List of Commitments from Nunavut Impact Review Board's Technical Meeting for Agnico Eagle Mines Ltd.'s Meliadine Project (NIRB File No. 11MN034)

- 1) Please note that any commitments requiring submission of materials prior to the Final Environmental Impact Statement (FEIS) are also to be included within the FEIS where applicable.
- 2) Where it is requested that data be provided, it is expected a related discussion will also be included within the FEIS.
- 3) Where no timelines are indicated, Agnico Eagle Mines Ltd. (AEM) is to provide as per requests by the party.

Commit-		Reference (relevant	Commitment	Additional Notes	Comments
ment #		IR or TRC)			
4	In-ald 11:		DEIS Organization, Conclusions and Methodologies	1	
1	Rankin Inlet HTO		AEM commits to facilitate access to the bay near the tank farm and laydown area, and to include increased representation of the access trails within a figure that is to be included within the FEIS.		
2	KIA	IR 23	AEM commits to provide a discussion of ice and water content in the overburden piles that would be included in the waste rock piles including rationale for not storing overburden for reclamation within the FEIS.		
3	KIA	TRC 10, 12	AEM commits to provide a discussion regarding the flow of water into Meliadine Lake including contact water(s) and will ensure that all contact water and total suspended solids will be treated until it can be demonstrated that these water can be released without treatment with discussions provided within the FEIS.		
4	KIA and other parties		Where AEM's response to parties' technical review comments indicates incorporations into the FEIS "as appropriate" or "as applicable", AEM further commits to provide discussion and summaries as requested by parties' technical review comments within the FEIS and, where not included, AEM will provide a rationale clearly stating why the information was omitted.		
			Alternative Assessment including Geology, Geotechnical Information and Waste Management		
5	Rankin Inlet HTO		AEM commits to provide a summary of discussions with the Hamlet of Rankin Inlet on any developments that would occur in assisting community facilities and infrastructure within the FEIS.		i.e Another docking facility for the community; parking lot
6	KIA	DFO 13 & GN 9	AEM commits to include a discussion on alternatives and an assessment of their feasibility for the disposal of any treatment of water brine in excess of that which is needed for drilling operations within the FEIS.		What alternatives are being considered to brine disposal?
7	AANDC	AANDC TRC 2	AEM commits to elaborate on details regarding the geotechnical conditions around underground workings and ensure the information provided will address the interested parties' concerns within the FEIS.		
8	AANDC	AANDC TRC 68	AEM commits to clarify within the FEIS that the containment pond water quality was not used in the site water quality prediction modelling. Further describe that the laboratory leaching data was used to derive waste rock contact water quality.		
9	AANDC	· ·	AEM commits to provide within the FEIS a detailed description of the materials required for the construction of the berm at the landfill and to provide more information to ensure impacts from potential leachate are adequately mitigated and that the impact analysis is complete.		
10	AANDC	AANDC TRC 39 and IR 32	AEM commits to include in the FEIS a commitment to undertake an assessment of the berm and subgrade stability during the design phase to be presented during the Type A water licensing process.		
11	AANDC	IR 32	AEM commits to provide a conceptual design of the cover layer on the landfill, including material composition and thickness within the FEIS.		
12	AANDC	AANDC TRC 41	AEM commits to provide further rationale within the FEIS that supports its assertion that the landfill would not impact groundwater.		
13	AANDC	AANDC TRC 58, 61, 62 and 63	AEM commits to compile existing information presented in the draft EIS (DEIS) relating to snow thickness, soil composition, moisture content, permafrost temperature and ground vegetation into a dedicated section within the FEIS.		

14	AANDC	AANDC TRC 30	AEM commits to provide within the FEIS, an estimate of ore volume from the Discovery pit that is expected to be in a temporary ore stockpile prior to it being transported to the Meliadine site for processing and to provide an estimate of heat generated from sulphide oxidation predicted to be released by the ore in the temporary stockpile.	
15	AANDC	AANDC TRC 65	AEM commits to revise the wording in section 4.4, supporting document (SD) 6-1 describing the basis for the selection of the surface temperature wave used for calculation of depth of zero annual amplitude for the FEIS.	
16	AANDC	AANDC TRC 3	AEM commits to include within the FEIS a dedicated section that compiles the available site date relating to ice content, active layer thickness and terrain mapping; including data on the thermal conditions of waste rock facilities at Meadowbank (and other relevant sites if available); and provide rationale as to why additional modelling of waste rock facilities and foundations is not required.	
17	AANDC	AANDC TRC 67	AEM commits to provide depletion calculation rates for sulphide and neutralization potential (NP) in potentially acid generating humidity cell tests (HCT) to support the conclusion of the analyses within the FEIS.	
18	AANDC	AANDC TRC 67	AEM commits to provide within the FEIS, a description as to why the 30 week duration of the chemical leaching rate tests was sufficient to deplete carbonate NP, and to include a discussion on the tailings testing duration.	
19	AANDC	AANDC TRC 66	AEM commits to providing additional clarification to section 5.1 of the permafrost baseline report to describe the methodology used to calculate the depths at which permafrost 'opens'. AEM also commits to providing a discussion of the limitations of the methodology.	
20	AANDC	AANDC TRC 39 an	AEM commits to update the FEIS with its response to AANDC IR 32 as related to details on materials as part of AANDC's original request.	
21	AANDC		AEM commits to present the proposed monitoring of landfill condition (frozen or unfrozen) in the FEIS as stated in the response to AANDC IR 39.	
22	NRCan	NRCan TRC 18	AEM commits to do an additional interpretation of acid-base accounting (ABA) results based on carbonate neutralization potential (CaNP) and total sulphur, taking into consideration the presence of ankerite and siderite and to provide the interpretation within the FEIS.	Note that AEM has agreed/suggested to meet with Natural Recources Canada [NRCan] (and other interested parties that may have an interest in this topic) prior to submitting the FEIS to discuss the results of above commitments.
23	NRCan	NRCan TRC 19	AEM commits to do an additional, alternative calculation of the percentage of waste rock samples classified as potentially acid generating (PAG), uncertain and net acid generating (NAG) using CaNP and total sulphur values and describe how the updated values may impact the design of the waste rock storage area for the Discovery deposit and associated mitigation measures if necessary and provide the information within the FEIS.	Note that AEM has agreed/suggested to meet with NRCan (and other interested parties that may have an interest in this topic) prior to submitting the FEIS to discuss the results of above commitments.
24	NRCan	NRCan TRC 20	AEM commits to update its plan for the management of waste rock as necessary, to address the potential for oxidation/acid generation and metal leaching from waste rock for the FEIS.	Note that AEM has agreed/suggested to meet with NRCan (and other interested parties that may have an interest in this topic) prior to submitting the FEIS to discuss the results of above commitments.
25	NRCan		AEM commits to do an additional interpretation of the potential for acid generation from the tailings based on mineralogy and available buffering capacity, and reassess tailings management options as necessary and to provide the information within the FEIS.	Note that AEM has agreed/suggested to meet with NRCan (and other interested parties that may have an interest in this topic) prior to submitting the FEIS to discuss the results of above commitments.
26	NRCan	NRCan TRC 22 to 25 and EC TRC 24	AEM commits to provide details on the effluent water treatment options and constituent concentrations that may be achieved at end-of-pipe within the FEIS.	Note that AEM has agreed/suggested to meet with NRCan (and other interested parties that may have an interest in this topic) prior to submitting the FEIS to discuss the results of above commitments.

			Atmospheric Environment including Climate, Air Quality, Noise and Vibration	
27	KIA	KIA IR 17	AEM commits to provide additional rationale within the FEIS to support the Meliadine air quality model results for dust dispersion including a review of	
			dust modelling and monitoring results from the Meadowbank mine site as well as to provide a discussion of any results that it deems are not relevant to the proposed Meliadine project and rationale for excluding these.	
28	EC	EC TRC 8 and IR 133	AEM commits to review the reference provided by EC in IR #133 and to include information on greenhouse gases (GHG) that are applicable to the Meliadine site within the FEIS.	
29	EC	EC TRC 9	AEM will commit to provide EC with the requested input and control files used in the CALPUFF model and post processing utilities used to generate the air quality predictions presented in the Meliadine DEIS.	
30	NIRB		AEM commits to review its rationale regarding modelling scenarios for air quality and to provide a summary within the FEIS to explain why 2 pits operating concurrently was not included as a boundary condition.	
31	NIRB		AEM commits to provide justification for its differentiation of the operations fleet used during weekday versus weekend and frozen vs. unfrozen periods, within its analyses of air quality for the all weather access road including consideration of potential public use of the road within the FEIS.	
32	NIRB		AEM commits to provide clarification within the FEIS regarding its road management plan and specifically to clarify dust control measures that would be undertaken.	note: specifically along the all weather access road
33	KIA	KIA IR 26	AEM commits to provide an enhanced GHG reduction strategy as part of the project description within the FEIS.	
			Aquatic Environment including Water Management, Freshwater Environment, Hydrology, Hydrogeology and Mine R	Rock Characterization
34	KIA	KIA IR 13	AEM commits to review pathway analyses where no linkage is predicted and confirm prior to the FEIS that none were missed in the EIS document. If	
			any linkages were missed, AEM commits to providing discussion within the FEIS to ensure that pathways between mine activities and surface water have been effectively cut off through "environmental design features and mitigation".	
35	KIA	KIA IR 4 and 8.	AEM commits to provide a rationale within the FEIS as to why the existing climate historic record was used for the near future climate assessment and to include a comparison between the historical record and the 2020s climate model predictions. Depending on the results of this comparison, AEM will determine if modification to the conclusions and assessment is required for the FEIS.	
36	KIA	KIA IR 5 and 6		AEM has assessed the significance of valued ecosystemic components (VECs) and valued socio-economic components (VSECs) that are meaningful to water users, including cultural use such as drinking water or support of a fishery. KIA and AEM agree that it is necessary to document predicted changes in water by reference to the usual EA criteria such as magnitude, likelihood of spatial extent and duration but do not agree that significance can be assessed on its own merit. It should be linked to key properties that require protection for use by future generations. KIA and AEM also recognize that the change which AEM predicts in the FEIS can be usefully applied to adaptive management process during the water licence stage.

37	НТО		AEM commits to ensuring that water monitoring plans included within the FEIS and that they are put in place as described, should the project be allowed		
			to proceed.		
38	GN		AEM commits to conduct water quality monitoring in Meliadine River and to include this information along with baseline water quality data within the FEIS. Further, AEM will also include in the FEIS a commitment to consult with regulatory agencies in determining reference waterbodies (lake(s) and river(s)) to be used for the aquatics effects monitoring plan for the Type A Water Licence.	KIA offered to provide baseline data collected within Meliadine River over a 10 year period for use in AEM's baseline assessment.	
39	NIRB		AEM commits to review and include additional 2013 water quality data for Meliadine Lake within the FEIS or to provide a rationale as to why additional baseline for Meliadine Lake is not included in FEIS.		
40	AANDC		AEM will include in the FEIS a commitment to consider the potential impacts of permafrost or thawing in the design of contact water ponds for the Type A Water Licence.		
41	AANDC	•	AEM commits to provide its responses to AANDC IRs 5 through 9 as presented in responses to technical review comments 18, 19, 20, 21 and 22 within the FEIS.		
42	EC	EC TRC #24	AEM commits to providing a review of candidate effluent water treatment options that may be used to achieve reductions in concentrations of parameters of concern at end-of-pipe, including but not limited to major ions, sulphate, cyanide and metals within the FEIS.		EC accepts the difficulty in accurately estimating chemical load contributed from suspended solids at the final point of effluent. EC concurs with the AEM responses on mercury, silver and thallium and notes that cyanide degradation products can be addressed through effluent treatment. EC has received documents on the comparison of predicted waste rock leachate concentrations to Canadian Council of Ministers of Environment (CCME) guidelines.
43	NIRB	Related to Table 7.2-3 of volume 7	AEM commits to provide clarity in the FEIS regarding the pathway analyses for water quality.		
44	NIRB	Related to Table 7.3- 27 of Volume 7	AEM commits to review table 7.3-27 of the DEIS and to include appropriate cross-referencing within the FEIS where possible.		
45	KIA	KIA IR 19	AEM commits to provide the mass balance model for total dissolved solids, chloride and sodium within the FEIS.		
46	KIA		AEM commits to provide the framework for its water quality adaptive management plan within the FEIS. The detailed plan will be provided in support of the Water Licence application.		
47	KIA	KIA IR 22	AEM commits to provide a mass balance/dilution assessment of oxygen response to effluent discharge sufficient to demonstrate no significant adverse effects on dissolved oxygen within the FEIS.		
48	KIA	KIA IR 24	AEM commits to provide a summary of data regarding accumulation of sediment and sediment quality at diffuser outlets similar to the Meliadine project, if available within the FEIS.		
49	DFO		AEM commits to review the new <i>Fisheries Act</i> , specifically Schedule 1 and Section 7-13, Section 6, and available new DFO policy statements relating to the new Act. Also, AEM will review available new regulations, including new Aquatic Invasive Species Regulations, new MMER Regulations, and Marine Mammals Regulations, if in force at the time of preparation of the FEIS, and will incorporate applicable information and updated terminology into the FEIS and an updated Off-Setting Plan (formally called No Net Loss Plan). AEM will also include common and Inuktitut names of fish and provide photos within the FEIS.		

	Socio-Economic Environment and Assessment including Heritage Resources						
50	KIA		AEM commits to review the additional data provided by KIA in reference to the Socio-Economic Environment and include where appropriate within the FEIS. Where not included AEM will provide rationale for not including in the FEIS.				
51	GN	GN TRC 34	AEM commits to provide information on the mitigation measures that would address the following barriers: decreasing numbers of unemployed; limited education achievement; challenges of rotational work; and, limited participation by women in Volume 9.	Mitigation measures were described in supporting document (SD) 2: Socio-Economic Management Plan and would like this to be discussed in Volume 9, Section 9.4.3.1			
52	GN		AEM commits to provide additional information, in principal, on what plans AEM has for socio-economics during temporary closure of the mine within the FEIS, supporting document 2: Socio-Economic Management Plan.				
53	GN		As per the Road Management Plan Section 7.1 of Volume 7, AEM commits to regular inspections of the bridge constructed in 2012 on the lower Meliadine River to ensure that the natural flow of water is maintained at this specific location. AEM will report the results of the inspections to the Territorial Archaeologist. The timing of the inspections should coincide with the annual ice break up in the spring/early-summer. If archaeological sites within Iqaluqaarjuup Nunanga Territorial Park continue to be damaged by flooding in the future, appropriate protective measures will be developed to consider long-term solutions.				
54	GN	GN TRC 41	AEM will remove the third paragraph from Section 9.11.6 of Volume 9 regarding Cumulative Effects for archaeological feature types. Archaeological feature type representation will be considered on a case-by-case basis during the permitting process.				
55	GN	GN TRC 44	AEM commits to include a discussion within the FEIS regarding potential residual effects to cultural and archaeological resources in the project area using terminology consistent with the methodology used within the environmental assessment.				
56	AANDC	AANDC TRC 55	AEM commits to provide an update and inform the parties (six groups) outside the Nunavut Settlement Area and report the results of the consultation within the FEIS.				
57	AANDC	AANDC TRC 54	AEM commits to clarify the methodology used for selecting key community concerns within the FEIS.				
58	AANDC		AEM commits to report the details on the direct employment effect analysis, namely total payroll and payments to contractors in both the construction and operation phases based on the Meadowbank experience.				
59	AANDC	AANDC TRC 82	AEM commits to include an evaluation of the training programs planned for the Meliadine site and include any relevant information from lessons learned from the Meadowbank site in the FEIS.				
60	NIRB		AEM commits to include details regarding its proposed hunter harvest monitoring program similar to what has been developed for the Meadowbank project along the all-weather access road within the FEIS.				
61	NIRB		AEM commits to review Volume 9 of the DEIS and clarify the study areas for the assessment including the potentially impacted communities. The FEIS will be updated as required.				
62	NIRB		AEM commits to provide rationale for the definition of duration used in Volume 9 and for any differences between definitions used for the ecosystemic and socio-economic environments.				

63	NIRB		AEM commits to update the FEIS to provide references and clarification as requested during the Technical Meeting. Sections as follows: • s. 9.3.1.6.1 (p. 9-76): "All communities have a number of Anglican, Roman Catholic, Glad Tidings and/orThe remaining 1% of the population identifies as having another religion." - references required. • s. 9.3.5.3 (p. 9-105): "The cumulative effects on Individual, Family and Community Wellbeing were discussed in Section 9.6.8It is also possible that a critical mass of well-functioning individuals and families can act as role models to other members of the community." - clarification regarding the statements made in this section, and references to justify statements required. • s. 9.4.1.1 (p. 9-125): "Telecommunication in Nunavut relies on costlywith other internet service providers in the larger Nunavut communities." - references required. • s. 9.4.1.2 (p. 9-127): "Arviat had a population of 2331 in 2010. Population has grown by 16.7% per year since 2001" - reference required. • s. 9.4.1.2 (p. 9-128): "The housing shortage (there were reportedly 600 namesresistant staphylococcus aureus infections." - references for waiting list numbers; additional details from housing authorities regarding the numbers of people on various housing lists. • s. 9.4.1.2 (p. 9-128): "Chesterfield Inlet is also one of the oldest communities inconsidered by people who live there to be quiet and more traditional than others in the Kivalliq." - references required. • s. 9.4.1.2 (p. 9-130): "Land based activity is not asliuit identity is being challenged." - references required. • s. 9.4.1.2 (p. 9-129): "Most people, including addiction counselors andMany people in Baker Lake do not believe that alcohol abuse has increased in association with Meadowbank." - references required. • s. 9.6.4.7 (p. 9-236): "With regard to in-migration, differentother hamlets become more varied in their population and more accepting of diveristy." - references required. • s. 9.7.1.2.3 (p	
64	NIRB		AEM commit to review material related to alcohol and abuse related to change in shift with Meadowbank and address as necessary in the FEIS.	
65	AANDC	AANDC TRC 80	AEM commits to provide information on type of cross-cultural training that would be provided to employees at the Meliadine site and include information pertaining to how long an individual will need to be on site before receiving this type of training. Discussion to be provided within FEIS.	
66	GN		GN commits to work with AEM to discuss how best to arrange interviews with key informants in Rankin Inlet to assess the existing capacities of the health and education facilities and information to be provided in the FEIS.	

	Public Engagement and Incorporation of Inuit Qaujimajatuqangit						
67	KIA	KIA IR 01	AEM commits to provide additional information on how it incorporated Inuit Qaujimajatuqangit into the document and provide a summary in the FEIS.				
68	NIRB		AEM commits to update the FEIS to identify where traditional knowledge was used in the analyses of VECs. Terrestrial Environment including Wildlife, Migratory Birds, Species at Risk and Vegetation				
69	GN	and 25; EC TRCs 1, 4, 5, 6, 7; KIA IR 2, IR 3 and TRC 3; and	AEM will provide more detail within the Terrestrial Environment Management and Monitoring Plan (TEMMP) for the FEIS including the following: 1) Wildlife monitoring protocols including survey design and methods and integration with existing programs (e.g., GN caribou collaring); 2) Specific mitigation and management strategies as advised by GN-DoE, EC, Rankin Inlet-HTO and KIA; 3) Specific mitigation and management strategies with examples of "What-if" scenarios for dealing with migratory birds and raptors, and their nests, predator dens and caribou migration; 4) Human-wildlife conflict management plan; and 5) Mitigation and management specific to the all-weather access road (AWAR) road.	AEM has the option to consult with parties on the modifications implemented within the TEMMP prior to submission as part of the FEIS.			
70	GN	GN TRC 13	AEM will not include grizzly bears, wolverine and arctic fox as VECs in the FEIS, but AEM commits to undertake a den survey prior to construction of Project infrastructure and phase II of the road and other project infrastructure. In addition, AEM will include management strategies the management, mitigation and monitoring of these species within the TEMMP, specifically as part of the human-wildlife conflict management plan.				
71	GN	GN TRC 17	Provided AEM can acquire appropriate data (i.e., rate of annual expansion and density by management areas to calculate eastward expansion), AEM will predict range expansion densities towards the Project area and provide a discussion regarding future muskox distribution near the Project including a rationale for, and explicit inclusion of, muskox in the TEMMP but not as a formal VEC in the FEIS.	3			
72	GN	GN TRC 23	Provided AEM can acquire appropriate data (i.e., rate of annual expansion and density by management areas to calculate eastward expansion) for muskox, AEM commits that it will predict range expansion densities towards the Project area and provide a discussion regarding future muskox distribution near the Project and provide a rationale for inclusion in the TEMMP but not as a formal VEC in the FEIS.				
			Human Health and Risk Assessment				
70	TNIDD		Cumulative Effects Assessment				
73	NIRB		AEM will provide a graphic representation within the FEIS of the cumulative effects assessment that was completed.				
74	NIRB		AEM will clarify that its consideration of cumulative effects within the FEIS included the Qamanirjuaq caribou herd, and will update its cumulative effects assessment if required.	AEM agreed to consult with appropriate parties, e.g BQCMB, GN-DoE regarding caribou in the region and the range of the different herds.			

			Marine Environment and Marine Transportation	
75	EC	EC TRC 2 (125 as submitted)	AEM commits to include in its shipping contracts the setback distances as recommended by Environment Canada.	
76	EC	EC TRC 2 (125 as submitted)	AEM commits to make its best efforts to provide ship track data to NIRB for inclusion in its annual monitoring report for the Meliadine Project, if approved.	
77	GN	GN TRC 14	AEM will review the references related to occurrence of polar bears in the marine environment in particular known summer time concentrations along the shipping route and update the baseline information within FEIS as needed.	
78	GN	GN TRC 15	AEM will work with the GN and other agencies to acquire appropriate data related to marine mammal (e.g., polar bears, walrus) and marine bird distribution and density to assess worst case and best case scenarios should a fuel release or spill event occur in the marine environment along the shipping route. Using the available data where applicable, AEM will for the FEIS: 1) highlight rough densities of marine mammals (e.g., polar bears) along the shipping routes; 2) justify the likelihood of major spills (i.e., justify one in a hundred years), and provide rationale around the parameters of magnitude (i.e., location of spill, volume of spill, area of dispersion, type of spill, response time); 3) identify worst case scenario (i.e., highest density of polar bears, high volume, worst type of liquid) and best case scenario (i.e., lowest density of marine mammals, low volume, lightest type of liquid); and 4) where appropriate, update the impact assessment within the FEIS.	
79	NIRB	Related to Section 8.1.2 of Volume 8	AEM commits to clarify statement in Section 8.1.2 within the DEIS "RSA (regional study area) also includes waters, communities, and portions of Nunavut and other regions of Canada that may be relevant to the assessment of widespread effects of the projectSubsequently, transboundary impacts are incorporated into the effects assessment." within the FEIS.	
80	NIRB	Related to Section 8.3.7.2.1 of Volume 8	AEM commits to clarify statement in section 8.3.7.2.1 within the DEIS which states "At the Project levelnatural recruitment, with an unlikely probability of occurrence given the application of proposed mitigation" within the FEIS. This clarification will include a description of "natural recruitment" and how this would work to reverse the effects of a major fuel spill and evidence that this would work in an arctic environment.	
81	NIRB	Related to Section 8.3.11 of Volume 8	AEM commits to providing within the FEIS, clarification/justification regarding its statement in the DEIS Section 8.3.11 which states "no environmental monitoring is proposed for marine fish and fish habitat."	
			Accidents and Malfunctions	
82	AANDC	AANDC TRC 52	AEM commits to ensure that its Emergency Response Plan includes the all weather access road and Itivia area as presented within the FEIS.	
83	NIRB		AEM commits to including within its Emergency Response Plan as presented in the FEIS, clarification regarding planned location and mobilization of emergency response equipment and emergency response personnel, and procedures for responding to incidents along the all weather access road as well as at Itivia facilities. AEM will describe its plans to consult with the Hamlet of Rankin Inlet regarding the potential coordination of emergency response efforts and training for incidents at Rankin Inlet and Itivia facilities.	