these issues, the Board was urged to adopt a precautionary approach to ensure that impacts are prevented and limited and that monitoring to identify effects be required throughout the project lifecycle. After full consideration and balancing of the information provided during the Board's Screening and Review as required under Article 12, Section 12.5.5 of the NLCA, the Board recommends that the Meliadine Gold Project can proceed to the regulatory phase. Further, as set out under Section 12.5.6(c) of the NLCA, the Board has developed recommended terms and conditions that are, in the Board's view, required to prevent or mitigate the potential adverse environmental and socio-economic effects of the project.

As indicated in a number of the Board's recommended terms and conditions, there is an expectation that to be effective, there will need to be on-going and committed involvement in the development and implementation of mitigation and monitoring measures on the part of not only Agnico Eagle Mines Ltd., but also on the part of the federal, territorial and local governments, the Nunavut Tunngavik Inc., the

⁴ P. Alareak, Community Representative, Arviat, NIRB Final Hearing File No. 11MN034 Transcript, August 26, p. 1077, lines 10-13.

Kivalliq Inuit Association, local hunters and trappers organizations and wildlife management boards, Elders, youth and other community representatives and members of the public. The Board is concerned that unless the capacity challenges for these participants are addressed and the required financial and technical resources are provided, that this vital input into the project's mitigation and monitoring measures may be lost. Accordingly, the Board urges all parties to work together to ensure that the capacity of these essential contributors is developed and maintained in order to preserve the robust and resilient approach to adaptive management that the Board views as fundamental to the sustainable development of this project.

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SOMMAIRE

Ce rapport et les recommandations résultent de l'étude de la Commission du Nunavut chargée de l'examen des répercussions (la CNER ou la Commission), des éventuels effets écosystémiques et socioéconomiques du projet de mine d'or Meliadine (Projet aurifère Meliadine) soumis par Agnico Eagle Mines Ltd. (Agnico Eagle ou le promoteur) en mai 2011. Tel que proposé, ce projet aurifère Meliadine impliquerait la construction, l'exploitation, la fermeture et la remise en état de cinq (5) mines à ciel ouvert et d'une mine souterraine ainsi que l'infrastructure appropriée pour l'extraction, le transport et l'expédition de l'or extrait des cinq (5) gisements. Le projet qui sera réalisé à environ 24 kilomètres (km) au nord-ouest de Rankin Inlet, dans la région Kivalliq du Nunavut, comportera une phase de construction d'environ trois ans et une phase d'exploitation d'environ treize ans, suivie pendant trois à quatre ans d'une phase de fermeture et de désaffectation de la mine.

Outre la construction et l'exploitation des mines, les activités et l'infrastructure inhérentes au projet incluront :

- . le transport du minerai, le dénoyage et endiguement des nappes d'eau, les activités de dynamitage et d'exploitation de carrières, le traitement de 27 millions de tonnes de minerai, l'évacuation des résidus et des stériles des divers sites miniers;
- . l'entreposage, le ravitaillement en carburant, la production d'énergie et récupération de chaleur, l'exploitation de l'administration et de l'hébergement du personnel sur le principal site minier;
- . la construction et le fonctionnement d'une barge à pieux ou dock flottant et d'aires de dépôt adjacentes;
- . l'utilisation du quai Itivia existant pour charger ou décharger le fret par voie maritime, incluant le carburant et les matériaux.
- . la construction et l'exploitation d'un parc de stockage de carburant au sud du site portuaire Itivia à Rankin Inlet;
- . l'exploitation de carrières, la construction/élargissement des voies, l'entretien des routes, la gestion de la poussière et gestion de la circulation sur toutes les routes toutes saisons, les voies de raccordement et les déviations;
- . le transport aérien/maritime des fournitures, du carburant et des produits réactifs à Rankin Inlet;
- . le transport aérien des employés du projet des communautés de Kivalliq et du sud via l'aéroport de Rankin Inlet puis de l'aéroport jusqu'au site par les routes toutes saisons; et
- . tout éventuel abandon, désaffectation et remise en état, incluant une période de surveillance post-fermeture.

Au cours des trois années et demie de l'examen préalable et de l'examen des éventuelles conséquences environnementales et socioéconomiques du projet, effectués par la Commission au titre de l'article 12

de l'Accord sur les revendications territoriales du Nunavut (ARTN), la Commission a entendu des représentants d'Agnico Eagle Mines Ltd, des intervenants officiels, des représentants de la collectivité et des membres du public; elle a examiné une vaste documentation, incluant l'ébauche et l'énoncé définitifs des incidences environnementales, des demandes de renseignements et des réponses ainsi que des soumissions techniques écrites; elle a écouté les observations et les questionnements de plus de 75 participants lors l'audience finale qui a commencé le 21 août à Rankin Inlet et s'est poursuivie pendant cinq jours. La Commission a entendu les participants à son examen se réjouir des possibilités d'emplois du projet (environ 1 000 personnes pendant la phase de construction et 750 pendant l'exploitation) ainsi que de son potentiel économique pour toute la région de Kivalliq; elle a saisi leur optimisme devant l'héritage positif que laissera le projet si correctement développé. Mais elle a aussi perçu les inquiétudes qui venaient contrebalancer les effets positifs, notamment quant aux éventuelles incidences sur l'environnement et sur le bien-être culturel et global des collectivités touchées. Tel que résumé par P. Alareak, représentant communautaire de Arviat, dans ses observations finales, « La terre et la faune, notamment les zones traditionnelles des caribous, doivent être respectées et protégées. Il doit y avoir un équilibre entre l'offre de possibilités économiques et la garantie d'une protection gouvernementale. »⁶

Étant donné ces considérations et les facteurs à équilibrer, la Commission a entendu des préoccupations quant aux transformations permanentes et durables que ce projet provoquerait sur l'aménagement paysager des sites miniers et des régions environnantes, avec des plans d'eau inaltérablement drainés, des cratères et des installations d'entreposage de résidus creusés dans le paysage et le dépôt de stériles dans des structures de plusieurs étages, visibles de très loin. Des questions ont aussi été soulevées relativement aux autres effets cumulatifs que provoquerait le transport maritime sur l'environnement marin en général et sur les mammifères marins en particulier; des résidents des terres situées le long des voies de transport ont déclaré à la Commission que l'intensité actuelle des transports dans la région avait déjà eu des conséquences sur les mammifères marins. La capacité de réagir aux accidents le long des voies du projet ainsi que lors du transport maritime et du transfert du carburant, a déclenché plusieurs inquiétudes. Des membres de la collectivité et des exploitants se sont dits préoccupés par les éventuels effets cumulatifs et transfrontaliers que déclencheraient, sur les populations de caribous, l'extraction minière et l'utilisation des toutes par Agnico Eagle Mines Ltd. et par la population.

Pour s'attaquer à ces problèmes, la Commission a été priée d'adopter une approche préventive visant à contrecarrer et limiter l'occurrence de répercussions et d'appliquer une surveillance pendant toute la durée du projet pour identifier les éventuels effets. Après examen approfondi et équilibré des renseignements transmis lors de l'examen préalable et de l'examen effectués en vertu de l'alinéa 12.5.5. de l'article 12 de l'ARTN, la Commission recommande que le projet aurifère Meliadine passe en phase de réglementation. De plus, tel que stipulé au sous-alinéa 12.5.6(c) de l'ARTN, la Commission a formulé les modalités et conditions qui, à son avis, s'imposent pour prévenir ou pour atténuer les éventuels effets négatifs économiques et environnementaux du projet.

Tel qu'indiqué dans plusieurs modalités et conditions recommandées par la Commission, un engagement soutenu et déterminé dans l'élaboration et la mise en vigueur des mesures d'atténuation

⁶ P. Alareak, représentant communautaire de Arviat, transcription du dossier No.11MN034, Audience finale de la CNER, 26 août, p. 1077, lignes 10 à 13.

et de surveillance est requis non seulement d'Agnico Eagle Mines Ltd. mais encore des gouvernements fédéral, territoriaux et locaux, de Nunavut Tunngavik Inc., de la Kivalliq Inuit Association, des organisations de chasseurs et de trappeurs, des conseils de gestion de ressources fauniques, des représentants des aînés, des jeunes et autres groupes communautaires et des membres du public. La Commission craint qu'à moins d'un règlement des problèmes capacitaires de ces participants et de l'octroi des ressources financières et techniques requises, leur participation et leurs observations vitales aux mesures d'atténuation et de surveillance ne soient perdues. Par conséquent, la Commission exhorte toutes les parties à travailler ensemble au développement et au maintien de la capacité de ces indispensables contributeurs afin de préserver la robuste et résiliente approche de gestion adaptative, gestion qu'elle juge fondamentale pour le développement durable du projet.

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Photo 1 – Board Members: (from left) Guy Alikut, Jaypootie Alikatuqtuq, Phillip Kadlun, Elizabeth Copland, Kaviq Kaluraq, Henry Ohokannoak, Joe Ohokannoak

1. INTRODUCTION

1.1 *Project Overview*

The Meliadine Gold project proposal, NIRB File: 11MN034 (the Project or Meliadine project) consists of the proposed construction, operation, closure, and reclamation of five open pit mines and one underground mine and associated infrastructure for the extraction, transportation and shipment of gold from five deposits approximately 24 kilometres (km) northwest of Rankin Inlet, in the Kivalliq Region of Nunavut and Chesterfield Inlet is approximately 80 km southwest. The Proponent for the Meliadine project is Agnico Eagle Mines Ltd. (the Proponent or Agnico Eagle). The expected 24 hour a day/365 days a year mine and milling operations are proposed to result in the daily extraction of approximately 8,500 tonnes of ore and up to 3.1 million tonnes of ore annually.

The geographic area of the Project includes the Tiriganiaq, Wesmeg, F Zone, Pump, and Discovery deposits, as well as the community of Rankin Inlet. The major Project components and associated Project activities as proposed include:

- Tiriganiaq/Main mine site would serve as the main base of operations, including overburden removal, open pit and underground mining, blasting, ore transportation, dewatering and diking of water bodies, quarrying activities, ore processing, tailings disposal, warehousing, refuelling, power generation and heat recovery, administration, and personnel accommodations;
- Development of the other four mineral deposits/mine sites (Pump, Wesmeg, F-Zone and Discovery) would include overburden removal, open pit and underground mining, blasting, quarrying activities, ore transportation, dewatering and diking of water bodies (where required), and fuelling (where required);
- A spud barge or floating dock would be constructed at the Itivia harbour adjacent to the existing community sealift offload site to receive annual freight via sealift;
- The existing Itivia dock would be used for unloading and loading of sealift freight, including fuel and materials;
- A fuel tank farm to be constructed south of the Itivia port site in Rankin Inlet would receive and store the mine's annual fuel re-supply;
- A laydown yard area would be constructed adjacent to the proposed spud barge to act as short term storage of incoming and outgoing sealift freight;
- Quarrying activities, road maintenance, dust management, and traffic management would be undertaken for the AWAR, spur roads and bypass road;
- Mobilization and shipment of supplies, fuel and reagents to Rankin Inlet would occur either by ship or by air;
- Transportation of Project employees to Rankin Inlet would occur via the Rankin Inlet Airport, with further transportation of mine employees to site via the AWAR; and

- Project abandonment, decommissioning and reclamation would include the removal of infrastructure and equipment from site, reclamation of disturbed areas and natural re-vegetation.

The ore extracted from all deposits would be transferred to the mill at Tiriganiaq via all-weather service roads would be constructed along with Phase 2 of the all-weather access road (AWAR). During Phase 2 of the AWAR development the Proponent proposes to:

- Widen the existing single lane AWAR to two lanes at a width of 8 metres (m);
- Construct a 9.4 km spur road connecting the Discovery deposit to the existing AWAR and the proposed community dock that would be constructed at the south end of Meliadine Lake;
- Construct a 20 km single lane haul road (16 m wide) between the Discovery and the Tiriganiaq sites, with 26 m wide passing zones at 500 m intervals. The haul road from the Discovery Deposit to Tiriganiaq site would run parallel to the spur road and AWAR and join up with the proposed haul road between the F Zone site to the mill site where it would follow a separate alignment to the primary crusher and ore stockpile location. The Proponent also proposes to construct a rock berm to separate the haul road(s) and the portion of the AWAR open to public;
- Construct a 6.1 km bypass road around the southern section of Rankin Inlet to connect the Itivia laydown area with the AWAR in order to avoid trucking of Project materials, fuel and equipment through residential areas; and
- Construct all-weather haul roads between the Wesmeg, F Zone and Pump deposits and the AWAR.

The Proponent has proposed that all mine haul roads would be closed to the public and that an unmanned gate would be installed on the AWAR just north of the road to the Iqalugaarjuup Nunanga Territorial Park⁷ for use when Agnico Eagle determines it must close the AWAR. Installation of an automatic gate on the Discovery spur road just past the community boat launch and a manned gate at the intersection of the AWAR and the haul road to the F Zone deposit have also been proposed.

The four general Project phases as proposed by the Proponent are as follows:

- Pre-Development Phase (approximately three years): Preliminary construction of Project infrastructure and site preparation; pre-development of the mining facility including stripping the overburden from the first open pits and developing the underground access ramp to the Tiriganiaq mine site; installing the spud barge and beginning construction on the fuel tank farm and laydown yard area at Itivia.
- Construction Phase (approximately two years): Construction of the Phase 2 bypass, access and spur roads; complete construction of mine infrastructure and facilities, fuel tank farm and laydown yard area; and construction of the tailings storage facility.
- Operational Phase (anticipated 13 years): Mining of gold from the deposit sites to commence in the following order: Tiriganiaq, F Zone, Wesmeg, Pump, and Discovery. For each deposit one or

⁷ The NIRB understands that the Iqalugaarjuup Nunaga Territorial Park is awaiting formal designation pursuant to the *Territorial Parks Act*.

several pits will be mined and the expected years of operation for each pit varies. The potential development of additional deposits (e.g., the Wolf deposit) in the Project area may extend the operating life of the Project.

- Decommissioning (approximately three years) and Reclamation Phase (approximately five years): Decommissioning to include the close of the mine and the decommissioning, demolishing or removal of existing infrastructure. Progressive reclamation phase to be undertaken for the land and equipment no longer needed for the Project as well as the continuous management of hazardous wastes and contaminated soil to return the site to a physically and chemically stable condition.

The Proponent had noted that post decommissioning monitoring could last an additional ten years. Decommissioning of the Project would include demolition of the site and the AWAR as well as reclamation of any contaminated areas. Closure of the tailings storage facilities would involve covering and then blending the final cover in with the existing topography. Mine rock piles would be covered and re-graded to promote vegetative growth and to provide wildlife access. The Proponent has acknowledged that decommissioning plans and financial security would be required for the Project but final details may not be available until the licencing stage or once the Project begins operations and Agnico Eagle committed it would update the NIRB as appropriate should the Project be approved.

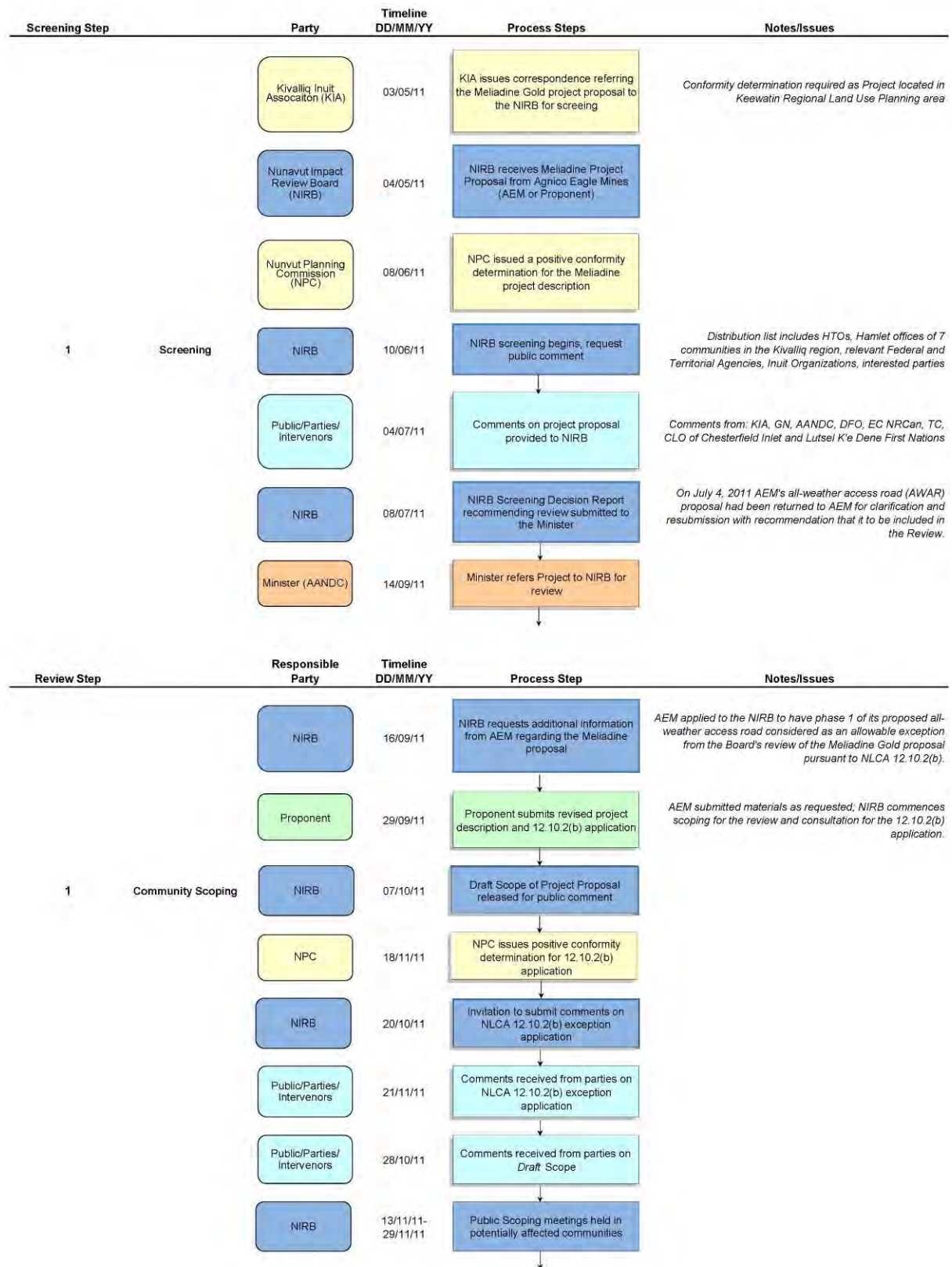
1.2 Procedural History

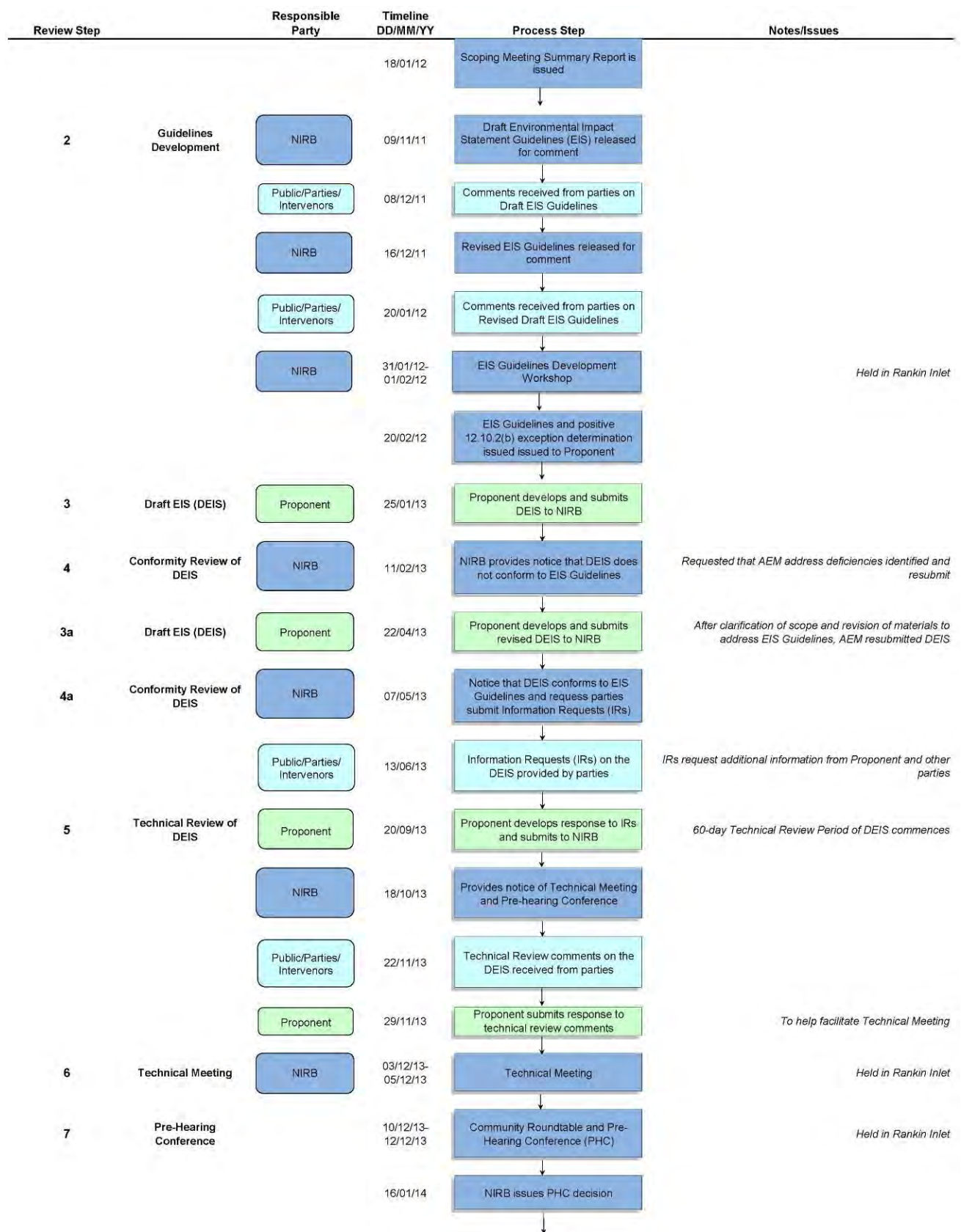
1.2.1 Key Procedural Steps in the Screening and Review of the Project Proposal

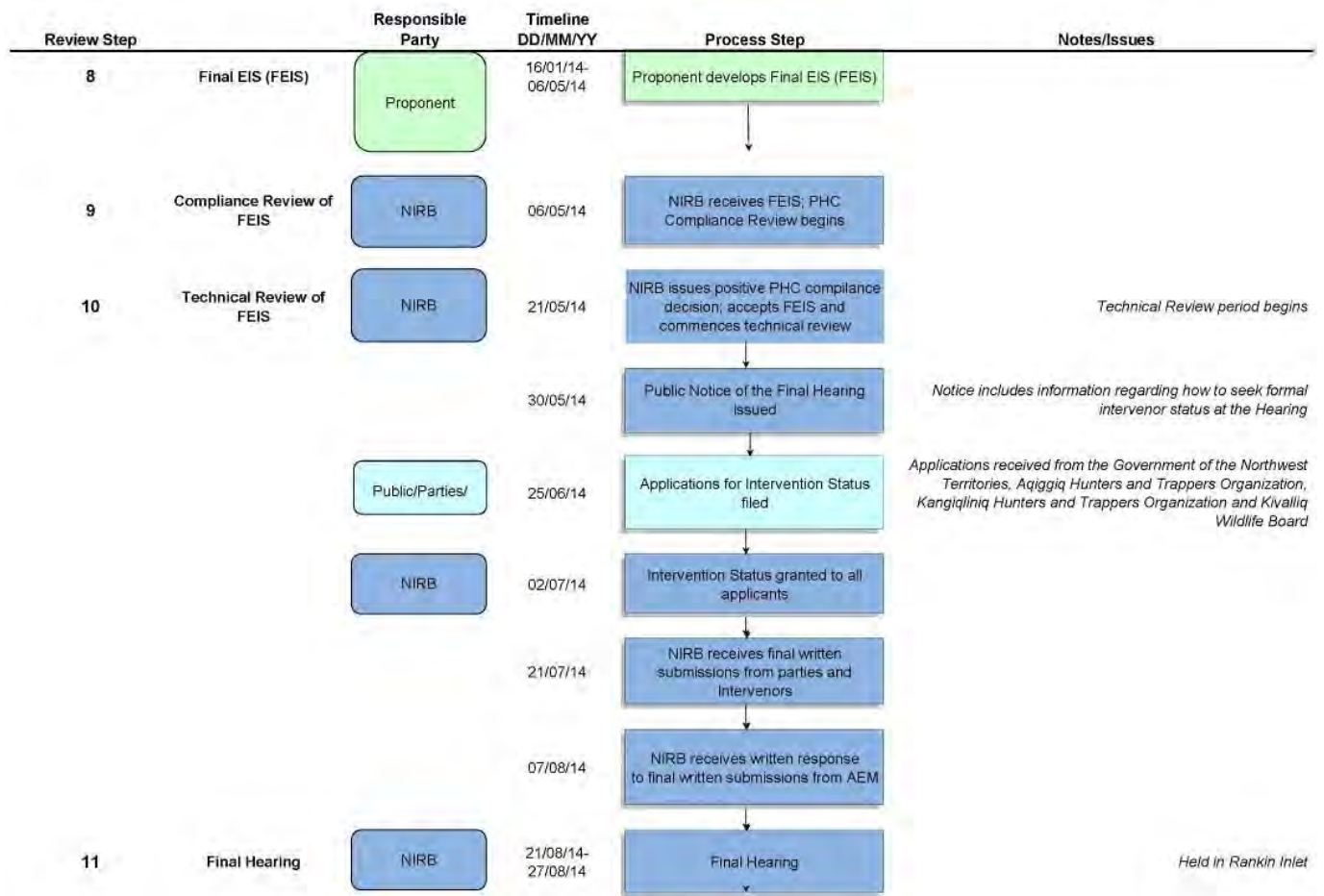
Figure 1 provides a summary of the key procedural steps associated with the NIRB's screening and review of the Meliadine project, commencing with the receipt of the Project proposal from Agnico Eagle on May 4, 2011 and continuing through to the completion of the Final Hearing on August 27, 2014. Figure 1 also identifies key milestones, opportunities for involvement of the public, parties and intervenors throughout the NIRB's screening and review process and the associated timelines.

This summary is not exhaustive, and parties wishing to develop a more complete understanding of the activities associated with the screening and review process associated with the Project proposal are encouraged to consult the complete listing of all documentation related to the Project available from the NIRB's public registry. Copies of the specific documents referenced in the listing and associated with the NIRB's Review of the Meliadine Project can be accessed online from the Board's public registry using the following link: <http://ftp.nirb.ca>

Figure 1: Procedural History







1.2.2 Applications for Activities to Be Excepted from the Review

On February 6, 2011 the Board initially received Agnico Eagle Ltd.'s "All-Weather Road (AWAR)" project proposal. It was submitted as a separate, standalone project proposal and the NIRB assigned the file number 11RN017. After completing a review of the application materials submitted, comments received and the provision of several opportunities for Agnico Eagle to respond to comments, concerns and requests for clarification, on July 4, 2011 the Board recommended to the Minister of Aboriginal Affairs and Northern Development (AAND) that this project proposal be returned for clarification pursuant to Section 12.4.4(c) of the Nunavut Land Claims Agreement (NLCA), as it was the NIRB's determination that the project proposal was insufficiently developed to permit proper screening. The NIRB found that the safety implications of public access to the AWAR were not adequately addressed in the application, that insufficient information had been provided regarding the need for, and alternatives to, the AWAR in connection with the Proponent's exploration and bulk sampling activities and that the proposal for the development of the AWAR from Rankin Inlet to the Meliadine site was not an independent, standalone project proposal as presented. Finding that the AWAR was integrally linked to the Meliadine Gold Project NIRB File No. 11MN034, the Board recommended that the AWAR project proposal would be best considered in the context of the overall Meliadine Gold Project.

On September 14, 2011 the NIRB received correspondence from the Honourable John Duncan, then Minister of AAND, regarding the NIRB's Screening Decision Report for Agnico Eagle's Meliadine Gold Project. In his response, the Minister indicated that if Agnico Eagle chose to reapply for early development of an AWAR between Rankin Inlet and the Meliadine site, it would be essential that the mine proposal (i.e. project description) be updated to reflect the modified proposal.

On September 29, 2011 the NIRB received an application from Agnico Eagle under Article 12, Section 12.10.2(b) of the NLCA seeking to except from the full review of the Meliadine Gold Project the development of Phase 1 of the AWAR to authorize the construction and operation of a 23.8 kilometre (km) single lane road between the Char River and the Meliadine West Advanced Exploration site. The Phase 1 development of the AWAR was proposed to be used solely in connection with exploration and pre-construction development activities. Agnico Eagle proposed in the application to except the AWAR from review that the additional construction and operation of the AWAR related directly to the development of the Meliadine Gold Mine would be considered as a separate phase (Phase 2) of the Meliadine Gold Project. The Phase 2 AWAR would be considered within the scope of the NIRB's Review of the Meliadine Gold Project and Agnico Eagle did not seek to except this phase of the AWAR development from Review.

Article 12, section 12.10.2 of the NLCA provides that certain types of activities may be excepted from an on-going review as follows:

12.10.2 Notwithstanding Section 12.10.1, where a project proposal has been referred for review pursuant to Part 5 or 6, approvals or licences for exploration or development activities related to that project may be issued if:

- (a) the activity falls within Schedule 12-1; or
- (b) the activity can, in the judgement of NIRB, proceed without such a review.

The Board solicited comment on the application to except Phase 1 of the AWAR from the Board's review in November 2011 and January 2012, and conducted a thorough review of the technical matters pertaining to the proposal. On February 20, 2012, the Board provided a determination to the respective authorizing agencies finding that the Phase 1: AWAR proposal, should not cause significant adverse impacts or public concern if allowed to proceed, provided that the NIRB's project-specific terms and conditions are applied and enforced. Further, the Board also indicated that the authorizing agencies could proceed to process the required approvals independently of the NIRB's Review of the related Meliadine Gold Project.

As clearly noted in the Board's February 2012 decision, the Board's decision to allow the specific exploration and/or development activities proposed under Phase 1 of the AWAR to proceed independently of the Review of the Meliadine Gold Project under Article 12, Section 12.10.2(b) did not affect the requirement for the Proponent to obtain any licences, permits or approvals required to subsequently undertake the activities, nor did the decision fetter or otherwise limit the Board's discretion with respect to the outcome of the Review of the Meliadine Gold Project.

Phase 1 of the AWAR was built in 2013 and is currently being used by Agnico Eagle as indicated in the application. Public access is only allowed for ATVs and snow machines.

1.3 Purpose of this Report

This Final Hearing Report presents the results of the NIRB's review of the Meliadine Gold Project. It includes the NIRB's conclusions and recommendations to the Minister, reflecting the Board's authority under the Nunavut Land Claims Agreement (NLCA). The Board is satisfied that it has complied with its obligations under the NLCA and that it has sufficient information to draw conclusions and make recommendations regarding the potential effects of the Project.

The reporting parameters for the Board's determination are found in section 12.5.6 of the NLCA:

12.5.6 After reviewing the project proposal, NIRB shall issue a report to the Minister and the Proponent containing:

- (a) its assessment of the project and its impacts;
- (b) its determination as to whether or not the project should proceed based on its assessment under (a); and
- (c) in the event the project were to proceed, terms and conditions reflecting the primary objectives set out in Section 12.2.5.

1.4 Jurisdiction of the Board

The Board has jurisdiction over the review of the Meliadine Gold Project pursuant to Article 12, Part 5 (Review of Project Proposals by NIRB) and Part 12 (Application) of the NLCA and as directed in the letter of the Honourable John Duncan, Minister of Aboriginal Affairs and Northern Development.⁸ As a review of the project was required, Part 5, Section 12.10.1 of the NLCA prohibited the issuance of licences or approvals required to allow the Meliadine Gold Project to proceed until after the review was completed a NIRB project certificate is issued.

1.5 The Mandate of the Board

Section 12.2.5 of the NLCA states that:

In carrying out its functions, the primary objectives of NIRB shall be at all times to protect and promote the existing and future well-being of the residents and communities of the Nunavut Settlement Area, and to protect the ecosystemic integrity of the Nunavut Settlement Area. NIRB shall take into account the well-being of residents of Canada outside the Nunavut Settlement Area.

In the present context, the function of the Board is to gauge and define the extent of the regional impacts of the Meliadine Gold Project, including a review of the ecosystemic and socio-economic

⁸ Letter from the Honourable John Duncan, Minister of Aboriginal Affairs and Northern Development to Lucassie Arragutainaq, Chairperson of the Nunavut Impact Review Board dated September 14, 2011 referring the Project Proposal to the NIRB for a review of the ecosystemic and socio-economic impacts under Part 5 of Article 12 of the NLCA.

impacts of the Project, to determine if the Project should proceed, and if so, under what terms and conditions. Reflecting the provisions of the NLCA, in carrying out this function, the NIRB's primary objective is at all times the protection and promotion of the existing and future well-being of the residents and communities of the Nunavut Settlement Area, and protecting the ecosystemic integrity of the Nunavut Settlement Area.

In addition to the general mandate and primary objective of the Board, at the time the Minister referred the Meliadine Gold Project proposal to the NIRB to conduct this review, the Minister agreed with the Board (as identified in the NIRB's Screening Decision Report⁹) that special consideration of the potential cumulative ecosystemic and socio-economic effects resulting from the increasing levels of mineral development in the Kivalliq Region was warranted during the NIRB's review. In addition, with respect to assessing cumulative impacts on caribou particularly, the Minister highlighted that this review must also consider transboundary effects.

1.6 Evidentiary Issues

1.6.1 The Burden and Standard of Proof

As stated in the Board's previous decisions, the burden of persuading the Board that any given project can, in the Board's judgment, proceed, rests with the Proponent. The community, Elders and Intervenors do not have the onus of persuading the Board that the Proponent has not satisfactorily assessed the anticipated ecosystemic or socio-economic impacts and environmental effects of the Project, or that the steps to avoid and mitigate or compensate for adverse impacts are insufficient. Discharging this onus requires that the Proponent submit an environmental impact statement (EIS) that fully reflects the NIRB-issued guidelines and Minister's direction. Only then can all participants contributing to the assessment have sufficient information to conduct a meaningful and constructive review of the Proponent's EIS and the Board conduct a full review of the matters relevant to its mandate¹⁰ and determine whether the Project may proceed, and if so, on what terms and conditions.

In addition to the overall onus on the Proponent during the Board's assessment, individual participants throughout the review also must meet the burden of proof for specific information or assertions offered to the Board. As stated in the NIRB Rules of Procedure¹¹ any party offering evidence has the burden of ensuring that they have provided the Board with sufficient information to support that participant's position. Further, where there is conflicting information, the Board has the authority to decide which information will be accepted by the Board in whole or in part. The standard of proof in this Review required a careful balancing of all of the information filed in writing with the Board prior to the Final Hearing and the information provided to the Board in person at the Final Hearing and the sections of this Report discussing the Board's Views address how the Board balanced information provided on key topics.

⁹ Nunavut Impact Review Board, Screening Decision Report, NIRB File No.: 11MN034, July 8, 2011 at p. 10.

¹⁰ See sections 12.5.1 and 12.5.2 of the NLCA.

¹¹ NIRB Rules of Procedure, September 3, 2009, Rule 32.1 at p. 18.

The standard of proof in this Hearing requires a careful balancing of all of the evidence presented in writing and at the Final Hearing. However, the onus remains on the Proponent to demonstrate that it is consistent with the Board's mandate and requirements of the NLCA.

1.6.2 The Precautionary Principle and Adaptive Management

As with all Board reviews, where there are substantial gaps in data or uncertainty regarding predicted effects, the Board is guided by the "precautionary principle". As noted in the Board's recent decisions, and cited in the EIS Guidelines issued by the NIRB for the Meliadine Gold Project, the Board is governed by the formulation of the precautionary principle as set out in Principle 15 of the Rio Declaration on Environment and Development (1992): "Where there are threats of serious or irreversible damage, lack of full scientific certainty *shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation*" [emphasis added].¹²

What this approach means in practice during a NIRB assessment is that the Proponent is required to show that despite the uncertainty associated with the predictions of some effects, the potential adverse for environmental impacts can be mitigated or reversed. The burden on the Proponent created by the precautionary principle in the case of the Meliadine Gold Project, as specified in the EIS Guidelines, required the Proponent to:

- Demonstrate that the proposed actions are examined in a precautionary manner in order to ensure that they do not cause serious or irreversible damage to the environment;
- Outline the assumptions made about the effects of the proposed actions and the approaches to minimize these effects;
- Identify any follow-up and monitoring activities planned, particularly in areas where scientific uncertainty exists in the prediction of effects; and
- Present public views on the acceptability of these effects.

The application of the precautionary principle in environmental decision-making results in decisions that reflect the potential for adverse environmental impacts, even though the risk of such impacts cannot be definitively proven. When the Board identifies that there are gaps that make it appropriate and advisable to implement a precautionary approach to decision-making very often "adaptive management" tools will be included in the NIRB's recommended terms and conditions. As defined by the Board in recent decisions:

Adaptive management is an ongoing process of decision-making that involves making initial decisions based on the existing data, subsequently monitoring for potential effects, assessing the effectiveness of the initial decisions (including assessing the effectiveness of mitigation measures) and then adjusting actions going forward to reflect the

12 UN (United Nations). 1972. Rio declaration on environment and development. In: Report of the United Nations Conference on the Human Environment, Stockholm; pp. 5-16.

*monitoring data and the effectiveness of measures taken to minimize adverse effects. Adaptive management provides the basis for sound environmental decision-making even in the face of uncertainty surrounding the nature and extent of effects that is often inherent at the environmental assessment stage. Adaptive management enables such projects to proceed, but in a manner that ensures the mechanisms chosen to manage the predicted effects are adjusted, when necessary, to reflect subsequent information that provides a more complete understanding of the nature, extent and appropriate management of such effects. The implementation of adaptive management is both consistent with, and supported by, NIRB's project monitoring jurisdiction as set out in Part 7 of Article 12 of the Nunavut Land Claims Agreement (NLCA). In addition, Part 8 of Article 12 of the NLCA expressly recognizes the need for flexibility in relation to project certificates developed by the NIRB, and provides the NIRB with the jurisdictional basis to revisit and modify, as required to meet the Board's objectives, the terms and conditions of a project certificate.*¹³

During this review, a number of participants have urged the Board to adopt the precautionary approach to monitor, manage and mitigate potential project effects:

*...I would just like to say that these recommendations that we've made and are -- which are elaborated in more detail in the evidence presented earlier today will allow the Kivalliq Inuit Association to remain engaged in the review, the adaptive management, and the regulatory processes, and will provide ongoing assurance that their interests are protected throughout the construction, the operation, and the closure of the mine.*¹⁴

*We have made it clear that development must occur in a manner that is consistent with the Nunavut Land Claim Agreement, the laws of Nunavut and Canada, the precautionary principle, and the goals and values of Nunavummiut... the Government of Nunavut has highlighted a need for monitoring, ongoing improvement, and adaptive management as a means to ensure predicted impacts are verified and managed and unexpected impacts are identified and mitigated;...We also believe that the significant impacts to the environment, including wildlife and habitats, should not be underestimated. Appropriate monitoring and adaptive management plans must be developed and implemented in accordance with the precautionary principle.*¹⁵

*AANDC is supportive of the NIRB taking a precautionary approach when considering recommendations, particularly with respect to the need for monitoring an [sic] [and] effective adaptive management.*¹⁶

¹³ NIRB File No.: 08MN053, Final Hearing Report for the Mary River Project, Baffinland Iron Mines Corporation, September 14, 2012 at p. 12.

¹⁴ N. Hutchison, Kivalliq Inuit Association, NIRB Public Hearing File No.: 11MN034 Transcript August 22, 2014 at p. 539, lines 3-12.;

¹⁵ S. Pinksen, Government of Nunavut, NIRB Public Hearing File No.: 11MN034 Transcript August 27, 2014 at pp. 1137-1139, lines 21-25; lines 19-23, and lines 11-16.

¹⁶ K. Costello, Aboriginal Affairs and Northern Development, NIRB Public Hearing File No.: 11MN034 Transcript August 22, 2014 at p. 416, lines 14-17.

*With the application of appropriate mitigation measures, appropriate offsetting plans, comprehensive adaptive management, follow up, and monitoring programs, we strongly believe that serious harm to fish habitat could be minimized during all stages of the project.*¹⁷

*...uphold a precautionary approach in the assessment of matters that can potentially affect present and future Inuit harvesting so that Inuit do not needlessly bear the brunt of eventual population level impacts and repercussions.*¹⁸

In addition, commencing in 2012, with the Board's review of the Mary River Project,¹⁹ the Board has further developed the precautionary approach to incorporate a "safety margin" into monitoring and mitigation measures. In the Board's view it is appropriate to apply the more protective approach to adaptive management in cases where: the seriousness or reversibility of potential adverse impacts is high; there is concern that there would be difficulty mitigating or reversing impacts if they were to occur; and/or where a high level of public concern is expressed. Where these factors are met, the Board has recommended implementing adaptive responses that are reflective of the potential adverse effects and proportional to the risk (i.e. the higher the risk of significant adverse impacts, the more extensive the required monitoring and mitigation measures).

1.6.3 Inuit Qaujimaningit

As indicated in both the EIS Guidelines and the Board's previous decisions, in the Board's view, Inuit Qaujimaningit (IQ), which encompasses Inuit Traditional Knowledge (TK) (and variations thereof) as well as contemporary Inuit knowledge that reflects Inuit societal values and experience, contributes vital information to the NIRB's review process. The term Inuit Qaujimaningit is meant to encompass local and community-based knowledge, ecological knowledge (both traditional and contemporary), which is rooted in the daily life of Inuit people and represents experience acquired over thousands of years of direct human contact with the environment.²⁰ With its emphasis on personal observation, collective experience and oral transmission over many generations, Inuit Qaujimaningit provides factual information on such matters as ecosystem function, social and economic well-being, and explanations of these facts and casual relations among them. In this regard, Inuit Qaujimaningit has played a significant role in this Review by: contributing to the development of accurate baseline information; comparing predictions of effects with past experience; and assisting in the assessment of the magnitude of projected effects.

¹⁷ M. Janowicz, Fisheries and Oceans Canada, NIRB Public Hearing File No.: 11MN034 Transcript August 22, 2014 at p. 463, lines 8-12.

¹⁸ L. Muckpah, Kivalliq Wildlife Management Board, NIRB Public Hearing File No.: 11MN034 Transcript August 22, 2014 at p. 559, lines 10-14.

¹⁹ For a more detailed discussion of the origins and justification for the Board's application of this version of the precautionary approach and adaptive management to specific effects, see NIRB File No.: 08MN053, Final Hearing Report for the Mary River Project, Baffinland Iron Mines Corporation, September 14, 2012 at pp. 11-13.

²⁰ Berkes, F. 1993. Traditional ecological knowledge in perspective. In: Inglis, J. (ed.), Traditional Ecological Knowledge: Concepts and Cases. Ottawa: Canadian Museum of Nature, pp. 1-9.

The Proponent was required to incorporate Inuit Qaujimaningit into the Environmental Impact Statement (EIS), to the extent that the Proponent had access to such information and in keeping with the expectation that the Proponent would undertake appropriate due diligence to gain access to the information but may be limited by obligations of confidentiality and other ethical obligations that may attach to such information. In addition to Inuit Qaujimaningit provided as part of the EIS or in questions or responses provided by the intervenors, during the approximately two days of Community Roundtables at the Final Hearing, Elders, Inuit harvesters and other community members freely shared their extensive Inuit Qaujimaningit with the Board. The NIRB has benefitted immensely from the Inuit Qaujimaningit provided in the FEIS and shared with us by the participants at the Final Hearing and the Board has considered and incorporated this information throughout the report and recommendations.

1.7 Scope of NIRB's Assessment and Environmental Impact Statement Guidelines

On the basis of comments received and the NIRB's screening of the Project Proposal, when the Board issued its screening decision report to the Minister of Aboriginal Affairs and Northern Development on July 8, 2011, the Board identified the following as issues that should be considered if the Project proceeded to a review under Article 12, Part 5 of the NLCA:

- impacts to the environment including surface and groundwater quality;
- impacts to air quality;
- Impacts to wildlife, especially caribou, migratory birds, species at risk and fish and fish habitat;
- Identified both positive and negative socio-economic impacts to communities in the region, specifically Rankin Inlet due to the close proximity;
- potential of cumulative impacts in the Kivalliq Region resulting from ongoing and incremental land use activities associated with mining, terrestrial transportation corridor creation, and marine shipping;
- Inclusion of the All-Weather Road Access Proposal (NIRB File No. 11RN017); and
- Level of information currently available in support of the Project Proposal.²¹

The Minister responded on September 14, 2011 directing the Board to undertake a review of the Project proposal under Article 12, Part 5 of the NLCA, the Minister also responded to the following issues of concern identified in the NIRB's Screening Decision Report for this file:

1. *Agnico-Eagle Mines Ltd.'s (AEM) "All-Weather Road Project"* – the Minister indicated that, should AEM choose to reapply for early development of an all-weather road to the Meliadine site, it would be essential that the mine proposal (i.e. project description) be updated to reflect the modified proposal. The Minister further noted that the discretion to consider and subsequently grant exceptions under NLCA 12.10.2 rests with the Board and should only be exercised after careful consideration.
2. *Potential Cumulative Effects of Increasing Mineral Development in the Kivalliq Region* – The Minister agreed that the cumulative ecosystemic and socio-economic effects resulting from the increasing levels of mineral development in the Kivalliq Region warranted special consideration,

²¹ NIRB Screening Decision Report, NIRB File No. 11MN034, July 8, 2011

and further observed that in assessing cumulative impacts on caribou, it would be essential that the scope of the Board's review include consideration of transboundary effects.

3. *Level of Information Currently Available in Support of the Project Proposal* – The Minister emphasized his support for ensuring that sufficient information was in place prior to commencing key stages in the review process.
4. *Availability of Participant Funding* – The Minister stated that, while funding has been provided for a limited number of complex projects in Nunavut on a case by case basis in the past, AANDC did not have an established participant funding program in place. As such, the Minister was not in a position to provide participant funding for the review at that time.

With these issues in mind, the NIRB requested additional information from Agnico Eagle and received it on September 29, 2011 and prepared a preliminary scoping list for the Project and then conducted public scoping sessions in the seven communities of the Kivalliq Region identified by the NIRB as potentially affected by the Project: Arviat, Baker Lake, Chesterfield Inlet, Coral Harbour, Rankin Inlet, Repulse Bay and Whale Cove. As indicated in the Board's Public Scoping Meeting Summary Report, released on January 18, 2012 the scoping process assisted the Board in identifying those components of the biophysical and/or socio-economic environment that may be impacted by the Project and/or for which there is public concern.

During the EIS Guidelines Workshop at Rankin Inlet, Agnico Eagle requested the NIRB to remove the Wolf, Pump and Discovery deposits from its Project scope as it was not going to be developing these deposits as part of this Project Proposal. On February 20, 2012 after due consideration of the issues identified in screening, the issues identified by the Minister and the comments received during the scoping process, and in accordance with section 12.5.2 of the NLCA, the NIRB provided the Proponent with the Environmental Impact Statement (EIS) Guidelines for the Project.²²

While it is the sole responsibility of a Proponent, subject to a NIRB review, to prepare an EIS that includes sufficient baseline data and analysis for a complete assessment of the anticipated impacts of the Project, the purpose of the EIS Guidelines is to assist the Proponent and participants in the Review by identifying the information requirements and expectations for the EIS that will form the basis for the Board's review of the Project. If an EIS conforms to the EIS Guidelines it enables the Board and interested parties to understand and assess the potential adverse and beneficial biophysical environmental and socio-economic effects associated with development of the project.

On January 25, 2013 the NIRB assessed the Proponent's Draft Environmental Impact Statement (DEIS) against the EIS Guidelines and found that the DEIS did not conform and requested that Agnico Eagle address the deficiencies identified and include an Amendment of the Project scope. On February 13, 2013 Agnico Eagle provided clarification to the NIRB with regards to the inclusion of the Pump and Discovery deposits into the Project scope. On March 6, 2013 the NIRB issued an updated Project scope and provided Agnico Eagle with information requirement regarding the amended deposits for the EIS Guidelines.

²²Guidelines for the Preparation of an Environmental Impact Statement for Agnico Eagle Mines Ltd.'s Meliadine Gold Project (NIRB File No. 11MN034), dated February 20, 2012.

On April 22, 2014 the NIRB received Agnico Eagle's revised DEIS and assessed it against the EIS Guidelines and found that the DEIS conformed to the EIS Guidelines and distributed the DEIS for review and comment on May 7, 2013. Following information requests, technical review and the Pre-Hearing Conference associated with the DEIS, further direction was provided to the Proponent regarding additional information required by the Board and the parties in the Final Environmental Impact Statement (FEIS) and the NIRB communicated these requirements in the Pre-hearing Conference Decision released on January 29, 2014.

On May 21, 2014 the NIRB indicated that the Proponent's FEIS conformed to the requirements of the EIS Guidelines and the additional requirements identified in the Pre-hearing Conference Decision, and remitted the FEIS to the parties for review and comment.

1.8 Key Issues

On the basis of the technical review comments on the *draft* Environmental Impact Statement, the technical meeting held in December and the comments of Community Representatives provided during the Community Roundtable portion of the Pre-hearing Conference for the Meliadine Gold Project, the Board identified that several key issues needed to be addressed by Agnico Eagle Mines Ltd. (Agnico Eagle) in the preparation of the Final Environmental Impact Statement, as follows:

- Overall updates to baseline data and improvement and substantiation of impact predictions and establishment of the baseline conditions necessary to found potential project monitoring;
- Clarification of the requirements and implications of changes to the applicable regulatory regimes, particularly with respect to the federal *Fisheries Act* and the *Navigable Waters Protection Act* (since renamed to the *Navigation Protection Act*);
- The preparation and presentation of specific procedures and protocols for environmental monitoring and mitigation in the form of specified Monitoring and Mitigation plans (including Road Management, Wildlife Mitigation and Monitoring, Dust Monitoring and Mitigation);
- Marine shipping effects, including marine safety, spill response, spill
- Community-level socio-economic impact assessment for Rankin Inlet and also extending to the analysis to other communities in the Regional Study Area;
- Identification of all site transportation and accommodation alternatives (including consideration of daily transit of employees to/from Rankin Inlet) and accommodation security measures;
- Updates to the cumulative effects assessment, particularly in relation to caribou and marine mammals based on the past, present and reasonably foreseeable mineral exploration activities within the Regional Study Area and marine shipping;

- More comprehensive analysis of labour force projections, (including Inuit employment at all project phases, training programs, turnover rates and regional employment and unemployment profiles in the Kivalliq region); and
- An update of relevant non-confidential information pertaining to the draft Inuit Impact Benefit Agreement.

In addition, in the Pre-hearing Conference Decision²³ the Board identified that in addition to these issues to be addressed by Agnico Eagle, other participants should also be prepared to address, in their written submissions and at the Final Hearing the following issues:

- How the Government of Nunavut and Agnico Eagle propose to meet with and engage the Hamlet Councils and social service providers in the potentially affected communities to discuss the socio-economic assessment aspect of the review and the related mitigation and monitoring plans;
- An update from the Kivalliq Inuit Association and Agnico Eagle regarding the extent to which the proposed Inuit Impact Benefit Agreement will provide a mechanism to allow for wildlife compensation claims to be filed to address potential project effects such as losses to harvesting access, diversion of harvested species and direct wildlife mortalities associated with project interactions; and
- Clarification from Aboriginal Affairs and Northern Development Canada (AANDC) regarding the extent to which information associated with the Government of Nunavut's caribou-related research informs AAND's issuance of licences in the Kivalliq region and whether information from the Beverly and Qamanirjuaq Caribou Management Board may also result in updated Caribou Protection Measures.

1.9 Disposition of Motions at the Oral Hearing

1.9.1 The Motion

On August 26, 2014 legal counsel for the Kivalliq Inuit Association (KIA) provided notice to the Board and legal counsel for Agnico Eagle and the intervenors that the KIA intended to bring forward a motion on August 27, 2014 to request that the Board keep the hearing record open for the receipt of additional information. The KIA's motion was formally filed with the Board on August 27, 2014 and was entered as Exhibit 50. The written response of Agnico Eagle to the motion was filed with the Board on August 27, 2014 and was entered as Exhibit 51.

The motion was brought under Rules 7.6 and 48.1 of the Board's Rules of Procedure, which state as follows:

7. Motions

²³ File No. 11MN034, NIRB Pre-hearing Conference Decision for the Meliadine Gold Project, January 16, 2014.

7.6 If a matter arises during an oral hearing that requires a decision or order of the Board, a party may bring the matter before the Board by making a motion orally. The Board shall dispose of an oral motion in accordance with such procedures as the Board may order

48. Closing of the Record

48.1 At the conclusion of an oral hearing, the record shall be closed unless the Board directs otherwise. Once the record is closed, no additional evidence shall be heard unless a written application is filed with the Board and the Board decides, following notification and submissions by the parties, that the evidence is material and that there was good cause for the failure to produce it in a timely fashion.²⁴

1.9.1 Board Process to Address the Motion

As outlined by the Board's legal counsel during the Final Hearing,²⁵ the Board process to deal with the motion consisted of having the Kivalliq Inuit Association (KIA) address the Board to provide the background and the basis for the motion. Following the KIA's presentation of the motion, the parties were invited to provide, in oral form, their response to the motion addressing whether they agreed with or objected to the motion and the basis for their position. Following the submissions from the parties, the Board adjourned to consider the motion and reconvened to provide an oral decision on the motion, with the more detailed reasons for the Board's disposition of the motion to be included in the Board's Final Hearing Report.

1.9.2 Basis for the Motion

In establishing the KIA's basis for the motion, the KIA indicated that although the negotiations between Agnico Eagle and the KIA in respect of the Inuit Impact Benefit Agreement (IIBA) required under Article 26 of the Nunavut Land Claims Agreement (NLCA) had been underway since 2011, some of the unresolved issues in the negotiation relate to commitments contained in the Final Environmental Impact Statement. Consequently, the KIA submitted that the manner in which these outstanding matters are addressed in the IIBA (or indeed if these matters are addressed at all in the IIBA) could impact the terms and conditions of any Project Certificate that the Board would recommend if the Project was approved to proceed. On this basis, the KIA submitted that it was appropriate and necessary for the Hearing Record to remain open until the KIA and Agnico Eagle could provide the Board with the final text of the IIBA.

It's clear to us that there is an intersection between the Inuit Impact Benefit Agreement and the socioeconomic provisions that might be considered for inclusion in any project certificate that may be issued for this project. If we don't resolve these issues in the context of an IIBA, then KIA would want this Board, the NIRB Board, to consider and

²⁴ NIRB Rules of Procedure, September 3, 2009 at pp. 6 and 22.

²⁵ T. Meadows, Nunavut Impact Review Board, NIRB Final Hearing File No. 11MN034 Transcript, August 27, 2014, p. 1104, lines 12-21.

*potentially make a decision with respect to matters that may be included in the project certificate. So we do believe that it's important that the Board know what is in the IIBA.*²⁶

Although the KIA conceded that the precise date on which the IIBA will be completed is unknown, on the basis of progress to date, the KIA projected that they would require the record to remain open at least until January 2, 2015 in order to allow sufficient time to conclude the IIBA negotiations.

The Board's legal counsel noted that the normal practice in the Board's prior assessments is that the negotiations for an IIBA are on-going during the course of the Board's assessment and that the IIBA is not concluded prior to the conclusion of the assessment of the project. That the environmental assessment and project licensing processes may precede the negotiation of the IIBA appears to be contemplated in Article 26, section 26.3.2 of the NLCA which states: "An IIBA shall be consistent with the terms and conditions of project approval, including those terms and conditions established pursuant to any ecosystemic and socio-economic impact review." On the basis of the prior practice and integrated regulatory process established under the NLCA, the Board asked the KIA to advise the Board as to any special circumstances in the context of this review that would warrant the Board leaving the record open for the final IIBA to be provided to the Board in advance of reaching their decision.

In response, the KIA indicated:

*Where we are concerned, as I say, about the intersection between these proceedings and the IIBA relate to statements made in the final environmental impact statement, which do not, in our view, lead to clarity of the commitments... what we're trying to achieve is clarity and if there is not clarity, then it's appropriate, we believe, to come back to the Board and ensure that the Board understands where there are problems ...The difficulty is that we are not able to satisfy ourselves that we have done the job that we are mandated to do and – and that is to ensure that the project certificate results in clarity for the Board as well as the IIBA and – and that's why we are concerned about ensuring that these two processes flow together.*²⁷

1.9.3 Views of the Parties

The Government of Nunavut did not support the motion. The Federal Government (Aboriginal Affairs and Northern Development, Environment Canada, Fisheries and Oceans Canada, Natural Resources Canada and Transport Canada) indicated that they did not support the motion on the basis that the IIBA and the assessment process are two distinct legal processes and the KIA's request did not justify keeping the record open.

The Kivalliq Wildlife Board, Aqiggiq Hunters and Trappers Organization and Kangiqliniq Hunters and Trappers Organization supported the position expressed by the government departments and did not support the KIA's motion.

²⁶ K. Gilson, Kivalliq Inuit Association, NIRB Final Hearing File No. 11MN034 Transcript, August 27, 2014, p. 1106, lines 11-20.

²⁷ K. Gilson, Kivalliq Inuit Association, NIRB Final Hearing File No. 11MN034 Transcript, August 27, 2014, pp. 1111-1112, lines 2-6; lines 22-26 and lines 8-14.

Agnico Eagle Mines Ltd. (Agnico Eagle) in written submissions filed as Exhibit No. 51, and in oral submissions, also indicated they did not support the KIA's motion on the basis that the NIRB project assessment process under Article 12 of the NLCA and the Inuit Impact Benefit Agreement (IIBA) negotiation process under Article 26 of the NLCA are separate and distinct processes. Agnico Eagle emphasized that although the Board may take into account commitments made by a project proponent when considering the mechanisms that may be used to mitigate socio-economic impacts of a given project, Article 12, Section 12.2.3 expressly states that the Board does not have the mandate to establish requirements for socio-economic benefits. Consequently, Agnico Eagle indicated that even in the absence of the final IIBA, the Board has a full record in the Final Environment Impact Statement and commitments made during the review and Final Hearing on all aspects of the environmental and socio-economic effects of the project and there is no proper foundation to justify "holding up the work of the Board in moving forward to make its decision after the close of this Final Hearing."²⁸

1.9.4 The Board's Disposition of the Motion

As indicated during the oral submissions on this motion, in the normal course of events, when the Final Hearing closes, the Hearing Record is also closed and there will be no further evidence or information received about the project so the Board may proceed to decision-making and preparing the Final Hearing Report. As recognized under Rule 48.1, the Board can, however, diverge from this practice when, upon written motion, a party establishes that the record should remain open in order for the Board to receive further evidence that is **material** and also where the party can establish that there was **good cause** for the failure to produce this material evidence in a timely fashion.

After adjourning for 20 minutes to consider the motion, the Board stated the following:

*The Board does not find that the exceptional circumstances required by rule 48.1 to keep the record open have been made out by the applicant. Specifically, the Board does not find that the evidence is material and that there was good cause for the failure to produce the evidence in a timely fashion. Consequently, the Board has denied the Kivalliq Inuit Association's motion to keep the hearing record open to await the completion of the Inuit Impact Benefit Agreement.*²⁹

On the key question of materiality of the IIBA to the Board's assessment of the Meliadine Gold Project the Board concluded that materiality must be considered in the specific and unique context created by the integrated co-management and regulatory regime established under the Nunavut Land Claims Agreement (NLCA). That the project assessment and licensing processes are separate and distinct from the IIBA negotiation process is established under Articles 10, 11, 12, 13 and 26 of the NLCA, and that the Board's mandate expressly excludes prescribing socio-economic conditions is made plain by Article 12, Section 12.2.3.

²⁸ Exhibit 51, NIRB Final Hearing File No.: 11MN034, August 27, 2014 filed by Agnico Eagle Mines Limited, "Submission in Reponse to KIA Motion to Keep the Record Open", at p. 2.

²⁹ T. Meadows, Nunavut Impact Review Board, NIRB Final Hearing File No. 11MN034 Transcript, August 27, 2014, pp. 1121-1122, lines 19-26 and lines 1-5.

As noted by the parties and conceded by the Kivalliq Inuit Association, it has generally been the practice of proponents and the relevant Inuit Associations to engage in on-going negotiations during the NIRB's assessment process and throughout project permitting and licensing. Further, as these on-going negotiations are typically confidential (and often the specific content of the Inuit Impact Benefit Agreement (IIBA) also remains confidential),³⁰ the Nunavut Impact Review Board has conducted prior reviews without information regarding the specific terms of the IIBA under negotiation without comment or concern being expressed that the Board was lacking material evidence in these cases.

Although the NLCA does not prescribe the specific timing of these parallel but distinct processes, it should be recognized that the NLCA establishes that until the assessment authority (in this case the NIRB) and all regulatory authorities exercising jurisdiction for project approvals (such as Aboriginal Affairs and Northern Development Canada and the Nunavut Water Board) have completed their decision-making processes and a proposed development has received the required project certificate, regulatory permits, licences or other authorizations, a development would not be allowed to proceed. A project proposal that fails to get the required project certificate or regulatory authorizations may not ever "commence" or "start up" (terms used in Article 26 that trigger the requirement to negotiate and conclude an IIBA). There is no requirement for an unsuccessful project proponent to complete an IIBA, and accordingly it is not surprising that in most cases the final IIBA is not negotiated until regulatory processes are completed.

The NLCA also contemplates that the assessment and licensing processes will inform the final IIBA, as Article 26, section 26.3.2 of the NLCA prescribes that "An IIBA shall be consistent with the terms and conditions of project approval, including those terms and conditions established pursuant to any ecosystemic and socio-economic impact review."

Although the Board shares the Kivalliq Inuit Association's view that there is clearly an interaction between the Board's assessment process and the extent to which potential socio-economic effects can be mitigated by the commitments of a Proponent negotiated under an Inuit Impact Benefit Agreement. The Board has not previously considered it necessary to have the final text of the IIBA before the NIRB in order to discharge the Board's mandate to assess the potential for socio-economic effects and to make recommendations regarding terms and conditions to mitigate the effects identified. Although the Board typically asks project proponents and the relevant Regional Inuit Association to provide the Board with general updates and non-confidential information as to the potential socio-economic effects proposed to be addressed in the IIBA and to provide comments on general mitigation measures that may be included, the Board's focus is solely on the extent to which mitigation measures may be included in a potential IIBA, but does not involve consideration, comment or direction with regard to the specific details of the IIBA as negotiated between the parties.

Consequently, the Board did not find that the information contained with a final IIBA would be required before the Board could conclude the review of potential socio-economic effects as required under

³⁰ In the Board's Pre-Hearing Conference Decision for this case, the Board expressly confirmed the expectation that, as in past reviews, the IIBA negotiations would not be finalized before the conclusion of the NIRB's process and that the specific terms of the draft IIBA may be confidential and would not be provided to the Board. See for example Section 3.2.1 in File No. 11MN034, NIRB Pre-hearing Conference Decision for the Meliadine Gold Project, January 16, 2014 at p 29.

Article 12 and therefore the final Inuit Impact Benefit Agreement (IIBA) would not constitute material evidence as required under Rule 48.1.

In addition, the Board did not find that the motion established good cause as to why the Kivalliq Inuit Association (KIA) and Agnico Eagle could not produce the general information regarding the relevant and non-confidential aspects of the IIBA content under negotiation for the Board's consideration at the Final Hearing. The Board also notes that if the final IIBA in its entirety was truly viewed by KIA as material evidence vital to the impact assessment process of the Board, there was no indication provided to the Board at the Pre-Hearing Conference in December 2013 that the KIA required the IIBA negotiations to be concluded before the Board proceeded to the Final Hearing stage of the review, nor did the KIA express the view that the final IIBA was required evidence in their final written submissions filed with the Board in advance of the Final Hearing.

Reflecting these considerations, the Board denied the KIA's motion to keep the record open as the KIA had not established that the final IIBA constituted material evidence and the KIA also did not show good cause for the failure to produce the evidence in a timely fashion at the Final Hearing.

2. PROJECT SETTING AND DESCRIPTION³¹

2.1 Project Setting

2.1.1 Site Features

As noted by Agnico Eagle within its FEIS, the following presents a description of the site features.

In the proposed Project area, winters are long and cold, while summers are short and cool and the physical features of the region have largely been determined by glaciation. Cryosolic soils are the dominant soils, and are underlain by continuous permafrost with active layers that are usually moist or wet throughout the summer. Heath tundra and sedge vegetation represent the dominant plant community types in the local Project area. Traditional plants are collected throughout the Project area for food and medicine. Caribou are an important part of Inuit life, providing food, fuel (from caribou fat) and materials for clothing, tools and traditional crafts. The region includes the summer range and calving grounds for Canada's largest caribou herds. The Qamanirjuaq caribou herd uses the Project area, while wolves are infrequently observed and the polar bear is uncommon to the area. The region is also a major breeding and nesting ground for a variety of migratory birds. The peregrine falcon population near Rankin Inlet is the highest known breeding density in the Arctic. The marine part of the Kivalliq region lies within the Northern Arctic Archipelago marine ecozone. The marine ecozone is used by migratory birds and is a major breeding ground for Arctic loons, tundra swans, and snow geese.

³¹ Unless otherwise stated, the Project Setting and Description is based on the information provided by the Proponent in the Project Proposal and Final Environmental Impact Statement (FEIS).

The Project area is dominated by waterbodies and interconnecting streams with metals concentrations generally very low in surface waterbodies and in most cases, concentrations are less than guidelines and measured organic compounds are generally below detection limits. Small and shallow ponds are the predominant waterbody type in the region and have low value for year-round use by fish. Stickleback represents one species of fish found in the Project regional study area with fish inhabiting all lakes and more than the half of the ponds in the surveyed Project area for at least a portion of the year. The main waterbody adjacent to the Project is Meliadine Lake which is an important lake for fishing for residents of Rankin Inlet. Fish were found to have low levels of metal accumulation.

Project-related shipping will make use Melvin Bay near Rankin Inlet. Water depths Melvin Bay are relatively shallow and local community members for small boat operations commonly use local waters in Melvin Bay (near Itivia). Arctic char represent an important food species for the local community and are mainly harvested during August in the Rankin Inlet region. Marine mammal species harvested in the Project area include beluga whales, walruses, polar bears, ringed seals, bearded seals, harp seals, and harbor seals. Several marine bird species are known to forage and/or nest in the Project area and egg harvesting occurs in spring for goose, eider, tern, guillemot, and gull. Locally harvested shellfish species include blue mussels.

The Kivalliq region is sparsely populated and it is part of the Inuit homeland and Inuit form over 80% of the population. Over the last 10 years, the fastest growing community in the socio-economic local study area (LSA) has been Whale Cove, and the slowest Chesterfield Inlet. More recently, Rankin Inlet and Baker Lake have been experiencing population growth. Rankin Inlet has a lower percentage of Inuit residents, and higher incomes. More people have English as their mother tongue in Baker Lake and Rankin Inlet than in other communities in the Kivalliq region.

Much of the economy in the Kivalliq region is based on subsistence hunting, trapping and fishing and mineral exploration and mining activities as well as construction, tourism and government services are the other principal activities. While tourism and recreation is a priority sector for development in the Kivalliq region, mining development is expected be the largest economic driver in the coming years. Mining is likely to provide more employment and business opportunities than any other foreseeable economic activity over the near to medium term. The mining sector also generally funds its own training and infrastructure needs, implying less dependence on territorial resources to enable development.

Mining job experience, training and some infrastructure are also of potential value to other economic activity. However, participation in the wage economy has led to decreased time spent on the land participating in traditional activities, and changes in family structures. Some Elders have noted concern over the loss of traditional knowledge and the retention of Inuktitut, especially amongst younger generations.

The Iqalugaarjuup Nunanga Territorial Park is located nearby to Rankin Inlet, and is used by visitors and locals for berry picking, fishing, and wildlife viewing. The Arvia'juaq and Qikiqtaarjuk National Historic Site include a small island in Hudson Bay near Arviat, and a peninsula to the north of Arviat. Both areas are considered to be important cultural sites. In addition, the McConnell River Migratory Bird Sanctuary is located 27 km south of the community of Arviat.

Archaeological sites within the Project area span approximately 3,500 years of occupation of the Barrenlands. The oldest sites are associated with the early Arctic Small Tool tradition or Pre-Dorset.

Predominately the sites within the local Project area are associated with Thule or Caribou Inuit and most of the sites contain tent rings, caches, and hunting blinds and are associated with summer and autumn activities.

2.1.2 Biophysical Conditions³²

The Kivalliq region includes mainland to the west of Hudson Bay as well as Southampton Island and Coats Island. The population is 8,348 in an area of 445,109 km² which is composed of seven communities: Arviat, Whale Cove, Rankin Inlet, Chesterfield Inlet, Baker Lake, Coral Harbour and Repulse Bay.

Most of this region is part of the Southern Arctic Ecozone which represents a major area of vegetative transition between the taiga forest to the south and the treeless Arctic tundra to the north. The ecozone is characterized by dwarf shrubs mixed with various herbs and lichens with wetlands in the low-lying areas and mainly support sedge/moss vegetation. The major limitations to vegetation growth are low precipitation, high winds and extremely dry winters, thus vegetation present plays an important role in the food chain.

Nearly all sedges, grasses and fruticose lichens, as well as many herbaceous and woody plants, provide food for grazing animals. Birds and small rodents, that in turn become food of fur-bearing carnivores, consume seeds, winter buds and the roots of many vegetation species.

January is the coldest month with a mean temperature of -28°C to -36°C and July is the warmest, reaching a mean high of 14°C. The growing season can be up to 750 growing degree-days, enhanced by long periods of daylight; however, frost is common during the summer. Total annual precipitation is less than 30 centimetres and the region is also known for high winds, which are due in part to the broad, flat, uninterrupted expanses offered to moving air masses.

The physical features of the region have largely been determined by glaciation which are primarily underlain by Precambrian granitic bedrock, the terrain consists largely of broadly rolling uplands and lowlands. Much of the region is mantled by discontinuous morainal deposits, except near the coasts, where fine textured marine sediments cover the surface with eskers traversing the landscape. This undulating landscape is studded with innumerable lakes, ponds and wetlands. The region is located in the Churchill geological province.

The marine part of the Kivalliq region lies within the Northern Arctic Archipelago marine ecozone. It is largely ice-free during the two- to three-month summer and has a landfast ice during the winter. The marine ecozone is used by migratory birds and is a major breeding ground for Arctic loons, whistling swans and snow geese. Marine wildlife include walrus, seals (grey, harp, bearded, harbour and ringed) and whales (beluga, narwhal, sperm, northern bluenose and bowhead).

³² Unless otherwise stated, the Biophysical Setting is based on the information provided by the Proponent in the Volume 2 of the Final Environmental Impact Statement (FEIS).

Protection areas of the Kivalliq region include: Arvia'juaq and Qikiqtaaluk National Historic Site of Canada, East Bay Migratory Bird Sanctuary, Fall Caribou Crossing National Historic Site of Canada, Harry Gibbons Migratory Bird Sanctuary, Iqalugaarjuup Nunanga Territorial Park, Inuujaarvik Territorial Park, McConnell River Migratory Bird Sanctuary, and part of the Thelon Wildlife Sanctuary.

The Kivalliq region is considered to have excellent mineral potentials and the Rankin-Ennadai-Kaminuriak (Qamanirjuaq) greenstone belt in the central Kivalliq is comparable to the Abitibi greenstone belt in Ontario and Québec for copper, gold, lead, nickel, platinum, silver and zinc. Hudson Bay also retains some potential for hydrocarbons and there has been prospecting activities in the region for decades. The Atlas of Canada provides with some information on past and current mineral exploration on the territory.

2.1.3 Socio-Economic Conditions³³

Nunavut's population of 31,909 people, in 2011, is distributed among 26 communities in the three regions of Kivalliq, Kitikmeot, and Qikiqtani. While the population grew rapidly over the 1980s and early 1990s, the growth rates have slowed substantially during the 2000s and are expected to fall further in the coming decade. Kivalliq's population grew from 7944 to 9479 people between 2001 and 2009, an average growth of 1.9% per year and this has been associated almost exclusively with high birth rates.

Death rates have not decreased substantially over the last 15 years and net migration has been negative. Although population growth rates are expected to slow somewhat over the coming years, they will remain high, and higher in Kivalliq than in Nunavut as a whole. Over the last ten years, the fastest growing community in the local study area (LSA) was Whale Cove and the slowest growing community was Chesterfield Inlet. More recently, Rankin Inlet and Baker Lake have been experiencing population growth, likely due to in migration by people who want to take advantage of jobs with mining companies and with businesses supplying these companies.

In 2006, Nunavut's median age was 23.1 years, compared to a median age in Canada of 39.5 years. The population in Kivalliq is even younger than Nunavut as a whole. While this presents challenges, this young population can become a driver of economic growth in the region, provided they have the tools and incentives needed to contribute to Kivalliq's economic development potential.

At the time of the 2006 census, Nunavut's population was 85% aboriginal, 99% of whom were Inuit and most of whom had Inuktitut as a mother tongue. Nunavut was home to a smaller percentage of Inuit in Canada in 2006 than in 2001, while the rest of Canada has seen its Inuit population increase by a third. Compared to the rest of Canada, Nunavut has large households, low incomes, and low mobility.

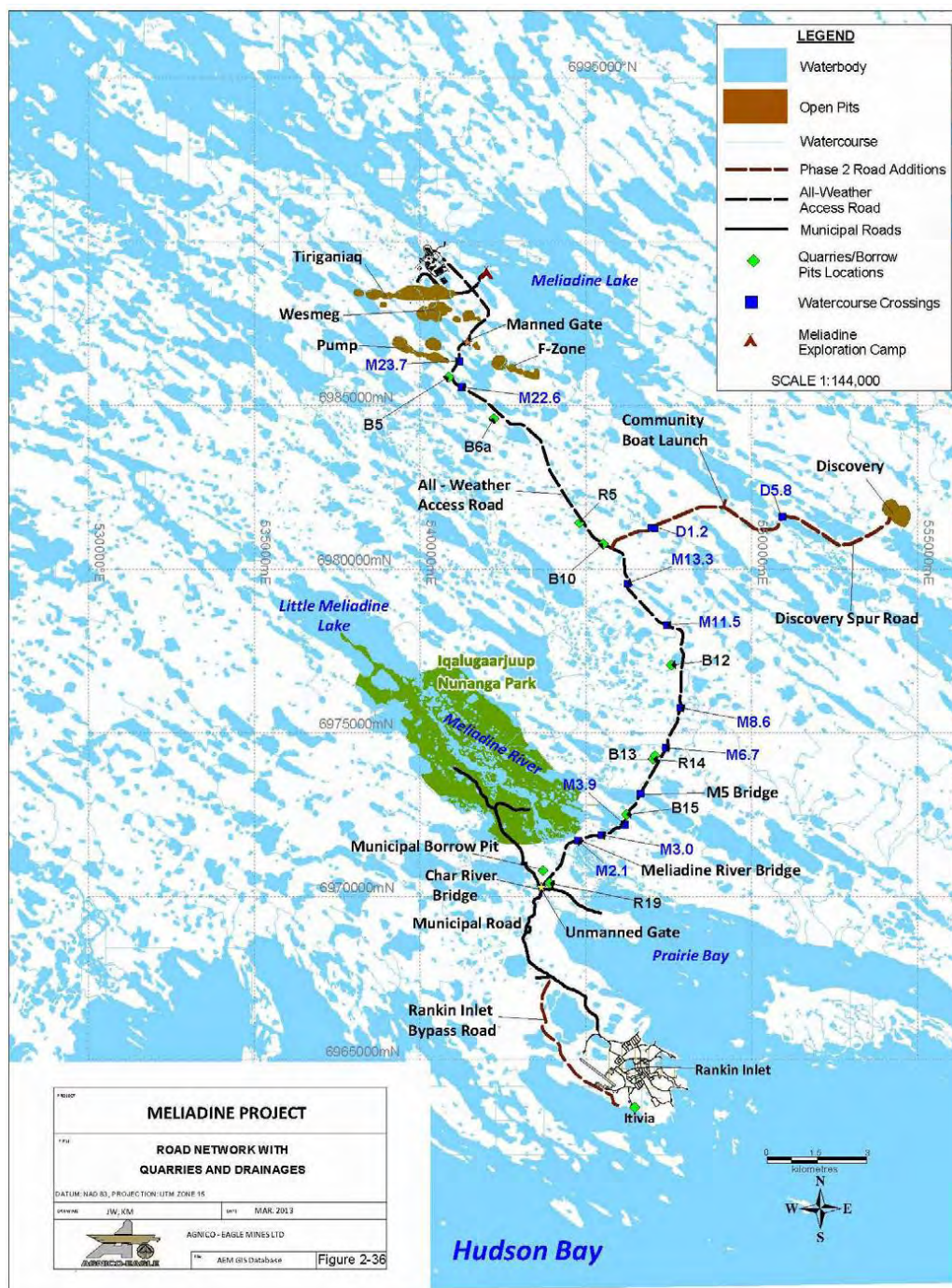
Population characteristics in the LSA communities display relatively homogeneous population characteristics, with a few exceptions. Rankin Inlet has a lower percentage of Inuit residents, and higher incomes. More people have English as their mother tongue in Baker Lake and Rankin Inlet than in other communities in the Kivalliq region. In the larger communities, there has been some decrease in

³³ Unless otherwise stated, Socio-Economic Conditions section of this report is based on the information provided by the Proponent in Volume 2 of the Final Environmental Impact Statement (FEIS).

Inuktitut as the language first learned and still understood and conversely, in smaller communities, maintenance of Inuktitut as a mother tongue has remained strong.

2.1.4 Map of Project Activities

Figure 2: Location of Project Activities, FEIS Map 1.0-B1



2.2 Project Description

The Meliadine Project (the Project) consists of mining at five gold deposits and processing of the ore at an on-site milling operation at a rate of 8,500 tonnes per day, as well as transportation of the gold bullion south for final refinement and sale. The Project includes the extended exploration, construction, operation, closure, and reclamation of both underground and open-pit mines and associated infrastructure for extraction, processing and transportation of gold. The mining of gold ore would occur at the five deposits through a phased approach, Tiriganiaq, Wesmeg, Pump, F Zone and Discovery, with Tiriganiaq being the only deposit where gold would be mined through both above ground and underground methods, with the other deposits being mined using open pit methods. There are three main Project areas: the Tiriganiaq mine site, the Discovery deposit and the Itivia Harbour. Phase 2 of all-weather access road (AWAR) would be an upgrade of the currently existing and previously approved Phase 1 of the AWAR which is approximately 24 kilometres (km) long and connects the Tiriganiaq exploration site to Rankin Inlet currently. As part of construction of Phase 2 of the AWAR, a spur road would be developed to connect the main road with the south end of Meliadine Lake to allow for public access to the Lake. Agnico Eagle has confirmed that Phase 2 of the AWAR would not be completed until it is ready to develop the Discovery deposit and would entail constructing a second road which would run parallel but separately from the public road, for mine traffic only.

Supplies and equipment required for construction and ongoing Project supply would be received during the open water season only, at the Itivia spud barge at Melvin Bay, near Rankin Inlet. The Itivia area would consist of eight one-million litre tanks for fuel and a laydown area to temporarily store materials received during the open water barging season. This area would be connected to the AWAR by a bypass road which would facilitate mine traffic avoiding the community of Rankin Inlet on route to the Project mine site.

2.2.1 Need for the Project

As described by Agnico Eagle in Volume 2 of its FEIS the necessity for the Project is presented in terms of six different factors:

- Create employment for Nunavummiut and other Canadians;
- Contribute to the vision and goals of Nunavummiut in terms of sustainable development (employment, training, career development, economic stability for residents of the Kivalliq region, and the creation of new business opportunities for Nunavut based businesses);
- contribute to the vision and goals of Inuit Beneficiaries through royalty payments to NTI and through land use fees, water compensation payments, and Inuit Impact and Benefit Agreement (IIBA) benefits to the KIA;
- provide revenue to the Government of Canada through corporate and income taxes;
- provide revenue to the Government of Nunavut (GN) through payroll taxes, equivalent municipal taxes, and fuel taxes; and

- generate a return on the investment made by AEM on behalf of its shareholders and generate a profit for AEM and its shareholders.³⁴

2.2.2 Project Components and Phases

The proposed major project components and associated Project activities, as described by Agnico Eagle in the FEIS include:

Access: The Phase 1 all-weather access road (AWAR) provides access between Rankin Inlet and the Meliadine site. This is a controlled access, single lane road, 23.8 km long. Once construction of the mine is approved, the AWAR will be widened to two lanes and opened to public use and a portion of the Discovery access road would be built to allow access to Meliadine Lake by local residents.

Airstrip and Port: The site will use Rankin Inlet's airport and a spud barge. There will not be an airstrip at the site.

Mineral Claims: The gold deposits are situated on leased claims under the Canada Mining Regulations that were staked prior to the Nunavut Land Claims Agreement. The claim block covers 52,173 ha and is approximately 80 km long. Agnico Eagle anticipates that the Project's total area of disturbance will cover an estimated 1,700 hectares.

Mining Methods: The mine will have both open pit and underground mining. The mine production rate will be 8,500 tonnes per day (tpd), with an estimated 2,500 tpd from underground and 6,000 tpd from open pits. Mining and milling will take place 24 hours a day, 365 days per year.

Mining Areas: Open pit mining is planned at five deposits. Presently underground mining is only planned for the Tiriganiaq deposit.

- Tiriganiaq – Largest of the known deposits with the mill site to be located immediately to the east.
- F Zone – Located approximately 3 km south of the proposed mill site.
- Discovery – Located approximately 21 km southeast of the proposed mill site.
- Wesmeg – Located 100 to 300 m south of the Tiriganiaq pit.
- Pump – Located approximately 3 km southwest of the proposed mill site.

As outlined in the FEIS Volume 1, Section 2, the Project will involve the following four phases:

- 1) **Pre-development Phase:** anticipated to begin as early as possible in the permitting process, and is included in the construction phase.³⁵
- 2) **Construction Phase:** Anticipated to be approximately 3 years.

³⁴ FEIS, Volume 2, Section 1.5, p. 1-4.

³⁵ FEIS, Volume 2, p. 65.

- 3) **Operational Phase:** Anticipated to start about 2 years after construction begins and continue for about 13 years.
- 4) **Decommissioning and Reclamation Phase:** Most of the demolition will occur at the end of the operational phase and would be done in the first two years of decommissioning. Reclamation work should be completed within 3-4 years of closure. Flooding of open pits would continue for several years. Post-closure activities, including needed monitoring, will continue until chemical and physical stability of the site is demonstrated (approximately 10 years beyond closure).

2.2.3 Construction and Operations

Construction of infrastructure is expected to take three years to complete including pre-development work, and would start by utilizing existing infrastructure established to support exploration and bulk sampling programs, including camps, fuel storage, laydown areas and Phase 1 of the all-weather access road (AWAR).³⁶

At Itivia spud barge, a fuel tank farm and a laydown yard would be constructed along with a bypass road to transport materials to the Tiriganiaq mine site in support of construction. Where possible, permanent infrastructure needed for construction and operation would be built at the onset of construction. Temporary infrastructure needed during construction would be removed once construction is complete.

Large quantities of aggregate would be required for construction activities. Aggregate, including crushed rock from quarries as well as sand and gravel from borrow sources, would be required for construction of Project components. A number of existing and potential aggregate sources have been identified and several existing rock quarry and borrow sites located on Inuit-owned land and are permitted under Agnico Eagle's current commercial lease with the Kivalliq Inuit Association (KIA). Extracted material would be used for ongoing maintenance of the AWAR, bypass road and Discovery spur road.

The planned operating life of the Project is 13 years. Conventional underground and open-pit mining techniques would be used, consisting of drill, blast and excavation of ore, followed by transport to crushing and screening facilities. Ore would be processed at the Tiriganiaq site with gold bullion then transported south by air for final refinement and sale on the global market.

Trucks would be used to deliver materials from the Itivia laydown area to the mine site including fuel and equipment. Annual re-supply for mine operations would be shipped only during open water to Melvin Bay, with a fleet of trucks and fuel trucks transporting supplies to the Tiriganiaq mine Site. Once operations begin, decommissioning of temporary construction infrastructure will take place, as construction camps, equipment and related infrastructure are removed and taken off-site. At the same time, geotechnical and geophysical survey programs will continue, and successful exploration results could extend the operational life and/or increase the annual ore production volume.

³⁶ FEIS, Volume 2, p. 65.

2.2.4 Decommissioning and Reclamation

Agnico Eagle) has developed a preliminary Mine Closure and Reclamation Plan (CRP) Supporting Document (SD) 2-17 in accordance with all applicable requirements. This preliminary CRP addresses all Project-related activity areas and infrastructure related to the Meliadine Project and provides a cost estimate for the final mine closure.

Three abandonment scenarios have been described in this preliminary CRP: temporary closure, indefinite shutdown and final mine closure. Additionally, progressive reclamation measures have been proposed to facilitate temporary, indefinite and final mine closures.

The open pits would be flooded once the operation in each pit is completed and the potential for underground operations in the pit has been dismissed. Flooding is planned to spread over a ten year period. Resloping of the pit walls, as required for long-term stability, would be carried out during operations and no re-sloping of slopes is planned for closure. Closure construction activities for the open pits would consist of placing a two to three metre (m) high berm along the edge of the pit perimeters in addition to flooding. Plug construction of the underground portal at the surface near the mill would occur immediately after the underground mining is completed and as the workings are flooded. The design of the plug will allow for flooding of the underground workings.

The tailings storage facility (TSF) will be progressively reclaimed during operations such that an engineered cover would be placed on the tailings surface as the tailings reach final elevation. The closure activities upon completion of pit operations would be to drain the Reclaim Pond into the attenuation pond, fill in the Reclaim Pond area, cover the remaining exposed tailings and construct the closure spillway.

All water management facilities would be active during closure until water quality meets discharge criteria and dikes are breached. Ditches and ponds would be scarified to promote re-vegetation and natural drainage once the dikes have been breached.

The all-weather access road (AWAR) would be active during closure until water quality meets discharge criteria and dikes are breached. The road surface would be scarified to promote re-vegetation and natural drainage once the dikes have been breached and access to the mine site is no longer required.

Infrastructure would be dismantled and disposed of off-site at an approved disposal facility or sold. Mine closure is integral to the mine design and this plan would be modified as a series of conceptual plans as the Project progresses. Planning for permanent closure is an active and iterative process, the intent of which is to develop a final plan using adaptive management. Adaptive management would enable the plan to evolve as new information becomes available through analyses, testing, monitoring, and progressive reclamation. As such, the CRP would be reviewed and updated on a regular basis as the Project proceeded into permitting, detailed design, construction, operations and closure. Likewise, the closure design and monitoring concepts would be advanced in greater detail through each of these phases as mine plans and designs are finalized and site specific information and monitoring data become available.

3. INVOLVEMENT OF INTERESTED PARTIES

3.1 Consultation Opportunities

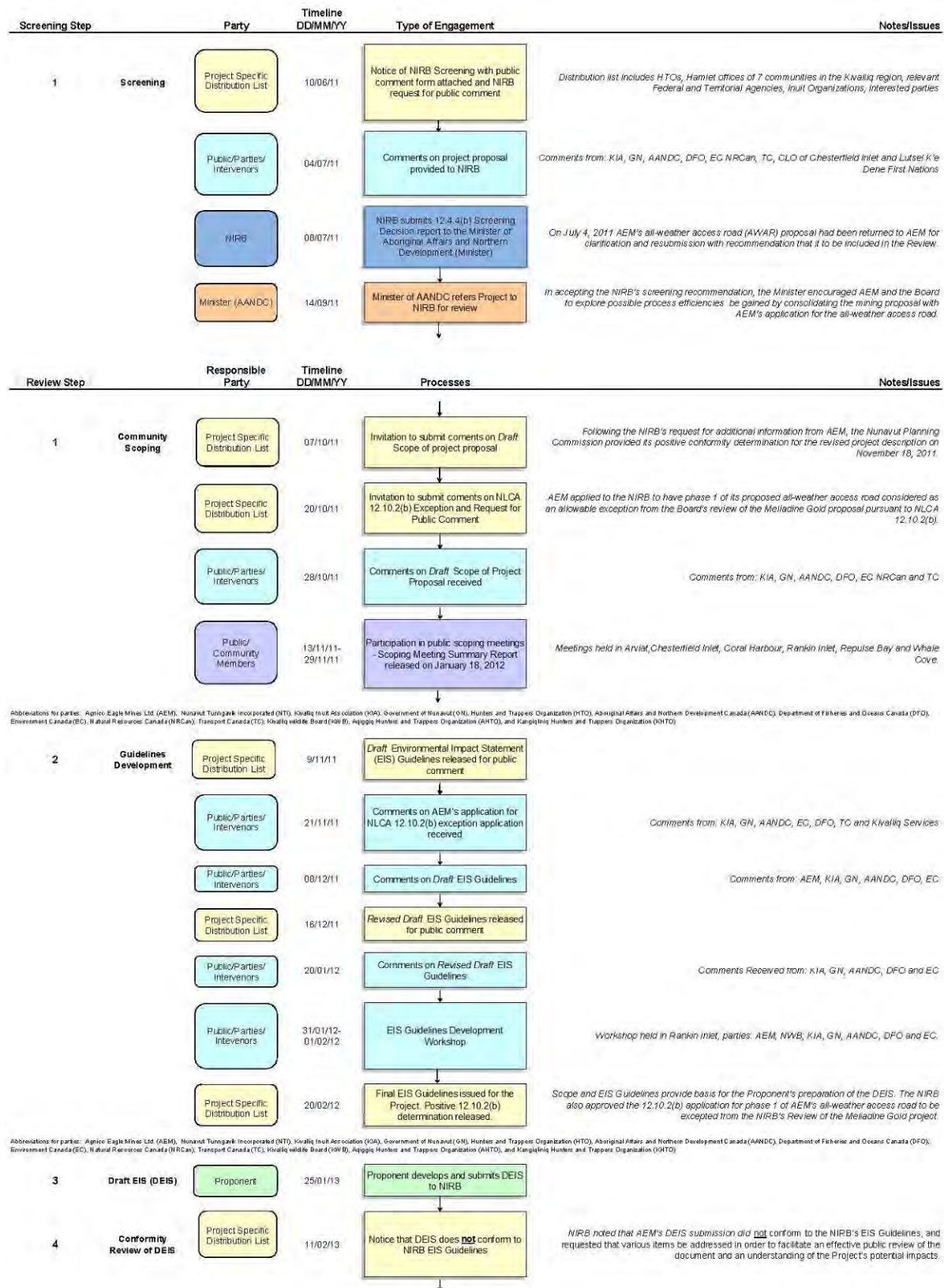
3.1.1 Public Consultation

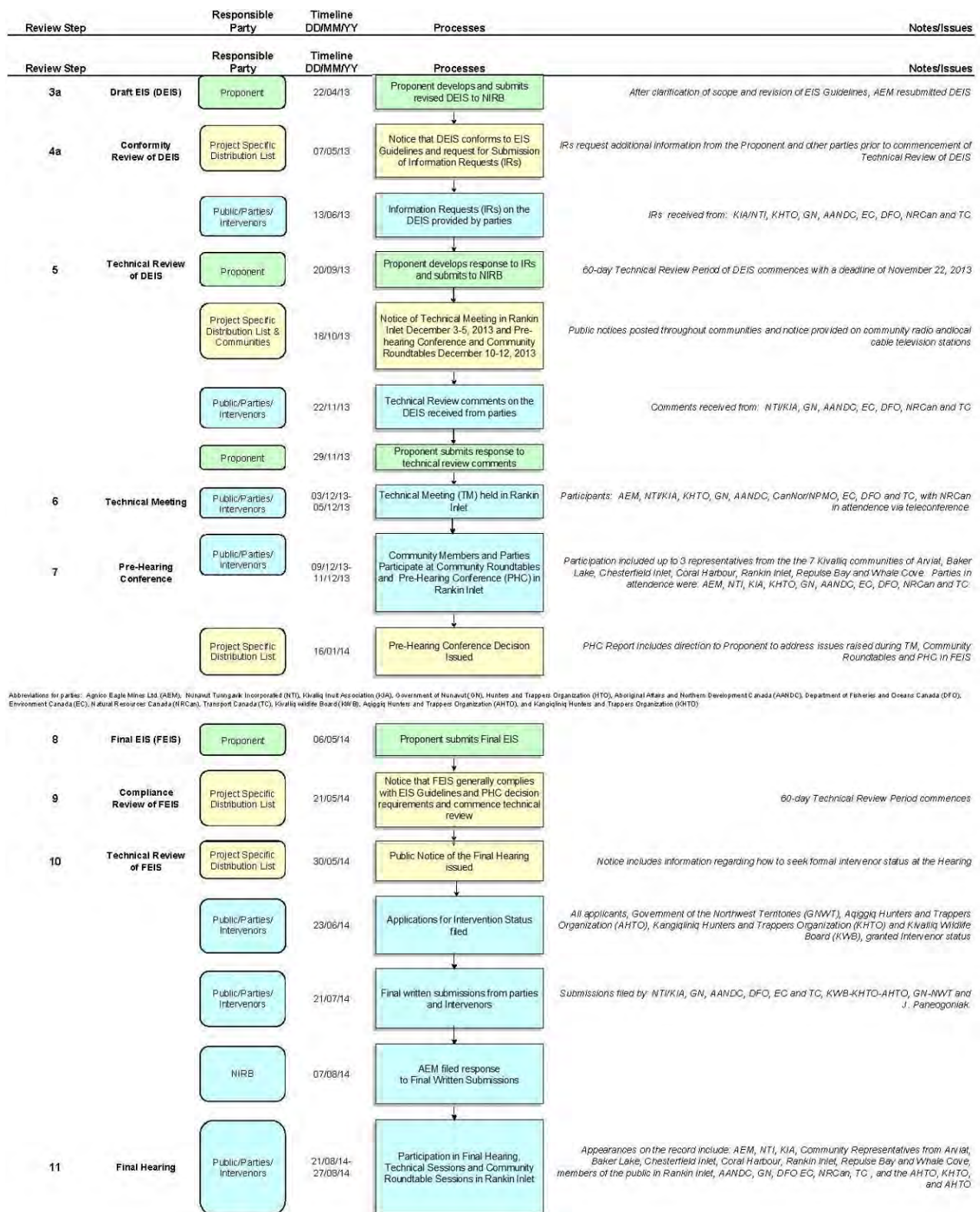
Public participation is a central objective of the NIRB review process. Meaningful public participation requires the Review to address concerns of the general public regarding the anticipated or potential environmental effects of the project. Another objective of the NIRB review process is to involve potentially affected Nunavummiut to address concerns regarding any changes that the Project may cause in the environment and the resulting effects of any such changes on the traditional and current use of land/ice and resources. The Proponent must ensure that Nunavummiut have the information they require regarding the Project and its potential impacts. In this regard, AEM's specific consultation efforts are summarized in the FEIS, Supporting Document 3-1.

The consultation efforts and opportunities for Nunavummiut to provide their comments to the NIRB during the review process are outlined in Figure 3 that follows.

Listings of attendees at all of the NIRB's public meetings held in association with the assessment of this Project, including the Final Hearing, can be reviewed via sign in sheets for each of these meetings, as it is the NIRB's practice to ask all participants to sign in at the beginning of each day of proceedings. A full listing of sign in sheets from the Final Hearing is available online from the NIRB's public registry: <http://ftp.nirb.ca>.

Figure 3: Public consultation efforts and opportunities





Abbreviations for parties: Agnico Eagle Mines Ltd. (AEM), Nunavut Tunngavik Incorporated (NTI), Kivalliq Inuit Association (KIA), Government of Nunavut (GN), Hunters and Trappers Organization (HTO), Aboriginal Affairs and Northern Development Canada (AANDC), Department of Fisheries and Oceans Canada (DFO), Environment Canada (EC), Natural Resources Canada (NRCan), Transport Canada (TC), Kivalliq Wildlife Board (KWB), Aqigigik Hunters and Trappers Organization (AHTO), and Kivalliq Hunters and Trappers Organization (KHTO)

In addition to the consultation activities undertaken by the NIRB and the Proponent, as public access to the internet and Northern-based media outlets continue to improve, the media has played an important role in supporting the NIRB's goals of enhanced public awareness and participation. In print, radio, and online venues, the media have helped by providing notice of meetings and hearings, disseminating information and, in some cases, providing discussion forums that allow people to express opinions and increase understanding. In this Review, the Board notes the significant contributions of the media with respect to the Final Hearing. It is hoped that the presence of local media contributed to a heightened level of public awareness of both the Project and the NIRB's Review process.

3.2 The Participants

3.2.1 Nunavut Tunngavik Inc. (NTI)

NTI is a privately incorporated organization that is the successor to Tungavik Federation of Nunavut, the signatory to the Nunavut Land Claims Agreement (NLCA). NTI is responsible for representing the Inuit of all the regions and communities of Nunavut to safeguard, administer and advance the rights and benefits that belong to the Inuit of Nunavut and to promote their economic, social, and cultural well-being through succeeding generations. NTI advances and protects Inuit interests and ensures that the commitments made under the NLCA are met. With respect to the Meliadine Gold Project specifically, as the gold deposits are situated on Inuit Owned Lands (IOL) owned and administered by Nunavut Tunngavik Inc. (NTI; sub-surface and mineral rights) and the Kivalliq Inuit Association (KIA; surface rights) on behalf of the Inuit Beneficiaries as designated under the NLCA, the NTI will receive the mineral production royalties payable for the production of the mine,. However, although NTI are the owners of the minerals because these mineral rights are considered to be "grandfathered" under the NLCA, the Government of Canada remains responsible for administering these rights under the *Nunavut Mining Regulations*,³⁷ and then transferring the royalties collected to NTI (unless the administration is transferred to the mineral claim holder and the mineral rights holder by agreement).³⁸

Although present at the Final Hearing to ask and answer questions, and to extend support to the participation of the local hunters and trappers organizations and the Kivalliq Wildlife Management Board, NTI designated the Kivalliq Inuit Association (KIA) as the organization largely responsible to provide the technical review component of the NIRB's assessment of the Meliadine Gold Project jointly on behalf of NTI/KIA.³⁹

³⁷ *Nunavut Mining Regulations*, SOR/2014-69.

³⁸ See the summary of mineral tenure provided in the FEIS, Vol. 2, Section 1.5, Land Tenure, p. 40.

³⁹ B. Dean, Nunavut Tunngavik Inc., NIRB Public Hearing File No.: 11MN034 Transcript August 21, 2014, p. 145, lines 5-12.

3.2.2 Kivalliq Inuit Association (KIA)

KIA is a Designated Inuit Organization under the Nunavut Land Claims Agreement (NLCA), representing the rights and values of the Inuit within the Kivalliq region. The focus of KIA's involvement in the assessment is in relation to rights to water and wildlife compensation, landowner rights, and the negotiation of a suitable Inuit Impact and Benefit Agreement under Article 26 of the NLCA.

The KIA participated in all stages of NIRB's review process for this Project. In numerous information requests and technical review comments on the Draft and Final Environmental Impact Assessment, the KIA commented on the following central issues:

- Adequacy of the incorporation of Inuit Qajimajatuqanguit into the assessment;
- Adequacy of the consideration of caribou in the Terrestrial Environmental Management and Monitoring Plan;
- Adequacy of baseline to assess potential effects on raptors;
- Incorporation of climate change effects into the assessment, as well as inclusion of GHG reduction plans into project design and monitoring for effects of climate change;
- Adequacy of assessment of potential effects on water quality, sedimentation, sediment quality and questions regarding mitigation and monitoring measures to confirm predictions;
- Adequacy of wildlife baseline data, particularly with respect to caribou effects and cumulative effects on caribou;
- Questions regarding modelling of effects on the atmospheric environment (and specifically potential dust emissions);
- Inadequacy of baseline hydrology and assimilative modelling for Meliadine Lake;
- Questions regarding the feasibility of segregation of overburden from waste rock and the eventual use of overburden in reclamation;
- Adequacy of baseline regarding the presence of contaminants in fish;
- Request to disaggregate data for Aboriginal/Non-Aboriginal people for several socio-economic indicators;
- Questions regarding whether the Regional Study Area is too broad from a hydrogeological perspective to identify issues;
- Concerns regarding the management of highly saline groundwater and the inadequacy of annual monitoring proposed for groundwater quality monitoring;
- Concerns that assumptions underlying water quantity modelling do not reflect IQ or potential effects of rising temperatures;
- Concerns that the potential for effects downstream of Peter Lake will not be detected as proposed monitoring does not include sampling locations further downstream;
- Concerns that there is ambiguity in the definition of "differing from baseline" proposed to be used by Agnico Eagle as indicating a threshold for action;
- Request to include both total and free cyanide in future sampling years;

- Questions regarding whether the proposed use of benthic macroinvertebrate baseline data will be sufficient to distinguish project changes to this community from baseline;
- Request to add fish tissue sampling to the sampling program for Meliadine Lake;
- Request for Agnico Eagle to develop site specific water quality objectives for Tiriganiaq Pit Lake post closure given the elevated background levels of copper;
- Questions/clarifications regarding the proposed Socio-economic Management Plan, including how often the plan would be reviewed, why some measures are identified as final and some are identified as “intended” and why the local hiring area is defined as three communities rather than all Kivalliq communities;
- Request to supplement caribou baseline information, including conducting an energetic/population modelling cumulative effects assessment for the Project;
- Request to update and augment the marine environment baseline information, especially with respect to marine wildlife (to support better effects monitoring, mitigation and adaptive management);
- Request to reassess spill predictions, conduct additional spill dispersion modelling and revise spill response plans;
- Request to develop a detailed marine wildlife monitoring plan;
- Request to use the updated marine environment baseline, spill predictions and modelling and marine wildlife monitoring plan to update cumulative effects assessment for marine shipping;
- Request for more details regarding the environmental and economic “trade offs” associated with the use of the Itivia area as the port facility for the project; and
- Request to consider implementing mitigation measures to avoid the introduction of non indigenous/invasive species in ballast water discharged during project shipping.

At the Final Hearing KIA expressed that their overall conclusions with respect to the Project were that, subject to remaining concerns regarding potential effects in the marine environment, deferral of the resolution of technical issues related to water quality to licensing and engaging in on-going discussions regarding refining monitoring and reporting with respect to impacts to air, the Final Environmental Impact Statement (FEIS) was accurate, generally acceptable and was a reasonable assessment of likely project impacts. On this basis, KIA concluded that they had not identified any issues that would prevent the approval of the Project.⁴⁰

3.2.3 Government of Nunavut (GN)

While the federal government currently has authority over the management of mineral resources in Nunavut, the GN has significant jurisdictional responsibility and permitting authority over activities that affect wildlife and wildlife habitat, Commissioner’s lands, municipalities, education, health, social

⁴⁰ Exhibit 33, NIRB Final Hearing File No.: 11MN034, August 22, 2014 filed by Nunavut Tunngavik Inc. and Kivalliq Inuit Association, “Final Environmental Impact Statement”, at p. 2

services, public safety, culture, community development, property rights, and the administration of the laws in Nunavut. The legislative base governing the GN's jurisdiction includes the *Apprenticeship, Trade and Occupations Certification Act*, *Environmental Protection Act*, *Income Tax Act*, *Nunavut Archaeological and Palaeontological Sites Regulations*, *Nunavut Housing Corporation Act*, *Official Languages Act*, *Petroleum Products Tax Act*, *Public Highways Act*, *Public Health Act*, *Scientists Act* and the *Wildlife Act*.

As indicated in the GN's established policy *Parnautit* applicable to mining in Nunavut,⁴¹ it is the GN's objective to ensure that mineral resource projects in Nunavut are developed in a manner that respects, protects and cares for the land, animals and the environment, while ensuring that a given project will create positive effects on the socio-economic conditions of the territory by providing opportunities for employment, education and training to Nunavummiut. Ultimately, the ability of Nunavummiut to take advantage of available employment is the foundation to any of the benefits of the Meliadine Gold Project.

The GN participated throughout the NIRB's review and provided comments and recommendations including the following issues:

- The need for regional and project specific socio-economic monitoring and recommendations in relation to participation in the existing Kivalliq Socio-Economic Monitoring Committee, establishing a project specific socio-economic monitoring working group and monitoring program;
- A request for Agnico Eagle to provide a detailed staff schedule at least 6 months prior to construction activities, in order for local work forces to be readied to meet upcoming project work force demands;
- Recommendations that all trades, journey men/women and apprentices be registered in Nunavut and if registrants from outside Nunavut will be employed, Agnico Eagle should report on the numbers of registrants from outside jurisdictions;
- Recommendation that Agnico Eagle report to GN on an on-going basis over the life of the Project, financial information such as contributions to GN tax revenues;
- Recommendation that the Proponent collaborate with the GN to provide voluntary periodic survey of the employees and offer financial literacy, planning and budgeting to project employees with a view to encouraging home ownership and mitigating the increased demand for social housing and potential for associated overcrowding of accommodations;
- Recommendation that regular bridge inspections be conducted and reported to GN along the AWAR from freshet to freeze up to monitor and prevent flooding and damage from ice build up impacting upstream archaeological sites;
- Recommendations that Agnico Eagle provide annual inspection reports and maps of known archaeological sites;

⁴¹ Government of Nunavut, Department of Economic Development and Transportation, 2013. "Parnautit: A foundation for the future—Government of Nunavut Mineral Exploration and Mining Strategy". Iqaluit: GN Dept. of ED and T.

- Recommendation that the Proponent establish a basic level of health services (equivalent to that established at the Meadowbank Mine Site) on-site;
- Recommendation that Agnico Eagle provide annual reporting regarding the use of the Proponent's employee support programs;
- Recommendations that the Proponent provide support for adequate caribou monitoring programs and be required to develop more stringent monitoring and mitigation in conjunction with other relevant parties (GN, KIA, hunters and trappers organizations, etc.);
- Recommendations that Agnico Eagle reconsider the development of mortality thresholds for certain carnivore species and that sufficient carnivore den surveys in the project area be conducted prior to project commencement;
- Recommendation that a plan be developed to mitigate the potential interactions between project activities and active raptor nests;
- Recommendation that the Terrestrial Environmental Monitoring and Mitigation Plan be updated with a more developed harvest survey methodology;
- Recommendation that the Proponent develop a more detailed re-vegetation plan for the site;
- With respect to Iqalugaarjuup Nunanga Territorial Park, recommendations that helicopter flights over the Park be prohibited and that the Park officials be included in the discussions of the operation of the AWAR in the vicinity of the park and also be notified of approaching caribou herds;
- Concerns with inadequate water quality monitoring background data during spring snowmelt period at Meliadine Lake and overall at Meliadine River and Little Meliadine Lake;
- Recommendations for dustfall monitoring and spill contingency planning for the bypass road in close proximity to Nipissar Lake; and
- Questions regarding whether the additional air quality monitoring proposed by Agnico Eagle in response to previous recommendations of the GN and others, will be sufficient and effective to demonstrate that the revised monitoring plan will identify impacts.

In conclusion, the GN indicated that by effectively balancing mitigation and monitoring efforts moving forward, the GN had concluded that the potential for the ecosystemic and socio-economic effects addressed by the GN could be effectively managed.⁴²

3.2.4 Aboriginal Affairs and Northern Development Canada (AANDC)

AANDC is the federal government department responsible for meeting the Government's obligations and commitments to First Nations, Inuit and Métis, and for fulfilling the federal government's constitutional responsibilities in the North. AANDC reviewed the Final Environmental Impact Statement for the Meliadine Gold Project from the perspective of water quality and quantity, land related issues such as vegetation and permafrost, and socio-economic impacts and benefits. As the Project will take

⁴² Exhibit 15, NIRB Final Hearing File No.: 11MN034, August 22, 2014 filed by Government of Nunavut, "Meliadine Project Final Hearing, Government of Nunavut, August 2014 Final Environmental Impact Statement", at p. 35-36.

place on Inuit Owned Lands, AANDC would not be issuing a regulatory instrument such as a land use permit for the Project, but if the Project would be approved to proceed AANDC would continue to participate in the water licensing process.

AANDC participated throughout the Board's review and provided technical review comments with respect to various issues, including:

- Questions regarding the geothermal characterization, specifically more detailed analysis of influence of stockpiled waste rock on permafrost;
- Request for more details regarding design considerations associated with the post-closure failure of the tailing storage facility, slope stability of attenuation ponds and landfill design;
- Request for more detailed assessment of permafrost under the lakes proposed to be used for attenuation ponds and recommending the possible development of a project area permafrost map;
- Request for more detail on Agnico Eagle's proposed surface water quality monitoring program and overall water management; and
- Recommend that a collaborative project-specific socio-economic monitoring group be established to monitor FEIS socio-economic predictions on topics such as education, training, labour force changes, mine closures and other priority areas of concern.

As summarized at the Final Hearing, AANDC agreed with the conclusions presented in the FEIS and did not have any areas of further concern relating to the biophysical components of the Project that were not addressed at the conclusion of the review.⁴³

3.2.5 Environment Canada (EC)

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. EC also provides meteorological data. In fulfilling its mandate, EC is bound by the following legislation: *Department of the Environment Act*, *Canadian Environmental Protection Act* (air quality, spill contingency planning and waste management), *Fisheries Act* (pollution prevention, water quality, metal mining effluent regulations), *Migratory Birds Convention Act* and the *Species At Risk Act*.

With respect to the Meliadine Gold Project, EC participated throughout the NIRB's review and provided specific comment on the following issues:

- Recommendations that Agnico Eagle provide further information on emission factors, assumptions used in calculations and information on emissions from support vessels that were used to develop emission estimates for vessel shipping;

⁴³ Exhibit 18, NIRB Final Hearing File No.: 11MN034, August 22, 2014 filed by Aboriginal Affairs and Northern Development Canada, "Agnico Eagle Mines proposed Meliadine Gold Project Rankin Inlet, August 2014 Aboriginal Affairs and Northern Development Canada", at p. 7.

- Questions regarding the proposed incineration of sewage sludge;
- Recommendations with respect to water quality that Agnico Eagle be required to monitor all sources of cyanide, ammonia and nitrate and use this data to update predictions, monitor for unpredicted effects and update mitigation measures as required;
- Recommendation that Agnico Eagle monitor water quality for all water sources flowing into attenuation pond AP-01 and reflect the results of this water quality data monitoring to revisit the water quality model and/or update predictions;
- Recommendation that Agnico Eagle be required to identify predicted effluent quality for all water quality parameters reported in Table 7.4-A24 in the FEIS over the life of the mine and that these predictions provide the basis for developing effluent quality criteria;
- Recommendation that thresholds be AP-01 that will identify when mitigation measures such as treatment are triggered;
- Recommendations that a more comprehensive approach be taken to establishing the water quality parameters that will be monitored during operations and that a working group be established to develop the Aquatic Effects Monitoring Program in advance of construction;
- Recommendation that treatment brine residuals resulting from treating saline groundwater are disposed of in a manner that does not affect fish-bearing waters and also noting that if ocean discharge of saline groundwater is contemplated, that a full assessment of this option would be required;
- Recommendation that Agnico Eagle consider the effects of salinity in Lake B4 on permafrost stability;
- Recommendation that environmental emergencies modelling and response planning be supplemented with environmental sensitivity mapping to identify particularly vulnerable, sensitive or valued sites and that worst-case scenarios be revised to include potential risk areas such as marine shorelines, rivers or waterway crossings, and that modelling be updated to reflect these more accurate worst-cases;
- Recommendation that hydrologic trajectory modeling for spilled diesel be conducted for the fuel transfer area in Melvin Bay, the access passage area and the area surrounding Panorama Island;
- Recommendation that best practices regarding pre-deployment of containment booms during ship to shore fuel transfer be included;
- Recommendations that setback distances from marine bird nests be added to the Shipping Management Plan and that there should be monitoring of marine bird and project vessels along the shipping route;
- Recommendation that the approved Mary River Project be included when assessing the potential cumulative effects on marine birds in the Hudson Strait;
- Recommendation that spill monitoring should include reporting the presence of oily sheens on the water near project vessels and identification of an oily sheen near project vessels should trigger the implementation of mitigation measures;
- Recommendation that Agnico Eagle should identify specific steps to be taken to protect wildlife (including marine birds) that could be affected by a spill and incorporate these steps into the spill contingency plans for the Project;

- Recommendations that vessel transits be monitored and reporting be provided in the event that there are collisions between marine birds and project vessels;
- Recommendation that ship speeds be reduced to prevent wake effects on migratory bird nests in low lying shoreline habitat;
- Questions as to whether the assessment of the potential for migratory birds and species at risk to experience project-related effects along the shipping route is adequate;
- Recommendations regarding identifying and avoiding destruction of nests and eggs of migratory birds and/or species at risk;
- Recommendations regarding specific mitigation measures that can be implemented to avoid impacts associated with water management ponds, lake dewatering, fish salvage, communication towers and aircraft disturbance;
- Recommendations regarding mitigation measures to limit the potential increased predation of migratory birds as predators are attracted to operations; and
- Identifying errors that should be corrected in reports and management plans with respect to shorebird species classifications.

As summarized at the Final Hearing, EC concluded that, in general, the conclusions drawn by the Proponent in the FEIS are supported by the analysis.⁴⁴

3.2.6 Fisheries and Oceans Canada (DFO)

The federal government exercises authority over marine and freshwater fisheries within Canada's territorial boundaries. DFO's primary focus in reviewing proposed developments in and around Canadian fisheries waters as defined under the *Fisheries Act* is to ensure that the works and undertakings do not result in the release of substances deleterious to fish or cause "serious harm" to fish (which includes marine mammals) or fish habitat under the applicable provisions of the *Fisheries Act*. DFO's environmental assessment and regulatory review of the Meliadine Gold Project focused on identifying the aspects of the Project that could impact fish, marine mammals and their habitats. On that basis, DFO recommended measures to avoid, mitigate or offset the impacts identified. DFO participated in all aspects of the NIRB's review of the Project and provided submissions on several key issues, including the following:

- Identifying concerns that the FEIS had ascribed a fishery value only to Meliadine Lake and only 3 fish species and recommendations that Agnico Eagle supplement the assessment to address the potential for effects on all fish species present in the waters affected by the Project;
- Identifying concerns that Agnico Eagle had not adequately considered all types of fish habitats (including overwintering habitat) accessible to fish during all stages of the mine (construction, pre-production, mining, closure and post-closure) and recommending that

⁴⁴ M. Mohammed, Environment Canada, NIRB Public Hearing File No.: 11MN034 Transcript August 27, 2014, p. 1148, lines 4-8.

Agnico Eagle broaden their assessment to include all fish habitat as defined under the Fisheries Act and all stages of the project;

- Indicating that an expected timeline for the reversibility of impacts was not provided in the FEIS and recommending that Agnico Eagle not only provide such a timeline but also demonstrate how the timeline would relate to the duration of mine related impacts on fish populations;
- Suggesting that the FEIS doesn't always consider connectivity of fish species in the assessment of impacts and recommending that Agnico Eagle should consider intraspecific and interspecific connectivity of all fish species listed as game fish in the Northwest Territories Fishery Regulations, Schedule I, as well as the fish that support those game fish;
- Indicating that DFO has concerns that the public access to the AWAR will also result in improved access to lakes, ponds and streams and recommending that Agnico Eagle identify measures that might be taken to mitigate if fish overharvesting occurs during the life of the mine;
- Requesting clarification regarding the duration of impacts described by Agnico Eagle as "short duration" or "temporary" and suggesting that when discussing impacts to fish and fish habitat that there should be some reference to the lifespan of the species affected;
- Requesting greater clarification regarding precisely which water bodies will require dewatering/lowering/removal;
- Indicating that DFO, Agnico Eagle and the potentially impacted communities are continuing to work to develop an acceptable conceptual offsetting plan to address the proposed temporary and permanent fisheries productivity losses resulting from the Project;
- Identifying that not all water bodies that may contain fish have been sampled and the tables in the FEIS describing the water bodies are inconsistent with respect to the presence/absence of fish;
- Requesting clarification of the basis for the calculations of losses and gains to fish productivity contained in the FEIS;
- Identifying that there appear to be gaps in the proposed offsetting plan in that impacts to marine fisheries environments were not considered and the aspect of "death of fish" as included in the definition of serious harm under the Fisheries Act have not been included; and
- Requesting clarification as to why local extirpation of Lake Trout in Lake B69 is considered to be within baseline values.

DFO indicated that it is of the view that the potential effects of the Project on the productivity of fisheries in the area can be offset, and that with appropriate measures in place, fish and fish habitat will be protected.⁴⁵

⁴⁵ M. Janowicz, Fisheries and Oceans Canada, NIRB Public Hearing File No.: 11MN034 Transcript August 27, 2014 at p. 1149, lines 14-18

3.2.7 Natural Resources Canada (NRCan)

The mandate of NRCan is to develop, implement and deliver policies, programs, science and technology for the sustainable development and responsible use of Canada's mineral, energy and forestry resources. With respect to the Meliadine Gold Project, NRCan participated throughout the NIRB's review. NRCan has the jurisdiction to issue a licence governing the manufacturing and storage of explosives through the federal *Explosives Act*. NRCan as the principal earth sciences agency within the Government of Canada also contributed advice and expertise regarding permafrost and terrain stability, hydrogeology and potential acid generation/metal leaching from mined materials. NRCan provided comments, advice and recommendations on these topics, including the following issues:

- Noting that Agnico Eagle or its explosives contractors will be required to provide further information in the application for explosives manufacturing and storage facilities with respect to types and maximum quantities of explosives, storage plans, liquid effluent plans, spill contingency plans, security plans, etc.;
- Identifying concerns that Agnico Eagle's terrain sensitivity mapping indicates there is potential for ice rich sediments along the road alignment, recognizing that the resulting impacts on terrain may be minimized during the design phase and recommending that prior to construction Agnico Eagle conduct additional site-specific investigations to further characterize subsurface conditions in sensitive terrain;
- Identifying concerns that if frozen conditions are not maintained within and under the mine's waste storage facilities that there may be an increase in the potential for seepage, and also noting that thawing of facility and dike foundations can result in instabilities and recommending that these concerns be addressed by the Proponent conducting detailed thermal analysis during the design of dikes, the waste rock storage facility and the tailings storage facility, conducting analysis to assess the extent of talik at B7 and developing and implementing a monitoring program to include thermal conditions and stability for tailings and waste rock storage facilities;
- Identifying that the FEIS has data limitations with respect to the conceptual groundwater model and recommending that prior to construction Agnico Eagle tabulate water pressure, density and freshwater head data for both past and future measurements and document methods for monitoring hydraulic head and then follow up to verify conceptual model and that during the pre-development, construction and operational phases collect new hydraulic data in key areas to better define vertical and horizontal groundwater flow;
- Identifying uncertainty in the volumes of saline water inflow to the underground mine and recommending that this uncertainty be taken into account during the development of Agnico Eagle's saline water management plan;
- Recommending that Agnico Eagle monitor waste rock behaviour through additional sampling and analyses during operation; and
- Identifying that potential for acid generation in the Discovery Deposit waste rock had not been adequately assessed and recommending that prior to the commencement of excavation of the Discovery Deposit, Agnico Eagle develop a waste rock management plan that addresses the potential for acid generation from waste rock at the Discovery Deposit.

NRCan stated at the close of the Final Hearing that it was satisfied with the information contained in the FEIS and the responses of the Proponent associated with those issues within the scope of NRCan's regulatory responsibilities and areas of expertise. In addition, NRCan expressed confidence that with the adoption of the recommendations provided by NRCan that the Meliadine Gold Project, if approved, could be managed as a responsible mine development.⁴⁶

3.2.8 Transport Canada (TC)

It is within TC's mandate to promote and support the development of an integrated transportation system that is safe, secure, efficient, and environmentally responsible. TC administers transportation regulations, policies and programs designed to enhance the safe operation of aircraft, trains, ships and barges. For the Meliadine Gold Project specifically, the Minister of TC is a responsible minister for the environmental assessment and exercises jurisdiction over marine transportation safety and security, navigation protection and transportation of dangerous goods pursuant to the *Canada Shipping Act, 2001*, the *Navigation Protection Act*, the *Marine Transportation Security Act* and the *Transportation of Dangerous Goods Act, 1992*. TC participated throughout the NIRB's review of the Project and provided comment, expertise and recommendations on issues within TC's jurisdiction, including the following issues:

⁴⁶ R. Johnstone, Natural Resources Canada, NIRB Public Hearing File No.: 11MN034 Transcript August 27, 2014, p. 1150-1151, lines 12-20 and lines 1-5.

- Identifying the marine transportation programs relevant to the Project and including programs related to vessel safety, security, pollution prevention, pollution response, marine liability and compensation and navigation protection;
- Identifying that provisions of the *Navigation Protection Act* will govern works constructed or placed in, on, over, under through, or across a scheduled list of navigable waterways;
- Identifying that the *Transportation of Dangerous Goods Act* and regulations will apply to dangerous goods imported, handled or transported in association with the Project;
- Recommending that all mitigation measures proposed by Agnico Eagle when approaching marine wildlife must be subject to safe navigation as determined by the Master of the vessel;
- Requiring that Agnico Eagle provide an updated and compliant Oil Pollution Emergency Plan to TC prior to the commencement of the Project;
- Requiring that Agnico Eagle notify TC once shipping services contracts for the Project have been awarded; and
- Recommending that Agnico Eagle abide by all applicable requirements of the *Transportation of Dangerous Goods Act and Regulations*.

TC indicated overall agreement that the conclusions contained in the FEIS are generally supported by the analysis.⁴⁷

3.2.9 Aqiggiq Hunters and Trappers Organization (AHTO)

The Aqiggiq Hunters and Trappers Organization (AHTO) is a non-profit organization incorporated under the *Societies Act of Nunavut*, with a stated mandate to promote the rights and interests of Inuit living in Chesterfield Inlet. The AHTO applied for and was granted formal Intervenor status at the Final Hearing. The NIRB recognizes that under the Nunavut Land Claims Agreement (NLCA) the AHTO has both expertise and a clear interest in matters relating to wildlife and the environment. In addition to asking questions throughout the technical session of the Final Hearing, the AHTO also provided a joint submission with the Kangiqliniq Hunter's and Trapper's Organization and the Kivalliq Wildlife Management Board, which is summarized under section 3.2.11 of this Report.

During the Final Hearing, the AHTO asked questions and expressed concerns regarding the following issues:

⁴⁷ Exhibit 28, NIRB Final Hearing File No.: 11MN034, August 22, 2014 filed by Transport Canada, "Nunavut Impact Review Board Final Hearing Agnico Eagle Mines Ltd.", at p. 11.

- Concerns about how Agnico Eagle proposed to minimize impacts to fish;
- Concerns about the potential for impacts on sea mammals and questions about whether compensation for project impacts that could have effects on sea mammal harvesting is being contemplated;
- Questions regarding regulations to prevent dumping in the marine environment;
- Questions regarding the use of explosives around fish;
- Concerns that seal populations may have already been impacted by existing shipping near Chesterfield Inlet;
- Questions regarding dust emissions and whether they could extend to Chesterfield Inlet;
- Questions regarding the extent to which noise from the mine and explosives use in particular may affect the wildlife in the vicinity;
- Concerns regarding the disturbance and damage to vegetation in the project area;
- Concerns regarding the number and size of lakes that will be dewatered for the Project;
- Concerns about potential impacts to freshwater;
- Concerns regarding the possibility/proximity of anchoring points close to Marble Island, which is critical habitat for sea mammals and seabirds;
- Questions regarding the extent to which Inuit Qaujimajatuqangit is being used fully and appropriately in the assessment;
- Concerns regarding effects to caribou migration routes; and
- Concerns that haul trucks must stop hauling when caribou are present on or near the road.

3.2.10 Kangiqliniq Hunters & Trappers Organization (KHTO)

The Kangiqliniq Hunters and Trappers Organization (KHTO) is a non-profit organization incorporated under the *Societies Act of Nunavut*, with a stated mandate to promote the rights and interests of Inuit living in Rankin Inlet. The KHTO participated during the Technical Meeting and Pre-hearing Conference for the Project and applied for and was granted formal Intervenor status at the Final Hearing. The NIRB recognizes that under the Nunavut Land Claims Agreement (NLCA) the KHTO has both expertise and a clear interest in matters relating to wildlife and the environment and that the KHTO would also be involved in the management of public road access issues on the all-weather access road (AWAR). In addition to asking questions throughout the technical session of the Final Hearing, the KHTO also provided a joint submission with the Aqiggiq Hunter's and Trapper's Organization and the Kivalliq Wildlife Management Board, which is summarized under section 3.2.11 of this Report.

During the Final Hearing, the KHTO also provided comments and expressed concerns with respect to various issues, including the following:

- Questions regarding how the design of the proposed tailings facility at Meliadine differs from the structure in British Columbia that recently failed and caused tailings to be released into the river;
- Concerns that during periods when caribou are close to the road there may be a tendency for hunters to hunt very close to the road;
- Concerns regarding the presence of taliks associated with lakes and underground water bodies;
- Concerns about whether any contamination going into Rankin Inlet around the Itivia port could potentially add to contamination that is already there from tailings coming from the Rankin Inlet nickel mine;
- Questions regarding whether the Proponent will have counselling available to employees;
- Concerns about ship anchoring off shore and doing transfers of fuel and cargo a distance from the shore;
- Concerns about bridges and rocks functioning as blocks that prevent caribou from crossing;
- Concerns about the potential for ships to pass too close to Marble Island;
- Concerns about dust from the roads and ensuring that there are sufficient funds to ensure that there are dust suppressants;
- Concerns regarding how the KHTO and Agnico Eagle will be able to work together to ensure that the public access (and hunters' access in particular) can be safely maintained on the AWAR when it is expanded; and
- Questions regarding how Agnico Eagle will ensure that fish do not get injured when dewatering lakes.

3.2.11 Kivalliq Wildlife Board (KWB)

The Kivalliq Wildlife Board (KWB) applied for and was granted formal intervenor status for the Public Hearing. The KWB's mandate is derived from Article 5 of the Nunavut Land Claims Agreement (NLCA) and is tasked with the management and coordination of implementing Inuit harvesting regulations and preserving Inuit harvesting interests across the Kivalliq region. The KWB's role also includes supporting the actions and operations of the local hunters and trappers organizations across the Kivalliq. In that capacity, the KWB worked with the Aqiggiq Hunter's and Trapper's Organization (AHTO) and the Kangiqliniq Hunter's and Trapper's Organization (KHTO) to provide a joint presentation at the Final Hearing.

In the AHTO, KHTO and KWB's joint intervention at the Final Hearing, the following issues were addressed:

- Measures must be taken to ensure that Agnico Eagle's access to the mine and Inuit access to the land must both be preserved;
- Project-related marine shipping must be viewed as an incremental contribution to cumulative effects of existing shipping (recognizing that there is considerable uncertainty regarding the effects of existing shipping on marine mammals and the marine environment and that these effects are poorly understood);
- There must be due regard given to the fact that the assessment of significant cumulative impacts to wildlife and wildlife habitat is very different if considered from the viewpoint of Inuit harvesters rather than from an industrial perspective;
- The importance of caribou to the Kivalliq Inuit must be brought to the forefront of the impact assessment, particularly as many of the project-related interactions with caribou may take place in particularly sensitive times (post-calving migration) and places (post-calving grounds) in the caribou lifecycle; and
- A precautionary approach must be taken in the assessment of matters that can potentially affect present and future Inuit harvesting as Inuit should not needlessly bear the brunt of eventual population-level impacts and repercussions.

3.2.12 Government of the Northwest Territories (GNWT)

The GNWT applied for and was granted standing to participate as a formal Intervenor, and the GNWT provided written submissions,⁴⁸ but did not attend the Final Hearing. The jurisdictional basis for the GNWT's intervention is their role as the primary authority for wildlife conservation and management in the Northwest Territories. Reflecting their role and jurisdiction, the focus of the GNWT's intervention was on ensuring that effects on transboundary caribou herds harvested by NWT residents are managed in a way that supports sustainable use by current and future generations.

With respect to the Meliadine Gold Project, the GNWT's primary concern was the extent to which the Project may have cumulative effects on the Qamanirjuaq caribou herd, which is harvested by hunters in the NWT and other jurisdictions (including Saskatchewan and Nunavut). The GNWT's written submission addressed the following issues:

- Concerns that increases in caribou mortality resulting from the all-weather access road (AWAR), including mortality due to vehicle collisions, increased predation, the increased harvesting associated with improved access to hunting grounds along the AWAR and also due to impacts from the AWAR and mine being located in particularly sensitive caribou habitat such as post-calving and core calving ranges have not been fully considered in the assessment;
- Recommendation that harvest study areas included in the Terrestrial Environment Management and Monitoring Plan (TEMMP) be extended further west to capture potential changes in access to post-calving and calving ranges of the herd;

⁴⁸ See Government of the Northwest Territory's comments on AEM's Final Environmental Impact Statement for the Meliadine Project, submitted as a Final Written Submission on July 21, 2014 and available from the NIRB's on-line public registry.

- Recommendation that a harvest access management plan be developed in close collaboration with the Proponent and the Hamlets of Rankin Inlet, Chesterfield Inlet and Whale Cove and the local hunters and trappers organizations, the Government of Nunavut and other governmental authorities as appropriate to identify harvest thresholds along the road and coordinated management responses to be implemented if monitoring indicates thresholds are exceeded;
- Questions regarding the limited spatial scale of the Caribou Effects Study Area used for the FEIS as it does not extend to the entire range of the herd nor the entire area over which accumulated impacts may occur and this limited spatial scale also creates uncertainty regarding the relationship between habitat loss and herd dynamics and the significance of habitat loss to the herd;
- Recommendation that the NIRB issue recommendations on the development of a framework for assessing, monitoring and managing cumulative effects for the entire range (all jurisdictions) of the Qamanirjuaq caribou herd;
- Recommendation that Agnico Eagle be required to monitor the effectiveness of project mitigations as part of the TEMMP;
- Recommendation that the NIRB give careful consideration to the design and details of the Hunter Harvest Survey in its recommendations; and

Recommendation that the NIRB require Agnico Eagle to hire a dedicated local survey coordinator through the Rankin Inlet HTO (Kangiqliniq Hunter's and Trapper's Organization) and provide adequate resources to the HTO to run the program.

3.2.13 Local Communities Represented

The NIRB invited five community representatives from each of the seven communities identified as being potentially affected to attend the Final Hearing in Rankin Inlet. Community organizations were contacted in order to solicit representatives from broad demographic groups to participate, including local women's groups, Hunters and Trappers Organizations, Elders' societies, Hamlet Councils, and youth groups. Where no local group existed, the NIRB sought advice from regional associations and organizations in order to confirm participants for the Final Hearing.

A total of 20 community representatives from Arviat, Baker Lake, Chesterfield Inlet, Coral Harbour, Repulse Bay, and Whale Cove, as well as five local Rankin Inlet community representatives participated in the community roundtable portion of the Meliadine Gold Project Final Hearing.

The format of the Final Hearing allowed the community representatives to observe the technical presentations of Agnico Eagle and Intervenor over the first two and a half days of proceedings and to attend an Agnico Eagle-led visit to the proposed Meliadine Gold Project site. Community representatives attended the technical sessions prior to participating in the final two and a half days which were dedicated to community roundtable sessions. During these roundtable sessions, community representatives from each community were invited to sit at the table with the Board to hear shortened presentations by Agnico Eagle and Intervenor which explained project components and technical submissions. Community representatives then posed questions to Agnico Eagle and/or Intervenor and were also invited to provide their comments to the NIRB Board.

Specific reference to relevant comments, issues and concerns expressed by community representatives at the Final Hearing in relation to particular effects are described in detail in Sections 4 and 5 of this report, however, Table 1 that follows provides a very brief summary of the key issues, concerns and perspectives offered by the community representatives and members of the public during the community roundtable sessions.

Table 1: Key issues as raised by community representatives

Subject	Issues/Concerns/Comments
ECOSYSTEMIC EFFECTS	
Air Quality	Can you use salt water from the marine environment for dust suppression instead of calcium chloride? The air coming out of the ventilation system of the mine how would you ensure that it doesn't result in the release of methane and other air contaminants being released from the underground into the atmosphere surrounding the tunnel ventilation system? With respect to the waste incinerator, how will Agnico Eagle ensure that there is no smoke coming from the garbage incineration What measures will Agnico Eagle take to prevent the dust from the road going into Nipissar Lake? Will there be dust emitted during the blasting associated with construction? Road should be constructed out of concrete and it does not appear that this alternative has been assessed as an alternative just because it is expensive? Public have concerns about the dustfall and effects on the snow
Noise and Vibration	
Landforms, Soils and Permafrost	What will the huge waste rock pile look like—how tall will it be? Could there be fossils in the rock that is being mined
Vegetation	How will effects on vegetation (that could lead to effects on human health or wildlife health) identified during monitoring be communicated to the community? Is Agnico Eagle going to use chemicals/salt to treat the ice and

Subject	Issues/Concerns/Comments
	dust on the road and could that get into the vegetation and affect the berries? Could cyanide or other chemicals be released onto the vegetation?
Freshwater Quality and Fish	The ponds are becoming empty—they have been draining and evaporating, the bigger ponds are also evaporating very quickly—does anyone know why the ponds are draining over the last few years There are a lot of lakes/ponds that are currently drying up, I would like to make sure that this mine will not result in further disturbance/losses to the fish because we are already losing fish When fish are removed from water bodies intended to be dewatered and placed in new water bodies, their behaviour will change because they may not have the same food sources Concerned about impacts to freshwater fish in the water bodies that remain on the landscape after the dewatering Is the bypass too close to Nipissar Lake and will that potentially affect the Town's water reservoir and is Agnico Eagle's dust control expected on that road to prevent dustfall into those water sources Who does the monitoring/enforcement with respect to the water quality (i.e. who makes the judgment call of when the water is of sufficient quality and can be discharged off-site) When fish are moved from a dewatered water body into another water body—about what percentage of the fish being moved will die How will GN monitor the water quality at Nipissar Lake to ensure that the community's drinking water isn't impacted by dust emissions? Have noted that Nipissar Lake appears to no longer have fish in it—are there any thoughts about putting fish back into the lake Once the fish are moved and placed in a new water body, are they monitored as follow up to ensure that they are doing

Subject	Issues/Concerns/Comments
	alright or not When Agnico Eagle uses explosives will there be dead fish floating afterwards
Terrestrial Wildlife and Habitat	The caribou arrive in the area in the summer time and the mine site is right in the middle of the caribou migration route where the caribou pass – has Agnico Eagle thought about putting up obstacles around the bridges to make them go around When the waste rock piles and pits change the landscape significantly will the caribou be able to migrate around the area? Will the HTO and KIA continue to be involved to make sure that features such as waste rock and the development of the site do not impose obstacles to the caribou migrations The caribou migration routes have changed along the Hudson’s Bay – we think it is low level helicopter flights associated with exploration and we do not wish to see low level flying in the area because it appears to be affecting the caribou migration At what distance from the ground are helicopters allowed to fly? If there are accidental kills on the road to Meliadine—where would the carcasses be put (caribou, ground squirrels, etc. other animals) Has the assessment of terrestrial wildlife included the assessment of small mammals such as ground squirrels and lemmings? How will harvest surveys be undertaken and by whom? How will the results be reported back to communities. What happens if there is contamination identified in country foods; who would provide that information back to the communities? Will elders and the KIA be consulted by Agnico Eagle when changes to the caribou migration routes are identified Have alternative routes been considered for the road that would not overlap with the hunter’ roads

Subject	Issues/Concerns/Comments
Birds	Could migratory birds and other birds that eat the birds be affected by the chemicals used at the site or impacts to the vegetation? How will nesting sites be avoided? In preparing Environment Canada's submissions did EC consult with the residents, the Rankin Inlet HTO, etc.
Marine Environment, Water, Ice and Sediment	Will the saline groundwater collected in the mine be released to the marine environment and if it is, what will the water quality be and how will this be controlled/regulated.
Marine Wildlife and Marine Habitat	There are many different kinds of marine mammals near Marble Island; how are you going to monitor for effects and report back to the elders and the community if there are potential effects identified by monitoring We believe Marble Island will be impacted by shipping and the Chesterfield Inlet residents live off the sea mammals for food so we are very concerned about that and would like to ensure that Agnico Eagle takes into account the traditional knowledge of our communities—we are mostly concerned about changes to the migration routes of marine mammals There are a number of migrating whales in the areas of Marble Island and we have concerns that anchorage within 2 kilometres is too close Does your marine mammal study area include Hudson Strait and Rankin, or is it localized to the area immediately surrounding Itivia ? The potential effects on marine mammals and terrestrial wildlife (caribou) for Coates Island and Walrus Island are a concern and residents of Coral Harbour want to ensure that monitoring takes place on Coates Island and Walrus Island and Marble Island
Reclamation and Contamination	How will groundwater that builds up in the underground mine be dealt with to make sure it doesn't spread from the mine and into the groundwater that has not otherwise contacted the mine What will happen with the old vehicles once the mine ceases operations? If the company does not get the mine approved would Agnico

Subject	Issues/Concerns/Comments
	Eagle remove Phase I of the road? What about if the mine does go ahead; could the company negotiate with the Hamlet of Rankin Inlet to leave the road in place?
Shipping	How would all the shipping of the fuel be undertaken (would there be fuel barging) and where would the fuel be off loaded Who is responsible for regulating the shipping part of the route and which regulators will be responsible for responding and enforcement if there is a spill If the Proponent is not responsible for monitoring along the shipping route (because they are not responsible for the shipping route or from the piloting of vessels contracted for shipping) is the KIA or other agencies going to assume responsibility Will the shipping involve the exchange of ballast water in the Hudson's Strait? Transport Canada should take a much greater role and presence in monitoring fuel tankers travelling in this area, as there is really a great deal more shipping going on but not an increase in monitoring
Waste Management	Where is used/waste oil going to be taken to be disposed of—will it be dumped into the open pit? How will tailings impoundment facility integrity be maintained to avoid the release of tailings like we saw in BC? How will the tailings impoundment facility be monitored to ensure that if permafrost starts to melt that changes can be dealt with before it leads to cracking in the walls of the facility
Waste Rock	Could waste rock be hauled to the Hamlet to be used in road construction and other construction? What is the exact amount of waste rock that will be generated and what will be the contaminants that could be released from the waste rock – what are you monitoring for?
SOCIO-ECONOMIC EFFECTS	
Population Demographics	If the mine were to open would there be a socio-economic committee and if so, how long would it continue to operate?

Subject	Issues/Concerns/Comments
	How has population growth been factored into Agnico Eagle's projections How will the GN monitor the effects of in migration to Rankin Inlet on housing (such as the increased demand for social housing, a higher rate of overcrowding, increased demands for private home ownership)
Education and Training	Glad to hear that there is a training program being contemplated to support the staffing of the mine Will older people without certificates and training be able to train on the job in order to be employed at the mine What is Agnico Eagle's plan to increase the ability of employees to develop into skilled trades (and will this include the ability of non-Agnico Eagle employees, such as Hamlet employees to gain access to apprenticeship opportunities) Will Agnico Eagle have any other job training available for the administrative staff (e.g. human resources officers, etc.) How long would heavy equipment opportunity training take and would training be offered in the communities? There is a lack of pre-employment training programs, such as work readiness training, pre-certification training programs, preparing for apprenticeship, etc. Does the GN have plans to expand beyond Arviat and into the rest of the Kivalliq to provide this kind of training across all communities
Livelihood & Employment	Would like to see the mine provide employment opportunities and training opportunities for young people in all the affected communities, not just Rankin Inlet Would like to see Inuit people responsible for staffing the gate How many Inuit employees are at the site right now and how many of those employees are going to get certification Who will look after the applications; will there be a hiring officer/committee in Chesterfield Inlet or only Rankin Inlet When will hiring opportunities really be in full force because people have been waiting for more than 12 months to find out if they meet the requirements to be hired by Agnico

Subject	Issues/Concerns/Comments
	Eagle? How do you manage the employment rate for Inuit beneficiaries? What will Agnico Eagle's strategy be to ensure that more Inuit employees can work in the mine? What is the percentage of Meadowbank's current work force from the Kivalliq Region and what is the expected percentage of Meliadine employees to be drawn from the Kivalliq Region? Where can people apply for jobs when they come from communities other than Rankin Inlet and Chesterfield Inlet? Would you have the ability to replace employees if they have a family emergency by employees that could be deployed from Rankin Inlet? Will people who have not yet been employed by Agnico Eagle from Rankin Inlet and Chesterfield Inlet have priority over placing existing employees from Meadowbank
Economic Development & Self Reliance	Encourage an on-going working relationship with GN and Agnico Eagle to work closely with HTOs of Rankin Inlet and Chesterfield Inlet – keep informed of hiring process, training, employment opportunities—if Agnico Eagle goes off track, the HTOs will bring you back on track How will workers be trained in financial literacy so that the employees can take advantage of these opportunities
Human Health and Well-Being	When there are people working out at the mine, will Agnico Eagle be providing the stay at home spouse with support in the community as well What about making peer counseling available to the employees? Will elders be made available on-site and if so, would the elders be only from Rankin Inlet or from the other Kivalliq communities as well? How will Agnico Eagle ensure that there are additional health and mental health workers added to communities to address the additional effects/stress on the existing systems

Subject	Issues/Concerns/Comments
	Will information be provided to workers to prevent the spread of sexually transmitted infections Have concerns that Inuit employees are not able to gain access to culturally sensitive professionals via the 1-800 Employee Assistance Program and that a community-based counselling service would be better
Community Infrastructure and Public Services	Will members of the public have access to the entire AWAR route or are there limits on the public use of the road? Community would like to see no restrictions to public use Has Agnico Eagle thought about building a road from Chesterfield Inlet? Has Agnico Eagle considered constructing a permanent dock facility rather than spud barging? How will strains on the existing airlines and existing airport be dealt with (e.g. more flights, more taxis) It would be advisable to have more community consultation in ADVANCE of activities being undertaken
Contracting and Business Opportunities	Does the employment rate for Inuit beneficiaries apply to contractors?
Culture, Resources and Land Use	The AWAR has benefitted hunters in providing access to harvesting and fishing areas and if this is controlled properly there can be benefits to the road. But don't agree that the road should be taken out after the mine is at an end. Will the Itivia tank farm area disturb cabins in the area? Was only Inuit Quajimajatuqangit from Rankin Inlet included in the Final Environmental Impact Statement or were the other communities also included HTOs are expecting to continue to be involved with the Proponent on an on-going basis to provide Inuit Quajimajatuqangit to develop monitoring and mitigation programs as project effects are noted How will cultural sensitivity be exhibited on-site and how will non-Inuit managers become familiar with our cultural values? Including things like access to country foods for Inuit workers and education and training that reflects our values and our

Subject	Issues/Concerns/Comments
	culture Will English be the language on site or will it be a French/ English/ Inuktitut site with French being the predominant language of management? There are problems of Inuit employees not being treated well at Meadowbank by the management who are predominantly French; how will Agnico Eagle make sure this is not repeated in the Meliadine site
Taxes and Benefits	With respect to the payroll taxes will GN set aside a specific fund or program for project effects or does that revenue go into General Revenue
Leadership and Governance	Who makes up the Kivalliq Socio-Economic Monitoring Committee (K-SEMC)?
OTHER ISSUES RAISED	
Accidents and Malfunctions	How does Agnico Eagle plan to respond to an emergency spill into the marine environment? If a fuel shipment were to be spilled, how many 45 gallon drums would that be A fuel spill will be devastating to all the communities in this area as we are all reliant on the marine mammals in the area for food What action would Agnico Eagle take if there is an incident during the fuel transfer that could result in a leak or spill of fuel into the marine environment? Concerned that long term effects of a spill on wildlife could be very serious and have not been completely considered in Agnico Eagle's assessment Why is the spill modelling information not complete; and at what point will there be spill modelling information completed (i.e. before the mine becomes operational, before the mine is in full production, before shipping ramps up) Has GN considered Agnico Eagle's spill response plans and considered the potential effects on the community spill kits provided in each community Does Environment Canada have any plans in place for what they would need to do in order to be able to respond to a spill and what kind of damage would Environment Canada be

Subject	Issues/Concerns/Comments
	responsible to assess and enforce
Cumulative Effects	For shipping, the region is already seeing effects so any additional shipping is likely to lead to cumulative effects; has this been considered (seal harvesting has already been affected)
Community Engagement	How will the results of monitoring (including issues such as effects on harvesting from increased access associated with road use, increased pressure on the availability of housing in Rankin Inlet) be communicated back to the community on an on-going basis
Inuit harvesting	If Inuit harvesting is affected by a fuel spill who is responsible for providing compensation
Monitoring	How will Inuit Qaujimajatuqangit be incorporated into the monitoring plans

4. ECOSYSTEMIC EFFECTS

Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) described its approach used for analyzing potential effects, as well as classifying and determining the environmental significance of impacts from the Project on the biophysical environment, in Volume 4 of the Final Environmental Impact Statement (FEIS). Agnico Eagle used the following key elements in its approaches and methods for assessing potential effects from the Project:

- Valued Ecosystemic Components (VECs);
- Pathway Analysis;
- Spatial and Temporal Boundaries;
- Effects Analysis;
- Residual Impact Classification and Significance;
- Uncertainty; and
- Monitoring and Follow-up.

Agnico Eagle selected the VECs assessed based on their role in the ecosystem, value placed on it by humans for traditional use, cultural connection and by Inuit Qajimajatuqangit holders. The Nunavut Impact Review Board (NIRB) also identified biophysical components that Agnico Eagle gave full consideration of during its consideration for selection of VECs assessed.

Once Agnico Eagle finalized its list of VECs, assessment and measurement endpoints were identified for each VEC. Assessment endpoints were defined to represent the key properties of the VEC that should be protected for their use by future human generations. Measurement endpoints were defined by Agnico Eagle as quantifiable expressions of change to assessment endpoints as compared to baseline and reference conditions.

Once this was complete, Agnico Eagle conducted a 'pathway analysis' or drafted a list of all potential effects that the Project could have on a valued ecosystemic component (a pathway) which was then used by the Proponent to verify the existence of linkages or potential interactions of the Project with each VEC. Potential effects/pathways were eliminated through application of environmental design features or proposed mitigation that included Project design elements, environmental best practices, management policies and procedures, and social programs.⁴⁹ Environmental design features were developed through an iterative process between the Project's engineering and environmental teams to avoid or mitigate effects. If there were still effects after mitigation, then the pathway was given a rating of either primary, minor, or as having no linkage using scientific knowledge and Inuit Qajimajatuqangit,

⁴⁹ FEIS, Volume 7, p. 7-322.

logic, experience with similar development and environmental design features as described below. Only primary pathways undergo effects analysis; if a pathway was determined to have no linkage or minor, they are summarized but not carried through the effects assessment.

- no linkage – pathway is removed by environmental design features (i.e., effect mitigation) so that the Project results in no detectable (measurable) environmental change and residual effects to a VEC or VSEC when compared to baseline or guideline values;
- minor linkage– pathway could result in a minor environmental change, but would have a negligible residual effect on a VEC or VSEC when compared to baseline or guideline values; or
- primary linkage– pathway is likely to result in a measurable environmental change that could contribute to residual effects on a VEC or VSEC when compared to baseline or guideline values.

As part of the effects analysis, Agnico Eagle defined spatial and temporal boundaries and conducted cumulative effects as applicable. The effects analysis was summarized using a numerical and/or qualitative description of magnitude, geographic extent, duration and frequency. From the residual effects, pathways were linked to an assessment endpoint that was classified using categorical scales for each impact criterion (e.g., low magnitude, regional geographic extent, long-term duration, high likelihood). The Proponent then used results from the effects analysis and residual impact classification in the evaluation of the significance of impacts from the Project on VECs. Agnico Eagle also identified uncertainty if it was present for each VEC with a primary pathway, and how the Proponent would address uncertainty to increase the level of confidence that potential effects to a VEC would not be greater than predicted. Finally, Agnico Eagle presented monitoring and follow-up programs to measure the relevant effects of the Project on the biophysical environment and to test the accuracy of impact predictions and to determine the effectiveness of mitigation measure.

4.1 Air Quality

4.1.1 Views of the Proponent

Agnico Eagle conducted studies to establish baseline conditions for air quality and assess the direct and indirect effects the Project would have on air quality and this was described in Volume 5 Section 5.2 of the FEIS.

The site study area (SSA) was defined for air quality to be the direct area of physical disturbance associated with the construction and operation of the Mine Site (disturbance footprint), and extends outward a distance of 500 metre (m). Agnico Eagle did not define site specific study areas (SSAs) defined for the all-weather access road (AWAR), Rankin Inlet activities, or Marine Shipping. The local study area (LSA) was defined for the Mine Site (rectangle which extends at least 5km in all directions), all-weather access road (AWAR) [band of 3 kilometres (km) in width, extending 1.5 km on either side of the travel surface of the roadway], and Rankin Inlet activities (community boundaries). The regional

study area (RSA) was defined as a 40x45 km area generally centered on the Mine Site, and includes the area where air quality dispersion modelling predictions were made. The areas where air quality effects are associated with Marine Shipping were considered to be beyond the air quality RSA and were not assessed. The temporal boundaries for the air quality focused on the operational phase of the Project.

Agnico Eagle has anticipated that the Project would impact local air quality by:

- Increasing both air concentrations and atmospheric deposition rates as a result of producing air emissions at the Mine site operations and through vehicle use on the AWAR;
- Releasing greenhouse gas emissions from the use of Project vehicles at the Mine site, along the Phase II AWAR and in Rankin Inlet, and Marine Shipping;
- Changing localized air emissions, temporarily, through activities associated with material receipt, storage, and transfer.

To address or remove the three minor linkage pathways, Agnico Eagle incorporated environmental design features such as best management practices to control fugitive particulate emissions and use of diesel fuel with less than 15 parts per million (ppm) of sulphur.⁵⁰ Agnico Eagle then conducted an analysis of the four primary pathways that are identified above.

In FEIS Volume 2, Agnico Eagle presented two methods of disposing of the sludge left after going through the sewage treatment plant. Sludge would be incinerated if possible; if not, it would be disposed of in the tailings storage facility (TSF).⁵¹

An Air Quality Monitoring Plan⁵² was proposed by Agnico Eagle to confirm the accuracy of impact predictions and it included:

- An endpoint or threshold that will be used to measure the accuracy of predictions;
- Air quality monitoring program;
- Emissions monitoring program;
- Mitigative and adaptive strategies;
- Response planning describing strategies for responding to events of higher than expected emission rates or air quality impacts; and
- Annual report describing procedures for the preparation of annual reports and their ancillary components.⁵³

4.1.2 Views and Concerns of Interested Parties

Several parties provided comments pertaining to air quality during their final written submissions and in their presentations at the Final Hearing.

⁵⁰ FEIS, Volume 5, p. 5-21 to 5-45.

⁵¹ FEIS, Volume 2, p. 207.

⁵² FEIS, Supporting Document (SD) 5-1 Air Quality Monitoring Plan.

⁵³ FEIS, Volume 5, p. 5-56 and 5-57.

The Government of Nunavut (GN) noted in its Final Written Submission that the bypass road ran almost adjacent to Nipissar Lake, the source of potable water for the community of Rankin Inlet. The GN stated that since Rankin Inlet had already voiced concerns in regards to dust, the Proponent should look at how dust could be perceived of as an issue due to the proximity of the current routing near Nipissar Lake. Agnico Eagle agreed, in principle, with the written submission and agreed to prepare a dust management plan and to extend dust monitoring along the bypass road during construction and operation.

During the Final Hearing the GN confirmed the agreement in principle, noting that:

Dustfall along the bypass road is also a concern, and the proponent should ensure there is dustfall monitoring in place on the bypass road and that dust suppression is used to ensure it does not enter Nipissar lake. The proponent has agreed with these recommendations and will update the relevant plans accordingly.⁵⁴

Environment Canada (EC) commented on Agnico Eagle's proposed incineration of sewage sludge. In the Final Written Submission EC commented that "incineration of sewage sludge may lead to poor incinerator performance increasing the formation and release of contaminants to the environment."⁵⁵ Further, EC commented that the De Beers Snap Lake Mine had stopped incinerating sewage sludge as it was having trouble with efficiency so it was dewatering and disposing of the sludge in the landfill. EC suggested that if Agnico Eagle wanted to burn sewage sludge that it purchase an incinerator with the required design specifications to burn sludge and obtain a letter from the manufacturer. Then the incinerator emissions should be stack tested while burning sewage sludge to ensure that the Canada-wide Standards for Dioxins and Furans emissions are achieved. Agnico Eagle agreed in principle in their August 7, 2014 response to final written submissions.

Kivalliq Inuit Association and Nunavut Tunngavik Inc. (KIA/NTI) noted the uncertainty in modelling estimates for CALPUFF and requested a description of the calibration and validation of the process used for the CALPUFF model results and an analysis of model accuracy for dust deposition using results from Ekati and Meadowbank. The KIA recommended Agnico Eagle design, and implement a dust monitoring and adaptive management program to include: snowpack surveys and dust fall collectors; lichen surveys; near field, far field and reference sites that are located with consideration of ambient wind conditions; baseline data collected prior to significant construction activity; and an annual reporting mechanism and response framework.

During the Final Hearing, KIA asked for clarification on whether Agnico Eagle's follow-up and monitoring commitments include any validation for the model predictions that had been presented in the FEIS. Agnico Eagle responded:

In the air quality monitoring plan that was presented in – I think its Appendix 5.1(a) of the FEIS, there is an indication in there that, as part of that monitoring work that has been committed to, that the results of the monitoring will be compared to the predictions, and they will also be looked at over time to see if there's an upward or downward trend to give

⁵⁴ S. Pinksen, Government of Nunavut, NIRB Final Hearing File No. 11MN034 Transcript, August 22, 2014, p. 387, lines 11-17.

⁵⁵ Environment Canada, Final Written Submission July 21, 2014, p. 9.

*indications of what is happening with the air quality and dust levels and how the program will manage and mitigate them at the site as either being successful or could be modified to reduce the effects.*⁵⁶

Agnico Eagle also stated that their monitoring along the all-weather access road during both construction and operations. The KIA noted that dust fall is really best used when it is an indicator of a change over a period of time, and they felt that one year of data would not provide enough information to detect any change and requested the analysis be conducted during pre-construction period and through the ramp-up to maximum production.⁵⁷ The KIA noted at the Final Hearing that Agnico Eagle in its air quality monitoring plan, had indicated that it would install one realtime air monitoring station to measure dust and nitrogen oxides. The KIA further indicated:

*We would request that at least two realtime monitoring stations be installed, one generally upwind of the mine working areas and the production area and one generally downwind so that the data can be used to determine what the effect of the mine workings themselves actually are.*⁵⁸

Several members of the public also discussed their concerns regarding impacts to air quality resulting from dust:

*When I went up to the mine site, I was more concerned about the Rankin Inlet water lake. I think that it's concerning to me because there's so much dust in that area. There's going to be a lot of dust in the transportation. Trucks are going to be passing through that route. I wonder if there's going to be any dust suppressants because it could be very dangerous if -- if there's dust flying around during the transportation, and I wonder if the calcium chloride would cause a problem if it were to be used as a dust suppressant.*⁵⁹

*Not only myself, but other residents of Baker Lake have also noticed changes. This past winter, during spring thaw, the dust from the road has turned black, and we have not really gone out -- out on the land to go hunting or fishing because there's so much dust on the road, and the dust goes a long distance and spreads out on the tundra. We even noticed that some of the lakes have -- and we notice that some of the caribou have been caught, there's not a lot of fat on them. I think it's because the lichen that they feed off of has got -- it's layered with dust. We can see dust flying and spreading across the tundra from a great distance.*⁶⁰

⁵⁶ M. Rawlings, Agnico Eagle, NIRB Final Hearing No. 11MN034 Transcript, August 21, 2014, p. 91 lines 23-26 and p. 92 lines 1-7.

⁵⁷ J. Kirkaldy, Kivalliq Inuit Association, NIRB Final Hearing File No. 11MN034 Transcript, August 22, 2014, p. 529 lines 15-21.

⁵⁸ J. Kirkaldy, Kivalliq Inuit Association, NIRB Final Hearing File No. 11MN034 Transcript, August 22, 2014, p. 529 lines 23-26 and p. 530 lines 1-4.

⁵⁹ P. Iksiraq, Baker Lake, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 745, lines 12-20.

⁶⁰ P. Iksiraq, Baker Lake, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 747, lines 5-17.

*I think people notice that -- because there's a different water in the inlet of Rankin Inlet, and the -- the bypass that is going to be built over Nipissar Lake, and I'm sure there's going to be a lot of dust flying to the drinking water of Rankin Inlet. What are you going to -- how are you going to prevent the dust?*⁶¹

Also during the Final Hearing, a community representative from Baker Lake related her experience with the environmental impacts associated with the Meadowbank gold mine and questioned the Proponent regarding the measures that would be in place to protect mine workers underground when storms or blizzards occurred, specifically inquiring whether mine shaft ventilation would continue to function properly. The representative also requested clarification from Agnico Eagle regarding any plans to utilize calcium chloride or saltwater to suppress dust on the all-weather access road, indicating concerns associated with dust creating dangerous driving conditions and questioning the possible adverse environmental effects of calcium chloride as a dust suppressant.⁶² Agnico Eagle provided an explanation regarding mine site ventilation and also acknowledged the need to protect Nipissar Lake, confirming that it would likely use freshwater for dust suppression purposes but that it would investigate options if something further was needed to serve as a dust suppressant.

4.1.3 Views of the Board

The Board is aware that the Proponent is still in the process of advancing designs and confirming possible and/or selected options related to Project activities and facilities. The Board notes that Agnico Eagle has committed, as indicated in both the FEIS and at the Final Hearing, to undertake continued studies and monitoring as well as implement preventative and mitigation measure to reduce the potential impacts of the Project on air quality.

The Board notes that Agnico Eagle is still addressing the issue of how it will deal with its sewage sludge, either by incineration or by disposal of in the tailings storage facility. The Board encourages the Proponent to evaluate the effectiveness of incinerating sludge and assess for and plan appropriately during the design stage for which technique is selected.

During the Final Hearing, NIRB staff noted vehicle usage, dust fall, and collisions with wildlife estimates are best guesses derived primarily through experience. On this basis, the NIRB questioned how any potential uncertainties in the projected traffic might affect confidence levels of air emissions and dust fall for the Project.

*I'm getting back to an early point that I made about one of the difficulties of this assessment is looking at the potential impacts both of the mine-related traffic and the public-access-related traffic on this proposed roadway, quantifying that and then coming up with a realistic – realistic potential impacts.*⁶³

⁶¹ M. Tukurdjuk, Repulse Bay, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 899, lines 17-24.

⁶² P. Iksiraq, Baker Lake representative, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 745 lines 11-22.

⁶³ R. Barry, Nunavut Impact Review Board, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 180 lines 7-13.

I think I'll just reiterate the difficulty that the Board has and the challenge that we have with—not just a desire, but a need to, as much as possible, quantify predicted effects, put some meaning to the significance of those effects, and then report on the acceptability of those potential effects. So I certainly appreciate Agnico Eagle's attitude toward a willingness to work with – with partners, also the approach to adaptive management, I think, is very clear, but the step before that and trying to determine the likelihood of impacts, the severity, the probability of these things occurring, so that's why I'm back and trying to, as much as possible, increase the level of certainty and comfort that we have with the predictions that are being presented in the final environmental impact statement.⁶⁴

Agnico Eagle responded that with their understanding of the uncertainty and they recognize the importance of follow-up monitoring and mitigation, adjusting their mitigation strategies as required moving forward through constructions, operations, and closure.

In the Government of Nunavut's Final Written Submission, it commented on dust fall into Nipissar Lake. The NIRB would encourage a precautionary approach for selection of the final routing of the bypass road and implementation of a dustfall monitoring plan for the Lake.

During the Final Hearing, the Board asked the following question in regards to the Rankin Inlet bypass road

I'm just going back to Philippa's question about dust suppression along the bypass road and Nipissar Lake. How far would the bypass road be from the lake? And is there a possibility of salt accumulation in the lake if you were to use calcium chloride?⁶⁵

Agnico Eagle replied that:

To give you that precise measure, we don't have because it's not a final design. That final design will take involvement with the Hamlet, if the project is given the approval to go forward. The next step in designing that road is to sit with the Hamlet and to determine where the road actually goes. We know that it will be greater than -- than 20, 30 metres away from the lake. The other thing is, when we design that road, the concept is to try and get it out of the drainage. Nipisaar Lake actually drains toward the bay, so the key is to try and move it away from the lake using an actual drain to move it away from the lake as much as we can. But those are details that will be done during the design phase, if the project is approved to move forward. And if we use calcium chloride, it's very important that we do that monitoring to ensure that the calcium chloride is not moving into the lake whatsoever. That would be an unacceptable event, and so we have to ensure that calcium chloride that's put down is not -- it becomes a function of how much you put down. You

⁶⁴ R. Barry, Nunavut Impact Review Board, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014 p. 182 lines 9-25.

⁶⁵ K. Kaluraq, Nunavut Impact Review Board, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 774 lines 23-26 and 775 lines 1-2.

*want to make sure you don't overdose the road. So it's to keep the calcium chloride in place, and we would have to commit to that monitoring to ensure that that is taking place.*⁶⁶

The Board expects Agnico Eagle to follow through on this commitment and others made in regards to air quality for this Project both in the FEIS and during the Final Hearing, including those relating to dust suppression.

4.1.4 Conclusions and Recommendations of the Board

The Board, in considering those views of the Proponent and parties as outlined above, and throughout the assessment of the Project, has provided the following recommendations:

1. Prior to commencing construction activities, the Proponent shall update its Air Quality Monitoring Plan, and shall consider installing two real-time air monitoring stations in advance of mining operations. The updated plan shall include, but is not limited to, details regarding the following:
 - a. Description of real-time air monitoring stations including proposed timing of installation, location, and any factors considered with regards to planning for the installation;
 - b. Plans for the collection of total suspended dust samples year round, including sampling for metals content relevant to the Project;
 - c. Description of snowpack surveys and dustfall collectors;
 - d. Description of lichen surveys;
 - e. Identification of near field, far field and reference sites that are located with consideration of ambient wind conditions;
 - f. Baseline data collected prior to significant construction activity; and
 - g. A description of the proposed annual reporting mechanism and response framework.
2. The Proponent shall demonstrate through monitoring of air quality at the aboveground emissions points at the mine site and at the Tiriganiaq site that sulphur dioxide (SO₂) and nitrous dioxide (NO₂) emissions remain within predicted levels and, where applicable, within limits established by all applicable guidelines and regulations. In cases where exceedances occur, the Proponent shall provide an explanation for the exceedance, a description of planned mitigation, and shall conduct additional monitoring to evaluate the effectiveness of mitigative measures.
3. Prior to commencing construction activities the Proponent shall update its dust management and monitoring plan to address and/or include the following additional items:
 - a. Align plan requirements with commitments made in the FEIS and during the Final Hearing to monitor dust along the all-weather access road and associated roads and trails.

⁶⁶ L. Connell, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 775, 3-26 and p. 776 lines 1-2.

- b. Verify commitments to the utilization of dust suppressants along the all-weather access road including and associated roads and trails, including a description of the type of suppressant to be utilized, the frequency and timing of applications to be made throughout the various seasons of road use.
- c. Outline the specific adaptive management measures to be considered should monitoring indicate that dust deposition is higher than predicted, specifically where traffic along the all-weather access road is greater than initially predicted.

The updated plan should be submitted to the NIRB for review and comment at least 60 days prior to commencement of construction activities.

4. The Proponent shall develop and implement an Incineration Management Plan that takes into consideration the recommendations provided in Environment Canada's *Technical Document for Batch Waste Incineration* (2010).⁶⁷
5. The Proponent shall provide all stack testing conducted on temporary or permanent incinerators operated for the Project to the NIRB in the annual report for that year.
6. The Proponent shall employ appropriate dust suppression measures when conducting activities in the landfill such as topping or capping.

4.2 Climate and Meteorology (including Climate Change)

4.2.1 Views of the Proponent

Agnico Eagle conducted studies to establish baseline conditions for climate and meteorology and assess the effects of the Project on climate and meteorology, and climate change were described in Volume 5 Section 5.3 and 5.4 of the Final Environmental Impact Statement (FEIS).

Climate and Meteorology

Agnico Eagle did not define a site study area (SSA), a local study area (LSA) or a regional study area (RSA) for either climate and meteorology. As part of the preliminary design studies for the Project, on-site meteorological data were collected between 1997 and 2001. A review was undertaken to compare this data to data from Meteorological Services of Canada station at Rankin Inlet to assess how accurate this data was. It was determined that the 1997-2001 data were not accurate; however it concluded that the meteorological conditions at the mine site were comparable to those at Rankin Inlet.⁶⁸ The description for existing environment for climate used in the FEIS and modelling relies on historic observations collected for over 30 years. A 5-year (for the period 2006 to 2010) meteorological data set of temperature, precipitation and wind was developed for the Project area using the MM5 and CALMET

⁶⁷ Environment Canada, 2010. Technical Document for Batch Waste Incineration.

⁶⁸ FEIS, Volume 5, p. 60.

meteorological processors and it was determined that the CALMET data set was well-suited for the air quality dispersion modelling assessment.⁶⁹ This 30 years of historic data was used to characterize historic climate trends and future climate trends were projected more than 50 years into the future.

No specific assessment of the effects of the Project on climate and meteorology was undertaken. In keeping with the Terms of Reference (NIRB's EIS Guidelines), existing climate and meteorology were fully described and used in assessing the various effects of the Project on the environment, as well as in supporting the Project design.⁷⁰

After its analysis, Agnico Eagle does not anticipate that the Project would impact local climate and meteorology and presented the following

- Agnico Eagle has anticipated possible future effects of a changing climate on the Project:
- Changing sea ice conditions, sea level rise, and coastal erosion may impact inbound and outbound shipping of fuel and product at Ranking Inlet.
- Warming temperatures may affect permafrost in the vicinity of the Project site, potentially leading to an increased layer thickness. This could directly affect infrastructure at the Project site in the long-term.

Climate Change

Agnico Eagle did not define an SSA, LSA or an RSA for climate change and completed the assessment following the process defined by the Federal-Provincial-Territorial Committee on Climate Change and Environmental Assessment (FPTCCCEA). The requirement of the FPTCCCEA guidelines consider climate change through the following considerations:

- How will potential changes in climate affect the infrastructure associated with the Project?
- How will the operation of the Project affect climate change (e.g., the Project's contribution to climate through the emission of Greenhouse gases)?⁷¹

Through its assessment, Agnico Eagle described the current climate, documented how the climate had changed over the last 40 years in the region, discussed the future range of climate projections and presented a climate risk matrix. Additionally, Agnico Eagle estimated that the annual greenhouse gas (GHG) emissions for the project were the worst case operating year.

Agnico Eagle noted that traditional knowledge (TK or Inuit Qaujimajatuqangit) collected generally matched the historic trend analysis from Baker Lake and that a general decrease in precipitation was noted in almost all the seasons and temperatures were seen to increase.⁷²

Agnico Eagle has anticipated that the Project may also contribute to potential changes in climate by:

⁶⁹ FEIS, Volume 5, p. 60.

⁷⁰ FEIS, Volume 5, p. ix.

⁷¹ FEIS, Volume 5, p. 64-65.

⁷² FEIS, Volume 5, p. 71.

- Emitting an estimated 317 kilotonnes of carbon dioxide (CO₂) equivalents in greenhouse gas (GHG) emissions to the atmosphere from combustion sources related to production, heating and transportation.

However, Agnico Eagle concluded that:

Due to the global insignificance of the predicted emissions from this Project, it is anticipated that the Project will not have a measurable effect on climate, and therefore, the effect of the Project on climate was assessed as not significant.⁷³

4.2.2 Views and Concerns of Interested Parties

On the subject of the impacts that meteorological conditions, including climate change, could have on the Project and the effects of the Project on climate change, the Nunavut Tunngavik Inc. and the Kivalliq Inuit Association (NTI/KIA) were the only intervenor to submit a recommendation in their Final Written Submissions to the Board.

The KIA/NTI recommended the development of a Greenhouse Gas Emissions (GHG) reduction plan akin to the other management plans presented in the supporting documents of Volume 2.⁷⁴ Agnico agreed in principle with the written submission.⁷⁵ Agnico further explained at the Final Hearing that they have implemented a number of initiatives to reduce their energy use and emissions at Meadowbank, including: posting ongoing fuel usage for all employees to encourage accountability, turning off room/hallway lights when not in use and promoting an anti-idling campaign. An engineering review for the potential use of liquid natural gas was assessed for Meadowbank; however, geographical and logistic barriers have deemed this option not feasible at present time.⁷⁶

During the Final Hearing, the KIA also had concern with the lack in integrating existing research and work that's been completed by Inuit organizations,

*On the issue of climate change, for example, there is a significant body of research and work that's been done by Inuit organizations, as well as many others concerned about climate change in northern Canada. Some of this work dates back to the '70s. Some well documented sources, such as Voices of the Bay, which is marginally referenced in the environmental impact statement.*⁷⁷

4.2.3 Views of the Board

⁷³ FEIS, Volume 5, p. xi.

⁷⁴ Nunavut Tunngavik Inc. and Kivalliq Inuit Association, Final Written Submission, July 21, 2014.

⁷⁵ Agnico Eagle Response to Final Written Submissions, August 7, 2014.

⁷⁶ D. Walker, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 75-77, lines 10-26, 1-26 and 1-7.

⁷⁷ B. Parlee, Kivalliq Inuit Association, NIRB Final Hearing File No.: 11MN034 Transcript, August 22, 2014, p. 523, lines 3-11.

The Board acknowledges that the further data is being collected and final designs are not yet available for the Project, so the analysis was completed based on Agnico Eagle's best assumptions. The Board is reasonably satisfied with the degree to which Proponent has accounted for the effects of the Project on climate change and incorporated these considerations into the Project's initial design factors to address potential variability in site conditions that may be attributable to climate change.

The Board notes however that information and assessments involving the potential impacts that climate change could have on the Project and the effects of the Project on climate continues to evolve; therefore, the Proponent needs to remain committed to revising and updating the current information and predictions to account for any relative variations and changes that had not been anticipated.

Given the potential for significant, but unanticipated effects associated with climate change, the Board urges Agnico Eagle to remain vigilant in updating its assessment of climate change and its related effects on the Project.

The Board appreciates the suggestion put forth by NTI/KIA that the Proponent develop a Greenhouse Gas Emissions (GHG) reduction plan in line with its other management plans as presented in the FEIS, and notes the Proponent's commitment to preparing such a plan.

The Board is also of the view that the impacts of extreme meteorological events on the Project and related considerations for Project design and planning have the potential to create significant challenges for the Project. Some of these events include the following: extreme temperature and precipitation events, high winds and waves, ice ride-up and pile-up events, extreme ocean water levels (high and low), severe fog or white out conditions, disruption in operations, and physical damage to infrastructure. In addition, potential changes to the timing of ice formation, active layer thickness, and frequency of storms also pose some challenges. At the Meadowbank site, Agnico Eagle has noted that the spring freshet has been earlier and larger than what was predicted, resulting in challenges. The Board expects that this knowledge will be adapted to Meliadine designs and plans as these are developed and finalized.

The Board acknowledges that some integration of Inuit Qaujimajatuqangit with the comparison of climate data trends with scientific knowledge. The Board would like to encourage the Proponent to carry this knowledge over to the next stage of planning and continue to use Inuit Qaujimajatuqangit in its design stage and finalization of plans.

4.2.4 Conclusions and Recommendations of the Board

The Board, in considering those views of the Proponent and parties as outlined above, and throughout the assessment of the Project, has provided the following recommendations:

1. The Proponent shall provide within its annual report to the NIRB, calculations of greenhouse gas emissions generated by activities at the Itivia port and other Project sources including mine-related road traffic and aircraft associated with the Project. Calculations shall take into consideration, fuel consumption as measured by the Proponent's purchase and use as well as the fuel use of its contractors and sub-contractors.
2. To actively engage Inuit in initiatives related to climate change, where it is feasible, the Proponent shall endeavour to include the participation of Inuit from affected communities

when undertaking climate-change related studies and research. To actively engage Inuit in initiatives related to climate change, where it is feasible, the Proponent shall endeavour to include the participation of Inuit from affected communities and other communities in Nunavut when undertaking climate-change related studies and research.

3. Prior to the commencement of operations, the Proponent shall develop a Greenhouse Gas Emissions (GHG) Reduction Plan which includes, but is not limited to:
 - a. An estimate of the Project's GHG baseline emissions;
 - b. A description of monitoring measures to be undertaken, including the methods, frequency, parameters, and a description of data analysis; and,
 - c. A description of mitigative and adaptive strategies planned, and taken, toward reducing the Project-related emission of greenhouse gases over the Project's life.

4.3 Noise and Vibration

4.3.1 Views of the Proponent

Agnico Eagle conducted studies to establish baseline conditions for noise and vibration and assess the effects of the Project on noise and vibration and these studies were described in Volume 5 Section 5.5 of the Final Environmental Impact Statement (FEIS).

Noise

Agnico Eagle defined the site study area (SSA) for noise to include the SSA for air quality and physical footprint of the all-weather access road (AWAR) and the activities within Rankin Inlet; however, there was no SSA established for Marine Shipping. The local study area (LSA) for noise extends approximately 5 kilometres from the noise SSA, and encompasses all receptor locations where it is expected noise effects from the Project activities could affect humans. The noise LSA does not include Marine Shipping activities due to the large distance between these activities and identified noise receptor locations. An explicit regional study area (RSA) was not defined for noise as the potential Project noise effects are expected to be limited to only the SSA and LSA. The temporal boundaries for the potential noise and vibration effects were also limited and focused on the operational phase of the Project.

Agnico Eagle also considered five separate cases in its noise assessment to provide flexibility in operations and to fully assess the potential effects of the mining on noise levels.

- Case 1: Processing plant operating at a maximum capacity, underground mining at Tiriganiaq, power generation, ancillary supporting operations (on Mine Site and the AWAR, within Rankin Inlet, and along the Marine Shipping route), and open pit mining at Tiriganiaq;
- Case 2: Processing plant operating at a maximum capacity, underground mining at Tiriganiaq, power generation, ancillary supporting operations (on Mine Site and the AWAR, within Rankin Inlet, and along the Marine Shipping route), and open pit mining at F Zone;
- Case 3: Processing plant operating at a maximum capacity, underground mining at Tiriganiaq, power generation, ancillary supporting operations (on Mine Site and the AWAR, within Rankin Inlet, and along the Marine Shipping route), and open pit mining at Pump;

- Case 4: Processing plant operating at a maximum capacity, underground mining at Tiriganiaq, power generation, ancillary supporting operations (on Mine Site and the AWAR, within Rankin Inlet, and along the Marine Shipping route), and open pit mining at Discovery; and
- Case 5: Processing plant operating at a maximum capacity, underground mining at Tiriganiaq, power generation, ancillary supporting operations (on Mine Site and the AWAR, within Rankin Inlet, and along the Marine Shipping route), and open pit mining at Wesmeg.⁷⁸

Agnico Eagle has anticipated that the Project would impact local noise by:

- Changing noise levels due to Mine Site Project activities, use of Project vehicles along the AWAR and activities associated with material receipt, storage and transfer to the Project.

To remove four minor linkage pathways or limit the effects of the Project on noise, the Proponent has proposed to implement environmental design features⁷⁹ such as in the case of Marine Shipping where activities were considered to be a minor pathway as they occur at such a large distance from any identified point of reception. Only three primary pathways underwent further analysis and these pathways were determined to have a measurable effect on noise levels.⁸⁰

The preliminary Noise Monitoring Plan has been proposed by Agnico Eagle to confirm the accuracy of impact predictions.⁸¹

Vibration

Agnico Eagle wrote in their concordance table that:

*Vibrations are mostly related to blasting activities and, therefore, baseline vibration levels in the Project area are anticipated to be low and were not assessed. Some blasting is required for quarrying construction materials for the AWAR [all-weather access road]; however, no Project related blasting occurred at the time of field studies.*⁸²

Agnico Eagle did however, consider vibrations with noise on specific valued ecosystemic components (VECs) in the receiving environment including noise and vibrations associated with blasting and marine shipping in Volume Section 5.5. The potential effects of vibrations on specific VECs in the receiving environment, including human health, terrestrial wildlife, marine mammals and fish in the freshwater and marine environments were dealt with elsewhere in the FEIS (e.g., FEIS Volumes 6, 7, 8 and 10).⁸³ Agnico Eagle found no literature on the effects of in-ground or in-water vibrations (e.g., from blasting activities) to terrestrial wildlife (including birds) could be found, although marine mammals and fish may be affected by in-water vibrations.⁸⁴

⁷⁸ FEIS, Volume 5, p. 93.

⁷⁹ FEIS, Volume 5, p. 90-97.

⁸⁰ FEIS, Volume 5, p. 103.

⁸¹ FEIS, Supporting Document 5-2.

⁸² FEIS, Volume 1, p. 1-A-118.

⁸³ FEIS, Volume 5, p. 91.

⁸⁴ FEIS, Volume 6, p. 194.

Agnico Eagle did include monitoring of blasting vibrations is addressed in SD 2-14 Explosives Management Plan and vibrations has also been included in the Noise Monitoring plan.

4.3.2 Views and Concerns of Interested Parties

Several intervenors provided comments and recommendations during the Final Hearing for noise and vibration.

The Aqiggiq Hunters and Trappers Organization acknowledged that noise would come out of the mine site, should it proceed, and expressed concern that animals can hear from long distances.

*I also had -- about the noise. I know there's going to be a certain amount of noise coming out of the mine site. If the mine were to proceed, the animals can hear from a long distance. This is going to impact the sea mammals and will the trajectory of the explosives have an impact on the wildlife on the land and the noise?*⁸⁵

Agnico Eagle responded

*...the question was asked of us about if we assessed the effects of noise on terrestrial wildlife and marine mammals. I can answer in regards to terrestrial wildlife. We did assess the effects of noise for what's known as "sensory disturbance" or "indirect effects", so not effects from the direct footprint, but indirect effects from noise, smell, sight. That was assessed as part of our assessment. Regarding marine mammals, we do recognize that noise can affect marine mammals, and we have a followup presentation on the marine section where we will discuss that aspect.*⁸⁶

Agnico Eagle also acknowledged that noise can affect marine mammals but that the conclusions in the FEIS were that these impacts would not be significant.

The Kivalliq Inuit Association (KIA) noted that regardless of ships size, Project-related shipping may still have impacts which would contribute to the overall risk of vessel collisions and would add to the overall noise budget. The vessels would not be present were it not for the Project, so the potential impacts need to be considered and monitored.⁸⁷ Agnico Eagle agreed with KIA that the ships and the potential impacts associated with those ships to the environment need to be considered,⁸⁸ but indicated that these potential impacts were considered in the FEIS and the conclusions that there would be no significant noise and vibration impacts associated with the Project.

KIA further noted that they found noise definitions to be confusing and somewhat contradictory. They also felt that the effects of construction and blasting should have been included in the assessment and

⁸⁵ L. Mimialik, Aqiggiq Hunters and Trappers Organization, NIRB Final Hearing File No.: 11MN034 Transcript, August 21, 2014, p. 95-96, lines 22-26 and 1-2.

⁸⁶ C. De La Mare, Agnico Eagle, NIRB Final Hearing File No.: 11MN034 Transcript, August 21, 2014, p. 96, lines 15-25.

⁸⁷ J. Higdon, Kivalliq Inuit Association, NIRB Final Hearing File No.: 11MN034 Transcript, August 21, 2014, p. 265, lines 1-7.

⁸⁸ D. Walker, Agnico Eagle, NIRB Final Hearing File No.: 11MN034 Transcript, August 21, 2014, p. 265, lines 9-14.

that the FEIS should not have confined the analysis to only the operational phase of the Project. However, KIA conceded that neither would change the overall conclusion of the study. Finally, KIA had concern that the proposed frequency and duration of the noise monitoring plan (monitoring two times per year and only for a 24-hour period each time), would be insufficient to confirm the accuracy of the impact predictions. On this basis, KIA suggested expanding the Noise Management plan to include multi-day measurement campaigns during peak activity periods.⁸⁹

4.3.3 Views of the Board

The Board noted conflicting evidence between Volumes 1, 2 and 5 of the FEIS. In Volume 1, Agnico Eagle stated in section 4.3.1 that vibration would only happen during blasting activities; however, in Volume 2 of the FEIS that Agnico Eagle indicated that vehicular traffic along both the all-weather access road (AWAR) and adjacent segregated haul road would create localized noise and vibration.⁹⁰ Agnico Eagle wrote that “Overall, both noise and vibration effects are expected to be very localized and dependent upon traffic volumes.”⁹¹ Further, Agnico Eagle indicated that an assessment of noise and vibration was conducted in Volume 5 and Agnico Eagle included vibration as a valued ecosystemic component.⁹² Volume 5 does not have an individual analysis of vibrations and does not discuss vibrations along the AWAR or the adjacent segregated haul road. The Board is encouraging the Proponent to use a precautionary approach to its consideration of vibration.

The Board acknowledges that Agnico Eagle has situated the main facilities at the Tiriganiaq site approximately 2 kilometres northeast of the Tiriganiaq open pit to reduce the impact of vibration from blasting. However, the Board has some uncertainty regarding the consideration of vibrations in the Proponent’s assessment as vibration can result in impacts to soils, wildlife, and humans. The enjoyment of the land and ability to participate in traditional activities such as hunting may also be impacted by Project activities and could affect Inuit Qaujimajatuqangit. The Board notes that in Volume 6, Agnico Eagle’s literature search did not find information on impacts to terrestrial wildlife from vibrations, but would encourage that it take a precautionary approach and include monitoring of impacts from Project-related vibration.

With respect to noise, the Board also encourages the Proponent to take a precautionary approach given the large number of employees to be accommodated on site and the proximity of some of the cabins to Project-related activities. The Board would encourage monitoring of noise and vibration impacts to human receptors throughout the life of the Project as well as be open to the public for feedback, and has provided recommendations to be incorporated into the Proponent’s finalized noise abatement plan.

⁸⁹ J. Kirkaldy, Kivalliq Inuit Association, NIRB Final Hearing File No.: 11MN034 Transcript, August 22, 2014, p. 531, lines 1-18.

⁹⁰ FEIS, Volume 2, p. 240.

⁹¹ FEIS, Volume 2, p. 240.

⁹² FEIS, Volume 2, p. xxii.

4.3.4 Conclusions and Recommendations of the Board

The Board offers the following recommendations in order to mitigate potential impacts as relating to noise and vibration:

The Proponent shall further develop and implement its noise abatement plan to protect people and wildlife from mine activity noise, including, blasting, drilling, equipment, vehicles and aircraft. The noise abatement plan will be developed in consultation the Government of Nunavut, Environment Canada and Health Canada as appropriate, and at a minimum is to include:

1. Restrictions on blasting and drilling when migrating caribou, birds or local carnivores may be affected;
 - a. The establishment of strict standards for noise levels; use of equipment and vehicles with the best noise attenuation devices;
 - b. When practical, the use of fences or berms around noisy machinery or sites;
 - c. Flight corridor restrictions over sensitive areas with known concentrations of wildlife and birds whenever possible;
 - d. Requiring with the exception of take off and approach for landing, a minimum flight altitude of 300 metres above ground level when flights to and from the mine site are passing near sensitive wildlife and bird areas; and,
 - e. The incorporation of the use of sound metres to monitor sound levels at locations in and around the mine site and local study area. The location and design of the sound metres shall be selected in consultation with EC and set up immediately upon issuance of the Project Certificate for the purpose of obtaining baseline data, and shall be maintained for data collection during and after operations.
2. The Proponent shall conduct noise and vibration monitoring at Project accommodations sites located at the Tiraginiaq mine site. Sampling shall be undertaken during the summer and winter months during all phases of Project development, with reporting of results and implementation of associated mitigation measures as necessary reported to the NIRB.

4.4 Terrestrial Environment

4.4.1 Views of the Proponent

Volume 6 of the Final Environmental Impact Statement (FEIS) presented the interactions of the Project with the terrestrial environment, focusing specifically on permafrost and permafrost terrain, and terrain and soils, within Sections 6.3 and 6.4 respectively, as well as in Supporting Document (SD) 6-1 Permafrost Baseline Studies. For the purposes of this assessment, permafrost terrain was used to refer to the geomorphology, surface geology and periglacial processes that have shaped the terrain features, both soil and rock. Volume 10 of the FEIS discusses the Environmental Risk Assessment associated with soils and permafrost that was undertaken for the Project.

Agnico Eagle defined the local study area (LSA) as a 500 metre (m) buffer surrounding the mine footprint and a 1000 m boundary surrounding the all-weather access road (AWAR), the Discovery area

road and the Rankin Inlet bypass road. The regional study area (RSA) was selected to measure the existing baseline conditions at a scale large enough to capture the maximum predicted spatial extent of the combined direct and indirect effects from the Project on permafrost and soils.⁹³

Permafrost and Permafrost Terrain

Agnico Eagle assessed the direct effects of changes to permafrost and permafrost terrain in the study area during all phases of the Project. The Proponent determined that changes to permafrost and permafrost terrain could only be evaluated in the context of how they may result in effects to other components (i.e., other developments, activities and natural factors) within identified study areas. Therefore, effects to the terrain, including rock, soil and permafrost were anticipated to be confined to the Project footprint area.

Of the forty pathways that Agnico Eagle identified for permafrost and permafrost terrain, the only primary linkage identified was the physical loss or permanent alteration of permafrost and permafrost terrain within the Project footprint due to Project activities during all phases of the Project. The remaining pathways were considered to either have no linkage or a minor linkage and were addressed through environmental design features or mitigation measures, such as minimizing depth and footprint area of quarries and designing Project facilities to manage water such that it does not collect or pond. Once it was determined that potential adverse effects would be mitigated through design or implementation of specific measures, these pathways were deemed not to require further assessment.

Recognizing that the Project would be constructed in a permafrost-rich environment, during its presentation at the Final Hearing, Agnico Eagle reiterated that thermistors had been placed on site and that more information had been provided in the FEIS to bolster the assessment that had been provided previously in the Draft Environmental Impact Statement (DEIS). Agnico Eagle also committed to collect additional information during its next stages of design for the Project and that monitoring would be conducted to address potential impacts from the Project associated with permafrost and terrain.⁹⁴

As part of its permafrost assessment, Agnico Eagle also looked at snowdrift accumulation along the alignment of the all-weather access road (AWAR); however, the general conclusions were also applicable to other facilities and infrastructure for the Project. Agnico Eagle predicted based on wind existing data that dominant winds were from the north-northwest and sub-dominant winds were from the north. This would mean that that southeast and south-facing slopes would be short steep lee slopes and lake shorelines are more likely to accumulate snow and that Project facilities and infrastructure would tend to accumulate snow on the leeward side.

Terrain and Soils

Section 6.4 of FEIS Volume 6 describes the assessment that Agnico Eagle conducted for Project interactions with terrain and soils (e.g., soil quality and erosion) through all Project phases. The Proponent evaluated the effect to terrain and soils in the context of how they may result in effects to other valued components such as air quality, water quality and water quantity.

⁹³ FEIS, Volume 6, p. 6-v.

⁹⁴ D. Walker, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 128, lines 12-16.

For this portion of its assessment, Agnico Eagle identified four pathways that have no linkage which were eliminated from further assessment through minimizing the Project area that would require stripping and establishing designated site assessment roads. Three pathways with a minor linkage were removed through specific environmental design features and incorporation of appropriate mitigation measures, such as controlling dust and ensuring the proper waste rock management procedures are developed. The Proponent identified the following primary linked pathways for local terrain and soils:

- site clearing, contouring, and excavation can cause admixing, compaction, and increase erosion potential, and change terrain;
- soil disturbance can change physical, biological, and chemical properties of soils, and increase erosion potential;
- permanent loss or alteration of soils from the Project footprint; and
- residual ground disturbance can cause permanent alteration of terrain and soils.

Within the FEIS the Proponent indicated that no impact predictions were made directly for terrain and soils as impacts to these components would be captured in other valued ecosystem components (VECs) and, as such, no cumulative effects assessment was completed as the effects were assessed to be localized. In FEIS Volume 10, Agnico Eagle presented an effects analysis for the impacts of the Project to the environment which included the four steps of risk assessment, including problem formulation, exposure assessment, toxicity assessment and risk characterization which relied upon predicted concentrations of chemicals in various environmental media, including soil. No chemicals of potential concern were identified for soil during testing and it was therefore predicted that these chemicals would not exceed applicable guidelines for the protection of wildlife or aquatic life health or baseline concentrations.⁹⁵

Agnico Eagle proposed the use of a “biopile”⁹⁶ to remediate soils and rock contaminated by light hydrocarbons such as diesel fuel, with a proposed location and a preliminary design presented in FEIS Volume 2. The FEIS described that contaminated soils would be piled in the treatment area with pipes running through the pile to ensure ventilation. At the bottom end of the treatment enclosure, a lined trench would recover leachate and runoff waters, which would be tested and treated appropriately before release. The contaminated soils would be monitored until they could be shown to meet remediation objectives, at which time they would be removed and could be reused on the Project site. At final Project closure, this area would be cleared of any contaminated material and the area would be buried under a layer of non-potential acid generating, non-leaching waste rock.

Monitoring programs for terrain and soils would be assessed during all phases of the Project to verify the accuracy of effect predictions and adaptively manage and implement mitigation as required. Agnico Eagle has proposed to monitor soil conditions as part of site reclamation, to estimate reclamation success.

⁹⁵ FEIS, Volume 10, p. vi.

⁹⁶ FEIS, Volume 2, p.215.

4.4.2 Views and Concerns of Interested Parties

Permafrost and Permafrost Terrain

Aboriginal Affairs and Northern Development Canada (AANDC) commented in its final written submission that there was insufficient geothermal analysis of permafrost temperatures within Agnico Eagle's Final Environmental Impact Statement (FEIS). AANDC further notes that insufficient information was provided regarding permafrost conditions for the Project area and, in the absence of sufficient analysis regarding the influence of the Project on permafrost, improper structure design may occur. AANDC explained that permafrost changes may lead to soil instability (settling and sliding), melting of the permafrost and changes to vegetation. At the Final Hearing AANDC acknowledged Agnico Eagle's commitment to complete further analysis of permafrost in the Project area and update the terrain permafrost maps as required. AANDC representatives stated that "from the environmental aspect everything has been addressed and will be addressed at the water licensing phase should the Project be approved".⁹⁷

Within its Final Written Submission to the NIRB, Natural Resources Canada (NRCan) presented concerns regarding the adequacy of geotechnical information (i.e., permafrost information) that had been collected by Agnico Eagle and the subsequent assessment of how ground thermal conditions could be affected by the Project, specifically related to the tailings storage facility (TSF) and associated waste rock storage facility (WRSF). NRCan explained that this baseline information and analysis are required to support Project design and ensure that impacts on water quality are minimized. NRCan generally agreed with Agnico Eagle that the current level of geotechnical investigations and analysis were sufficient for the preliminary design stage and emphasized that frozen conditions were not part of the dike design that has been proposed for the TSF, leaving NRCan to also suggest a number of related recommendations. During the Final Hearing, the NRCan representatives indicated that they were satisfied with the information Agnico Eagle provided regarding permafrost in the Proponent's August 7, 2014 Response to Final Written Submissions. NRCan also asked Agnico Eagle to elaborate on the additional analysis that would be conducted to support mitigation measures and detailed design for the Project during the Final Hearing.⁹⁸ Agnico Eagle responded by stating

During our presentation on the terrestrial environment, I made reference to the collection of an -- additional permafrost data and the monitoring of additional permafrost data into construction and operations, and I'll provide a bit more clarification of what that might entail. It's recognized that the design of these facilities will need to consider the permafrost environment and the site-specific conditions of the environment as it relates to the purpose and the design of those facilities. In order to design the facilities to meet the objective, we will need to collect additional information, site-specific information. In fact, I can use some examples. For example the dikes around the tailings facility, we will need to understand, have a detailed understanding of the foundation conditions on which to situate the dike. So this would involve the collection of additional information needed, so geotechnical or

⁹⁷ K. Costello, Aboriginal Affairs and Northern Development Canada, NIRB Final Hearing File No. 11MN034 transcript, August 21, 2014, p. 159, lines 2-5.

⁹⁸ K. Cavellaro, Natural Resources Canada, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 160 lines 1-9.

otherwise. As we collect this information for design, we would use this data and update the permafrost mapping and information collected, the database collected as indicated by AANDC in their previous comment. So this is as we go through the detailed design phase. In addition, the operations of these facilities would include monitoring of foundation conditions, including freeze-back -- potentially freeze-back, and we look at Meadowbank for an example. The dike structures that have been conducted at Meadowbank consist of monitoring the foundation to monitor against temperature as one element. So, for example, to look at the potential freeze-back of that foundation. Similar, therm -- they're called "thermistors" which monitor these temperatures. Similarly, they have thermistors installed in the waste rock piles to monitor freeze-back of their facilities. AEM is proposing or anticipating that similar monitoring devices will be installed or required as part of the design and operation of the infrastructure of Meliadine. So this information will provide additional data to characterizing the site-specific conditions at the site and will be used to complement the existing database that we have.⁹⁹

Terrain and soils

In its Final Written Submission, the Kivalliq Inuit Association (KIA) requested an assessment of the feasibility of a dedicated storage area for the overburden that the FEIS discussed stripping from the Project area. KIA noted that the overburden [topsoil/organic matter] contains organic matter and a seed bank that would make it useful for site remediation; however, the overburden [topsoil/organic matter] would not be available at closure. The KIA questioned Agnico Eagle at the Final Hearing about storing the overburden [topsoil/organic matter] separately for use during mine closure as has been committed to by other northern mines as part of reclamation planning.

The KIA have asked Agnico Eagle about the feasibility of storing this separately so it could be used and accessible when the times comes to close the mine and to recover de-vegetated areas to actually promote the recovery, in terms of de-vegetated area to promote the recovery. Instead of letting them grow on bare rock, there could -- some of their natural soils would be back and available and the natural seed bank. In response to our comments on the FEI -- on the final impact statement, AEM said that they would greatly appreciate hearing from the KIA if it has information on techniques used that have been used elsewhere in similar permafrost conditions that could make this recovery process practical. We did do a little bit of digging, and we didn't have to dig very long. We found that, at the Diavik Diamond Mine in the Northwest Territories, they are segregating till and overburden separately from the waste rock with active plans to use it for closure. The project description Sabina Mine in Nunavut, also promoting -- proposing to store overburden separately for use during closure, and the Baffinland Mary River project have also made similar commitments in their mine plan. So our observation is that other mining companies do think it is feasible, and we will be

⁹⁹ D. Walker, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 160 lines 13-26, p. 161 lines 1-26 and p. 162 lines 1-3.

providing this information and the details in our submission following our presentation tomorrow.¹⁰⁰

Agnico Eagle responded, stating:

It's very fine that you quote those references back. I would be interested to see your information. But I notice that all of those projects, nobody's actually done any reclamation yet. You're talking about future people committing to do things who haven't had the ground experience yet. They actually haven't done any of that recovery yet. We based our comment on the fact that at Meadowbank, we did stockpile material. We tried to then recover it, and when it's frozen, you end up with an extremely difficult task to try and strip it, because when you go to dig into it, you have a frozen mass. It's full of ice. And so we have not yet seen anybody actually achieve this in Nunavut. And so you're -- it's fine to make a commitment, but these commitments have not been followed through on yet in any of these operations. They are just that -- they are commitments by people who haven't yet done it, and so we were asking for examples of where it's actually been done. Because, yes, if we can learn from somebody else, we see the value in doing that, but our experience at Meadowbank has proven that it's extremely difficult to try and extract back that material.¹⁰¹

4.4.3 Views of the Board

The Board is aware that the Proponent is still in the process of capturing data, advancing designs, and confirming possible and/or selected options related to Project activities and facilities. The Board notes that Agnico Eagle has committed, as indicated in both the FEIS and at the Final Hearing, to undertake continued studies and monitoring as well as implement preventative and mitigation measure to reduce the potential impacts of the Project on permafrost and soils.

Permafrost and Permafrost Terrain

Proposed environmental design features and mitigation measures identified by Agnico Eagle for minimizing the impacts to sensitive landforms and permafrost are, in the Board's view, satisfactory at this stage of project development. The Board would like to emphasise, however, the importance of Agnico Eagle's familiarity with the site-specific conditions of the Project site in ensuring the health of a sensitive northern ecosystem. Agnico Eagle has committed to collecting more data during Project licensing and the Board believes that this information should also assist in finalizing the proposed follow-up and complementary initiatives communicated by the Proponent in the FEIS and at the Final Hearing. It is critical to ensure that the proposed measures are, and will continue to be, effective in achieving the desired objectives and adequately addressing concerns related to sensitive landforms and permafrost.

¹⁰⁰ N. Hutchinson, Kivalliq Inuit Association, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 166, lines 6-26 and p. 167 lines 1-6.

¹⁰¹ L. Connell, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 167 lines 8-26 and p. 168 lines 1-4.

The Board would like to highlight the importance of Inuit Qaujimajatuqangit related to the terrestrial environment, as the Board believes that the potential impacts of the Project on the abundance and distribution of unique or valuable landforms (i.e., aesthetics) warrants special consideration by the Proponent. The beauty and importance of the natural topography and landscape, as perceived by the people who live close to, and who travel through the Project area, deserves consideration throughout the life of the Project. Topographical features may be used by Inuit and other travellers as landmarks in navigating across the tundra; changes to that landscape should be considered by Agnico Eagle.

*My question or rather point of clarification around the question is when it comes to the waste rock -- waste rock piles, I notice the reference to the size of the rock pile. The point of clarification I want is how -- how is it managed?*¹⁰²

The Board encourages Agnico Eagle to work with the public as it develops its final designs to ensure that new features that would be introduced to the area – such as the proposed 15-story high rock pile and large berms surrounding the tailings impoundment area – are contoured to look as natural as possible, and to the extent possible, that these do not impact upon the use of natural features for navigation.

Terrain and soils

The Board has noted instances of contradicting information within FEIS volumes 2 and 6. Agnico Eagle presented two soil-handling techniques for topsoil/organic matter: in FEIS Volume 2, stating that it would not be stripping topsoil (i.e., two-lift soil salvage) for the Project and in Volume 6, discussing the pros and cons of topsoil stripping, noting in its conclusion that soil salvage/stripping would be conducted as part of the mitigation measures for soils.¹⁰³

Although the Board appreciates Agnico Eagle's statements at the Final Hearing and the Proponent's discussion of the issue in response to the questions by the Kivalliq Inuit Association, the Board nonetheless encourages Agnico Eagle to investigate ways of using the root/seed rich materials (top 6 inches) of the overburden/topsoil/organic matter that is removed in its site reclamation. In the Board's view, some of the issues with overburden becoming frozen and not being readily available for use may be mitigated by Agnico Eagle's plans to develop the Project in stages, as overburden may not have to be segregated in large piles for years before being used in reclamation. The Board also recognizes that reclamation practices specific to Nunavut will also be informed by Agnico Eagle's experience with site reclamation at the Meadowbank site and the Board expects the Proponent's reclamation plans for this Project to be adapted and improved as lessons are learned and best practices are developed at the Meadowbank mine site.

4.4.4 Conclusions and Recommendations of the Board

The Board, in considering those views of the Proponent and parties as outlined above, and throughout the assessment of the Project, is providing the following recommendations:

¹⁰² P. Kadlun, Nunavut Impact Review Board, NIRB Final Hearing File No. 11MN034 Transcript, August 22, 2014, p 114, lines 4-10.

¹⁰³ FEIS, Volume 6, p. 100.

1. The Proponent shall conduct further permafrost mapping to document permafrost temperature, thickness of seasonal thaw and amount of ground ice in the Project development area, with such information to be available to inform the detailed design of Project infrastructure (i.e., dikes and tailings storage facility designs and talik predictions for lakes that are to be dewatered or used for saline water storage).
2. The Proponent shall undertake additional geotechnical investigations as required to identify sensitive landforms, modify engineering design for Project infrastructure (i.e., dikes, tailings storage facility, waste rock pile and landfill), and develop and implement preventative and/or mitigation and monitoring measures to minimize the impacts of the Project's activities and infrastructure on sensitive landforms. Plans for the investigations, mitigative and monitoring measures are to be included within an updated Environmental Protection Plan.
3. The Proponent is encouraged to conduct more detailed thermal analysis to support detailed design of the dikes and the tailings storage facility, including seepage and stability analysis, and shall incorporate the results of the analysis into Project design. Details of the thermal analyses undertaken are to be provided to the NIRB.
4. The Proponent shall assess the potential environmental effects of a post-closure failure of the geomembrane of the Tailings Storage Facility while tailings are in a thawed state. This assessment shall include, at a minimum:
 - a. A description of the potential environmental effects of such a failure;
 - b. Identification of the monitoring measures employed to detect environmental changes that could result;
 - c. Identification of proposed mitigation measures to address any changes identified during monitoring; and
 - d. Updated Risk Management Plan and Closure and Reclamation Plan reflecting changes which result from the post-closure failure assessment.

A summary of the results from this assessment and implications to project infrastructure and operational plans shall be provided to the NIRB.

5. The Proponent shall finalize and implement a comprehensive erosion management plan to prevent or minimize the effects of destabilization and erosion resulting from Project activities.
6. The Proponent shall monitor the effects of the Project on permafrost conditions relative to Project infrastructure, including along the all-weather access road and associated roads, waste rock stockpile, trails and quarries. Through its monitoring the Proponent must demonstrate that permafrost integrity is maintained with implementation of appropriate preventative measures should permafrost degradation be observed.
7. The Proponent shall provide the NIRB with copies of as-built drawings and final design plans for Project infrastructure as they are developed/finalized to assist with the Board's ongoing monitoring efforts.
8. The Proponent shall develop and implement a monitoring program for its Tailings Storage Facility and Waste Rock Storage Facility (including dikes). The monitoring program is to include, but shall not be limited to:

- a. Plans for monitoring the thermal condition and stability of storage facilities (including deformation of the cover) and dikes, including the use of thermistor cables, temperature loggers, and core sampling technology as required to monitor dike stability and tailings freezeback efficiency, including for example, factors such as ice content and stability; and,
- b. Measures proposed to ensure the safe containment and structural integrity of Project infrastructure, and to prevent contamination of waterbodies.

Details of the monitoring program are to be provided to the NIRB.

- 9. The Proponent shall explore the the feasibility and practicality of topsoil/organic matter salvage as part of phased approach to Project development, with updates to its Closure and Reclamation Plan to reflect any changes based on this investigation. The Closure and Reclamation Plan should be updated on an on-going basis as more information becomes available from similar reclamation projects, including experience with implementing closure and reclamation plans at the Meadowbank mine site, as applicable.
- 10. The Proponent shall update its Waste Management Plan to include details which explain how the design employed for Project landfills is expected to protect the integrity of the local environment, including permafrost integrity, and water quality for adjacent waterbodies. The Proponent shall demonstrate its consideration for the use of liners at waste management facilities, where feasible.

4.5 Geology (including Geochemistry)

4.5.1 Views of the Proponent

Agnico Eagle conducted an assessment of direct and indirect impacts from geology and geochemistry on the Project in Volumes 2 and 6, Sections 2.3.1, 2.6.1.1 and 6.2 respectively of the Final Environment Impact Statement (FEIS). Rock and overburden in the Project area underwent a detailed assessment of geochemical characteristics, with associated information presented in Supporting Document (SD) 6-3 Geochemistry Baseline Report for the Tiriganiaq, Pump, Wesmeg, F Zone and Discovery deposits. It was further noted by Agnico Eagle that its analysis had also included the geochemical characteristics associated with the Wolf deposit.¹⁰⁴

Within FEIS Volume 2, Section 6.2.1 Agnico Eagle noted its position that an assessment of direct and indirect impacts from geology and geochemistry on the Project is outside the scope of an Environmental Impact Statement (EIS). Further, the Proponent did not consider geology and geochemistry to be a valued ecosystem component (VEC) and did not subject the same to a formal effects assessment unless it was evaluated in the context of how it may affect identified valued ecosystemic components (VECs) such as water quality, water quantity and terrain and soil. Agnico Eagle further acknowledged,

¹⁰⁴ FEIS, Volume 6, p. 10.

however, that geology and geochemistry are important considerations to how the Project is designed, constructed, operated and closed.¹⁰⁵

In its geochemical analysis, Agnico Eagle identified the following characteristics of the rock in the Project area: rock in the area contains some arsenic; all overburden samples tested were non-acid generating except for the rock at the Discovery deposit; sulphide content was low and buffering capacity was high; and the potential for metal leaching was low.

Agnico Eagle incorporated monitoring and follow-up into all phases of the Project for geochemistry, as specifically described within SD 2-5 Environmental Management Protection Plan, SD 2-6 Surface Water Management Plan, SD 2-7 Ore Storage Management Plan and SD 2-10 Borrow Pits and Quarries Management Plan.

4.5.2 Views and Concerns of Interested Parties

In its Final Written Submission to the NIRB, Natural Resources Canada (NRCan) explained that at the Draft Environmental Impact Statement (DEIS) stage, the department had concerns that the combined tailings from the Project could be potentially acid generating (PAG) and, on this basis, there was a potential to generate acid rock drainage (ARD). Reflecting these concerns during the review of the DEIS, NRCan recommended that Agnico Eagle provide further information in the Final Environmental Impact Statement (FEIS) to demonstrate that the bulk tailings would possess adequate buffering capacity to reduce the potential for ARD. Consequently, during the Technical Meeting held in December 2014, Agnico Eagle committed to do an additional interpretation of the PAG based on mineralogy and available buffering capacity and reassess tailings management options as necessary. NRCan noted that it was satisfied with what Agnico Eagle included in the FEIS on the issue of buffering capacity, but recommended that Agnico Eagle continuously monitor throughout the operations phase of the Project, with monitoring designed to test the preliminary results and predictions presented in the FEIS. NRCan also recommended that Agnico Eagle commit to making adjustments to tailings management as may be necessary to reflect actual results and as would be required to ensure appropriate closure and reclamation planning for the site.

During its presentation during the technical portion of the Final Hearing, NRCan re-iterated that it felt the samples collected to date were sufficient to make a preliminary evaluation of the ARD predictions for the Project. NRCan was also satisfied that Agnico Eagle would be continually monitoring as part of the environmental monitoring program.¹⁰⁶

4.5.3 Views of the Board

The proposed environmental design features and mitigation measures identified by Agnico Eagle for minimizing the impacts to geological features are, in the Board's view, satisfactory for this stage of Project development. The Board believes that the collection of additional data that Agnico Eagle committed to providing at the regulatory phase, and the proposed follow-up and complementary initiatives described in the FEIS and at the Final Hearing will be critical in ensuring that the measures

¹⁰⁵ FEIS, Volume 6, p. 8.

¹⁰⁶ K. Cavallaro, Natural Resources Canada, NIRB Final Hearing File No. 11MN034 Transcript, August 22, 2014, p. 491, lines 11-14.

proposed are, and will continue to be, effective in achieving the desired objectives and adequately addressing concerns related to the geological features of the Project and receiving environment.

The Board has concerns about the potential negative impacts that Project infrastructure (i.e., tailings impoundment facility, waste rock storage, landfill and biopile) could have on the surrounding area due to the potential for acid rock drainage (ARD) and metal leaching (ML), as well as any chemicals of concern.

My question or rather point of clarification around the question is when it comes to the waste rock...The point of clarification I want is how -- how is it managed? Is it a berm? And the other part is if there is any leaching from those rock piles, how are they managed?¹⁰⁷

Agnico Eagle responded to the question raised during the Final Hearing, noting:

So for the waste rock ... yes, you can have some leaching, and that is part of our water management plan to pyramid-drain operation all of the water that will -- can leach, can seepage from the waste rock, and we will send to the generation pump. Actually, our monitoring shows that we should not have any contamination at the end, but it is something that we will continue to monitor. That is part of the monitoring plan, to look at the concentration of this water. But during the operation, this water will be collected and sent to the generation (sic) pump.¹⁰⁸

The Board also notes that the Project is located within a sensitive area, as the general proximity contains a great number of small waterbodies, site roads and infrastructure are in close proximity to the Iqalugaarjup Nunanga Territorial Park, and overall, the Project is relatively close to the community of Rankin Inlet. On this basis, the Board believes that a precautionary approach should be taken to protect the health of the land and the people, particularly as the area is also heavily utilized by Inuit, visitors to the Iqalugaarjup Nunanga Territorial Park, and residents of Rankin Inlet and Chesterfield Inlet.

The Board also notes that while the Wolf deposit was included in the geochemical analysis that Agnico Eagle conducted and presented within the FEIS for the Project, the Wolf deposit was *not* included in the scope of this Review and was not assessed during this Review. As a result, any planned development associated with the Wolf deposit would need to be submitted to the Board for adequate assessment before the deposit could be developed.

4.5.4 Conclusions and Recommendations of the Board

The Board, in considering those views of the Proponent and parties as outlined above, and throughout the assessment of the Project, is providing the following recommendations:

1. The Proponent shall report annually to the NIRB on the adaptations it has had made to the Mine Waste Management Plan and practices based on results obtained through monitoring.

¹⁰⁷ P. Kadlun, Nunavut Impact Review Board, NIRB Final Hearing File No. 11MN034 Transcript, August 22, 2014, p. 114, lines 4-10.

¹⁰⁸ S. Robert, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 114, lines 11-26.

2. Prior to the commencement of excavation at the Discovery deposit, the Proponent, in consultation with Natural Resources Canada, shall update its Mine Waste Management Plan to assess the potential for acid rock drainage and to identify any monitoring and mitigation measures that may be required in this development area.

4.6 Hydrogeology and Groundwater Quantity and Quality

4.6.1 Views of the Proponent

Volume 7, Section 7.2 of the Final Environmental Impact Statement (FEIS) describes the studies undertaken by Agnico Eagle to establish baseline conditions and assess the effects of the Project on hydrogeology and groundwater quantity and quality. The conceptual Aquatics Effects Management Plan (AEMP) provided by Agnico Eagle in Supporting Document (SD) 7-3 outlined Project activities and potential environmental interactions identified as being of concern for the aquatic ecosystem, including details for the effluent, water quality and biological monitoring required under the Environmental Effects Monitoring (EEM) program of the Metal Mining Effluent Regulations (MMER) pursuant to the *Fisheries Act*.

While hydrogeology and groundwater quantity and quality were considered valued ecosystemic components (VECs), Agnico Eagle determined that changes could only be evaluated in the context of how they may result in effects to other valued components such as fish habitat, hydrology and surface water quality. Agnico Eagle defined the same boundaries for hydrogeology and groundwater assessment,¹⁰⁹ with the local study area (LSA) defined as all Project facilities and pits along with the nearest lakes with open talik and the regional study area (RSA) defined as regional lakes with open taliks sufficient to define the regional groundwater flow directions.

In the groundwater sections of the FEIS, Agnico Eagle described that, in the presence of deep permafrost, highly saline groundwater (i.e., brine or brackish water) was present which was observed to be typical of mines that extend to similar depths in permafrost as the Project would. In Volume 2, Section 2.6.1.9 Agnico Eagle proposed methods to dispose of this water: with its naturally elevated levels of chlorine, sodium and calcium it could be used for drilling, as mixing water into the paste backfill and for freeze control. Excess water could be sent to a desalination plant for treatment and it would be expected to discharge 55% of the plant inflow as treated water, which could then be put in holding pond AP-01 prior to being discharged to Meliadine Lake or being re-used in the mill. The remaining 45% of the saline water or concentrated brine could be disposed of in the ocean or temporarily stored on site, then pumped back to the underground at end of mine life. Both options were presented and further evaluated during the feasibility design stage for the Project and an adaptive management approach was proposed (SD 2-1) with ocean disposal being favoured if underground disposal proved to be impracticable.

¹⁰⁹ FEIS, Volume 7, p. vi.

Agnico Eagle has predicted that the following specific Project activities or infrastructure have the potential to impact local hydrogeology and groundwater quantity and quality:

- Development of the underground mine at Tiriganiaq and construction of the mine rock and tailings storage facilities could change both shallow groundwater and deep groundwater regimes as a result of the dewatering of B7 Lake;
- Disposal of saline groundwater from the underground workings at surface, underground at Tiriganiaq, or in Itivia Bay;
- Removal of bedrock and ore altering existing faults and changing contaminant transport processes in subsurface and surface water quality. Additionally seepage from waste rock storage facilities could also change groundwater quality;
- Locating the tailing storage facility (TSF) in a dewatered headwater lake with an open talik; and
- Releasing sediment from infrastructure and road construction, including watercourse crossings.

To remove pathways or limit the effects of the Project on hydrogeology and groundwater, the Proponent proposed to implement specific environmental design features or mitigation measures¹¹⁰ and also highlighted its pathway analysis in which ten pathways were determined to be no linkage pathways which could be eliminated. Pathways that were determined to be minor in nature were eliminated through environmental design features or mitigation as well (i.e., the groundwater flowing into the underground mine will be collected and treated and at closure, the underground mine will be flooded with fresh water to keep high TDS in the lower portions of the mine). As no primary pathway linkages were identified directly for hydrogeology or groundwater, no further analysis was undertaken.

Agnico Eagle proposed monitoring of hydrogeological conditions throughout each phase of the Project either on a daily or annual basis, with the following monitoring measures or programs proposed to confirm the accuracy of impact predictions:

- implementation of established quality assurance/quality control measures for data acquisition, groundwater sampling, and analysis;
- measurement of groundwater inflow to the open pits and underground mine;
- seepage mapping in the open pits and underground mine;
- collection of groundwater samples in sumps in the open pits and the underground mine;
- pressure measurements from ports at designated depths and respective water levels in the Westbay well;
- collection of groundwater samples from ports in the Westbay well;
- water sample analysis for main ions and other parameters of interest;
- review and compilation of relevant permafrost, soils quality, surface water quality and hydrology reports and information; and
- data and information assessment and completion of a groundwater monitoring report including recommendations for mine management team.

¹¹⁰ FEIS, Volume 7, p. 34-40.

4.6.2 Views and Concerns of Interested Parties

Groundwater

Within its final written submission to the Board, Natural Resources Canada (NRCan) indicated that the baseline conducted for the Project was less comprehensive than would generally be collected for the purposes of groundwater characterization due to permafrost, leaving Agnico Eagle to rely primarily upon a simple conceptual model of groundwater flow to define the groundwater flowpaths. NRCan noted that “in permafrost environments, groundwater water and permafrost processes are closely linked because permafrost is generally a barrier to groundwater and groundwater flow can transport heat and alter the thermal regime of the ground”.¹¹¹ As such, NRCan provided advice for the use of groundwater wells to obtain better hydrogeological data to support conceptual and numerical models as beneficial for water management and the validation of impact assessment, and recommended the inclusion of additional groundwater parameters to be monitored (including water pressure, density and water head).

With regards to the assessment of impacts to hydrogeology, NRCan stated in both its final written submission and presentations during the Final Hearing that it was generally satisfied with Agnico Eagle’s FEIS and responses to NRCan’s comments and recommendations.

The Kivalliq Inuit Association (KIA) also commented on groundwater in its final written submission. The KIA had concerns that Agnico Eagle intended to detect seasonal variation in groundwater by sampling annually at the existing Westbay deep well for the first two years of the Project, noting that yearly monitoring was not believed to be sufficient to detect seasonal variations and recommending a more frequent sampling protocol (i.e., 2x per year). KIA further highlighted its opinion that detecting seasonal variation in groundwater was unlikely to happen. During Agnico Eagle’s presentation on the freshwater environment at the technical portion of the Final Hearing, the Proponent agreed that “seasonal variations cannot be detected in the groundwater flow and the objective was to monitor for the potential variations in the groundwater flow over time”.¹¹² Both parties considered the issue resolved at the Final Hearing.

During the Final Hearing, the Kangiqliniq Hunters and Trappers Organization noted concern with regard to taliks and water underground, noting that rivers run throughout the winter, and expressing a desire for monitoring to be considered. “It doesn’t seem like there’s going to be an impact to them, but there is a possibility that there may be. I would like to ensure that these water bodies that are underground, that they’re monitored continually.”¹¹³ Agnico Eagle replied that as the underground has salt water it would monitored every year.

Saline groundwater

¹¹¹ Natural Resources Canada, Final Written Submission, July 21, 2014, p. 7.

¹¹² D. Walker, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 216 lines 5-7.

¹¹³ J. Tatty, Kangiqliniq Hunters and Trappers Organization, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 230 lines 11-19.

Environment Canada (EC) wrote in its final written submission that the various alternatives for disposal of the concentrated brine from the desalinization treatment was an outstanding issue from the Draft Environmental Impact Statement (DEIS) and that the FEIS focused on two main alternatives with which EC had concerns. EC noted in its presentation during the technical portion of the Final Hearing that in principal, Agnico Eagle had agreed to ensure that the disposal of treated brine would be done in such a manner to ensure no impacts to the receiving environment. However, EC noted that if ocean discharge became the preferred option, additional assessment (i.e., full environmental assessment) would likely be required.¹¹⁴ Additionally, if the concentrated saline water was stored in a lake, EC questioned whether this might cause problems with respect to lowering the freezing point in the associated permafrost.

In its Final Written Submission, Natural Resources Canada (NRCan) also noted concerns regarding the uncertainty with the predicted volume of saline groundwater that might flow into the underground mine. While noting that NRCan's expertise is not managing saline water, the volumes that Agnico Eagle presented had a high degree of uncertainty and might make it necessary to further develop the management strategy and collect more data to verify groundwater modelling. NRCan noted in its presentation during the technical portion of the Final Hearing that Agnico Eagle has agreed in principal to assess its saline water management strategy and to verify its groundwater model.

The Kivalliq Inuit Association (KIA) noted in its Final Written Submission that in June 2014 that it had questioned Agnico Eagle on the potential discharge of saline groundwater into the marine environment as the potential impacts had not been considered in the FEIS. Agnico Eagle responded that the discharge of saline groundwater to the marine environment had not been considered under the current environmental impact statement and if it was identified as a viable option, it would likely require an amendment to the Project.

Intervenors questioned Agnico Eagle at the Final Hearing in regards to the disposal of saline water in the ocean

*And the second question is about that salt content you'll be releasing from underground, how well that will be monitored or are you going to dispose it to the Hudson Bay or what is going to happen to that salt content? I'm worried that it -- it be released to our Hudson Bay and not refined enough to have it released, and that, I'm worried about.*¹¹⁵

Agnico responded, noting:

With respect to the discharge of saline or salty water from underground, under the proposal that we have put before NIRB, we have not -- we have clearly made it clear that we will not discharge that salt water into the ocean. Our proposal is to hold that water onsite, treat it, and return the concentrated brine back into the underground mine. So that's what's been suggested, so we are not asking NIRB for permission to put anything into the ocean. That is not part of the proposal. It was suggested that could be an alternative, but it was

¹¹⁴ A. Wilson, Environment Canada, NIRB Final Hearing File No. 11MN034 Transcript, August 22, 2014, p. 425, lines 2-12.

¹¹⁵ N. Kadlak, Arviat, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 716 lines 10-16.

*acknowledged right away that that alternative would require a separate environmental assessment and subsequent approval.*¹¹⁶

At the Final Hearing, the NIRB requested that the Proponent clarify “why Nipissar Lake was not included within the local study area for its assessment of freshwater quality [and] project effects to freshwater quality.”¹¹⁷

Agnico Eagle responded in Exhibit 37 to the NIRB’s question and stated that it had made an error in one of the sentences in the FEIS as Nipissar Lake had been considered for potential effects to water quality due to dust, spills, and accidents.¹¹⁸

4.6.3 Views of the Board

The Board is aware that Agnico Eagle is still in the process of collecting data, advancing designs, and confirming possible and/or selected options related to Project activities and facilities that could potentially impact the quality, flow, and quantity of surface water in the local study area (LSA) and regional study area (RSA). The Board notes that the Proponent has committed, as indicated in the FEIS and at the Final Hearing, to undertake continued baseline studies and monitoring as well as implement preventative and mitigation measure to reduce the potential impacts of the Project.

Agnico Eagle currently has two proposed options for disposal of saline water that will be collected from both underground and open pit mining. The Board feels that the Proponent provided little certainty with regard to the quantity of saline water that may be encountered, and it appreciates Agnico Eagle’s commitment to use as much of the unprocessed water as possible in other aspects of the Project (i.e., exploratory drilling and making cement). However, the Board is of the opinion that the determination of what to do with an unknown quantity of additional saline water may introduce unforeseen challenges, both environmentally and financially. In Agnico Eagle’s consideration of options, it noted the possible disposal of desalinated water either underground or into Itivia Bay. In the alternative, there would be no desalinization plant and saline groundwater would be trucked and disposed of at Itivia Bay. The Board noted that at the Final Hearing that Agnico Eagle committed to not disposing of salt water in the ocean and that for the scope of this Project and the Board’s assessment, the consideration only included water being held onsite for treatment, with the concentrated brine then to be sent back underground. The Board expects that if any disposal into the ocean is contemplated by Agnico Eagle, as stated by Environment Canada and as acknowledged by Agnico Eagle during the Final

¹¹⁶ L. Connell, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 718 lines 1-13.

¹¹⁷ R. Barry. Nunavut Impact Review Board, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 231, lines 12-15.

¹¹⁸ Exhibit 37, NIRB Final Hearing File No. 11MN034, August 25, 2014, filed by Agnico Eagle Mines Limited, “Meliadine FEIS Technical Hearing Follow-up to Differed Questions”, p. 8.

Hearing, pursuing this “alternative [may] require a separate environmental assessment and subsequent approval.”¹¹⁹

The Board notes that properly addressing hydrogeology and groundwater quantity and quality in the Proponent’s mitigation and monitoring programs will be critical to ensuring that adequate data is available to assess actual data against impact predictions contained within the FEIS. The Board is also of the view that although the flow of groundwater in the Project area is limited, a precautionary approach should be undertaken where the potential for effects is somewhat uncertain. Consideration should be given to developing and implementing a stand-alone, comprehensive Groundwater Monitoring and Management Plan to ensure that any potential impact to groundwater flow and quality is prevented or minimized, especially considering the prospect of encountering saline groundwater during mining operations.

4.6.4 Conclusions and Recommendations of the Board

The Board notes that uncertainty remains regarding the options proposed for the disposal of saline water, and that the disposal option chosen by Agnico Eagle will determine the applicable regulatory process, as disposal underground would likely be included in the Nunavut Water Board’s licensing jurisdiction, while disposal into the marine environment would involve the jurisdiction of Environment Canada and Fisheries and Oceans Canada. In addition, until the Proponent has chosen a preferred disposal option, there is uncertainty regarding predictions of the quantity of saline water that may be encountered, plans to collect and store saline water on site, as well as proposed monitoring for each of these components of the program. Given these uncertainties, the Board has not provided recommended terms and conditions applicable to the management of saline water, but when the disposal option has been chosen, the Board would be willing to coordinate and share information obtained through this Review with the applicable authorizing agency, as may be appropriate.

The Board, in considering those views of the Proponent and parties as outlined above, and throughout the assessment of the Project, has provided the following recommendations to ensure that the potential impacts to flow and quantity of water in the Project area are minimized:

1. The Proponent shall, reflecting any direction from the Nunavut Water Board during water licensing, collect new hydraulic data (e.g., from new monitoring wells) in key areas during the pre-development, construction and operation phases to better define vertical and horizontal ground flow in the project development area.
2. The Proponent shall provide to the NIRB, a saline water management plan which includes, but is not limited to, mitigation measures designed to address the potential for higher-than-predicted volumes of saline water inflows into the underground mine, treatment and disposal methods, and details of its plan to monitor saline water at site.
3. The Proponent shall carry out continued analyses over time to confirm and update, accordingly, the approximate fill time for the mine pits as identified in the FEIS.

¹¹⁹ L. Connell, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 718, lines 11-13.

4.7 Hydrology (including Surface Water Quantity) and Water and Sediment Quality

4.7.1 Views of the Proponent

Agnico Eagle conducted studies to establish baseline conditions for hydrology (including surface water quality) and sediment quality and assessed the potential effects of the Project on each, including the associated information in Volume 7, of the Final Environmental Impact Statement (FEIS) as well as Supporting Document (SD) 7-1: 2009 Aquatics Synthesis Baseline and SD 7-2: 2011 Aquatics Baseline. Volume 10 of the FEIS discussed the Environmental Risk Assessment the Human Health Risk Assessment conducted by Agnico Eagle in its consideration of effects as relevant to hydrology and sediment quality.

Hydrology (including Water Quantity)

Baseline information collected by Agnico Eagle focused on characterizing the streamflow and water level regimes at lake outlets in the local study area (LSA) which included watersheds that contained portions of the Project/Project activities; however, the extent of the LSA was divided between the mine site, the all-weather access road (AWAR) and Rankin Inlet (including Nipissar Lake). For the regional study area (RSA), Agnico Eagle considered the effects of the mine, the AWAR, and development at Rankin Inlet along with other developments, activities, and natural factors that influence hydrology including surface water and sediment quantity within the Atulik, Char River, Dry Cove, Meliadine Lake, Meliadine River, Rankin Inlet and Thompson watersheds. For surface water and sediment quality, the LSA was defined to include waterbodies and watercourses potentially impacted by a component of Project infrastructure; the mine area, AWAR and Rankin Inlet were assessed on their own.

In its presentation at the Final Hearing, Agnico Eagle stated that “Bathymetric surveys were also conducted in water bodies (sic) on the peninsula, and lake shoreline surveys and shoreline erosion assessment were completed.”¹²⁰ The FEIS indicated that a total of eight lakes and 26 ponds would be dewatered or drawn down during construction and during operations, and 45 ponds would be in-filled during construction of mine infrastructure. Through the operational phase of the Project, two ponds would have increased water levels.

Agnico Eagle anticipated that the Project would impact hydrology, including water quantity, due to changes in:

- Natural drainage patterns both for stream hydraulics and local drainage;
- Usage of water for the Project (i.e., process water and potable water for camp);
- Dewatering waterbodies; and

¹²⁰ D. Walker, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 201, lines 6-9.

- Removal of bedrock and ore materials may change shallow groundwater quantity in local watershed and the water level in small waterbodies.

In Volume 7 of the FEIS, Agnico Eagle discussed the pathways that have either no linkage or a minor linkage as well as identifying environmental design features that could be implemented which would allow for removal of the pathway from further analysis. The Proponent indicated that it had eliminated one no linkage pathway and seven minor linkage pathways, while the following three primary linkages were identified for effects to hydrology, including water quantity:

- Effects of Project infrastructure on flows, water levels and channel/bank stability in downstream waterbodies and streams;
- Effects of dewatering to flows, water levels and channel/bank stability in downstream waterbodies and streams; and
- Effects of watershed diversions on flows, water levels and channel and/or bank stability in downstream waterbodies and streams.

Agnico Eagle assessed each of these points based on each affected waterbody during the Project phase(s) when activities would be most likely to cause an adverse impact, while also proposing environmental design features and mitigation measures to reduce the effects. Overall, Agnico Eagle anticipated that the Project would have negligible effects on surface water quantity in the Atulik, Char River, Diana River, Dry Cove, Meliadine Lake, Meliadine River and Thompson watersheds. Further, Agnico Eagle noted its expectation that the cumulative effect of the Project would be negligible as well.

As part of its monitoring and follow-up, Agnico Eagle committed to monitoring flows and water levels at key locations in the LSA during all phases of the Project, as this was considered necessary to determine actual runoff and discharge rates.

Surface Water and Sediment Quality

Both water and sediment quality were selected as valued ecosystem components (VECs) for the Project and were found to have linkages to both ecological (which includes aquatic life) and human health values like drinking water.¹²¹ Agnico Eagle collected water samples across local and regional study areas which were analyzed for a variety of parameters such as: major ions, carbon, nutrients, metals and organic compounds. Sediments from select lakes were collected and analyzed for a suite of parameters including: particle size, nutrients, total metals, polycyclic aromatic hydrocarbons, organic compounds and organochlorines.

Regarding sediment quality, Agnico Eagle determined that concentrations of some heavy metals such as lead, mercury and zinc were generally below guidance levels, suggesting no pollution concerns from these metals. However, elevated levels of arsenic, chromium and copper were observed in the sediment samples, raising potential aquatic health issues. In addition, organic compounds originating from the use of pesticides and herbicides such as dichlorodiphenyldichloroethane (DDD), dichlorodiphenyldichloroethylene (DDE) and dichlorodiphenyltrichloroethane (DDT) were detected in

¹²¹ FEIS, Volume 7, p. 239.

one sediment sample and were suspected to have likely entered the local aquatic ecosystem through atmospheric deposition or soil erosion. In Volume 10 of its FEIS, Agnico Eagle did not identify any chemicals of potential concern for sediment or for Meliadine Lake and an analysis of soils did not identify any chemicals that exceeded applicable guidelines for the protection of wildlife or aquatic life health or baseline concentrations.¹²² High cadmium, lead, mercury and silver were identified as being of potential concern for certain small lakes in the Project area but hazard quotients indicated that adverse health effects to aquatic life were not expected. Copper was identified as a potential concern in Chickenhead Lake and once the assessment was completed, impacts to the health of aquatic life resulting from copper were determined to be not significant.

Aspects of the Project and associated activities likely to impact quality of surface water and sediment quality as identified by Agnico Eagle within the FEIS included the Project footprint and infrastructure, air, dust and water emissions.

Given the scope of the Project and associated activities, the Proponent has predicted that most pathways were determined to have either no linkage or a minor linkage to which Agnico Eagle has proposed environmental design features and mitigation measures such that it concluded that no further analysis was required. Agnico Eagle identified two primary linkage pathways: changes in water and sediment quality due to water emissions during operations and closure, and changes in water and sediment quality due to physical alterations of the watershed and air emissions during construction, operations and closure. Agnico Eagle has predicted that:

...the Project should not have a significant adverse impact on the continued opportunity for traditional and non-traditional use of fish in the local study area and beyond (Section 7.5), on the health of aquatic life (Section 10.1), or on human health (Section 10.2). Therefore, the Project will not have a significant adverse impact on water and sediment quality.¹²³

Monitoring and follow-up for water and sediment quality committed to by the Proponent includes sampling programs at waterbodies and watercourses near the mine, watercourses along the AWAR and near Rankin Inlet. The sampling program would be conducted as part of the Aquatic Effects Monitoring Plan (SD 7-3) and has been designed to encompass all phases of the Project.

4.7.2 Views and Concerns of Interested Parties

Water modelling and baseline

Within its final written submission to the NIRB, the Kivalliq Inuit Association (KIA) identified concerns with the information presented in Agnico Eagle's FEIS related to hydrology, specifically the water and sediment quality baseline information and subsequent modeling. The KIA noted that the furthest downstream sampling station was within Peter Lake's outlet and that no sample locations existed

¹²² FEIS, Volume 10, p. vi.

¹²³ FEIS, Volume 7, p. 321.

further downstream. Using the baseline data, Agnico Eagle modelled that there would be no impacts downstream of Peter Lake and that as such no water sampling was conducted in Diana River. The KIA suggested that Agnico Eagle consider including one more sampling point within the Diana River Watershed for future sampling years, to assist in identifying contamination within Peter Lake, should it arise. During the Final Hearing, the KIA and Agnico Eagle agreed that this is an issue that could be dealt with through an advisory group prior to the issuance of the water licence.¹²⁴

The KIA also noted that bathymetric or hydrologic data had not been presented for Meliadine Lake and that information for Meliadine Lake was scattered throughout the FEIS in a number of sections, causing concern that hydrologic baseline data had not been adequately considered. The KIA requested that Agnico Eagle summarize and present relevant data in one location and add investigations of the lake bathymetry to the planned research for upcoming field seasons. Agnico Eagle committed to conducting additional detailed surveys in the vicinity of the water intake in its August 7, 2014 response to written submissions.

Additionally, the KIA identified concern that Agnico Eagle had chosen to present means as a measure of baseline central tendency as opposed to the median while providing no discussion on how these means were selected when varying detection limits had been used throughout baseline data collection. This lack of definition of the parameters for hydrological baseline data collection led the KIA to have little confidence that Agnico Eagle would be prepared to instigate mitigation measures early enough to prevent impact to aquatic wildlife. In its presentation during the technical portion of the Final Hearing KIA explained that it appreciated that Agnico Eagle had agreed with the KIA's concerns in principal,¹²⁵ but remained concerned that this be turned into something that satisfied the KIA so that unforeseen changes could be identified and responded to. The KIA filed specific recommendations with the NIRB to address these concerns.¹²⁶ Agnico Eagle supported the recommendations put forward by the KIA, leading both the KIA and Agnico Eagle to agree that further discussions could occur during the water licensing phase of regulatory approvals for the Project.

The KIA also noted that no assessment of oxygen demand under the ice or in open water had been completed specifically as related to the discharge of treated effluent into Meliadine Lake.¹²⁷ The KIA went on to acknowledge that Agnico Eagle had committed to providing this information as part of the water licensing phase of regulatory approvals for the Project.

The KIA raised concerns related to sedimentation modelling, noting that Agnico Eagle had stated that "baseline information on sedimentation deposition and dispersion is based on observations made during field programs".¹²⁸ The KIA explained its position, noting that this does not provide a characterization of sedimentation baseline conditions sufficient enough to assess changes from the Project, as drainage patterns would be expected to change in the small watersheds given not all

¹²⁴ Exhibit 49, NIRB Final Hearing File No. 11MN034, August 27, 2014 filed by Agnico Eagle Mines Limited, "AEM Response to KIA Proposed Terms & Conditions Submission".

¹²⁵ Agnico Eagle Response to Final Written Submissions, August 7, 2014.

¹²⁶ Exhibit 33, NIRB Final Hearing File No. 11MN034, August 22, 2014 filed by Kivalliq Inuit Association, "Final Environmental Impact Statement Meliadine Gold Project".

¹²⁷ Nunavut Tunngavik Inc. and Kivalliq Inuit Association, Final Written Submission, July 21, 2014.

¹²⁸ FEIS, Volume 7, p. 265.

waterbodies would be reclaimed at closure. While Agnico Eagle had asserted that effluent discharge would be managed to total suspended solid criteria defined during the water licensing phase of regulatory approvals and, further, that the design of diversions would consider the stability of any such diversions to minimize erosion, KIA recommended that ongoing water quality monitoring be conducted to identify trends and that additional adaptive management strategies be identified for sediment and erosion control.

Fisheries and Oceans Canada (DFO) noted in its final written submission that the Proponent should provide a rationale to explain why streams were not incorporated into the FEIS and include references to timing window restrictions in their plans. As well, DFO commented on the discrepancy between tables that discussed dewatering and which waterbodies were to receive waste rock and how these calculations were conducted.

Freshet

The Kivalliq Inuit Association (KIA) noted in its Final Written Submission that significant predictions in hydrology modelling were based on the assumptions that inputs would not change throughout the life of the Project and that Agnico Eagle had also stated that Inuit Qaujimajatuqangit indicated “ice melt in Nunavut has started earlier in the last few years, and that the duration of melt has been shorter”.¹²⁹ The KIA expressed concern that Agnico Eagle’s conservative approach in Project design may not be sufficient to accommodate the greater water volume during freshet over a shorter period of time as indicated by Inuit Qaujimajatuqangit and modelling. The KIA further recommended that all water management structures and designs be reviewed for stability under changed climate predictions as part of the water licence application, to which Agnico Eagle agreed.

Water Quality and Monitoring

The KIA also noted that further calculations for copper and cyanide should be used in Project planning. Cyanide, the KIA indicated, should include free cyanide as part of the calculations for environmental effects monitoring programs. The KIA also recommended that since Agnico Eagle had predicted elevated copper concentrations in the Tiriganiaq Pit lake, it should calculate a site specific water quality objective using an accepted procedure as part of its post-closure monitoring.¹³⁰

Environment Canada (EC) also commented that it had concerns with the prediction and management of various nitrogen species by Agnico Eagle.¹³¹ Agnico Eagle stated in its Surface Water Management Plan that the degradation of cyanide was not considered to occur in the tailings storage facility (TSF) pond and the resulting production through biological degradation was not included. Further, Agnico Eagle’s model states that biological degradation would not occur due to the Arctic locale. EC found this to be inconsistent with experience at northern mine sites, noting that it would be reasonable to expect reductions in cyanide and increases in ammonia and nitrate concentrations in the TSF pond. Agnico Eagle indicated that the potential need for treatment of cyanide destruction by-products, cyanate or

¹²⁹ FEIS, Volume 7, p. 61.

¹³⁰ D. Hutchinson, Kivalliq Inuit Association, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 222, lines 17-26.

¹³¹ Environment Canada, Final Written Submission, July 21, 2014.

ammonia was going to be addressed at the detailed design phase and proposed mitigation measures that would be finalized during licensing. EC recommended that monitoring of facilities like the TSF be done during early in the construction and operation phases, and that the water quality model be updated to predict nitrogen species concentrations over time to allow mitigation to be implemented appropriately.

The Government of Nunavut (GN) also commented on chemicals of concern in its final written submission and noted that surface water was not assessed further with respect to human health. The GN felt that surface water quality could be an issue given that country food pathways were screened out of the risk assessment, noting that the general public which included workers may use Meliadine Lake for drinking and fishing and requesting that Agnico Eagle adjust the screening threshold for various chemicals to account for this possibility. The GN was not confident that Agnico Eagle had demonstrated that chemicals were screened out of the risk assessment as it took into account the life of the Project. Further, the GN noted that it had been recommending that the Meliadine River within the Iqalugaarjuup Nunanga Territorial Park be a part of the water monitoring program since the filing of Agnico Eagle's Draft Environmental Impact Statement (DEIS). Agnico Eagle had committed during the December 2013 Technical Meeting to conducting water quality monitoring in the Meliadine River and include all applicable information in the FEIS. The GN found that sampling within the Meliadine River in the Iqalugaarjuup Nunanga Territorial Park was not included in the FEIS and the GN requested that Agnico Eagle include this in its Aquatic Effects Monitoring Plan. Further, it was noted that the version of the Aquatics Effects Monitoring Plan included within the FEIS did not provide a list of potential reference lakes so it was difficult to review the information and be confident that all items had been duly considered.

Environment Canada (EC) also commented on effluent quality and discharge limits upon which Agnico Eagle based its assumptions of the dissolved fraction of the metals and which would be an underestimate of total concentration of selected parameters.¹³² Agnico Eagle presented the maximum allowable effluent concentrations; however, EC noted that as the concentrations are not linked to Project predictions, this underestimate of the concentration of contaminants would then be higher than predicted. It further indicated that, while the end of pipe effluent concentrations predicted for the Project may be allowable on the basis of the dissolved fraction of the metals to reach objectives within 100 metres, they would be too high at the end of the pipe and would not be acceptable for discharge. EC recommended that the Proponent monitor water quality and use data for total metals to periodically re-run the water quality model. Further, effluent quality criteria and further refinement of edge of mixing zone concentration targets and thresholds should be identified and included in an adaptive management plan.

During EC's presentation at the Final Hearing, it stated that "normally at the [environmental assessment] stage Environment Canada likes to see a little more in the Aquatics Effects Management Plan and be really sure that we can get the project and understand if we are going to be able to detect impacts".¹³³ The KIA also commented that end of pipe concentrations of some parameters would exceed the Canadian Council of Ministers of Environment (CCME) guidelines and noted as that no

¹³² Environment Canada, Final Written Submission, July 21, 2014.

¹³³ A. Wilson, Environment Canada, NIRB Final Hearing Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 223-224, lines 25-26 and 1-2.

additional treatment options were outlined in Volume 7, this raised a concern as to when concentrations would return to either background concentrations or below CCME guidelines. During its presentation during the technical portion of the Final Hearing, Agnico Eagle stated that “It’s fully anticipated that the water license will have effluent water quality criteria that will need to be met. AEM commits to providing additional data in the water license phase to assist in the development of water pipe criteria”.¹³⁴

Aboriginal Affairs and Northern Development Canada (AANDC) noted that there was a lack of detail on the water quality monitoring plan for the Project and that a clear monitoring schedule for relevant water quality parameters was required and this issue had been brought forward previously in the Draft Environmental Impact Statement (DEIS).¹³⁵ AANDC also commented that although no information on the landfill leachate collection system was provided, documents submitted did include a conceptual framework and Agnico Eagle had committed to providing this information during the water licensing stage.

Additionally, AANDC noted a concern that the drainage systems may overflow during spring melt due to a buildup of snow, ice and debris. AANDC indicated within its final written submission that potential blockages and conditions which could result in watercourse blockages were not sufficiently determined and this was important for the development of mitigation plans.¹³⁶

The GN comments noted within its final written submission that while Agnico Eagle concluded that the lack of water and sediment quality sampling during spring snowmelt would not affect the results of the impact assessment, the snowpack accumulation and melt may be the single most important process affecting transport of atmospherically deposited contaminants to surface waters in northern landscapes. In the absence of water quality baseline of Meliadine Lake during the spring snowmelt period and the absence of information on chemical loading in the snowpack, it reduced the ability to predict seasonal impacts in the lake resulting from the Project. Further, it indicated that this lack of data also reduces the ability to understand the fate and effects of contaminants of potential concern in the lake ecosystems.¹³⁷ The GN noted that May is typically the time when activities occur around Meliadine Lake and additional water quality information for this period was critical.

Intervenors at the Hearing also commented on concerns over fresh water, noting:

...there is questions arising over they're going to be impacted very, very badly. I think because a lot of people are getting their freshwater from Meliadine River, and I'm sure they are contaminated. Water will be flowing down Meliadine River, and it was a water source for the elders, and a lot of people are going to rely on that water, freshwater, getting their freshwater from the river. And there's going to be a real bad impact in regards to the Meliadine River, and I'm sure there's going to be sediment, there's going to be dust, there's

¹³⁴ D. Walker, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 217, lines 4-7.

¹³⁵ Aboriginal Affairs and Northern Development Canada, Final Written Submission, July 21, 2014.

¹³⁶ Aboriginal Affairs and Northern Development Canada, Final Written Submission, July 21, 2014.

¹³⁷ Government of Nunavut, Final Written Submission, July 18, 2014.

*going to be flowing on the river. And I know that for a fact, and it will impact -- it will contaminate the Meliadine River.*¹³⁸

4.7.3 Views of the Board

The Board acknowledges the measures that have been developed and proposed by the Proponent to date. However, the Board still is concerned with the potential for changes in surface water and sediment quality, permafrost/talik distribution, groundwater distribution and flow paths that may be directed or indirectly attributable to Project facilities and activities. It is important that these issues be assessed and monitored throughout the life of the Project, as acknowledged during Agnico Eagle's closing remarks in FEIS Volume 11 where it was stated that "Sustainable development of the Project will contribute to the economic development of Nunavut...without a compromise to the health of the people or the land".¹³⁹ Given that Agnico Eagle's Meliadine Project is located near both the community of Rankin Inlet and in proximity to Chesterfield Inlet and the Iqalugaaarjuup Nunanga Territorial Park, the Board feels that it is important that a precautionary approach be taken in relation to considerations of surface water and believes that the potential impacts to surface water could affect or be perceived as affecting the people who live close to and who travel through the Project area for the life of the Project.

The Board encourages Agnico Eagle to work with the public and other authorizing agencies as it works on the next stages of its designs and management plans to ensure that surface water is protected and that the public is aware of activities conducted throughout the life of the Project.

Based on the representations made by several of the intervenors in their final written submissions and during their presentations at the Final Hearing, the need for amendments to the Aquatic Effects Management Plan became evident, as did the need to undertake sampling and monitoring to collect adequate baseline data from defensible reference sites prior to and during the commencement of construction activities. The Board agrees and notes that addressing these issues is critical from the perspective of ensuring that adequate data is available to assess impact predictions against actual data, and notes that ongoing water quality monitoring in the receiving environment will enable the identification of trends and additional adaptive management strategies if required, including those as may be required for the management of sediment and erosion control.

4.7.4 Conclusions and Recommendations of the Board

The Board, in considering those views of the Proponent and parties as outlined above, and throughout the assessment of the Project is providing the following recommendations:

1. The Proponent shall update its Aquatic Effects Monitoring Plan (AEMP) to include, at a minimum:

¹³⁸ L. Mimialik, Aqiggiq Hunters and Trappers Organization, NIRB Final Hearing File No. 11MN034 Transcript, August 22, 2014, p. 431 lines 12-25.

¹³⁹ FEIS, Volume 11, p. 11-29.

- a. Details regarding the monitoring of non-point sources of discharge, selection of appropriate reference sites, measures to ensure the collection of adequate baseline data at Meliadine Lake prior to and during construction activities, including information on chemical loading in the snowpack, and the mechanisms proposed to monitor for and treat runoff and sediment;
 - b. A description of measures to be undertaken as relate to dustfall monitoring, designed in accordance with the following:
 - i. To establish Phase 1 all-weather access road baseline data and a description of plans for data collection during Project operations for comparison;
 - ii. To facilitate comparison with existing guidelines;
 - iii. To assess the seasonal deposition (rates, quantities) and chemical composition of dust entering aquatic systems along representative distance transects of the all-weather access road and Rankin Inlet by-pass road;
 - c. A description of water quality monitoring to be conducted at Little Meliadine Lake; and
 - d. Details regarding comparisons of results to be run against predicted values and the analysis of data to be undertaken on an annual basis, or as may be required.
2. The Proponent shall develop and implement a sediment and erosion management plan to prevent or minimize the effects of destabilization and erosion that may occur due to Project activities. The plan should also detail sediment control plans to prevent and/or mitigate sediment loading into surface water within the Project area.
 3. The Proponent shall develop and implement adequate monitoring and maintenance procedures to ensure that the culverts and other conduits that may be prone to blockage do not significantly hinder or alter the natural flow of water from areas associated with the proposed mine. In addition, the Proponent shall monitor, document and report the withdrawal rates for water removed and utilized for all domestic and industrial purposes.

4.8 *Freshwater Aquatic Environment*

4.8.1 Views of the Proponent

Studies to establish baseline conditions for freshwater aquatic environment including biota and habitat were carried out by the Proponent and discussed in Volume 7 of its FEIS, as well as SD 7-1: Aquatics Synthesis Baseline and SD 7-2: 2011 Aquatics Baseline. Volume 10 of the FEIS presented aspects of the Proponent's Environmental Risk Assessment and Human Health Risk Assessment in relation to fish and the consumption of fish, respectively.

A range of valued ecosystemic components (VECs) and valued socio-economic ecosystemic components (VSECs) were selected for the Proponent's assessment of fish and fish habitat.¹⁴⁰ Specifically, fish

¹⁴⁰ FEIS, Volume 7, Table 7.5-1, p. 325.

habitat was selected as a VEC for the offsetting plan (SD 7-4) and Arctic char, lake trout and Arctic grayling were also selected as VECs as they represent species of economic and cultural importance to traditional users in Nunavut and also represent important ecosystem processes. The local study area (LSA) selected included watercourses and waterbodies directly affected by the Project activities. The regional study area (RSA) was identified to include those areas where the potential exists for direct, indirect and/or cumulative effects from Project activities.

In Volume 10 of its FEIS, Agnico Eagle provided its effects analysis, noting that it had relied upon predicted concentrations of chemicals in various environmental media including sediment within the Project area and Meliadine Lake. No chemicals of concern were identified for Meliadine Lake, and Agnico Eagle found that chemicals in soil did not exceed applicable guidelines for the protection of wildlife or aquatic life health or baseline concentrations.¹⁴¹ Cadmium, lead, mercury and silver were identified as chemicals of some concern for certain small lakes in the Project area but hazard quotients indicated that adverse health effect to aquatic life were not expected. Copper was also identified as a concern in Chickenhead Lake and once the assessment was completed, impacts to the health of aquatic life resulting from copper were considered not significant.

Agnico Eagle has assessed that aspects of the Project and associated activities likely to impact quality of freshwater aquatic environment, including biota and habitat included the Project footprint, infrastructure, dewatering, water, dust, and air emissions, and blasting.

Through its pathway analysis, Agnico Eagle identified two pathways had no linkage and 23 pathways that had a minor linkage. None of these pathways were considered further in the assessment, as Agnico Eagle noted that environmental design and mitigations would negate the effects pathways (i.e., minimize Project footprint, control water withdrawal and installation of bridges). Ten pathways were identified to have primary linkages as such were related to Project activities which could have effects on fish habitat and on the abundance and distribution of Arctic Char, lake trout, and Arctic grayling and the continued opportunity for traditional and non-traditional use.¹⁴² Agnico Eagle determined that:

*The incremental changes to the quantity, quality, and spatial distribution of habitats should not have a significant impact on the structure and function of fish populations and lower trophic communities (i.e. fish habitat) in the ecosystem relative to natural factors occurring over the same period of time and space. Therefore, the Project should not have a significant adverse impact on the continued opportunity for traditional and non-traditional use of fish in the local study area and beyond.*¹⁴³

The Proponent prepared a conceptual Aquatics Effects Management Plan (AEMP) in SD 7-3 with the following objectives:

- to determine the short- and long-term effects of the Project on the aquatic receiving environment;
- to evaluate the accuracy of predictions made in the FEIS;

¹⁴¹ FEIS, Volume 10, p. vi.

¹⁴² FEIS, Volume 7 p. 728-729.

¹⁴³ FEIS, Volume 7, p. 464.

- to assess the efficacy of planned mitigation incorporated into Project design; and
- to collect data required to identify the need for potential additional mitigation of Project effects, within a management response framework.¹⁴⁴

4.8.2 Views and Concerns of Interested Parties

Fisheries and Oceans Canada (DFO) raised numerous concerns in its final written submission regarding the Project's potential to impact the freshwater aquatic environment, particularly with reference to possible contamination of water bodies from effluent discharge, erosion, and sedimentation as well as the Proponent's selection of valued ecosystemic components (VECs).¹⁴⁵ DFO along with the Kivalliq Inuit Association (KIA) commented on the species that had been selected to be monitored, noting that the FEIS identified a fishery value limited to only Meliadine Lake and three fish species. Regarding hydrology predictions, DFO recommended that Agnico Eagle should identify its level of confidence that fish will not be affected by the Project and requested clarification regarding the timing for hydrology to return to baseline levels post closure. DFO also recommended that "fishery value" should be defined and clarified throughout the FEIS and not evaluated based on fishing preference by a particular community. DFO also recommended that Agnico Eagle clarify its position with respect to mitigating fish overharvesting throughout the Project to allow it to make a determination on the FEIS conclusion that effects from increased fishing pressure would be negligible compared to baseline conditions.

DFO's final written submission also indicated that direct or indirect release of contaminants into the local aquatic environment would be likely to threaten fish health and habitat in the long term and highlighted implications resulting from the physical alteration of drainage patterns, water levels and channel stability by the Project to benthic invertebrates, fish and fish habitat. It was further recommended by DFO that Agnico Eagle clarify effects to quality of fish habitat in the Aquatics Effects Monitoring Plan (AEMP), that it consider sedimentation within its monitoring program, and that it include more than two reference lakes. DFO also requested clarity in regards to calculations in the calculations that were used for the offsetting plan, noting that while the offsetting plan would be completed in the licensing phase, there were concerns around how the plan had been developed to date.

The Kivalliq Inuit Association (KIA) also commented on the offsetting plan and baseline information presented for fish, noting that no discussion of the validity had been provided for the Proponent's fish and fish habitat data collected 15 years ago, nor was a rationale provided for the lack of sampling data since 2012.¹⁴⁶ Further, fish tissue data was only collected and analyzed in 1997, no fish tissue data had been collected since then and the KIA noted that without at least two samples, it would be difficult to determine the stability of mercury concentrations in the fish over time.¹⁴⁷ Further to baseline data, the KIA commented that benthic invertebrates were not sampled intensely enough and difficulties may arise in assessing changes to the benthic macroinvertebrate community composition resulting from the

¹⁴⁴ FEIS, Volume 7, p. 468.

¹⁴⁵ Fisheries and Oceans Canada, Final Written Submission, July 21, 2014.

¹⁴⁶ Kivalliq Inuit Association, Final Written Submission, July 21, 2014.

¹⁴⁷ Nunavut Tunngavik Inc. and Kivalliq Inuit Association, Final Written Submission, July 21, 2014.

Project. It suggested alternative assessment criteria and data collection be considered for inclusion within the AEMP.

Recommendations put forward by DFO included the development of offsetting plans that will adequately compensate for habitat losses that are unavoidable during the project lifecycle, as well as that the Proponent work with local hunters and communities to determine Inuit preference for fish habitat compensation.

The NIRB had questions regarding proposed fish-out programs associated with the Project:

*Do you know if there's fish in that lake? And if so, what do you propose to do about the fish? Are you going to be transferring the fish – if there is fish in that lake, transferring it to another lake? Can you explain that to me, please?*¹⁴⁸

Agnico Eagle confirmed that water removal and fish-out programs would be necessary, indicating that the licensing process would be able to address the requirements of these programs:

*So yes, we have some lake that we have to remove the water, but before we have to remove the fish. So that is the first thing. And what we – we have to do during the -- the licencing process is to have -- fish out protocol done with the DFO and with the HTO, so usually what we do is that we'll transfer this fish to another lake, so usually is what -- what we try to do, but that is the side with -- with the -- Department of Fisheries and Oceans and also with the hunters and trappers organization of Rankin.*¹⁴⁹

The public also commented on the importance of fish and fish species during the Final Hearing:

*You have to also include the nine-spined stickleback, because they are an important food source for other larger fish. Perhaps make little streams for them, because they're fish food. We have to ensure that they're included. Please don't destroy -- destroy them and their habitat. How are you going to remove the nine-spined sticklebacks from the lakes and streams? They're always -- they're always around large boulders. Sometimes they can be seen on the shoreline of lakes, and then once the ice breaks up, they go back into the deeper parts of the lakes.*¹⁵⁰

When you're going to dewater the lakes and ponds, where are these -- this water that's being taken out, where are they going to put it? And the pumps that are going to be used, they're small lakes. We used to always have to be made aware, the small lakes. Now, if they're going to pump water from these lakes, there are lots of little aquatic species. The aquatic species that are going to be sucked through these -- through these pipes, they're going to be transferred to another lake. Is there going to be some type of filtering used so that these aquatic species won't be pumped into the other receiving lakes? My friend David

¹⁴⁸ H. Ohokannoak, Nunavut Impact Review Board, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 116, lines 20-25.

¹⁴⁹ S. Robert, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 117, lines 2-11.

¹⁵⁰ D. Aglukark, Arviat, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 738, lines 7-17.

*had just -- my friend David mentioned, I think, that -- the nine-spined sticklebacks. I think of them as aquatic species, even organisms.*¹⁵¹

*"...downstream from the lakes down to the sea before they go down into the deeper depths, after a few days, there are different types of fish, including lake trout. Now, if they're put in different -- a different environment or different habitat, maybe from perhaps the pressure of the -- or the oxygen level might be different for them. They may not be able to adjust to another lake.*¹⁵²

Fisheries and Oceans Canada provided additional clarification to address community comments, noting:

*Absolutely, we're going to look at every water body separately, and we're going to develop a plan for -- together with Agnico Eagle, a plan for every waterbody, and we're going to avoid critical periods for those species. Like it's, of course, mostly the species that are of concern: Lake trout, char, and grayling. That is going to be customized for the waterbody and the species as well not to interfere with the spawning season or migration season.*¹⁵³

4.8.3 Views of the Board

With respect to the freshwater aquatic environment, the Board examined the information provided by Agnico Eagle and noted the representations made by intervening parties in their final written submissions and presentations during the Final Hearing and throughout the Review of the Project. The Board has determined that from a general perspective, most of the relevant issues have been adequately addressed for this stage of assessment, recognizing that water licensing provides more in-depth consideration of certain relevant topics. The Board is aware that there are a number of issues such as the offsetting plan and thresholds for blasting that will require further consideration and approval by the respective regulatory authorities.

The Board agrees that continued assessment of the potential and direct impacts of the Project on the mortality of a number of fish species (i.e., arctic char and arctic grayling) and other freshwater organisms will need to be conducted throughout the life of the Project.

The Board acknowledges that regulatory approvals will be required to support real and potential changes to habitat or the loss of habitat resulting from the alterations and disruption in the flow of water from the Project. However, Agnico Eagle must also ensure that adequate and continual monitoring and adaptive management strategies are implemented, and that any potential impacts to the freshwater aquatic environment are prevented or minimized as well as ensuring Inuit Qaujimajatuqangit has been respected and that public understanding of the Project area is properly informed. Further, adequate compensation to affected communities may need to be determined for fish mortalities directly or indirectly attributable to the Project.

¹⁵¹ J. Tatty, Rankin Inlet, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014 p. 1014, lines 7-21

¹⁵² J. Tatty, Rankin Inlet, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 1016, lines 1-8.

¹⁵³ M. Janowicz. Fisheries and Oceans Canada, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 1016 lines 11-19.

Climate change may have direct and indirect effects on freshwater biota in local and regional areas associated with the Project through changes in air temperature, precipitation and ultraviolet radiation. Climate change effects on aquatic biota may also be mediated through changes to hydrology and water quality. The prediction of cumulative effects of the Project and climate change on fish (i.e., arctic char) and freshwater biota in general is inherently difficult to predict and wrought with high uncertainty. It is possible that climate change could also result in adverse effects such as an increase in the accumulation of metals in fish tissue due to a higher respiration rate associated with warmer water (lower in dissolved oxygen). The Board recognizes that these two competing effects of climate change are not expected to cumulatively affect Arctic char in a meaningful way, although as noted, there is a high degree of uncertainty in the predicted effects of climate change.

The all-weather access road (AWAR) was predicted to have positive and negative effects on the people of Chesterfield and Rankin Inlet as well as to the health of the environment in the surrounding area. The additional or improved access to Meliadine Lake and surrounding waterbodies may result in additional pressure on fish populations, fresh water and existing and potential future cabins in the Project area. As such, the Board encourages Agnico Eagle to revisit its proposed plans as indicated in the FEIS and work with all applicable agencies and the community members in Rankin Inlet to ensure that all changes to the surrounding area are captured and are being monitored appropriately through all phases of the Project.

Again, the Board would like to highlight the importance of Inuit Qaujimajatuqangit as it relates to fish and fish habitat and the consumption of fish. Appropriate tissue sampling to establish a baseline is an important component to ensure the public and animals are informed about the safety of consuming fish which may be impacted by Project activities. The beauty and importance of country food, as perceived by the people who live close to and who travel through the Project area, deserves consideration throughout the life of the Project. The Board also encourages Agnico Eagle to work with the public as it works on the next stages of its final design to ensure that the public are informed and have input regarding the design and final location of Project infrastructure, where possible.

4.8.4 Conclusions and Recommendations of the Board

The Board, in considering those views of the Proponent and parties as outlined above, and throughout the assessment of the Project, has provided the following recommendations:

1. The Proponent shall, prior to the commencement of construction, update its Aquatic Effects Monitoring Plan (AEMP) to include, at a minimum:
 - a. Clarification regarding the predicted effects of the Project to the quality of fish habitat;
 - b. Provide details for additional reference lakes to be included within its sampling and monitoring programs;
 - c. Updates to include sedimentation within relevant monitoring programs; and
 - d. Results from testing for mercury in fish tissue, including results of the testing in baseline data.

2. The Proponent shall maintain an appropriate setback distance between project quarries and fish-bearing or permanent water bodies as required to prevent acid rock drainage or metal leaching into such water bodies.
3. Prior to the commencement of construction, the Proponent shall submit to the NIRB, a Site Drainage and Silt Control Plan.
4. The Proponent shall meet or exceed the guidelines set by Fisheries and Oceans Canada for blasting thresholds and implement practical and effective measures to ensure that residue and by-products of blasting do not negatively affect fish and fish habitat.
5. The Proponent shall ensure that all Project infrastructure in watercourses is designed and constructed in such a manner that it does not unduly prevent and limit the movement of water in fish bearing streams and rivers.

4.9 Vegetation

4.9.1 Views of the Proponent

Agnico Eagle provided an effects assessment for vegetation in Volume 6 of its FEIS, which included a consideration of potential changes resulting from Project effects to air quality, water quantity and quality and terrain and soils. Additionally, Volume 9 of the FEIS detailed traditional plants and their usage and Volume 10 discussed risk assessment and studies undertaken to determine the changes in environmental quality due to chemical releases from the Project; vegetation was considered within the assessment of the quality of food.

Agnico Eagle defined the same local study area (LSA) for vegetation as was used for soils, consisting of a 500 metre (m) buffer surrounding the mine footprint, and 1000 m buffer surrounding the all-weather access road (AWAR), the Discovery area road, and the Rankin Inlet bypass road. A larger buffer was adopted on either side of the planned AWAR right-of way to account for anticipated effects from the road. The regional study area (RSA) was selected based on the need to measure the existing baseline conditions at a scale large enough to capture the maximum predicted spatial extent of the combined direct and indirect effects from the Project on permafrost, soils, vegetation and wildlife.

Agnico Eagle identified three valued ecosystemic components (VECs) to be considered for vegetation: plant populations and communities, listed (rare) plant species and traditional use of plants. Agnico Eagle assessed these VECs in terms of Project activities and was able to eliminate six no linkage pathways through its development of a site water management plan, its intention to recycle water and its commitment to ensure that equipment is re-fueled, serviced and washed away from stream crossings. The seven pathways of minor linkage were eliminated through Agnico Eagle's planned environmental design features such as dust control, minimizing the Project footprint and inspecting equipment as it is brought to the site to ensure soil from other locations is not carried onto the site. Two primary linkage pathways were carried through the effects analysis, including physical loss or alteration of vegetation from the Project footprint, and the permanent loss and alteration of vegetation caused by residual ground disturbance. After completing its effects analysis, Agnico Eagle determined that the Project should not have a significant adverse impact on vegetation population abundance and

distribution, nor on the continued opportunity for traditional and non-traditional vegetation use in the region.

Within Volume 10 of its FEIS, Agnico Eagle presented its risk assessment, which included potential changes to soil quality, water quality, sediment quality and the quality of food (vegetation, prey) for consumption by wildlife for all stages of the Project. The study areas, local study area (LSA) and regional study area (RSA), were consistent as those presented for vegetation. Metal concentrations in plants (shrubs, forbs, grasses, sedges and non-vascular plants) were collected from the mine site and along the AWAR, which was further assessed with information from soils, air, and water. The results were compared with established criteria for chemicals of concern levels that are known to maintain a healthy environment for wildlife and the public, resulting in Agnico Eagle's prediction that Project effects on air, soil quality, water and sediment quality were expected to be negligible.

Agnico Eagle also noted that monitoring and follow-up for vegetation would be included in a number of plans such as its SD 6-4: Terrestrial Environmental Management and Monitoring Plan (TEMMP). Re-vegetation would also likely be included for the construction and operations phases of the Project and as part of its Closure and Reclamation Plan (SD 2-17). Agnico Eagle also noted that further details regarding these plans would need to be finalized with regulators and the communities.¹⁵⁴

4.9.2 Views and Concerns of Interested Parties

During the Final Hearing, the Kivalliq Inuit Association (KIA) commented on Agnico Eagle's consideration of Inuit Qaujimajatuqangit within its effects assessment for vegetation (e.g., plant populations and communities). The KIA noted that Agnico Eagle's prediction that the Project would result in moderate, local scale impacts to plant populations and communities as a result of dust deposition and furthermore, that these areas were becoming more accessible for berry and plant harvesting.¹⁵⁵ The KIA noted that Agnico Eagle had acknowledged the concerns of elders; however, Agnico Eagle stated that there would be many other areas where people might harvest berries or other traditional plants in the area surrounding the Project which would not be affected by the Project, concluding that the Project would have no significant adverse effect to traditional use of plants.¹⁵⁶ The KIA requested greater clarity on how these conclusions were developed; Agnico Eagle and the KIA then agreed that the issue could be resolved during the regulatory phase and through the development of monitoring and mitigation plans.

In its final written submission, the Government of Nunavut (GN) expressed concern with regard to Agnico Eagle's Preliminary Mine Closure and Reclamation Plan (SD 2-17), noting that the proposal to allow areas disturbed by the Project to naturally re-vegetate, with some surfaces modified to promote regrowth was of concern. Further, the GN indicated that within its Roads Management Plan, Agnico Eagle had contemplated seeding surfaces if approved native plant seeds were available, but that this

¹⁵⁴ FEIS, Volume 6, p. 152.

¹⁵⁵ B. Parlee, Kivalliq Inuit Association, NIRB Final Hearing File No 11MN034 Transcript, August 22 , 2014, p. 523, lines 18-23.

¹⁵⁶ B. Parlee, Kivalliq Inuit Association, NIRB Final Hearing File No. 11MN034 Transcript, August 22 , 2014, p, 523 lines 24-26 and p. 524 lines 1-6.

measure was not included within the Proponent's Preliminary Closure and Reclamation Plan.¹⁵⁷ As well, the GN noted that neither plan proposed the use of substrates or amendments (i.e., fertilizers) to encourage re-vegetation. The GN noted that within the Terrestrial Environment Management and Monitoring Plan, Agnico Eagle proposed to monitor re-vegetation through studies conducted on three occasions during the post-closure period, but noted that no draft protocol or duration for monitoring had been proposed. The GN recommended that additional details on performance standards and the duration of such monitoring be provided prior to approval of the Project.

Intervenors also discussed their concerns and shared Inuit Qaujimajatuqanit, with a resident from Baker Lake noting:

*The vegetation that goes on the surface, more of them are destroyed by the dust if they're too close to the roads, especially if it's so close to the road. We notice that there are a lot of flowers and other plants that eventually die out, although they -- and the company tries to use solvents and other material to try to keep the dust down or control the dust. I'm just wondering what kind of solvent they -- they actually use? Does it contain salt water or salt? Or what is the real -- what is the material that they actually use to control the dust?*¹⁵⁸

Agnico Eagle provided clarification in response, indicating:

*What is proposed is the use of water, just water as a primary technique. We have -- we have outlined that there may be places where a salt can be used, but they have to be used very, very carefully because they have consequences if they are used. You know, salts can attract animals. They can damage water -- adjoining water bodies, so we are trying to limit our use of that to only critical zones where they -- the -- where that is a necessity because of other factors, but our primary material for controlling dust would be water.*¹⁵⁹

With regard to natural re-vegetation for closure and reclamation of the Project, a community representative noted that "even the smallest plants will eventually die from disturbance, but we know that they will grow back in a number of years. The Project would disturb a lot of ground but after it closed up it would take a number of years before the vegetation would start growing again".¹⁶⁰

4.9.3 Views of the Board

The Board recognizes that Agnico Eagle conducted vegetation surveys and plant tissue sampling in years leading up to the submission of the Draft EIS. The Board also acknowledges that Agnico Eagle considered traditional plant usage as part of its incorporation of Inuit Qaujimajatuqangit and effects assessment. However, taking into consideration evidence presented at the Final Hearing and in submissions from parties, the Board is not confident that Project-induced changes to the abundance

¹⁵⁷ Government of Nunavut, Final Written Submission, July 18, 2014.

¹⁵⁸ P. Iksiraq, Baker Lake, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p 172, lines 5-6.

¹⁵⁹ L. Connell, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 172, lines 14-24.

¹⁶⁰ L. Mimialk, Agiqqiq Hunters and Trappers Organization, August 21, 2014, p. 170, lines 5-20.

and distribution of vegetation communities and the resultant indirect effects to traditional plant use have been adequately considered by the Proponent.

In Volume 10 of its FEIS, the Proponent states that no monitoring and follow-up are recommended for directly evaluating environmental health and that any monitoring requirements for air, water and sediment quality currently proposed for the Project would support the continued assessment of environmental health for the Project.¹⁶¹ During the Final Hearing the NIRB's Chairperson asked, "Earlier KIA brought up these metals in the area. Are these very small – small metal particles hazardous to animals and plants in the area?"¹⁶²

The Proponent responded, noting its reliance upon inferences from air quality data, and the resulting predictions used for other disciplines:

*When we did the air quality assessment, my side of the air quality work, we looked at concentrations and potential deposition rates of what we called indicator components, the things that are normally regulated, but we also predicted the concentrations and depositions of substances such as metals, which we've heard about; organic components, which is from fuel; and compounds that are what we call "polycyclic aromatic hydrocarbons", again, from the combustion of fuel. All of those compounds could have an effect on vegetation or people or wildlife. To make sure that that was looked at fully, predictions were provided to all other disciplines....*¹⁶³

The Board recommends that in the absence of data which confirm predictions, a precautionary approach be taken until monitoring can substantiate assumptions made in the FEIS.

Furthermore, the Board would like to reiterate that the Project could produce a great deal of dust with as a result of daily mine traffic and increased public access along the all-weather access road. Agnico Eagle is expected to continue to collect information and update applicable operational and mitigation plans on a regular basis, including those relating to vegetation distribution, abundance, and health. At a minimum, dustfall monitoring should be undertaken at a number of stations along both sides of the all-weather access road, in order that issues relating to vegetation health are identified and addressed as they arise.

As Agnico Eagle is proposing a phased approach to the Project, with the Discovery deposit to be the last deposit developed for the mine. As such, it is the Board's expectation that where possible, monitoring data and information from the construction and initial operations of the Meliadine mine, the Mary River mine, and the Meadowbank mine, as specifically relating to vegetation health and impacts of all-weather access roads, will be used to inform the Proponent's effects assessment for the Meliadine project moving forward, including updates to relevant predictions and mitigation and monitoring plans as may be required.

¹⁶¹ FEIS, Volume 10, p. viii.

¹⁶² E. Copland, Nunavut Impact Review Board, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 118, lines 12-14.

¹⁶³ M. Rawlings, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 119-120, lines 16-26 and 1-2.

The Board would like to emphasize the importance of Inuit Qaujimajatuqangit and notes that the potential for the Project to impact upon the abundance and distribution of unique or valuable plants can affect the importance of a landscape, as perceived by Inuit proximal to the Project area (i.e., aesthetics and availability of country food). This should be considered by Agnico Eagle throughout the life of the Project and communities should be informed of results of studies on vegetation sampling and the efficacy of dust control as inferred by results from vegetation surveys.

4.9.4 Conclusions and Recommendations of the Board

The following Board recommendations are meant to establish mechanisms for early and effective monitoring (including third party monitoring) and to recognize the value of adaptive management in responding to Project-related effects on vegetation, including:

- A loss of vegetation in the local study area (LSA) and regional study area (RSA);
- Introduction of invasive plant species;
- A reduction in plant health and the quality of forage and traditionally used plants (due mainly to deposition of dust) within the LSA;
- A loss of or decline in the quality of culturally valued vegetation within the RSA.

Construction and Operations

1. The Proponent shall ensure that Project components and activities are planned and conducted in such a way as to minimize the Project footprint; this should include input from potentially affected communities where applicable.
2. The Proponent shall ensure that equipment and supplies brought to Project sites are clean and free of soils that could contain plant seeds not naturally occurring in the area. Vehicle tires and treads in particular must be inspected, and cleaned if required, prior to transport into Nunavut for use in Project areas.

Monitoring

3. The Proponent shall incorporate protocols for monitoring for the potential introduction of invasive vegetation species (e.g. surveys of plant populations in previously disturbed areas) into its Terrestrial Environment and Monitoring Plan. Any introductions of non-indigenous plant species must be promptly reported to the Government of Nunavut Department of Environment.
4. The Proponent shall conduct sampling to determine baseline levels for metals in soils found in areas with berry-producing plants near the Project area, and shall update relevant vegetation sections within the Terrestrial Management and Monitoring Plan to incorporate ongoing monitoring of these parameters prior to commencing operations.
5. The Proponent shall establish an on-going monitoring program to determine the distribution, abundance, and health of vegetation species used as caribou forage (such as lichens) near Project areas, prior to commencing operations.

Adaptive Management

6. The Proponent shall review, on an annual basis, all monitoring information and the vegetation mitigation and management plans developed under its Environmental Management Plan and Terrestrial Environment and Monitoring Plan (TEMMP) and adjust such plans as may be required to effectively prevent or reduce the potential for significant adverse project effects on vegetation abundance, diversity and health, taking into account lessons learned at other northern mining developments where appropriate.

Reclamation and Revegetation

7. Prior to the commencement of operations, the Proponent shall develop a progressive re-vegetation program for disturbed areas that are no longer required for operations, such program to incorporate measures for the use of test plots, reseeding and replanting of native plants as necessary. It is further recommended that this program be directly associated with the management plans for erosion control established for the Project and incorporate lessons learned at Meadowbank.
8. The Proponent shall include re-vegetation strategies in its Closure and Reclamation Plan that support progressive reclamation and that promote natural revegetation and recovery of disturbed areas compatible with the surrounding natural environment and incorporate lessons learned at Meadowbank.

4.10 Terrestrial Wildlife and Wildlife Habitat

4.10.1 Views of the Proponent

The baseline conditions and the results of the effects assessment for the Project related to the terrestrial wildlife were described by Agnico Eagle in Volume 6, Section 6.6 of the Final Environmental Impact Statement (FEIS). Three valued ecosystemic components (VECs) were utilized by Agnico Eagle for its assessment of potential effects to terrestrial wildlife and wildlife habitat: barren ground caribou, gray wolf and polar bear. Grizzly bear, muskox, and wolverine were also considered as VECs, but were not selected because the core part of their distributional range does not overlap with the Project. In addition, the Proponent indicated there have been either no, or very few, observations of these animals in close proximity to the Meliadine camp and few wolverines or grizzly bears harvested by the Rankin Inlet community.¹⁶⁴

Agnico Eagle's effects assessment recognized that developments outside the regional study area (RSA) can impact wide ranging species, such as barren ground caribou (Qamanirjuaq and Lorillard herds), and can act cumulatively with impacts from the Project. As caribou have the potential to interact with the Project, a caribou effects study area was also used in the wildlife and wildlife habitat assessment to assess the incremental and cumulative effects from the Project and other existing and reasonably foreseeable developments, where deemed to be applicable by the Proponent.

¹⁶⁴ FEIS, Volume 6, p. 154

Although not directly considered within its effects assessment, impacts from the Project to the maintenance of muskox populations and the continued opportunity for traditional and non-traditional use of muskox were predicted by Agnico Eagle to be negligible, in part because potential interactions of muskoxen with the Project are expected to be with a few individuals, not with the core of the population. Agnico Eagle has committed to communicate closely with Government of Nunavut biologists to understand the range expansion of muskox, with considerations to be made to adapt its Terrestrial Environment Management and Monitoring Plan or TEMMP¹⁶⁵ (SD 6-4) to include detection surveys for muskox, if deemed necessary.¹⁶⁶

Within Table 6.6-8 of the FEIS, Agnico Eagle identified 26 pathways associated with the VECs for terrestrial wildlife and wildlife habitat, five (5) of which were primary linkages, 11 which were minor linkages and 10 which were identified as no linkage.¹⁶⁷ Examples of environmental design features and mitigation incorporated into the design of the Project to remove pathways or limit the effects to terrestrial wildlife and wildlife habitat included:

- Minimizing physical footprint of project facilities and infrastructure;
- Designing roads as narrowly as possible;
- Designing cross-drainage structures such that hydraulic barriers will not be created;
- Regular inspections of the road and facilities;
- Developing and implementing a site water management plan (SD-6);
- Actively suppressing dust from roads;
- Providing employees with wildlife environmental awareness training;
- Developing and enforcing a “no hunting, trapping, harvesting, or fishing” policy for employees and contractors;
- Providing wildlife with the right-of-way on roads;
- Establishing an appropriate “no shooting zone” along the road and around the mine site; and,
- Developing and implementing a Terrestrial Environment Management and Monitoring Plan.

Agnico Eagle predicted within its FEIS that Project-induced incremental loss and fragmentation of habitat would result in negative and negligible to low magnitude effects on wildlife populations in the RSA and caribou effects study area. It further noted that habitat loss from the Project was expected at a local scale but that fragmentation would be also expected to have effects on wildlife populations at the regional scale. Agnico Eagle concluded that incremental effects of the Project from habitat loss and fragmentation are expected to be reversible in the long-term.

¹⁶⁵ Within the FEIS and Supporting Document 6-4 Agnico Eagle has alternately referred to its TEMMP as a “Terrestrial Environment Management and Monitoring Plan” and a “Terrestrial Environment Mitigation and Monitoring Plan”. Within this hearing report the NIRB has chosen to reference the title of SD 6-4 (Terrestrial Environment Management and Monitoring Plan) when referring to the TEMMP.

¹⁶⁶ FEIS, Volume 6, p. 156.

¹⁶⁷ FEIS, Volume 6, p. 174.

The Proponent also predicted within its FEIS that the Project would have low magnitude effects on wildlife populations in the RSA and caribou effects study area from permanent changes to wildlife habitat as a result of open pits, tailings and waste rock storage facilities. Long-term habitat loss and fragmentation from the main mine site were predicted to affect wildlife populations but were proposed to be reversible through site reclamation though arctic terrestrial ecosystems are slow to recover from disturbance¹⁶⁸.

The Proponent predicted that sensory effects from the Project would be reversible within a few years following closure (long-term), with sensory effects during construction and operation of the Project are expected to be continuous.¹⁶⁹ Agnico Eagle also noted that incremental Project effects from changes in the migration patterns of caribou would be expected to be negative but low in magnitude, indicating that extent of the effect will be regional or beyond, occurring at the home range scale. It also predicted that permanent changes at the main mine site would result in long-term disruption or alteration of migratory routes but that the effect to wildlife populations would be reversible.

Within Volume 6 of its FEIS, the Proponent predicted that improved access to harvest wildlife as a result of the Project would be expected to have low to moderate negative effects on wolf and caribou populations, and that incremental effects would be local in geographic extent and reversible at the end of active closure (medium-term).¹⁷⁰

With respect to cumulative effects, Agnico Eagle noted that cumulative habitat loss and fragmentation from previous, existing and future developments in the RSA would have negative effects, low in magnitude, and that where individuals from the caribou population may interact with other developments and activities in the caribou effects study area, the cumulative impacts from direct habitat loss and fragmentation on population size and distribution could be beyond regional in geographic extent.

Furthermore, cumulative effects from permanent habitat loss and fragmentation from previous, existing, and future developments were predicted by the Proponent to be low in magnitude and regional in geographic extent, while cumulative indirect effects were predicted to have high magnitude effects on wildlife populations, at a regional to beyond regional geographic context.

Agnico Eagle noted that cumulative effects from changes in the availability of wildlife for human use were predicted to be positive and low to moderate in magnitude and regional in geographic extent, and that because the all-weather access road (AWAR) would be scarified during closure, effects were expected to be medium-term and reversible, and to occur periodically during traditional and non-traditional hunting seasons.¹⁷¹

Agnico Eagle developed its Terrestrial Environment Management and Monitoring Plan (TEMMP) to comply with the NIRB's requirements for a wildlife mitigation and monitoring plan, and presented the document to provide further detail on the Project-specific wildlife and wildlife habitat monitoring

¹⁶⁸ FEIS, Volume 6, p. 250.

¹⁶⁹ FEIS, Volume 6, p. 253.

¹⁷⁰ FEIS, Volume 6, p. 253.

¹⁷¹ FEIS, Volume 6, p. 253.

components and contributions to other regional monitoring programs. The Proponent noted that the TEMMP is also intended to be a living document that can be used for discussion with regulators, Hunters and Trappers Organizations, communities and other people interested in the Project to participate in the development and review of wildlife effects mitigation and monitoring.¹⁷²

Road Traffic

Exhibit 37 provided by the Proponent during the Final Hearing estimated that the total annual number of vehicle transits along the Meliadine all-weather access road (AWAR), including Project and public traffic, would be 30,200 (15,100 round trips); a combination of heavy trucks and lighter vehicles but excluding all-terrain vehicles (ATVs) and snowmobiles. The total annual number of ATV transits along the Meliadine AWAR was estimated to be 8,600 (4,300 round trips).¹⁷³

Based on Agnico Eagle's experience with wildlife mortalities along the Meadowbank all-weather access road, the Proponent provided estimates of wildlife mortalities caused by vehicle collisions along the Meliadine AWAR, conservatively, as follows:

- Ungulates (caribou) 1 per year
- Predatory Mammals (e.g. wolf) 1 per year
- Small Mammals 25 per year
- Birds 15 per year.¹⁷⁴

The Proponent further noted that the Meadowbank AWAR is more than four times longer than the Meliadine AWAR, and that the general abundance of larger wildlife (e.g., ungulates and predators) in the Meadowbank area is comparatively greater. Additionally, Agnico Eagle indicated that the profile of the Meadowbank AWAR is more variable with a greater number of curves and hills (e.g., potential blind spots) than the Meliadine AWAR, but further acknowledged that the Meadowbank AWAR is a private access road for the mine, and public access is restricted to ATVs.¹⁷⁵

Within its FEIS, Agnico Eagle noted that the 21 kilometre haul road proposed to be constructed between the Discovery deposit and the mill at the Tiriganiaq site would include a continuous safety barrier installed between the two distinct roads to separate heavy mine haul trucks from public vehicles on the AWAR, and indicated that the barrier would be constructed of waste rock, to a height of 1.5 to 2 metres. NIRB staff questioned whether the barrier would limit or restrict movement of caribou crossings along the road, to which Agnico Eagle provided a response in its filed Exhibit 37, noting that it had agreed through discussions with the Kivalliq Inuit Association to construct any safety berms for twinned road

¹⁷² FEIS, Volume 6, p. 257.

¹⁷³ Exhibit 37, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014 filed by Agnico Eagle, "Meliadine FEIS Technical Hearing Follow-up to Deferred Questions", p. 1.

¹⁷⁴ Exhibit 37, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014 filed by Agnico Eagle, "Meliadine FEIS Technical Hearing Follow-up to Deferred Questions", p. 1.

¹⁷⁵ Exhibit 37, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014 filed by Agnico Eagle, "Meliadine FEIS Technical Hearing Follow-up to Deferred Questions", p. 1.

sections in such a manner that caribou are able to cross the road alignment with minimal risk of alteration of movement.¹⁷⁶

4.10.2 Views and Concerns of Interested Parties

In a joint final written submission to the NIRB, Nunavut Tunngavik Inc. (NTI) and the Kivalliq Inuit Association (KIA) provided comments for the Board's consideration regarding terrestrial wildlife and wildlife habitat, with emphasis on the incorporation of traditional knowledge and Inuit Qaujimajatuqangit relating to caribou habitat and habitat use, caribou movement, and increased harvesting pressures on caribou.

The NTI/KIA submission took note of the traditional knowledge and Inuit Qaujimajatuqangit that the Proponent had incorporated into the Final Environmental Impact Statement (FEIS) related to caribou movements, noting that local knowledge holders and scientists indicated the presence of caribou crossings and trails in the area and a potential funneling effect into the Proponent's local study area where documented cultural sites suggest historic Inuit use of area for hunting.¹⁷⁷ Specifically, the Proponent suggested there is some conflicting evidence in Inuit Qaujimajatuqangit provided by the Kangiqliniq Hunters and Trappers Organization that caribou are scared of mining projects – or become accustomed to them.¹⁷⁸ NTI/KIA also noted that there was an indication of a synergy between traditional knowledge and Inuit Qaujimajatuqangit and collar data regarding movement corridors at the south end of regional study area (RSA), with some anticipation that caribou will move further west.¹⁷⁹

NTI/KIA further noted within their submission that much of the traditional knowledge and Inuit Qaujimajatuqangit incorporated into the Proponent's FEIS was related to Inuit harvesting, rather than observations made about caribou while harvesting.¹⁸⁰ While the Proponent had predicted a significant increase in caribou harvesting as a result of the Meliadine AWAR, NTI/KIA argue that as this prediction was based on evidence of a doubling of caribou harvesting numbers near to Agnico Eagle's Meadowbank Gold mine due to increased road access, it remained unclear whether the total caribou harvest for the community had increased, or whether people were being economic about their harvesting and staying closer to the road to save time and money. NTI/KIA also acknowledged that the statistics presented by Agnico Eagle regarding the caribou harvest near its Meadowbank operation may have been based on an 'unsuccessful' harvest study with poor participation rate, and that it may not be accurate to assume that the number of caribou taken from the mine area had altered from days prior to Meadowbank.

In their final written submission to the NIRB, KIA/NTI provided a number of additional recommendations related to the Proponent's Terrestrial Environment Management and Monitoring Plan (TEMMP), including:

¹⁷⁶ Exhibit 37, NIRB Final Hearing File No.: 11MN034, August 25, 2014, filed by Agnico Eagle, "Meliadine FEIS Technical Hearing Follow-Up to Deferred Questions", p. 3.

¹⁷⁷ Nunavut Tunngavik Inc. and Kivalliq Inuit Association Final Written Submission, July 21, 2014.

¹⁷⁸ Nunavut Tunngavik Inc. and Kivalliq Inuit Association Final Written Submission, July 21, 2014

¹⁷⁹ Nunavut Tunngavik Inc. and Kivalliq Inuit Association Final Written Submission, July 21, 2014

¹⁸⁰ Nunavut Tunngavik Inc. and Kivalliq Inuit Association Final Written Submission, July 21, 2014.

1. Provide the Caribou Decision Tree prior to the Final Hearings, providing details on monitoring linked to numbers, composition (cows and calves) or seasons that caribou approach the mine area. Linkages between monitoring and mitigation should be clear.
2. Clarify within the TEMMP issues related to critical caribou calving timing and distances from the road alignment.
3. Provide specific caribou road crossing sites.
4. Clarify how road surveillance monitoring determines if a threshold of no more than 10% deflection of caribou approaching roads and infrastructure occurs.
5. Clarify directly how monitoring links back to mitigation.
6. Ensure consistency between the Caribou Migration Procedure and the TEMMP.
7. Clarify how zone of influence (ZOI) monitoring for caribou will be conducted for the Project to verify impact predictions and provide data to direct mitigation to minimize impacts of the Project on caribou.¹⁸¹

With regard to consideration for muskoxen and predatory mammals in the TEMMP, NTI/KIA further requested that the Proponent commit to, or that the NIRB require the Proponent to address:

1. Sighting thresholds for actions to specifically address muskoxen should be specifically included in TEMMP.
2. Modify the threshold for project-related mortality for predatory mammals to include more than Arctic fox.¹⁸²

Within its Final Written Submission to the NIRB, the Government of Nunavut (GN) identified the following primary issues of concern related to Agnico Eagle's proposed activities: improved access for harvesting caribou; caribou monitoring; and muskox monitoring. Overall however, the GN's reviewers concluded that the presentation and substance of the additional information provided by the Proponent since the Pre-Hearing Conference was well thought out and organized.¹⁸³

The GN offered specific advice regarding appropriate methodology and scope for the harvest study proposed by Agnico Eagle within FEIS Supporting Document 6.4 [Terrestrial Environment Management and Monitoring Plan (TEMMP)], advising that a rigorous, defensible survey methodology will be essential for the survey to generate reliable, accurate information to assess the impact of the all-weather access road (AWAR) on local wildlife harvest rates. The Proponent was further urged to review the final report of the Nunavut Wildlife Harvest Study (2004) to obtain an overview of methodological considerations for wildlife harvest survey design in Nunavut.¹⁸⁴

Noting that the FEIS acknowledges that increased caribou harvesting may occur as a result of improved access associated with the Project (Section 6.6.4.3.2) but that it also predicts that the residual impact of this increase will be of low to moderate magnitude, the GN was unable to accept the Proponent's

¹⁸¹ Nunavut Tunngavik Inc. and Kivalliq Inuit Association Final Written Submission, July 21, 2014.

¹⁸² Nunavut Tunngavik Inc. and Kivalliq Inuit Association Final Written Submission, July 21, 2014.

¹⁸³ Government of Nunavut, Final Written Submission, July 18, 2014.

¹⁸⁴ Government of Nunavut, Final Written Submission, July 18, 2014.

assessment on the grounds that too much uncertainty exists with regard to its analysis of effects to harvest levels. Recognizing this uncertainty, the GN advocated for more stringent monitoring and mitigation measures, over and above those presented in the FEIS, recommending specific mitigation measures to support the Proponent's development of adequate monitoring and mitigation measures relating to improved access for harvesting caribou in conjunction with the GN and other relevant parties.¹⁸⁵

From its review of the proposed caribou monitoring presented by the Proponent in its FEIS, the GN's Final Written Submission expressed concern that Agnico Eagle's plans would be insufficient to test impact predictions and support effective mitigation actions. This concern was noted to originate from the lack of detail in the TEMMP regarding the design of regional monitoring programs and/or the unproven nature of the methods proposed. The GN therefore recommended that further work would be required to develop the TEMMP with respect to caribou monitoring at the regional level prior to the commencement of construction activities, with further consultation required with the GN, Kangiqliniq HTO and the KIA in order to develop an overall satisfactory TEMMP.

Further recommendations were provided by the GN regarding the need for the Proponent to conduct a survey to locate any dens of foxes, bears or wolverines that could be damaged or destroyed during construction or operation of the Project, and to monitor the distribution and abundance of muskox within the regional study area to assess the potential effects of the Project on future range expansion, abundance and availability for harvest. The GN also requested that the Proponent set thresholds for direct mortality of wolf, grizzly bear, polar bear, wolverine, and fox, in consultation with the GN and other affected parties, to ensure monitoring and mitigation for the Project is responsive to undesirable rates of mortality.¹⁸⁶

During the Final Hearing the Government of Nunavut entered as Exhibits 16 and 17 a joint Agnico Eagle and GN submission on suggested terms and conditions for the Project for the NIRB's consideration. This joint submission addressed each of the recommendations provided by the GN within its Final Written Submission to the NIRB.¹⁸⁷

The Government of the Northwest Territories (GNWT) also provided a Final Written Submission to the NIRB which outlined its concerns about the potential impacts of the Meliadine Project and overall cumulative effects on the Qamanirjuaq herd, which is harvested by hunters in the NWT and other jurisdictions and may be showing a trend of decline.¹⁸⁸ The GNWT's main concerns were related to the all-weather access road (AWAR), the consideration of and proposed mitigations for managing cumulative effects and the lack of consideration given to transboundary impacts. The GNWT provided the following six specific recommendations for the NIRB to consider:

1. Agnico Eagle ensure that monitoring the effectiveness of project mitigations is included in the TEMMP.

¹⁸⁵ Government of Nunavut, Final Written Submission, July 18, 2014.

¹⁸⁶ Government of Nunavut, Final Written Submission, July 18, 2014.

¹⁸⁷ Exhibit 16: Exhibit 17, NIRB Final Hearing File No. 11MN034 Transcript, August 22, 2014 filed by Government of Nunavut "Joint Submission on Commitments" and "Joint Submission on Suggested Terms and Conditions" respectively.

¹⁸⁸ Government of the Northwest Territories, Final Written Submission, July 21, 2014.

2. The NIRB give very careful consideration to the design and details of the Hunter Harvest Survey in its recommendations.
3. The NIRB include terms and conditions to ensure Agnico Eagle's Hunter Harvest Survey include a provision for hiring a dedicated local survey coordinator through the Rankin Inlet HTO and provide adequate resources for the HTO to run the program.
4. Agnico Eagle extend the harvest study areas to the west into the core calving ground.
5. The NIRB incorporate terms and conditions to support collaboration between Agnico Eagle, Rankin Inlet, Chesterfield Inlet and Whale Cove HTOs, the GN and other authorities as appropriate to develop an access management plan that identifies harvest thresholds along the road and to coordinate appropriate management responses in the event that monitoring indicates those thresholds are exceeded.
6. The NIRB make recommendations to the appropriate authorities for development of a framework for assessing, monitoring and managing cumulative effects for the entire multi-jurisdictional Qamanirjuaq range which recognizes the shared nature of the herd among numerous communities in four jurisdictions.

Upon questioning by the NIRB staff during the Final Hearing, the GN indicated its support/agreement with GNWT recommendations 1, 2, and 3.¹⁸⁹

The GN did not support the GNWT's recommendation 4:

*The Government of the Northwest Territories recommended that Agnico Eagle Mines extend the harvest study areas to the west into the core calving grounds. The Government of Nunavut does not agree with this recommendation, given the length of the road and its -- the location of the core calving areas and existing levels of access to this area veer out further down the road, we are of the opinion that access to the core calving area will not be enhanced by the project, not substantially.*¹⁹⁰

The GN only partially supported/agreed with GNWT recommendation 5:

*The Government of Nunavut is in partial agreement with this recommendation. We have recommended and the proponent has committed to the development of a road access management plan that will detail Agnico Eagle Mines' policies and procedures for managing access to the road and the implementation of wildlife mitigation measures, so in this regard, we agree with the Government of the Northwest Territories. We do not agree that there is a need to identify specific thresholds for harvesting associated with the road.*¹⁹¹

¹⁸⁹ S. Pinksen, Government of Nunavut, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014 p. 603 lines 14-26 and p. 604 lines 1-14.

¹⁹⁰ S. Pinksen, Government of Nunavut, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 604 lines 15-24.

¹⁹¹ S. Pinksen, Government of Nunavut, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 605 lines 10-19.

The GN did not support GNWT recommendation 6:

*We do agree with some concerns concerning cumulative effects, but range-wide discussions on cumulative effects are outside the scope of this hearing, and we won't be responding to that issue. If the Nunavut Impact Review Board wishes to make recommendations to any agency, that's certainly within the Board's jurisdiction to do that, but it's not a matter for this hearing.*¹⁹²

During the Final Hearing, NTI explained that consultation regarding the Project had already begun to impact the administrative capacity of the Kangiqliniq Hunters and Trappers Organization (KHTO), and further noted that the KHTO was currently experiencing an increased workload from the AWAR which could be expected to increase further should the mine be developed.

Even before the road was built, whenever the caribou would come close to the community, the HTO -- the hunters and trappers organization would have challenges regulating their members or -- or working with the community. The HTO would go on the radio. Elders would be on the radio asking hunters to let that first group of caribou go through, migrate through, not to be so quick to -- to hunt. It is a tough situation because -- because it's spring, it's usually been a while since people have had fresh meat or caribou, and they are quite close to the community, so it creates some -- some challenges for the HTO in regulating their members to begin with.

*So now, with improved access and a road that goes out further and there's bridges to cross rivers, it puts even a bigger workload on the HTO. The HTO has also met with KIA, but I guess it goes back to some earlier comments that the HTOs have been underfunded for a number of years, and they have probably some of the hugest responsibilities in terms of looking after or managing things at the community level, so it has -- there has been meetings, but there's still a lot of work to be done.*¹⁹³

The Kivalliq Wildlife Board (KWB), Aqiggiq Hunters and Trappers Organization (AHTO) and the Kangiqliniq Hunters and Trappers Organization (KHTO) prepared a joint final written submission which outlined their collective position on a number of items related to terrestrial wildlife and habitat.

With regard to the overlap of the all-weather access road with pre-existing trails, the KWB/AHTO/KHTO acknowledged that the route selection had been made in consultation with the KHTO and that the AWAR would be open to the public during most conditions during mine operations, however noted that the current combination of restricted access to the first phase of the AWAR and curtailed traditional trail network was a source of frustration for the KHTO membership. The KWB/AHTO/KHTO also noted within their joint Final Written Submission:

¹⁹² S. Pinksen, Government of Nunavut, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 606 lines 1-8)

¹⁹³ B. Dean, Nunavut Tunngavik Incorporated, NIRB Final Hearing File No. 11MN034 Transcript, August 22, 2014, p. 564, lines 7-26 and p. 565 lines 1-3.

*The fact that the AWAR corridor is viewed as an important caribou hunting area also suggests that caribou are not a chance occurrence – that caribou migration through the camp and across the AWAR ought to be viewed as an expectation rather than an anomaly. As such, there is a need to clarify and emphasize both AWAR traffic and access protocols, and improve public awareness, communication and cooperation in that respect.*¹⁹⁴

The KWB/AHTO/KHTO reiterated this point during the Final Hearing, noting the linkages between the road and harvesting, and recommending measures to address this matter:

*The all-weather access road is linked with Inuit land use and harvesting, and we wanted to address that there is frustration for a number of the Kangiqliniq HTO members for the access of the road and that caribou migration crosses through the all-weather access road. And the recommendation from the Kivalliq Wildlife Board, Rankin, and Chesterfield HTO, we are recommending public awareness, communication, and cooperation between the residents of Rankin Inlet and Agnico Eagle in regards to the all-weather access road.*¹⁹⁵

With regard to the geographic proximity of the Project with respect to caribou, the KWB/AHTO/KHTO noted within its Final Written Submission and during the Final Hearing that not only is the Project proposed in an area utilized by barren-ground caribou, but that the majority of interactions which may occur would take place at a particularly sensitive space and time for caribou – that is, within post-calving grounds, and during the post-calving migration period:

*The project is in a sensitive space. It's in part of the post-calving ground for the Qamanirjuaq and Beverly caribou, and during post-calving migration, that area is used by the caribou herds. The Kivalliq Inuit rely on the caribou, and there may be project-related effects on the caribou herd, and we asked for precaution in regards to the caribou.*¹⁹⁶

The KWB/AHTO/KHTO noted within their joint submission, a passage from the NIRB's Pre-Hearing Conference Decision which captured a perspective raised by a community member, namely that "our wildlife, our water and our very being will be affected by the development of this mine and there are only a few thousand of us in the Territory who will be directly affected; we are not opposed if the mine is developed properly, but we will all need to work together throughout the life of the mine from start to finish to make sure that happens." The KWB/AHTO/KHTO also noted that despite Agnico Eagle's conclusion that the Project would not be associated with any negative impact on Inuit harvesting, further discussion is required regarding the potential for decreased wildlife availability, and from that, resulting impacts to Inuit harvesting, noting that it would be Inuit, not industry, who could ultimately pay the price for future significant declines in wildlife populations, through voluntary or imposed harvest limitations.¹⁹⁷

¹⁹⁴ Kivalliq Wildlife Board, Aqiggiq Hunters and Trappers Organization, Kangiqliniq Hunters and Trappers Organization, Final Written Submission, July 21, 2014.

¹⁹⁵ L. Muckpah, Kivalliq Wildlife Board, Aqiggiq Hunters and Trappers Organization, Kangiqliniq Hunters and Trappers Organization, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 1047, lines 16-25.

¹⁹⁶ L. Muckpah, Kivalliq Wildlife Board, Aqiggiq Hunters and Trappers Organization, Kangiqliniq Hunters and Trappers Organization, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 1048, lines 14-21.

¹⁹⁷ Kivalliq Wildlife Board, Aqiggiq Hunters and Trappers Organization, Kangiqliniq Hunters and Trappers Organization, Final Written Submission, July 21, 2014.

*We're asking for more discussion in regards to wildlife and environment management. We feel that, at the end of the day, it's the Inuit in the Kivalliq region that will be impacted by the project.*¹⁹⁸

The KWB/AHTO/KHTO noted further within its Final Written Submission that potential effects on wildlife and wildlife habitat are not only the customary endpoints of ecological impact assessment, but are also, through Inuit harvesting, impact pathways for socio-cultural impact assessment and that negative effects on harvested species and/or their habitat could and should be deemed significant.

Additional testimony provided by the KWB/AHTO/KHTO emphasized concerns regarding the all-weather access road affecting caribou harvesting and increasing the administration efforts required by the Kangiqliniq HTO:

*I just want to briefly say, in regards to the migration of caribou, since -- since the road has been built and the public have access, we've noticed that there are -- a lot more of them are being killed because the population is growing rapidly. There are a lot more younger hunters. We need to try to talk to them and explain to them that, you know, it's very dangerous to hunt around the town itself, too close to the town itself. We sometimes notice that not -- not a large herd, but some animals do go right to the site of the proposed mine, and when the animals are disturbed by any humans, they tend to tame very easily. I -- I do know that we're not supposed to be petting or make -- make them -- not to disturb the animals because they tend to tame very quickly. I -- I just wanted to say that, you know, we've got to be aware of this.*¹⁹⁹

*Thank you, James. Yes. That's a concern to us. The all-weather road is a concern to us. We have to go by the road because those are our traditional hunting grounds. It's going to be a concern -- a major concern to us because there will be hunters on that road, on parts of it, who have to ensure and have discussions -- further discussions on this issue. We have to speak with the -- we need resources and sometimes there are only two wildlife conservation officers available in the community, and there are more and more people that are going out hunting these days. And we need to ensure that hunters can go out and access that area. It's going to perhaps not be a good idea if hunters weren't available to -- if they can't go hunting in the traditional hunting grounds.*²⁰⁰

Yes. I understand. You were clear. We need -- the public would like to be able to use the road, the access road, but the danger is the use of guns that may be used during caribou migration. I think this could be resolved in some way. Perhaps, I wonder if maybe, while the

¹⁹⁸ L. Muckpah, Kivalliq Wildlife Board, Aqiggiq Hunters and Trappers Organization, Kangiqliniq Hunters and Trappers Organization, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 1048-1049, lines 22-26 and line 1.

¹⁹⁹ J. Tatty, Kangiqliniq Hunters and Trappers Organization, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 173, lines 22-26 and p.174 lines 1-12.

²⁰⁰ J. Tatty, Kangiqliniq Hunters and Trappers Organization, NIRB Final Hearing File No. 11MN034 Transcript August 22, 2014, p. 561, lines 25-26 and p. 562 lines 1-14.

*caribou are migrating, we could close the access road at that time because our voice alone will not be strong enough for -- to be heard. I think -- as organizations and with Agnico Eagle Mines, I think we could ensure that this -- the -- it's going to -- it's going to be mainly used by Agnico Eagle transport -- transportation. This has always been a concern to myself that there may be danger -- dangerous time if guns are going to be used during the caribou migration. I think we could talk more about this problem.*²⁰¹

*...It's just like a highway that you can relax and -- because the caribou didn't have any problem crossing the roads, the route to the Iqalugaarjuup Park, when the caribou are migrating through...*²⁰²

Testimony was also provided by community members with regards to wildlife and wildlife habitat

*I wanted to be made -- I want to make this -- I want to be made aware of -- about the caribou. Through our traditional knowledge, the caribou arrive in the summertime. It's very obvious when they come in. The mine that you plan to build is right on the migration path of the mine site. You probably saw some -- some signage where the caribou migrate. That have been -- those paths on the migration route have been there for thousands of years and will not change. I wonder if you could make some -- put some boulders up near the bridges, and I was -- wanted to make that comment. Thank you very much for allowing me to make comments as I wish. And remember people of today are not really aware of their traditional knowledge, and we want to -- we want to pass our knowledge up to them, but there's a lot of young people out there today that don't know about -- much about our traditional knowledge. So we're doing our best to pass our knowledge on...*²⁰³

*It was mentioned yesterday. The -- I know that the caribou crossing is going to be -- going to be very important to the Inuit. The caribou crossing is very important to the Inuit. Like I said, it -- sometimes the caribou just don't know how to read, and -- but they -- they might go through the migration route that they actually know, and -- and we'd -- I'd like to see KIA, along with an elder too, because right now the caribou migration routes are changing, and this is -- it's really difficult, but however, it could be very simple, and we would like to have an elder to talk to the proponents about the importance of the caribou crossing.*²⁰⁴

Yes, the question that you've asked, whether there are going to be any protective -- protection measures, I don't know how plans are put in place about the caribou crossings. It's -- it's just a traditional or a caribou crossing. It's their migration path since time began. There -- there is a scent that the caribou use as their trail when they're migrating. Even if we're long past done, that's going to be the migration route for the caribou, but maybe at

²⁰¹ J Tatty, Kangiqliniq Hunters and Trappers Organization, NIRB Final Hearing File No. 11MN034 Transcript August 22, 2014, p. 568, lines 23-26 and p. 569 lines 1-12.

²⁰² J. Tatty, Kangiqliniq Hunters and Trappers Organization, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 1070, lines 12-16.

²⁰³ J. Tattuinee, Rankin Inlet, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 657 lines 20-26 and p. 658 lines 1-23.

²⁰⁴ D. Aglukark, Arviat, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 898 lines 13-25.

*times, it will change. The all-weather road is not in the way, as we saw. There is ample room for the caribou -- caribou to pass. There are also slopes, natural slopes in the natural environment. Caribou -- caribou can cross them. They can go on them and cross over. They're not going to get stranded in the middle of the road. They know where to go. Thank you for your question from the delegate -- the only delegate from Baker Lake.*²⁰⁵

*I just wanted to ask in regards to land surface. Any company that wants to start mining have to have roads to access. These vehicles do require roads. When the roads are being built, men are talking smaller animals, lemmings and siksik. I'm pretty sure a lot of these little animals eventually are -- are eventually perished, like, their homes being covered with gravel.*²⁰⁶

*...the impact will be beyond the affected area and will include Arviatimmiut. Land and wildlife, especially traditional areas and caribou, must be respected and protected. There must be a balance between providing economic opportunities and ensuring environmental protection....*²⁰⁷

*The animals and the wildlife never stop. We value the wildlife. They will probably be disturbed by the mine in the beginning, because that's the way they are, even when we are out hunting, they're disturbed by us when we go out hunting. We've noticed that.*²⁰⁸

4.10.3 Views of the Board

The predominant concerns expressed regarding terrestrial wildlife and the Project relate to the operation of the all-weather access road (AWAR) and the associated potential for interference with wildlife movement, direct mortalities from road traffic, and indirect mortalities associated with increased access for the general public to caribou harvesting. Although the Proponent highlighted its experience with operating the Meadowbank all-weather access road, it was acknowledged that a direct comparison is problematic as the Meadowbank road is a private access road for the mine with public access restricted to ATVs.

Questioning of the Proponent by the NIRB staff revealed uncertainty regarding the traffic volume estimates for the AWAR that had been included within the Final Environmental Impact Statement (FEIS), as these estimates were the Proponent's "best guess" and had been derived in part from a survey of recreational cabin use within the Meliadine area. When questioned regarding how the uncertainty regarding traffic volumes affected confidence levels through interconnected effects assessments such as dust, wildlife harvesting, etc., the Proponent explained that a precautionary approach had been

²⁰⁵ L. Mimialik, Agaqqiq Hunters and Trappers Organization, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. xxx lines 3-20.

²⁰⁶ P. Iksiraq, Baker Lake, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 171 lines 5-12.

²⁰⁷ P. Alareak, Arviat, NIRB Final Hearing Transcript File No. 11MN034, August 26, 2014, p. 1077 lines 8-13

²⁰⁸ P. Iksiraq, Baker Lake, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 1080 lines 4-8.

taken with conservative assumptions which would allow project monitoring to influence adaptive management employed throughout the life of the mine.²⁰⁹

The Board remains concerned that, in addition to Agnico Eagles mine-related traffic the proposed use of AWAR by the general public represents a potential for environmental effects which is difficult to accurately quantify. While the Proponent has indicated its intention to assume liability for all aspects of road operation and its willingness to work with relevant parties to ensure effects to terrestrial wildlife are limited to the extent possible, the Board remains concerned that in addition to direct wildlife mortalities from vehicle collisions, public road use may significantly affect local harvesting trends. Additionally, successful mitigation of adverse effects from the all-weather access road will require adherence to appropriate mitigation measures by the Proponent *and* the general public. Recommendations have therefore been provided by the NIRB to address appropriate safeguards, and monitoring and reporting requirements in excess of those proposed by the Proponent in its FEIS.

As referenced in the above section, during the Final Hearing the Government of Nunavut (GN) entered as Exhibits 16 and 17 a joint Agnico Eagle and GN submission on suggested terms and conditions for the Project Certificate for the NIRB's consideration. In some cases it appears to the Board that specific mitigation measures that had been recommended within the GN's Final Written Submission were subsequently accepted by the Proponent "in principle". In some case, it appears that the parties have drafted the terms and conditions that are the subject of agreement in principle to be considerably more general than the wording originally proposed in the GN's Final Written Submissions, with the caveat that further refinement would be obtained in working groups outside of the NIRB's Project Certificate. For example, item 9 within GN's Final Written Submission addresses the GN's concerns regarding improved access for harvesting caribou and provides six very specific mitigation measures over and above what the Proponent proposed through its FEIS. However, the term and condition recommended by the GN is much less prescriptive and specific: *"The Proponent shall support the development of adequate monitoring and mitigation measures relating to improved access for harvesting caribou in conjunction with the GN and other relevant parties"*. Following discussion with Agnico Eagle, the recommended term and condition was further developed and presented jointly within Exhibit 17 as the following:

In consultation with the Government of Nunavut and other relevant parties, the Proponent shall develop adequate monitoring and mitigation measures relating to the harvesting of caribou and improved harvesting access granted by the all-weather access road. These measures shall include, but not necessarily be limited to, a Road Access Management agreement between the Proponent, [the Kivalliq Inuit Association and the Kangiqliniq Hunters' and Trappers' Organization] to be completed prior to phase II of road construction.

While the Board appreciates and encourages the collaborative approach taken in developing mitigation measures that are acceptable to regulators and felt to be achievable by the Proponent, in some instances the Board is concerned that the recommended mitigation is not sufficiently specific to satisfy

²⁰⁹ D. Walker, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 105 lines 9-26 through p. 107 lines 1-13 and L. Connell, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 841 lines 23-26 and p. 842 lines 1-5.

the Board that the potential impacts to the environment will be adequately addressed and that the Proponent's compliance with the term and condition can be assessed. The Board has concerns that deferring the development of details regarding mitigation measures to some future time after the issuance of a Project Certificate does not provide the required clarity and direct guidance required by all parties as the Project proceeds through subsequent regulatory approval processes. This concern is particularly acute given concerns discussed by the Board and parties in this report regarding the need to ensure ongoing capacity amongst regulators and responsible authorities as the Project moves forward into development. The Board also recognizes that even if a proposed term and condition is found to be acceptable to the Proponent and one or more intervenors, the Board must take a broader view of the recommended terms and conditions than would be typical for any one intervenor as the NIRB must consider the terms and conditions in the context of: the Board's conclusions with respect to the assessment; all other recommended terms and conditions; the overall development of the Project; and on-going monitoring obligations of the Board. On this basis, and recognizing the advice and evidence of parties, the Board has, for some terms and conditions, chosen not to adopt the wording suggested by parties. In such cases, the Board has used its discretion to develop recommended terms and conditions which retain sufficient flexibility for the desired collaborative approach to adaptive management while providing the degree of specificity required to satisfy the Board's mandate for ensuring that the integrity of the ecosystem is protected.

The Proponent highlighted its plans to undertake a harvest study in collaboration with the Kivalliq Inuit Association, the GN, and Hunters and Trappers Organizations (HTOs). The GN further endorsed methodology which would require more regular meetings with hunters to validate harvest information with the objective improving overall study design, recommending that details of this study be worked out within six months of the issuance of a Project Certificate, in collaboration with the GN and other affected parties. While the NIRB agrees with the spirit and intention of this recommendation, the Board remains concerned for the capacity of the local HTOs as noted by Nunavut Tunngavik Inc. and the Kangiqliniq HTO in particular during the Final Hearing. The HTOs would be critical to the success of any such studies to be undertaken, and as such will require sufficient resources and support to ensure they can contribute to the extent required.

4.10.4 Conclusions and Recommendations of the Board

The Board, in considering those views of the Proponent and parties as outlined above, and throughout the assessment of the Project, is providing the following recommendations specific to terrestrial wildlife and wildlife habitat:

1. The Proponent shall continue to develop and implement Project-specific monitoring for the terrestrial environment through its Terrestrial Environment Management and Monitoring Plan (TEMMP), and will demonstrate appropriate refinements to design, incorporation of analytical methods and elaboration of methodologies. The TEMMP shall contain clear thresholds to allow for the assessment of long-term trends and cumulative effects where project interactions are identified. Coordination and cooperation will be required where data collection, analysis and interpretation, or responsibility for mitigation and management requires the efforts of multiple parties (e.g., government, Kivalliq Inuit Association, communities).
2. In consultation with the Government of Nunavut (GN) and other relevant parties, the Proponent shall further develop its Terrestrial Environment Management and Monitoring Plan (TEMMP) to include increased caribou monitoring across the regional study area and additional details on

the scope and design of monitoring programs. The Proponent shall also demonstrate consideration for contributing to existing and planned regional monitoring initiatives associated with terrestrial wildlife and wildlife habitat as appropriate. Monitoring should be adequate to test impact predictions, monitor impact thresholds and trends over time, and to support implementation of mitigation measures as proposed in the Final Environmental Impact Statement.

3. The Proponent shall demonstrate consideration for cooperating with existing and planned regional and/or community-based monitoring initiatives associated with terrestrial wildlife and wildlife habitat that produce information pertinent to mitigating project-induced impacts. The Proponent shall give special consideration for supporting regional studies of population health and harvest programs for Qamanirjuaq caribou which help address areas of uncertainty for Project impact predictions.
4. The Proponent shall update its Terrestrial Environment Management and Monitoring Plan (TEMMP) for the Project to include a detailed harvest study prepared in consultation with the Government of Nunavut (GN) and other affected parties. The design of the harvest study should demonstrate consideration for the following:
 - a. hiring of a dedicated local survey coordinator through local Hunters and Trappers Organizations (HTOs) and provision of adequate resources for the HTOs to run the program;
 - b. the potential effects on caribou populations and on caribou behaviour resulting from increased human access caused by the all-weather access road and associated roads and trails; and,
 - c. increasing local knowledge of the project development areas, including establishing baseline harvesting levels prior to unrestricted public access on the all-weather access road.
5. The Proponent shall share information with the Government of Nunavut (GN) relating to the migration of caribou and include the GN as a party respecting caribou monitoring and movement through Project development areas, including the all-weather access road and associated roads and trails.
6. In consultation with the Government of Nunavut, the Kivalliq Inuit Association, the Kivalliq Wildlife Board and local Hunters and Trappers Organizations, the Proponent shall develop appropriate monitoring and mitigation measures relating to the harvesting of caribou and improved harvesting access granted by the all-weather access road. These measures shall be included within a Road Access Management Agreement that must be in place prior to construction of phase 2 of the all-weather access road. The Road Management Agreement shall include the following specific measures:
 - During periods when large aggregations of caribou (greater than 50 individuals) are detected within 1 km of the all-weather access road (AWAR), the road will be closed to public access via car and truck by means of a barrier at the southern gate. Public access using all-terrain vehicles (ATVs) will be allowed.
 - During periods when large aggregations of caribou (greater than 50 individuals) are observed within 1 km of the AWAR, the road will be closed to public access via barriers at bridges on the AWAR to prevent all vehicle access, including ATVs. This will allow

ATVs to enter areas previously accessible along existing trails while not facilitating access via bridges constructed specifically for the Project.

- Following consultation with the Nunavut Wildlife Management Board, as required under the *Nunavut Wildlife Act*, it is recommended that a no-shooting zone (1 km wide) on either side of the road should be established as a condition of public access to the AWAR and compliance with this Agnico Eagle policy should be monitored and reported by the Proponent.
 - Dedicated 'road monitors' should patrol the road to ensure compliance with the provisions of the Road Management Plan (SD 2-9) relating to public safety and wildlife. Monitoring should be increased during periods of road closure when large aggregations of caribou are present.
 - All incidents of hunting involving shooting along or across the AWAR should be reported by the Proponent to the GN.
 - During periods when large aggregations of caribou are detected near the Project, harvest monitoring intensity should be increased to ensure that levels of caribou harvesting are properly documented.
7. The Proponent is encouraged to consult with the Nunavut Research Institute (NRI) on the research permitting process as it relates to the *Nunavut Scientists Act*. The Proponent is encouraged to share monitoring and research study design with the NRI four (4) months prior to the anticipated commencement of research activities to facilitate licensing review
 8. The Proponent shall develop a strategy for the recovery of terrestrial wildlife habitat in a progressive manner that is consistent with the *Nunavut Wildlife Act*.
 9. The Proponent shall not conduct routine helicopter flights over, or land in, Iqalugaaruup Nunanga Territorial Park. The Proponent will communicate this commitment to all helicopter companies contracted by it to undertake work at the Meliadine Project site prior to the start of such contracted work. Emergency flights, specifically medical evacuation flights and/or search and rescue overflights are excepted from adherence to this requirement.
 10. The Proponent shall undertake periodic surveys and a habitat assessment for muskoxen in the regional study area by partnering with, or complementing, the existing regional muskox monitoring programs.
 11. Prior to construction of Project infrastructure and Phase 2 of the all-weather access road, the Proponent shall conduct a survey that is sufficient to locate any dens of foxes, bears or wolverines that could be damaged or destroyed during construction or operation of the Project.
 12. The Proponent shall ensure that road safety barriers or berms associated with Project infrastructure, all-weather access road and associated roads/trails are constructed to allow for the safe passage of caribou and other terrestrial wildlife while achieving the objective of separating public road use with Project-related mine traffic.
 13. In consultation with the Government of Nunavut (GN) and other affected parties, the Proponent shall set thresholds for direct mortality of wolf, grizzly bear, polar bear, wolverine, and fox to ensure monitoring and mitigation for the Project is responsive to undesirable rates of mortality. The Proponent shall reach an agreement with the appropriate Designated Inuit Organization regarding compensation or any direct mortality of wildlife resulting from the Project.

14. The Proponent shall report annually to the NIRB regarding its terrestrial environment monitoring efforts, with inclusion of the following information:
 - a. Description of all updates to terrestrial ecosystem baseline data;
 - b. A description of the involvement of Inuit in its monitoring programs;
 - c. A detailed presentation and analysis of the distribution relative to Project infrastructure and activities for caribou and other terrestrial mammals observed during surveys and incidental sightings;
 - d. Results of the annual monitoring program, including field methodologies and statistical approaches used to support conclusions drawn; and
 - e. An assessment and presentation of annual environmental conditions including timing of snowmelt, green-up, as well as standard weather summaries.
15. Within its annual report to the NIRB, the Proponent shall incorporate a review section which includes:
 - a. An examination for trends in the measured natural variability of Valued Ecosystem Components in the region relative to the baseline reporting;
 - b. A detailed analysis of wildlife responses to operations with emphasis on wildlife behaviour, mortalities and displacements (if any), and responses to operations of the all-weather access road and associated access roads/trails;
 - c. A demonstration and description of how the monitoring results, including the all-weather access road and associated access roads/trails contribute to cumulative effects of the project; and
 - d. Any proposed changes to the monitoring survey methodologies, statistical approaches or proposed adaptive management stemming from the results of the monitoring program.

4.11 Birds and Bird Habitat

4.11.1 Views of the Proponent

Section 6.7, Volume 6 of the Final Environmental Impact Statement (FEIS) contains Agnico Eagle's baseline information and assessment of effects of the Project on birds and bird habitat. The assessment also includes potential changes from the Project like air quality, noise, water quantity and quality, terrain and soils and vegetation. The Proponent included within Volume 8 of its FEIS, its assessment of potential Project effects to marine birds.

The same local study area (LSA) and regional study area (RSA) were used for birds and bird habitat as were defined for soils and vegetation. The LSA consisted of a 500 metre (m) buffer surrounding the mine footprint, and 1000 m surrounding the all-weather access road (AWAR), the Discovery area road, and the Rankin Inlet bypass road. The RSA was selected to measure the existing baseline conditions at a scale large enough to capture the maximum predicted spatial extent of the combined direct and indirect effects from the Project on permafrost, soils, vegetation and wildlife.

Agnico Eagle identified three valued ecosystemic components (VECs) associated with birds and bird habitat: upland birds (including migratory birds), waterbirds and raptors. Seabirds were also considered a VEC, as noted above, these were assessed in Volume 8 (Marine Environment). The Proponent developed a list of pathways for the Project and identified 15 no linkage pathways that were eliminated from additional assessment through timing of dewatering, erosion protection measures and installation of appropriately designed drainage structures. Ten minor linkage pathways were also removed from further assessment through implementation of dust measures and regularly maintaining vehicles. Agnico Eagle indicated that the pathways identified as “minor linkage” or “no linkage” did not require further analysis because there would be no impact to baseline conditions if the specified environmental design features were implemented or the recommended mitigation measures were put into place. Consequently, only the three primary pathways listed below were identified for further analysis and Agnico Eagle analyzed these pathways with reference to effects on upland birds, waterbirds and raptors.

- Direct loss and fragmentation of bird habitat from the Project footprint, including the mine infrastructure, AWAR and Rankin Inlet infrastructure;
- Permanent changes in bird habitat following closure of the mine site and supporting infrastructure; and
- Sensory disturbance can change the amount of different quality habitats, and alter bird movement and behaviour (distribution).
- After assessing these primary pathways, Agnico Eagle predicted that the Project should not have a significant adverse impact on the continued opportunity for traditional and non-traditional use of birds in the region.

Marine Birds

Three primary pathways as noted in Volume 8 of the FEIS were carried through the assessment as related to marine birds, including:

- Sensory disturbance from structural lighting may result in changes in health and mortality risk in marine birds due to collisions with infrastructure;
- Sensory disturbance from structural lighting and in-air noise from nearshore human activities may alter marine bird behavior;
- Accidental spills from vessel activities and fuel operations can have direct adverse effects on marine water quality and associated indirect effects on marine wildlife (including birds).

Agnico Eagle noted within its assessment that the potential impacts of lighting to marine bird health and mortality risk were considered to be low in magnitude, site-specific (local), medium-term (present throughout the life of the Project), isolated in frequency, reversible, with an unlikely probability of occurrence, and to be non-significant at the population level. With respect to sensory disturbances from in-air noise from Project-related vessels and other nearshore activities, Agnico Eagle noted that marine birds may temporarily alter foraging and loafing patterns and distribution to avoid noise sources but that no substantial behavioural or physiological effects were anticipated areas that are already used and that residual environmental effects are expected to be low in magnitude, site-specific (local), medium-term (present throughout the life of the Project), and periodic in frequency. Agnico Eagle also indicated within Volume 8 of its FEIS that marine birds would likely be the most adversely affected

wildlife receptor from a worst-case diesel fuel spill event in the marine environment. It noted that the magnitude of a worst-case diesel fuel spill on marine bird health and mortality and bird habitat was considered to be high, since the spill may result in mortalities of SARA-listed marine bird species, and could impact large populations of migratory birds. This effect on birds was also considered regional to beyond regional in geographic extent (extending beyond the RSA), long-term in duration, isolated in frequency, and reversible through natural recruitment. It also found that no long-term effects on marine bird populations are anticipated, indicating this as a non-significant effect.

Monitoring and Follow-Up

Agnico Eagle proposed monitoring and follow-up associated with bird and bird habitat in the Terrestrial Environmental Management and Monitoring Plan (TEMMP) Supporting Document (SD) 6-4. The principal goal of the TEMMP is to provide information required for the Project and adaptively manage the Project to protect the environment including birds and bird habitat.²¹⁰ Agnico Eagle has also committed to cooperating with the Arctic Raptor Project to identify and monitor active raptor nests.

With respect to marine birds, Agnico Eagle noted that any incidents of bird mortalities associated with lighting infrastructure, construction activities, and Project vessel operations would be recorded, and that, in the unlikely event of a worst-case diesel fuel spill, follow-up monitoring for certain marine species may be proposed, and that the scope of such follow-up monitoring would be determined at the time of the event.

4.11.2 Views and Concerns of Interested Parties

Infrastructure concerns

The Kivalliq Inuit Association (KIA) Final Written Submission identified concerns about baseline information on raptors nesting within 10 kilometres (km) of the Project. The KIA indicated that the information provided by Agnico Eagle was inadequate to test assumptions about effects to raptors to assess predictions made during monitoring of the Project in the Draft Environmental Impact Statement (DEIS). KIA noted that although the information available in the Final Environmental Impact Statement (FEIS) was improved; Agnico Eagle did not provide mitigation strategies on how all migratory birds would be prevented from nesting on the Project, specifically the infrastructure and man-made structures. Environment Canada (EC) also commented on birds and infrastructure and man-made structures in its Final Written Submission. EC noted that if communications towers were installed on-site, these towers could present a risk of collision for birds (upland, waterfowl and raptor) particularly during migration periods. EC recommended that Agnico Eagle consult with EC regarding best management practices to minimize bird collisions.

Marine Considerations

Though Agnico Eagle found there to be no linkage in its pathway analysis for vessel bird strikes, the potential for marine bird collisions with Project vessels along the shipping route prompted EC to

²¹⁰ FEIS, Volume 6, p. 377.

recommend in its final written submission that vessels be checked for bird strikes after a suspected event. EC further recommended that wildlife monitoring reports include information on any bird collisions with vessels, specifically the date, time, spatial coordinates, wind speed and direction, visibility, precipitation, sea state, number of birds found dead or injured on the deck and on the water, and whether search lights or vessel lighting were active at the time; where collisions occur more than once during the same period, at the same location or under similar meteorological conditions, adaptive management should be implemented to attempt to reduce the likelihood of collisions occurring in the future; and Agnico Eagle consult with EC to determine suitable adaptive management and mitigation measures as well as consider the suitability of mitigation measures outlined by Merkel and Johansen.^{211,212} Agnico Eagle agreed in principle.

EC also recommended that monitoring of spills into marine waters should include reporting of the presence of oily sheens on the water near vessels at the port site and that mitigation measures be implemented to reduce these discharges.²¹³ In addition, specific to the Spill Contingency Plan (SD 2-16), EC recommended that Agnico Eagle identify and incorporate steps that would be taken to protect wildlife (including marine birds) in the event of a spill. Agnico Eagle stated that it planned to further refine its respective management plans and that it would work with Environment Canada to ensure completeness.

EC also recommended that species listed on other Species at Risk Act (SARA) Schedules or under consideration for listing on SARA, including those designated as at risk by COSEWIC, be considered in the assessment in a similar manner, including the Harlequin Duck. The Spill Contingency Plan should include mitigation measures to avoid adverse effects to species at risk and migratory birds (including Harlequin Ducks) from spills as well as details regarding monitoring of effects of a spill on species at risk and migratory birds.²¹⁴ Agnico Eagle considered that their general mitigation measures are also applicable to Harlequin Ducks. However, should the Project be given approval to proceed to permitting, future revisions of the Oil Pollution Emergency Plan (SD 8-2) would include mitigation measures to avoid adverse effects to species at risk and migratory birds (including Harlequin Ducks) from spills, as well as details regarding monitoring of effects of a spill on species at risk and migratory birds.²¹⁵

EC had several recommendations in its final written submission related to Agnico Eagle's assessment of the Project's potential effects on marine birds, and specifically regarding cumulative impacts to marine birds from vessels along the shipping route. It recommended that Agnico Eagle include the Mary River Project when assessing cumulative effects on marine birds in Hudson Strait, including within its annual reporting.²¹⁶ Agnico Eagle agreed in principle. EC also recommended that data presented within annual reporting should include observations of marine birds, vessel-marine bird interactions, and observations of large congregations of birds, and that Agnico Eagle/shipping contractors use well-established methodology for recording marine bird data to ensure it is comparable to existing baseline data and can

²¹¹ Merkel, F.R., and Johansen, K.L. 2011. Light-induced bird strikes on vessels in Southwest Greenland. *Marine Pollution Bulletin* 62: 2330-2336.

²¹² Environment Canada, Final Written Submission, July 21, 2014.

²¹³ Environment Canada Final Written Submission, July 21, 2014.

²¹⁴ Environment Canada, Final Written Submission, July 21, 2014.

²¹⁵ Agnico Eagle Response to Final Written Submissions, August 7, 2014, p.130.

²¹⁶ Environment Canada, Final Written Submission, July 21, 2014.

be integrated with regional databases on seabird distribution in support of cumulative effects monitoring.²¹⁷ Agnico Eagle also agreed in principle with this recommendation.

During the Final Hearing, EC questioned Agnico Eagle's intent to have marine vessels stay at least 200 metres away from nesting shore birds, when previous EC recommendations have listed setback distances for migratory birds, including nesting birds, and some of those distances are a little bit more than 200 metres.²¹⁸ Agnico Eagle clarified that the 200 metres would be a minimum setback distance and that the setback would vary depending on the species;²¹⁹ it would be up to the shipper to tell Agnico Eagle how they would achieve this commitment.

Disturbance to Migratory Birds

EC also noted in its Final Written Submission that Agnico Eagle stated that avoidance should be the primary mitigation measure and that Agnico Eagle would try to limit vegetation removal to only non-nesting periods. In the event that vegetation clearing could not be scheduled outside of the breeding season, nest searches would be completed within four days of activities. If nests were identified, appropriate buffer zones would be in place until the young had fledged. EC noted the commitments and recommended that scientifically sound protocols should be used including non-intrusive search methods and further suggested that Agnico Eagle include information on the success of these mitigation measures be in the annual wildlife monitoring reports. The Government of Nunavut (GN) also commented on nesting birds in its Final Written Submission, specifically noting that raptor nests are not to be destroyed or disturbed without a permit issued by the Department of Environment.

EC also specifically commented about how Agnico Eagle proposed to address sensory disturbances within the air traffic management plan. In that plan, Agnico Eagle had included a number of measures to mitigate sensory disturbance from aircraft on wildlife and has indicated that the on-site "Environment Department" would be expected to inform pilots of raptor nests and waterfowl and shorebird staging areas so that these areas could be avoided.²²⁰ While recognizing that any measures designed to minimize aircraft disturbance to staging, nesting and moulting migratory bird may be modified at the discretion of the pilots of the aircraft to reflect safety issues, EC provided additional specific recommendations regarding appropriate measures that should be included in the air traffic management plan.

EC also commented on Agnico Eagle's plan to dewater waterbodies and the mitigation and overall monitoring of waterfowl and waterbirds. EC noted that waterfowl and waterbirds can make extensive use of on-site water management ponds and monitoring data from other operating mines in the Northwest Territories supports this. On this basis, EC recommended that mitigation measures be implemented to prevent waterfowl and waterbirds from using these areas and that monitoring be used to assess if deterrence is effective or if further mitigation would be required. EC also noted that Agnico

²¹⁷ Environment Canada, Final Written Submission, July 21, 2014.

²¹⁸ M. Mohammed, Environment Canada, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 271, lines 9-19.

²¹⁹ D. Walker, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 271, lines 22-25.

²²⁰ Environment Canada, Final Written Submission, July 21, 2014.

Eagle stated a number of small lakes and ponds within the Project area would be dewatered. Along with the dewatering, Agnico Eagle stated that the Project would include changes to local flows, drainage patterns and drainage areas and proposed a number of mitigation measures for fish. EC reminded Agnico Eagle that waterbird nesting and brood-rearing occurs on some of the waterbodies identified for dewatering and that loons have been killed after becoming tangled in gill nets during fish salvage operations. EC recommended that mitigation measures be discussed in the Terrestrial Environmental Management and Monitoring Plan (SD 6-4) and be included in the fish salvage plan. EC was encouraged to see that Agnico Eagle was adopting the Program for Regional and International Shorebird Monitoring (PRISM) and had agreed to data share. Finally, EC indicated that Agnico Eagle should ensure that shorebirds are correctly identified in forthcoming reports and management plans.

Chesterfield Inlet community representative Elie Kimmaliardjuk commented at the Final Hearing that:

*Right now, in August, during all the migration of the migratory birds are going to be flying, and they're going to be landing -- they're going to be eating a lot of berries, and even just smaller birds as well. We're going to be seeing a lot of migratory birds in that area. Yeah. Do a report, I wonder -- I wonder when you're going to be using different kinds of chemicals to treat the road?*²²¹

In response, Agnico Eagle noted that

About the chemical on the road, we know that it can be a problem, it can contaminate the berries, and it's why we try to use waters as we can, but at some place, what happens is, when it's a sunny day like today -- and we are inside. When we have a sunny day and -- the water is not effective because after one hours (sic), it's just left, so we need to use some chemical. We try to use some chemical -- I will try to go slow down, I think. We will try to use some chemical that will be environmentally friendly, but the one that we use that are very effective is calcium chloride. It's salt. So we will try to use salt but try to be careful and not to put too much that it can affect wildlife, can affect the fish, so we have to be careful of how we apply it and how much we apply it. You talk also about some contaminants, some chemical that we will use at the site, so one of them is cyanide. So we will use some cyanide, and this will be to -- we have the rock that contain gold, and the cyanide will be able to remove the gold from the rock, and cyanide is toxic. And it's for that that the cyanide is managed really, really carefully. So we have to -- we have to comply with the international cyanide code, and we have to make sure that this cyanide is always safe before it's going into the mill, so when it's going into the mill, after that, we will -- we will use it for the gold, but before it go out of the mill, we will destroy the cyanide, and we will make sure that, when we go into the tailings and pourment (phonetic), that the cyanide just here where the tailings of fine material -- we can add a little bit of cyanide, but the cyanide have to be below 50 ppm, so that -- and we make sure that we do not have any bird that will die if they go on -- on the lake -- not the lake because it's not a lake anymore, on the water, on the tailings.

²²¹ E. Kimmaliardjuk, Chesterfield Inlet, NIRB Final Hearing File No. 11MN034 Transcript, August 25 , 2014, p. 681 lines 19-22.

Also what we use in Meadowbank that we will use also in Meliadine is that we have some cannon. We use some cannon around the tailing ponds to afraid the birds, to make sure it's not a problem. They won't die, but we don't want to have birds on our tailings, so we have this cannon to make sure that the bird will be afraid, and they will not stay on the tailings.²²²

4.11.3 Views of the Board

The Board is supportive of the recommendations put forward by parties, and agrees that reasonable measures to prevent impacts, such as avoidance of nesting sites and ongoing monitoring, should be further developed within Agnico Eagle's Environmental Protection Plan and that Agnico Eagle should also incorporate the specific commitments made in the FEIS and at the Final Hearing into the Terrestrial Management and Monitoring Plan (TEMMP). The Project area is an important nesting area for local waterbird/waterfowl populations, and it will be important for Agnico Eagle to investigate and use best practices and strategies for discouraging all bird populations from using the tailings impoundment area and other Project facilities.

...has Environment Canada considered the potential impacts to waterfowl, which -- okay. I understand migratory birds come back every year to a nesting area. If a lake is dewatered and some lakes have small islands where birds nest or -- and then there's going to be this new mountain formed. Is there going to be an effect, and how can -- how will this be addressed?²²³

And then redirected questioning to the Proponent

Just to expand, I thought it might be worth directing the question back to the proponent to ask. We spent some time earlier in the hearing talking about offsetting -- offsetting for ponds and lakes that you're taking out of production for fish, but I think the Chair's question is very valid. Can Agnico Eagle perhaps describe the effects assessment it's had for the effects of dewatering lakes on migratory birds and, as we heard, the offsetting options if any are considered for migratory birds.²²⁴

Agnico Eagle responded

Under the -- with -- I'll start with the fish to set the scene for my answer. Obviously with fish, they have nowhere to go. They can't move around; they can't go anywhere else, and so the law of Canada requires that, if you're going to disrupt fish, you have to create this offset plan. The federal law that protects migratory birds states that you can't disturb a bird once it's nesting. That applies to us; it applies to everybody. That's the law of Canada, but there is no offsetting or compensation or offset plan required for migratory birds, and the major

²²² S. Robert, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 685 line 26, p. 686-687 lines 1-26 and 1-16.

²²³ E. Copland, Nunavut Impact Review Board, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 950 lines 15-21.

²²⁴ R. Barry, Nunavut Impact Review Board, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 951, lines 14-24.

*reason for that is the birds -- yes, they will see the loss of that lake where they may have gone before, but there are much -- much in the way of other small lakes in the vicinity that are still there for them to go to. And so the current law in Canada does not require us to offer or look at offsetting plans for migratory birds that come back and find that lake is gone. And from an environmental perspective, we did look at this within the FEIS, and in this case, we have a very large percentage of the ground cover here has lake habitat. So the birds have other alternatives -- large amounts of other alternatives to go to.*²²⁵

Habitat fragmentation for song birds/waterfowl and mammals can be a huge challenge especially with higher traffic on the all-weather access road (AWAR), the development in future of the AWAR into a 21 kilometre double lane road with berm between the two roads and movement of large trucks. For all bird populations it is vital that the environment is respected.

Unforeseen accidents occur, but if appropriate planning has been completed and implementation of measures happens quickly, damage can be reduced. In Inuit Qaujimajatuqangit, respect of the land is an important concept and planning appropriately shows that respect. The Board encourages Agnico Eagle to use a precautionary approach when developing its mitigation for birds that reflects local knowledge and incorporates what Agnico Eagle has learned from the Meadowbank project and what the NIRB and intervenors such as Environment Canada are learning from the Mary River project.

4.11.4 Conclusions and Recommendations of the Board

Awareness

1. The Proponent shall ensure all employees working at Project sites receive awareness training regarding the importance of avoiding known nests and nesting areas and avoiding large concentrations of foraging and moulting birds.

Species at Risk

2. If Species at Risk or their nests and eggs are encountered during Project activities or monitoring programs, the primary mitigation measure must be avoidance. The Proponent shall establish clear zones of avoidance based on the species-specific nest setback distances outlined in the Terrestrial Environment Management and Monitoring Plan.
3. The Proponent shall ensure that the mitigation and monitoring strategies developed for Species at Risk are updated as necessary to maintain consistency with any applicable status reports, recovery strategies, action plans and management plans that may become available during the duration of the Project.

Construction/Clearing Activities

4. Prior to bird breeding season, the Proponent shall either conduct clearing activities or identify and install nesting deterrents (e.g., flagging) to discourage birds from nesting in areas likely to be disturbed by construction/clearing activities. If clearing is to take place during the nesting season, a nest survey should take place to identify nests and any identified nests must remain

²²⁵ L. Connell, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 952, lines 1-23.

undisturbed until the young have fledged or left the nest. Any nests identified shall be included as part of the annual reporting for the Terrestrial Environmental Mitigation and Monitoring Plan (TEMMP).

5. The Proponent shall protect any nests found (or indicated nests) with a buffer zone determined by the setback distances outlined in its Terrestrial Environment Mitigation and Monitoring Plan (TEMMP), until the young have fledged. If it is determined that observance of these setbacks is not feasible, the Proponent will develop nest-specific guidelines and procedures to ensure bird's nests and their young are protected.

Marine Considerations

6. Any incidents of bird mortalities associated with lighting infrastructure, construction activities, and Project vessel operations are to be recorded and reported to Environment Canada (Canadian Wildlife Services). The Proponent shall work with the Canadian Wildlife Services to determine appropriate recording and reporting format and timing.
7. The Proponent shall develop a framework for monitoring of marine bird species and their habitat in the event of a major marine fuel spill. Specific details regarding the scope of follow-up monitoring may be further refined if and when such an event were to occur.
8. The Proponent shall maintain reduced speeds to sufficiently ensure that wakes are equal or less than the mean natural seasonal wave height to prevent wake action from negatively impacting migratory bird nests in low lying shoreline habitat.
9. The Proponent shall ensure all Project vessels are checked for bird strikes after a suspected event and include details of its protocol to do so, as well as results, within its updated Terrestrial Environment Mitigation and Monitoring Plan.
10. The Proponent shall submit an updated Oil Pollution Prevention Plan including measures to avoid adverse effects to species at risk and migratory birds from spills, as well as details regarding monitoring of effects of a spill on species at risk and migratory birds.
11. The Proponent shall demonstrate consideration for the potential cumulative effects of other development projects and shipping activities (including community resupply) when assessing their cumulative effects on marine birds in the Hudson Strait, in its annual report.

Flight Altitude Requirements

12. Subject to safety requirements, the Proponent shall require all Project related aircraft to maintain a cruising altitude of at least:
 - a. 650 m during point to point travel when in areas likely to have migratory birds
 - b. 1100 m vertical and 1500 m horizontal distance from observed concentrations of migratory birds
 - c. 1100 m over the area identified as a key site for moulting snow geese during the moulting period (July-August), and if maintaining this altitude is not possible, maintain a lateral distance of at least at least 1500 m from the boundary of the Project.
13. The Proponent shall ensure that pilots are informed of minimum cruising altitude guidelines and that a daily log or record of flight paths and cruising altitudes of aircraft within all Project areas is maintained and made available for regulatory authorities such as Transport Canada to monitor adherence and to follow up on complaints.

Monitoring

14. The Proponent shall develop detailed and robust mitigation and monitoring plans for migratory birds, reflecting input from relevant agencies, the Kivalliq Inuit Association and communities.
15. The Proponent shall continue to develop and update relevant monitoring and management plans for migratory birds under the Proponent's Environmental Protection Plan and Terrestrial Environment Mitigation and Monitoring Plan (TEMMP) prior to construction. The key indicators for follow up monitoring under this plan will include upland birds (including migratory birds), waterbirds, raptors, and seabirds including migration and wintering.
16. The Proponent's monitoring program shall assess and report, on annual basis, the extent of terrestrial habitat loss due to the Project to verify impact predictions and provide updated estimates of the total Project footprint.
17. The Proponent's Terrestrial Management and Monitoring Plan (TEMMP) shall include mitigation measures implemented to prevent the use of water attenuation ponds by waterfowl and waterbirds and monitoring that assesses whether the mitigation measures are working or revised or further deterrent measures are required.
18. The Proponent shall implement mitigation measures and monitoring programs to limit the attraction of predators and scavengers to Project facilities in the TEMMP and other plans such as the Landfill and Waste management plan as appropriate.

4.12 Marine Environment

4.12.1 Views and Concerns of the Proponent

Volume 8 of the Final Environmental Impact Assessment (FEIS) considered the marine environment, presenting the Proponent's assessment of potential impacts of the Project on marine ecology, marine water and sediment quality, and marine biota including fish, Species at Risk (under *Species at Risk Act* [SARA]), and marine habitat. Section 8.2 focused on potential impacts to the marine physical environment, with water quality featured as a valued ecosystem component (VEC). For this assessment, Agnico Eagle concluded that "Potential Project-related effects on marine sediment quality were considered to be indirect as a result of direct effects to marine water quality, and, therefore, were assumed to be captured within the assessment of marine water quality."²²⁶

Of the seven (7) pathways that Agnico Eagle identified through its analyses for the assessment of marine water quality, only the following primary linkage was identified:

- Accidental spills from vessel activities and fuel transfer operations can have direct adverse effects on marine water quality and associated indirect effects on marine wildlife.

The other six (6) identified pathways were considered to have minor linkages and were not carried through the rest of the analysis, as the potential for adverse impacts was considered to be mitigated

²²⁶ FEIS, Volume 8, p. 5.

through implementation of environmental design features and mitigation measures such as adherence to plans, speed limits and placement of Project infrastructure to avoid sensitive habitats.

Agnico Eagle concluded that no environmental monitoring was required for marine water quality.²²⁷

4.12.2 Views and Concerns of Interested Parties

During the Final Hearing, Nunavut Tunngavik Incorporated (NTI) requested clarification on where ballast water would be released and the volume/amount, as Agnico Eagle's hearing presentation stated ballast water would only be released at designated areas along the shipping route and when no marine wildlife is present.²²⁸ Agnico Eagle replied by explaining that Transport Canada designates areas where ballast water can be discharged and changed for ships coming in the Hudson Strait, and it would be off the coast of Labrador.²²⁹ Agnico Eagle acknowledged that the volume of ballast water was an issue with Mary River, but the situation is different for Meliadine as Project vessels would be coming north in a loaded condition, so it's very unlikely that they will be bringing ballast water into Nunavut.²³⁰ Ballast water is generally required to stabilize large, empty or lightly-loaded vessels and is released as ships are loaded with their heavy cargo, as would be the case with the ore carriers travelling into Nunavut to collect the iron ore from the Mary River Project.

During the Final Hearing, the Kivalliq Inuit Association (KIA) questioned how Agnico Eagle planned to ensure mitigation by avoiding marine mammals when discharging bilge water, grey water and sewage.²³¹ Agnico replied with a commitment applicable to the shipping contracts for the Project, where it would be up to the operator of the vessel to abide by those conditions on Agnico Eagle's behalf. The KIA further questioned whether Agnico Eagle would include time stamped vessel locations as part of the project monitoring, as Northern Canada Vessel Traffic Services Zone (NORDREG) is now a requirement for ships to supply information.²³²

The KIA also questioned the fuel spill modelling exercise where ocean currents were set to zero and cited a lack of site-specific data, noting further that this exercise cannot provide guidance for spill response if the model is not realistic. Agnico Eagle suggested further discussion with KIA, but noted the use of only diesel fuel, which is of a low viscosity and will weather rapidly when spilled in a marine environment.²³³ The KIA acknowledged Agnico Eagle's offer to work on updating the marine baseline,

²²⁷ FEIS, Volume 8, p. 8-24

²²⁸ D. Walker, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 244-245, lines 25-26 and 1-2.

²²⁹ J. Witteman, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 255, lines 12-19.

²³⁰ J. Witteman, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 256, lines 3-14.

²³¹ J. Higdon, Kivalliq Inuit Association, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 262, lines 9-19.

²³² J. Higdon, Kivalliq Inuit Association, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 263, lines 8-23.

²³³ D. Walker, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 266, lines 1-9.

recognizing this is a new issue raised; however, KIA disagreed with Agnico Eagle's position that the current baseline is sufficient.²³⁴

Finally, within their final written submission, NTI/KIA recommended that Agnico Eagle provide a detailed assessment of the environmental and economic trade-offs of using a deep-water port as opposed to the harbour facility presented in the FEIS. Options for avoiding the cumulative impacts of two substantial harbour/port developments in a small community should be presented. The submission also recommended that the NIRB consider whether it is reasonable to assess a deep water port proposal separate from the mine project given that development of a deep water port may hinge on whether the port will be used by mine traffic.²³⁵ Agnico Eagle replied that they would take this recommendation under consideration.

During the Final Hearing, Environment Canada (EC) questioned the potential impacts associated with the disposal of brine residuals to the marine environment and what Agnico Eagle's management plan would entail.²³⁶ Agnico Eagle responded, explaining that the handling of high total dissolved solids (TDS) in water is still being considered and evaluated. Further, should release of brine water to the marine environment be proposed as a path forward, it would likely require an amendment to the Project Certificate. Currently it is unknown how much saline groundwater may need to be discharged and thus the only solution may to treat and discharge the concentrated brine in the marine environment, however, alternatives will also be assessed.²³⁷

During the Final Hearing, Environment Canada noted the water licence for the Meliadine Project would not cover the marine environment, thus the *Fisheries Act* alone might be applicable with limits for discharges in the Metal Mining Effluent Regulations if it applied.²³⁸ These regulations would play particular importance with respect to the treatment and discharge of underground water from the Tiriganiaq underground mine.

EC also submitted several recommendations for the NIRB's consideration within its Final Written Submission. With respect to environmental sensitivity mapping, EC recommended that Agnico Eagle undertake a shoreline characterization and segmentation study within the Melvin Bay area, including Itivia Harbor and Panorama Island. This mapping would include the ship-to-ship fuel transfer area of operations, with environmental sensitivity mapping of biological and ecological resources within the intertidal areas of Melvin Bay. Agnico Eagle agreed in principle with EC's recommendations, noting however, it would require a better understanding of study limits.

Specific to spill modelling scenarios, EC recommended that Agnico Eagle develop other potential scenario descriptions that may better represent a worst case incident presenting potential impacts to

²³⁴ J. Hidgon, Kivalliq Inuit Association, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 268, lines 18-20.

²³⁵ Nunavut Tunngavik Inc. and Kivalliq Inuit Association, Final Written Submission, July 21, 2014.

²³⁶ A. Wilson, Environment Canada, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 269, lines 12-15.

²³⁷ D. Walker, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 270, lines 14-26.

²³⁸ A. Wilson, Environment Canada, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 445, lines 22-25.

receiving water bodies, which may better help to “identify potential risk areas” such as marine shorelines, rivers or waterway crossings.²³⁹ Within its August 7, 2014 response to final written submissions Agnico Eagle noted that its intention to further refine respective management plans should the Project be approved to proceed, and Agnico Eagle would be open to obtaining input/assistance from Environment Canada to address these issues.

For fuel transfer activities, EC recommended that Agnico Eagle undertake hydrologic trajectory modeling for potential spilled diesel product for the fuel transfer area of operations within Melvin Bay, the access passage area, and the area surrounding Panorama Island; and as a best practice, pre-deploy containment boom for all fuel transfers from the small tanker to the onshore transfer point at Itivia Harbor. Alternatively, that specific criterion was developed as a precautionary protective measure for the pre-deployment of containment boom for ship-to-shore fuel transfer activities.²⁴⁰ Within its response to final written submissions, Agnico Eagle indicated that it would take EC’s recommendations under advisement and will use this input in the further refinement of its Meliadine Project response plans, but in Agnico Eagle’s view the Meliadine Project Certificate (if issued) should not include conditions that specifically require pre-deployment of containment boom.²⁴¹

EC noted its concerns with FEIS subsection 8.3.4 (pathways analysis) and recommended that ship speed be reduced sufficiently to ensure that wakes are equal or less than the mean natural seasonal wave height to prevent wake action from negatively impacting migratory bird nests in low lying shoreline habitat.²⁴² Within its written response to final written submissions Agnico Eagle explained its view that the proposed reduced vessel speeds within Melvin Bay is an appropriate mitigation measure, noting that while it does not believe at this time that the more general measures recommended by EC are necessary, however, discussions will continue with Environment Canada.²⁴³ During its presentation at the final hearing EC noted that it was pleased that the proponent had included limits to vessel speeds in the Melvin Bay area and along the shipping route, noting it was satisfied that its concern for wake effects had been addressed.

Transport Canada (TC), in its Final Written Submission to the NIRB recommended Agnico Eagle recognize that they (or their contractors) must comply with the Cargo Fumigation and Tackle Regulations for lifting appliances; In its response to final written submissions, Agnico Eagle replied it would ensure this compliance is incorporated through its tendering process.²⁴⁴ TC also recommended Agnico Eagle plan for compliance with the *Transportation of Dangerous Goods Act, 1992* and associated regulations, which Agnico Eagle agreed to in principle.

During the Final Hearing, the Nunavut Impact Review Board (NIRB) staff questioned Agnico Eagle’s reference and understanding of the Mary River Project activities.²⁴⁵ In the FEIS Agnico Eagle stated “The Mary River Project was not considered to interact in a cumulative nature with the Meliadine Project due

²³⁹ Environment Canada, Final Written Submission July 21, 2014.

²⁴⁰ Environment Canada, Final Written Submission, July 21, 2014.

²⁴¹ Agnico Eagle Response to Final Written Submissions, August 7, 2014 p.125.

²⁴² Environment Canada, Final Written Submission, July 21, 2014.

²⁴³ Agnico Eagle Response to Final Written Submissions, August 7, 2014, p.129.

²⁴⁴ Agnico Eagle Response to Final Written Submissions, August 7, 2014 p.133.

²⁴⁵ R. Barry, Nunavut Impact Review Board, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 282-283, lines 15-26 and 1-8.

to the current development plans for the Mary River Project, which does not include shipping through the Hudson Strait”²⁴⁶. The NIRB questioned what assumptions Agnico Eagle included in their Project effects assessment for the Mary River Project, as it appeared that only the scope of the “Early Revenue Phase” for the Mary River Project was used for Agnico Eagle’s assessment rather than the full scope of approved project activities described in NIRB Project Certificate No. 005. Agnico Eagle agreed it had completed its cumulative effects assessment based on the Early Revenue Phase and further agreed to review its cumulative effects analysis to include the entire Mary River project. Agnico Eagle presented the cumulative effects of shipping in Exhibit No. 48 of the Final Hearing, which noted:

With the inclusion of the Mary River Project in the cumulative effects assessment with respect to shipping activities, a larger increase in cumulative shipping levels is anticipated to occur in Hudson Strait than previously reported in Volume 8 of the FEIS, particularly during the Meliadine operations phase. However, the result of the cumulative effects assessment for shipping activities did not change from that originally provided in Volume 8 of the FEIS, as impact ratings (e.g. magnitude, geographic extent), which were initially conservatively estimated, remain the same.²⁴⁷

4.12.3 Views of the Board

The Board has considered the information presented in the FEIS and the presentations made by interested parties and community members, and believes that the issues related to the marine environment will be critical for the Proponent to address adequately moving forward to ensure public support for the Project. While the shipping for the Project is restricted to annual resupply during the open water season only, and the Proponent is intending to use experienced Canadian shipping contractors and established shipping lanes, the amount of cargo and supplies to be delivered annually for the Project through Melvin Bay and Itivia will occur in an area frequented by community members is expected to continue to be of interest and possible concern to the public as the Project proceeds. The Board supports the recommendations provided by parties regarding the need for further baseline research, spill modelling, precautionary approaches with shipping, and monitoring programs.

The NIRB recognizes that the proposed spud barge may cause changes to the local marine environment at Itivia and Melvin Bay as a result of the Project. The increase in shipping to Rankin Inlet and the lightering activities associated with the Project have the potential to impact upon marine wildlife and marine wildlife habitat immediately and cumulatively, over the long term. The Board acknowledges that Fisheries and Oceans Canada is responsible for approving all alteration, disruption and destruction of marine habitat and for determining the appropriateness of compensation, and that the Proponent may be required to carry out and further consultation with local communities regarding these activities, which the Board supports. Still, the Board expects that Agnico Eagle will take a precautionary approach and minimize the footprint of its Project and the impacts of all associated activities, even where new construction and continuous operations will fundamentally alter existing landscapes.

²⁴⁶ FEIS, Volume 8, p. 105.

²⁴⁷ Exhibit 48, NIRB Final Hearing File No. 11MN034, August 27, 2014 filed by Agnico Eagle Mines Limited, “Updated Cumulative Effects Assessment to Include the Mary River Project”, p. 3-4.

4.12.4 Conclusions and Recommendations of the Board

The Board, in considering those views of the Proponent and parties as outlined above, and throughout the assessment of the Project, has provided the following recommendations:

General

1. The Proponent shall update all relevant plans including, but not limited to: the Shipping Management Plan, Wildlife Mitigation and Monitoring Plan, and Adaptive Management Plan, in order to address concerns and identify potential impacts of the Project and proposed mitigation measures designed to protect the integrity of the marine environment. The Shipping Management Plan shall also incorporate updates for all Project-related shipping.

Spill Prevention

2. The Proponent shall ensure that it maintains the necessary equipment and trained personnel to respond to all sizes of potential spills associated with the Project in a self-sufficient manner.
3. Prior to the shipping of Project supplies, the Proponent shall conduct fuel spill dispersion modeling that will, at a minimum, consider:
 - a. Modeling of oil spills in the following areas:
 - i. Pinch points, including: Hudson Strait, Melvin Bay area including Itivia Harbour and Panorama Island;
 - ii. Shallow water and shorelines; and,
 - iii. Areas that have been identified as having high flows and/or high concentrations of marine mammals, marine fish or seabirds;
 - b. Open water and ice-covered conditions;
 - c. Spill volumes up to and including loss of a full tanker cargo; and,
 - d. Differences in the quantity and properties of each type of bulk fuel transported by vessels when they are at, or in transit to, the port of Rankin Inlet.

4.13 Marine Wildlife

4.13.1 Views of the Proponent

Volume 8, Section 8.3 of the Final Environmental Impact Statement (FEIS) presented information regarding the studies conducted by Agnico Eagle to establish baseline conditions for marine wildlife and wildlife habitat, and analyses undertaken to assess the effects of the Project on marine wildlife and wildlife habitat. For the purposes of Agnico Eagle's baseline and effects assessment, marine wildlife and wildlife habitat was represented by anadromous and marine fish, marine birds, and marine mammals, including Species at Risk. For the purposes of this report, the Proponent's effects assessment regarding marine birds has been included in [section 4.11](#), Birds and Bird Habitat.

The Proponent's effects assessment evaluated all Project phases, and when possible, Agnico Eagle incorporated indirect and cumulative effects from traditional activities and knowledge, non-traditional land use and resource use, and third party sources such as traditional knowledge for the marine

approaches to Rankin Inlet. The scope of Agnico Eagle's study was divided into two separate assessment areas. Firstly, the baseline conditions were assessed for all Project activities occurring in the proposed spud barge area in Melvin Bay. This included nearshore activities such as vessel operations, and construction, operation and decommissioning of the spud barge. Secondly, marine transport activities occurring both inside and outside of Melvin Bay were assessed separately.

Agnico Eagle identified fifteen (15) pathways through its analysis for the assessment of marine wildlife and wildlife habitat which were considered to have a primary linkage and were carried through the effects analysis:

- Changes in fish habitat quality due to grounding of spud and cargo barges;
- Sensory disturbance from structural lighting may result in changes in health and mortality risk in marine birds due to collisions with infrastructure;
- Sensory disturbance from structural lighting and in-air noise from nearshore human activities may alter marine bird behavior;
- Alteration in marine mammal and fish behavior due to underwater noise from vessel activities;
- Vessel movements in Melvin Bay and the shipping corridor may result in collisions with marine birds (change in health and survival); and
- Accidental spills from vessel activities and fuel operations can have direct adverse effects on marine water quality and associated indirect effects on marine wildlife.

Agnico Eagle identified three (3) no linkage pathways and six (6) minor linkage pathways and applied environmental design features or specific mitigation measures to address and remove these pathways. In this fashion, once a pathway had been eliminated it was not assessed any further.

Marine Fish and Fish Habitat

The Proponent's assessment of marine fish and fish habitat concluded that:

- Monitoring is not suggested for any changes to fish habitat during operation of the spud barge, because it is expected to be less severe than those effects naturally occurring from winter ice scour events and site-specific;
- Monitoring behavior responses of fish to underwater noise resulting from shipping and vessel movements would be difficult to achieve and, therefore, is not suggested; and
- In the unlikely event of a major spill, follow-up monitoring on fish species and their habitats would likely be proposed. The scope of such follow-up monitoring would be determined in consultation with Fisheries and Oceans Canada (DFO) and at the time of the event.

Marine Mammals

The Proponent's assessment of marine mammals concluded that:

- A Shipping Management Plan (SD 8-1) will be implemented, where marine mammal monitoring will be undertaken by shipping contractors during all shipping activities to avoid interactions with marine mammals. Any incidents of vessel strikes with marine mammals will be recorded and reported to DFO; and

- In the unlikely event of a major spill, follow-up monitoring on marine mammals and their habitats would be proposed.

Through the effects assessment, Agnico Eagle looked at marine mammals, fish and marine birds and proposed mitigation measures which it incorporated into Supporting Document (SD) 8-1 Shipping Management Plan. These mitigation measures include, for example, having Project vessels maintain a distance of at least two kilometres (km) from Marble Island, recommended vessel speeds, keeping cargo vessels and large fuel tankers anchored in deep waters outside Melvin Bay, and locating Project infrastructure in areas of least impact.

Overall, project pathways influencing marine VECs were determined to be low to high in magnitude, local to beyond regional in geographic extent and medium-term in duration.²⁴⁸ Further, Agnico Eagle concluded that the scale of impacts should not be large enough to cause irreversible changes to populations levels or decrease the resilience of marine VECs.²⁴⁹ Finally, Agnico Eagle concluded that the Project should not have a significant adverse impact on the continued opportunity for traditional and non-traditional use of marine resources in the region.²⁵⁰

With regard to monitoring and follow-up, Agnico Eagle suggested that results of monitoring should be provided to relevant agencies with management responsibility for each species. In Agnico Eagle's proposed Shipping and Management Plan, the following was included:

- Marine monitoring would be undertaken by shipping contractors during all shipping activities to avoid interactions with marine mammals and any incidents of vessel strikes would be recorded and reported to Fisheries and Oceans Canada (DFO);
- A worst-case fuel spill may occur and in the unlikely event of a major spill, follow-up monitoring would be proposed at the time of the event; and
- Any incidents of bird mortalities associated with lighting infrastructure, construction activities, and Project vessel operations would be recorded and reported to Environment Canada (Canadian Wildlife Services).

4.13.2 Views and Concerns of Interested Parties

Within their joint Final Written Submission to the NIRB, Nunavut Tunngavik Incorporated (NTI) and the Kivalliq Inuit Association (KIA) provided commentary regarding Agnico Eagles incorporation of traditional knowledge and Inuit Qaujimajatuqangit in its Final Environmental Impact Statement (EFIS) related to marine wildlife valued ecosystem components and their respective effects assessments. NTI/KIA noted that the incorporation of traditional knowledge and Inuit Qaujimajatuqangit for marine fish was limited, with a lack of clarity regarding whether there is subsistence use of Greenland Cod and Polar Cod. NTI/KIA went on to state they believed that there was "very poor integration of traditional knowledge and Inuit Qaujimajatuqangit in the sections on marine mammals (seals, walrus, and

²⁴⁸ FEIS, Volume 8, p. 8-138

²⁴⁹ FEIS, Volume 8, P. 8-138.

²⁵⁰ FEIS, Volume 8, p. 8-139.

whales)”.²⁵¹ While noting that there was some use in having defined harvesting locations, both parties felt that there was poor integration in respect of the following: description of habitat including migration corridors, population dynamics, reproduction, behavior, health/body condition, potential impacts of the project, monitoring and mitigations.

Observing that the Proponent had not collected any data regarding marine mammals along the proposed shipping route in Hudson Strait but instead relied on desktop research alone, the KIA recommended that the marine baseline be significantly revised and updated prior to any Project-related shipping, and these revisions and updates be included in the Proponent’s Shipping Management Plan. The KIA also requested that the Proponent provide more information on habitat use, seasonal distributions and migration patterns, and critical use areas (ie. feeding and calving areas, etc.) for marine mammals. In KIA’s view, this information should be included in an updated baseline that can be used to better understand the Project-related impacts of shipping and inform its Wildlife Mitigation and Monitoring Plan and associated adaptive management.²⁵²

While agreeing in principle with the KIA’s concerns, Agnico Eagle noted that these issues had not been raised in the technical review of the Draft Environmental Impact Statement (DEIS) and as such the Proponent had not had opportunity to discuss the KIA’s concerns directly to ensure they were comprehensively understood. Agnico Eagle stated that it needed to determine where the baseline data would be collected and further that the area selected would be limited to the areas near Melvin Bay, indicating that the Proponent would need to ensure it understood the extent of the proposed work before agreeing to any such commitment.²⁵³

The KIA’s Final Written Submission went on to recommend that the baseline information for beluga whales should be updated by the Proponent, similar to the updates required for all other marine mammals as described (see above). Agnico Eagle agreed in principle with the KIA’s recommendation.

The KIA recommended that the Proponent develop the necessary marine components for wildlife mitigation and monitoring and add this information to the appropriate management plan. In the KIA’s view the Proponent’s plan would need to include specific plans for monitoring of marine wildlife, mitigation steps to be employed (and monitoring to ensure that mitigation is successful), plans for inclusion of local hunters in monitoring, and plans to coordinate with other organizations such as Government departments.²⁵⁴ Agnico Eagle agreed in principle with this recommendation.

The KIA recommended that a detailed plan for marine wildlife monitoring be developed, particularly for “species at risk” under the Species At Risk Act (SARA) or The Committee on the Status of Endangered Wildlife in Canada (COSEWIC). The KIA further noted that it felt that shipping companies should be required to conduct monitoring of marine wildlife and ensure that trained observers are used, that established data collection and recording protocols are used, and that monitoring results are provided to regulators and the KIA on a timely basis. Ideally, such monitoring would be conducted continuously

²⁵¹ Nunavut Tunngavik Inc. and Kivalliq Inuit Association, Final Written Submission, July 21, 2014.

²⁵² Nunavut Tunngavik Inc. and Kivalliq Inuit Association, Final Written Submission, July 21, 2014.

²⁵³ Agnico Eagle Response to Final Written Submissions, August 7, 2014.

²⁵⁴ Nunavut Tunngavik Inc. and Kivalliq Inuit Association, Final Written Submission, July 21, 2014.

during daylight conditions, but the KIA recognized that this may be logistically challenging.²⁵⁵ Agnico Eagle replied that they would take this recommendation under consideration.

In its response, Agnico Eagle noted that they are but one of the companies and communities contracting ships and that it was not reasonable that Agnico Eagle alone be required to meet the requirement of providing an annual shipping log and a map of ship tracks in its annual report. The KIA contended that the NIRB has the ability and mandate to include Project conditions that go above regulatory requirements or standard operating procedures, where appropriate, and is therefore able to place conditions on the Proponent to be met by its contractors. As the Project would have impacts on the marine environment, and mitigation steps had been identified (i.e., speed restrictions) that can only be assessed for compliance and efficacy through time-stamped vessel location data. This monitoring information will also be important for establishing the Proponent's contribution to the cumulative impacts of shipping, which would otherwise not be studied, go undetected, and remain difficult to predict.

Finally, the KIA also recommended that walrus haulouts be given special attention for marine monitoring, mitigation, and adaptive management.²⁵⁶ Agnico Eagle agreed in principle with this recommendation.

The KIA recommended that Agnico Eagle and the KIA should consider seeking participation in the Marine Environmental Working Group that was established for the Mary River Project. This group was tasked with advising Baffinland Iron Mines Ltd. on monitoring studies related to its shipping in Hudson Strait, and could do the same for Agnico Eagle. Both projects will have cumulative effects related to their shipping in Hudson Strait. In the KIA's view, this is an opportunity to pool resources related to shared shipping routes and to extend monitoring and any ancillary research to Rankin Inlet. This cooperation should improve understanding of shipping impacts and thereby their cumulative effects, and inform mitigation and adaptive management. This impact monitoring would help to establish the Meliadine Gold Project's contribution to cumulative shipping effects so they can be properly considered when other developments are assessed—otherwise the baseline is allowed to shift unchecked, increasing the risk of lasting environmental damage.²⁵⁷ Agnico Eagle replied that they would take this recommendation under consideration.

Fisheries and Oceans Canada (DFO) requested clarification through its final written submission regarding why the killer whale was not included with the Species at Risk listed in FEIS Table 8.3-6. Agnico Eagle clarified that killer whales are found within both the local study area and the regional study area, have no SARA status, but are of Special Concern under the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). According to COSEWIC, the range of the associated Designatable Unit (unique population) of killer whales does include Hudson Bay and Hudson Strait.²⁵⁸

In its final written submission to the NIRB, Transport Canada (TC) recommended that Agnico Eagle provide details on what mitigation measures will be conveyed to the vessels employed for the Project's

²⁵⁵ Nunavut Tunngavik Inc. and Kivalliq Inuit Association, Final Written Submission, July 21, 2014.

²⁵⁶ Nunavut Tunngavik Inc. and Kivalliq Inuit Association, Final Written Submission, July 21, 2014.

²⁵⁷ Nunavut Tunngavik Inc. and Kivalliq Inuit Association, Final Written Submission, July 21, 2014.

²⁵⁸ Agnico Eagle Response to Final Written Submissions, August 7, 2014, p. 115

annual resupply. TC also recommended that Agnico Eagle make it clear that the proposed mitigation measures employed by vessels when approaching marine wildlife are, 'subject to safe navigation considerations as determined by the master of the vessel'.²⁵⁹ Agnico Eagle replied that it intended to communicate its commitments, and planned to meet with the shipping company, once selected, to further discuss these constraints/requirements and to establish how these requirements can be conveyed to each vessel employed in providing shipping services to the Meliadine Project.²⁶⁰

The Kivalliq Wildlife Board (KWB), Aqiggiq Hunters and Trappers Organization (AHTO) and Kangiqliniq Hunters and Trappers Organization (KHTO) commented in their joint final written submission that Project-related marine shipping should be considered as incremental, cumulative traffic in a context of great uncertainty and poor understanding with respect to the impacts of shipping on marine mammals and the underwater environment.²⁶¹ Agnico Eagle indicated that it agreed in principle.

To reduce uncertainty surrounding its cumulative impact assessment, the KWB/KHTO/AHTO felt that Agnico Eagle should revise the assessment to reflect: a) updated impact predictions that are based on an improved baseline and better understanding of shipping interactions with marine wildlife, b) revised spill modelling, c) consideration of harbour alternatives, d) potential increases in the quantity of ore mined and in the lifetime of the project, and e) foreseeable future shipping by the Mary River and Canadian Royalties Inc. mining projects. Activities, VECS, and valued socio-economic components (VSECs) should not be considered in isolation to one another or removed from cumulative consideration if they are considered non-significant when considered in isolation.²⁶² Agnico Eagle replied that it would take this recommendation under consideration.

During the Final Hearing, community members also discussed their concerns regarding impacts to marine wildlife and wildlife habitat resulting from the proposed Project:

*You guys said it's (Meliadine Project) going to affect some of the route over there near the Marble Island, and that's a lot of marine mammals are over there, a lot of walrus, belugas, seals. When you guys -- do you guys do research on that if it's affecting, and are you guys going to let the elders know if there's any changes in marine mammals over there, their habitats and their migration routes?*²⁶³

*Seal population is declining because there's too many shipping -- there's too much shipping, and there will be some compensation to Inuit if there are any impacts to sea mammals.*²⁶⁴

Agnico Eagle replied to this comment with the clarification it would be using a pre-existing shipping route which would be approximately 2 kilometres away from Marble Island and they intended to work

²⁵⁹ Transport Canada, Final Written Submission, July 21, 2014.

²⁶⁰ Agnico Eagle Response to Final Written Submissions, August 7, 2014, p. 131.

²⁶¹ Kivalliq Wildlife Board, Kangiqliniq Hunters and Trappers Organization and Aqiggiq Hunters and Trappers Organization, Final Written Submission, July 21, 2014.

²⁶² K Nunavut Tunngavik Inc. and Kivalliq Inuit Association, Final Written Submission, July 21, 2014.

²⁶³ P. Enuapik, Whale Cove, NIRB Final Hearing File No.: 11MN034 Transcript, August 25, 2014, p. 671, lines 13-20.

²⁶⁴ L. Mimialik, Chesterfield Inlet, NIRB Final Hearing File No.: 11MN034 Transcript, August 26, 2014, p. 981, lines 11-14.

with both the KIA and the GN to develop a marine mammal mitigation and monitoring program that will involve local knowledge as well.²⁶⁵

4.13.3 Views of the Board

The Board acknowledges that the scope of marine-related components and activities associated with the Project is limited to shipping associated with annual resupply during the open water season, as well as modest facilities in Rankin Inlet to support these activities. The Board notes further that the Project's shipping route, though currently used by vessels for annual resupply to communities in the Kivalliq Region, passes through sensitive marine wildlife habitat and areas used for both transportation, recreation and harvesting of wildlife by residents of the region. As such, it is understandable that significant public concern was expressed by members of the public regarding Agnico Eagle's proposed marine-related activities and their associated potential for adverse environmental and socio-economic effects.

Significant comments and discussion in parties' written submissions and at the Final Hearing discussed the incorporation of traditional knowledge and Inuit Qaujimajatuqangit into the Proponent's Final Environmental Impact Statement and associated baseline information and effects assessments. The Board acknowledges that Agnico Eagle undertook an extensive literature review when preparing the sections of its FEIS which address marine wildlife baseline and potential Project effects; however, it has concern with the deficiencies in the available baseline information and proposed monitoring plans ability to measure for cumulative effects. Recognizing that the communities of the Kivalliq Region place great value for the local marine environment, wildlife and wildlife habitat, there is a corresponding need to ensure proper environmental protection and management is in place prior to Project-related shipping commencing.

During the Final Hearing the NIRB questioned whether there were any pre-existing marine mammal monitoring networks with marine monitors to collect data and assess cumulative impacts along the shipping route.²⁶⁶ Further, the NIRB asked whether there had been any observed impacts to marine mammals within the Hudson Strait and Hudson Bay as a result of shipping in the region.²⁶⁷ Transport Canada replied that it had no knowledge of such a program. Fisheries and Oceans Canada commented that marine mammals are trying to avoid shipping route, when feasible, and they were not aware of marine mammals in the area that intrigued by shipping at this point.²⁶⁸ Agnico Eagle further added that its FEIS states:

...that they, the ship, will monitor for marine mammals. It doesn't say that there will be a monitor on the ship and they are not going to put an individual on the ship that is there just

²⁶⁵ C. De La Mare, Agnico Eagle, NIRB Final Hearing File No.: 11MN034 Transcript, August 25, 2014, p. 671-672, lines 24-26, 1-6.

²⁶⁶ K. Kaluraq, Nunavut Impact Review Board, NIRB Final Hearing File No.: 11MN034 Transcript, August 26, 2014, p. 1004-1005, lines 18-26, 1.

²⁶⁷ K. Kaluraq, Nunavut Impact Review Board, NIRB Final Hearing File No.: 11MN034 Transcript, August 26, 2014, p. 1004-1005, lines 18-26, 1.

²⁶⁸ M. Janowicz, Fisheries and Oceans Canada, NIRB Final Hearing File No.: 11MN034 Transcript, August 26, 2014, p. 1007, lines 13-18.

*to look for wildlife. What we're saying is we were asked to make it a condition of the shipping that the ship does that monitoring to look out for wildlife so they avoid collisions.*²⁶⁹

The Board is concerned with the confidence levels used in predictions for cumulative effects as presented by Agnico Eagle. One notable example is an estimate of a 297% increase in total cumulative increase in shipping as a result of multiple overlapping Projects during operations; however, as stated in Exhibit 48 as filed during the Public Hearing:

“...the effects of any injuries or fatalities on marine mammal populations as a whole are expected to be reversible through natural recruitment, meaning the number of new young marine mammals that will enter the populations over time will offset the number of marine mammal mortalities or injuries resulting from potential vessel strikes...”²⁷⁰

Agnico Eagle then concluded that given the availability of accepted mitigation measures and industry best practices, significant adverse residual effects on marine mammal populations are not likely to occur.²⁷¹

After considering the evidence provided to the NIRB for this assessment, the Board believes that there is a need for greater dialogue and discussion with Nunavut communities regarding shipping in waters of the Nunavut Settlement area, particularly related to community resupply and resource development. Nunavummiut and project proponents would benefit from greater leadership and communication from the government agencies and departments responsible for overseeing the laws and regulations that govern shipping in waters of the Nunavut Settlement Area, as well as the parties with responsibilities for the management and protection of marine wildlife and wildlife habitat.

4.13.4 Conclusions and Recommendations of the Board

The Board, in considering those views of the Proponent and parties as outlined above, and throughout the assessment of the Project, is providing the following recommendations specific to marine wildlife and wildlife habitat:

1. Prior to any Project-related shipping, the Proponent will update its marine baseline information to ensure that it includes the most recent information on marine wildlife abundance and distribution, carefully considers seasonal distribution patterns of marine wildlife, and incorporates western scientific and Inuit Qaujimajatuqangit knowledge sources. The updated marine baseline should be made available to appropriate authorities for feedback, then

²⁶⁹ L. Connell, Agnico Eagle, NIRB Final Hearing File No.: 11MN034 Transcript, August 26, 2014, p. 1008, lines 10-18.

²⁷⁰ Exhibit 48, NIRB Final Hearing File No. 11MN034, August 25, 2014 filed by Agnico Eagle Mines Limited, “Submission in Response to NIRB request to Update Cumulative Effects Assessment to Include the Mary River Project”, p. 4.

²⁷¹ Exhibit 48, NIRB Final Hearing File No. 11MN034, August 25, 2014 filed by Agnico Eagle Mines Limited, “Submission in Response to NIRB request to Update Cumulative Effects Assessment to Include the Mary River Project”, p. 4.

incorporated into the Proponent's Shipping Management Plan (SMP), with continued updates on a regular basis as new information becomes available.

2. The Proponent shall assess its available baseline information for Melvin Bay and for the area surrounding the fuel transshipment anchorage to ensure that both are adequate for the detection of Project-related impacts, particularly related to contaminants.
3. Prior to any Project-associated shipping, the Proponent shall revise and update the Terrestrial Environment Management Plan (TEMMP) and/or the Shipping Management Plan (SMP) to include following information:
 - a. a plan for involvement of local hunters in wildlife baseline studies and monitoring program;
 - b. a plan for coordinating wildlife studies/monitoring activities with other organizations, institutions, government departments and/or individual researchers conducting wildlife studies in the regional study area; and
 - c. measures to be applied to avoid or reduce the disturbance, harassment, injury or mortality of marine mammals due to shipping activities.
4. The Proponent shall require all contracted shipping companies to provide full-time marine wildlife monitoring using trained observers and established data collection and recording protocols. Monitoring plans should include provisions for all *Species At Risk Act* (SARA) and for the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) listed species (birds and mammals).
5. The Proponent shall ensure that, subject to vessel and human safety considerations, all Project shipping adhere to the following mitigation procedures while in the vicinity of marine mammals (including polar bear) and birds:
 - a. Marine mammals will be given right of way;
 - b. Ships will when possible, maintain a straight course and constant speed, avoiding erratic behavior; and
 - c. When marine mammals appear to be trapped or disturbed by vessel movements, the vessel will implement appropriate measures to mitigate disturbance, including stoppage of movement until wildlife have moved away from the immediate area.
6. Prior to any Project-related shipping, the Proponent will prepare a map of terrestrial walrus haulouts (uglit) in the Project area, and use this information for route planning, fuel spill modeling, and sensitive area identification. The map should include all available sources of information on uglit locations, including scientific knowledge and Inuit Qaujimajatuqangit and shall be updated by the Proponent whenever new information becomes available.
7. The Proponent shall consider ways to monitor disturbance to walrus at terrestrial haulout sites, including but not limited to remote monitoring (e.g., time-lapse cameras) and community-based monitoring or Inuit Qaujimajatuqangit surveys.
8. The Proponent is encouraged to liaise with relevant stakeholders, regulatory agencies and/or forums (e.g. the Marine Environmental Working Group associated with the Mary River Project), that might allow for participation in relevant research and management initiatives and

increasing understanding and mitigation of potential cumulative effects associated with the Project's shipping activities through the Hudson Strait.

5. SOCIO-ECONOMIC EFFECTS

Agnico Eagle Mines Ltd. (Agnico Eagle or the Proponent) described their approach used for analyzing potential effects, as well as classifying and determining the environmental significance of impacts from the Project on the biophysical environment, in Volume 4 of the Final Environmental Impact Statement (FEIS). Agnico Eagle used the following key elements in its approaches and methods for assessing potential effects from the Project:

- Valued Socioeconomic Components (VSECs);
- Pathway Analysis;
- Spatial and Temporal Boundaries;
- Effects Analysis;
- Residual Impact Classification and Significance;
- Uncertainty; and
- Monitoring and Follow-up.

Agnico Eagle selected the VSECs assessed based on their role in the ecosystem, value placed on it by humans for traditional use, cultural connection and by Inuit Qajimajatuqangit holders. The Nunavut Impact Review Board (NIRB) also identified biophysical components that Agnico Eagle gave full consideration of during its consideration for selection of VSECs assessed.

Once Agnico Eagle finalized its list of VSECs, assessment and measurement endpoints were identified for each VSEC. Assessment endpoints were defined to represent the key properties of the VSEC that should be protected for their use by future human generations. Measurement endpoints were defined by Agnico Eagle as quantifiable expressions of change to assessment endpoints as compared to baseline and reference conditions.

Once this was complete, Agnico Eagle conducted a 'pathway analysis' or drafted a list of all potential effects that the Project could have on a valued ecosystemic component (a pathway) which was then used by the Proponent to verify the existence of linkages or potential interactions of the Project with each VSEC. If effects were identified after mitigation, pathways were given a rating of either primary, minor, or as having no linkage using scientific knowledge and Inuit Qaujimajatuqangit, logic, experience with similar development and environmental design features as described below. Only primary pathways underwent effects analysis; if a pathway was determined to have no linkage or minor, they are summarized but not carried through the effects assessment.

- no linkage – pathway is removed by environmental design features (i.e., effect mitigation) so that the Project results in no detectable (measurable) environmental change and residual effects to a VEC or VSEC when compared to baseline or guideline values;
- minor linkage– pathway could result in a minor environmental change, but would have a negligible residual effect on a VEC or VSEC when compared to baseline or guideline values; or
- primary linkage– pathway is likely to result in a measurable environmental change that could contribute to residual effects on a VEC or VSEC when compared to baseline or guideline values.

As part of the effects analysis, Agnico Eagle defined spatial and temporal boundaries and conducted cumulative effects as applicable. The effects analysis was summarized using a numerical and/or qualitative description of magnitude, geographic extent, duration and frequency. From the residual effects, pathways were linked to an assessment endpoint that was classified using categorical scales for each impact criterion (e.g., low magnitude, regional geographic extent, long-term duration, high likelihood). The Proponent then used results from the effects analysis and residual impact classification in the evaluation of the significance of impacts from the Project on VSECs. Agnico Eagle also identified uncertainty if it was present for each VEC with a primary pathway, and how the Proponent would address uncertainty to increase the level of confidence that potential effects to a VSEC would not be greater than predicted. Finally, Agnico Eagle presented monitoring and follow-up programs to measure the relevant effects of the Project on the socioeconomic environment, to test the accuracy of impact predictions, and to determine the effectiveness of mitigation measure.

5.1 Economic Development, Contracting and Business Opportunities

5.1.1 Views of the Proponent

Economic Development

Within its Final Environmental Impact Assessment (FEIS), Agnico Eagle predicted with high confidence that the Project would result in significant positive economic effects.²⁷² It further noted that these positive effects would be the result of its expenditures in the territory, job creation, and revenues, which would accrue to the Government of Nunavut, the Kivalliq Inuit Association, and Nunavut Tunngavik Incorporated.²⁷³ The Proponent also clarified that these effects may be experienced in both rises and falls in economic indicators, as certain Project phases such as construction ramp up and then down, and while production peaks and then ramps down at mine closure.²⁷⁴

Agnico Eagle defined the local study area (LSA) for economic effects as being comprised of the Kivalliq region and the regional study area (RSA) consisting of the territory of Nunavut.²⁷⁵ It further noted within its FEIS that special focus had been placed on the communities of Arviat, Baker Lake, Chesterfield

²⁷² FEIS, Volume 9, p. 191.

²⁷³ FEIS, Volume 9, p. 155.

²⁷⁴ FEIS, Volume 9, p. 155.

²⁷⁵ FEIS, Volume 9, p. 13 and 15.

Inlet, Rankin Inlet, and Whale Cove when assessing economic development and opportunities, owing to its stated expectation that the Project would mainly draw labour from these communities.²⁷⁶

To determine the overall impact of the project to economic development and opportunities Agnico Eagle evaluated endpoints in its pathway analyses for this component, including the following:²⁷⁷

▪ Employment	▪ Economic Infrastructure
▪ Gross Domestic Product (GDP) and economic growth	▪ Government fiscal situation
▪ Inflation and Consumer Price Index	▪ Business opportunities and contracting
▪ Trade balance	▪ Economic Development
▪ Investment	▪ Income
▪ Employment by industry	▪ Traditional economic activities

For each of the measurement endpoints identified by Agnico Eagle through its assessment of economic development and opportunities, it predicted within the FEIS a positive and significant effect resulting from the Project. The Proponent noted that in general, economic and social benefits would be expected to accrue to all communities within the LSA and to the Kivalliq region, and that these benefits would be largely derived from employment, education and training, and contracting opportunities.²⁷⁸ It further noted however, that the potential for negative socio-economic effects to occur with respect to individuals and families and at the community level would exist in each of the LSA communities, and that these may be associated with the challenges of transitioning into a wage-based economy, and specifically transitioning into mining-related employment.²⁷⁹

Within its FEIS, Agnico Eagle noted that for the GDP and economic growth and economic development endpoints, potential negative impacts could result from the Project ramping down in the case of GDP and Economic Growth and from potential conflict with interests of other sectors such as tourism and elevated costs through increased demand for resources such as labour.²⁸⁰ The Proponent predicted that should the Project proceed it would add an estimated \$522 million cumulatively to Nunavut's GDP over the construction phase (2014 to 2017), and that Nunavut's growth would continue at a rate of 23% annually, compared to 6.4%.²⁸¹ It further estimated the annual direct effect of the Project on GDP during operations would be \$250 million. In terms of inflation, Agnico Eagle noted within its FEIS that the Project has the potential to cause short-term inflation, mainly as a result of excess demand over supply for labour in the Kivalliq communities. Agnico Eagle also identified that these inflationary pressures could negatively affect people unable to access the labour market; however, the Proponent also noted that this minor inflation was not expected to result in significant effects at the territorial level. Agnico Eagle also noted within its FEIS that "large projects are not typically expected to shock

²⁷⁶ FEIS, Volume 9, p. 12.

²⁷⁷ FEIS, Volume 9, Table 9.1-2, p. 10.

²⁷⁸ FEIS, Volume 9, p. 13.

²⁷⁹ FEIS, Volume 9, p. 13.

²⁸⁰ FEIS, Volume 9, Table 9.4-34, p. 192.

²⁸¹ FEIS, Volume 9, p. 161.

savings rates in Nunavut as they may do other more commonly accepted economic indicators such as GDP and employment”.²⁸²

Agnico Eagle noted within its FEIS that economic growth may be attributed in part to an increased number of small businesses forming as local people organize to deliver the goods and services demanded not only by the Project, but also by other people in the region who have larger disposable incomes as a result of increased employment.²⁸³ In terms of economic diversification, the Proponent’s FEIS also indicated that as the Project may have the effect of reinforcing the Kivalliq region as a resource based economy, some advantages and disadvantages would come from being heavily reliant upon one or a few economic sectors and employers – including being more susceptible to fluxes in commodity prices and other external factors.²⁸⁴ The Proponent asserted that “the Project could have substantial and long-lasting positive effects on businesses in [the Kivalliq region, thereby] creating a platform for substantial economic growth and diversification of the economy.”²⁸⁵

In terms of final closure, Agnico Eagle indicated within its FEIS that potential economic effects of the Project would predominantly result from the end of employment and contracting opportunities that would have been ongoing for up to 17 years, and the negative social effects that may result from an economic downturn.²⁸⁶ With respect to temporary or unforeseen and premature Project closure(s), Agnico Eagle noted within its FEIS that as these would be unplanned, a greater potential may exist for negative effects as well as the risk that many of the expected benefits of the Project in terms of improved capacities of labour, businesses, and communities may not have been fully realized. Agnico Eagle also noted that the economic effects of closure in general would depend largely on whether or not there were economic alternatives available at the time of closure to replace the Project, which, it argued, would be dependent upon progress made in developing the mining sector within the region and territory.²⁸⁷ It further indicated that the ongoing development in Nunavut’s mining sector could mean that other projects may replace the Meliadine project in future years and if that occurs, the risk of the Project’s closure having a long-term negative impact on the territorial economy would be minimal.²⁸⁸

With respect to revenues accruing to the territory, Agnico Eagle provided numbers associated with personal income taxes (paid in Nunavut), corporate income tax, taxes from unincorporated business profits, non-renewable resource revenue, sales and excise taxes, payroll taxes and property taxes. From these numbers, Agnico Eagle presented information within its FEIS to indicate that the total revenues contributed to the territory could be expected to reach \$26.9 million per year during the Project’s construction phase (2014-2017), and \$20.7 million per year during operations (2017-2027).²⁸⁹

Agnico Eagle acknowledged within its FEIS the important income dimensions related to traditional activities, which generate income based on land and resource use; however, it noted that it would be

²⁸² FEIS, Volume 9, p. 163.

²⁸³ FEIS, Volume 9, p. 179.

²⁸⁴ FEIS, Volume 9, p. 163

²⁸⁵ FEIS, Volume 9, p. 180.

²⁸⁶ FEIS, Volume 9, p. 158.

²⁸⁷ FEIS, Volume 9, p. 158.

²⁸⁸ FEIS, Volume 9, p. 167.

²⁸⁹ FEIS, Volume 9, Tables 9.4-22 and 9.4-23, p. 164-165.

impossible to quantify the effects of the Project on land based economic activities.²⁹⁰ The Proponent also noted within the FEIS that the major challenge identified through its research, including interviews, for many harvesters is how to earn the money required while still having the time to harvest, noting that maintaining traditional activity and supporting the development of the mining industry may require trade-offs as well as compensation.²⁹¹ Agnico Eagle indicated within its FEIS that it did not predict the Project would have an economic impact upon traditional activities such as fishing, hunting, and trapping when considered a separate sector of the economy.²⁹² During the Final Hearing, Agnico Eagle noted that mining activities could impact upon these activities, and that while local hiring may decrease the time available for people to participate in traditional activities, the resultant increased incomes might also help local residents overcome constraints to pursuing those same activities.²⁹³

Within its FEIS, Agnico Eagle discussed the potential for increased employment opportunities to limit participation in traditional activities, noting that the Project and its induced activities might spur an increase in demand for local food, which could in turn create opportunities for local individuals and business to generate income from selling the proceeds of hunting and fishing activities.²⁹⁴ It also noted that certain aspects of the Project might affect access and barriers to land based activities in positive and negative ways, such as the all-weather access road potentially facilitating better access for hunting activities while also having the potential to change hunting patterns. This potential effect is discussed in more detail in Section 5.5 of the Final Hearing Report.

Contracting and Business Opportunities

Agnico Eagle noted within its FEIS that it would depend on several contract services during the construction phase of the Project, which would lead to job opportunities as well as contract opportunities for local businesses. In addition, it confirmed that it is company policy to maximize opportunities for businesses in the Kivalliq region to access opportunities to provide goods and services to the Project, again, in the interest that Project benefits accrue not only to the larger national and regional economies, but also to the economy and people of the Kivalliq region.²⁹⁵ The Proponent indicated that within this policy if local businesses have limited experience working with the mining sector, it may implement Project-specific initiatives to remove barriers for successful bidding on procurement contracts.²⁹⁶

Further, with reference to baseline conditions, Agnico Eagle acknowledged that many local businesses may be suited to meet consumptive needs of the resident population, but that they may have limited experience dealing with the management and logistics of procurement. Consequently, such businesses may not have the breadth or the financial resources needed to bid on large contracts and to supply

²⁹⁰ FIES, Volume 9, p. 182.

²⁹¹ FEIS, Volume 9, p. 85.

²⁹² FEIS, Volume 9, Tables 9.4-30 and 9.4-33, p. 179 and 184.

²⁹³ D. Walker, Agnico Eagle, NIRB Final Hearing File No. 11N034 Transcript, August 23, 2014, p. 320-321, lines 24-26, 1-3.

²⁹⁴ FEIS, Volume 9, Section 9.3.4.1.2.

²⁹⁵ FEIS, Volume 9, p. 155.

²⁹⁶ FEIS, Volume 9, p. 155.

large, time sensitive operations while being subject to time pressures and quality control requirements.²⁹⁷

Having considered this, Agnico Eagle outlined a number of initiatives within its FEIS designed to enhance opportunities to supply goods and services to the Project, including for example:

- Maintaining a regularly updated database of potential suppliers of goods and services in the Kivalliq region that identifies businesses interested and with some capacity to supply the Project;
- Working with the Kivalliq Inuit Association (KIA) during the construction and operational phases of the Project to provide a framework for tendering and awarding contracts that facilitates and promotes the participation first of Inuit Firms from the affected communities, and then from other Kivalliq Region communities;
- Providing to the KIA, business associations and the business community, in English and Inuktitut, full and timely information on procurement requirements for those contracting opportunities where the Proponent and local businesses agree that there is existing capacity within the local business community to supply at least a part of the required goods or services;
- Developing contracting procedures that take into account the potential need to break down procurement packages, waive financial guarantees for smaller sized contracts, or otherwise facilitate the participation of smaller businesses; and
- Providing an explanation for the weaknesses in an offer to any business that may be denied an opportunity to bid when the basis for the Proponent's denial is that the bidder lacked capacity to successfully deliver on the goods or services contract.²⁹⁸

Agnico Eagle additionally noted within its FEIS that existing businesses in the Kivalliq region are expanding and that new businesses and joint ventures are being formed in response to the economic opportunities offered by the Meadowbank Gold Mine operation and other ongoing exploration projects.²⁹⁹ As it would require contractors to draw labour from qualified local sources and provide on-the-job training programs during the construction phase, Agnico Eagle has indicated that local benefits from contracting opportunities would be maximized.³⁰⁰

In terms of the accrual of benefits from contracting, Agnico Eagle predicted within the FEIS that most of the distribution of contracting opportunities will be in Baker Lake and Rankin Inlet as 70% of the Kivalliq region's businesses registered with Nunavut Tunngavik Inc. are located in these communities, including all businesses that have existing contracts with Agnico Eagle.³⁰¹ It also noted that due to geographic proximity, and the fact that Rankin Inlet has become somewhat of a business hub within the Kivalliq region, Rankin Inlet may have some advantage to bidding on contract opportunities.

²⁹⁷ FEIS, Volume 9, p. 155.

²⁹⁸ FEIS, Volume 9, p. 156.

²⁹⁹ FEIS, Volume 9, p. 176.

³⁰⁰ FEIS, Volume 9, p. 177.

³⁰¹ FEIS, Volume 9, p. 178.

Agnico Eagle noted in the FEIS that in order for the Kivalliq region to realize the number of opportunities related to contracting, businesses in the region will require new employees, which could induce more employment, and in turn, spin off more small businesses, which, it argued, could benefit the region in a major way.³⁰² In its response to final written submissions and questions by the KIA, the Proponent clarified that the *Business Development Plan* is a management plan that should not, contrary to what is currently in the plan, be tied to a study area.³⁰³ Agnico Eagle further clarified that within the Inuit Impact Benefit Agreement required under Article 26 of the Nunavut Land Claims Agreement to be negotiated between the proponent of a major development and designated Inuit Organization (KIA) before construction commences, there would be preferential hiring in the communities of Rankin Inlet and Chesterfield Inlet, followed by the other Kivalliq communities.

5.1.2 Views and Concerns of Interested Parties

Both the Kivalliq Inuit Association (KIA) and the Government of Nunavut (GN) noted within their final written submissions that despite recognizing that improved access for harvesting can affect wildlife population sizes, Agnico Eagle had not provided an adequate analysis of the impact increased access could have on the Rankin Inlet harvest of caribou from the Qamanirjuaq herd.^{304,305} Consequently, the KIA recommended that Agnico Eagle be required to provide a quantitative analysis of the potential effects that a doubling of the Rankin Inlet caribou harvest will have on a declining Qamanirjuaq herd.³⁰⁶

Nunavut Tunngavik Incorporated (NTI) commented on the importance of employment during the Final Hearing, also making note of the transition away from more traditional economic pursuits:

*Employment is needed up here by the people, especially Inuit people. You know, the history of economics is the fur trade. That is gone. We're not going to see Inuit getting thousands and thousands of dollars selling fur.*³⁰⁷

The Government of Nunavut (GN) indicated within its final written submission that in the event of Project closure (planned or premature), it would expect that Agnico Eagle would follow through on its commitment to continue collaboration with the socio-economic monitoring committee, and furthermore, that commitments made for the life of the Project should also include any post-closure period (planned or premature).³⁰⁸ The GN also indicated its acceptance of Agnico Eagle's position that effective socio-economic monitoring of community level trends requires a collaborative approach, and

³⁰² FEIS, Volume 9, p. 178.

³⁰³ Agnico Eagle, Responses to Final Written Submission.

³⁰⁴ Kivalliq Inuit Association, Final Written Submission, Appendix 1, July 21, 2014.

³⁰⁵ Government of Nunavut, Final Written Submission, July 18, 2014, p. 18.

³⁰⁶ Kivalliq Inuit Association, Final Written Submission, Appendix 1, July 21, 2014.

³⁰⁷ J. Eetoolook, Nunavut Tunngavik Inc., NIRB Final Hearing File No. 11MN034 Transcript, August 27, 2014, p. 1146, lines 16-20.

³⁰⁸ Government of Nunavut, Final Written Submission, July 18, 2014.

suggested that a technical, focused working group including the Proponent, government agencies, and the KIA be formed in order to oversee the monitoring of these trends.³⁰⁹

Similarly, Aboriginal Affairs and Northern Development Canada (AANDC) recommended within its final written submission that since Agnico Eagle did speculate with respect to the socio-economic impacts arising from temporary, final and post-closure phases, these phases and effects should be included within collaborative socio-economic monitoring programs that may be developed and that mitigation measures be applied as necessary.³¹⁰

The GN also provided comments with respect to Agnico Eagle's projected estimates of taxation to be accrued territorially, noting specifically that it agreed with the numbers provided within the FEIS, and that in general, the GN accepted the information provided by Agnico Eagle to serve as a basis for its internal medium-term tax forecasts. The GN also noted within its final written submission that the Project would be likely to generate a stream of territorial tax revenues that could be expected to contribute positively to its other revenues.³¹¹ The GN recommended that should the Project be allowed to proceed, the Proponent be required to communicate to the GN major decisions, which may impact territorial tax revenues, and that it respond to requests for information and input from GN finance officials regarding taxes. The GN further recommended that Agnico Eagle develop, in collaboration with the GN, a protocol to communicate this information.

Members of the public had questions for the Proponent with respect to its Inuit employment levels, asking specifically, whether target Inuit employment levels were carried over to contractors as well.³¹²

5.1.3 Views of the Board

The Board finds that the information provided by Agnico Eagle with respect to economic development, contracting, and business opportunities represents a fair assessment of the baseline conditions, and agrees that the estimates and projections related to economic factors such as GDP, economic growth, the consumer price index and territorial revenues are acceptable. The Board agrees that communication with the GN regarding major decisions may be helpful to the territorial government in relation to fiscal planning; however, it recognizes that the Proponent cannot be required to disclose Project-specific information of a proprietary or confidential nature.

³⁰⁹ Government of Nunavut, Final Written Submission, July 18, 2014.

³¹⁰ Aboriginal Affairs and Northern Development Canada, Final Written Submission, July 21, 2014.

³¹¹ Government of Nunavut, Final Written Submission, July 18, 2014.

³¹² D. Matoo, Chesterfield Inlet, Final Hearing NIRB File 11MN034 Transcript, August 25, 2014, p. 704, lines 11-12.

However, the Board does not find that the Proponent has given adequate quantitative consideration to the potential impacts to the local and regional economy, which may result from temporary and final closure. The Board understands the difficulty Agnico Eagle expressed with regard to projecting future trends; however, the Board expects that better estimates should be provided, and that the experience of other mining projects and regions in Nunavut with temporary or final closure, such as the Nanisivik mine in the North Baffin region, could be used. Similarly, the Board acknowledges Agnico Eagle's indication that closure of the mine could not only produce impacts that are a direct result of the end of employment and contracting opportunities, but that negative social effects could be the result of a larger economic downturn and not solely attributable to the Project. The Board feels, however, that additional and quantifiable details regarding impacts to the community of Rankin Inlet, the Kivalliq region, and the territory as a whole were lacking, as were proposed measures to help mitigate various impacts, which may result from mine closure(s). The Board also acknowledges the comments raised by AANDC and the GN and agrees with the stated importance of including closure and post-closure phases within considerations for socio-economic monitoring, including the collection and analysis of Project-specific and regional data and trends.

The NIRB does not feel that the Proponent has accurately and quantifiably predicted the potential impacts the Project may have upon traditional economic activities, specifically those that may relate to improved accessibility to various pursuits via public access to the all-weather access road. Similarly, given the KIA's position with respect to the Proponent's limited use of traditional knowledge and Inuit Qaujimajatuqangit, the Board feels that Agnico Eagle should further consider the input of local knowledge to improve upon its predictions of both increased access and resultant harvest pressures on the Qamanirjuaq caribou herd.

5.1.4 Conclusions and Recommendations of the Board

The Board recognizes the value of the work that may be undertaken by Agnico Eagle and other parties in the form of a project-specific working group. Further, the Board recognizes that this type of working group will be useful for the monitoring and mitigation of several socio-economic factors, not only to the Economic Development, Contracting and Business Opportunities aspect, and the Board is therefore generally recommending the use of a socio-economic working group to address all socio-economic monitoring and mitigation as follows:

1. The Proponent is strongly encouraged to participate in the work of the Kivalliq Socio-Economic Monitoring Committee along with other agencies and the communities of the Kivalliq region, and to identify areas of mutual interest and priority for inclusion into a collaborative monitoring framework that includes socio-economic priorities related to the Project, communities, and the Kivalliq region as a whole.
2. The Proponent is encouraged to work in collaboration with other socio-economic stakeholders including for example, the KIA, GN, AANDC, and communities of the Kivalliq region, to establish a socio-economic working group for the Project to develop and oversee the Meliadine Socio-economic Monitoring Program. The working group should develop a Terms of Reference which outlines each member's roles and responsibilities with regards to, where applicable, project-specific socio-economic monitoring throughout the life of the Project. The Terms of Reference

are to be provided to the NIRB upon completion, and within one year of issuance of the Project Certificate

3. The Proponent shall develop the Meliadine Socio-economic Monitoring Program to monitor the predicted impacts outlined in the FEIS as well as regional concerns identified by the Kivalliq Socio-economic Monitoring Committee (SEMC). Where possible, the Proponent is encouraged to work in collaboration with all other socio-economic stakeholders such as the KIA, GN, AANDC and the communities of the Kivalliq region in developing this program, which should include a process for adaptive management and mitigation in the event unanticipated impacts are identified. Details of the Meliadine Socio-economic Monitoring Program are to be provided to the NIRB upon finalization, and within one year of issuance of the Project Certificate.

The Board has concerns regarding the potential for and impacts of, temporary mine closure on the economic well-being of the residents and businesses of the Kivalliq Region and recommends the following:

4. Prior to the commencement of operations, the Proponent is required to undertake an analysis of the risk of temporary mine closure, giving consideration to how communities in the Kivalliq region may be affected by temporary and permanent closure of the mine, including economic, social and cultural effects. The results of this analysis are to be provided to the NIRB upon completion.
5. Within 3 months of the NIRB's acceptance of the Proponent's analysis of the risk of temporary mine closure referenced above, the proponent is expected to update its Socio-Economic Management Plan or to include within a newly developed plan or framework, a description of its plan to collect and analyze Project-specific and regional data at closure and post-closure phases, as well as its defined measures to help mitigate impacts which may result from Project closure(s), both temporary and final.

5.2 Employment

5.2.1 Views of the Proponent

Agnico Eagle identified within its FEIS, the stated goal to maximize the employment of people in the Kivalliq communities through training, and furthermore, to implement culturally sensitive workforce practices aimed at improving workplace retention.³¹³ Agnico Eagle also noted its intention to have in place measures that would work to increase the capacity of people in the Kivalliq region to take advantage of opportunities arising from the Project, including a range of education and training initiatives.³¹⁴

³¹³ FEIS, Volume 9, Table 9.4-19, p. 153.

³¹⁴ FEIS, Volume 9, p. 212-213.

During the Final Hearing, Agnico Eagle noted its commitment to a priority hiring policy for Inuit beneficiaries, indicating that first priority would be given to those in, what the Proponent considered to be the most affected communities, Rankin Inlet and Chesterfield Inlet, followed by the other five communities of the Kivalliq region, and then Nunavut.³¹⁵

Within the FEIS, the Proponent acknowledged the potential for Project employment to draw employees away from other economic activity and to create a competition of sorts, noting that this may result in negative impacts on service delivery and/or increased costs for both business and government. Agnico Eagle further stated that taking this into consideration, along with the potential for in-migration to provide additional labour sources, these labour force adjustments are predicted to have an overall positive effect. The Proponent projected that as more skilled people move into new jobs and space becomes available for less skilled workers to become employed there would be an overall increase in the labour force capacity.³¹⁶

Within its FEIS, Agnico Eagle acknowledged that the decreasing unemployment rate in the Kivalliq region, the limited educational achievement levels, the need for potential employees to overcome the challenges of rotational work, as well as the limited participation of women in the labour force, could result in some difficulty successfully hiring employees from the Kivalliq region.³¹⁷ Agnico Eagle did note, however, that as of 2006 a large number of people have entered the labour force in the Kivalliq region, and suggested that with an assumed annual labour force growth of 2.3%, an additional 500 people could be included within the region's labour force by 2017. Furthermore, Agnico Eagle suggested that people may choose to move from part time and seasonal to full time or full year work.³¹⁸

Agnico Eagle further noted that "good wages" offered by the Project may attract employees who are already employed; this could indirectly contribute to the overall labour pool, as hiring these workers could create opportunities for others to take advantage of these job vacancies.³¹⁹

Agnico Eagle demonstrated a consideration of culturally-sensitive workforce management practices and an investment in the region's long term labour needs through its commitment to implementing employment, education and training benefit enhancement measures designed to capture the benefits of the Project by supporting local residents' ability to benefit from Project activities, and which aim to address barriers to employment.³²⁰ Examples of the employment benefit enhancement measures as outlined in the FEIS include:

³¹⁵ L. Grondin, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 27, 2014, p. 1164, lines 3-8.

³¹⁶ FEIS, Volume 9, p. 180.

³¹⁷ FEIS, Volume 9, p. 171.

³¹⁸ FEIS, Volume 9, p. 171.

³¹⁹ FEIS, Volume 9, p. 172.

³²⁰ FEIS, Volume 9, p. 172.

- A commitment to include points of hire in all 7 Kivalliq communities, including the funding of transportation between the mine site and these points of hire to enable Project employment without a need to leave home communities for extended periods of time;
- A commitment to provide Kivalliq communities and the Kivalliq Inuit Association with information regarding workforce requirements, job descriptions, qualifications, and performance criteria in English and Inuktitut;
- A commitment to review educational and training requirements for Project positions, to conduct prior learning assessments of candidates with a view to accepting experience in lieu of qualifications where possible; and
- To provide cross-cultural training to all employees in order to facilitate the successful integration of Inuit employees into the workforce and to facilitate understanding of Inuit values.³²¹

In terms of training and benefit enhancement measures, the following provide an example of the Proponent's stated commitments as found in the FEIS:

- To provide pre-employment training to job candidates in areas such as work readiness, life skills, and personal financial management;
- The establishment of a Work Force Development Plan to internally guide Agnico Eagle on its Project-related training needs and to facilitate addressing those needs through its continued participation in the Kivalliq Mine Training Society;
- To retrain selected construction workers for operations phase jobs and training operations workers in new required skills to allow successful employees to continue their employment as work force needs shift; and
- To support employee efforts to upgrade education as a means towards job advancement.

As noted during the Final Hearing, Agnico Eagle "will be looking for people with [any] skills and without certification as well because, again, we have had lots of successes with our in-house programs where people start without qualifications, but that they do acquire these skills at the mine."³²²

Overall, the Proponent had indicated that the Project could have substantial and long-lasting positive effects on businesses in the Kivalliq region by creating a platform for substantial economic growth and diversification of the economy, including increases to available employment. Agnico Eagle advocated within the FEIS that these effects would outweigh the potential negative effects caused by increased pressure on the labour market throughout the Kivalliq region.³²³

With respect to the Project competing with other businesses for labour, Agnico Eagle noted within its FEIS that although some potential may exist for competition during the initial phases of project development, it predicted that over the longer term, labour demand would not exceed Nunavut's capacity to supply. It further noted that with multiple mining projects operating at one time in Nunavut,

³²¹ FEIS, Volume 9, p. 180.

³²² K. Maynard, Agnico Eagle, NIRB Final Hearing File No. 11MN034, August 25, 2014, p. 684, lines 13-17.

³²³ FEIS, Volume 9, p. 180.

development of the industry could be expected to smooth out “bumps” in unemployment and as projects open and close, employment opportunities could arise.³²⁴

Regarding the effects of Project closure on employment, Agnico Eagle provided a detailed description of various scenarios to describe the mining industry’s capability to absorb workers from the Project at closure, based on operations-phase employment. It noted within the FEIS that the effects of closure on employment would be highly speculative because of the number of potential scenarios, which could exist, with other sources of employment being available at the time(s) of closure(s).³²⁵ Furthermore, Agnico Eagle noted that the enhanced capacity of the region’s labour force and businesses, as well as social investment and increased government revenues, could contribute to improved socio-economic status for residents over the life of the Project, having a result of improving the overall capacity to absorb the impacts of closure.³²⁶

5.2.2 Views and Concerns of Interested Parties

Nunavut Tunngavik Incorporated (NTI) noted the importance of effective on the job training and employment for young people, stating during the Final Hearing a desire to see young people not only hired in positions such as machine operators, but also to see them in management positions for the Project.³²⁷

The Government of Nunavut (GN) indicated within its final written submission, an acceptance of Agnico Eagle’s position that the local labour force must be able to respond to the requirements of the mining industry in order to maximize local employment for the life of the Project.³²⁸ The GN further noted during the Final Hearing that it expected that the Project would generate a significant demand for local employment and that it would be necessary for the GN to have time to adequately prepare Nunavummiut for employment opportunities.³²⁹ The GN also included within its final written submission, that where Agnico Eagle had indicated that a majority of positions would be unspecialized, efforts towards the maximization of local labour would need to reflect the ability of the Proponent and governments to upgrade and align the skillsets of the local population with the precise requirements of the mine. The GN further stressed the importance of producing accurate labour market information and reliable economic and employment forecasting for the current and future labour force, noting that it would require the most up-to-date estimates of the types of employment that would be available throughout the Project life, including the skills that would be required for such jobs. GN noted that this type of information would be critical to ensuring an available labour force that is able to maximize the potential benefit of the Project. Reflecting these vital importance of this information, GN recommended that the Proponent provide a detailed staff schedule for each of the Project phases with

³²⁴ FEIS, Volume 9, p. 194.

³²⁵ FEIS, Volume 9, p. 187.

³²⁶ FEIS, Volume 9, p. 186.

³²⁷ J. Eetoolook, Nunavut Tunngavik Inc., NIRB Final Hearing File No. 11MN034 Transcript, August 27, 2014, p. 1147, lines 6-10.

³²⁸ Government of Nunavut, Final Written Submission, July 18, 2014.

³²⁹ S. Pinksen, Government of Nunavut, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 858, lines 17-21.

positions by department and division identified, including the associated National Occupational Classification (NOC) code for each position.³³⁰

The GN also indicated within its final written submission that under its mandate it can administer Government of Canada training programs, it is responsible to oversee the apprenticeship program in Nunavut and further, it is able to provide access to several training initiatives and programs. As such, it noted that it would be essential for the Proponent to consult with the GN in the early stages of preparation and development of education and training activities. The GN requested that the Proponent identify and register all trades occupations, journeypersons and apprentices working with the Project, as well as register any trades occupations listed in its forecast. The GN further requested that Agnico Eagle identify how many registered apprentices and journeypersons from other jurisdictions were in its employ, and report this information to the GN.³³¹

Aboriginal Affairs and Northern Development Canada (AANDC) also included comments within its final written submission regarding employment, and acknowledged the Proponent's commitment to providing information regarding Inuit employment levels at each phase of the Project. AANDC noted that data cited within the FEIS as relating to the labour force analysis utilizes information from 2006, and noted that little information was provided on the required efficacy of training programs to meet employment targets. As such, AANDC requested that Agnico Eagle update its labour force analysis utilizing recent baseline information as such may be available from the Nunavut Bureau of Statistics or Statistics Canada, and recommended that the Proponent work collaboratively to monitor any impacts the Project may have on the labour force characteristics of the Kivalliq region at all project phases.³³²

AANDC further commented on Agnico Eagle's proposed *Human Resources Plan* and suggested that once training programs have commenced the Proponent work with the Socio-Economic Working Group in an effort to monitor training outcomes.³³³

Community representatives commented on the importance of training initiatives, the support for employment opportunities to be provided to local residents, and also questioned the GN on the provision of various training programs for Nunavummiut in the area of mining:

*We sense a lack of programs in the area of pre-employment and pre-trades in the area of mining. In Arviat, the Hamlet council economic development has spearheaded and seen opportunities come from the mine, and we have conducted our own training in areas such as welder helpers, diamond drillers, work-readiness programs and so on. It is good that Arviat has these opportunities, but it is limited right now only to Arviat, and it's not available to any other Nunavummiut. The question I ask is to the Government of Nunavut, are there any future programs proposed in Nunavut in this area? I see recently here Nunavut Arctic College has opened a trade school. These types of training programs could be offered to make use of this opportunity with mining that has come to Kivalliq.*³³⁴

³³⁰ Government of Nunavut, Final Written Submission, July 18, 2014.

³³¹ Government of Nunavut, Final Written Submission, July 18, 2014.

³³² Aboriginal Affairs and Northern Development Canada, July 21, 2014.

³³³ Aboriginal Affairs and Northern Development Canada, July 21, 2014.

³³⁴ E. Anoe, Arviat, Final Hearing NIRB File 11MN034 Transcript, August 24, 2014, p. 891-892, lines 23-26, 1-12.

*We have also been made aware of the importance of how are our youth can benefit from the employment and training opportunities which might be offered by the mine. These opportunities would not only be as Agnico Eagle Mines employees, but through economic spinoffs, such as the provision of business services that will be needed to support the mine.*³³⁵

*There are very few jobs in our region and in our community. As Inuit and as elders, we aren't making much of an income with what we -- but with what we have, we help our families. The cost of fuel is very high, and the cost of food as well. So I'm going to support -- be in support of seeing the mine open.*³³⁶

5.2.3 Views of the Board

The Board acknowledges and appreciates Agnico Eagle's stated intentions with respect to implementing benefit enhancements related to employment and education, and agrees that these will be an essential factor toward development of the local labour force. The Board also notes the GN's role in developing and providing access to various training programs and opportunities. The Board however also notes comments raised by the public indicated that there is a lack of understanding of the GN's role in providing such training, and this gap in understanding highlights not only the need for training in the mining sector but also ensuring that the potential candidates for such training are informed about these opportunities. The Board acknowledges the GN's role in offering and facilitating relevant training for Nunavummiut. Accordingly, as training is developed, the Board encourages the GN to provide additional details to inform residents at the community-level of the various opportunities that exist so that they are able to take full advantage of training and realize the potential direct benefits of employment and indirect opportunities that could result from the Project.

The Board also appreciates comments raised by AANDC regarding the need for updated baseline information to be included within Agnico Eagle's labour force analysis, and agrees with the recommendation put forward that the Proponent work collaboratively to monitor any impacts the Project may have on the labour force characteristics of the Kivalliq region during all project phases. The Board feels that providing updated labour market information is essential to an accurate understanding of the current labour supply and demand situations for both the Kivalliq region and Nunavut as a whole. Furthermore, this information will be input required by the GN as well, as the GN develops and provides education and training opportunities to Nunavummiut. The Board also agrees with the recommendation that the Proponent work with other agencies to monitor the impacts the Project may have on regional labour force characteristics, and that this work should be continued throughout the life of the Project in order to identify trends and patterns in the data and to accurately compare these with predictions made within the FEIS.

³³⁵ D. Ningeongan, Rankin Inlet, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 1136, lines 16-22.

³³⁶ A. Nanordluk, Repulse Bay, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 1081, lines 13-19.

The Board acknowledges Agnico Eagle's identification of the potential for Project employment to draw employees away from other economic activity, including traditional pursuits, as well as the potential adverse impact this may have on affected businesses and government departments. However, the Board does not feel that Agnico Eagle discussed the potential for other employers to lose their existing employees to Project employment at the level of detail required to accurately quantify these impacts, nor to identify which, if any, sectors or areas of the economy may be hardest hit by the movement of employees to Project employment.

Finally, the Board recognizes Agnico Eagle's discussion related to the potential effects on employment, which may result from temporary and final closure of the Project, and agrees that the discussion of such impacts will be speculative in nature as the regional and local circumstances surrounding other avenues of employment in the future can only be estimated. The Board appreciates the confidence with which Agnico Eagle noted the ability of an enhanced regional labour force capacity and other factors such as social investment and increased government revenues to improve the socio-economic status of residents and the result of improving the overall capacity to absorb the impacts of Project closure. After considering the Proponent's scenario based approach to considering impacts of closure on employment, however, the Board finds that limited discussion was provided regarding the potential for employees to acquire transferable skills during employment at the Project. The Board has no doubt that many of the skills gained during employment at the Project could be transferred to other mining-related jobs and even to other sectors of employment, however it would suggest that where these transferable skills can be clearly identified for parties and employees and then purposefully developed during employment at the Project.

5.2.4 Conclusions and Recommendations of the Board

The Board acknowledges the potential for employment benefits to accrue to Nunavummiut, as noted by the Proponent and other parties during the Hearing, and heeds comments from the Government of Nunavut and Aboriginal Affairs and Northern Development Canada regarding a need for accurate information to inform various training and development plans. The Board therefore recommends the following:

1. The Proponent shall submit a detailed staff schedule to the NIRB and to the Government of Nunavut in the first 6 months following the issuance of a Project Certificate. The schedule should, at a minimum, provide a description of:
 - a. Title of positions required by department and division;
 - b. Quantity of positions available by Project phase and year;
 - c. Transferable skills, both certified and uncertified which may be required for, or gained during, employment within each position; and,
 - d. The National Occupational Classification (NOC) code for each individual position.

The Proponent is encouraged to consult the Government of Nunavut during development of the schedule. A new schedule should be submitted following any significant deviation from original predictions.

2. The Proponent is encouraged to register all trades occupations, journeypersons and apprentices working with the Project and to register any trades occupations listed in its forecast, as well as to provide the Government of Nunavut with information regarding the number of registered apprentices and journeypersons from other jurisdictions employed at the Project during each year of the Project's life.
3. The Proponent shall update its labour force analysis utilizing current or the most recent baseline information as may be available from the Nunavut Bureau of Statistics or Statistics Canada. The updated labour force analysis is to be provided to the NIRB within 6 months of the Project Certificate being issued. The Proponent is encouraged to work collaboratively with other stakeholders to monitor any impacts the Project may have on the labour force characteristics of the Kivalliq region during all project phases.

5.3 Education and Training

5.3.1 Views of the Proponent

Within its summary of the baseline environment for education in its FEIS, Agnico Eagle recognized that education and training are strongly connected to the quality of life felt by individuals and communities and suggested that many economic and employment opportunities require skills that require education and training.³³⁷ It further noted that the educational achievements in Nunavut and in the Kivalliq region were low compared to Canada, and that relative to Nunavut as a whole, educational attainment in the Kivalliq region was low, with the exception of Rankin Inlet.³³⁸ Agnico Eagle defined the local study area for education and training as the Kivalliq region, and Nunavut as the regional study area.³³⁹

In its FEIS, Agnico Eagle considered new job opportunities in the mining sector and options for postsecondary training, such as the technical school in Rankin Inlet and training programs offered in conjunction with mining project proponents, as motivators for young people to remain in school.³⁴⁰

Agnico Eagle acknowledged within its FEIS that poor educational achievement contributes to decreased economic opportunities and to social challenges that can be the consequence of unemployment and poverty; the Proponent also noted the desire to enhance the potential for residents of the Kivalliq to access employment and contracting opportunities created by the Project. Reflecting this commitment to the region, Agnico Eagle also committed to providing Project-related education and training programs.³⁴¹ Agnico Eagle has additionally noted its hope that the contribution of the Project to Inuit beneficiaries is maximized, and that longer-term participation in the wage and traditional economies is one of the outcomes.³⁴²

³³⁷ FEIS, Volume 9, p. 197.

³³⁸ FEIS, Volume 9, p. 200.

³³⁹ FEIS, Volume 9, p. 200.

³⁴⁰ FEIS, Volume 9, p. 208.

³⁴¹ FEIS, Volume 9, p. 212.

³⁴² FEIS, Volume 9, p. 212.

Within its FEIS, Agnico Eagle also confirmed that it had signed a Memorandum of Understanding with the territorial Department of Education with a focus on increasing the number of students in the Kivalliq region able to successfully transition from high school to the trades and mining-related career opportunities.³⁴³ Agnico Eagle also noted its intention to collaborate with the Kivalliq Inuit Association, and education authorities in Nunavut to develop the details of an education and training strategy that would be broader in its goals than simply meeting Project-related needs, and that it would include, for example, elements such as:

- Providing timely and accessible information to Kivalliq communities on all Project related education and training opportunities;
- Providing pre-employment training to promising job candidates in such areas as work readiness and life skills in order to enhance the potential for success once employed;
- Establish a Work Force Development Plan to guide Agnico Eagle on its Project-related training needs and to facilitate addressing those needs through its continued participation in the Kivalliq Mine Training Society;
- Providing on-the-job training and counselling as appropriate in areas such as career development, diversity and respectful behaviours, life skills, and personal financial management to support successful employment experience;
- Retraining selected construction workers for operations phase jobs and training operations workers in new required skills (for example, in mining methods) to allow successful employees to continue their employment as work force needs shift; and
- Supporting efforts of employees to upgrade their education as a means towards job advancement, including accommodating employees, where practical, who decide to participate in high school completion programs by allowing employees to retain employment with the mine while upgrading their skills.³⁴⁴

The Proponent noted within its FEIS that an initiative related to its Meadowbank Gold Mine operation and developed in conjunction with the territorial Department of Education had achieved success in terms of developing various initiatives that were designed to benefit students from the Kivalliq Region by informing, engaging and supporting youth to be prepared to enter the labor force. It also indicated that based on this success, should the Meliadine Project be approved to proceed, it would consider extending the initiative to other areas of the Kivalliq Region, including Rankin Inlet and Arviat.^{345,346}

Agnico Eagle also noted within its FEIS that the Project could potentially result in negative impacts where in-migration of employees may lead to larger class sizes, as well as a decreased desire to proceed to post-secondary education if a high school education would be sufficient for many of the Project's employment opportunities.³⁴⁷

³⁴³ FEIS, Volume 9, p. 212.

³⁴⁴ FEIS, Volume 9, p. 212.

³⁴⁵ FEIS, Volume 9, p. 213.

³⁴⁶ Agnico Eagle, Meliadine FEIS Recommendation Responses, August 5, 2014.

³⁴⁷ FEIS, Volume 9, p. 214.

Within its FEIS and during the Final Hearing, Agnico Eagle stated its commitment to emphasize on-the-job training to its employees during all phases of the Project. This emphasis on training is intended to help employees develop skills that would contribute toward improved job performance and promotion, and a broadening of the skill base of employees such that these skills could be applied elsewhere in the economy, particularly in the communities.^{348, 349} Agnico Eagle also noted that job experience gained in many of the fields offered through mine-related employment would be transferable, and that as such, the residual benefits from the Project would include increases to the human capital of the Kivalliq region.³⁵⁰ The Proponent noted within the FEIS that there would be potential for some on-the-job training during the construction phase, but that most of the on-the-job training would take place during the operations phase as the Project would be expected to build to a 30% Inuit permanent workforce.³⁵¹ Agnico Eagle further noted that it expects to employ some of its skilled employees from the Meadowbank Gold Mine operation during the operations phase of the Meliadine Gold Project.³⁵²

In addition to on-the-job training, Agnico Eagle also outlined within its FEIS a commitment to providing assistance to employees wanting to develop skills necessary to prepare them for employment and contracting, including pre-employment programs, educational institution based programs such as apprenticeship and technician programs, and training for businesses.³⁵³

Agnico Eagle noted within its FEIS, the challenges in predicting impacts of the Project on school capacities, indicating that these would depend on the volume and nature of in-migration to the region – another factor it is unable to predict with accuracy at this time. The Proponent did indicate that in general, an increased number of families moving to the region would create increased impacts on schools and class sizes, but that increased funding should also provide positive benefits to the schools in terms of teacher retention. Finally, Agnico Eagle noted that the Project could be reasonably expected to lead to better school performances and higher graduation rates through increased funding and by providing a source of motivation for students in terms of potential future employment at the Project.³⁵⁴

Agnico Eagle noted within its FEIS that monitoring of socio-economic effects in the Kivalliq region and Nunavut would primarily be the responsibility of the Kivalliq Socio-economic Monitoring Committee and the Nunavut General Monitoring Plan Secretariat.

5.3.2 Views and Concerns of Interested Parties

Aboriginal Affairs and Northern Development Canada (AANDC) noted within its final written submission that the information provided by Agnico Eagle regarding the education system utilization rates were somewhat lacking in terms of trend information pertaining to the experience of Baker Lake in

³⁴⁸ FEIS, Volume 9, p. 215.

³⁴⁹ K. Maynard, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 670, lines 3-15.

³⁵⁰ FEIS, Volume 9, p. 215.

³⁵¹ FEIS, Volume 9, p. 215.

³⁵² FEIS, Volume 9, p. 215.

³⁵³ FEIS, Volume 9, p. 216.

³⁵⁴ FEIS, Volume 9, p. 217.

consideration of the Meadowbank Gold Mine operation.³⁵⁵ AANDC also recommended that the Proponent work with the members of the Kivalliq Socio-Economic Monitoring Committee to regularly review and monitor education utilization rate trends to understand if the Project is having an impact on the education system of the Kivalliq region in general, and on any communities in particular.

AANDC also recommended that, as Agnico Eagle's FEIS indicated that the prediction of socio-economic impacts arising from temporary, final and post-closure phases were speculative, the Proponent should include these phases and effects in its collaborative socio-economic monitoring program and apply mitigation measures as necessary.³⁵⁶

During the Final Hearing, members of the public also had questions for the Proponent related to education and training:

*We've heard a lot about the trades programs and how they can further the education. Are there any other programs for people who would like to get into, say, the administrative side of working with your company?*³⁵⁷

*With the employee rate of Inuks being so low, what kind of strategies have you guys put forward to create more Inuit working within the mines? Like, I know you guys have a few things that go on within the high school level, but have you guys promoted anything that might be credit courses for some of the community high schools?*³⁵⁸

5.3.3 Views of the Board

The Board acknowledges the challenges that can be present in developing predictions for potential impacts to a valued socio-economic component such as education and training, and appreciates the effort put forth by Agnico Eagle in assessing the baseline conditions. The Board also recognizes the comprehensive analysis that supported Agnico Eagle's predictions of potential impacts to this socio-economic component, and appreciates the many commitments made by the Proponent both in the FEIS, and again during the Final Hearing, in the areas of education and training.

The Board acknowledges and agrees with AANDC's recommendation that the Proponent work with the members of the Kivalliq Socio-Economic Monitoring Committee to review and monitor education utilization rate trends on an on-going basis to understand if the project is having an impact on the education system of the Kivalliq region in general, and on any communities in particular. Furthermore, the Board again stresses the importance of Agnico Eagle's collecting and analyzing Project specific data, and recommends that it endeavour to survey all employees regarding high school, trade school and post-secondary completion rates, as well as to document whether employees are leaving educational institutions in order to gain employment with the Project. It is the Board's opinion that this Project-

³⁵⁵ Aboriginal Affairs and Northern Development Canada, Final Written Submission, July 21, 2014.

³⁵⁶ Aboriginal Affairs and Northern Development Canada, Final Written Submission, July 21, 2014.

³⁵⁷ O. Tagalik, Arviat, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 744, lines 4-8.

³⁵⁸ D. Matoo, Chesterfield Inlet, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 705, lines 5-11.

specific information will lend a crucial perspective to regional monitoring initiatives and datasets, which may be collected and analyzed by other bodies, including the GN and the Regional Socio-Economic Monitoring Committee.

The Board supports AANDC's recommendation that Agnico Eagle's project-specific socio-economic monitoring program should address potential impacts to education and training arising from temporary, final and post-closure phases.

5.3.4 Conclusions and Recommendations of the Board

With respect to comments heard regarding a need for a variety of training opportunities and the transferability of skills gained at the Project, the Board recommends the following:

1. The Proponent is encouraged to work with training organizations and/or government departments offering mine-related or other training in order to provide additional opportunities for residents and employees to gain meaningful and transferable skills and certifications.
2. Prior to construction, the Proponent shall develop an easily referenced listing of formal certificates and licences that may be acquired via on-site training or training during Project employment. The listing shall indicate which of these certifications and licences would be transferable to a similar job site within Nunavut, and should be updated on an annual basis, and is to be provided to the NIRB upon completion and as may be revised.

Furthermore, with respect to the impacts of Project closure on education and training, the Board recommends that:

3. The Proponent's project-specific socio-economic monitoring program should be updated to address the potential impacts to education and training, which may arise from temporary, final and/or post-closure phases.

The Board recognizes comments raised by agencies and members of the communities during the Final Hearing and recommends the following:

4. The Proponent is encouraged to work with the members identified as potential stakeholders in the socio-economic monitoring working group and with the Kivalliq Socio-Economic Monitoring Committee to review and monitor education utilization rate trends on an on-going basis to understand if the Project can be determined to be having an impact on the education system of the Kivalliq region and/or on any communities in particular.

5.4 Population Demographics

5.4.1 Views of the Proponent

Agnico Eagle concluded in Volume 9, Section 2, of the Final Environmental Impact Statement (FEIS) that the Project should result in no residual effects on the population demographics valued socio-economic

component (VSEC) for the communities in the local study area (LSA) when considered in light of proposed mitigation measures. Agnico Eagle defined the socio-economic LSA for population demographics as being comprised of communities “nearest the project”, which included Arviat, Baker Lake, Chesterfield Inlet, Rankin Inlet and Whale Cove.³⁵⁹ Agnico Eagle concluded that the potential cumulative impacts of the Project on population demographics would be contingent on the timing of the Project phases compared to those of seven other mining projects in the region, and predominantly the Kiggavik uranium project and the Meadowbank Gold Mine.³⁶⁰ The Proponent concluded that there should be no residual effects on population demographics from the Project when taken into consideration with its proposed mitigation measures, including hiring and contracting.

In the FEIS, Agnico Eagle identified population stability as the only, and primary, pathway of effects through its assessment on population demographics, and focused this consideration on the potential effects of the Project on in-migration to Rankin Inlet and induced out-migration from other communities. During the Final Hearing, Agnico Eagle confirmed that the potential impacts associated with the project on population demographics would include in-migration to Rankin Inlet and out-migration from other communities within the territory due to the Project, as well as in-migration to Rankin Inlet from people outside of Nunavut.³⁶¹ Although Agnico Eagle only used population projection modelling for potential project-related migration impacts on Rankin Inlet³⁶² it noted that the community of Arviat may also experience in-migration due to its potential for mining and consumer related business opportunities.³⁶³ The Proponent noted that in-migration may result in competition for jobs, social services and goods and services, particularly housing, and predicted that migration levels would be more prevalent during the operations phase of the Project.³⁶⁴ Agnico Eagle predicted that there would be three predominant groups of in-migrants to the LSA communities, particularly Baker Lake and Rankin Inlet, in order of project impact: returning family members of Kivalliq residents, economic migrants, and out of area workers (e.g., southern hires).³⁶⁵

5.4.2 Views and Concerns of Interested Parties

As mentioned in preceding sections, the Government of Nunavut (GN) noted within its final written submission that while the Kivalliq SEMC is responsible for regional and territorial socio-economic monitoring, it recognized the Proponent’s acknowledgement of the need for project-specific socio-economic monitoring to effectively assess the impacts and benefits related to the Project.³⁶⁶ The GN recommended within its submission that the Proponent collaborate with the regulatory departments of the Federal and Territorial governments and Regional Inuit Association in order to establish a socio-

³⁵⁹ FEIS, Volume 9, p. 1.

³⁶⁰ FEIS, Volume 9, p. 53.

³⁶¹ D. Walker, AEM, NIRB Final Hearing File No. 11MN034 Transcript, August 22, 2014, p. 319, lines 5-10.

³⁶² FEIS, Volume 9, p. 45.

³⁶³ FEIS, Volume 9, p. 43.

³⁶⁴ FEIS, Volume 9, p. 44.

³⁶⁵ FEIS, Volume 9, p. 42.

³⁶⁶ Government of Nunavut, Final Written Submission, July 18, 2014.

economic monitoring focused working group to develop and oversee a Project-specific socio-economic monitoring program.³⁶⁷

The GN further recommended that Agnico Eagle establish a monitoring and reporting mechanism to identify trends in population migration and effects that may result from the Project in order to allow the Proponent to collaborate with the GN and other agencies to identify measures for managing and mitigating adverse impacts on employee well-being and communities included in the LSA.³⁶⁸

In its final written submission, Aboriginal Affairs and Northern Development Canada (AANDC) noted that following its review of Agnico Eagle's FEIS, collaborative socio-economic monitoring in areas where impacts are uncertain or may require mitigations remained an area of outstanding concern.³⁶⁹

Similar to a recommendation put forth by the GN, AANDC also recommended within its final written submission that in order for Agnico Eagle to effectively monitor the socio-economic impacts of the Meliadine Gold Project, the Proponent should collaborate with various socio-economic stakeholders to establish a socio-economic monitoring focused working group to develop and oversee a project-specific socio-economic monitoring program.³⁷⁰

During the final hearing, a community representative noted that the Project would result in population growth and demographic change.³⁷¹

5.4.3 Views of the Board

The Board acknowledges the Proponent's identification of in- and out-migration as having the potential to impact population demographics within the LSA, and further acknowledges its proposed efforts to mitigate and address these potential impacts as outlined within Agnico Eagle's FEIS and supporting documentation filed during the final hearing.

The Board agrees with the similar positions set forth by the Government of Nunavut and Aboriginal Affairs and Northern Development Canada in terms of the importance of Agnico Eagle's collection and analyses of socio-economic data as related to project-specific conditions relating to various parameters in general, and population demographics specifically. The Board appreciates Agnico Eagle's commitment to supporting and participating in regional and territorial socio-economic monitoring efforts and programs, as well as its stated commitment to collect and provide analysis of socio-economic data related to the Meliadine Gold Project specifically.

The Board notes however, that the Proponent has not assessed with the level of confidence expected by the Board, the potential for Project-induced demographic changes in population, including migration and redistribution, and the effects of those changes, as well as interactions between local residents and non-residents as required by the NIRB's EIS Guidelines for the Project. Furthermore, the Board is not

³⁶⁷ Government of Nunavut, Final Written Submission, July 18, 2014.

³⁶⁸ Government of Nunavut, Final Written Submission, July 18, 2014.

³⁶⁹ Aboriginal Affairs and Northern Development Canada, Final Written Submission, July 21, 2014.

³⁷⁰ Aboriginal Affairs and Northern Development Canada, Final Written Submission, July 21, 2014.

³⁷¹ D. Aglukark, Arviat, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 738, lines 18-19.

confident in the assessment provided by Agnico Eagle for the potential effects of fly-in/fly-out employment on population demographics, nor for the potential effects from various Project phases, including unemployment as a result of temporary suspension of operations or mine closure and the impact upon population demographics in the LSA.

The Board acknowledges that the Meliadine Gold Project has the potential to impact the socio-economic environment within the Kivalliq Region and Nunavut as a whole, and that certain changes would be felt at not only the individual level, but at the community and territorial levels as well. In- and out-migration are impacts that must be considered and monitored throughout the life of the Project in order to assist government and other service providers in determining the levels of service required to support changing community needs and to acquire the funding needed to ensure these service levels are met.

The Board accepts the recommendations provided by the Government of Nunavut³⁷², and Aboriginal Affairs and Northern Development Canada³⁷³ regarding socio-economic monitoring and has provided, where appropriate, recommendations to reflect the issues raised by these submissions.

5.4.4 Conclusions and Recommendations of the Board

The Board acknowledges the challenges which may be faced by the Proponent in monitoring certain socio-economic indicators independently, and consequently has in section 5.1.4, provided recommendations regarding the Proponent's participation in the Kivalliq Socio-Economic Monitoring Committee. Further to this, the Board sets forth the following for the consideration of the Kivalliq Socio-Economic Monitoring Committee and its membership in an effort to ensure that the monitoring of demographic changes affecting the Kivalliq communities sufficiently captures any changes that may be the result of the Meliadine Gold Project:

1. The Kivalliq Socio-Economic Monitoring Committee and its membership are encouraged to engage in the monitoring of demographic changes including the movement of people into and out of the Kivalliq communities and the territory as a whole. This information may be used in conjunction with monitoring data obtained by the Proponent from recent hires and/or out-going employees in order to assess the potential effects of the Project on migration.

The Board also recommends that the Proponent undertake project-specific monitoring of employee information in order to contribute valuable data into the initiatives of both the socio-economic working group as outlined in recommendations within section 5.1.4, as well as those of the Kivalliq Socio-Economic Monitoring Committee and as may be undertaken by other agencies. The information collected may inform the NIRB and other agencies of demographic changes occurring within communities, the Kivalliq region, and Nunavut as a whole that may be project-related:

2. The Proponent is encouraged to work with the Kivalliq Socio-Economic Monitoring Committee to design and implement a voluntary survey to be offered to its Nunavummiut employees on an annual basis in order to identify changes of address, housing status (i.e. public/social, privately owned/rented, government, etc.), and migration intentions, while respecting confidentiality of

³⁷² Government of Nunavut, Final Written Submission, July 18, 2014.

³⁷³ Aboriginal Affairs and Northern Development Canada, Final Written Submission, July 21, 2014.

all persons involved. The survey should be designed in collaboration with the Government of Nunavut, the Nunavut Housing Corporation and other relevant stakeholders. Non-confidential results of the survey are to be reported to the Government of Nunavut and the NIRB.

3. The Proponent shall include with its annual reporting to the NIRB a summary of employee origin information as follows:
 - a. The number of Inuit and non-Inuit employees hired from each of the Kivalliq communities, specifying the number from each;
 - b. The number of Inuit and non-Inuit employees hired from each of the Kitikmeot and Qikiqtani regions, specifying the number from each;
 - c. The number of Inuit and non-Inuit employees hired from a southern location or other province/territory outside of Nunavut, specifying the locations and the number from each; and
 - d. The number of non-Canadian foreign employees hired, specifying the locations and number from each foreign point of hire.

5.5. *Traditional Activity and Knowledge*

5.5.1. Views of the Proponent

Agnico Eagle concluded in Volume 9, Section 3, of its Final Environmental Impact Statement (FEIS) that there would be both positive and negative residual impacts on traditional land use (TLU) and traditional activity and knowledge for the communities in the local and regional study areas (LSA and RSA respectively). In the FEIS, Agnico Eagle defined the socio-economic LSA for TLU as the proposed mine footprint, proposed all-weather access road (AWAR) footprint and a 500 metre (m) buffer surrounding each of these footprints.³⁷⁴ The RSA was defined to include the proposed mine; proposed AWAR, the caribou effects study area, and the communities of Rankin Inlet, Chesterfield Inlet and Whale Cove.³⁷⁵

To assess the potential effects of the Project on TLU, Agnico Eagle identified three (3) primary effects pathways in the FEIS, including traditional and commercial harvesting, land use and mobility, and food security.³⁷⁶ Agnico Eagle utilized a literature review, focus group studies and interviews to collect information on traditional land use seasonal patterns for Rankin Inlet, Chesterfield Inlet and Whale Cove, and also utilized traditional knowledge collected from Inuit Qaujimajatuqangit (IQ) studies previously conducted by AREVA Resources Canada Inc. for its proposed Kiggavik Project.³⁷⁷

In its response to final written submissions, Agnico Eagle clarified its adaptive management framework, particularly as it related to caribou populations, and committed to updating its Terrestrial Wildlife

³⁷⁴ FEIS, Volume 9, p. 15.

³⁷⁵ FEIS, Volume 9, p. 15.

³⁷⁶ FEIS, Volume 9, p. 97.

³⁷⁷ FEIS, Volume 9, p. 55-96.

Management and Monitoring Plan (TEMMP) in response to the Kivalliq Inuit Association's specific information requests.³⁷⁸ During the Final Hearing, Agnico Eagle repeated its commitment to incorporate traditional knowledge into each of its monitoring plans.³⁷⁹

Traditional and Commercial Harvesting

To assess the potential effect of the Project on traditional and commercial harvesting, Agnico Eagle considered the potential effects of the Project on the availability of harvesting resources, access to those resources, and potential effects on traditional values, lifestyles and household function resulting from the introduction of wage employment.³⁸⁰ Agnico Eagle's FEIS identified two primary effects pathways considered within its analysis of potential effects of the Project on traditional and commercial harvesting. Firstly, Agnico Eagle predicted that the potential effects of the Project on the availability of terrestrial and marine wildlife (including fish) for traditional and commercial harvesting would be "negligible to moderate in magnitude ... local to regional in scale ... medium to long term, reversible" and ranging from not likely to highly likely.³⁸¹ Through its vegetation, wildlife and marine wildlife assessments, Agnico Eagle determined that harvesters of these resources should not notice a disruption in harvesting patterns "relative to current natural cycles" and noted that it did not expect the Project to have an effect on the sustainability of resources for traditional harvesting.³⁸² Second, in its FEIS, Agnico Eagle predicted that the Project would lead to increased access to traditional harvesting areas via the all-weather access road (AWAR).³⁸³ During the Final Hearing, Agnico Eagle clarified that it would implement restrictions to on-site workers for hunting, trapping, harvesting and fishing.³⁸⁴

In the FEIS, Agnico Eagle predicted that the potential residual impacts of the Project on traditional and commercial harvesting would range from not significant to moderate and would include:

- Changes in the availability of terrestrial and marine wildlife (including fish);
- Permanent loss or alteration of vegetation including listed and traditional plant species resulting from residual ground disturbance;
- Increased time and resources available for harvesting of country foods;
- Weakening of traditional culture, including traditional values and lifestyles and household function due to Project-related wage employment; and
- Perceptions of the Project leading to mental stress and changes in behaviour, including the reduced consumption of country foods.³⁸⁵

³⁷⁸ Agnico Eagle, Response to Final Written Submissions, August 7, 2014.

³⁷⁹ B. Armstrong, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 851, lines 16-19.

³⁸⁰ FEIS, Volume 9, p. 98.

³⁸¹ FEIS, Volume 9, p. 106.

³⁸² FEIS, Volume 9, p. 106-107.

³⁸³ FEIS, Volume 9, p. 98.

³⁸⁴ D. Walker, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 130, lines 14-18.

³⁸⁵ FEIS, Volume 9, Table 9.3-18, p. 109.

In its FEIS, Agnico Eagle further predicted that the potential cumulative effects on traditional harvesting resulting from the Project would be:

- Positive, low to moderate in magnitude, regional, medium-term, reversible and periodic during traditional and non-traditional hunting seasons regarding the availability of wildlife;
- Negative, low in magnitude, long-term and continuous regarding the availability of birds;
- Negligible regarding the availability of marine species; and
- Negligible to low regarding the availability of vegetation.³⁸⁶

Agnico Eagle noted within the FEIS that members of the LSA communities depend highly on land-based resources for sustenance and livelihoods, particularly caribou.³⁸⁷ It further noted that as indicated by traditional knowledge studies, hunting, trapping and fishing have occurred near the proposed Project site, and further, that Meliadine Lake has been a traditional fishing spot.³⁸⁸ During the Final Hearing, Agnico Eagle stated that it had observed caribou crossing near the Project site, which participants noted in the traditional knowledge studies.³⁸⁹ Participants of a traditional knowledge study regarding marine approaches expressed concerns regarding the health of Meliadine Lake near section 4 of the proposed AWAR and the potential negative effects of project activities on nesting birds.³⁹⁰ Agnico Eagle also noted in the FEIS that the preservation of Marble Island was identified as an area of concern by traditional knowledge holders participating in the various studies and workshops.³⁹¹ During the Final Hearing, Agnico Eagle committed to ensuring that the Project footprint would be kept to a minimum of at least two (2) kilometres from Marble Island and noted that project-related ships would not be anchoring at Marble Island.³⁹² During the Final Hearing, Agnico Eagle noted that it would establish a marine wildlife monitoring program and committed to consulting with the GN, KIA and HTOs to establish that program.³⁹³

Land Use and Mobility

In the FEIS, Agnico Eagle identified change in access to traditional use as the one, and primary, pathway through its analysis of the Project's potential effects on land use and mobility.³⁹⁴ In addition, the Proponent predicted that the potential negative residual impacts of the Project on land use and mobility would range from low to moderate and would include impacts on the use of culturally important areas and impacts on access to land use areas.³⁹⁵ In the FEIS, Agnico Eagle also predicted that the potential residual impacts of Project activities on noise and visual effects to culturally important areas, such as cabins and sites in the Iqalugaarjuup Nunanga Territorial Park, would be negative.³⁹⁶ Agnico Eagle noted that due to increased noise levels and the presence of waste rock piles, the "wilderness experience" of

³⁸⁶ FEIS, Volume 9, p. 111.

³⁸⁷ FEIS, Volume 9, p. 141.

³⁸⁸ FEIS, Volume 9, p. 63.

³⁸⁹ S. Robert, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 659, lines 1-10.

³⁹⁰ FEIS, Volume 9, Section 3, p. 65.

³⁹¹ FEIS, Volume 9, Appendix 9.3-C, p. 1.

³⁹² S. Robert, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 694, lines 4-15.

³⁹³ L. Connell, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 717, lines 20-26.

³⁹⁴ FEIS, Volume 9, Table 9.3-17, p. 97.

³⁹⁵ FEIS, Volume 9, Table 9.3-19, p. 110.

³⁹⁶ FEIS, Volume 9, p. 107.

traditional land users may be diminished, and that the potential effect would be negligible to moderate depending on the proximity of land users to the Project site.³⁹⁷ Agnico Eagle further noted that the potential negative visual effect would likely extend to the RSA and that this impact would be long term. During the Final Hearing, Agnico Eagle clarified that while there was uncertainty regarding the number of cabins that would potentially be affected by the Project, it had surveyed the current use of existing cabins in order to predict potential effects.³⁹⁸

Agnico Eagle noted in the FEIS that as potential noise effects would not extend beyond the LSA and that there were no other projects identified in the LSA, the potential cumulative impacts on noise levels would be limited to the potential noise effects of the Project.³⁹⁹ In addition, Agnico Eagle predicted that, owing to limited regional development in the RSA, the potential cumulative visual effects would be low.⁴⁰⁰

Agnico Eagle also considered the potential effects to the use of culturally important areas to be low in significance and that a residual and cumulative effects assessment on the potential effects of the Project to the archaeological record was unnecessary, as it did not identify any primary pathways relating to, or impacting upon, heritage resources.⁴⁰¹

In the FEIS Agnico Eagle noted that the proposed AWAR would provide increased access to and within the LSA, including to Meliadine Lake and cabins, but that due to the absence of development and other roads in near proximity, the potential cumulative effects of multiple roads was expected to be low. Agnico Eagle clarified during the Final Hearing that the proposed AWAR would be accessible to the public, but that public access would be restricted nearer to the mine site for safety reasons.⁴⁰² Further, during the Final Hearing, Agnico Eagle noted that following closure of the mine and after reclamation of the road, it expected that the surface would be scarified, passable, and similar to a trail.⁴⁰³

Food Security

In the FEIS, Agnico Eagle identified changes in availability and quality of traditional foods as the one, and primary, pathway through its analysis of potential effects on food security.⁴⁰⁴ Agnico Eagle used results of its human health risk assessment (HHRA), which indicated that there were no chemicals of potential concern in the soil or surface water, to determine that there would be no chemical changes in country foods (including plants, animals and fish) and that therefore no additional assessment was required.⁴⁰⁵ In addition, the Proponent predicted that the potential negative residual impacts of the Project on food security, the potential for perceptions of the Project to lead to mental stress and changes in behaviour,

³⁹⁷ FEIS, Volume 9, p. 107.

³⁹⁸ L. Connell, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, pp. 107-108, lines 18-26 and 1-3.

³⁹⁹ FEIS, Volume 9, p. 111.

⁴⁰⁰ FEIS, Volume 9, p. 111.

⁴⁰¹ FEIS, Volume 9, p. 111.

⁴⁰² L. Connell, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 666, lines 1-24.

⁴⁰³ L. Connell, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 929, lines 1-19.

⁴⁰⁴ FEIS, Volume 9, Table 9.3-20, p. 110.

⁴⁰⁵ FEIS, Volume 9, p. 108.

including reduced consumption of country foods, would be low.⁴⁰⁶ During the Final Hearing Agnico Eagle noted that at the mine site, it would only be able to procure country foods from licenced sources for general consumption, but that a separate kitchen area would be available for individuals to bring and prepare their own country food at site.⁴⁰⁷

5.5.2. Views and Concerns of Interested Parties

Many parties commented on the potential effect of increased access via the AWAR on wildlife populations. During the Final Hearing, the Kivalliq Inuit Association (KIA) noted that the proposed AWAR would likely result in altered harvest distribution and that it may increase harvesting pressures upon the Qamanirjuaq caribou herd.⁴⁰⁸ The KIA questioned whether the Government of Nunavut, the Nunavut Wildlife Management Board or Nunavut Tunngavik Incorporated should be responsible for undertaking a regional harvest study to determine if the potential effects to the caribou herd could be deemed to be related to the road or to other causes.⁴⁰⁹

During the Final Hearing, one community representative from Rankin Inlet noted that the proposed Project site would overlap with caribou migration paths, and that this information is accepted and known through the transmission of traditional knowledge.⁴¹⁰

During the Final Hearing, members of the public discussed the potential effects of the proposed AWAR on public access and hunting opportunities. One community representative from Rankin Inlet noted that because a potential benefit of the proposed AWAR would be increased access to harvesting sites, the AWAR should not be reclaimed after the Project site had been closed in order to continue to facilitate increased access to harvesting areas.⁴¹¹ Additionally, a community member from Whale Cove questioned the proposed accessibility of the entire AWAR by the public and asked whether parts of the road would be restricted to non-mine employees, recommending that there be no restrictions to public access along the road.⁴¹²

In its joint final written submission, the Kivalliq Wildlife Board (KWB), Aqiggiq and Kangiqliniq Hunters and Trappers Organizations (AHTO and KHTO, respectively) noted that the AWAR corridor is an important caribou hunting area and argued that caribou migration through the proposed camp and AWAR should be viewed as an expectation rather than anomaly. In addition, the KWB, AHTO and KHTO

⁴⁰⁶ FEIS, Volume 9, Table 9.3-20, p. 110.

⁴⁰⁷ L. Connell, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 889, 890, lines 5-18, 9-22.

⁴⁰⁸ K. Poole, Kivalliq Inuit Association, NIRB Final Hearing File No. 11MN034 Transcript, August 22, 2014, p. 534, lines 18-26.

⁴⁰⁹ K. Poole, Kivalliq Inuit Association, NIRB Final Hearing File No. 11MN034 Transcript, August 22, 2014, p. 534-535, lines 18-26-21 and 1-2.

⁴¹⁰ J. Tattuinee, Rankin Inlet, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 657-658, lines 20-26 and 1-6.

⁴¹¹ C. Makpah, Rankin Inlet, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 654, lines 1-25.

⁴¹² M. Nangmalik, Whale Cove, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 665-666, lines 17-26 and 1-6.

noted the importance of ensuring compatibility between Agnico Eagle's need for access to the land for its activities, and the need for Inuit to have access to the land as well.⁴¹³ The KWB, AHTO and KHTO also recommended that the Board "give due regard to the fact that the significance of cumulative impacts to wildlife and wildlife habitat may be different if determined from the viewpoint of Inuit harvesters rather than from an industrial perspective."⁴¹⁴

In its final written submission, Fisheries and Oceans Canada (DFO) commented on potential overharvesting of fish, which may result from increased access via the AWAR.⁴¹⁵

During the Final Hearing, community representatives expressed concern regarding the potential impact of Project activities on marine mammals. One community representative from Chesterfield Inlet noted that community members hunt for sea mammals as a source of food near Chesterfield Inlet and Marble Island, and that shipping activities as part of the Project would affect migration paths of marine mammals and would impact fish.⁴¹⁶ Similarly, one community representative from Chesterfield Inlet noted, "Marble Island is used a lot by hunters, and [is] a migration path for whales" and suggested that ships should not be passing closer than two kilometres to Marble Island.⁴¹⁷ One community representative asked that Agnico Eagle inform elders if "there [are] any changes in marine mammals [at Marble Island], their habitats and their migration routes".⁴¹⁸

In their final written submission, the KWB, AHTO and KHTO argued that although the proposed project-specific marine traffic "is not of an unprecedented scale," that because the marine environment is important to the Inuit coastal communities, project-specific marine traffic must be considered.⁴¹⁹

Within its final written submission, AANDC noted although VECs and VSECs were highly interrelated, particularly regarding harvesting, food security and traditional activities, the potential interactions between impacts on VSECs and VECs were unclear in the FEIS.⁴²⁰ AANDC recommended that Agnico Eagle collaborate with the Kivalliq Socio Economic Monitoring Committee to monitor impacts on areas of concern to communities, particularly related to harvesting, food security and traditional activities.⁴²¹

During the Final Hearing, parties commented on Agnico Eagle's use of Inuit Qaujimajatuqangit and Traditional Knowledge in its assessments and the subsequent predictions of potential project induced effects.

⁴¹³ Kivalliq Wildlife Board, Aqiggiq Hunters and Trappers Organization and Kangiqliniq Hunters and Trappers Organization, Final Written Submission, July 21, 2014.

⁴¹⁴ Kivalliq Wildlife Board, Aqiggiq Hunters and Trappers Organization and Kangiqliniq Hunters and Trappers Organization, Final Written Submission, July 21, 2014.

⁴¹⁵ Fisheries and Oceans Canada, Final Written Submission, July 21, 2014.

⁴¹⁶ L. Mimialik, Chesterfield Inlet, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, pp. 689-690, lines 9-26 and 1-4.

⁴¹⁷ G. Thompson, Chesterfield Inlet, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 691, lines 19-24.

⁴¹⁸ P. Enuapik, Whale Cove, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 671, lines 13-20.

⁴¹⁹ Kivalliq Wildlife Board, Aqiggiq Hunters and Trappers Organization and Kangiqliniq Hunters and Trappers Organization, Final Written Submission, July 21, 2014.

⁴²⁰ Aboriginal Affairs and Northern Development Canada, Final Written Submission, July 21, 2014, p. 18.

⁴²¹ Aboriginal Affairs and Northern Development Canada, Final Written Submission, July 21, 2014, p. 18.

The Kivalliq Inuit Association (KIA) for instance, noted that it did not find “sufficient evidence of the use of traditional knowledge to support the proponent’s claim that it had been well integrated into the assessment of their proposed project”, particularly with regard to knowledge obtained from Elders and the identification of potential effects.⁴²² Additionally, in its final written submission, the KIA argued that Agnico Eagle did not adequately “synthesize or incorporate Inuit Qaujimajatuqangit in any meaningful manner” into its assessment of the Project’s potential effects on the terrestrial environment and recommended better inclusion of issues (particularly those related to caribou calving) into its Terrestrial Environment Management and Monitoring Plan.⁴²³ The KIA provided suggestions with regard to traditional knowledge research.

The Government of Nunavut expressed support for the use of Inuit societal values through Inuit Qaujimajatuqangit throughout the progression of the Project.⁴²⁴

Community representatives expressed a concern that focus was being placed on the use of scientific knowledge, and indicated that holders of Inuit Qaujimajatuqangit in Rankin Inlet should be asked to share their knowledge, particularly in regards to the abundance of seals and caribou, and that they should also be consulted regarding project activities such as the reclamation of the AWAR.⁴²⁵ A representative from Arviat also noted that the land and wildlife, especially traditional areas and caribou, must be respected and protected, recommending that there be a balance between providing economic opportunities and ensuring environmental protection.⁴²⁶ A representative from Rankin Inlet noted present issues with the transmission of traditional knowledge, particularly to the younger generations.⁴²⁷

Also during the Final Hearing, a community representative from Coral Harbour expressed concern regarding the accessibility of, and potential for contamination to, country food brought to site by employees and questioned whether country food would be inspected when brought to the mine.⁴²⁸

5.5.3. Views of the Board

The Board acknowledges comments raised by the KIA regarding the limited inclusion and incorporation of traditional knowledge and Inuit Qaujimajatuqangit into Agnico Eagle’s assessment and monitoring of Project effects in general, and with regard to the terrestrial and marine environments in particular. The Board agrees with the KIA’s recommendation that a community-based process for the integration and

⁴²² B. Parlee, Kivalliq Inuit Association, NIRB Final Hearing File No. 11MN034 Transcript, August 22, 2014, p. 520, lines 13-17.

⁴²³ Kivalliq Inuit Association, Final Written Submission, July 21, 2014, p. 2.

⁴²⁴ S. Pinsken, Government of Nunavut, NIRB Final Hearing File No. 11MN034 Transcript, August 22, 2014, p. 389, lines 6-12.

⁴²⁵ M. Nangmalik, Whale Cove, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, pp. 941-942, lines 19-26 and 1-19.

⁴²⁶ P. Alareak, Arviat, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 1077, lines 11-13.

⁴²⁷ J. Tattuinee, Rankin Inlet, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 658, lines 7-12.

⁴²⁸ M. Matoo, Coral Harbour, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 887, lines 11-12, 889-890, lines 20-23 and 1-7.

sharing of monitoring results should be established during the life of the mine, and acknowledges the requests from Chesterfield Inlet to have local traditional knowledge incorporated into project considerations and assessments, as well as to be informed of changes to marine mammals in terms of habitats and migration routes. The Board also appreciates Agnico Eagle's commitment to cooperate with the KIA, Inuit stakeholders, and the Hunters and Trappers Organization to incorporate traditional knowledge information into its monitoring plans.

The Board shares concerns raised by parties regarding the increased access to terrestrial wildlife and freshwater fish species which may be facilitated by public use of the all-weather access road, and notes the potential for increased harvesting and fishing pressures that may come as a result. While the all-weather access road may be proposed as privately owned and operated, the Board does not feel that Agnico Eagle has adequately gauged the potential levels of public usage of the road. Furthermore, the Board does not feel that Agnico Eagle has accurately assessed the impacts of increased pressures to the surrounding areas and resultant impacts to terrestrial species and fisheries resources.

The Board acknowledges comments raised by AANDC regarding the lack of clarity and visual representation of the interconnectedness of the VECs and VSECs, particularly regarding harvesting, food security and traditional activities. The Board agrees with AANDC's recommendation that the Proponent monitor Project impacts in areas of concern to communities, and acknowledges Agnico Eagle's analysis of these VECs and VSECs and use of community and traditional knowledge.

The Board agrees with the comments from various parties raised with respect to the hunter harvest study as proposed by Agnico Eagle, and accepts that additional work may be needed by the Proponent to improve study design and methodology; recommendations have thus been provided within section 4.10.4.

The Board recognizes that Agnico Eagle has yet to finalize traffic management and usage plans for the all-weather access road, however as noted previously throughout this report, it shares concerns raised by various parties with respect to improved access to caribou, as well as to fisheries populations, and the additional harvesting pressures which may come as a result.

During the Final Hearing, it became apparent to the Board that Agnico Eagle had not adequately considered factors such as public parking, boat docking/launching, and garbage facilities in its design considerations for the public boat launch area at Meliadine Lake.^{429, 430} The Board has concerns that these factors were not considered by Agnico Eagle prior to the Final Hearing and that the details of its initial proposal for the community boat launch facility were not available for the information of, and discussion by, all parties. Without being able to consider these details, the Board is not confident that the FEIS adequately considers the potential effects that may be associated with increased access to Meliadine Lake and heavy use of the road, the new launch facilities, and the Lake itself.

⁴²⁹ K. Kalarag, NIRB, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 1066, lines 14-21.

⁴³⁰ L. Connell, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, pp. 1066-1067, lines 6-26 and 1-9.

5.5.4. Conclusions and Recommendations of the Board

The Board notes that Agnico Eagle has not finalized the system by which it intends to allow unrestricted public access to the all weather access road, and recognizes its commitment to have this system in place prior to the completion of construction of Phase 2 of the all-weather access road. As such, the Board has provided recommendations within section 6.1.4 of this Report.

The Board acknowledges that the Proponent has yet to develop plans relating to the public boat launch and surrounding area proposed for development at Meliadine Lake, and recommends the following:

1. Prior to commencing construction of the Discovery spur road to pass Meliadine Lake, the Proponent shall provide to the NIRB, details regarding the design features for the Meliadine Lake community boat launch, including traffic turnoffs from the all-weather access road, relevant signage, parking areas, considerations for public safety around the boat launch, plans for garbage removal and treatment of other refuse including buildings and equipment which may be stored at the site, as well as plans to monitor and/or maintain the site, including frequency and timing. These details, once finalized, shall also be incorporated, as updates, to various mitigation, monitoring and/or management plans as applicable.

The Board recognizes the Proponent's commitment to cooperating with various agencies and to include traditional knowledge within its monitoring plans and also acknowledges from a community level perspective, that ongoing engagement is of utmost importance; it therefore recommends the following:

2. The Proponent is encouraged to consult with the Kangiqliniq Hunters and Trappers Organization and the Kivalliq Socio-Economic Monitoring Committee and to make all reasonable efforts to engage Elders and community members of the Kivalliq communities in order to have community level input into updates to its monitoring plans, programs and mitigative measures. This type of engagement will ensure that these programs and measures have been informed by traditional activities, cultural resources, and land use as such may be implicated or impacted by ongoing Project activities. All plans are to include a feedback mechanism for consulting with residents of the Kivalliq, including the provision of results from the Proponent's wildlife monitoring programs to each community.

5.6. *Non-Traditional Land Use and Resource Use*

5.6.1. Views of the Proponent

Agnico Eagle concluded in Volume 9, Section 9, of the Final Environmental Impact Statement (FEIS) that potential residual effects of the Project on non-traditional land use and resource use (NTLU) would be regional in extent, negative, negligible to moderate, medium to long-term duration and not significant.⁴³¹ Agnico Eagle further noted in the FEIS that non-traditional hunting, fishing and tourism activities were limited in the regional study area (RSA) and concluded that the potential impact of the

⁴³¹ FEIS, Volume 9, Table 9.9-2, p. 314.

Project would be negligible to low.⁴³² In addition, Agnico Eagle concluded that it did not expect that the Project would result in cumulative effects in the local study area (LSA), with the exception of effects on the acoustic environment.⁴³³ In the FEIS, Agnico Eagle defined the socio-economic LSA for NTLU as comprising the terrestrial resources of Rankin Inlet, the all-weather access road (AWAR), and the Project mine site. The regional study area (RSA) for NTLU was defined as the caribou RSA, including the Iqalugaarjuup Nunanga Territorial Park and Chesterfield Inlet.⁴³⁴

To analyze the potential effect of the Project on the non-traditional land use VSEC, Agnico Eagle focused on the following two VSECs in the FEIS: hunting and fishing; and tourism, recreation, parks and protected areas.⁴³⁵ Agnico Eagle noted in the FEIS that while commercial fishing is not prominent in the RSA, the tourism industry is a “priority sector” in the Kivalliq region.⁴³⁶ Through pathway analysis, Agnico Eagle identified five (5) primary pathways and predicted that the Project would have potential positive and non-significant residual effects on these pathways.⁴³⁷

In the FEIS, Agnico Eagle first predicted that as a result of the placement of the AWAR, the Project may increase access to non-traditional hunting and fishing opportunities in the RSA as well as to the Iqalugaarjuup Nunanga Territorial Park and would provide a positive effect and benefit to outfitting and guiding businesses as well as tourism in the RSA.⁴³⁸ In the FEIS Agnico Eagle noted that prior to the AWAR being constructed both visitors and residents of Rankin Inlet frequented the Iqalugaarjuup Nunanga Territorial Park via a gravel road and trails.⁴³⁹

Secondly, Agnico Eagle predicted that while the Project may affect the availability of wildlife and fish resources for hunting and fishing activities, it did not consider the potential effects to be significant, as NTLU activities were found to be prevalent.⁴⁴⁰

In the FEIS, Agnico Eagle predicted that Project-related noise and visual effects (the latter resulting from the proposed waste rock piles) may have a moderate effect on hunting and fishing experiences of individuals as well as tourism in certain areas of the RSA, including those activities taking place or staged near Meliadine Lake and cabins near the Project area.⁴⁴¹ Agnico Eagle further predicted that the proposed waste rock piles at the Project site would be visible from 55 to 60 kilometres (km) away and would be visible from points around Rankin Inlet and in the southeast section of the aforementioned Territorial Park.⁴⁴² Agnico Eagle clarified that the future waste rock piles would not be visible from other parks and protected areas in the RSA, including the Arvia’juaq and Qikiqtarrjuk National Historic Sites and the McConnell River Migratory Bird Sanctuary. Agnico Eagle further predicted that the expected

⁴³² FEIS, Volume 9, p. 315.

⁴³³ FEIS, Volume 9, p. 316.

⁴³⁴ FEIS, Volume 9, p. 306.

⁴³⁵ FEIS, Volume 9, Table 9.9-1, p. 311.

⁴³⁶ FEIS, Volume 9, p. 307.

⁴³⁷ FEIS, Volume 9, p. 307.

⁴³⁸ FEIS, Volume 9, p. 315.

⁴³⁹ FEIS, Volume 9, p. 312.

⁴⁴⁰ FEIS, Volume 9, p. 315.

⁴⁴¹ FEIS, Volume 9, p. 315.

⁴⁴² FEIS, Volume 9, p. 308.

noise resulting from the project would not exceed the recommended value of 40 decibels outside of a proposed 1.5 km buffer.⁴⁴³

In the FEIS, Agnico Eagle predicted that while no other developments currently exist in the vicinity of the Project and it did not predict any cumulative impacts in the LSA, the potential does exist for cumulative effects to occur within the acoustic environment.⁴⁴⁴ Agnico Eagle also acknowledged the potential for cumulative effects in the RSA to result from the proposed Manitoba to Nunavut road (to extend from Churchill, Manitoba to Rankin Inlet, Nunavut), the Ferguson Lake Project, and the Churchill Diamond Project, as all three developments would potentially use the Manitoba to Nunavut road to transport goods and personnel. Agnico Eagle added that it was unlikely, yet possible, that the Ferguson Lake Project and the Churchill Diamond Project would use Rankin Inlet as a port and that the road traffic resulting from those two projects in combination with the Meliadine Gold Project would act cumulatively to increase noise levels in the LSA where the Manitoba to Nunavut road would enter Rankin Inlet. Agnico Eagle considered this scenario unlikely and concluded that there would be no potential significant effects.⁴⁴⁵

In the FEIS, Agnico Eagle did not recommend additional mitigation or follow-up measures, noting that proposed mitigation measures regarding hunting and fishing and noise were proposed in relation to other Valued Ecosystem Components.⁴⁴⁶

In its response to final written submissions, Agnico Eagle responded to the GN's request for additional information on the Iqalugaarjuup Nunanga Territorial Park by providing recent data on Park use, wildlife and bird habitat and associated archaeological sites.⁴⁴⁷

5.6.2. Views and Concerns of Interested Parties

In its final written submission, the Government of Nunavut noted that some of the information the Proponent provided in the FEIS regarding the Iqalugaarjuup Nunanga Territorial Park was incorrect, and requested that Agnico Eagle consult with the GN to update its information regarding the Park to maintain consistency and accuracy.⁴⁴⁸

The GN further commented on the public accessibility of Phase 2 of the proposed AWAR, which is located approximately 160 metres from the southern boundary of the Iqalugaarjuup Nunanga Territorial Park, and suggested that increased access to the road could potentially impact the "natural and cultural integrity of the Park".⁴⁴⁹ The GN noted that it had not been consulted, or included in consultation plans in Agnico Eagle's FEIS concerning access and recommended the Proponent involve the GN in discussions regarding the management of unrestricted access to the AWAR.⁴⁵⁰ During the Final Hearing, the GN

⁴⁴³ FEIS, Volume 9, p. 308-309.

⁴⁴⁴ FEIS, Volume 9, p. 316.

⁴⁴⁵ FEIS, Volume 9, p. 316.

⁴⁴⁶ FEIS, Volume 9, p. 316.

⁴⁴⁷ Agnico Eagle, Responses to Final Submissions, August 7, 2014.

⁴⁴⁸ Government of Nunavut, Final Written Submission, July 18, 2014.

⁴⁴⁹ Government of Nunavut, Final Written Submission, July 18, 2014.

⁴⁵⁰ Government of Nunavut, Final Written Submission, July 18, 2014.

noted that through discussions with Agnico Eagle, its previous concerns regarding the Park had been addressed and that the Proponent had committed to recommendations made by the GN.⁴⁵¹

The GN and the Proponent both acknowledged that the Proponent operates and maintains the Meliadine all-weather access road under a road land use lease granted by the Kivalliq Inuit Association as the road is primarily located on Inuit Owned Land, and that under this lease, the Proponent is bound to manage, maintain and operate the road in accordance with the terms and conditions contained within the lease and the applicable laws of Canada and Nunavut. The Proponent acknowledged that the southern end of the AWAR passes in close proximity to the Iqalugaaruup Nunanga Territorial Park managed by the Government of Nunavut, and committed to also consulting Government of Nunavut Park staff on matters relating to AWAR access.

The GN also acknowledged and supported Agnico Eagle's commitment to avoid flying over or landing within the boundaries of the Iqalugaaruup Nunanga Territorial Park.⁴⁵²

As previously documented in section 4.10.2, the Kivalliq Wildlife Board (KWB), Aqiggiq and Kangiqliniq Hunters and Trappers Organizations (AHTO and KHTO, respectively) noted that the AWAR corridor overlaps with caribou migration routes, and further indicated that caribou are prevalent in the area, which is heavily used by Inuit for the harvesting of caribou.⁴⁵³

5.6.3. Views of the Board

The Board shares the concerns raised by the GN regarding the need for accurate and up to date information on the Iqalugaaruup Nunanga Territorial Park and appreciates Agnico Eagle's provision of requested data in its response to written comments.

The Board also shares concerns raised by the GN regarding the potential effects that increased access via the all-weather access road may have on access to the Iqalugaaruup Nunanga Territorial Park and specifically, to the ecosystemic and cultural aspects of the Park. The Board supports the GN's recommendation that Agnico Eagle consult with the GN on matters relating to public access the AWAR, considering the potential for increased access to the Territorial Park. Furthermore, the Board appreciates Agnico Eagle's efforts to date in terms of incorporating the GN's requests regarding consultation efforts.

The Board recognizes that although the concerns raised by the KWB, AHTO and KHTO regarding the prevalence of caribou in the Project area and potential impacts were offered specifically in the discussion of traditional land use, in the Board's view, it is safe to infer that non-traditional land use activities, particularly hunting, fishing, and related outfitting and guiding businesses, may also be potentially affected in a similar manner.

⁴⁵¹ S. Pinsken, Government of Nunavut, NIRB Final Hearing File No. 11MN034 Transcript, August 22, 2014, p. 395, lines 9-13.

⁴⁵² Government of Nunavut, Final Written Submission, July 18, 2014.

⁴⁵³ Kivalliq Wildlife Board, Aqiggiq Hunters and Trappers Organization and the Kangiqliniq Hunters and Trappers Organization, Final Written Submission, July 21, 2014.

5.6.4. Conclusions and Recommendations of the Board

As was previously noted in section 4.5, the Board recognizes that Agnico Eagle has not yet finalized its plans for managing unrestricted public access to the AWAR, and recommends the following recommendations be included in the development of Agnico Eagle's approach to AWAR access management and where applicable, that these items be included in the required updates to Agnico Eagle's Roads Management Plan:

1. The Proponent is encouraged to consult with outfitting and guiding businesses that operate in the LSA and RSA regarding use of the area, specifically as it relates to hunting, fishing and guiding within proximity of the AWAR. Results of this consultation should be incorporated into updated plans where applicable.

Furthermore, recognizing the valuable information that may be obtained from local outfitters and guides regarding land and resource use in the area, the Board makes the following recommendation:

2. The Proponent is strongly encouraged to consider incorporating information obtained from local outfitting and guiding businesses into its Hunter Harvest Survey where possible, and to include these organizations as potential respondents to surveys undertaken.

5.7. *Cultural, Archaeological and Paleontological Resources*

5.7.1. Views of the Proponent

In Volume 9, Section 11 of the Final Environmental Impact Statement (FEIS), Agnico Eagle defined the boundary for the socio-economic local study area (LSA) for cultural, archaeological and paleontological resources as comprising the Project footprint and a buffer of 500 metres (m) surrounding the footprint.⁴⁵⁴ Agnico Eagle limited the LSA for Project infrastructure in Rankin Inlet to the Project footprint and did not include a buffer beyond the legislated 30 m protection zone. Agnico Eagle defined the regional study area (RSA) as the Project lease area plus a 7-km buffer, which included the Iqalugaarjuup Nunanga Territorial Park.⁴⁵⁵

Agnico Eagle utilized a literature review, which included heritage studies, Inuit Qaujimagatuqangit studies and field work, to conclude that, because all of the archaeological sites that would potentially be impacted by the Project either have, or would be, mitigated using standard archaeological methods, there would be no impacts to the sites that would contribute to significant residual effects on the overall archaeological record baseline.⁴⁵⁶ As a result, Agnico Eagle did not assess any primary linkages,⁴⁵⁷ and

⁴⁵⁴ FEIS, Volume 9, p. ix.

⁴⁵⁵ FEIS, Volume 9, p. ix.

⁴⁵⁶ FEIS, Volume 9, p. 326-336 and 340.

⁴⁵⁷ FEIS, Volume 9, Table 9.11-1, p. 338.

determined that a residual effects assessment and classification was not required with respect to proposed project impacts on the archaeological record.⁴⁵⁸ In the FEIS, Agnico Eagle clarified that it did not determine significance of archaeological sites using pathway analysis, but through a “scientific perspective” with input from community members through Inuit Qaujimajatuqangit studies.⁴⁵⁹

Agnico Eagle defined archaeological site significance as follows:

- Low if excavation would be anticipated to result in a limited quantity of artifacts (e.g., cache, tent ring, hunting blind etc.);
- Moderate if excavation was expected to result in larger numbers of one feature type, multiple feature types, or the potential for artifacts to be in close proximity to other sites that may provide insight into past lifestyles;
- High significance assigned to features that are rare in the archaeological record based on regional cultural histories and which could be expected to contain a larger number of artifacts if excavated or sacred sites (grave, sod houses, Palaeoeskimo site on the mainland etc.).⁴⁶⁰

Inuit Qaujimajatuqangit studies within the LSA revealed that while Rankin Inlet community participants did not identify any culturally important areas, Chesterfield Inlet community participants identified the Meliadine River as important as well as a specific related site, called Qamaviniktalik.⁴⁶¹ In its FEIS, Agnico Eagle identified 43 archaeological sites within the Phase 2 AWAR LSA, 14 of which it predicted would be impacted by construction activities.⁴⁶²

In the FEIS, to analyze the potential effect of the Project on the cultural, archaeological and paleontological resources VSEC, Agnico Eagle analyzed potential effects of the Project on the archaeological record and considered three (3) minor pathways, which included the potential effect of various project activities on the archaeological record during the construction, operation, closure and post closure phases.⁴⁶³ Agnico Eagle identified these activities as those related to mine infrastructure (e.g., blasting, water management, site roads and open pits), the AWAR, and Rankin Inlet infrastructure.⁴⁶⁴ Agnico Eagle clarified that a “pathway may have minor linkage if [it] would result in a minor environmental change, but would have a negligible residual effect on the archaeological record relative to [the] baseline.”⁴⁶⁵ In addition, Agnico Eagle noted that marine transport was the only proposed Project activity to have no identified link or proposed effect on the complete archaeological record and specified that the Project did not have a link with every archaeological site in the LSA.⁴⁶⁶ Agnico Eagle did not identify any archaeological sites as having potential primary pathway linkages because “none of the impacts to the archaeological sites [were] considered to contribute to significant

⁴⁵⁸ FEIS, Volume 9, p. 349.

⁴⁵⁹ FEIS, Volume 9, p. 332.

⁴⁶⁰ FEIS, Volume 9, p. 332.

⁴⁶¹ FEIS, Volume 9, p. 335.

⁴⁶² FEIS, Volume 9, p. 341.

⁴⁶³ FEIS, Volume 9, Table 9.11-1, p. 338-339.

⁴⁶⁴ FEIS, Volume 9, Table 9.11-1, p. 338-339.

⁴⁶⁵ FEIS, Volume 9, p. 340.

⁴⁶⁶ FEIS, Volume 9, p. 340.

residual effects on the overall archaeological record baseline because a record of the site [had] been documented and [would] be preserved in permit reports”.⁴⁶⁷

In the FEIS, Agnico Eagle identified 52 recorded sites within the mine infrastructure LSA,⁴⁶⁸ 98 archaeological sites within the LSA, and 266 archaeological sites within the RSA.⁴⁶⁹ Agnico Eagle concluded that most of the sites within the LSA had low to moderate archaeological significance while 13 had high archaeological significance. Furthermore, of the 34 archaeological sites Agnico Eagle considered associated with minor pathway effects, two (2) were associated with high archaeological significance.⁴⁷⁰ Agnico Eagle noted that while it had begun mitigating potentially impacted archaeological sites, at least three (3) require mitigation prior to construction.⁴⁷¹ In the FEIS, Agnico Eagle noted that the Project could result in indirect impacts to archaeological sites and committed to restricting the access of personnel to archaeological sites in proximity to the mine infrastructure.⁴⁷²

Agnico Eagle also predicted that potential cumulative effects to the archaeological record within the RSA could result from interactions between Project activities, specifically its exploration program, expansion of infrastructure in Rankin Inlet, development and use of the Iqalugaarjuup Nunanga Territorial Park, and traditional and recreational land use.⁴⁷³

To monitor and actively protect heritage resources, Agnico Eagle committed to implementing its proposed Cultural and Heritage Resources Protection Plan, which included proposed mitigation measures.⁴⁷⁴ Some of these proposed mitigation strategies included the avoidance of known archaeological sites, completing a heritage assessment within the project footprint and ensuring staff members are aware of Agnico Eagle’s obligations and mitigation strategies to protect heritage resources. Furthermore, in the FEIS, Agnico Eagle committed to working with the GN, and specifically the GN’s Territorial Archaeologist, to monitor and mitigate potential effects to archaeological sites that could be flooded due to ice buildup at the lower Meliadine River bridge.⁴⁷⁵

5.7.2. Views and Concerns of Interested Parties

In its final written submission and during the Final Hearing, the Government of Nunavut (GN) expressed concern that ice could build up at bridge crossings, particularly at the lower Meliadine River in the Iqalugaarjuup Nunanga Territorial Park, and potentially cause flooding of important archaeological areas upstream.⁴⁷⁶ The GN recommended that the Proponent continue to provide twice-weekly inspection reports for the Meliadine River Bridge, the Char River Bridge, and the Bridge at Crossing M5 to the Government of Nunavut Territorial Archaeologist during the summer freshet period and the fall freeze-

⁴⁶⁷ FEIS, Volume 9, p. 349.

⁴⁶⁸ FEIS, Volume 9, p. 340.

⁴⁶⁹ FEIS, Volume 9, p. 349.

⁴⁷⁰ FEIS, Volume 9, p. 349.

⁴⁷¹ FEIS, Volume 9, p. 349.

⁴⁷² FEIS, Volume 9, p. 349.

⁴⁷³ FEIS, Volume 9, p. 350.

⁴⁷⁴ FEIS, Volume 9, p. 350.

⁴⁷⁵ FEIS, Volume 2, SD 2-9, p. 27-28.

⁴⁷⁶ Government of Nunavut, Final Written Submission, July 18, 2014.

up.⁴⁷⁷ Additionally, the Government of Nunavut recommended that Agnico Eagle consult with its Department of Culture and Heritage as soon as Agnico Eagle identifies the potential for ice buildup to impact upstream archaeological sites.⁴⁷⁸

The GN further noted in its final written submission that through its Archaeological Impact Assessment, Agnico Eagle identified many archaeological sites which were within or close to the 30 metre (m) legislated buffer of the Project infrastructure and that these sites would need to be scientifically documented and marked, or excavated.⁴⁷⁹ The GN noted that although it acknowledged the Proponent's commitment to communicate regularly with the GN, the Proponent's proposed monitoring regime pursuant to its Cultural and Heritage Resource Protection Plan was inadequate. The GN specified that monitoring of sites should occur "as long as there is ongoing activity in the vicinity of archaeological resources" and that the frequency of monitoring archaeological sites should be consistent throughout construction and operations phases. Specifically, the GN stated that:

"no archaeological sites should be mitigated by excavation until the final footprint of all Project infrastructures is known; ... all sites within the legislated 30 m buffer of Project infrastructure should be subject to a monitoring program developed in consultation with the GN; and that all archaeological sites within 80 m of the Project footprint should be considered for inclusion in the monitoring program according to their significance."⁴⁸⁰

The GN concluded that the Territorial Archaeologist should make the final determination as to how archaeological sites should be dealt with and that an inspection protocol and form should be developed.⁴⁸¹

In addition, the GN noted its limitations to analyze Agnico Eagle's annual mitigation strategies of archaeological sites as identified in the Proponent's Cultural and Heritage Resources Protection Plan, specifically with regards to the Proponent's comparison of mitigation strategies undertaken between years. The GN recommended that when Agnico Eagle submits an application for a Class 2 Permit to undertake archaeological work, and subsequent reporting, it submit within one document the location of all known archaeological sites within the LSA in relation to the Project infrastructure. The GN requested that Agnico Eagle submit supplementary visual aids accompanying the annual reporting in the form of a series of maps, and made multiple recommendations on design features and accompanying textual description.⁴⁸² During the Final Hearing, the GN clarified that the Proponent would need to submit maps only if there were changes in the Project footprint or when an archaeological permit is being applied for.⁴⁸³

⁴⁷⁷ Government of Nunavut, Final Written Submission, July 18, 2014.

⁴⁷⁸ Government of Nunavut, Final Written Submission, July 18, 2014.

⁴⁷⁹ Government of Nunavut, Final Written Submission, July 18, 2014.

⁴⁸⁰ Government of Nunavut, Final Written Submission, July 18, 2014.

⁴⁸¹ Government of Nunavut, Final Written Submission, July 18, 2014.

⁴⁸² Government of Nunavut, Final Written Submission, July 18, 2014.

⁴⁸³ S. Pinsken, Government of Nunavut, NIRB Final Hearing File No. 11MN034 Transcript, August 22, 2014, p. 379, lines 6-24.

The GN also commented on Agnico Eagle's plan to conduct Archaeological Impact Assessments pursuant to its Heritage Resources Protection Plan and noted that the GN-Department of Culture and Heritage is the only authority that can confirm the archaeological potential of an area.⁴⁸⁴ Furthermore, the GN noted that the Proponent would need to apply for archaeological permits on an annual basis for activities conducted outside of the scope of the Project, including exploration activities.⁴⁸⁵

5.7.3. Views of the Board

The Board shares concerns raised by the Government of Nunavut regarding the potential for ice buildup at specific bridge crossings to result in the flooding of archaeological sites upstream. The Board finds the GN's request that Agnico Eagle provide the GN's Territorial Archaeologist with frequent inspection reports for the Meliadine River Bridge, Char River Bridge, and the Bridge at Crossing M5 to be reasonable, considering the concerns raised. The Board also agrees with the GN's recommendation that Agnico Eagle should consult with the GN-Department of Culture and Heritage to develop mitigation plans as soon as inspections reveal that ice has built up to a point whereby it could impact archaeological sites found upstream.

The Board acknowledges concerns raised by the GN regarding annual inspection reports to be submitted by the Proponent and notes the GN's requests regarding reporting and supplementary visual documentation.

5.7.4. Conclusions and Recommendations of the Board

The Board acknowledges Agnico Eagle's recent efforts to submit weekly inspection reports to the GN on the status of the Meliadine River Bridge, Char River Bridge, and the Bridge at Crossing M5 and recommends the following:

1. The Proponent shall, in consultation with the Government of Nunavut's Territorial Archaeologist, determine a reporting frequency for the provision of inspection reports to the Government of Nunavut regarding the status of the Meliadine River Bridge, the Char River Bridge, and the M5 Bridge Crossing during the spring freshet period (mid-May to June) and during the remainder of the ice-free period to freeze-up (July to October).
2. The Proponent shall consult with the Government of Nunavut – Department of Culture and Heritage in developing a mitigation plan to address ice buildup at the Meliadine River Bridge, the Char River Bridge, and the Bridge Crossing at M5. The Proponent shall submit this mitigation plan to the NIRB once finalized.

⁴⁸⁴ Government of Nunavut, Final Written Submission, July 18, 2014.

⁴⁸⁵ Government of Nunavut, Final Written Submission, July 18, 2014.

5.8. Individual and Community Wellness

5.8.1. Views of the Proponent

Agnico Eagle concluded in Volume 9, Section 6, of the Final Environmental Impact Statement (FEIS) that although “potential effects on individual, family, and community wellbeing are complex, far reaching and unpredictable”, it predicted that residual effects on individual and community wellbeing would generally be positive at the community level and potentially negative at the individual and family level.⁴⁸⁶ Agnico Eagle noted that potential cumulative effects resulting from a “rapidly expanding mining sector” could intensify both predicted negative and positive effects on individual, family and community wellbeing.⁴⁸⁷ Agnico Eagle defined the boundary of the local study area (LSA) for individual, family and community wellbeing as comprising the five communities of Rankin Inlet, Chesterfield Inlet, Whale Cove, Baker Lake and Arviat, and the regional study area (RSA) as the territory of Nunavut.⁴⁸⁸

In the FEIS, Agnico Eagle analyzed baseline data it considered relevant to its analysis of the potential Project effects on individual and community wellbeing and the following key subjects, with a focus on physical, social, mental and human health:⁴⁸⁹

- Human health;
- Disease;
- Alcohol and drug use;
- Cultural integrity;
- Crime; and
- Housing.

To analyze the potential effect of the Project on individual, family and community wellbeing, Agnico Eagle focused on the following four (4) aspects in the FEIS: physical and mental health, safety, family and community cohesion, and savings.⁴⁹⁰ Through its pathway analysis, Agnico Eagle identified 18 secondary pathways and the following five (5) primary pathways:

⁴⁸⁶ FEIS, Volume 9, p. 251, 274.

⁴⁸⁷ FEIS, Volume 9, p. 274.

⁴⁸⁸ FEIS, Volume 9, p. viii.

⁴⁸⁹ FEIS, Volume 9, p. 221-237.

⁴⁹⁰ FEIS, Volume 9, Table 9.6-14, p. 244-250.

- Long-term project employment may enable people to rent or purchase private housing;
- Project employment may increase time and resources available for harvesting nutritious country foods;
- Project health and safety training may improve health and safety at the mine site and more generally outside of the workplace;
- A higher number of Project vehicles in Rankin Inlet may increase the risk of traffic accidents; and
- The Project may result in an increased percentage of Territorial savings being exported out of Nunavut by out-of-Territory employees.⁴⁹¹

In the FEIS, Agnico Eagle further assessed potential effects on the following factors related to wellness:

▪ Individual, family, and community wellbeing;	▪ Family and community cohesion
▪ Physical and mental health;	▪ Family function and domestic violence;
▪ Substance abuse;	▪ Rotation;
▪ Sexually transmitted infections;	▪ Gambling;
▪ Housing;	▪ Crime;
▪ Nutrition;	▪ Safety;
▪ Vulnerable groups;	▪ Accidents; and
	▪ Savings. ⁴⁹²

In the FEIS, Agnico Eagle predicted that the potential residual effects of the Project would be of low significance on the following: the ability to rent/purchase private housing; nutrition; perceptions of harm resulting from the Project; traffic accidents; potential inflation increasing vulnerability; and territorial savings being exported out of Nunavut by Meliadine employees.⁴⁹³ Agnico Eagle also predicted that the Project would have a moderate, significant effect on: physical and mental health from overcrowding and stress on health services; increased time and financial resources enabling traditional harvesting; improved health and safety; weakening of traditional culture; higher inequality; family function and domestic violence; gambling; crime; and household savings.⁴⁹⁴ Agnico Eagle further predicted that the Project would have a moderate to highly significant effect on: substance abuse; crime; and sexually transmitted infections.⁴⁹⁵ The Proponent also proposed many design features and mitigation strategies to minimize potential negative effects and to promote the potential positive effects of the Project, including work readiness training, Elders and family network support programs, and cultural sensitivity training programs for all employees.⁴⁹⁶

In the FEIS, Agnico Eagle noted that although it was difficult to predict causality between employment, traditional culture, and wellbeing in a northern context, many examples indicated that employment and “good incomes” were correlated with improved wellbeing and predicted this association would be

⁴⁹¹ FEIS, Volume 9, Table 9.6-14, p. 244-250.

⁴⁹² FEIS, Volume 9, p. 251-266.

⁴⁹³ FEIS, Volume 9, Table 9.6-18, p. 271-272.

⁴⁹⁴ FEIS, Volume 9, Table 9.6-18, p. 271-272.

⁴⁹⁵ FEIS, Volume 9, Table 9.6-18, p. 271.

⁴⁹⁶ FEIS, Volume 9, p. 268.

exemplified in the LSA communities.⁴⁹⁷ Agnico Eagle predicted in the FEIS that some individuals and families would experience a disbenefit [sic] from the proposed Project, and that early in the Project life there would be an adjustment period at the community level wherein there would be a “reduced sense of wellbeing.”⁴⁹⁸ Agnico Eagle noted that potential negative effects during this transition period could result from individuals transitioning into a wage economy and shift work, climate change, existing socio-economic issues, particularly related to health and education, as well as from cultural acceptance of “evolving roles”,⁴⁹⁹ particularly in relation to gender roles and women entering the workforce.⁵⁰⁰ Agnico Eagle predicted that individuals, families and communities as a whole would benefit in terms of health and financial resources and noted that increased financial resources could lead to increased opportunities to purchase nutritious foods and to harvest country foods.⁵⁰¹ Agnico Eagle noted that at the individual level there could be a reduced reliance on country foods, which could affect others, particularly Elders and youth.⁵⁰²

In the FEIS Agnico Eagle predicted that rates or the incidence of crime in Rankin Inlet may increase as a result of the Project, and that while these effects may be managed by police and government services and are expected to decrease “over time”, the perception of a decreased sense of wellbeing may prevail.⁵⁰³

In the FEIS, Agnico Eagle indicated that it did not expect any potential transboundary effects on individual, family and community wellbeing.⁵⁰⁴

During the Final Hearing, Agnico Eagle noted that it planned to establish programs in partnership with the Kivalliq Mine Training Society and literacy organizations to assist employees and their spouses in dealing with rotational employment. The Proponent noted that it was developing a program that would include bringing spouses of Meliadine employees to the Project site to learn about the site and camp life. Further, Agnico Eagle discussed the potential for an additional program in collaboration with the Kivalliq Mine Training Society that would bring spouses of Project employees together for opportunities to socialize and provide support to one another; noting that this program had been successful at its Meadowbank Gold site.⁵⁰⁵

During the Final Hearing, Agnico Eagle clarified that it intended to provide multiple types of support programs to ensure a range of options for employees⁵⁰⁶ and that one of the purposes of having Elders on site is so that employees and families can choose with whom they speak if they are uncomfortable speaking with company representatives or human resource personnel.⁵⁰⁷ Agnico Eagle also indicated

⁴⁹⁷ FEIS, Volume 9, p. 274.

⁴⁹⁸ FEIS, Volume 9, p. 274.

⁴⁹⁹ FEIS, Volume 9, p. 274.

⁵⁰⁰ FEIS, Volume 9, p. 270.

⁵⁰¹ FEIS, Volume 9, p. 273.

⁵⁰² FEIS, Volume 9, p. 273.

⁵⁰³ FEIS, Volume 9, p. 273.

⁵⁰⁴ FEIS, Volume 9, p. 274.

⁵⁰⁵ K. Mayrand, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 673-674, lines 3-26 and 1-11.

⁵⁰⁶ K. Mayrand, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 917-918, lines 5-26, and 1-6.

⁵⁰⁷ M. Connell, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 22, 2014, p. 367, lines 1-19.

that it would appoint these Elders based on recommendations from employees and the LSA communities.⁵⁰⁸ Agnico Eagle clarified in response to a question that it would consider Elders from all communities in the LSA, not limited to Rankin Inlet.⁵⁰⁹ During the Final Hearing, Agnico Eagle noted that it intended to provide multiple support programs to ensure a range of options for employees, which would include an option for employees to phone a hotline, with Inuit counsellors available, to discuss any issues.⁵¹⁰

In the FEIS, Agnico Eagle proposed to regularly monitor employees' use of proposed programs and services including counselling, the Employee and Family Assistance Program, as well as job retention rates and "other social wellbeing data".⁵¹¹ Furthermore, Agnico Eagle provided detail on proposed monitoring of socio-economic effects resulting from the Project to minimize negative effects and maximize benefits in its Socio-Economic Management Plan.⁵¹² Agnico Eagle committed to working with the Kivalliq Socio-Economic Monitoring Committee (SEMC) to collect regional data on "wellbeing indicators" including statistics on health outcomes, crime rates, and housing statistics.⁵¹³

5.8.2. Views and Concerns of Interested Parties

In its written submission, AANDC recommended that Agnico Eagle collaborate with the SEMC and other agencies and affected communities to develop a comprehensive project-specific socio-economic monitoring program as well as a focused working group to develop and oversee the program, which encompasses not only data collection but also data analysis.⁵¹⁴

In its final written submission, the GN commented on the various potential sexual relations that Agnico Eagle predicted would likely occur at the Project site, including the potential for sexual assault. The GN noted that although the Proponent had provided helpful information regarding its proposed employee support programs, they may not adequately "address, prevent, [or] respond to sexual and other potential forms of abuse that can occur onsite".⁵¹⁵ The GN requested that Agnico Eagle commit to discussing employee support and abuse-prevention programming with the GN's Department of –Health, as well as to provide updates on the progress of these programs.⁵¹⁶

During the Final Hearing, the GN noted that it supported Agnico Eagle's proposed programs, including on-site Elders programs, registered nurses, employee and family assistance programs, full-time Inuit

⁵⁰⁸ K. Mayrand, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 675, lines 1-5.

⁵⁰⁹ K. Mayrand, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 678, lines 22-26.

⁵¹⁰ K. Mayrand, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 917-918, lines 5-26 and 1-6.

⁵¹¹ FEIS, Volume 9, p. 274.

⁵¹² FEIS, Volume 9, SD 9-2.

⁵¹³ FEIS, Volume 9, p. 274.

⁵¹⁴ Aboriginal Affairs and Northern Development Canada, Final Written Submission, July 21, 2014.

⁵¹⁵ Government of Nunavut, Final Written Submission, July 18, 2014.

⁵¹⁶ Government of Nunavut, Final Written Submission, July 18, 2014.

counsellors on-site, and cross cultural awareness training.⁵¹⁷ The GN recommended that the Proponent commit to reporting to the GN on the progress of these programs and to sign a memorandum of agreement reflecting these commitments.⁵¹⁸

During the Final Hearing, community representatives spoke about mental health issues and the need for trained on-site mental health workers and family counsellors, as well as pre-emptive training regarding the potential transmission of sexually transmitted diseases.⁵¹⁹ One community representative from Arviat also advocated that the Proponent should be culturally sensitive to the specific needs of Inuit employees and provide cross-cultural training to all of its employees.⁵²⁰ One community representative from Rankin Inlet expressed concern regarding potential miscommunication between southern and northern ideologies, which could occur when Inuit employees use the proposed support hotline, and reported that employees at the Agnico Eagle's Meadowbank mine had expressed such communication issues when utilizing this service.⁵²¹

During the Final Hearing, in response to questions raised by a NIRB Board member, the GN noted that it was developing a framework to address mental health services that would include increasing the number of mental health care professionals in the communities as well as the capacity of community members to provide care, with the assistance of trained professionals.⁵²²

During the Final Hearing, community representatives commented on employee support programs including the potential difficulties faced by spouses of rotational employees remaining in the home and being responsible for the majority of the household responsibilities, and inquired about Agnico Eagle's spousal support programs.⁵²³ Community representatives asked additional questions regarding the on-site Elder program, specifically asking whether Elders selected would be representative of all the Kivalliq communities or just Rankin Inlet.⁵²⁴

In its final written submission, the GN also noted that increased demand on housing resulting from the Project could have a negative effect on the health and wellbeing of affected employees.⁵²⁵

⁵¹⁷ S. Pinsken, Government of Nunavut, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 863, lines 4-12.

⁵¹⁸ S. Pinsken, Government of Nunavut, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 863, lines 16-20.

⁵¹⁹ D. Aglukark, Arviat, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 737, lines 3-26.

⁵²⁰ D. Aglukark, Arviat, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 737, lines 3-26.

⁵²¹ S. Tutanuak, Rankin Inlet, NIRB Final Hearing File No. 11MN034 Transcript, August 26 2014, p. 916, lines 14-26.

⁵²² T. Cousins, Government of Nunavut, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, pp. 910-911, lines 15-26 and 1-22.

⁵²³ P. Enuapik, Whale Cove, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 672, lines 7-26.

⁵²⁴ P. Enuapik, Whale Cove, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 674, lines 14-18; S. Kriterdluk, Rankin Inlet, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 678, lines 1-6.

⁵²⁵ Government of Nunavut, Final Written Submission, July 18, 2014.

5.8.3. Views of the Board

As previously noted in Sections 5.1.3 and 5.1.4, the Board is in agreement with the general recommendation put forth by Aboriginal Affairs and Northern Development Canada that Agnico Eagle work to collect and analyze project-specific socio-economic data and develop a project-specific monitoring program in collaboration with agencies, affected communities and the KSEMC. The Board also, as previously noted, appreciates Agnico Eagle's commitment to support and participate in regional and territorial socio-economic monitoring efforts and programs, as well as its stated commitment to collect and provide analysis of socio-economic data related to the Meliadine Gold Project.

The Board shares concerns raised by parties regarding the potential for physical and sexual abuse to occur at the Project site. While the Board appreciates Agnico Eagle's commitment to developing on-site programs to assist in maintaining the wellbeing of its employees and acknowledges the difficulties in obtaining information and addressing such issues, it agrees with the Government of Nunavut that the Proponent has not adequately addressed the potential for sexual and other types of abuse to occur at the Project site.

The Board agrees with the similar positions presented by the Government of Nunavut and community representatives regarding the importance of cross-cultural awareness training for Project employees, and appreciates Agnico Eagle's commitment to developing and improving upon its programming. In addition, the Board appreciates the feedback from both Agnico Eagle and community representatives on Agnico Eagle's existing programs at its Meadowbank site. The Board agrees with the Government of Nunavut that it would be helpful if Agnico Eagle provided information to the GN regarding the implementation of its programs at the Meadowbank site, including best practices that may have developed. Furthermore, the Board agrees with the community representative's suggestion that Elders selected for the on-site Elders programs should be representative of all of the Kivalliq communities.

The Board acknowledges the link between the availability of housing and wellbeing as presented by the Government of Nunavut and has recommended that the Proponent work to investigate measures and programs, which may assist employees gain access to housing, including individual home ownership options.

5.8.4. Conclusions and Recommendations of the Board

The Board recognizes the value that project-specific information provides to the Proponent in monitoring and reporting regarding the potential impacts from the Project. This information is also central to supporting government departments to identify and maintain an on-going understanding of service constraints, gaps and needs that may be attributed, at least in part, to the project-specific effects, and recommends the following:

1. The Proponent is encouraged to consider providing access to counseling and treatment programs for substance and gambling addictions, and programs, which address domestic, parenting, and marital issues that could affect employees and/or their families.
2. The Proponent is encouraged to work with the Kivalliq Socio-Economic Monitoring Committee to monitor potential indirect effects of the Project, including indicators such as the prevalence

of substance abuse, gambling issues, family violence, marital problems, rates of sexually transmitted infections and other communicable diseases and others as deemed appropriate.

The Board appreciates Agnico Eagle's acknowledgement of potential cultural divisions between employees and its commitment to various programming related to wellness, and recommends the following:

3. The Proponent shall provide the NIRB with a description of wellness and cultural diversity/acceptance programming made available to employees and family or community members and shall report the following information with respect to each program to the NIRB annually:
 - a. Language of instruction;
 - b. Uptake by employees and/or family members where relevant, noting Inuit and non-Inuit participation rates;
 - c. Completion rates for enrolled participants, noting Inuit and non-Inuit rates; and
 - d. Issues as may relate to program content which may have been noted or present either on site or in the community and which affect Project employment or employee wellness.
4. In its annual reporting to the NIRB, the Proponent is strongly encouraged to provide detailed descriptions of all employee programs and training including:
 - a. Descriptions of the goals of each program offered;
 - b. Language of instruction;
 - c. Schedules and location(s) of when each program was offered;
 - d. Uptake by employees and/or family members where relevant, noting Inuit and non-Inuit participation rates; and,
 - e. Completion rates for enrolled participants, noting Inuit and non-Inuit rates.

The Board has concerns with respect to how Project-related effects may contribute to the availability and accessibility of housing in the Kivalliq region, and as such, is recommending the following:

5. The Proponent is encouraged to investigate measures and programs designed to assist Project employees with pursuing home ownership or accessing affordable housing options.

5.9. Community Infrastructure and Public Services

5.9.1. Views of the Proponent

Agnico Eagle concluded in Volume 9, Section 7, of the Final Environmental Impact Statement (FEIS) that the Project would have significant long-term residual effects on the demand for housing and transportation infrastructure and some social and health services on the LSA communities, specifically on Rankin Inlet.⁵²⁶ Agnico Eagle predicted that the potential cumulative effects on community

⁵²⁶ FEIS, Volume 9, Table 9.7-5, p. 291.

infrastructure and public services from expansion of the mining sector would be additive and at the same significance level as predicted for residual effects.⁵²⁷ Agnico Eagle noted that the cumulative demand on public infrastructure and for services in the LSA communities would be negative if the capacity to provide for those needs did not grow proportionally, but would be beneficial if the cumulative demand led to an expansion of the existing service sector, notably in Rankin Inlet.⁵²⁸ In the FEIS, Agnico Eagle defined the local study area (LSA) for community infrastructure and public services as the five communities of Rankin Inlet, Chesterfield Inlet, Whale Cove, Baker Lake and Arviat. Agnico Eagle defined the regional study area (RSA) as the territory of Nunavut.⁵²⁹

In the FEIS, Agnico Eagle analyzed baseline data and potential Project effects on community infrastructure and public services, which included the following key subjects:

- Housing;
- Schools;
- Health services;
- Social services;
- Police;
- Religious services;
- Financial services;
- Local and regional transportation;
- Communications; and
- Other community infrastructure and services.⁵³⁰

Through pathway analysis, Agnico Eagle identified seven (7) pathways with no linkage to the Project and 11 primary pathways, and predicted that the Project would predominantly have significant residual effects on these pathways.⁵³¹ Agnico Eagle proposed various environmental design features and mitigation measures to minimize potential negative effects and to promote potential positive effects.⁵³²

In the FEIS, Agnico Eagle predicted that the Project would have significant negative effects on housing as workers and their families migrating to the LSA communities, particularly Rankin Inlet, may place increased demand where there already exists a significant lack of housing.⁵³³ While acknowledging that the Project would result in a change to baseline values regardless of mitigation measures, Agnico Eagle proposed the following mitigation strategies to counteract and reduce the potential negative effects of the Project on housing:

⁵²⁷ FEIS, Volume 9, p. 294.

⁵²⁸ FEIS, Volume 9, p. 294.

⁵²⁹ FEIS, Volume 9, p. ix.

⁵³⁰ FEIS, Volume 9, p. 275-283; Table 9.7-4, p. 284.

⁵³¹ FEIS, Volume 9, Tables 9.7-4 and 9.7-5, p. 284, 291.

⁵³² FEIS, Volume 9, Table 9.7-4, p. 283-285.

⁵³³ FEIS, Volume 9, p. 287.

- The provision of a worker's camp to accommodate employees;
- The transportation of employees directly from their home communities to the Project site; and
- Discouraging people from migrating to Rankin Inlet without secure employment.⁵³⁴

During the Final Hearing, Agnico Eagle stated the position that while the Proponent should not be responsible for social housing in Nunavut, Agnico Eagle would commit to providing the GN with required labour force projections for each project phase to support the GN in assessing its housing requirements.⁵³⁵

In its FEIS, Agnico Eagle predicted that in-migration to the LSA communities would result in increased numbers of school aged children in the communities, particularly Rankin Inlet, which could have a negative and even "detrimental effect on quality of life".⁵³⁶ Agnico Eagle noted however that the existing schools would likely be able to accommodate the projected increased numbers of children attending school and did not consider this potential effect to be significant.⁵³⁷

In the FEIS, as previously noted in Section 5.4 of the Final Hearing Report, Agnico Eagle predicted that most of the expected in-migration would occur in Rankin Inlet, which it predicted would place increased demand on health services in the community.⁵³⁸ Agnico Eagle noted that the proposed airport expansion and transferring of patients with medical emergencies and certain health issues may lessen some of the expected demand on the health care sector.⁵³⁹ Agnico Eagle committed to providing on-site health services for its personnel and noted that that Project personnel with training in First Aid and CPR may provide a counter-balancing and positive effect to the projected strain on health services by providing first response assistance.⁵⁴⁰ During the Final Hearing, Agnico Eagle stated that the provision of onsite health services should not be a condition of the Project, as the provision of health services is clearly the responsibility of the Government of Nunavut.⁵⁴¹

In the FEIS, Agnico Eagle predicted that the Project-related increased demand placed on social, and police services in the LSA, and notably in Rankin Inlet, would produce a negative, long-term, and therefore, significant effect.⁵⁴² Agnico Eagle noted that some social services would likely be impacted more than others, such as services required to address drug and alcohol abuse issues and this could affect individual, family and community quality of life.⁵⁴³

⁵³⁴ FEIS, Volume 9, Table 9.7-4, p. 284.

⁵³⁵ D. Walker , Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 22, 2014, p. 333, lines 4-10.

⁵³⁶ FEIS, Volume 9, p. 292.

⁵³⁷ FEIS, Volume 9, p. 292.

⁵³⁸ FEIS, Volume 9, p. 288.

⁵³⁹ FEIS, Volume 9, p. 288.

⁵⁴⁰ FEIS, Volume 9, p. 288.

⁵⁴¹ D. Walker , Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 22, 2014, p. 333, lines 11-15.

⁵⁴² FEIS, Volume 9, p. 292-293.

⁵⁴³ FEIS, Volume 9, p. 293.

In the FEIS, Agnico Eagle predicted that the potential effects of the Project on financial services would largely occur in Rankin Inlet and would be negative, negligible, and not significant due to the prevalence of financial services existing in the community.⁵⁴⁴

Agnico Eagle also predicted that Project-related increased traffic on municipal roads would result in a negative, long term and significant effects on community members. Agnico Eagle noted that while increased traffic could result in accidents and would have a "nuisance effect" on road users, the potential impacts would largely be limited to those utilizing the AWAR.⁵⁴⁵ Agnico Eagle noted that the construction of the AWAR would have a positive effect on road infrastructure and would facilitate access for traditional and non-traditional land uses.⁵⁴⁶

In the FEIS, Agnico Eagle predicted that due to increased demand, the potential effects of the Project on communication services would be negative, low in magnitude, long-term in duration and significant.⁵⁴⁷

5.9.2. Views and Concerns of Interested Parties

The Government of Nunavut noted in its final written submission that it agreed with the Proponent's predictions that the Project would place additional demand on an already strained public housing sector, and that this could directly or indirectly affect other areas such as health, crime rates and educational attainment, which could also reduce potential benefits resulting from the Project.⁵⁴⁸ The GN agreed with Agnico Eagle's statement in its FEIS that private home ownership or renting is a limited option in the LSA and Nunavut as a whole, but noted that it is unable to financially "absorb these costs on behalf of the Proponent".⁵⁴⁹ The GN noted that it agrees with the Proponent's conclusion that the Project would result in increased financial capacity for individual employees and that employees would also have access to financial literacy and planning programs as offered by the Proponent.⁵⁵⁰ The GN further noted that the combined effects of Project-related benefits and changes to the GN's own Public Housing Rent Scale would likely support a transition to private home ownership and reduced burden on the public housing sector.⁵⁵¹ The GN recommended that Agnico Eagle collaborate with the GN and the Nunavut Housing Corporation on potential alternative and affordable housing options and Project related financial planning and literacy programs.⁵⁵²

In its final written submission, the GN noted that Agnico Eagle provided contradictory conclusions regarding the Project's predicted effects on health services in Rankin Inlet.⁵⁵³ The GN agrees with the determination in the FEIS that the Project would have a significant impact on health services in Rankin Inlet through indirect effects including overcrowding and population growth and directly through

⁵⁴⁴ FEIS, Volume 9, p. 293.

⁵⁴⁵ FEIS, Volume 9, p. 293-294.

⁵⁴⁶ FEIS, Volume 9, p. 294.

⁵⁴⁷ FEIS, Volume 9, p. 294.

⁵⁴⁸ Government of Nunavut, Final Written Submission, July 18, 2014.

⁵⁴⁹ Government of Nunavut, Final Written Submission, July 18, 2014.

⁵⁵⁰ Government of Nunavut, Final Written Submission, July 18, 2014.

⁵⁵¹ Government of Nunavut, Final Written Submission, July 18, 2014.

⁵⁵² Government of Nunavut, Final Written Submission, July 18, 2014.

⁵⁵³ Government of Nunavut, Final Written Submission, July 18, 2014.

increased demand on emergency services.⁵⁵⁴ Drawing on its experiences with Agnico Eagle's Meadowbank Project in Baker Lake, the GN made recommendations within its final written submission regarding the on-site medical staff and the use of the GN contracted Medevac aircraft for emergencies. The GN also noted that there have been instances where Agnico Eagle contracted employees have refused payment of Medevac services and/or placed a burden on local health services and recommended that Agnico Eagle take responsibility to financially reimburse the GN for use of its Medevac services by employees and/or contractor employees.⁵⁵⁵ The GN further recommended that Agnico Eagle collaborate with the GN to develop guidelines related to the use of GN health and Medevac services and to develop a program to monitor Agnico Eagle's impact on the GN's health services.

In its final written submission, the Kivalliq Inuit Association (KIA) commented on the lack of information provided by Agnico Eagle in its FEIS related to community infrastructure and public services, including housing starts and permits within the LSA and RSA communities, population demographics, family characteristics, and community infrastructure.⁵⁵⁶

5.9.3. Views of the Board

The Board agrees with Agnico Eagle, the Government of Nunavut and the Kivalliq Inuit Association that the Project would likely affect the already strained public housing sector in the Kivalliq region, specifically in Rankin Inlet. As noted by the Board at the Final Hearing, communities where public housing is limited have seen that even when people have employment at the mine, employees, particularly youth, who have difficulty securing housing may end up living in substandard living conditions or even become homeless.⁵⁵⁷ The Board also questioned Agnico Eagle on whether it could provide staff housing in the communities, and Agnico Eagle made it clear that it is unable to provide this type of infrastructure.⁵⁵⁸ Although the Board recognizes the difficulties faced by the GN, including the limited resources available to provide public housing, the Board also acknowledges that Agnico Eagle is not directly responsible for providing housing to employees. The Board does, however, appreciate Agnico Eagle's acknowledgement of the issue and willingness to propose mitigation measures, which as noted, includes a fully serviced camp at the mine site. The Board accepts the position of the GN that collaboration between Agnico Eagle and the GN, particularly in regards to data sharing, may prove particularly beneficial to the GN to identify and address project-induced housing issues and supports this on-going dialogue as essential to developing effective solutions before strains on housing resources becomes a community crisis.

The Board accepts the GN's conclusion that the Project has the potential to significantly impact health services in Rankin Inlet by putting both short and long-term strains on the existing health services in the

⁵⁵⁴ Government of Nunavut, Final Written Submission, July 18, 2014.

⁵⁵⁵ Government of Nunavut, Final Written Submission, July 18, 2014.

⁵⁵⁶ Kivalliq Inuit Association, Final Written Submission, July 21, 2014.

⁵⁵⁷ G. Alikut, NIRB, NIRB Final Hearing File No. 11MN034 Transcript, August 22, 2014, p. 359-360, lines 22-26 and 1-8.

⁵⁵⁸ G. Alikut, NIRB, NIRB Final Hearing File No. 11MN034 Transcript, August 22, 2014, p. 359-360, lines 22-26 and 1-8.

affected communities, and particularly Rankin Inlet. The issues of payment of Agnico Eagle's responsibility for payment to the GN for all Medevac services incurred by its employees, is however, beyond the scope of the Board's assessment to address.

5.9.4. Conclusions and Recommendations of the Board

The Board recognizes the value that Project-specific information could have to the GN regarding the need for public housing, and it acknowledges Agnico Eagle's commitment to provide information to the GN (e.g., labour force projections). The Board recommends the following, and notes that to avoid duplication, the Proponent may wish to combine the requirements of this recommendation with recommendation 2, section 5.4.4:

1. The Proponent is encouraged to collaborate with the Kivalliq Socio-Economic Monitoring Committee and the Government of Nunavut – Nunavut Housing Corporation, to design and implement a voluntary employee survey to be completed on an annual basis in order to identify any changes of address, detailed occupancy status (i.e., public/social, privately owned/rented, government, number of people sharing the resident space, etc.), housing preferences, migration intentions, and reasons for migration while respecting confidentiality of all person involved. Non-confidential results of the survey are to be reported to the Government of Nunavut and the Nunavut Impact Review Board.

The Board recognizes the value of on-going dialogue between Agnico Eagle in collaboration with other parties responsible for housing issues in the Kivalliq and recommends the following:

2. The Proponent is encouraged to collaborate with the Government of Nunavut – Nunavut Housing Corporation prior to the development and inception of its programs relating to financial literacy and planning to ensure that relevant and accurate information about housing and home ownership is available and considered for inclusion.
3. The Proponent is encouraged to work collaboratively with the Government of Nunavut Department of Health to monitor the impacts of the Meliadine Gold Project on health services within the LSA communities and specifically, Rankin Inlet.

5.10. *Public and Worker Health and Safety*

5.10.1. Views of the Proponent

Agnico Eagle presented its baseline and impact assessment for public and worker health and safety in Volume 9, Section 9.10 and within its Human Health Risk Assessment (HHRA) in Volume 10 of the Final Environmental Impact Statement (FEIS).

Agnico Eagle noted its previous experience with public and worker health and safety in Nunavut through the operation of the Meadowbank mine, as well as other mines that it operates in Canada. There are also a number of federal and territorial regulations in place, which regulate how mines will be operated.

Further, Agnico Eagle has drafted and operated health and safety (H&S) management systems in line with these regulations.

In its HHRA found within Volume 10 of the FEIS, Agnico Eagle assessed the effects of the Project on human health as the Project may be associated with changes to environmental quality due to chemical releases. The boundaries of the HHRA were aligned with the boundaries identified by the impact assessment components that predicted potential Project related changes to environmental quality, or that provided information relevant to receptors (i.e., humans).⁵⁵⁹ These impact assessment components were as follows:

- Atmospheric environment, including air quality and noise;
- Freshwater environment, including surface water and sediment quality; and
- Socio-economic environment, including traditional knowledge and traditional land use.

Agnico Eagle analyzed risks to human health through the changes that could only be evaluated in the context of occurring with other valued components such as air and noise, soil and terrain, vegetation, surface water and sediment quality, fish and fish habitat, population demographics, traditional knowledge, Inuit Qaujimajatuqangit and traditional land use (TLU). Within Volume 9, Agnico Eagle then identified two valued socio-economic components (VSECs): good health and safety performance for the Project and good health and safety for the general public and workers. These two VSECs were also identified as primary linked pathways and underwent analysis; however, the assessment of public and worker health and safety did not require a residual impact classification and were considered by Agnico Eagle to be positive. The third pathway, potential environmental effects on human health, Agnico Eagle deemed to be non-significant.

Agnico Eagle conducted analysis of the potential environmental effects on human health in Volume 10, which considered potential changes in chemical concentrations in air, soil, water, sediment, fish, country foods and noise. The risk assessment evaluated the potential for adverse health effects via the potential pathways identified by the environmental components that predicted potential Project-related changes to soil quality (through air quality), water quality and sediment quality. Air quality and noise from the Project were considered to have potential residual effects on human health. Short-term effects from the Project were identified for both workers on- and off-site for diesel particulate matter (DPM), NO₂, cadmium, acrolein and aldehyde in ambient air. Agnico Eagle indicated that concentrations of these materials associated with acute health effects tend to be orders of magnitude higher than those predicted for the Project. Long-term or chronic effects on worker health due to DPM and acrolein from Project emissions at the permanent camp complex were also identified as a potential residual effect. Agnico Eagle's FEIS indicated that concentrations associated with chronic health effects tended to be orders of magnitude higher than those predicted as a result of the Project.⁵⁶⁰ Both short-term and long-term effects were considered to either be unlikely or not significant for workers on site or the public outside the Project. The predicted change in noise levels at one location within the noise local study area (LSA) exceeded acceptable targets, but Agnico Eagle considered it to be a low magnitude of effect.

⁵⁵⁹ FEIS, Volume 10, p. v and vi.

⁵⁶⁰ FEIS, Volume 10, p. vii.

Agnico Eagle listed design features and mitigation measures that could be implemented for health and safety within its various management plans as presented in supporting documents, and concluded that all impacts or changes that it analyzed were not significant.

Agnico Eagle included a monitoring program as a part of its FEIS in SD 9-6 Occupational Health and Safety Plan and indicated that specific targets would be outlined if the Project was approved, as well as committing to complying with Canadian and Nunavut occupational health and safety regulations. Agnico Eagle did not recommend monitoring or follow-up to directly evaluate environmental health as monitoring would be occurring as part of the existing monitoring programs.

5.10.2. Views and Concerns of Interested Parties

The Government of Nunavut (GN) noted within its final written submission that it had some uncertainty around the Proponent's assessment with respect to particulate matter, and specifically, regarding the assessment of worker's exposure to receptors through the inhalation pathway. The GN indicated that it was not clear whether inhalation exposure had been accurately assessed by Agnico Eagle, and recommended that the Proponent undertake additional air quality monitoring within the Project's environmental and health risk monitoring program. In its response to final written submissions, Agnico Eagle agreed to incorporate the suggested air quality monitoring into the updated air quality monitoring program if the Project was approved.⁵⁶¹

Additionally, the GN recommended that Agnico Eagle provide additional rationale for the environmental and health risk monitoring program to support the assumption that the operations scenario is an appropriate bounding scenario even for the construction phase when Project activities will differ.⁵⁶² On August 7, 2014 Agnico Eagle responded with the requested justification on emission rates and indicated that the approach taken in the assessment likely overestimated the potential exposure and risks and that predicted effects are considered to be consistent with a "worst-case" scenario.⁵⁶³

At the Final Hearing, the Kivalliq Inuit Association (KIA) discussed deposition rates for air and noted that it had difficulty locating the total suspended particulate deposition rates; indicating that Agnico Eagle's health impact assessment deposition rates for individual metals were provided, but that total suspended particulates were not.⁵⁶⁴ In its presentation during the Final Hearing the KIA re-iterated that the geometric mass mean diameter used for particulate calculations was too small to capture the size range of the particulate and consequently, the KIA found that Agnico Eagle's predicted deposition rates for total particulate were likely underestimated.⁵⁶⁵ The KIA noted that though this particular value would not change anything in the FEIS, it was an important number for evaluating human and ecological health assessment and requested a sensitivity test be undertaken for this particular parameter to

⁵⁶¹ Agnico Eagle, Response to Final Written Submissions, August 7, 2014.

⁵⁶² Government of Nunavut, Final Written Submission, July 21, 2014.

⁵⁶³ Agnico Eagle, Response to Final Written Submissions, August 7, 2014.

⁵⁶⁴ J. Kirkaldy, Kivalliq Inuit Association, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 85 lines 10-18.

⁵⁶⁵ J. Kirkaldy, Kivalliq Inuit Association, NIRB Final Hearing File No. 11MN034 Transcript, August 22, 2014, p. 528 lines 2-6.

determine the certainty of the values presented by Agnico Eagle in the FEIS.⁵⁶⁶ In its response to final written submissions, Agnico Eagle indicated that it agreed in principal to doing so.⁵⁶⁷

A community representative provided comments regarding human health, asking whether there would be a health committee [occupational health and safety committee] set up at Meliadine as there is one at Meadowbank.⁵⁶⁸ Agnico Eagle confirmed that there would be a committee put in place for Meliadine if one had not already been established.

5.10.3 Views of the Board

Agnico Eagle predicted that the potential for the Project to affect the health of the public and employees was limited because of environmental design features and proposed mitigation that would be implemented. The Board, after considering evidence presented by all parties including members of the public, feels that the Meliadine Gold Project has the potential to impact upon human and environmental health as outlined in the text that follows.

In Volume 10 of its FEIS, the Proponent states that ongoing monitoring of surface water from lakes and water courses around the mine site, all-weather access road and Rankin Inlet had been included within its various plans and further, that any cumulative health effects arising due to air quality and noise from existing and future developments in the regional study area for those valued ecosystemic components were expected to be negligible.⁵⁶⁹ The Board recommends that a precautionary approach be used until such a time as monitoring confirms whether the assumptions made in the FEIS are correct. The Board supports the GN's request for additional air quality monitoring, and acknowledges the Proponent's commitment to undertake the additional monitoring.

Additionally, with the proposed construction of Phase 2 of the all-weather access road (AWAR) and the twinned road from the Discovery deposit and the Tiriganiaq mill site that will eventually accommodate large mine traffic and an unknown amount of public traffic, there is uncertainty with regard to noise in the area, as well as uncertainty as to how noise may affect existing cabins. As Agnico Eagle stated that some existing cabins are predicted to have potential for high noise rates, the Board agrees with Agnico Eagle that these locations would be appropriate to include in the noise monitoring program for the project.

As is undoubtedly the case with all the parties to the NIRB's review, the Board takes the health and safety of the public and employees seriously and expects that all lessons learned from Agnico Eagle's mines including Meadowbank, have been taken into consideration in the preparation of plans and procedures to protect the health and safety of the public and employees.

⁵⁶⁶ J. Kirkaldy, Kivalliq Inuit Association, NIRB Final Hearing File No. 11MN034 Transcript, August 22, 2014, p. 528 lines 7-14.

⁵⁶⁷ Agnico Eagle, Response to Final Written Submissions, August 7, 2014.

⁵⁶⁸ P. Iksiraq, Baker Lake, NIRB Final Hearing File No. 11MN034 Transcript, August 22, 2014, p. 343, lines 2-3.

⁵⁶⁹ FEIS, Volume 10, p. viii.

5.10.4 Conclusions and Recommendations of the Board

1. The Proponent shall update the air quality monitoring aspect of its environmental and health risk monitoring program to include the following parameters for particulate matter:
 - a. An analysis of the metals content of the dust collected in passive monitoring; and
 - b. Discrete samples collected on a periodic basis from the camp and analyzed for acrolein and aldehyde.

Results are to be incorporated into the Proponent's annual reporting for submission to the NIRB.

6. OTHER MATTERS TAKEN INTO ACCOUNT

6.1. *Accidents and Malfunctions*

6.1.1. Views of the Proponent

Agnico Eagle discusses accidents and malfunctions in Final Environmental Impact Statement (FEIS) Volume 2 Project Description, as well as in Supporting Document (SD) 2-15 Risk Management and Emergency Response Plan (ERP). Given that annual resupply for the Project is proposed to occur through sealift and barge into Rankin Inlet through waters of the Nunavut Settlement Area, FEIS Volume 8 Marine Environment and Impact Assessment also presented considerable discussion regarding accidents and malfunctions associated with the Project.

Within FEIS Volume 8, Agnico Eagle discussed the potential effects of a fuel spill in the marine environment associated with Project resupply, observing that "The environmental consequence of a worst case diesel fuel spill would be dependent on the distance from the spill to the shoreline and sensitive areas, as well as on weather and oceanographic conditions".⁵⁷⁰ Six different hypothetical spill locations were assessed to better understand the physical behavior of a potential fuel spill in the marine environment. Two of these locations were in Melvin Bay/Itivia Bay where fuel transfers would be occurring and four locations along the shipping route within the Nunavut Settlement Area with known sensitive habitat: Walrus Island; Coats Island; Ungava Peninsula and Eastern Hudson Strait. Agnico Eagle used the ADIOS2 model for its study, a one-dimensional assessment that allows an approximation of travel time and percent fuel remaining without accounting for effects associated with local bathymetry, with the input of local wind speed values to approximate wave conditions and predict the weathering half-life of the spilled fuel. While acknowledging that the magnitude of a worst-case scenario fuel spill on marine water quality would be high for both incremental and cumulative scenarios, these effects were considered to be medium-term and reversible. With proposed mitigation in place, the frequency of this potential effect is considered isolated as the probability (or likelihood) was considered unlikely (predicted as occurring once every 500+ years for a major diesel spill) and, therefore, not likely to occur during the lifetime of the Project. The Proponent concluded by predicting

⁵⁷⁰ FEIS, Volume 8, p. 21.

that the effect of a worst-case diesel fuel spill on marine water quality was not expected to be significant.

Agnico Eagle's draft Emergency Response Plan (ERP) was proposed to be used by the Proponent to provide a consolidated source of information for employees, contractors and site visitors to allow quick and efficient response to any foreseeable emergency that could occur in relation to the Project.⁵⁷¹ The Proponent noted that ERP presented within the FEIS is conceptual in nature and would be refined and finalized prior to operational activities and updated on a regular basis thereafter. The ERP was divided into three parts: risk assessment and management, accidents and malfunctions and an emergency response plan. To date, Agnico Eagle has not completed a full list of potential malfunctions or accidents associated with the Project; however, Agnico Eagle has proposed to conduct an analysis of the Project using a methodology linking likelihood with consequence severity. The Proponent has committed to also incorporate the following core Policy commitments into the ERP:

- Operate safely;
- Protect the environment;
- Respect for employees; and
- Respect for communities.

Within the ERP, Agnico Eagle provided a list of 11 other management plans contained with the FEIS that could contain information related to the ERP. The current version of the ERP addressed emergency scenarios that could result from gold mining, processing, transportation and related activities at the Meliadine Project; including but not limited to the mine site, Phase 2 All-weather Access Road (AWAR), Rankin Inlet bypass road to Itivia and Agnico Eagle's Itivia facilities. Guiding the Proponent's development of this document has been the principle that an effective ERP must provide:

- A clear chain of command for health and safety activities;
- Well-defined corporate expectations regarding health and safety;
- Comprehensive hazard prevention and control methods; and

Record-keeping requirements to track program progress.

6.1.2. Views and Concerns of Interested Parties

Nunavut Tunngavik Inc. (NTI) and the Kivalliq Inuit Association (KIA) joint final written submission to the NIRB indicated that additional information was required from Agnico Eagle before the risk and potential impacts of accidental diesel spills could be adequately assessed for the marine environment. In its Final Written Submission, the KIA commented that while it was originally missing information that Agnico Eagle subsequently supplied to in June 2014,⁵⁷² the rationales underlying each assumption in the additional information had not been presented. The KIA indicated an uncertainty associated with the method of analysis and further noted that the Aquatics Effects Monitoring Plan (SD 7-3) did not discuss

⁵⁷¹ FEIS, SD 2-15, page 1.

⁵⁷² Nunavut Tunngavik Inc. and Kivalliq Inuit Association, Final Written Submission July 21, 2014, Appendix 5.

spill response along the ship track. The KIA also noted a concern that the fuel tankers may not be properly equipped for a spill.

The NTI/KIA submission recommended that the Proponent reassess its spill predictions to inform spill response planning, including revising and rerunning fuel spill dispersal modeling to consider: 1) high risk spill locations; 2) model inputs that capture the range of environmental conditions that occur during the shipping season at each spill location, 3) potential interactions between spills and concentrations of migratory or resident marine mammals, birds, and/or fishes; 4) a range of spill volumes up to and including loss of a full tanker cargo, and 5) differences in the quantity and properties of each type of bulk fuel transported by ships when they are at, or in transit to, Melvin Bay. The NTI/KIA submission further noted that results should be used to reassess seasonal spill impact predictions along the shipping route and in port, and to reassess the adequacy of spill response planning and preparedness.⁵⁷³ Agnico Eagle replied that they will take this recommendation under consideration.

The KIA indicated that further modelling for seasonal variation and presence of large concentrations of marine mammals, birds and fishes could be done to raise the levels of certainty associated with Project predictions. Following modelling, preparedness planning could then be implemented better in the Oil Pollution Emergency Plan and Shipboard Oil Pollution Emergency Plan. Overall, the KIA indicated in its Final Written Submission that the risk of fuel spills had not been adequately considered, nor had the potential for associated damage.

Within its final written submission to the NIRB, the Government of Nunavut (GN) commented that Agnico Eagle's definition of "major spill" within Supporting Document (SD) 2-16 Spill Contingency Plan was vague and the Proponent had not clearly expressed what criteria were in place to determine when an incident would be considered a "major spill". The GN also noted that it was not clear if prevention measures would be put in place to prevent vandalism and accidental discharges at the Proponent's fuel handling facilities. The GN also identified that the Spill Contingency Plan did not fully address the reconciliation of records and measures to verify whether spills were cleaned up appropriately. Further, the GN noted that Nipissar Lake, Rankin Inlet's supply of potable water was not assessed for vulnerability to spills from the Bypass road and this issue was not specifically addressed in the Spill Contingency Plan. Based on the current alignment, it appears that the Bypass Road could pass within 30 metres of the shore of Nipissar Lake and a fuel truck accident which resulted in a spill would be of serious concern for the Hamlet. On this basis, the GN recommended that an assessment be undertaken to determine whether the mitigation measures in SD 2-16 would be sufficient to address the potential to impact Nipissar Lake. As well, the GN requested that spill modelling be conducted to include Nipissar Lake, with amendments to the Spill Contingency Plan as necessary to reflect the results of the updated spill modelling.

In response to questioning by the NIRB staff regarding road management and safety during the Final Hearing, GN representatives provided information regarding statistics for visits to the Territorial Park and rates of motor vehicle incidences in Rankin Inlet to assist with the Board's assessment of the Project's all-weather access road and associated traffic.

⁵⁷³ Nunavut Tunngavik Inc. and Kivalliq Inuit Association, Final Written Submission, July 21, 2014.

*For vehicles entering the territorial park, this is one-way trips, in 2012, there were 988 (sic) vehicle entries into the park. So if you wanted to know about return trips, you would double that. So this is the one-way trip. In 2013, there were 7,175 vehicle entries into the park, one-way trips. These numbers come from a vehicle monitor that counts vehicles entering the park.*⁵⁷⁴

*There are 911 vehicles registered in Rankin Inlet, and of that 911, 329 are privately owned vehicles, the remainder being company owned, government, industrial vehicles, et cetera.*⁵⁷⁵

*In these -- or motor vehicle accidents that were reported in the Rankin Inlet area, so it would include the park and the road and stuff, in 2013, there were ten motor vehicle accidents. The breakdown is, six of those were commercial vehicles and four were privately owned vehicles. In 2014, year-to-date, so up until August, there have been five motor vehicle accidents. Two of those were commercial vehicles, and three were private vehicles. I'll also provide some earlier numbers going back a couple more years. In 2012, there were 17 motor vehicle accidents; in 2011, there were 12; and in 2010, there were six.*⁵⁷⁶

Subsequent questioning clarified that the traffic volumes for the Territorial Park were 9088 vehicle entries and did not distinguish between vehicle types [i.e., trucks, atvs (all-terrain vehicles), snowmobiles, etc.]. The GN further clarified that these traffic volumes had been collected from June through October only, and were not representative of a full 12-month period.

In closing remarks made to the NIRB at the Final Hearing, the GN took the opportunity to further explain its findings regarding the information presented by Agnico Eagle's proposed operation of the all-weather access road for the Project:

*We'd like to take one opportunity to clarify one thing about roads. In the road management plan, given the proponent's experience operating and maintaining a road in Nunavut, specifically the Meadowbank experience, our reviewers did not come to the conclusion that the proponent's predictions on road issues, accidents, and similar things were unreasonable. We are satisfied with the proponent's commitment to verify their predictions through periodic spot-checks once the road is open to the public. It is our expectation that any deviations from the predictions would trigger an immediate review of the road management plan and its adequacy to handle the demonstrated level of -- level of traffic.*⁵⁷⁷

⁵⁷⁴ S. Pinksen, Government of Nunavut, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p.903, lines 8-15.

⁵⁷⁵ S. Pinksen, Government of Nunavut, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p.905, lines 14-17.

⁵⁷⁶ S. Pinksen, Government of Nunavut, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p.903, lines 19-26 and p. 904 lines 1-5.

⁵⁷⁷ S. Pinksen, Government of Nunavut, NIRB Final Hearing File No. 11MN034 Transcript, August 27, 2014, p.1139, lines 21-16 and p. 1140 lines 1-9.

The Canadian Coast Guard (CCG) provided the NIRB with a written submission on August 18, 2014 regarding questions relating to marine spill response that had been raised previously during the pre-hearing conference for the Project. The CCG provided a description of how the marine spill response regimes function in Canada's North, while also attempting to answer the questions that had been brought to the CCG's attention through the NIRB's Pre-Hearing Conference Decision report.

The CCG explained that the primary response capacity for pollution discharges in Arctic waters remains with the oil handling facility or the vessel, as the case may be, with the CCG providing a backstop response role when the polluter is unknown, unable or unwilling to respond. In response to questions raised by the Kivalliq Inuit Association (KIA), clarification was provided regarding the emergency response supplies available in communities for fuel spills and whether these caches would be upgraded because of developments such as the Project:

The CCG is responsible for Arctic Community Packs (ACPs) in Rankin Inlet, Chesterfield Inlet, Baker Lake and other Arctic communities. A proponent must demonstrate responsibility for preparedness/response to their accidents and incidents in total, in accordance with the responsibilities under the *Canada Shipping Act, 2001* (CSA, 2001), as identified by Transport Canada. CCG assets cannot be used to demonstrate this capacity as they (assets and resources) fall outside of the requirements of the application of the *CSA, 2001*. CCG typically steps in when a responsible party is unknown, unwilling, or unable to execute an effective response. In terms of the sufficient staff and abilities to respond to emergencies, CCG does not certify, audit, or evaluate capacity of private or territorial response capabilities, but instead ensures an appropriate response when there is a spill.⁵⁷⁸

The CCG's submission went on to explain that, under Canada's Marine Oil Spill Preparedness and Response Regime, there are currently no certified Response Organizations (as defined by the *Canada Shipping Act, 2001*) operating in Nunavut, however, the CCG is of the view that there are many private and public resources that could be drawn upon in the event of a significant pollution incident in which the polluter is unwilling or unable to deliver an adequate response. Under Canada's Marine Oil Spill Preparedness and Response Regime, a polluter is always responsible for any pollution and associated damage they have caused, while the CCG's role in Canada's Regime is to ensure an appropriate response to all ship-sourced pollution incidents for which it is made aware.

Environment Canada (EC) commented on the Spill Contingency Plan as well, noting within its Final Written Submission that it would have also been useful to include information such as shoreline characterization and segmentation which would assist in environmental sensitivity mapping that could both inform Agnico Eagle's spill response strategies and facilitate timely recovery operations. EC also discussed the desktop exercises that were proposed in Section 8 of SD 2-16 and noted how the worst-case spill scenario used in the Spill Contingency Plan was not, in EC's view, truly representative of the worst case. EC identified that a spill scenario involving additional impacts to a receiving water body would likely be worse and could widen both the response actions that need to be taken but also the damage that could result.

⁵⁷⁸ Canadian Coast Guard, August 18, 2014, p. 2.

EC recommended that Agnico Eagle develop other potential scenario descriptions to include in its desktop exercises that include the potential effects of spills on marine shorelines, rivers or waterway crossings. EC also encouraged the Proponent to adopt best practices when conducting fuel transfers to ensure safety for ship-to-shore fuel transfer activities. Finally, EC requested implementation of spill contingency measures for wildlife including migratory birds, as Agnico Eagle would be handling not only fuel, but hazardous materials including cyanide. EC noted that marine birds are vulnerable to oil spills and to pollution of their feeding areas and therefore Agnico Eagle should determine steps in advance of an accident to provide clear direction to field crews to protect wildlife.

Transport Canada (TC) commented in its Final Written Submission that Agnico Eagle should be required to provide details on what mitigation measures would be conveyed to the vessels employed for shipping as well as to clarify what the proposed mitigation measures when approaching marine wildlife are, “subject to safe navigations considerations as determined by the Master of the Vessel”.⁵⁷⁹ Further, TC commented on legal requirements that Agnico Eagle would be expected to comply with if the Project was approved, such as the *Transportation of Dangerous Goods Act, 1992* and associated regulations. TC also commented that Agnico Eagle would be required to provide an updated and compliant Oil Pollution Emergency Plan (OPEP) if the Project was approved and stated that the transportation of emulsion used in explosives may require an Emergency Response Assistance Plan.

Natural Resources Canada (NRCan) made comments in its Final Written Submission on Explosives Manufacture and Storage. It noted that Agnico Eagle or its explosives contractor would be required to submit applications for manufacturing and storage facilities for the Project and that the new Explosives Regulations, 2013 are in force.

A member of the public, J. Panegoniak, submitted a comment during the final written submissions stage of the review suggesting that Agnico Eagle install roadside markers with reflective night visible markers so that during blizzards workers have something to use to follow the road.⁵⁸⁰

On August 25, 2014 during the Final Hearing, Mr. John Ell presented comments regarding the all-weather access road (AWAR) associated with the Project, noting that he would like to see the road paved with concrete rather than the way it is proposed with natural gravel cover. Explaining that he was concerned that the Proponent’s plans had not considered a highway design with concrete as an alternative construction technique,⁵⁸¹ in his submission to the NIRB it was suggested that if the AWAR was made with concrete it would be cost-effective and would be make the road last longer, which would be a benefit to the community. During the Final Hearing Mr. Ell also spoke about the benefits of using concrete for road safety, long-term budget planning, dust control, health and safety to workers, seasonal use, and better night-time visibility.⁵⁸²

Yes. It would be expensive to lay concrete or asphalt on the road, but at the end, it would cost less because it would be a cost-effective investment, and the civil engineers can also

⁵⁷⁹ Transport Canada, Final Written Submission, July 21, 2014.

⁵⁸⁰ J. Panegoniak, Email Submission, June 24, 2014.

⁵⁸¹ J. Audlatnar Ell, Rankin Inlet, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p.752-754.

⁵⁸² Exhibit 40, NIRB Final Hearing File No. 11MN034, August 25, 2014 filed by J. Audlatnar Ell, “August 25, 2014 Written submission to the Nunavut Impact Review Board”.

*make a design how the concrete could be used. It could be cost effective. It could -- it would help our people. The cement and/or concrete would be of use for in the mine. It's already a good road, but if it's made of concrete, it would last longer.*⁵⁸³

During the Final Hearing, a community representative expressed concerns that the Project may result in an oil spill in the ocean and asked how effective the clean-up would be, and whether the area could be returned to a clean condition. Agnico Eagle responded that a spill of fuel for the Project would involve a spill of diesel fuel and not oil, and that a number of measures, such as the use of double-hulled vessels would prevent a large oil spill.

Another community representative commented that he was concerned with animals and spills and asked what would happen to animals if there were an accident. He further observed that in the North “we’re not prepared for these kind of things that they—individuals would miss out on because the animals would start to deteriorate, et cetera, from the spills”.⁵⁸⁴

*One other question she asked or comment she made, even maybe to DFO, oil from ships. There's been some residue found on some seal hides, even the -- they have been catching seal, and they're trying to clean it, but there's some oil residue.*⁵⁸⁵

*Well, we can -- I mean, we can -- we can show you the residue from the seal skins. We just don't know where to send them.*⁵⁸⁶

Many community representatives commented on protecting the Hudson’s Bay if there was to be a fuel spill as well as the transfer of fuel in Itivia Bay. Community members wanted to know the spill response plans that Agnico Eagle would have in place for responding to a fuel spill. Community members also commented on how long it may take to finalize the spill plan if it is not already in place and question who would take responsibility if a spill occurred.

*Is there... a contingency plan in the event of a major or minimal spill, environmental dimension on which impacts are considered have more influence than others? How will the affected communities be compensated if any compensations are to be put in place if there are any environmental damages from the project?*⁵⁸⁷

...if there should be an oil spill, fuel spill, we will know that -- we know that our -- you already responded that there's going to be a -- it will be where we do have emergency measures and plans. Do you have emergency measures in -- planned for the -- such as an

⁵⁸³ J. Audlatnar Ell, Rankin Inlet, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p.753 lines 3-11.

⁵⁸⁴ L. Mimialik, Agiqqig Hunters and Trappers Organization, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 763 lines 24-26 and p. 764 lines 1-2.

⁵⁸⁵ E. Copland, Nunavut Impact Review Board, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 996 lines 19-23.

⁵⁸⁶ M. Tukurdjuk, Naujaat (Repulse Bay), NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014 p. 997 lines 5-7.

⁵⁸⁷ S. Tutanuak, Rankin Inlet, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 947 lines 12-17.

*accident like an oil spill? Because we live in a very fragile country, and it may look very harsh but very, very fragile country.*⁵⁸⁸

During the final Hearing, the public also commented on the operation of the sewage plant

*Now, if the water treatment plant goes mechanical, I wonder if there's going to be anything in place or that the water that is going to be used doesn't just go all over the environment. What plans are in place to stop that from occurring?*⁵⁸⁹

Agnico Eagle responded:

*You asked the question about the water treatment plant, what would happen if the mechanical unit broke down mechanically or was not doing its job. It's a very good question, because we sure don't want bad-quality water exiting the site at that point in time. So what we've done is designed the plant so if we have a mechanical failure, the water just stays. We have a storage pond in front of the plant, and we hold the water in that pond until we either fix the mechanical problem or make the corrections needed to reach the right degree of treatment before we let the water out. So we do have in place a contingency plan to ensure that that treatment plant would not operate if the unit was mechanical -- or something had failed. And that will be established under the water licence as well.*⁵⁹⁰

6.1.3. Views of the Board

The Board acknowledges Agnico Eagle's suggested buffer of 500 metre (m) around applicable Project components where no shooting is permitted. Agnico Eagle suggested "500 metres either side of the road [AWAR] and 500 metres around the active mine workings where we would have no shooting. And it's to protect public safety. It's to ensure that we aren't having accidents because of the prominence of people travelling through those areas. So it's a safety issue."⁵⁹¹ The Board accepts that this no shooting buffer is necessary as it provides safety not only for employees of the Project, but also members of the public that could be travelling on the all-weather access road (AWAR). The Board also acknowledges the following testimony of the Kangiqliniq Hunters and Trappers Organization:

It's just like a highway that you can relax and because the caribou didn't have any problem crossing the roads, the route to the Iqalugaarjuup Park, when the caribou are migrating through-- through the part, there are so many vehicles, so many hunters taking pictures or

⁵⁸⁸ R. Ningeocheak, Rankin Inlet, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 949 lines 3-10.

⁵⁸⁹ M. Matoo, Coral Harbour, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 708 lines 22-26.

⁵⁹⁰ L. Connell, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 25, 2014, p. 713 lines 15-26 and p. 714 lines 1-4.

⁵⁹¹ L. Connell, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 22, 2014, p. 363 lines 22-26 and p. 364 lines 1-2.

*harvesting. It's – and sometimes it's very scary to – to get that close to the harvesters, because there's a lot of shootings...*⁵⁹²

The Board is unclear however, regarding what specific measures or policing the Proponent intends to employ to prevent members of the public from actively harvesting and discharging firearms within any such a safety buffer, once established. While the NIRB has cause to question the means and associated effectiveness of implementing this required mitigation, the Board supports that such a measure is in fact required and can be developed further prior to allowing full public access on the AWAR.

As raised during questioning from NIRB staff to the Proponent and other parties at the Final Hearing, the Board is not convinced that the estimates provided by Agnico Eagle regarding the level of use of the all-weather access road (AWAR) by members of the public are accurate. Consequently, the Board has reservations that the estimated number of accidents/incidents along the road may not be realistic or adequately account for the intensity of use of the road by community residents, which in turn has implications for the Board's confidence in associated areas of the Proponent's impact assessment.

*I'm getting back to an early point that I made about one of the difficulties of this assessment is looking at the potential impacts both of the mine-related traffic and the public-access-related traffic on this proposed roadway, quantifying that and then coming up with a realistic – realistic potential impacts.*⁵⁹³

*I think I'll just reiterate the difficulty that the Board has and the challenge that we have with—not just a desire, but a need to, as much as possible, quantify predicted effects, put some meaning to the significance of those effects, and then report on the acceptability of those potential effects. So I certainly appreciate Agnico Eagle's attitude toward a willingness to work with – with partners, also the approach to adaptive management, I think, is very clear, but the step before that and trying to determine the likelihood of impacts, the severity, the probability of these things occurring, so that's why I'm back and trying to, as much as possible, increase the level of certainty and comfort that we have with the predictions that are being presented in the final environmental impact statement.*⁵⁹⁴

"The one outstanding concern where we're questioning some of these public traffic rates and the reason why we would question them further is with regards to potential for motor vehicle accidents. During a question yesterday, Agnico Eagle cited its experience in operating the Meadowbank access road and the fact that there's been very limited accidents occurring on that road. However, we would caution that that may not be a very comparable situation, as that -- that particular road doesn't have the public access that is projected or planned for the Meliadine all-weather access road. In particular, having public members regularly transiting the road with pickup trucks, all-terrain vehicles, I think the

⁵⁹² J Tatty, Kangiqliniq Hunters and Trappers Organization, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p.1070 lines 12-20.

⁵⁹³ R. Barry, Nunavut Impact Review Board, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 180 lines 7-13.

⁵⁹⁴ R. Barry, Nunavut Impact Review Board, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014 p. 182 lines 9-25.

proponent has done a good job of -- and we would expect the proponent could be accurate in its projections for its own traffic -- its own traffic on that road, but when it comes to the public traffic and some of the other statements in your final environmental statement, with regards to expecting an increase in local wealth, recreational cabin use, et cetera, we're finding that we don't have -- or we're questioning the confidence in the numbers for the public traffic. It's with regards to the potential for accidents that we don't see much discussion of the potential for motor vehicle accidents for the public-use component of the road; both the public with project vehicles and the public in individual accidents and with one another.”⁵⁹⁵

The Board notes that this is not the only location in the Final Hearing Report that the uncertainty regarding traffic volume estimates on the AWAR has arisen. This issue was also incorporated into the NIRB's assessments of impacts to terrestrial wildlife and birds and the Board is concerned that associated environmental effects are difficult to accurately quantify. As such, the Board would like to encourage Agnico Eagle to consult with the Kivalliq Inuit Association and the Hamlet of Rankin Inlet, Government of Nunavut and other appropriate agencies to devise a system for unrestricted public access to the all-weather access road. The Proponent should also explore the options available through other jurisdictions in Canada for the operation of mine roads that are open to the public and incorporate these into Supporting Document (SD) 2-9 Roads Management Plan. The Board would also emphasize communication as a very important part of the road for both Agnico Eagle *and* the public as there is great potential for accidents along the AWAR.

Recognizing the proposed routing of the Rankin Inlet bypass road, the all-weather access road, development of the boat launch area at the south end of Meliadine Lake and the alignment of the future road to the Discovery deposit, the Board has identified a potential for convergence and conflict between a variety of large mine-related vehicles, community resident vehicles hauling boats and trailers, and ATVs or snow machines using the AWAR and associated roads and trails. If not controlled properly and with sensible and clearly communicated “rules of the road” or Project infrastructure, the intersections and crossings of these roads can create a significant potential for motor vehicle accidents. For example, the Rankin Inlet bypass road is proposed to join the road to the Iqalugaarjuup Nunanaga Territorial Park at or near the same location or just prior to Diane River Road which where the development of a new quarry has recently been approved. The Board anticipates that where the road from Rankin Inlet, the bypass road and the Diane River Road intersect there may be a high volume of traffic particularly during peak times of the year. To address the potential for roadway intersections and crossings to create safety issues, the Board expects that the Hamlet of Rankin Inlet, the Government of Nunavut and Agnico Eagle to work together to develop roadway intersections and crossings in a manner that recognizes the variety of vehicles that may be meeting on these roads and to develop, communicate and ensure adherence to rules of the road necessary to ensure public safety.

The Board also has concerns that the increase in traffic resulting from upgrading the AWAR to allow for unrestricted public access will result in individuals travelling to the southern end of Meliadine Lake with trailers and boats mixing with mining-related traffic, which may increase the risk of serious incidents. The community members' vehicles will be interacting not only with fuel trucks traveling between Rankin

⁵⁹⁵ R. Barry, Nunavut Impact Review Board, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014 p. 842, lines 20-26 and p. 843 lines 1-21.

Inlet and the Meliadine site, but also with large mining equipment (e.g., Caterpillar 777F) when the planned road to the Discovery deposit is constructed. Though the FEIS discussed Agnico Eagle's plans to construct a safety berm to separate the mine traffic from the public traffic, testimony provided at the Final Hearing made it evident that the design and function of such a structure had not been given sufficient consideration at this stage of Project development:

MR. BARRY: ...I'm looking for Agnico Eagle to give a little bit more of a description of this proposed barrier, how wide and how tall it would be, and maybe to describe -- or to detail a bit more on what's written in that section that caribou are not expected to be impeded from crossing the all-weather road in this area. We're just wondering how this berm, the safety berm, whatever you're calling it, might -- might pose an obstruction to caribou⁵⁹⁶.

MR. CONNELL: The berm -- the berm is envisioned as to separate the public traffic from mine traffic, and the idea is to built something that is probably the -- the height -- or there actually is a standard, and I don't know it off the top of my head, but it's something -- I think the height of the large truck tire, so it's roughly in the order of 3 feet at least in height, so yeah, you would think that -- and that could be either ore-filled barrier or it could be a concrete barrier, but it doesn't have to be a continuous barrier. It doesn't have to be lined up so that there's no gaps through it. It has to make sure that you can't -- you can't -- there's logic there as to why someone wouldn't drive from one road onto the other. The whole purpose of this barrier is to prevent public cars from -- in that shorter section from mixing with the large haul traffic going back and forth to the discovery deposit from a safety perspective. But what can be done is to allow gaps in that barrier so that a caribou could pass through the barrier because it's to stop a truck going through, and there would be signage. There's no design done at this point in time. It's concept, and obviously that's got to be -- as part of the permitting process to come up with a design for that, but the concept is to prevent the movement of public vehicles into the haul truck vehicles, to keep some separation there. We can incorporate into that gaps through which the caribou could pass, the animals could pass through that section. I don't know how long the section is, but -- I don't remember off the top of my head how long that piece is.⁵⁹⁷

MR. BARRY: Maybe I'll -- I'll go over this again because I think I had a different understanding that it would be a 1.5-metre to 2-metre-tall barrier unbroken, and I realize that this is at the conceptual stage, but I'm not aware of a permitting process that would explicitly be looking at these structures. This isn't -- there isn't one that I'm aware of offhand, so there is quite a discrepancy between whether it would be broken or unbroken. If we're talking about most of the traffic being all-terrain vehicles and it was to be unbroken, it may not serve the same purpose as a continuous barrier. So I think, from the Board's perspective, what we're trying to assess is, one, the effectiveness of increasing human safety, which I think is the primary purpose of this; two, would it be creating -- having a different impact on animal movement, and we think of caribou, but we also think of other

⁵⁹⁶ R. Barry, Nunavut Impact Review Board, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 175, lines 5-13.

⁵⁹⁷ L. Connell, Agnico Eagle Mines Limited, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 175, lines 15-26 and p. 176, lines 1-19.

*animals that would be going there, so I would appreciate any additional clarification that Agnico Eagle might be able to provide from your experts with regard to whether any additional design elements have been considered at this stage with regards to animal movement across the all-weather road.*⁵⁹⁸

*MR. CONNELL: You raise a good point, and I don't believe we have done that work to design it, and it's going to be a balancing act, as you say, to -- to meeting the mine safety standards because barriers are -- are set for mining vehicles for the appropriate mining safety act in Nunavut, and obviously, that -- if you barrier it just to that -- it's -- it will become a barrier, so yeah, there has to be some incorporation of some concept of how we address that issue for that piece of the road. Even to the point that that piece should be a public access, and so we're open to discussion on that. It's -- but we don't have the answer at this point in time.*⁵⁹⁹

Recognizing that development of the Discovery deposit and associated spur road is not contemplated for the initial phase of development for the Meliadine Project, the NIRB believes that sufficient opportunity exists to ensure that an appropriate mechanism to separate public and mine related traffic can be developed without compromising the safety of the public and the safe passage of terrestrial wildlife which may include appropriately placed wildlife crossings which allow movement across the safety berm. Additionally, this delay in development of the Discovery deposit also affords the Proponent with time to address the safety of operating the additional road and to have a more comprehensive understanding of management of traffic on the AWAR through its initial operation and use by the public.

In developing recommendations to address the Board's concerns with the construction/operation of the all-weather access road and associated roads and trails with unrestricted public access, the Board has adopted a precautionary approach requiring Agnico Eagle to monitor traffic levels at strategic points and report regularly on incidences encountered and the effectiveness of mitigation measures employed. Prior to unrestricted public access, the Proponent will be required to ensure that it has the means to implement and enforce temporary road closures and respond to accidents and emergencies related to both Project and public road use during all seasons. The Board also notes that the Proponent will be required to consult with the Hamlet of Rankin Inlet with regard to the alignment and operation of the bypass road (particularly in proximity to Nipissar Lake) and the results of these discussions and rationale for the final alignment of the bypass road should be included in the road plan.

The Board also shares the concerns expressed by residents about the potential for accidents along the proposed bypass road to have adverse effects on Rankin Inlet's drinking water sources, Nipissar Lake and the Char River. As noted by intervenors the potential for such effects was not included in Agnico Eagle's worst-case scenario analysis. Reflecting these concerns, the Board is recommending that Agnico Eagle be required to include these types of scenarios (an incident resulting in a spill into surface water) in an updated worst case scenario modelling and to incorporate the resulting information into updated

⁵⁹⁸ R. Barry, Nunavut Impact Review Board, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014 p. 176, lines 22-26 and p. 177, lines 1-19.

⁵⁹⁹ L. Connell, Agnico Eagle Mines Limited, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 177 lines 20-26 and p. 178 lines 1-6.

terrestrial and marine spill plans. The Board would also encourage the Proponent to seek advice and to the extent possible co-ordinate with all agencies having jurisdiction and responsibility for spill response in the area and to demonstrate consideration for Inuit Qaujimajatuqangit for identification of particularly sensitive or valued areas that may be more susceptible to damage. If a spill should happen around sensitive areas, ensuring rapid and appropriate response is vital to preserving the health of the environment, ensuring that the current and traditional uses of the area are not unduly affected, as well as for preserving the value of the area, including aesthetics and minimizing disruption to the people and wildlife.

The Board examined the information provided in the FEIS by the Proponent and noted the representations made by intervening parties in their final written submissions and the community representatives during the Final Hearing that the increase in the potential for spills or other accidents resulting in releases of diesel fuel that could be associated with Project shipping is a critical concern for the communities along the shipping route. The potential increased risk of accidents and shipping traffic through the Hudson strait and Hudson Bay was identified as a particular concern. The Board agrees with Agnico Eagle's observation provided with the diesel spill modelling provided in the FEIS that the severity of an accident "would be dependent on the distance of the spill to the shoreline and sensitive areas, as well as on weather and oceanographic conditions."⁶⁰⁰ Although Agnico Eagle will only be conducting shipping during the open water season and using established shipping routes, the Board heard that during shoulder seasons (early or late in the open water season) the unexpected presence of ice can create risks and unforeseen challenges. The Board has provided additional recommendations in this regard to the extent considered appropriate.

6.1.4. Conclusions and Recommendations of the Board

To ensure that accidents resulting from wildlife interactions with traffic along the all-weather access road (AWAR) are minimized, the Board recommends the following:

1. Prior to construction Phase 2 of the all-weather access road (AWAR) and the Rankin Inlet bypass road, the Proponent shall consult applicable laws in Canada and Nunavut as well as meet with all regulatory agencies and the public as it finalizes its road operations plans.
2. The Proponent shall include in an updated Terrestrial Wildlife Management and Monitoring Plan (TEMMP), plans for increased caribou monitoring efforts including weekly winter track surveying and summer and fall surveys undertaken on foot twice per month. These results shall be reported to the NIRB as a part of the Agnico Eagle's annual reporting requirements.
3. The Proponent shall include within its updated Terrestrial Wildlife Management and Monitoring Plan, a commitment to establishing deterrents along the AWAR at any areas where it is observed that caribou are attracted to the AWAR and their presence may present a risk of collisions with traffic along the AWAR (such as areas where caribou are utilizing the AWAR to facilitate movement, areas where caribou may be licking minerals/road salt from the road, areas where caribou are gathering to avoid insects, etc.).

⁶⁰⁰ FEIS, Volume 8, p. viii.

With respect to the containment of potential fuel spills in marine areas, the Board provides the following recommendations, and furthermore, notes that additional recommendations have been provided in section 4.12.4 as relate to the Proponent's preparedness to respond to marine spills:

4. The Proponent shall contract only Transport Canada certified shippers to carry cargo for the Project, and will ensure shippers are aware of the requirements of the Shipping Management Plan, the Risk Management and Emergency Response Plan and the Oil Pollution Emergency Plan (OPEP).
5. The Proponent shall monitor the ingress/egress of Project related ships at Rankin Inlet and report any accidents or spills immediately to the regulatory agencies as required by law and to NIRB's Monitoring Officer.
6. The Proponent shall ensure that best practices are used at all times during ship to shore and other marine-based fuel transfer events, including implementing measures specifically designed to prevent leaks and spills resulting from ice forming on the hoses during fuel transfers.
7. The Proponent shall ensure that the necessary spill response equipment and training is available prior to commencing project shipping.

The Board also requires updates to the Proponent's spill contingency planning to address potential incidents near the municipality of Rankin Inlet:

8. Prior to construction, the Proponent shall update its Spill Contingency Plan specific to a major spill event occurring on the bypass road and within proximity to (and including potential spills into) Nipissar Lake.

With respect to the all-weather access road, the Board has provided the following recommendation to address potential impacts to human health and safety, mitigation measures and monitoring plans:

9. The Proponent shall implement all such measures necessary to protect public and mine traffic on all Project roads. The measures undertaken shall include, but are not limited to:
 - a. Prior to expansion of the AWAR, the Proponent shall update its Roads Management Plan to include a detailed consultation plan specifying the methods the Proponent will use to provide the Kivalliq Inuit Association, members of the Hunters and Trappers Organizations in the area, residents of Rankin Inlet and the Hamlet of Rankin Inlet with information regarding the safety requirements of AWAR use. The updated Plan is to be submitted to the Nunavut Impact Review Board, Kivalliq Inuit Association, Kangiqliniq Hunters and Trappers Organization, and the Government of Nunavut;
 - b. Prior to the opening of the AWAR to the public, and annually thereafter, advertise and hold at least one community meeting in the Hamlet of Rankin Inlet and Chesterfield Inlet to explain to the community the rules for use of the road;
 - c. Prior to the opening of the AWAR to the public, the Proponent shall address enforcement of health and safety rules for the operation of the road (i.e., no shooting zone) and implement necessary communications with the public (i.e., signage and public meetings), which includes, but is not limited to:
 - i. Maintaining manned and unmanned gates as proposed along the all-weather access road;

- ii. The posting of signs in English and Inuktitut along the road at appropriate intervals (i.e., 10 km and bridge crossings); and
 - iii. Place notices at least quarterly on the radio and television to explain to the community the rules for use of the road;
- d. Once the AWAR expansion is completed and the road is opened to the public, the Proponent shall conduct a vehicle survey four times annually (once during the weekdays during the winter season, once during the week end days during the winter season, once during the weekdays during the summer season and once during the week end days during the summer season) to record the number and types of mine vehicles and the number and type of public vehicles using the AWAR over a 12 hour period (8:00 am to 8:00 pm). The vehicle survey data shall be collated as indicated above and provided in the Proponent's Annual Report;
- e. Prior to the development of the Discovery deposit, the Proponent shall update its Road Management Plan for the planned operation of the twinned road which could include additional rules, Project infrastructure, or other measures designed to maintain safety for employees and the public; and
- f. Report all accidents or other safety incidents on the road, to the Government of Nunavut, Kivalliq Inuit Association, the Hamlet of Rankin Inlet and the NIRB immediately.

6.2. *Alternatives Analysis*

6.2.1. Views of the Proponent

Agnico Eagle Mines Limited (Agnico Eagle) assessed thirty-six alternatives to the proposed project components and activities against the criteria of: technical feasibility; economic viability; environmental acceptability; community preference; social acceptability; and reclamation and closure requirements.⁶⁰¹ If an alternative was considered to not be technically feasible or economically viable it was not analyzed further and only those alternatives that met the criteria of being technically feasible and economically viable were evaluated as alternatives against the other four criteria. Agnico Eagle also indicated that the criterion of community preference received particular attention and in some case "override" all other criteria.⁶⁰² In conducting the alternatives analysis, Agnico Eagle also considered factors unique to this project, including the vulnerability of the Arctic ecosystem, the potential for the extension of the mine life, reclamation and closure and the potential for cumulative effects.⁶⁰³ It should be noted the temporal boundaries of the various alternatives considered by Agnico Eagle did not differ, and as such, temporal boundaries were not a factor in the assessment of alternatives.⁶⁰⁴ Primarily on the basis of the scoring

⁶⁰¹ FEIS, Volume 1, p. xxxiv.

⁶⁰² FEIS, Volume 2, SD 2-1: Alternatives Assessment Report, p. 14.

⁶⁰³ FEIS, Volume 2, SD 2-1: Alternatives Assessment Report, p. vi.

⁶⁰⁴ FEIS, Volume 2, SD 2-1: Alternatives Assessment Report, p. 10.

of each alternative against the six listed criteria, and recognizing the unique context surrounding the Meliadine Gold Project, Agnico Eagle identified the preferred Project alternatives.

Project alternatives specifically analyzed by Agnico Eagle included:

- The marine shipping route for fuel and dry cargo;
- Access road alternatives – community bypass road alignment;
- All-weather Access Road – restricted or unrestricted use by public;
- Use of the Rankin Inlet airport or build airstrip on site;
- Use of Itivia or a private port;
- Production rate and mining methods – open pit vs underground mining;
- Location of mill complex and associated infrastructure;
- Alternatives to on-site processing of ore;
- Alternate road access to deposits;
- Location of main fuel storage tank farm;
- Power generation – power plant location, fuel transportation, choice of generating equipment, fuel choice, wind energy, solar, thermal energy and hydroelectric;
- Location and transport technology type for Tailings Storage Facility;
- Waste rock/overburden storage alternatives;
- Hiring point for work force;
- Waste management and disposal alternatives;
- Alternatives to using cyanide in the mill process;
- Form of mill tailings generated – slurry, thickened or filtered;
- Site water treatment alternatives;
- Salt water management (including concentrated brine disposal options);
- Mine dewatering alternatives;
- Closure and reclamation alternatives; and
- The “no-go” alternative.⁶⁰⁵

The conclusions of Agnico Eagle’s alternatives analysis identified the following as the preferred alternatives:

- Shipping of fuel and dry cargo from Québec;
- Use of Itivia as port area to fulfill marine shipping needs;

⁶⁰⁵ FEIS, Volume 2, p. 69-70.

- Use of Rankin Inlet airport for transport of Agnico Eagle employees and air freight;
- Construction and use of a road to bypasses the Hamlet;
- Locating the mill complex and associated infrastructure 1 km Northwest of the present advanced exploration camp;
- Unrestricted use of the all-weather access road by the public;
- Installing Tank Farm at Itivia site;
- Diesel generators would be fuel source for power generation;
- Power plant located at Meliadine site;
- Tailings to consist of thickened slurry transported by pipeline;
- Tailings Storage Facility to be located in drainage basin identified as B7 near the mill;
- Five waste rock storage facilities will be developed for each of the Tiriganiaq, Wesmeg, F Zone, Pump and Discovery ore deposits;
- Manage salt water by treating, temporarily storing concentrated brine on-site and pumping salt water back into the underground;
- Hiring points to include communities in the Kivalliq and southern Canada;
- Backfilling of selected open pits with waste rock to take place;
- Sewage sludge will be burned in an incinerator;
- Cyanide to be used in the mill process; and
- Combined all-weather haul road and access road to allow for year round trucking of ore from Discovery deposit to the process plant.⁶⁰⁶

In the evaluation of the “no go” alternative, Agnico Eagle observed that if the Meliadine Gold Project was not developed, significant benefits and revenues to Nunavut Tunngavik Inc., the Kivalliq Inuit Association, the Hamlet, the Government of Nunavut and the Federal Government would not accrue. In addition, in the absence of the Project, Agnico Eagle predicted that continued underemployment and limited opportunities for young members of communities would be likely to lead to increased social stresses. On this basis, Agnico Eagle identified that the preferred alternative would be the development of the Meliadine Gold Project.⁶⁰⁷

6.2.2. Views and Concerns of Interested Parties

With respect to the “no go alternative”, there was fairly widespread acceptance by intervenors, community representatives and members of the public that the Kivalliq region welcomes the employment and economic opportunities that the Meliadine Gold Project represents:

⁶⁰⁶ For the specific scoring of the alternatives considered see: FEIS, Volume 2, SD 2-1: Alternatives Assessment Report, Table 4-1 Rating of Alternatives, p. 15-20.

⁶⁰⁷ FEIS, Volume 2, SD 2-1, p. 21-22.

*We people in Rankin Inlet, because -- because we are no longer relying on harvesting for domestic food and there are a lot of unemployed people, young people, and I -- and we know that the money will be flowing and because we are able to work, not only with the mines, but where we are, we're happy with the mines.*⁶⁰⁸

With respect to specific aspects of the alternatives assessment, the Kivalliq Inuit Association noted that the alternative of using a deep-water port rather than the harbour facility at Itivia should have been assessed.⁶⁰⁹ The KIA indicated that such an assessment should consider the options for avoiding the cumulative impacts of two substantial harbour/port developments in a small community.

Environment Canada identified that with respect to brine disposal options that the disposal of brine treatment residuals must be done in a manner to minimize the potential for effects on fish-bearing waters.⁶¹⁰ In addition if marine discharge of brine treatment residuals is contemplated, Agnico Eagle should be required to characterize effluent and receiving waters and a more fulsome assessment of impacts should be carried out. As summarized at the Final Hearing:

*As you've heard from the proponent, there's going to be underground water from the Tiriganiaq underground mine. It's going to [sic] [be] very salty. So this isn't going to be appropriate to go into freshwater. They're proposing to take this saline deep groundwater, use a desalination treatment plant and get some of it good enough to discharge into the freshwater environment, and the rest will be a brine that they then have to manage. The current proposals are to either keep this underground or to discharge it to the marine environment. The proponent has agreed to in principle our recommendation that disposal of treatment brine will have to be done so that there [sic] [are] no impacts to fish-bearing waters, and this includes the marine environment of course. Those are fisheries waters. If the ocean discharge option is considered, there's [sic] a couple of factors to keep in mind. That would be a metal mining effluent regulation discharge point, and a full assessment would be needed, and so that would be probably more environmental assessment.*⁶¹¹

The Kivalliq Wildlife Board expressed the following concerns with respect to the preferred alternative of the public use of the all-weather access road, observing that there is a need to ensure that it is clear how both mine traffic and public access will be controlled (including establishing mechanisms such as access protocols, improving public awareness, communication and cooperation).⁶¹²

⁶⁰⁸ J. Tatty, Kangiqliniq Hunters and Trappers Organization, NIRB Final Hearing File No. 11MN034 Transcript, August 26, p. 1071, lines 10-16.

⁶⁰⁹ Kivalliq Inuit Association, Technical Submission, KIA-MAR-10, 2, June 12, 2014 and reiterated in the KIA's Final Written Submissions, July 18, 2014, p. 18.

⁶¹⁰ Environment Canada, Final Written Submission, July 21, 2014.

⁶¹¹ A. Wilson, Environment Canada, NIRB Final Hearing File No. 11MN034 Transcript, August 22, p. 424-425, lines 18-26 and lines 1-11.

⁶¹² Kivalliq Wildlife Board, Final Written Submission, June 7, 2014.

6.2.3. Views of the Board

The Board commends the Proponent for the considerable weight given to community preferences when conducting the assessment of alternatives. The Board does, however recognize that with respect to the routing and use of the all-weather access road (AWAR), the choice of the communities' preferred alternative of full public access to the AWAR shared with project-related vehicles will create more issues and potential for additional impacts that would not exist if the public access to the road was restricted or prohibited altogether. On this basis, the Board has recommended terms and conditions to recognize the issues arising from Agnico Eagle's choice of the preferred alternative of unrestricted public access.

With respect to the Proponent's choice to have project-shipping follow the existing community re-supply route, the Board recognizes that these routes have been established as safe and efficient routes. However, the Board does note that it appears from the information provided by community representatives along the shipping route that communities may be starting to notice effects from the existing levels of shipping,⁶¹³ and that as a result, the Board is recommending monitoring for cumulative effects along the established shipping route.

Reflecting these concerns and uncertainties associated with the effects predictions, the Board has also applied a more stringent level of the precautionary approach to developing the recommended terms and conditions guiding the monitoring of the potential for impacts associated with public access along the AWAR and along the shipping route.

With respect to the management and ultimate disposal of saline groundwater that accumulates in the underground mine, the Board shares the view expressed by Environment Canada that the discharge of concentrated brine treatment residuals to the ocean was not fully assessed in the context of the NIRB's review of the Project. Consequently, the Board identifies for the Proponent that if ocean discharge becomes the preferred option for this aspect of the Project additional environmental assessment may be required.

6.2.4. Conclusions and Recommendations

Recognizing that the alternative of full public access is the preferred alternative for the AWAR, the Board has recommended the following term and condition designed to ensure that the members of the public travelling on the AWAR have up to date information regarding conditions on the AWAR, limitations on public use that may arise and the requirements for safe use of the road for mine traffic and public traffic alike (i.e. "rules of the road").

1. Prior to expansion of the AWAR, the Proponent shall prepare and add to the finalized Roads Management Plan (SD 2-9), a detailed consultation plan specifying the methods the Proponent will use to provide the Kivalliq Inuit Association, members of the Hunters and Trappers Organizations in the area, residents of Rankin Inlet and the Hamlet of Rankin Inlet with information regarding the safety requirements and any limitations on public AWAR use (i.e. the

⁶¹³ See for example the information provided by L. Mimialik, Aqiggiq Hunters and Trappers Organization, NIRB Final Hearing File No. 11MN034 Transcript, August 22, p. 342, lines 6-18 and August 25, p. 689, lines 9-21.

“rules of the road”) and to ensure that this information continues to be clearly communicated on an on-going basis while the public has access to the AWAR.

The Board recommends the following term and condition relating to monitoring for effects related to project shipping:

2. The Proponent shall, in coordination and consultation with the Kivalliq Inuit Association and the Hunters and Trappers Organizations of the Kivalliq communities, provide updates to its Shipping Management Plan to identify adaptive management measures that will be employed if effects monitoring identifies potential for effects on marine mammal populations along the shipping route.

6.3. *Cumulative Effects*

As required by s. 7.11 of the EIS Guidelines, cumulative effects assessment for the Project was required to identify the residual effects of the Meliadine Gold Project and the potential for those effects to interact with the residual effects of other past, present and reasonably foreseeable future actions or activities to assess whether these interactions could result in a greater effect to a valued component (VC) of the biophysical or socio-economic environments.

6.3.1. Summary of Key Issues

The Proponent identified potential cumulative effects on the terrestrial, marine and socio-economic environments as follows:

- Terrestrial components -- vegetation; terrestrial wildlife and wildlife habitat; and birds and bird habitat;
- Marine components -- marine water quality; marine fish and fish habitat; and marine mammals and marine birds; and
- Socio-economic components -- population demographics; traditional activities and knowledge; economic development and opportunities; education and training; individual, family and community wellbeing; community infrastructure and public services; governance and leadership; and public and worker health and safety.⁶¹⁴

The specific cumulative effects to terrestrial components included effects to listed and traditional use plant species, bird and wildlife habitat loss and fragmentation, changes in caribou migration patterns, indirect sensory effects on wildlife, upland and water bird populations and effects on caribou and wolf populations associated with improved access for harvesting due to the all-weather access road (AWAR).⁶¹⁵

⁶¹⁴ FEIS, Volume 1, p. 146.

⁶¹⁵ FEIS, Volume 1, p. 146-147.

With respect to marine wildlife populations, the Proponent predicted in the FEIS that cumulative impacts from the Project were not predicted to significantly influence the maintenance of the abundance and distribution of marine wildlife populations, as the scale of impacts alone or in combination were not expected to result in irreversible changes at the population level, nor decrease the resilience of marine Valued Ecosystem Components (VECs).⁶¹⁶

With respect to the socio-economic components, the Proponent indicated that the cumulative effects of the Meliadine, Kiggavik, and Meadowbank Projects on in-migration might actually be less than the effects of each project individually as the projects are currently tracking with some overlap and interdependence and expectations that there will be growth in the available labour force.

The major cumulative effects with respect to economic development and opportunities in Nunavut identified for the Project were as follows:

- Cumulative population growth may place challenges on housing, infrastructure and services;
- Over the longer term, labour demand will not exceed Nunavut's capacity to supply;
- The mining industry currently holds out the most promise in creating the jobs that a rapidly growing workforce will need;
- Training programs designed to develop skilled and productive workers will be needed to meet and exceed the employment demand; and
- Development of the mining industry can improve unemployment and participation rates— as projects open and close, alternative employment opportunities are opened for retrenched employees.⁶¹⁷

Agnico Eagle concluded in its assessment that the net cumulative effects of previous, existing, and future projects, including the Meliadine Gold Project on training and employment will be positive and will benefit the Kivalliq region. Not only will there be increased access to training but also greater employment opportunities for applying that training and opportunities for advancement due to the training provided.

The Proponent predicted that expansion of the mining sector could also accelerate the potential for positive effects on individual, family and community wellbeing by providing “a shift in the understanding of the possibilities and aspirations of the balance of the population”. It was Agnico Eagle's view that as economic opportunities open up, people will have a greater range of possible career choices, which could reduce the negative effects of potential inequities on, for example, crime and social conflict.

Agnico Eagle also predicted that the mining sector expansion in the Kivalliq also has the potential to accelerate and exacerbate the largely additive effects on public infrastructure and services. The Proponent indicated that regardless of where the specific mining projects are located throughout the Kivalliq, given that Rankin Inlet functions as a central hub for the Region and occupies a position of

⁶¹⁶ FEIS, Volume 1, p. 147.

⁶¹⁷ FEIS, Volume 1, p. 147 and 148.

competitive advantage compared to other Kivalliq communities, this means that most effects of mining expansion will be seen in Rankin Inlet.⁶¹⁸

Further, Agnico Eagle identified that the cumulative increase on demand for services in the communities in the Local Study Area will be a significant negative effect in the event that service capacity does not also grow. However, the Proponent predicted that when thresholds are reached, and these capacity strains stimulate the expansion of existing services and addition of new services, the effect could become a significant cumulative benefit.

The Proponent predicted that the cumulative effects on governance due to the mostly additive effects of reasonably foreseeable projects will be large, as there would be significant fiscal benefits associated with project development. However, Agnico Eagle identified constraints on government expenditures and increased competition for labour as potential negative effects that could be offset by streamlining government operations and processes, short term training initiatives and reduced hiring goals. The Proponent suggested that increased experience of staff and operational cost-effectiveness may also mitigate some of these effects.

The Proponent predicted that reinforcement of health and safety principles from projects such as Meliadine, Meadowbank, and Kiggavik will “be a driver for a health and safety culture to take hold amongst Inuit and non-Inuit populations in Kivalliq”. Although the Proponent identified the potential for effects on environmental quality to potentially impact human health, on the basis of the Proponent’s conclusion that cumulative effects to air quality, noise, and surface water and sediment quality are expected to be negligible, Agnico Eagle concluded that the subsequent effects to human health would also be negligible.⁶¹⁹

6.3.2. Views and Concerns of Interested Parties

As noted in the Final Written Submissions and at the Final Hearing by the Kivalliq Inuit Association (KIA), there were concerns noted about the scale of the cumulative effects assessment for caribou used by the Proponent for this assessment, as illustrated by the following exchange:

[K. POOLE, KIA]: *You mentioned the cumulative effects assessment, and what Agnico Eagle did was standard. I'm not trying to belittle it, but it's what normally has been done for many of these mine development proposals where it's a habitat based, and, frankly, I think we all agree that you could predict the outcome of that habitat-base assessment even from the start before you put pen to paper, because they never come up with a significant determination. Because the area, even using a large zone of influence, that the accumulative developments, communities, hunting camps, whatever, within the range of the herd or the assessment area would be, it will never amount to more than a few percent of the entire area. We're wondering if a better approach would*

⁶¹⁸ FEIS, Volume 1, p. 148.

⁶¹⁹ FEIS, Volume 1, p. 149.

be to look at it from an energetics population modelling point of view. So it's not just an area that doesn't include the entire annual range, but it looks at the individual caribou and models it through its entire use of the annual range and looks at energetics costs with a lot of assumptions going into it of what developments will be, including the effects -- potential effects of the Meliadine Mine. And I'm wondering if you would consider that kind of assessment in a cumulative effects analysis.

[C. DE LA MARE, Agnico Eagle] *So as pointed out, we have used just standard, traditional approach for developing a cumulative effects assessment for caribou for this project. In addition, this is an area where, you know, at least over the last three years, caribou have interacted with the project for roughly around a week of the entire year. So from that aspect, we feel that our approach is sufficient enough to determine the effects of the project on caribou, and we think adding an energetics approach will, perhaps, yield some different information, so you'll have some different questions around the assumptions and outputs of that as well.*⁶²⁰

The NIRB was also cautioned at the Final Hearing by the Kivalliq Wildlife Board (KWB) to ensure that cumulative effects on caribou be specifically considered from the viewpoint of Inuit harvesters:

*Give due regard to the fact that the significance of cumulative impacts of wildlife and wildlife habitat may be different if determined from the viewpoint of Inuit harvesters, rather than from an industrial perspective. Considering the uncertainties surrounding the magnitude, duration, and reversibility of many potential impacts to wildlife and wildlife habitat, it could be argued that negative effects on harvested species and/or their habitat are to be seen as significative [sic] [significant]. Impact on caribou post calving grounds and migration further bring the importance of caribou to Kivalliq Inuit to the forefront of impact assessment, especially since the majority of project-related interactions occur at a particularly sensitive space and time in the lifecycle of caribou.*⁶²¹

In addition, the KWB, the local hunters and trappers organizations, as well as community members and members of the public also expressed concerns regarding cumulative effects associated with marine traffic and the potential for effects on marine mammals, fish and bird populations:

Consider project related marine shipping as incremental, cumulative traffic in a context of great uncertainty, and poor understanding with respect to the impacts of shipping on marine mammals and the underwater environment. The focus of a gold mine project proposal is

⁶²⁰ K. Poole, Kivalliq Inuit Association, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 155-156, lines 11-26 and lines 1-8 and C. De La Mare, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 156, lines 11-23.

⁶²¹ L. Muckpah, Kivalliq Wildlife Board, NIRB Final Hearing File No. 11MN034 Transcript, August 22, 2014 p. 558, lines 11-25.

necessarily placed on the terrestrial environment, but Inuit in coastal communities cannot afford to lose sight of the marine environment. Consequently, an increase in shipping intensity raises concerns, previously voiced by the Chesterfield HTO for the continued health of marine mammal, fish, and bird populations.

Although strictly project specific, marine traffic is not of an extraordinary scale. It must be considered with an additional increment to the cumulative shipping related stresses on the marine environment off the shores of the Kivalliq. Given how little understanding of the impacts of shipping on marine mammals and the underwater environment either Inuit Qaujimagatuqangit or western science can provide, it is more crucial to do so.⁶²²

In addition, the KWB also noted that uncertainty affects the parties' confidence with Agnico Eagle's prediction of cumulative effects:

For the assessment of cumulative effects and determination of significance, we wanted to address the uncertainty surrounding the magnitude, duration, and reversibility of many potential impacts to wildlife and wildlife habitat and that there will be negative effects on harvested species and/or their habitat, and there is no doubt it will be significative [sic] [significant].⁶²³

In general, the Board agrees with submissions by the Government of Nunavut, the Kivalliq Inuit Association, the Kivalliq Wildlife Board, the Kangiqliq Hunters and Trappers Organization, the Aqiggiq Hunters and Trappers Organization, community representatives and members of the public that uncertainty remains regarding the cumulative effects on terrestrial wildlife such as caribou. Both the uncertainty of the effects predictions and the importance of this wildlife to harvesters and community members supports the Board's application of a more stringent standard of the precautionary approach when designing recommended monitoring and management measures.

With respect to the potential for cumulative effects of project-shipping, at the Final Hearing the Board questioned Agnico Eagle's assumption that the cumulative effects analysis did not need to include, as a reasonably foreseeable project, shipping via the Hudson Strait from the approved Mary River Project. As outlined in the exchange that follows:

[R. BARRY, NIRB] ...we note, much like the Kivalliq Inuit Association brought up, this point from -- it was referred to in the final environmental impact statement in Section 8-105, so Volume 8. There was a statement about the -- the understanding that the Mary River project has been indefinitely deferred, so there will be no shipping from the Mary River project through the Hudson Strait, and this had direct effects on what was included within their marine -- marine environment effects, the cumulative effects component on that...I'd like to get some

⁶²² L. Muckpah, Kivalliq Wildlife Board, NIRB Final Hearing File No. 11MN034 Transcript, August 22, 2014, p. 557-558, lines 13-26 and lines 1-9.

⁶²³ ⁶²³ L. Muckpah, Kivalliq Wildlife Board, NIRB Final Hearing File No. 11MN034 Transcript, August 26, 2014, p. 1048, lines 6-12.

*clarification from Agnico Eagle on what impact that -- that assumption may have had on their project -- their project effects assessment and any -- any ability of the proponent to adjust and clarify while we're still at the hearing on those potential interactions.*⁶²⁴

[D. WALKER, Agnico Eagle] *...We will come back tomorrow morning. We recognized previously that, during operations when the Mary River project would come online, there would be subsequent decrease in the number of ships as a result of the closure of the Meadowbank project, so in -- in reality, the -- the -- it's not an added value on the assessment completed by Mary River because we're not adding any additional ships as a result of this project. We're kind of balancing the removal of current -- current shipping. That's just a point of clarification.*⁶²⁵

Subsequently, on the last day of the Final Hearing, Agnico Eagle filed an updated cumulative effects assessment of the potential effects of project-related shipping to reflect the addition of the approved Mary River shipping.⁶²⁶ The updated assessment concluded that:

With the inclusion of the Mary River Project in the cumulative effects assessment with respect to shipping activities, a larger increase in cumulative shipping levels is anticipated to occur in Hudson Strait than previously reported in Volume 8 of the Final Environmental Impact Statement (FEIS), particularly during the Meliadine operations phase. However the result of the cumulative effects assessment for shipping activities did not change from that originally provided in Volume 8 of the FEIS, as impact ratings (e.g. magnitude, geographic extent), which were initially conservatively estimated remain the same.⁶²⁷

The Board's Chairperson also inquired as to the potential for cumulative effects associated with the permanent dewatering of several water bodies in the mine area. In response, Fisheries and Oceans Canada (DFO) conceded that although cumulative effects were not directly considered by DFO during their technical review, they were able to conclude that cumulative effects on the fishery were not anticipated:

In our review under the Fisheries Act, we actually don't look at cumulative effects. We consider them in our review, but we review every project -- every time project-by-project basis, okay? So that's -- probably for a lot of people, this is the shortcoming of Fisheries Act, but the assumption is that we are dealing with issues like that during the environmental impact assessment review like -- like we are doing right

⁶²⁴ R. Barry, Nunavut Impact Review Board, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 282-283, lines 15-24 and lines 3-8.

⁶²⁵ D. Walker, Agnico Eagle, NIRB Final Hearing File No. 11MN034 Transcript, August 21, 2014, p. 285, lines 2-12.

⁶²⁶ Exhibit 48, NIRB Final Hearing File No.: 11MN034, August 27, 2014 filed by Agnico Eagle Mines Limited, "Meliadine FEIS Technical Hearing Follow Up to Deferred Questions #10".

⁶²⁷ Exhibit 48, NIRB Final Hearing File No.: 11MN034, August 27, 2014 filed by Agnico Eagle Mines Limited, "Meliadine FEIS Technical Hearing Follow Up to Deferred Questions #10".

now. And findings of these assessments gives us a direction where we're supposed to go with developing offsetting habitats.

In case of this development, we don't think that -- so we've got thousands of lakes here around, and if this project would affect seriously Meliadine Lake, we would definitely say that there is cumulative effect, but the lakes are small -- and small -- they have some fisheries, but our understanding is that and goal is that after Agnico Eagle is going to conduct their operation, they're going to reclaim the area and pretty much the productivity of [the fishery in] this area is going to return back to normal.⁶²⁸

6.3.3 Conclusions and Recommendations of the Board

In the Board's view, the terms and conditions the Board has developed to limit, monitor and mitigate the potential for effects on specific Valued Ecosystem Components (VECs) or Valued Socio-economic Components (VSECs), as set out throughout this Report, have been designed to address both project-specific effects and also the additive cumulative effects of the Project. On this basis, the Board has not recommended particular terms and conditions that are solely directed at addressing cumulative effects. Rather, where cumulative effects for a particular VEC or VSEC have been noted, the Board has proposed recommended terms and conditions to specifically address all potential effects on that VEC or VSEC, whether project-specific and/or cumulative.

6.4. Performance Bonding

Pursuant to Article 12, Section 12.5.5(f) of the Nunavut Land Claims Agreement (NLCA), the NIRB "shall, when reviewing any project proposal, take into account all matters that are relevant to its mandate, including the following: ...(f) posting of performance bonds." As noted in past Board decisions, given the NIRB's jurisdiction and primary objectives, most notably "protecting the ecosystemic integrity of the Nunavut Settlement Area", the Board's consideration of performance bonding involves an inquiry into whether the Proponent has established that there are sufficient financial assurance mechanisms in place to "prevent environmental degradation and preserve and protect the area's ecosystemic integrity."⁶²⁹

6.4.1. Views of the Proponent

In the Final Environmental Impact Statement (FEIS), Volume 2, Sections 1.2.3 and 1.6.1, Agnico Eagle outlined the Proponent's long operating history at several mines and provided information regarding the status of the mine closure and reclamation planning for their operating mines. The Proponent also

⁶²⁸ M. Janowicz, Fisheries and Oceans Canada, NIRB Final Hearing File No. 11MN034 Transcript, August 22, 2014, p. 478-479, lines 16-26 and lines 1-10.

⁶²⁹ NIRB File No.: 08MN053, Final Hearing Report for the Mary River Project, Baffinland Iron Mines Corporation, September 14, 2012, p. 232.

outlined their overall approach to ensuring that all asset retirement obligations and liabilities are fully accounted for. As stated in the FEIS:

All of AEM's operating mine sites have up-to-date mine closure and reclamation plans. ...the asset retirement obligation (ARO) or reclamation liability has been calculated for each site and accounting provisions taken for this liability. Financial assurance requirements for mine reclamation are being met as required at each site.⁶³⁰

Of greatest relevance to the Board are the existing security provisions applicable to Agnico Eagle's operation in Nunavut, the Meadowbank Mine. As stated in the FEIS:

AEM maintains an updated Closure and Reclamation Plan for its Meadowbank Mine in Nunavut in accordance with both its Type A Water License and its Commercial Production Land Use Lease with the Kivalliq Inuit Association (KIA)...AEM maintains security bonds against reclamation liability in the form of guaranteed Letters of Credit held by one of Canada's main banks that are pledged to the Government of Canada and to the KIA in the event that AEM does not complete reclamation at Meadowbank in accordance with the approved Closure and Reclamation Plan. In total, AEM has approximately \$100 Million in security bonds posted for its Meadowbank Mine for reclamation liability and for compensation for loss of fish habitat caused by the project. AEM also maintains insurance coverage in the event of an environmental accident resulting in major harm to a third party caused by its activities at Meadowbank. In addition AEM has provided a third party liability bond of \$5 Million to the Government of Nunavut against an accident at its fuel storage facility in Baker Lake. AEM anticipates posting of similar security bonds if and when the Meliadine Project proceeds into construction.

AEM has completed a Water Compensation Agreement with the KIA for the Meadowbank Mine in accordance with Article 20 of the Nunavut Land Claims Agreement (NLCA). This provides ongoing water compensation payments to the KIA during the mine's construction, operations and into post closure phases.⁶³¹

With respect to the ability of Agnico Eagle to fund the additional reclamation liability associated with the Meliadine Gold Project, the Proponent provided the following confirmation:

AEM currently funds its reclamation and water license financial security liability for its Meadowbank operation through... irrevocable letters of credit issued to the interest of the Government of Canada (for water related financial security against reclamation or major accident causing environmental damage as outlined under the Type A Water

⁶³⁰ FEIS, Volume 2, p. 17

⁶³¹ FEIS, Volume 2, p. 19-20.

License); to the Government of Nunavut (for accidents or incidents such as a fuel oil spill from the Baker Lake tank farm that could cause major damage to the environment); to the Kivalliq Inuit Association (for land and water related financial security against reclamation or major accident causing environmental damage as outlined under the Commercial and Production land use leases for Inuit Owned Lands) and to DFO (for financial security against successful implementation of fish compensation measures as authorized by DFO). The total value of these letters of credit are in the range of \$100 Million, pledged for reclamation liability, fish habitat compensation initiatives and various other forms of security (third party liability for the Baker Lake fuel tank farm, land use lease security, etc.). These letters of credit are deducted from AEM's credit lines held by the banks ... AEM currently reports lines of credit available of approximately \$1 Billion consequently AEM is confident that it has the economic preparedness to meet the requirements for reclamation and security should the Project proceed.⁶³²

Agnico Eagle did not provide a specific estimate of reclamation liability for the Meliadine Gold Project, deferring the detailed analysis of this liability to the water licensing process. However Agnico Eagle did project that the reclamation liability for Meliadine will likely be analogous to Agnico Eagle's Meadowbank operations, as follows:

AEM expects that similar financial surety requirements will be required if and when the Meliadine Project is approved to proceed and is prepared to meet this obligation in a similar manner to how it met its financial security obligations for the Meadowbank Mine.⁶³³

6.4.2. Conclusions and Recommendations

Perhaps with the recognition that in Nunavut the detailed assessment of security is typically addressed during the water licensing process that follows the NIRB assessment, the Board received no comment on this issue from any of the other participants. Consequently, the Board accepts that the Proponent has established their current financial capacity to secure their reclamation obligations at various mines across Canada and most particularly at Agnico Eagle's existing mine in Nunavut, the Meadowbank Mine. In considering this issue, the NIRB also acknowledges that the detailed assessment of reclamation liability will be undertaken by the Nunavut Water Board subsequently during the water licensing process. Consequently, the NIRB is confident that the Proponent has established, in a general sense, that Agnico Eagle has, or prior to operation will have, sufficient financial assurance mechanisms in place to prevent environmental degradation and preserve and protect the area's ecosystemic integrity. On this basis, the NIRB has not recommended any terms and conditions with respect to performance bonding.

⁶³² FEIS, Volume 2, p. 48-49.

⁶³³ FEIS, Volume 2, p. 49.

6.5. *Transboundary Effects*

As established under s. 7.12 of the EIS Guidelines for the Meliadine Gold Project, transboundary effects are defined as those effects linked directly to the activities of the Project inside the Nunavut Settlement Area, which occur across provincial, territorial, international boundaries or may occur outside of the Nunavut Settlement Area.

6.5.1. Views of the Proponent

The Proponent recognized that there was some potential for transboundary effects related to the socio-economic effects of the Project, including potential economic benefits in the form of provincial and federal taxes, and employment, business and contracting opportunities not filled by Nunavummiut.

In terms of ecosystemic components, the Proponent recognized that marine shipping associated with the Project also has the potential for transboundary effects to marine water quality, fish and fish habitat, mammals and/or birds resulting from accidental spills, underwater and in-air noise, and vessel strikes. However, while recognizing the potential for effects, the Proponent considered the residual impacts of these effects to not be significant.

With respect to the terrestrial environment, changes in the migration patterns of caribou were identified due to the Project and the cumulative cases and the Proponent predicted that the extent of these effects may be transboundary, but occurring at the home range scale and therefore were not assessed to be significant. Residual impacts to migratory birds were also noted as potential transboundary effects, although the Proponent noted that these potential effects will be negligible due to the small impact of the Project.⁶³⁴

6.5.2. Views and Concerns of Interested Parties

Many of the parties who raised concerns regarding cumulative effects to particular Valued Ecosystem Components (VECs) or Valued Socio-economic Components (VSECs) also raised concerns regarding the potential for transboundary effects associated with these potential impacts. As these issues are generally discussed under the specific VECs or VSECs (such as the discussions in sections 4.10 in respect of Terrestrial Wildlife and Wildlife Habitat, 4.11 Birds and Bird Habitat and 4.13 Marine Wildlife) the Board has not repeated the discussions in this section. However, the parties can rest assured that any noted transboundary concerns were considered in the development of the Board's recommended terms and conditions included under those specific VECs or VSECs.

However, as the central basis of the intervention of the Registered Intervenor, the Government of the Northwest Territories (GNWT) was on potential transboundary effects, the Board expressly notes that the Board considered the GNWT's submissions summarized in some detail under Section 3.2.12 of the Report under both the Terrestrial Wildlife and Wildlife Habitat section of this report (4.10) as well as in this section.

⁶³⁴ FEIS, Volume 11, p. 11-v.

In summary, the GNWT's written submission focused on concerns about transboundary effects on caribou mortality in the Nunavut Settlement Area resulting from vehicle collisions, increased predation, the increased harvesting associated with improved access to hunting grounds along the all-weather access road (AWAR) and also due to impacts from the AWAR and mine being located in particularly sensitive caribou habitat such as post-calving and core calving ranges. The GNWT raised, as did the Kivalliq Inuit Association, questions as to whether the standard scale of the cumulative effects assessment conducted by Agnico Eagle was sufficient to accurately capture and identify the potential for effects (in general, cumulatively and transboundary) on project-related effects such as habitat loss and herd dynamics.⁶³⁵

6.5.3. Views of the Board

In the Board's view, uncertainty remains regarding the full extent of effects on caribou within the Nunavut Settlement Area (NSA), as set out in detail in Sections 4.10 of this report. With this uncertainty regarding the potential effects within the NSA, even greater uncertainty exists regarding the nature and extent of transboundary effects outside the NSA. In the Board's view, the same can be said of the potential for transboundary effects on marine mammals associated with shipping (as outlined in detail in Section 4.13 of this Report). Reflecting this uncertainty, the Board has applied a more stringent version of the precautionary approach and expects the development of highly protective adaptive management measures.

6.5.4. Conclusions and Recommendations of the Board

As with the immediately preceding section on Cumulative Effects, the Board has not developed individual terms and conditions directed to addressing "transboundary effects" specifically. Rather, the Board has integrated into the recommended terms and conditions in respect of terrestrial and marine wildlife, birds and bird habitat and accidents and mishaps (sections 4.10-4.13 and 6.1) that address, in an integrated way measures to limit, monitor and adaptively manage the potential for transboundary effects. For example, several of the recommended terms and conditions under the Terrestrial Wildlife Section 4.10 require the Proponent to consult with listed participants within the Nunavut Settlement Area, but also with "other affected parties". It is the Board's expectation that if project monitoring identifies transboundary effects that the "other affected parties" to be included will extend to transboundary parties that are directly affected by the impacts identified.

7. RECOMMENDATION TO THE MINISTER

After due consideration and in accordance with the process and primary objectives of the Nunavut Land Claims Agreement, the Board has determined that Agnico Eagle Ltd.'s Meliadine Gold Project, NIRB File No.: 11MN034 should proceed in accordance with the Board's Final Hearing Report and associated recommendations.

⁶³⁵ Government of the Northwest Territory, Final Written Submission, July 21, 2014.

8. RECOMMENDED PROJECT SPECIFIC TERMS AND CONDITIONS

8.1. *The NIRB's Monitoring Program*

As set out in Sections 12.7.1 and 12.7.2 of the NLCA the NIRB has the jurisdiction to establish a project-specific monitoring program to: measure the ecosystemic and socioeconomic effects of a project; assess whether the project is in compliance with the prescribed project terms and conditions; share information with regulatory agencies to support the enforcement of land, water or resource use approvals and agreements; and to assess the accuracy of predictions contained in the environmental impact statements. Given the Board's application of the precautionary approach to several aspects of this Project Proposal, in the Board's view project-specific monitoring will play a crucial role in addressing the uncertainty regarding Project effects and enabling all parties to adapt mitigation measures on an ongoing basis to ensure the Project's negative effects are prevented or limited to the extent possible.

The role of the Board with respect to the establishment of monitoring programs is to focus the terms and conditions in relation to the Project. With respect to existing or future general regional and territorial monitoring programs that may include some of the same monitoring parameters/indicators as the project-specific monitoring program, the NLCA also directs the NIRB to avoid duplication but facilitate co-ordination and integration between the project-specific monitoring programs required by the NIRB and more general programs such as the Nunavut General Monitoring Program.⁶³⁶ Where the requirements of regional or territorial programs are more extensive or substantively different than those established through the Project Certificate, at all times the Proponent must ensure compliance with the Project Certificate terms and conditions.

In order to co-ordinate, integrate and avoid duplication with other monitoring programs, but also to ensure that the NIRB's project-specific monitoring program yields the information required to measure effects and adequately assess compliance with terms, conditions, regulatory instruments and agreements, the NIRB's monitoring program is developed after consultation with responsible authorities, the resource and land owners and the proponent following a Regulators' Meeting that typically occurs within several weeks after the Minister has issued a decision that the project can proceed to obtain regulatory authorizations and providing the Minister's direction regarding recommended terms and conditions. A short time after the Regulators' Meeting, the NIRB issues the Project Certificate, but the project-specific monitoring program, which is usually issued as an Appendix to the Project Certificate may not be issued in final form until some months after key regulatory authorizations, including land use permits, water licences, mineral leases, etc. are issued so that the

⁶³⁶ See the discussion in Section 5.10.3 of the report and Sections 12.7.4 and 12.7.5 of the NLCA.

monitoring program supplements and supports but does not duplicate the monitoring requirements in regulatory and land use instruments.

It is important to remember that the NIRB's monitoring program will have varying requirements over the course of the Project lifecycle, and that monitoring requirements will apply from construction to eventual abandonment and reclamation. In areas where there may be a need for flexibility in relation to the terms and conditions of the Project Certificate or their application, the NIRB has endeavoured to reflect this in the associated language and/or acknowledge that objectives may be achieved through various means. In addition, in the event that the monitoring program needs to be modified to better achieve its purpose, the Board, the Proponent, the Designated Inuit Organization or other interested parties may cause the Board, under Section 12.8.2 of the NLCA to revisit the monitoring program, or any other terms and conditions in the NIRB Project Certificate. However, the NIRB wishes to clearly state that the Board has every expectation that Agnico Eagle Mines Ltd. will fulfill all commitments made during the Final Hearing, within its Final Environmental Impact Statement and supporting documentation submitted during the Review, not just those commitments that have been incorporated into the Terms and Conditions recommended by the Board in this report. The Board further notes that, as indicated in Agnico Eagle's, Response to Final Written Submissions,⁶³⁷ filed in advance of the Final Hearing and as noted by several intervenors during the Final Hearing, the Proponent had come to "agreement in principle" regarding many requests filed by agencies in final written submissions provided to the Board, and it is our expectation that the Proponent will be in a position to demonstrate actions taken in finalizing these commitments in practice.

8.1.1. Format of Recommendations

8.1.2. General Provisions

The NIRB retains the ability to give additional clarification or direction on an ongoing basis through its Monitoring Officer, with respect to compliance requirements for the Project. Upon request by the Proponent or other parties, the NIRB can provide additional clarification or direction regarding implementation of Project Certificate terms and conditions.

Where the objective of a Project Certificate term or condition can be achieved through more efficient alternate means, the Proponent is encouraged to consult with the NIRB (and other parties as required) to seek acceptance of proposed alternatives.

⁶³⁷ Agnico Eagle, Response to Final Written Submissions, August 7, 2014.

Where not specified, the NIRB recognizes and respects the role of other licensing and permitting processes yet to be completed. The NIRB strongly encourages the coordination of monitoring and reporting requirements in order to reduce duplication.

8.2. Recommended Terms and Conditions

8.2.1. Ecosystemic Terms and Conditions

8.2.1.1. Air Quality

Term and Condition No.	1
Category:	Air Quality – Updated Air Quality Monitoring Plan
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure monitoring
Objective:	To define plans for the monitoring of data and mechanisms for response with regard to potential air quality impacts arising from the Project
Term or Condition:	Prior to commencing construction activities, the Proponent shall update its Air Quality Monitoring Plan, and shall consider installing two real-time air monitoring stations in advance of mining operations. The updated plan shall include, but is not limited to, details regarding the following: a. Description of real-time air monitoring stations including proposed timing of installation, location, and any factors considered with regards to planning for the installation; b. Plans for the collection of total suspended dust samples year round, including sampling for metals content relevant to the Project; c. Description of snowpack surveys and dustfall collectors; d. Description of lichen surveys; e. Identification of near field, far field and reference sites that are located with consideration of ambient wind conditions; f. Baseline data collected prior to significant construction activity; and g. A description of the proposed annual reporting mechanism and response framework.
Reporting Requirements:	The updated plan should be submitted to the NIRB at least 90 days prior to the start of construction, with results submitted annually thereafter or as may otherwise be required.

Term and Condition No.	2
Category:	Air Quality – Emissions monitoring
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and

	Maintenance, Closure and Post-Closure monitoring
Objective:	To provide feedback on Project-related greenhouse gas emissions
Term or Condition:	The Proponent shall demonstrate through monitoring of air quality at the aboveground emissions points at the mine site and at the Tiriganiaq site that sulphur dioxide (SO ₂) and nitrous dioxide (NO ₂) emissions remain within predicted levels and, where applicable, within limits established by all applicable guidelines and regulations. In cases where exceedances occur, the Proponent shall provide an explanation for the exceedance, a description of planned mitigation, and shall conduct additional monitoring to evaluate the effectiveness of mitigative measures.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	3
Category:	Air Quality – Dust management and monitoring plan
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction
Objective:	To define plans for the monitoring of air quality data, specifically dust deposition arising from the all-weather access road
Term or Condition:	Prior to commencing construction activities the Proponent shall update its dust management and monitoring plan to address and/or include the following additional items: a. Align plan requirements with commitments made in the FEIS and during the Final Hearing to monitor dust along the all-weather access road and associated roads and trails. b. Verify commitments to the utilization of dust suppressants along the all-weather access road including and associated roads and trails, including a description of the type of suppressant to be utilized, the frequency and timing of applications to be made throughout the various seasons of road use. c. Outline the specific adaptive management measures to be considered should monitoring indicate that dust deposition is higher than predicted, specifically where traffic along the all-weather access road is greater than initially predicted.
Reporting Requirements:	The updated plan should be submitted to the NIRB for review and comment at least 60 days prior to commencement of construction activities.

Term and Condition No.	4
Category:	Air Quality – Incineration management plan
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure monitoring
Objective:	To ensure incineration activities are designed in a manner that mitigates impacts to air quality
Term or Condition:	The Proponent shall develop and implement an Incineration Management Plan that takes into consideration the recommendations provided in Environment Canada's <i>Technical Document for Batch Waste Incineration</i>

	(2010). ⁶³⁸
Reporting Requirements:	The plan should be submitted to the NIRB at least 60 days prior to the commencement of construction activities.

Term and Condition No.	5
Category:	Air Quality – Stack testing
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure monitoring
Objective:	To mitigate impacts to air quality from incineration activities
Term or Condition:	The Proponent shall provide all stack testing conducted on temporary or permanent incinerators operated for the Project to the NIRB in the annual report for that year.
Reporting Requirements:	Stack test results are to be reported to the NIRB and to Environment Canada annually, or as may otherwise be required.

Term and Condition No.	6
Category:	Air quality – Landfill dust suppression
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure
Objective:	To address potential air quality concerns arising from dust generated at the landfill
Term or Condition:	The Proponent shall employ appropriate dust suppression measures when conducting activities in the landfill such as topping or capping.
Reporting Requirements:	To be determined following approval of the Project by the Minister

8.2.1.2. Climate and Meteorology (including Climate Change)

Term and Condition No.	7
Category:	Climate and Meteorology, Climate Change – Greenhouse gas emissions
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure monitoring
Objective:	To provide feedback on Project-related emissions
Term or Condition:	The Proponent shall provide within its annual report to the NIRB, calculations of greenhouse gas emissions generated by activities at the Itivia port and other Project sources including mine-related road traffic and aircraft associated with the Project. Calculations shall take into consideration, fuel consumption as measured by the Proponent's purchase

⁶³⁸ Environment Canada, 2010. Technical Document for Batch Waste Incineration.

	and use as well as the fuel use of its contractors and sub-contractors.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	8
Category:	Climate and Meteorology, Climate Change – Inuit participation
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure monitoring
Objective:	To promote public awareness and engagement of affected groups
Term or Condition:	To actively engage Inuit in initiatives related to climate change, where it is feasible, the Proponent shall endeavour to include the participation of Inuit from affected communities when undertaking climate-change related studies and research.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	9
Category:	Climate and Meteorology, Climate Change – Greenhouse Gas Emissions Reduction Plan
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction
Objective:	To develop a pro-active approach to limiting greenhouse gas emissions throughout the Project life
Term or Condition:	Prior to the commencement of operations, the Proponent shall develop a Greenhouse Gas Emissions (GHG) Reduction Plan which includes, but is not limited to: a. An estimate of the Project's GHG baseline emissions; b. A description of monitoring measures to be undertaken, including the methods, frequency, parameters, and a description of data analysis; and, c. A description of mitigative and adaptive strategies planned, and taken, toward reducing the Project-related emission of greenhouse gases over the Project's life.
Reporting Requirements:	The plan should be submitted to the NIRB at least 90 days prior to the commencement of operations.

8.2.1.3. Noise and Vibration

Term and Condition No.	10
Category:	Noise and Vibration – Noise and Vibration Abatement Plan
Responsible Parties:	The Proponent, Government of Nunavut, Environment Canada and Health Canada
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure monitoring
Objective:	To minimize the impact of noise and vibration

Term or Condition:	The Proponent shall further develop and implement its noise abatement plan to protect people and wildlife from mine activity noise, including, blasting, drilling, equipment, vehicles and aircraft. The noise abatement plan will be developed in consultation the Government of Nunavut, Environment Canada and Health Canada as appropriate, and at a minimum is to include: a. Restrictions on blasting and drilling when migrating caribou, birds or local carnivores may be affected; b. The establishment of strict standards for noise levels; use of equipment and vehicles with the best noise attenuation devices; c. When practical, the use of fences or berms around noisy machinery or sites; d. Flight corridor restrictions over sensitive areas with known concentrations of wildlife and birds whenever possible; e. Requiring with the exception of take off and approach for landing, a minimum flight altitude of 300 metres above ground level when flights to and from the mine site are passing near sensitive wildlife and bird areas; and, f. The incorporation of the use of sound metres to monitor sound levels at locations in and around the mine site and local study area. The location and design of the sound metres shall be selected in consultation with EC and set up immediately upon issuance of the Project Certificate for the purpose of obtaining baseline data, and shall be maintained for data collection during and after operations.
Reporting Requirements:	The finalized noise abatement plan should be submitted to the NIRB at least 90 days prior to the commencement of construction.

Term and Condition No.	11
Category:	Noise and Vibration – Monitoring at accommodations sites
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure monitoring
Objective:	To minimize the impacts of vibration on employees
Term or Condition:	The Proponent shall conduct noise and vibration monitoring at Project accommodations sites located at the Tiraginiaq mine site. Sampling shall be undertaken during the summer and winter months during all phases of Project development, with reporting of results and implementation of associated mitigation measures as necessary reported to the NIRB.
Reporting Requirements:	To be determined following approval of the Project by the Minister

8.2.1.4. Terrestrial Environment

Term and Condition No.	12
Category:	Terrestrial Environment – Permafrost and permafrost terrain mapping
Responsible Parties:	The Proponent
Project Phase:	Pre-Construction, Construction
Objective:	To further understanding of baseline conditions and to inform design of Project facilities and mitigate impacts to permafrost
Term or Condition:	The Proponent shall conduct further permafrost mapping to document permafrost temperature, thickness of seasonal thaw and amount of ground ice in the Project development area, with such information to be available to inform the detailed design of Project infrastructure (i.e., dikes and tailings storage facility designs and talik predictions for lakes that are to be dewatered or used for saline water storage).
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	13
Category:	Terrestrial Environment – Terrain and soils, geotechnical investigations
Responsible Parties:	The Proponent
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure
Objective:	To assist with design of Project facilities and mitigate impacts to sensitive landforms
Term or Condition:	The Proponent shall undertake additional geotechnical investigations as required to identify sensitive landforms, modify engineering design for Project infrastructure (i.e., dikes, tailings storage facility, waste rock pile and landfill), and develop and implement preventative and/or mitigation and monitoring measures to minimize the impacts of the Project's activities and infrastructure on sensitive landforms. Plans for the investigations, mitigative and monitoring measures are to be included within an updated Environmental Protection Plan.
Reporting Requirements:	The updated plan is to be submitted to the NIRB within 90 days of the issuance of a Project Certificate, with annual reporting requirements to be determined following approval of the Project by the Minister

Term and Condition No.	14
Category:	Terrestrial Environment – Dike and tailings storage facility design
Responsible Parties:	The Proponent
Project Phase:	Pre-Construction, Construction
Objective:	To ensure Project design features consider thermal analysis and stability
Term or Condition:	The Proponent is encouraged to conduct more detailed thermal analysis to support detailed design of the dikes and the tailings storage facility, including seepage and stability analysis, and shall incorporate the results of the analysis into Project design. Details of the thermal analyses undertaken

	are to be provided to the NIRB.
Reporting Requirements:	Details are to be provided to the NIRB at least 60 days prior to the commencement of construction, with annual reporting requirements to be determined following approval of the Project by the Minister

Term and Condition No.	15
Category:	Terrestrial Environment – Tailings storage facility design and management
Responsible Parties:	The Proponent
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To ensure Project infrastructure integrity is considered and maintained post-closure
Term or Condition:	The Proponent shall assess the potential environmental effects of a post-closure failure of the geomembrane of the Tailings Storage Facility while tailings are in a thawed state. This assessment shall include, at a minimum: a. A description of the potential environmental effects of such a failure; b. Identification of the monitoring measures employed to detect environmental changes that could result; c. Identification of proposed mitigation measures to address any changes identified during monitoring; and d. Updated Risk Management Plan and Closure and Reclamation Plan reflecting changes which result from the post-closure failure assessment. A summary of the results from this assessment and implications to project infrastructure and operational plans shall be provided to the NIRB.
Reporting Requirements:	A summary of the assessment and updated plans should be submitted to the NIRB 6 months following issuance of the Project Certificate, with annual reporting requirements to be determined following approval of the Project by the Minister

Term and Condition No.	16
Category:	Terrestrial Environment – Erosion Management Plan
Responsible Parties:	The Proponent
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To ensure appropriate measures for preventing destabilization and erosion of shorelines, stream edges and ensure that diversion channels are maintained
Term or Condition:	The Proponent shall finalize and implement a comprehensive erosion management plan to prevent or minimize the effects of destabilization and erosion resulting from Project activities.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	17
Category:	Terrestrial Environment – Permafrost integrity
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To ensure that impacts to permafrost and permafrost terrain are minimized through all phases of the Project
Term or Condition:	The Proponent shall monitor the effects of the Project on permafrost conditions relative to Project infrastructure, including along the all-weather access road and associated roads, waste rock stockpile, trails and quarries. Through its monitoring the Proponent must demonstrate that permafrost integrity is maintained with implementation of appropriate preventative measures should permafrost degradation be observed.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	18
Category:	Terrestrial Environment – As-built drawings and final design plans
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction
Objective:	To ensure the NIRB and public have information available on the Project components to assist in monitoring.
Term or Condition:	The Proponent shall provide the NIRB with copies of as-built drawings and final design plans for Project infrastructure as they are developed/finalized to assist with the Board's ongoing monitoring efforts.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	19
Category:	Terrestrial Environment – Tailings and waste rock monitoring program
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure, Post-Closure
Objective:	To ensure the integrity of Project infrastructure is maintained, and to establish rigorous safeguards to prevent structural failure
Term or Condition:	The Proponent shall develop and implement a monitoring program for its Tailings Storage Facility and Waste Rock Storage Facility (including dikes). The monitoring program is to include, but shall not be limited to: a. Plans for monitoring the thermal condition and stability of storage facilities (including deformation of the cover) and dikes, including the use of thermistor cables, temperature loggers, and core sampling technology as required to monitor dike stability and tailings freezeback efficiency, including for example, factors such as ice content and stability; and, b. Measures proposed to ensure the safe containment and structural

	integrity of Project infrastructure, and to prevent contamination of waterbodies. Details of the monitoring program shall provided to the NIRB.
Reporting Requirements:	Details of the monitoring program should be submitted to the NIRB at least 90 days prior to the establishment of either facility, with annual reporting requirements to be determined following approval of the Project by the Minister

Term and Condition No.	20
Category:	Terrestrial Environment – Closure and Reclamation Plan
Responsible Parties:	The Proponent
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure/Care and Maintenance, and Closure
Objective:	To assist in the re-vegetation of reclaimed areas
Term or Condition:	The Proponent shall explore the the feasibility and practicality of topsoil/organic matter salvage as part of phased approach to Project development, with updates to its Closure and Reclamation Plan to reflect any changes based on this investigation. The Closure and Reclamation Plan should be updated on an on-going basis as more information becomes available from similar reclamation projects, including experience with implementing closure and reclamation plans at the Meadowbank mine site, as applicable.
Reporting Requirements:	The updated plan is to be submitted to the NIRB within 6 months of the issuance of the Project Certificate, with annual reporting to be determined following approval of the Project by the Minister

Term and Condition No.	21
Category:	Terrestrial Environment – Waste Management Plan
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To ensure permafrost integrity is maintained and that soil contamination is minimized
Term or Condition:	The Proponent shall update its Waste Management Plan to include details which explain how the design employed for Project landfills is expected to protect the integrity of the local environment, including permafrost integrity, and water quality for adjacent waterbodies. The Proponent shall demonstrate its consideration for the use of liners at waste management facilities, where feasible.
Reporting Requirements:	The updated plan is to be submitted to the NIRB at least 90 days prior to operation of Project landfills, with annual reporting requirements to be determined following approval of the Project by the Minister

8.2.1.5. Geology (including Geochemistry)

Term and Condition No.	22
Category:	Geology (including Geochemistry) – Mine Waste Management Plan
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure
Objective:	To inform parties on the adaptive management progress made relating to mine waste management
Term or Condition:	The Proponent shall report annually to the NIRB on the adaptations it has had made to the Mine Waste Management Plan and practices based on results obtained through monitoring.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	23
Category:	Geology (including Geochemistry) – Mine Waste Management Plan, Discovery Deposit
Responsible Parties:	The Proponent, Natural Resources Canada
Project Phase:	Construction, Operations
Objective:	To mitigate impacts of Acid Rock Generation and Metal Leaching
Term or Condition:	Prior to the commencement of excavation at the Discovery deposit, the Proponent, in consultation with Natural Resources Canada, shall update its Mine Waste Management Plan to assess the potential for acid rock drainage and to identify any monitoring and mitigation measures that may be required in this development area.
Reporting Requirements:	To be determined following approval of the Project by the Minister

8.2.1.6. Hydrogeology and Groundwater Quantity and Quality

Term and Condition No.	24
Category:	Hydrogeology and Groundwater – Hydraulic data
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations
Objective:	To collect and analyze additional baseline data to use as baseline to monitor for groundwater quality.
Term or Condition:	The Proponent shall, reflecting any direction from the Nunavut Water Board during water licensing, collect new hydraulic data (e.g., from new monitoring wells) in key areas during the pre-development, construction and operation phases to better define vertical and horizontal ground flow in the project development area.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	25
Category:	Hydrogeology and Groundwater – Saline Water Management Plan
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, construction, Operations, temporary closure/care and maintenance, closure, post closure monitoring.
Objective:	To manage saline groundwater and minimize the impacts to permafrost, soil, surface water, vegetation and wildlife.
Term or Condition:	The Proponent shall provide to the NIRB, a saline water management plan which includes, but is not limited to, mitigation measures designed to address the potential for higher-than-predicted volumes of saline water inflows into the underground mine, treatment and disposal methods, and details of its plan to monitor saline water at site.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	26
Category:	Hydrogeology and Groundwater – Pit refill rates
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, construction, Operations, temporary closure/care and maintenance, closure, post closure monitoring.
Objective:	To assess the flow of groundwater into the lake
Term or Condition:	The Proponent shall carry out continued analyses over time to confirm and update, accordingly, the approximate fill time for the mine pits as identified in the FEIS.
Reporting Requirements:	To be determined following approval of the Project by the Minister

8.2.1.7. Hydrology (including Surface Water Quantity) and Water and Sediment Quality

Term and Condition No.	27
Category:	Hydrology and Sediment Quality – Aquatics Effects Monitoring Plan
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, construction, Operations, temporary closure/care and maintenance, closure, post closure monitoring.
Objective:	To mitigate potential impacts to surface waters
Term or Condition:	The Proponent shall update its Aquatic Effects Monitoring Plan (AEMP) to include, at a minimum: a. Details regarding the monitoring of non-point sources of discharge, selection of appropriate reference sites, measures to ensure the collection of adequate baseline data at Meliadine Lake prior to and during construction activities, including information on chemical loading in the snowpack, and the mechanisms proposed to monitor

	for and treat runoff and sediment; b. A description of measures to be undertaken as relate to dustfall monitoring, designed in accordance with the following: i. To establish Phase 1 all-weather access road baseline data and a description of plans for data collection during Project operations for comparison; ii. To facilitate comparison with existing guidelines; iii. To assess the seasonal deposition (rates, quantities) and chemical composition of dust entering aquatic systems along representative distance transects of the all-weather access road and Rankin Inlet by-pass road; c. A description of water quality monitoring to be conducted at Little Meliadine Lake; and d. Details regarding comparisons of results to be run against predicted values and the analysis of data to be undertaken on an annual basis, or as may be required.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	28
Category:	Hydrology and Sediment Quality – Sediment and Erosion Management Plan
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction
Objective:	To develop appropriate sediment and erosion controls to prevent impacts to surface waters and sediment quality.
Term or Condition:	The Proponent shall develop and implement a sediment and erosion management plan to prevent or minimize the effects of destabilization and erosion that may occur due to Project activities. The plan should also detail sediment control plans to prevent and/or mitigate sediment loading into surface water within the Project area.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	29
Category:	Hydrology and Sediment Quality – Water infrastructure monitoring
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, temporary closure/care and maintenance, closure, post closure monitoring.
Objective:	To mitigate impacts to natural water flow
Term or Condition:	The Proponent shall develop and implement adequate monitoring and maintenance procedures to ensure that the culverts and other conduits that may be prone to blockage do not significantly hinder or alter the natural flow of water from areas associated with the proposed mine. In addition, the Proponent shall monitor, document and report the withdrawal rates for water removed and utilized for all domestic and industrial purposes.

Reporting Requirements:	To be determined following approval of the Project by the Minister

8.2.1.8. Freshwater Aquatic Environment

Term and Condition No.	30
Category:	Freshwater Aquatic Environment – Aquatic Effects Monitoring Plan
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To monitor and mitigate potential effects to the freshwater aquatic environment
Term or Condition:	The Proponent shall update its Aquatic Effects Monitoring Plan (AEMP) to include, at a minimum: a. Provide details for additional reference lakes to be included within its sampling and monitoring programs; b. Updates to include sedimentation within relevant monitoring programs; and c. Results from additional testing for mercury in fish tissue, and include test results in updated baseline data.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	31
Category:	Freshwater Aquatic Environment – Setbacks
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To mitigate impacts of runoff/sedimentation into freshwater aquatic habitat.
Term or Condition:	The Proponent shall maintain an appropriate setback distance between project quarries and fish-bearing or permanent water bodies as required to prevent acid rock drainage or metal leaching into such water bodies.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	32
Category:	Freshwater Aquatic Environment – Site Drainage and Silt Control Plan
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To mitigate impacts of the Project on natural drainage and minimize sedimentation
Term or Condition:	Prior to the commencement of construction, the Proponent shall submit to the NIRB, a Site Drainage and Silt Control Plan.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	33
Category:	Freshwater Aquatic Environment – Blasting
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To mitigate impacts of explosives use on fish and fish habitat
Term or Condition:	The Proponent shall meet or exceed the guidelines set by Fisheries and Oceans Canada for blasting thresholds and implement practical and effective measures to ensure that residue and by-products of blasting do not negatively affect fish and fish habitat.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	34
Category:	Freshwater Aquatic Environment – Watercourses
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction
Objective:	To prevent blockages or restrictions to fish passages
Term or Condition:	The Proponent shall ensure that all Project infrastructure in watercourses is designed and constructed in such a manner that it does not obstruct or limit the natural movement of water in fish bearing streams and rivers.
Reporting Requirements:	To be determined following approval of the Project by the Minister

8.2.1.9. Vegetation

Term and Condition No.	35
Category:	Vegetation – Site footprint
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To minimize the impacts of the Project on vegetation
Term or Condition:	The Proponent shall ensure that Project components and activities are planned and conducted in such a way as to minimize the Project footprint; this should include input from potentially affected communities where applicable.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	36
Category:	Vegetation – Invasive species
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction
Objective:	To prevent the introduction of invasive species
Term or Condition:	The Proponent shall ensure that equipment and supplies brought to Project sites are clean and free of soils that could contain plant seeds not naturally

	occurring in the area. Vehicle tires and treads in particular must be inspected, and cleaned if required, prior to transport into Nunavut for use in Project areas.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	37
Category:	Vegetation – Monitoring for invasive species
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To minimize introduction of invasive species.
Term or Condition:	The Proponent shall incorporate protocols for monitoring for the potential introduction of invasive vegetation species (e.g. surveys of plant populations in previously disturbed areas) into its Terrestrial Environment and Monitoring Plan. Any introductions of non-indigenous plant species must be promptly reported to the Government of Nunavut Department of Environment.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	38
Category:	Vegetation – Updated baseline and ongoing monitoring
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To assess the impact of the Project on berry-producing plants
Term or Condition:	The Proponent shall conduct sampling to determine baseline levels for metals in soils found in areas with berry-producing plants near the Project area, and shall update relevant vegetation sections within the Terrestrial Management and Monitoring Plan to incorporate ongoing monitoring of these parameters prior to commencing operations.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	39
Category:	Vegetation – Monitoring
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To monitor metal levels in vegetation
Term or Condition:	The Proponent shall develop and establish an on-going monitoring program to determine the distribution, abundance, and health of vegetation species used as caribou forage (such as lichens) near Project areas, prior to commencing operations.
Reporting Requirements:	Details for the program are to be submitted to the NIRB within 6 months of the issuance of the the Project Certificate, with annual reporting

	requirements to be determined following approval of the Project by the Minister

Term and Condition No.	40
Category:	Vegetation – Adaptive management
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To mitigate impacts to vegetation abundance, diversity and health
Term or Condition:	The Proponent shall review, on an annual basis, all monitoring information and the vegetation mitigation and management plans developed under its Environmental Management Plan and Terrestrial Environment and Monitoring Plan (TEMMP) and adjust such plans as may be required to effectively prevent or reduce the potential for significant adverse project effects on vegetation abundance, diversity and health, taking into account lessons learned at other northern mining developments where appropriate.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	41
Category:	Vegetation – Reclamation and re-vegetation
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To maximize revegetation in reclaimed areas
Term or Condition:	Prior to the commencement of operations, the Proponent shall develop a progressive re-vegetation program for disturbed areas that are no longer required for operations, such program to incorporate measures for the use of test plots, reseeding and replanting of native plants as necessary. It is further recommended that this program be directly associated with the management plans for erosion control established for the Project and incorporate lessons learned at Meadowbank.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	42
Category:	Vegetation – Closure and Reclamation Plan
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To maintain an up to date re-vegetation plan for the Project
Term or Condition:	The Proponent shall include re-vegetation strategies in its Closure and Reclamation Plan that support progressive reclamation and that promote natural revegetation and recovery of disturbed areas compatible with the surrounding natural environment and incorporate lessons learned at Meadowbank

Reporting Requirements:	To be determined following approval of the Project by the Minister

8.2.1.10. Terrestrial Wildlife and Wildlife Habitat

Term and Condition No.	43
Category:	Terrestrial Wildlife and Wildlife Habitat – General
Responsible Parties:	The Proponent and other parties as appropriate
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To ensure appropriate and responsive adaptive management
Term or Condition:	The Proponent shall continue to develop and implement Project-specific monitoring for the terrestrial environment through its Terrestrial Environment Management and Monitoring Plan (TEMMP), and will demonstrate appropriate refinements to design, incorporation of analytical methods and elaboration of methodologies. The TEMMP shall contain clear thresholds to allow for the assessment of long-term trends and cumulative effects where project interactions are identified. Coordination and cooperation will be required where data collection, analysis and interpretation, or responsibility for mitigation and management requires the efforts of multiple parties (e.g., government, Kivalliq Inuit Association, communities).
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	44
Category:	Terrestrial Wildlife and Wildlife Habitat – Caribou monitoring
Responsible Parties:	The Proponent, Government of Nunavut
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To further define details of monitoring programs
Term or Condition:	In consultation with the Government of Nunavut (GN) and other relevant parties, the Proponent shall further develop its Terrestrial Environment Management and Monitoring Plan (TEMMP) to include increased caribou monitoring across the regional study area and additional details on the scope and design of monitoring programs. The Proponent shall also demonstrate consideration for contributing to existing and planned regional monitoring initiatives associated with terrestrial wildlife and wildlife habitat as appropriate. Monitoring should be adequate to test impact predictions, monitor impact thresholds and trends over time, and to support implementation of mitigation measures as proposed in the Final Environmental Impact Statement.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	45

Category:	Terrestrial Wildlife and Wildlife Habitat – General monitoring
Responsible Parties:	The Proponent and other parties as appropriate
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To promote coordination of monitoring efforts
Term or Condition:	The Proponent shall demonstrate consideration for cooperating with existing and planned regional and/or community-based monitoring initiatives associated with terrestrial wildlife and wildlife habitat that produce information pertinent to mitigating project-induced impacts. The Proponent shall give special consideration for supporting regional studies of population health and harvest programs for Qamanirjuaq caribou which help address areas of uncertainty for Project impact predictions.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	46
Category:	Terrestrial Wildlife and Wildlife Habitat – Harvest study
Responsible Parties:	The Proponent, Government of Nunavut, Hunters and Trappers Organizations, other parties as appropriate
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To ensure harvest study considers appropriate Project-specific factors
Term or Condition:	The Proponent shall update its Terrestrial Environment Management and Monitoring Plan (TEMMP) for the Project to include a detailed harvest study prepared in consultation with the Government of Nunavut (GN) and other affected parties. The design of the harvest study should demonstrate consideration for the following: a. Hiring of a dedicated local survey coordinator through local Hunters and Trappers Organizations (HTOs) and provision of adequate resources for the HTOs to run the program; b. The potential effects on caribou populations and on caribou behaviour resulting from increased human access caused by the all-weather access road and associated roads and trails; and, c. Increasing local knowledge of the project development areas, including establishing baseline harvesting levels prior to unrestricted public access on the all-weather access road.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	47
Category:	Terrestrial Wildlife and Wildlife Habitat – Monitoring
Responsible Parties:	The Proponent, Government of Nunavut
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To promote coordination of monitoring efforts

Term or Condition:	The Proponent shall share information with the Government of Nunavut (GN) relating to the migration of caribou and include the GN as a party respecting caribou monitoring and movement through Project development areas, including the all-weather access road and associated roads and trails.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	48
Category:	Terrestrial Wildlife and Wildlife Habitat – Management of road access
Responsible Parties:	The Proponent, Government of Nunavut, Kivalliq Inuit Association, Kivalliq Wildlife Board, and local HTOs
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To ensure mitigation and monitoring consider increases to harvesting from improved access
Term or Condition:	In consultation with the Government of Nunavut, the Kivalliq Inuit Association, the Kivalliq Wildlife Board and local Hunters and Trappers Organizations, the Proponent shall develop appropriate monitoring and mitigation measures relating to the harvesting of caribou and improved harvesting access granted by the all-weather access road. These measures shall be included within a Road Access Management Agreement that must be in place prior to construction of phase 2 of the all-weather access road. The Road Management Agreement shall include the following specific measures: ▪ During periods when large aggregations of caribou (greater than 50 individuals) are detected within 1 km of the all-weather access road (AWAR), the road will be closed to public access via car and truck by means of a barrier at the southern gate. Public access using all-terrain vehicles (ATVs) will be allowed. ▪ During periods when large aggregations of caribou (greater than 50 individuals) are observed within 1 km of the AWAR, the road will be closed to public access via barriers at bridges on the AWAR to prevent all vehicle access, including ATVs. This will allow ATVs to enter areas previously accessible along existing trails while not facilitating access via bridges constructed specifically for the Project. ▪ Following consultation with the Nunavut Wildlife Management Board, as required under the <i>Nunavut Wildlife Act</i>, it is recommended that a no-shooting zone (1 km wide) on either side of the road should be established as a condition of public access to the AWAR and compliance with this Agnico Eagle policy should be monitored and reported by the Proponent. ▪ Dedicated 'road monitors' should patrol the road to ensure compliance with the provisions of the Road Management Plan (SD 2-9) relating to public safety and wildlife. Monitoring should be

	increased during periods of road closure when large aggregations of caribou are present. ▪ All incidents of hunting involving shooting along or across the AWAR should be reported by the Proponent to the GN. ▪ During periods when large aggregations of caribou are detected near the Project, harvest monitoring intensity should be increased to ensure that levels of caribou harvesting are properly documented.
Reporting Requirements:	Road Access Management Agreement to be submitted to the NIRB at least 60 days prior to the commencement of construction of Phase 2 of the AWAR, with annual reporting requirements to be determined following approval of the Project by the Minister

Term and Condition No.	49
Category:	Terrestrial Wildlife and Wildlife Habitat – Research licensing
Responsible Parties:	The Proponent, Nunavut Research Institute
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To facilitate licensing review
Term or Condition:	The Proponent is encouraged to consult with the Nunavut Research Institute (NRI) on the research permitting process as it relates to the <i>Nunavut Scientists Act</i> . The Proponent is encouraged to share monitoring and research study design with the NRI four (4) months prior to the anticipated commencement of research activities to facilitate licensing review.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	50
Category:	Terrestrial Wildlife and Wildlife Habitat – Wildlife habitat
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To ensure progressive reclamation of disturbed wildlife habitat
Term or Condition:	The Proponent shall develop a strategy for the recovery of terrestrial wildlife habitat in a progressive manner that is consistent with the <i>Nunavut Wildlife Act</i> .
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	51
Category:	Terrestrial Wildlife and Wildlife Habitat –
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and

	Maintenance, Closure and Post-Closure Monitoring
Objective:	To minimize disturbance from helicopter overflights
Term or Condition:	The Proponent shall not conduct routine helicopter flights over, or land in, Iqalugaaruup Nunanga Territorial Park. The Proponent will communicate this commitment to all helicopter companies contracted by it to undertake work at the Meliadine Project site prior to the start of such contracted work. Emergency flights, specifically medical evacuation flights and/or search and rescue overflights are excepted from adherence to this requirement.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	52
Category:	Terrestrial Wildlife and Wildlife Habitat – Muskoxen monitoring
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To promote coordination of monitoring efforts
Term or Condition:	The Proponent shall undertake periodic surveys and a habitat assessment for muskoxen in the regional study area by partnering with, or complementing, the existing regional muskox monitoring programs.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	53
Category:	Terrestrial Wildlife and Wildlife Habitat – Furbearer surveying
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To minimize disturbance to furbearers from Project activities
Term or Condition:	Prior to construction of Project infrastructure and Phase 2 of the all-weather access road, the Proponent shall conduct a survey that is sufficient to locate any dens of foxes, bears or wolverines that could be damaged or destroyed during construction or operation of the Project.
Reporting Requirements:	Survey results shall be submitted to the NIRB at least 60 days prior to the commencement of construction activities, with annual reporting requirements to be determined following approval of the Project by the Minister

Term and Condition No.	54
Category:	Terrestrial Wildlife and Wildlife Habitat – Movement of wildlife
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To ensure Project infrastructure does not prevent or unduly limit to movement of wildlife

Term or Condition:	The Proponent shall ensure that road safety barriers or berms associated with Project infrastructure, all-weather access road and associated roads/trails are constructed to allow for the safe passage of caribou and other terrestrial wildlife while achieving the objective of separating public road use with Project-related mine traffic.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	55
Category:	Terrestrial Wildlife and Wildlife Habitat – Wildlife mortality
Responsible Parties:	The Proponent, Government of Nunavut, Designated Inuit Organization
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To ensure clear thresholds exist for Project-related mortality of wildlife species, adequate adaptive management measures and compensation agreements are in place
Term or Condition:	In consultation with the Government of Nunavut (GN) and other affected parties, the Proponent shall set thresholds for direct mortality of wolf, grizzly bear, polar bear, wolverine, and fox to ensure monitoring and mitigation for the Project is responsive to undesirable rates of mortality. The Proponent shall reach an agreement with the appropriate Designated Inuit Organization regarding compensation or any direct mortality of wildlife resulting from the Project.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	56
Category:	Terrestrial Wildlife and Wildlife Habitat – Reporting
Responsible Parties:	The Proponent
Project Phase:	Construction, Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To mitigate and monitor for impacts to wildlife
Term or Condition:	The Proponent shall report annually to the NIRB regarding its terrestrial environment monitoring efforts, with inclusion of the following information: a. Description of all updates to terrestrial ecosystem baseline data; b. A description of the involvement of Inuit in its monitoring programs; c. A detailed presentation and analysis of the distribution relative to Project infrastructure and activities for caribou and other terrestrial mammals observed during surveys and incidental sightings; d. Results of the annual monitoring program, including field methodologies and statistical approaches used to support conclusions drawn; and e. An assessment and presentation of annual environmental conditions including timing of snowmelt, green-up, as well as

	standard weather summaries.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	57
Category:	Terrestrial Wildlife and Wildlife Habitat – Reporting
Responsible Parties:	The Proponent
Project Phase:	Construction, Operations, Temporary Closure /Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To mitigate and monitor for impacts to wildlife
Term or Condition:	Within its annual report to the NIRB, the Proponent shall incorporate a review section which includes: a. An examination for trends in the measured natural variability of Valued Ecosystem Components in the region relative to the baseline reporting; b. A detailed analysis of wildlife responses to operations with emphasis on wildlife behaviour, mortalities and displacements (if any), and responses to operations of the all-weather access road and associated access roads/trails; c. A demonstration and description of how the monitoring results, including the all-weather access road and associated access roads/trails contribute to cumulative effects of the project; and d. Any proposed changes to the monitoring survey methodologies, statistical approaches or proposed adaptive management stemming from the results of the monitoring program.
Reporting Requirements:	To be determined following approval of the Project by the Minister

8.2.1.11. Birds and Bird Habitat

Term and Condition No.	58
Category:	Birds and Bird Habitat – Awareness
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To prevent/minimize impacts on birds and bird habitat
Term or Condition:	The Proponent shall ensure all employees working at Project sites receive awareness training regarding the importance of avoiding known nests and nesting areas and avoiding large concentrations of foraging and moulting birds.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	59

Category:	Birds and Bird Habitat – Species at Risk
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To minimize impacts on Species at Risk
Term or Condition:	If Species at Risk or their nests and eggs are encountered during Project activities or monitoring programs, the primary mitigation measure must be avoidance. The Proponent shall establish clear zones of avoidance based on the species-specific nest setback distances outlined in the Terrestrial Environment Management and Monitoring Plan.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	60
Category:	Birds and Bird Habitat – Species at Risk
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To minimize impacts to Species at Risk
Term or Condition:	The Proponent shall ensure that the mitigation and monitoring strategies developed for Species at Risk are updated as necessary to maintain consistency with any applicable status reports, recovery strategies, action plans and management plans that may become available during the duration of the Project.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	61
Category:	Birds and Bird Habitat – Construction/clearing activities
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations
Objective:	To minimize disturbance to birds during the breeding season
Term or Condition:	Prior to bird breeding season, the Proponent shall either conduct clearing activities or identify and install nesting deterrents (e.g., flagging) to discourage birds from nesting in areas likely to be disturbed by construction/clearing activities. If clearing is to take place during the nesting season, a nest survey should take place to identify nests and any identified nests must remain undisturbed until the young have fledged or left the nest. Any nests identified shall be included as part of the annual reporting for the Terrestrial Environmental Mitigation and Monitoring Plan (TEMMP).
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	62
Category:	Birds and Bird Habitat – Construction/clearing activities
Responsible Parties:	The Proponent

Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To minimize the impacts on birds during the breeding season
Term or Condition:	The Proponent shall protect any nests found (or indicated nests) with a buffer zone determined by the setback distances outlined in its Terrestrial Environment Mitigation and Monitoring Plan (TEMMP), until the young have fledged. If it is determined that observance of these setbacks is not feasible, the Proponent will develop nest-specific guidelines and procedures to ensure bird's nests and their young are protected.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	63
Category:	Birds and Bird Habitat – Marine considerations
Responsible Parties:	The Proponent, Environment Canada
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To minimize the impact of marine shipping on birds and bird habitat
Term or Condition:	Any incidents of bird mortalities associated with lighting infrastructure, construction activities, and Project vessel operations are to be recorded and reported to Environment Canada (Canadian Wildlife Services). The Proponent shall work with the Canadian Wildlife Services to determine appropriate recording and reporting format and timing.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	64
Category:	Birds and Bird Habitat – Marine considerations
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To ensure appropriate monitoring measures are in place to address the potential impacts of marine fuel spills
Term or Condition:	The Proponent shall develop a framework for monitoring of marine bird species and their habitat in the event of a major marine fuel spill. Specific details regarding the scope of follow-up monitoring may be further refined if and when such an event were to occur.
Reporting Requirements:	The framework should be submitted to the NIRB at least 90 days prior to conducting any Project-related shipping, with annual reporting requirements to be determined following approval of the Project by the Minister

Term and Condition No.	65
Category:	Birds and Bird Habitat – Marine considerations

Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To minimize the impact of marine shipping on birds and bird habitat
Term or Condition:	The Proponent shall maintain reduced speeds to sufficiently ensure that wakes are equal or less than the mean natural seasonal wave height to prevent wake action from negatively impacting migratory bird nests in low lying shoreline habitat.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	66
Category:	Birds and Bird Habitat – Marine considerations
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To minimize the impact of marine shipping on birds and bird habitat
Term or Condition:	The Proponent shall ensure all Project vessels are checked for bird strikes after a suspected event and include details of its protocol to do so, as well as results, within its updated Terrestrial Environment Mitigation and Monitoring Plan.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	67
Category:	Birds and Bird Habitat – Marine considerations
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To minimize the impact of marine shipping on birds and bird habitat
Term or Condition:	The Proponent shall submit an updated Oil Pollution Prevention Plan including measures to avoid adverse effects to species at risk and migratory birds from spills, as well as details regarding monitoring of effects of a spill on species at risk and migratory birds.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	68
Category:	Birds and Bird Habitat – Marine considerations
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To minimize the impact of marine shipping on birds and bird habitat
Term or Condition:	The Proponent shall demonstrate consideration for the potential cumulative effects of other development projects and shipping activities (including community resupply) when assessing their cumulative effects on marine

	birds in the Hudson Strait, in its annual report.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	69
Category:	Birds and Bird Habitat – Flight altitude requirements
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To minimize the impact of aircraft on birds and bird habitat
Term or Condition:	Subject to safety requirements, the Proponent shall require all Project related aircraft to maintain a cruising altitude of at least: a. 650 m during point to point travel when in areas likely to have migratory birds b. 1100 m vertical and 1500 m horizontal distance from observed concentrations of migratory birds c. 1100 m over the area identified as a key site for moulting snow geese during the moulting period (July-August), and if maintaining this altitude is not possible, maintain a lateral distance of at least at least 1500 m from the boundary of the Project.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	70
Category:	Birds and Bird Habitat – Flight altitude requirements
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To minimize the impact of aircraft on bird and bird habitat
Term or Condition:	The Proponent shall ensure that pilots are informed of minimum cruising altitude guidelines and that a daily log or record of flight paths and cruising altitudes of aircraft within all Project areas is maintained and made available for regulatory authorities such as Transport Canada to monitor adherence and to follow up on complaints.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	71
Category:	Birds and Bird Habitat – Monitoring
Responsible Parties:	The Proponent, Kivalliq Inuit Association, Kivalliq HTOs and communities
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To develop appropriate mitigation measures and monitoring plans related to birds

Term or Condition:	The Proponent shall develop detailed and robust mitigation and monitoring plans for migratory birds, reflecting input from relevant agencies, the Kivalliq Inuit Association and communities.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	72
Category:	Birds and Bird Habitat – Monitoring
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To minimize the impact to sensitive bird species
Term or Condition:	The Proponent shall continue to develop and update relevant monitoring and management plans for migratory birds under the Proponent's Environmental Protection Plan and Terrestrial Environment Mitigation and Monitoring Plan (TEMMP) prior to construction. The key indicators for follow up monitoring under this plan will include upland birds (including migratory birds), waterbirds, raptors, and seabirds including migration and wintering.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	73
Category:	Birds and Bird Habitat – Monitoring
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To assess the extent of terrestrial habitat loss
Term or Condition:	The Proponent's monitoring program shall assess and report, on annual basis, the extent of terrestrial habitat loss due to the Project to verify impact predictions and provide updated estimates of the total Project footprint.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	74
Category:	Birds and Bird Habitat – Monitoring
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To minimize the impact of Project activities on water birds
Term or Condition:	The Proponent's Terrestrial Management and Monitoring Plan (TEMMP) shall include mitigation measures implemented to prevent the use of water attenuation ponds by waterfowl and waterbirds and monitoring that assesses whether the mitigation measures are working or revised or further deterrent measures are required.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	75
Category:	Birds and Bird Habitat – Monitoring
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To minimize the impact of predatory species on nesting birds
Term or Condition:	The Proponent shall implement mitigation measures and monitoring programs to limit the attraction of predators and scavengers to Project facilities in the TEMMP and other plans such as the Landfill and Waste Management Plan as appropriate.
Reporting Requirements:	To be determined following approval of the Project by the Minister

8.2.1.12. Marine Environment

Term and Condition No.	76
Category:	Marine Environment – General
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To ensure plans and Project design reflect the need to protect the ecosystemic integrity of the marine environment
Term or Condition:	The Proponent shall update all relevant plans including, but not limited to: the Shipping Management Plan, Wildlife Mitigation and Monitoring Plan, and Adaptive Management Plan, in order to address concerns and identify potential impacts of the Project and proposed mitigation measures designed to protect the integrity of the marine environment. The Shipping Management Plan shall also incorporate updates for all Project-related shipping.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	77
Category:	Marine Environment – Spill prevention
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To ensure appropriate response capacity for potential spill events
Term or Condition:	The Proponent shall ensure that it maintains the necessary equipment and trained personnel to respond to all sizes of potential spills associated with the Project in a self-sufficient manner.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	78
Category:	Marine Environment – Spill prevention
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To ensure accurate and adequate spill response and emergency preparedness
Term or Condition:	Prior to the shipping of Project supplies, the Proponent shall conduct fuel spill dispersion modeling that will, at a minimum, consider: a. Modeling of oil spills in the following areas: i. Pinch points, including: Hudson Strait, Melvin Bay area including Itivia Harbour and Panorama Island; ii. Shallow water and shorelines; and, iii. Areas that have been identified as having high flows and/or high concentrations of marine mammals, marine fish or seabirds; b. Open water and ice-covered conditions; c. Spill volumes up to and including loss of a full tanker cargo; and, d. Differences in the quantity and properties of each type of bulk fuel transported by vessels when they are at, or in transit to, the port of Rankin Inlet.
Reporting Requirements:	Results of the spill dispersion modeling should be submitted to the NIRB at least 90 days prior to the commencement of construction, with requirements for annual reporting to be determined following approval of the Project by the Minister

8.2.1.13. Marine Wildlife

Term and Condition No.	79
Category:	Marine Wildlife – Updated baseline
Responsible Parties:	The Proponent, other parties as appropriate
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To ensure updated and accurate marine baseline data is available prior to Project-related shipping
Term or Condition:	Prior to any Project-related shipping, the Proponent will update its marine baseline information to ensure that it includes the most recent information on marine wildlife abundance and distribution, carefully considers seasonal distribution patterns of marine wildlife, and incorporates western scientific and Inuit Qaujimajatuqangit knowledge sources. The updated marine baseline should be made available to appropriate authorities for feedback, then incorporated into the Proponent's Shipping Management Plan (SMP), with continued updates on a regular basis as new information becomes

	available.
Reporting Requirements:	Updated baseline should be provided to the NIRB and appropriate authorities prior to the commencement of Project-related shipping, with annual reporting requirements to be determined following approval of the Project by the Minister

Term and Condition No.	80
Category:	Marine Wildlife – Marine baseline
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To ensure updated and accurate marine baseline data is available
Term or Condition:	The Proponent shall assess its available baseline information for Melvin Bay and for the area surrounding the fuel transshipment anchorage to ensure that both are adequate for the detection of Project-related impacts, particularly related to contaminants.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	81
Category:	Marine Wildlife – Wildlife plans
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To ensure relevant plans incorporate mitigation and monitoring programming for marine wildlife
Term or Condition:	Prior to any Project-associated shipping, the Proponent shall revise and update the Terrestrial Environment Management Plan (TEMMP) and/or the Shipping Management Plan (SMP) to include following information: a. a plan for involvement of local hunters in wildlife baseline studies and monitoring program; b. a plan for coordinating wildlife studies/monitoring activities with other organizations, institutions, government departments and/or individual researchers conducting wildlife studies in the regional study area; and c. measures to be applied to avoid or reduce the disturbance, harassment, injury or mortality of marine mammals due to shipping activities.
Reporting Requirements:	Updates to the relevant plan(s) should be provided to the NIRB a minimum of 120 days prior to the commencement of Project-related shipping, with annual reporting requirements to be determined following approval of the Project by the Minister

Term and Condition No.	82

Category:	Marine Wildlife – Monitoring
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To ensure monitoring of marine wildlife during Project-related ship voyages
Term or Condition:	The Proponent shall require all contracted shipping companies to provide full-time marine wildlife monitoring using trained observers and established data collection and recording protocols. Monitoring plans should include provisions for all <i>Species At Risk Act</i> (SARA) and for the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) listed species (birds and mammals).
Reporting Requirements:	Updated monitoring plans should be provided to the NIRB a minimum of 120 days prior to the commencement of Project-related shipping, with annual reporting requirements to be determined following approval of the Project by the Minister

Term and Condition No.	83
Category:	Marine Wildlife – Marine mammal interactions
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To prevent impacts to marine mammals associated with Project shipping
Term or Condition:	The Proponent shall ensure that, subject to vessel and human safety considerations, all Project shipping adhere to the following mitigation procedures while in the vicinity of marine mammals (including polar bear) and birds: a. Marine mammals will be given right of way; b. Ships will when possible, maintain a straight course and constant speed, avoiding erratic behavior; and c. When marine mammals appear to be trapped or disturbed by vessel movements, the vessel will implement appropriate measures to mitigate disturbance, including stoppage of movement until wildlife have moved away from the immediate area.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	84
Category:	Marine Wildlife – Route planning
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To mitigate potential impacts terrestrial walrus haulouts
Term or Condition:	Prior to any Project-related shipping, the Proponent will prepare a map of terrestrial walrus haulouts (uglit) in the Project area, and use this

	information for route planning, fuel spill modeling, and sensitive area identification. The map should include all available sources of information on uglit locations, including scientific knowledge and Inuit Qaujimajatuqangit and shall be updated by the Proponent whenever new information becomes available.
Reporting Requirements:	Mapping and associated details should be provided to the NIRB a minimum of 180 days prior to the commencement of Project-related shipping, with annual reporting requirements to be determined following approval of the Project by the Minister

Term and Condition No.	85
Category:	Marine Wildlife – Monitoring
Responsible Parties:	The Proponent
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To monitor potential impacts to walrus
Term or Condition:	The Proponent shall consider ways to monitor disturbance to walrus at terrestrial haulout sites, including but not limited to remote monitoring (e.g., time-lapse cameras) and community-based monitoring or Inuit Qaujimajatuqangit surveys.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	86
Category:	Marine Wildlife – Cumulative effects
Responsible Parties:	The Proponent, other parties as appropriate
Project Phase:	Pre-construction, Construction, Operations, Temporary Closure/Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To promote coordinated understanding and mitigation of potential cumulative effects
Term or Condition:	The Proponent is encouraged to liaise with relevant stakeholders, regulatory agencies and/or forums (e.g. the Marine Environmental Working Group associated with the Mary River Project), that might allow for participation in relevant research and management initiatives and increasing understanding and mitigation of potential cumulative effects associated with the Project's shipping activities through the Hudson Strait.
Reporting Requirements:	To be determined following approval of the Project by the Minister

8.2.2. Socio-Economic Terms and Conditions

8.2.2.1. Economic Development, Contracting, and Business Opportunities

Term and Condition No.	87
Category:	Economic Development, Contracting and Business Opportunities – Socio-Economic Monitoring, Kivalliq Socio-Economic Monitoring Committee
Responsible Parties:	The Proponent, members of the KSEMC
Project Phase:	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	Description of the general monitoring framework to be developed in consultation with the Kivalliq Socio-Economic Monitoring Committee.
Term or Condition:	The Proponent is strongly encouraged to participate in the work of the Kivalliq Socio-Economic Monitoring Committee along with other agencies and the communities of the Kivalliq region, and to identify areas of mutual interest and priority for inclusion into a collaborative monitoring framework that includes socio-economic priorities related to the Project, communities, and the Kivalliq region as a whole.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	88
Category:	Economic Development, Contracting and Business Opportunities – Socio-Economic Monitoring
Responsible Parties:	The Proponent, KIA, GN, AANDC, Kivalliq communities
Project Phase:	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	Description of a socio-economic monitoring working group to oversee project-specific monitoring program
Term or Condition:	The Proponent is encouraged to work in collaboration with other socio-economic stakeholders including for example, the KIA, GN, AANDC, and communities of the Kivalliq region, to establish a socio-economic working group for the Project to develop and oversee the Meliadine Socio-economic Monitoring Program. The working group should develop a Terms of Reference which outlines each member's roles and responsibilities with regards to, where applicable, project-specific socio-economic monitoring throughout the life of the Project. The Terms of Reference are to be provided to the NIRB upon completion, and within one year of issuance of the Project Certificate.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	89
Category:	Economic Development, Contracting and Business Opportunities – Socio-Economic Monitoring

Responsible Parties:	The Proponent, KSEMC, KIA, GN, AANDC, Kivalliq communities
Project Phase:	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	Details regarding the establishment of Project-specific socio-economic monitoring program.
Term or Condition:	The Proponent shall develop the Meliadine Socio-economic Monitoring Program to monitor the predicted impacts outlined in the FEIS as well as regional concerns identified by the Kivalliq Socio-economic Monitoring Committee (SEMC). Where possible, the Proponent is encouraged to work in collaboration with all other socio-economic stakeholders such as the KIA, GN, AANDC and the communities of the Kivalliq region in developing this program, which should include a process for adaptive management and mitigation in the event unanticipated impacts are identified. Details of the Meliadine Socio-economic Monitoring Program are to be provided to the NIRB upon finalization, and within one year of issuance of the Project Certificate.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	90
Category:	Economic Development, Contracting and Business Opportunities – Closure planning and monitoring
Responsible Parties:	The Proponent, KSEMC
Project Phase:	Pre-Construction, Construction
Objective:	To capture and provide analysis of Project-specific and regional data during Project closure(s), and to clarify mitigation measures related to closure.
Term or Condition:	Prior to the commencement of operations, the Proponent is required to undertake an analysis of the risk of temporary mine closure, giving consideration to how communities in the Kivalliq region may be affected by temporary and permanent closure of the mine, including economic, social and cultural effects. The results of this analysis are to be provided to the NIRB upon completion.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	91
Category:	Economic Development, Contracting and Business Opportunities – Closure planning and monitoring
Responsible Parties:	The Proponent, KSEMC
Project Phase:	Pre-Construction, Construction
Objective:	To capture and provide analysis of Project-specific and regional data during Project closure(s), and to clarify mitigation measures related to closure.
Term or Condition:	Within 3 months of the NIRB's acceptance of the Proponent's analysis of the risk of temporary mine closure referenced above, the proponent is expected to update its Socio-Economic Management Plan or to include within a newly developed plan or framework, a description of its plan to collect and analyze

	Project-specific and regional data at closure and post-closure phases, as well as its defined measures to help mitigate impacts which may result from Project closure(s), both temporary and final.
Reporting Requirements:	To be determined following approval of the Project by the Minister

8.2.2.2. Employment

Term and Condition No.	92
Category:	Employment – Employment schedule
Responsible Parties:	The Proponent
Project Phase:	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	In the interest of producing accurate labour market information and reliable economic and employment forecasting for the current and future labour force, it is important to have up-to-date estimates of the types of employment available through the Project, and what skills are required for these jobs.
Term or Condition:	The Proponent shall submit a detailed staff schedule to the NIRB and to the Government of Nunavut in the first 6 months following the issuance of a Project Certificate. The schedule should, at a minimum, provide a description of: a. Title of positions required by department and division; b. Quantity of positions available by Project phase and year; c. Transferable skills, both certified and uncertified which may be required for, or gained during, employment within each position; and, d. The National Occupational Classification (NOC) code for each individual position. The Proponent is encouraged to consult the Government of Nunavut during development of the schedule. A new schedule should be submitted following any significant deviation from original predictions.
Reporting Requirements:	Within 6 months of Project Certificate issuance and as required thereafter.

Term and Condition No.	93
Category:	Employment – Registration of trades workers
Responsible Parties:	The Proponent
Project Phase:	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To ensure that the Government of Nunavut has accurate information to assist it in its role as overseer of the apprenticeship program in Nunavut and in its provision of access to training initiatives and programs.
Term or Condition:	The Proponent is encouraged to register all trades occupations,

	journeypersons and apprentices working with the Project and to register any trades occupations listed in its forecast, as well as to provide the Government of Nunavut with information regarding the number of registered apprentices and journeypersons from other jurisdictions employed at the Project during each year of the Project's life.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	94
Category:	Employment – Labour force analysis
Responsible Parties:	The Proponent
Project Phase:	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To update information provided within the FEIS and monitor Project impacts on labour force characteristics throughout the life of the Project.
Term or Condition:	The Proponent shall update its labour force analysis utilizing current or the most recent baseline information as may be available from the Nunavut Bureau of Statistics or Statistics Canada. The updated labour force analysis is to be provided to the NIRB within 6 months of the Project Certificate being issued. The Proponent is encouraged to work collaboratively with other stakeholders to monitor any impacts the Project may have on the labour force characteristics of the Kivalliq region during all project phases.
Reporting Requirements:	To be determined following approval of the Project by the Minister

8.2.2.3. Education and Training

Term and Condition No.	95
Category:	Education and Training – Transferable skills and training
Responsible Parties:	The Proponent, Kivalliq Inuit Association, Government of Nunavut, Municipal Training Organization
Project Phase:	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	Offering training which results in certification that is valid for employment at other sites or in other fields contributes to the long-term employability of Nunavummiut.
Term or Condition:	The Proponent is encouraged to work with training organizations and/or government departments offering mine-related or other training in order to provide additional opportunities for residents and employees to gain meaningful and transferable skills and certifications.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	96
Category:	Education and Training – Transferable skills and training
Responsible Parties:	The Proponent

Project Phase:	Pre-Construction
Objective:	Offering training which results in certifications that are valid for employment at more than one site or in different fields contributes to the long-term employability of Nunavummiut.
Term or Condition:	Prior to construction, the Proponent shall develop an easily referenced listing of formal certificates and licences that may be acquired via on-site training or training during Project employment. The listing shall indicate which of these certifications and licences would be transferable to a similar job site within Nunavut, and should be updated on an annual basis, and is to be provided to the NIRB upon completion and as may be revised.
Reporting Requirements:	The initial listing should be provided to the NIRB at least 60 days prior to the start of construction, and annually thereafter or as may otherwise be required.

Term and Condition No.	97
Category:	Education and Training – Monitoring impacts of closure
Responsible Parties:	The Proponent
Project Phase:	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To further the understanding of the impacts that Project closure may have on education and training.
Term or Condition:	The Proponent's project-specific socio-economic monitoring program should be updated to address the potential impacts to education and training which may arise from temporary, final and/or post-closure phases.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	98
Category:	Education and Training – Monitoring impacts to education system
Responsible Parties:	The Proponent, KSEMC
Project Phase:	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To further the understanding of potential impacts from pressures to the education system in the Kivalliq region and individual communities throughout the life of the Project.
Term or Condition:	The Proponent is encouraged to work with the members identified as potential stakeholders in the socio-economic monitoring working group and with the Kivalliq Socio-Economic Monitoring Committee to review and monitor education utilization rate trends on an on-going basis to understand if the Project can be determined to be having an impact on the education system of the Kivalliq region and/or on any communities in particular.
Reporting Requirements:	To be determined following approval of the Project by the Minister

8.2.2.4. Population Demographics

Term and Condition No.	99
Category:	Population Demographics – Monitoring demographic changes
Responsible Parties:	The Proponent, KSEMC
Project Phase:	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	Monitoring demographic changes affecting the Kivalliq communities is important to understanding trends which may be correlated with the Meliadine Project or other activities in the region.
Term or Condition:	The Kivalliq Socio-Economic Monitoring Committee and its membership are encouraged to engage in the monitoring of demographic changes including the movement of people into and out of the Kivalliq communities and the territory as a whole. This information may be used in conjunction with monitoring data obtained by the Proponent from recent hires and/or outgoing employees in order to assess the potential effects of the Project on migration.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	100
Category:	Population Demographics – Survey of Nunavummiut employees
Responsible Parties:	The Proponent, KSEMC, GN
Project Phase:	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	Monitoring changes in the circumstances of Nunavummiut employees may provide important information which could be used to evaluate predictions made and the potential impacts to Kivalliq communities.
Term or Condition:	The Proponent is encouraged to work with the Kivalliq Socio-Economic Monitoring Committee to design and implement a voluntary survey to be offered to its Nunavummiut employees on an annual basis in order to identify changes of address, housing status (i.e. public/social, privately owned/rented, government, etc.), and migration intentions, while respecting confidentiality of all persons involved. The survey should be designed in collaboration with the Government of Nunavut, the Nunavut Housing Corporation and other relevant stakeholders. Non-confidential results of the survey are to be reported to the Government of Nunavut and the NIRB.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	101
Category:	Population Demographics – Employee origin
Responsible Parties:	Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Project Phase:	
Objective:	Project-specific information regarding employee origin is important to

	comparing predictions of labour availability and employment opportunities with actual levels of employment from various demographic segments over different geographic areas.
Term or Condition:	The Proponent shall include with its annual reporting to the NIRB a summary of employee origin information as follows: - The number of Inuit and non-Inuit employees hired from each of the Kivalliq communities, specifying the number from each; - The number of Inuit and non-Inuit employees hired from each of the Kitikmeot and Qikiqtani regions, specifying the number from each; - The number of Inuit and non-Inuit employees hired from a southern location or other province/territory outside of Nunavut, specifying the locations and the number from each; and - The number of non-Canadian foreign employees hired, specifying the locations and number from each foreign point of hire.
Reporting Requirements:	To be determined following approval of the Project by the Minister

8.2.2.5. Traditional Activity and Knowledge

Term and Condition No.	102
Category:	Traditional Activity and Knowledge – Meliadine Lake community boat launch
Responsible Parties:	The Proponent
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	Appropriate planning for and consideration of, mitigation in design features and further monitoring of usage is an important component of the public boat launch as proposed in order to ensure public and worker safety.
Term or Condition:	Prior to commencing construction of the Discovery spur road to pass Meliadine Lake, the Proponent shall provide to the NIRB, details regarding the design features for the Meliadine Lake community boat launch, including traffic turnoffs from the all-weather access road, relevant signage, parking areas, considerations for public safety around the boat launch, plans for garbage removal and treatment of other refuse including buildings and equipment which may be stored at the site, as well as plans to monitor and/or maintain the site, including frequency and timing. These details, once finalized, shall also be incorporated, as updates, to various mitigation, monitoring and/or management plans as applicable.
Reporting Requirements:	Initial details to be provided prior to commencement of construction of the Discovery spur road; submission of updated plans and monitoring details to be determined following approval of the Project by the Minister

Term and Condition No.	103

Category:	Traditional Activity and Knowledge – Community input to monitoring
Responsible Parties:	The Proponent, KIA, KHTO, KSEMC
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	Incorporating community input into monitoring plans, programs and mitigation measures is important to ensuring they consider traditional knowledge and activities.
Term or Condition:	The Proponent is encouraged to consult with the Kangiqliniq Hunters and Trappers Organization and the Kivalliq Socio-Economic Monitoring Committee and to make all reasonable efforts to engage Elders and community members of the Kivalliq communities in order to have community level input into updates to its monitoring plans, programs and mitigative measures. This type of engagement will ensure that these programs and measures have been informed by traditional activities, cultural resources, and land use as such may be implicated or impacted by ongoing Project activities. All plans are to include a feedback mechanism for consulting with residents of the Kivalliq, including the provision of results from the Proponent's wildlife monitoring programs to each community. The Proponent shall submit updated plans to the NIRB within 30 days' of their revision and/or finalization.
Reporting Requirements:	To be determined following approval of the Project by the Minister

8.2.2.6. Non-Traditional Land Use and Resource Use

Term and Condition No.	104
Category:	Non-Traditional Land Use and Resource Use – Consultation with outfitters and guides
Responsible Parties:	The Proponent
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	It is important that the Proponent have an accurate understanding of land use patterns near Project activities in order to properly assess safety precautions that may be needed to protect human and environmental health, as well as to understand where these uses may be impacted by Project activities.
Term or Condition:	The Proponent is encouraged to consult with outfitting and guiding businesses that operate in the LSA and RSA regarding use of the area, specifically as it relates to hunting, fishing and guiding within proximity of the AWAR. Results of this consultation should be incorporated into updated plans where applicable.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	105

Category:	Non-Traditional Land Use and Resource Use – Hunter harvest survey
Responsible Parties:	The Proponent
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	Where possible, relevant information obtained from non-traditional land uses such as outfitting and guiding may help in improving the robustness of the hunter harvest survey to be carried out by the Proponent.
Term or Condition:	The Proponent is strongly encouraged to consider incorporating information obtained from local outfitting and guiding businesses into its Hunter Harvest Survey where possible, and to include these organizations as potential respondents to surveys undertaken.
Reporting Requirements:	To be determined following approval of the Project by the Minister

8.2.2.7. Cultural, Archaeological and Paleontological Resources

Term and Condition No.	106
Category:	Cultural, Archaeological and Paleontological Resources – Inspection reporting
Responsible Parties:	The Proponent, GN
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	It is important that the Proponent and the GN determine a mutually agreeable schedule for the Proponent's reporting of inspection results, as this information may be needed for adjustments to mitigation and/or monitoring measures and programs.
Term or Condition:	The Proponent shall, in consultation with the Government of Nunavut's Territorial Archaeologist, determine a reporting frequency for the provision of inspection reports to the Government of Nunavut regarding the status of the Meliadine River Bridge, the Char River Bridge, and the M5 Bridge Crossing during the spring freshet period (mid-May to June) and during the remainder of the ice-free period to freeze-up (July to October).
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	107
Category:	Cultural, Archaeological and Paleontological Resources – Mitigation of ice buildup
Responsible Parties:	The Proponent, GN
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	It is important that a plan be developed to address ice buildup at various Project bridge crossings in order to ensure the protection of archaeological resources.
Term or Condition:	The Proponent shall consult with the Government of Nunavut – Department

	of Culture and Heritage in developing a mitigation plan to address ice buildup at the Meliadine River Bridge, the Char River Bridge, and the Bridge Crossing at M5. The Proponent shall submit this mitigation plan to the NIRB once finalized.
Reporting Requirements:	To be determined following approval of the Project by the Minister

8.2.2.8. Individual and Community Wellness

Term and Condition No.	108
Category:	Individual and Community Wellness – Counseling and treatment programs
Responsible Parties:	The Proponent
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To make available, necessary treatment and counseling services for employee and family well-being.
Term or Condition:	The Proponent is encouraged to consider providing access to counseling and treatment programs for substance and gambling addictions, and programs which address domestic, parenting, and marital issues that could affect employees and/or their families.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	109
Category:	Individual and Community Wellness – Indirect impacts to health and well-being
Responsible Parties:	The Proponent, KSEMC
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To understand the indirect impacts of the Project upon health and well-being.
Term or Condition:	The Proponent is encouraged to work with the Kivalliq Socio-Economic Monitoring Committee to monitor potential indirect effects of the Project, including indicators such as the prevalence of substance abuse, gambling issues, family violence, marital problems, rates of sexually transmitted infections and other communicable diseases and others as deemed appropriate.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	110
Category:	Individual and Community Wellness – Employee cohesion
Responsible Parties:	The Proponent
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To encourage the on-site cohesion and wellbeing of employees thorough

	cultural awareness and wellness programs
Term or Condition:	The Proponent shall provide the NIRB with a description of wellness and cultural diversity/acceptance programming made available to employees and family or community members and shall report the following information with respect to each program to the NIRB annually: a. Language of instruction; b. Uptake by employees and/or family members where relevant, noting Inuit and non-Inuit participation rates; c. Completion rates for enrolled participants, noting Inuit and non-Inuit rates; and d. Issues as may relate to program content which may have been noted or present either on site or in the community and which affect Project employment or employee wellness.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	111
Category:	Individual and Community Wellness – Employee training opportunities
Responsible Parties:	The Proponent
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To understand how the Proponent's employee training programs are delivered and received, including uptake and completion rates by Inuit and non-Inuit staff.
Term or Condition:	In its annual reporting to the NIRB, the Proponent is strongly encouraged to provide detailed descriptions of all employee programs and training including: a. Descriptions of the goals of each program offered; b. Language of instruction; c. Schedules and location(s) of when each program was offered; a. Uptake by employees and/or family members where relevant, noting Inuit and non-Inuit participation rates; and, b. Completion rates for enrolled participants, noting Inuit and non-Inuit rates.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	112
Category:	Individual and Community Wellness – Access to housing
Responsible Parties:	The Proponent
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To investigate ways that economic development and self-reliance may improve access to housing by employees.
Term or Condition:	The Proponent is encouraged to investigate measures and programs designed to assist Project employees with pursuing home ownership or accessing affordable housing options.
Reporting Requirements:	To be determined following approval of the Project by the Minister

8.2.2.9. Community Infrastructure

Term and Condition No.	113
Category:	Community Infrastructure – Access to public housing
Responsible Parties:	The Proponent, KSEMC, GN-Nunavut Housing Corporation
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To inform the territory with respect to current housing rates, needs, and intentions to migrate may provide the GN with insight as to where additional resources may need to be devoted, based on trends that can be identified.
Term or Condition:	The Proponent is encouraged to collaborate with the Kivalliq Socio-Economic Monitoring Committee and the Government of Nunavut – Nunavut Housing Corporation, to design and implement a voluntary employee survey to be completed on an annual basis in order to to identify any changes of address, detailed occupancy status (i.e., public/social, privately owned/rented, government, number of people sharing the resident space, etc.), housing preferences, migration intentions, and reasons for migration while respecting confidentiality of all person involved. Non-confidential results of the survey are to be reported to the Government of Nunavut and the Nunavut Impact Review Board.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	114
Category:	Community Infrastructure – Financial literacy and planning programs
Responsible Parties:	The Proponent, GN-Nunavut Housing Corporation
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To ensure accurate and helpful information is passed to Project employees relating to financial literacy and housing/homeownership.
Term or Condition:	The Proponent is encouraged to collaborate with the Government of Nunavut – Nunavut Housing Corporation prior to the development and inception of its programs relating to financial literacy and planning to ensure that relevant and accurate information about housing and home ownership is available and considered for inclusion.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	115
Category:	Community Infrastructure – Impacts to health services
Responsible Parties:	The Proponent, GN
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring

Objective:	It is important to understand potential Project-specific impacts to the local health services, as well as to ensure a clear procedure is developed for Project employee medical referrals.
Term or Condition:	The Proponent is encouraged to work collaboratively with the Government of Nunavut Department of Health to monitor the impacts of the Meliadine Gold Project on health services within the LSA communities and specifically, Rankin Inlet.
Reporting Requirements:	To be determined following approval of the Project by the Minister

8.2.2.10. Public and Worker Health and Safety

Term and Condition No.	116
Category:	Public and Worker Health and Safety – Air quality monitoring
Responsible Parties:	The Proponent, Government of Nunavut
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	Adequate analysis of particulate matter is required in order to understand the potential impacts to human health.
Term or Condition:	The Proponent shall update the air quality monitoring aspect of its environmental and health risk monitoring program to include the following parameters for particulate matter: a. An analysis of the metals content of the dust collected in passive monitoring; and b. Discrete samples to be collected on a frequency to be determined in collaboration with the Government of Nunavut, from the camp, and analyzed for acrolein and aldehyde. Results are to be incorporated into the Proponent's annual reporting for submission to the NIRB.
Reporting Requirements:	To be determined following approval of the Project by the Minister

8.2.3. Other Terms and Conditions

8.2.3.1. Accidents and Malfunctions

Term and Condition No.	117
Category:	Accidents and Malfunctions – All-weather access road
Responsible Parties:	The Proponent, Kivalliq Inuit Association, Hamlet of Rankin Inlet, community members
Project Phase:	Pre-Construction
Objective:	To ensure overall safety through design and operation of the road, in accordance with relevant legislation and regulatory requirements
Term or Condition:	Prior to construction Phase 2 of the all-weather access road and the Rankin Inlet bypass road, the Proponent shall consult applicable laws in Canada and

	Nunavut as well as meet with all regulatory agencies and the public as it finalizes its road operations plans.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	118
Category:	Accidents and Malfunctions – All-weather access road
Responsible Parties:	The Proponent
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To ensure adequate monitoring of wildlife presence informs road management and operations
Term or Condition:	The Proponent shall include in an updated Terrestrial Wildlife Management and Monitoring Plan (TEMMP), plans for increased caribou monitoring efforts including weekly winter track surveying and summer and fall surveys undertaken on foot twice per month. These results shall be reported to the NIRB with the Proponent's annual reporting requirements.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	119
Category:	Accidents and Malfunctions – All-weather access road
Responsible Parties:	The Proponent
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To mitigate potential interactions of caribou with traffic along the AWAR
Term or Condition:	The Proponent shall include within its updated Terrestrial Wildlife Management and Monitoring Plan, a commitment to establishing deterrents along the AWAR at any areas where it is observed that caribou are attracted to the AWAR and their presence may present a risk of collisions with traffic along the AWAR (such as areas where caribou are utilizing the AWAR to facilitate movement, areas where caribou may be licking minerals/road salt from the road, areas where caribou are gathering to avoid insects, etc.).
Reporting Requirements:	The updated plan should be submitted to the NIRB at least 90 days prior to the start of construction, with annual reporting requirements to be determined following approval of the Project by the Minister

Term and Condition No.	120
Category:	Accidents and Malfunctions – Marine shipping
Responsible Parties:	The Proponent
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure / Care and

	Maintenance, Closure and Post-Closure Monitoring
Objective:	To ensure protection of the marine environment
Term or Condition:	The Proponent shall contract only Transport Canada certified shippers to carry cargo for the Project, and will ensure shippers are aware of the requirements of the Shipping Management Plan, the Risk Management and Emergency Response Plan and the Oil Pollution Emergency Plan (OPEP).
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	121
Category:	Accidents and Malfunctions – Marine shipping
Responsible Parties:	The Proponent
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To ensure protection of the marine environment
Term or Condition:	The Proponent shall monitor the ingress/egress of Project related ships at Rankin Inlet and report any accidents or spills immediately to the regulatory agencies as required by law and to NIRB's Monitoring Officer.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	122
Category:	Accidents and Malfunctions – Marine shipping
Responsible Parties:	The Proponent
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To ensure protection of the marine environment
Term or Condition:	The Proponent shall ensure that best practices are used at all times during ship to shore and other marine-based fuel transfer events, including implementing measures specifically designed to prevent leaks and spills resulting from ice forming on the hoses during fuel transfers.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	123
Category:	Accidents and Malfunctions – Marine shipping
Responsible Parties:	The Proponent
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To ensure protection of the marine environment
Term or Condition:	The Proponent shall ensure that the necessary spill response equipment and training is available prior to commencing project shipping.
Reporting Requirements:	To be determined following approval of the Project by the Minister

Term and Condition No.	124
Category:	Accidents and Malfunctions – Spill preparedness
Responsible Parties:	The Proponent
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To ensure protection of local water resources
Term or Condition:	Prior to construction, the Proponent shall update its Spill Contingency Plan specific to a major spill event occurring on the bypass road and within proximity to (and including potential spills into) Nipissar Lake.
Reporting Requirements:	The updated plan should be submitted to the NIRB at least 90 days prior to the start of construction, with annual reporting requirements to be determined following approval of the Project by the Minister

Term and Condition No.	125
Category:	Accidents and Malfunctions – All-weather access road
Responsible Parties:	The Proponent
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To ensure rules for use of the road are clearly communicated in the interest of providing for the health and safety of all users of the AWAR
Term or Condition:	The Proponent shall implement all such measures necessary to protect public and mine traffic on all Project roads. The measures undertaken shall include, but are not limited to: a. Prior to expansion of the AWAR, the Proponent shall update its Roads Management Plan to include a detailed consultation plan specifying the methods the Proponent will use to provide the Kivalliq Inuit Association, members of the Hunters and Trappers Organizations in the area, residents of Rankin Inlet and the Hamlet of Rankin Inlet with information regarding the safety requirements of AWAR use. The updated Plan is to be submitted to the Nunavut Impact Review Board, Kivalliq Inuit Association, Kangiqliniq Hunters and Trappers Organization, and the Government of Nunavut; b. Prior to the opening of the AWAR to the public, and annually thereafter, advertise and hold at least one community meeting in the Hamlet of Rankin Inlet and Chesterfield Inlet to explain to the community the rules for use of the road; c. Prior to the opening of the AWAR to the public, the Proponent shall address enforcement of health and safety rules for the operation of the road (i.e., no shooting zone) and implement necessary communications with the public (i.e., signage and public meetings),

	which includes, but is not limited to: i. Maintaining manned and unmanned gates as proposed along the all-weather access road; ii. The posting of signs in English and Inuktitut along the road at appropriate intervals (i.e., 10 km and bridge crossings); and iii. Place notices at least quarterly on the radio and television to explain to the community the rules for use of the road; d. Once the AWAR expansion is completed and the road is opened to the public, the Proponent shall conduct a vehicle survey four times annually (once during the weekdays during the winter season, once during the week end days during the winter season, once during the weekdays during the summer season and once during the week end days during the summer season) to record the number and types of mine vehicles and the number and type of public vehicles using the AWAR over a 12 hour period (8:00 am to 8:00 pm). The vehicle survey data shall be collated as indicated above and provided in the Proponent's Annual Report; e. Prior to the development of the Discovery deposit, the Proponent shall update its Road Management Plan for the planned operation of the twinned road which could include additional rules, Project infrastructure, or other measures designed to maintain safety for employees and the public; and f. Report all accidents or other safety incidents on the road, to the Government of Nunavut, Kivalliq Inuit Association, the Hamlet of Rankin Inlet and the NIRB immediately.
Reporting Requirements:	The updated plan should be submitted to the NIRB at least 90 days prior to the start of construction, with annual reporting requirements to be determined following approval of the Project by the Minister

8.2.3.2. Alternatives Analysis

Term and Condition No.	126
Category:	Alternatives Analysis – All-weather access road
Responsible Parties:	The Proponent
Project Phase:	Pre-Construction
Objective:	To ensure clear and consistent communication of safety requirements and road use limitations to inform members of the public

Term or Condition:	Prior to expansion of the AWAR, the Proponent shall prepare and add to the finalized Roads Management Plan (SD 2-9), a detailed consultation plan specifying the methods the Proponent will use to provide the Kivalliq Inuit Association, members of the Hunters and Trappers Organizations in the area, residents of Rankin Inlet and the Hamlet of Rankin Inlet with information regarding the safety requirements and any limitations on public AWAR use (i.e. the “rules of the road”) and to ensure that this information continues to be clearly communicated on an on-going basis while the public has access to the AWAR.
Reporting Requirements:	The updated plan should be submitted to the NIRB at least 90 days prior to the start of construction, with annual reporting requirements to be determined following approval of the Project by the Minister

Term and Condition No.	127
Category:	Alternatives Analysis – Marine shipping
Responsible Parties:	The Proponent, Kivalliq Inuit Association, Kivalliq HTOs
Project Phase:	Pre-Construction, Construction, Operations, Temporary Closure / Care and Maintenance, Closure and Post-Closure Monitoring
Objective:	To ensure adaptive management measures are available to address impacts to marine mammals
Term or Condition:	The Proponent shall, in coordination and consultation with the Kivalliq Inuit Association and the Hunters and Trappers Organizations of the Kivalliq communities, provide updates to its Shipping Management Plan to identify adaptive management measures that will be employed if effects monitoring identifies potential for effects on marine mammal populations along the shipping route.
Reporting Requirements:	The updated plan should be submitted to the NIRB at least 90 days prior to the start of construction, with annual reporting requirements to be determined following approval of the Project by the Minister

8.3. Recommendations for Regulatory Agencies, Land and Mineral Owners

Although the Board recognizes that the following recommendations are not binding on the parties, given the significant and pressing issues regarding strains on the capacity of local communities and regulatory agencies identified during the Board's Review of the Project, the Board has summarized these concerns in this section and has provided the recommendations that follow. It should be noted that in providing these recommendations, the NIRB recognizes that all the parties have the jurisdiction and discretion to choose the extent to which they wish to adopt and implement any of the following recommendations in whole or in part; the Board's purpose in providing the recommendations in this report is simply to recognize and affirm the critical on-going role of local communities, regulatory agencies and the land and mineral owners in contributing to monitoring and reporting on project-specific effects and to provide some possible mechanisms to support the parties' capacity in this regard.

As identified in the Board's discussion of the precautionary approach and adaptive management in this Report, in the face of uncertainty regarding the prediction of effects which is expected for some effects at the environmental assessment phase of project development, the precautionary approach depends on effective monitoring and adaptive management. In the Board's view, to truly be effective both effects monitoring and adaptive management must be informed by the prior and current knowledge, observations and experiences of local residents and regulatory agencies with jurisdiction over project development. Ensuring that these participants have the financial and human resource capacity to continue to provide this vital information will undoubtedly be a challenge to all. The Board has serious concerns that limits on the ability of the affected communities and regulators to remain engaged on an on-going basis with the Project throughout its lifecycle will jeopardize the Board's ability to meet the promise of truly "setting the standard" for project development in Nunavut that is established by the Nunavut Land Claims Agreement and that is rightly expected by all Nunavummut and all Canadians. Project Proponents and the Nunavut Impact Review Board simply cannot accomplish this objective in isolation and it takes community and regulatory capacity to deliver sustainable development and a lasting positive legacy.

8.3.1. Supporting Community Capacity

As expressly noted in the Board's Pre-Hearing Conference Decision for this Project, community representatives recognize the importance of maintaining on-going engagement with the Proponent and all regulatory parties if the Meliadine Gold Project is to deliver on the promise of sustainable development in the Territory:

Underlying many of the questions and comments expressed by the community members in attendance was a clear message that: *our wildlife, our water and our very being will be affected by the development of this mine and there are only a few thousand of us in the Territory who will be directly affected; we are not opposed if the mine is developed properly, but we will all need to work together throughout the life of the mine from start to finish to make sure that happens.*⁶³⁹

⁶³⁹ File No. 11MN034, NIRB Pre-hearing Conference Decision for the Meliadine Gold Project, January 16, 2014 at p. 13.

However, despite the recognition of the central and on-going role of the affected communities in the development of the proposed Project, the Board also observed that financial and human resource constraints imposed limits on the participation of key contributors such as the Hamlet and the local hunters and trappers organizations in the NIRB process to date:

Recognizing the concerns raised by community representatives, the KHTO, and NTI regarding insufficient technical expertise being available for communities to assist with understanding potential impacts of the proposed Project, the Board feels additional efforts may be necessary by AEM, the NIRB and parties to ensure that affected groups and individuals are effectively engaged.⁶⁴⁰

The Board also heard concerns about capacity and limitations for these participants at the Final Hearing from representatives from Nunavut Tunngavik Inc.:

*One of the things we've been working on, or, I guess, stressing, have had discussions with the NIRB Board as well before, is the lack of a participant funding program in Nunavut. For the HTOs or the RWOs to participate, they need capacity, whether it's staff or the financial resources to be able to hire consultants or people that are specialists in this area to help them prepare and participate in the NIRB hearing process...the point we would like to make is, it's important to have the resources and the capacity to contribute and participate fully in this process so that we're able to identify any issues and concerns now, as opposed to a year or two down the road when it's a lot more difficult to address any concerns or issues the communities may have.*⁶⁴¹

Community members were specifically concerned about the capacity of the Kangiqliniq Hunters and Trappers Organization to participate on an on-going basis:

[J. TATTUINEE, Rankin Inlet]: *As board members, do you have enough funding, or are you going to be asking for funding? I don't have any other further questions. Thank you.*

[J. TATTY, KHTO]: *Yes, we're always looking for extra funding. It's been our pitfall. We need funding to operate, and it sounds good that organizations are going to offer us some so that we can operate.*⁶⁴²

In addition, the Board heard that the heightened role and potential administrative burden on the KHTO may be expected to significantly increase due to safety issues associated with public access to the all-weather access road (AWAR) particularly during caribou migration:

⁶⁴⁰ File No. 11MN034, NIRB Pre-hearing Conference Decision for the Meliadine Gold Project, January 16, 2014 at p. 34.

⁶⁴¹ B. Dean, Nunavut Tunngavik Inc., NIRB Public Hearing File No.: 11MN034, Transcript, August 21, 2014 at pp.145-146, lines 11-19 and lines 9-16.

⁶⁴² J. Tattuinee, Community Representative, Rankin Inlet, NIRB Public Hearing File No.: 11MN034, Transcript, August 26, 2014 at p. 1050, lines 5-8 and J. Tatty, Kangiqliniq Hunters and Trappers Organization, NIRB Public Hearing File No.: 11MN034, Transcript, August 26, 2014 at p. 1050, lines 9-12.

*...the public would like to be able to use the road, the access road, but the danger is the use of guns that may be used during caribou migration. I think this could be resolved in some way. Perhaps, I wonder if maybe, while the caribou are migrating, we could close the access road at that time because our voice alone will not be strong enough for -- to be heard. I think -- as organizations and with Agnico Eagle Mines, I think we could ensure that this --the -- it's going to -- it's going to be mainly used by Agnico Eagle transport -- transportation. This has always been a concern to myself that there may be danger -- dangerous time if guns are going to be used during the caribou migration. I think we could talk more about this problem.*⁶⁴³

As summarized by the Board's Executive Director:

*Particularly, I think it's illuminating to hear your concern for both project-induced effects, the project itself impacting upon the caribou and other wildlife, but also just that concern for increased access having the effect of the hunters and trappers organization being placed on a larger administrative burden, having to police its membership and hunters on that road to some degree.*⁶⁴⁴

Consequently, the Board recommends that:

1. Within 6 months of the issuance of the Project Certificate, the Proponent, the Kivalliq Inuit Association, Aboriginal Affairs and Northern Development Canada, the Government of Nunavut, the Hamlet of Rankin Inlet, Kangiqliniq Hunters and Trappers Organization, the Aqiggiq Hunters and Trappers Organization and the Kivalliq Wildlife Board convene a workshop to identify and secure the additional financial and human resource requirements necessary for the Hamlet and the KHTO, AHTO and KWB to participate fully in the monitoring and management of the Project, including, but not limited to;
 - a. the monitoring and management of harvesting and harvesters' access along the AWAR;
 - b. participation in additional baseline studies and harvest studies;
 - c. monitoring and management of effects on marine mammal harvesting along the shipping route; and
 - d. continued collection and contribution of Inuit Qaujimajatuqangit to inform monitoring, updates to management plans and the implementation and assessment of efficacy of any adaptive management measures required for the Project.

8.3.2. Supporting Regulatory Capacity

In addition to the concerns noted above regarding the capacity of community stakeholders to participate fully in the NIRB Review and to actively contribute to the project monitoring and adaptive management as the Project develops over time, throughout the Board's Review, the Board has also heard from regulatory agencies, Nunavut Tunngavik and the Kivalliq Inuit Association that all have experienced and expect to continue experiencing significant constraints on the financial, temporal and human resources required to fully and actively contribute to the NIRB process in the project review and

⁶⁴³ J. Tatty, Kangiqliniq Hunters and Trappers Organization, NIRB Public Hearing File No.: 11MN034, Transcript, August 22, 2014 at p. 570, lines 5-12

⁶⁴⁴ R. Barry, Nunavut Impact Review Board, NIRB Public Hearing File No. 11MN034, Transcript, August 22, 2014, p. 570, lines 5-12.

monitoring stages. For example, despite members of the community having questions at the Pre-Hearing Conference in this review about the Canadian Coast Guard's emergency response capability within Nunavut, and this information being considered relevant to assessing both the Proponent's spill modelling and emergency response plans, the Canadian Coast Guard did not appear at the Final Hearing, instead filing a written response to the Board in advance of the Final Hearing.⁶⁴⁵

As noted in the Board's Mary River Final Hearing Report in 2012,⁶⁴⁶ as the Board relies on the contributions of regulatory stakeholders to provide expertise and an understanding of their jurisdictional basis, including any licensing or permitting that may be informed by the NIRB's assessment, limits on the full participation of any regulatory stakeholders can jeopardize the Board's ability to provide thorough, credible and timely assessments. In the Board's review of the Meliadine Gold Project specifically, the Board found it exceptionally challenging to understand and accommodate the significant changes to the serious harm provisions of the Federal *Fisheries Act* that now replace the former hazardous alteration, disruption and destruction of fish and fish habitat ("HADD") sections of the former Act. The Board was also challenged to understand how amendments to both the *Fisheries Act* and the *Navigation Protection Act* affect the requirements for authorization surrounding tailings impoundment facilities and the *Metal Mining Effluent Regulations*. In the absence of clear, concise and consistent guidance from regulatory agencies regarding substantive changes to their regulatory processes, the Board, the Proponent and ultimately the public are left with uncertainty regarding what aspects of the assessment, can, should and most importantly should not be deferred to later licensing and permitting stages of project regulation.

The Board notes that a lack of regulatory capacity and full participation of authorizing agencies and landowners both during and after the Board's review is particularly troubling when, as is the case for this Board review, there is uncertainty with respect to some effects predictions and the Board employs the precautionary approach and relies on adaptive management to monitor and manage the potential for unpredicted effects.

On this basis, the Board offers the following recommendations to all regulatory agencies with a regulatory mandate for the project, land owners and mineral owners:

1. Within 12 months of the issuance of the Project Certificate, all regulatory agencies with a regulatory mandate for the project, land owners and mineral owners are to conduct an internal capacity assessment to identify the monitoring, inspection, enforcement and reporting requirements for the specific regulatory agency, land owner or mineral owner that will be associated with the Project during operations.
2. Within 24 months of the issuance of the Project Certificate, and on the basis of the internal capacity assessment, all regulatory agencies with a regulatory mandate for the project, land owners and mineral owners are to develop an implementation plan that identifies the ongoing resource commitments associated with the Project, the gaps in existing capacity and the

⁶⁴⁵ Letter from J. Thomas, Deputy Commissioner of Operations, Canadian Coast Guard, Fisheries and Oceans Canada to R. Barry, Executive Director, NIRB, August 6, 2014 and placed on the NIRB online public registry.

⁶⁴⁶ NIRB File No.: 08MN053, Final Hearing Report for the Mary River Project, Baffinland Iron Mines Corporation, September 14, 2012 at pp. 227-229 and 302.

mechanisms for ensuring there is capacity to meet the required commitments throughout the Project's lifecycle.

3. The Government of Nunavut is encouraged to provide information and details in a clear format to communities of the Kivalliq region in order to help inform residents of the various opportunities that exist for education and training and to facilitate Nunavummiut taking full advantage of and realizing the potential benefits of employment and other spinoff opportunities from the Project.

APPENDIX A: List of Exhibits from the Meliadine Gold Project Final Hearing

Exhibit	Exhibit Description	Date	From
1	Hard Copy PowerPoint Presentation Meliadine Gold Mine Project- Public Hearing Technical Sessions August 2014 Introduction and Overview (English/Inuktitut Combined)	August 21, 2014	Agnico-Eagle Mines Ltd. (Agnico Eagle)
2	DVD (due to file size exceeding 280 Mb not posted on the NIRB public registry) PowerPoint Presentation of Exhibit 1 (containing Video clip animation) Meliadine Gold Mine Project- Public Hearing Technical Sessions August 2014 Introduction and Overview (English/Inuktitut Combined)	August 21, 2014	Agnico Eagle
3	Hard Copy PowerPoint Presentation Meliadine Project Atmospheric Environment (Inuktitut)	August 21, 2014	Agnico Eagle
4	Hard Copy PowerPoint Presentation Meliadine Project Atmospheric Environment (English)	August 21, 2014	Agnico Eagle
5	Hard Copy Correspondence From M. Rawlings (Golder Associates) to S. Robert (Agnico Eagle) dated August 19, 2014 RE: Responses to Items from the Telephone Conversation with Senes and KIA on August 14, 2014—Meliadine Gold Project, Nunavut	August 21, 2014	Agnico Eagle/Kivalliq Inuit Association
6	Hard Copy PowerPoint Presentation Meliadine Terrestrial Presentation (Inuktitut)	August 21, 2014	Agnico Eagle

Exhibit	Exhibit Description	Date	From
7	Hard Copy PowerPoint Presentation Meliadine Terrestrial Presentation (English)	August 21, 2014	Agnico Eagle
8	Hard Copy PowerPoint Presentation Meliadine Freshwater Presentation (Inuktitut)	August 21, 2014	Agnico Eagle
9	Hard Copy PowerPoint Presentation Meliadine Freshwater Presentation (English)	August 21, 2014	Agnico Eagle
10	Hard Copy PowerPoint Presentation Meliadine Marine Presentation (Inuktitut)	August 21, 2014	Agnico Eagle
11	Hard Copy PowerPoint Presentation Meliadine Marine Presentation (English)	August 21, 2014	Agnico Eagle
12	Hard Copy Responses to Deferred Atmospheric Environment Questions Final Technical Hearing—Meliadine Gold Project Dated August 22, 2014	August 22, 2014	Agnico Eagle
13	Hard Copy PowerPoint Presentation Meliadine Socio-Economics & Human Health Presentation (Inuktitut)	August 22, 2014	Agnico Eagle
14	Hard Copy PowerPoint Presentation Meliadine Socio-Economics & Human Health Presentation (English)	August 22, 2014	Agnico Eagle

Exhibit	Exhibit Description	Date	From
15	Hard Copy PowerPoint Presentation Meliadine Project Final Hearing, Government of Nunavut, August 2014	August 22, 2014	Government of Nunavut (GN)
16	Hard Copy Joint Submission on Commitments Agnico-Eagle Mines Ltd. and Government of Nunavut	August 22, 2014	Agnico Eagle/ GN
17	Hard Copy Joint Submission on Suggested Terms and Conditions Agnico-Eagle Mines Ltd. and Government of Nunavut	August 22, 2014	Agnico Eagle/ GN
18	Hard Copy PowerPoint Presentation Agnico Eagle Mines proposed Meliadine Gold Project Rankin Inlet, August 2014 Aboriginal Affairs and Northern Development Canada	August 22, 2014	Aboriginal Affairs and Northern Development Canada
19	Hard Copy PowerPoint Presentation Environment Canada Presentation to Nunavut Impact Review Board Regarding Agnico Eagle Mines Ltd.'s Meliadine Gold Project (Inuktitut)	August 22, 2014	Environment Canada (EC)
20	Hard Copy PowerPoint Presentation Environment Canada Presentation to Nunavut Impact Review Board Regarding Agnico Eagle Mines Ltd.'s Meliadine Gold Project (English)	August 22, 2014	EC
21	Hard Copy PowerPoint Presentation Environment Canada Presentation to Nunavut Impact Review Board Regarding Agnico Eagle Mines Ltd.'s Meliadine Gold Project (French)	August 22, 2014	EC

Exhibit	Exhibit Description	Date	From
22	Hard Copy PowerPoint Presentation Meliadine Gold Mine Project Presentation to the Nunavut Impact Review Board, Final Hearing Conference, Rankin Inlet, NU August 21-27, 2014 (Inuktitut)	August 22, 2014	Fisheries and Oceans Canada (DFO)
23	Hard Copy PowerPoint Presentation Meliadine Gold Mine Project Presentation to the Nunavut Impact Review Board, Final Hearing Conference, Rankin Inlet, NU August 21-27, 2014 (English)	August 22, 2014	DFO
24	Hard Copy PowerPoint Presentation Natural Resources Canada Final Hearing Presentation Meliadine Gold Project (Inuktitut)	August 22, 2014	Natural Resources Canada (NRCan)
25	Hard Copy PowerPoint Presentation Natural Resources Canada Final Hearing Presentation Meliadine Gold Project (English)	August 22, 2014	NRCan
26	Hard Copy PowerPoint Presentation Natural Resources Canada Final Hearing Presentation Meliadine Gold Project (French)	August 22, 2014	NRCan
27	Hard Copy PowerPoint Presentation Nunavut Impact Review Board Final Hearing Agnico Eagle Mines Ltd. Meliadine Gold Project (Inuktitut)	August 22, 2014	Transport Canada (TC)
28	Hard Copy PowerPoint Presentation Nunavut Impact Review Board Final Hearing Agnico Eagle Mines Ltd. Meliadine Gold Project (English)	August 22, 2014	TC

Exhibit	Exhibit Description	Date	From
29	Hard Copy PowerPoint Presentation Meliadine Gold Mine Project Kivalliq Inuit Association and Nunavut Tunngavik Incorporated Technical Review of the Final Environmental Impact Statement (Part 1)	August 22, 2014	Kivalliq Inuit Association (KIA) Nunavut Tunngavik Incorporated (NTI)
30	Hard Copy PowerPoint Presentation Meliadine Gold Mine Project Kivalliq Inuit Association and Nunavut Tunngavik Incorporated Technical Review of the Final Environmental Impact Statement (Part 2)	August 22, 2014	KIA/NTI
31	Hard Copy PowerPoint Presentation Meliadine Gold Mine Project Kivalliq Inuit Association and Nunavut Tunngavik Incorporated Technical Review of the Final Environmental Impact Statement (Part 3)	August 22, 2014	KIA/NTI
32	Hard Copy Memo regarding Agnico Eagle spill modelling and map projections Prepared by: Dr. Jeff W. Higdon, Technical Adviser, Kivalliq Inuit Association August 22, 2014	August 22, 2014	KIA/NTI
33	Hard Copy Final Environmental Impact Statement (FEIS) Meliadine Gold Project, Nunavut Tunngavik Inc. and Kivalliq Inuit Association August 22, 2014	August 22, 2014	KIA/NTI
34	Electronic Copy Only Kivalliq Wildlife Board, Rankin Inlet Hunters and Trappers Organization and Chesterfield Inlet Hunters and Trappers Organization (Inuktitut)	August 22, 2014	Kivalliq Wildlife Board, Rankin Inlet HTO Chesterfield HTO
35	Electronic Copy Only Kivalliq Wildlife Board, Rankin Inlet Hunters and Trappers Organization and Chesterfield Inlet Hunters and Trappers Organization (English)	August 22, 2014	Kivalliq Wildlife Board, Rankin Inlet HTO Chesterfield HTO

Exhibit	Exhibit Description	Date	From
36	Hard Copy Recommended Terms and Conditions For the Meliadine Gold Project (NIRB File No.: 11MN034) Prepared by: Nunavut Tunngavik Inc. and Kivalliq Inuit Association August 24, 2014	August 25, 2014	Nunavut Tunngavik Inc. and Kivalliq Inuit Association
37	Hard Copy Meliadine FEIS Technical Hearing Follow Up To Deferred Questions Agnico Eagle Mines Ltd.	August 25, 2014	Agnico Eagle Mines Ltd. (Agnico Eagle)
38	Hard Copy PowerPoint Presentation Meliadine Gold Mine Project Public Hearing Community Sessions, August 2014 (Inuktitut)	August 25, 2014	Agnico Eagle
39	Hard Copy PowerPoint Presentation Meliadine Gold Mine Project Public Hearing Community Sessions, August 2014 (English)	August 25, 2014	Agnico Eagle
40	Hard Copy Written Submission to the Nunavut Impact Review Board John Audlatnar Ell	August 25, 2014	John Audlatnar Ell
41	Hard Copy PowerPoint Presentation Meliadine Gold Mine Project KIA-NTI Community Roundtable Session	August 25, 2014	Kivalliq Inuit Association Nunavut Tunngavik Inc.
42	Hard Copy Meliadine FEIS Technical Hearing Follow-Up to Deferred Questions Deferred No.: 06	August 26, 2014	Agnico Eagle Mines Ltd.
43	Electronic Copy Only Map of Walrus Survey of Hudson Bay and Hudson's Strait (showing Rankin Inlet as a lower priority for research) Fisheries and Oceans Canada	August 26, 2014	Fisheries and Oceans Canada

Exhibit	Exhibit Description	Date	From
44	Electronic Copy Only PowerPoint Presentation Supplemented Exhibit 22 (additional slide) Meliadine Gold Mine Project Presentation to the Nunavut Impact Review Board, Final Hearing Conference, Rankin Inlet, NU August 21-27, 2014 (English)	August 26, 2014	Fisheries and Oceans Canada
45	Hard Copy PowerPoint Presentation NRCan Community Roundtable Presentation Meliadine Gold Project (Inuktitut)	August 26, 2014	Natural Resources Canada (NRCan)
46	Hard Copy PowerPoint Presentation NRCan Community Roundtable Presentation Meliadine Gold Project (English)	August 26, 2014	NRCan
47	Hard Copy PowerPoint Presentation NRCan Community Roundtable Presentation Meliadine Gold Project (French)	August 26, 2014	NRCan
48	Hard Copy Meliadine FEIS Technical Hearing Follow Up to Deferred Questions #10	August 27, 2014	Agnico Eagle Mines Ltd. (Agnico Eagle)
49	Hard Copy Meliadine FEIS Technical Hearing AEM Response to KIA Proposed Terms & Conditions Submission	August 27, 2014	Agnico Eagle
50	Hard Copy NIRB file: 11MN014 Kivalliq Inuit Association Motion to keep the Hearing Record open	August 27, 2014	Kivalliq Inuit Association
51	Hard Copy Submission in Response to the KIA Motion to keep the Record Open	August 27, 2014	Agnico Eagle Mines Ltd.

Exhibit	Exhibit Description	Date	From
52	Hard Copy “When Mining Comes (Back) to Town: Exploring Mining Encounters in the Kivalliq Region” End of Field Work Season Report Tara Cater and Pallulaaq Friesen	August 27, 2014	Pallulaaq Friesen
53	Hard Copy Agnico Eagle Mines Limited Meliadine Gold Project NIRB Final Hearing Closing Statement	August 27, 2014	Agnico Eagle Mines Limited

APPENDIX B: List of Acronyms

[illegible]

[illegible]

APPENDIX C: BOARD SITE VISIT REPORT

Background:

As set out in the Nunavut Impact Review Board's Rules of Procedure,⁶⁴⁷ Item 27:

Prior to proceeding to a hearing, or during a hearing, the Board may, on its own initiative or on a motion by a party, schedule a site visit. The Board shall set the terms of reference for the site visit in advance and notify the parties in writing of the site visit and the terms of reference. The Board may request that representatives from a community and any other person accompany the Board on a site visit.

As noted in the Board's Pre-hearing Conference Decision for this file, on the basis of the request of Community Representatives and with the agreement of all the parties present at the Pre-hearing Conference in December 2013, the Board determined that scheduling a site visit to coincide with the Final Hearing would be beneficial.⁶⁴⁸ The Board also indicated that a public summary of the site visit would be attached as an Appendix to this Final Hearing Report.

Advance Notice Regarding the Site Visit:

In addition to the reference to the site visit included in the Pre-hearing Conference Decision, the date for the site visit (Saturday, August 23) and an indication that further details regarding the site visit would be issued by the Board were included in the Notice of Public Hearing for the Meliadine Gold Project issued on May 30, 2014. On July 23, 2014, 30 days in advance of the site visit, the Board also issued a specific Notice of Site Visit to the Meliadine Gold Project distribution list that provided further details regarding the purpose, travel logistics, timing, agenda and activities associated with the site visit. The Notice of Site Visit also requested that anyone wishing to attend the site visit confirm their participation with Agnico Eagle Mines Ltd. at least two weeks in advance. Both the *draft* Meliadine Final Hearing Agenda issued on August 1 and the final version of the Hearing Agenda released on August 11 and provided at the Final Hearing included the agenda for the site visit as well.

The Purpose of the Site Visit

As noted by the NIRB's Chairperson at the Final Hearing, the central purpose of the site visit was to provide the participants with an opportunity to increase their understanding and familiarity with the physical setting of the proposed project by getting a first-hand view of the site features, project area and the general location of key project components. Reflecting this limited purpose, the Board advised all parties that site visit would not use the visit as a means of gathering evidence that would not otherwise be provided to the Board during its review of the Meliadine Gold Project. Further the Board made it

⁶⁴⁷ NIRB Rules of Procedure, September 3, 2009 at p. 17.

⁶⁴⁸ File No. 11MN034, NIRB Pre-hearing Conference Decision for the Meliadine Gold Project, January 16, 2014 at p. 34.

clear that during the site visit the Board Members and staff would not discuss any matters of substance associated with the Board's review of the project proposal with anyone, including the project proponent, on-site personnel, participants at the Hearing or members of the public.

Itinerary

The approximately 120 participants who attended the site visit on August 23, 2014 departed from and returned to the Rankin Inlet Community Hall. Bus transportation supplied by Agnico Eagle Mines Ltd. could accommodate 40 attendees at one time and as such three tours involving identical itineraries were conducted by Agnico Eagle personnel at 8:00 am, 11:00 am and 2:00 pm.

The site tours travelled via the existing all-weather access road to pre-determined stops at the following locations:

1. The Meliadine Bridge;
2. The intersection of the existing all-weather access road and the proposed Discovery Road;
3. The existing portal facility;
4. The existing waste dump; and
5. The existing exploration camp.

The tour lasted approximately 2 ½ hours and no written materials were provided to the attendees during the site visit.

The attached PowerPoint presentation consisting of pictures from the site visit taken by Board staff was projected on the screens in the Hearing Room during the breaks throughout the remainder of the Final Hearing.

Attendees

Due to the 40 person capacity of the bus used for the site visit, the Nunavut Impact Review Board Members and Board staff could not attend the site visit at the same time as all of the Community Representatives and intervenors. However, regardless of which of the three site tours attended, the same agenda and access was provided to all attendees during the site visit.

Board staff and the Board Members, with the exception of Board Member Jaypootie Aliqatuqtuq who was unable to attend the site visit, participated in the 8:00 am tour along with several of the Final Hearing participants representing the Government of Nunavut, the Federal Government and Agnico Eagle.

Opportunities for Follow Up

As set out in the final Hearing Agenda, Item 11, time was set aside on the morning of August 25 for the Board, the proponent, the parties, Community Representatives or the public to identify any issues associated with the site visit that would require additional information or documentation, questions or other form of follow up to be placed on the Hearing Record. With the exception of some questions

arising as a result of the site visit which were answered in oral form, there were no additional requirements for formal follow up identified by any parties during this part of the Final Hearing.

NIRB Final Hearing Meliadine Gold Project proposal

Site Visit – August 23, 2014







