Attachment 3.3

Management Plan Update Concordance

(16 Pages)

Baffinland Phase 2 - Management Plans Required for Water Licence Application Concordance Table

Commitment ID#	Commitment Source	Comment ID	Management Plan	Description of Update/ Commitment	Section Reference	Notes
21	TSD 28	N/A	Borrow Pit and Quarry Management Plan	Update tables and figures with new quarry site information.	Appendix E	
247	Technical Comments	ECCC 3.20	Borrow Pit and Quarry Management Plan	The acid rock drainage testing protocol, which was appended to the Borrow Pit and Quarry Management Plan, will be reassessed and provided to regulators before quarries are permitted.	Appendix B	To be provided prior to permitting of quarries.
61	TSD 28	N/A	Emergency Response Plan	Provide updated site plans. New risks to be considered including: collisions along road/rail, stranding due to rail accident.	Appendix B, Section 4.2.15	
62	TSD 28	N/A	Emergency Response Plan	Remove 'Future revisions to the Emergency Response Plan will include references to the Railway Emergency Plan' and add reference to the Railway Emergency Plan.	Forward	
63	TSD 28	N/A	Emergency Response Plan	Add Railway Emergency Response Plan to Baffinland Emergency Response figure. Add Section 2.2.6 which will describe Railway Emergency Response Plan.	Sections 2.2 and 2.2.6	
64	TSD 28	N/A	Emergency Response Plan	Add sections on probable emergencies that may occur with the railway (e.g., derailments).	Section 4.2.15	
65	TSD 28	N/A	Emergency Response Plan	Add additional emergency response equipment that will be available for incidents on the railway.	Section 7.1.4	Additional detail will be provided in the Railway Emergency Response Plan. These sections will be aligned with this plan during finalization.
66	TSD 28	N/A	Emergency Response Plan	Add information on how railway occurrences must be reported as per Transportation Safety Board Regulations Section 5(1).	Section 8.3	
67	TSD 28	N/A	Emergency Response Plan	Add any new Project Certificate conditions applicable to Emergency Response that have been added to the amended Project Certificate.	N/A	Post-approval Phase 2 Proposal
68	TSD 28	N/A	Emergency Response Plan	Add reference to regulatory documents related to railway.	Appendix A.2	

Commitment ID#	Commitment Source	Comment ID	Management Plan	Description of Update/ Commitment	Section Reference	Notes
1	TSD 28	N/A	EPP	The construction and operation of the railway will require updates related to local land use	Sections 2.2, 2.12, 2.19	
5	TSD 28	N/A	EPP	The construction and operation of the railway will require updates related to local land use, and drilling, blasting, and crushing.	Section 2.2	
6	TSD 28	N/A	EPP	Mitigation to be added: Slopes will be flattened as necessary when being constructed in ice-rich or thaw sensitive materials, and will be protected with thermal and erosion protection material, if required. Excavations will be minimized, especially in areas of known ice-rich permafrost. Prior to embankment construction, ground disturbance will be minimized and vegetative or organic cover left in place to provide the maximum protection of the thermal regime. In areas where excavation is required, the foundations will be over excavated and backfilled with 0.8 m of non-freeze/thaw susceptible fill to minimize frost heaving and settlement. Slopes will be flattened as necessary when being constructed in ice-rich or thaw sensitive materials, and will be protected with erosion protection material, if required. This will include a geotextile layer as well as an engineered backfill. For high embankment fills on ice-rich materials, the side slopes may be flattened significantly or stabilization berms constructed to reduce the creep deformation potential. For construction during the summer, woven geotextile may be required over unstable ground. Proper runoff collection and diversions drainage systems will be used to control runoff and erosion from affecting the modified thermal regime. As part of basic design, thermal modeling will be conducted for each typical embankment condition and configuration to identify the actual permafrost protection measures required and to predict the nature of the active layer and the effect that construction will have on the thermal regime over the life of the Project. The thermal modeling will incorporate potential warming trends resulting from climate change based on world-recognized global warming scenarios. Thaw settlements and surface sloughing of cut slopes is expected, particularly during the thaw seasons immediately following construction. The behaviour of both cut slopes and embankment fills will be monitored throughout these thaw seasons and remedial measures will be implemented as necessary. For example, it is expected that many of the cut slopes will need to be monitored as thaw settlements occur. Silt fences and other erosion protection measures will be installed as necessary to prevent siltation of adjacent drainage courses and water bodies.	Section 2.3	

Commitment ID#	Commitment Source	Comment ID	Management Plan	Description of Update/ Commitment	Section Reference	Notes
7	TSD 28	N/A	EPP	Add measures to minimize changes to the hydrologic drainage patterns.	2.9, 2.17, 2.25, 2.27	
12	TSD 28	N/A	EPP	Add the following design considerations for culvert installation/replacement: •Install culverts at the same slope as the existing stream, where feasible. •Minimize culvert lengths. •Culverts with lengths that exceed 50 m may be considered barriers to fish passage due to darkness. Examine and consider methods to provide light inside culverts, where applicable. •Compare culvert velocities to the velocity in the existing watercourse to determine fish passage potential. This information can be used to reassess design velocities under proposed conditions with the culvert installed. With the channelization of flows and conveyance in culverts, the velocity of the flows may increase. This may be mitigated by placing rocks and boulders inside the culverts (stream replication) to provide greater friction, thereby reducing velocities and increasing the flow depth and to provide resting locations for fish. Boulders may be bolted into place. In culverts on steep slopes, high velocities may result in the movement of rocks inside the culvert. At these locations, install baffles, baffle inserts or weirs to: •assist in keeping rocks inside the culvert; •maintain and increase roughness in order to reduce velocities; and •provide additional resting locations for fish as they move through the culvert.	Section 2.18	
13	TSD 28	N/A	EPP	The following safety features will increase the visibility of the crossings and increase safe use of the road: • Early warning signs will warn road users of an approaching railway crossing and stop sign ahead. • A combined stop and railway crossing sign will be located on either side of the crossings. • Crossing timbers will ease vehicle, ATV, and snowmobile crossing. • Instructional bulletins regarding the rail crossings will be posted in English and Inuktitut at each end of the Tote Road.	Section 2.2	
14	TSD 28	N/A	EPP	Thaw settlements and surface sloughing of cut slopes is expected, particularly during the thaw seasons immediately following construction. The behaviour of both cut slopes and embankment fills will be monitored throughout these thaw seasons and remedial measures will be implemented as necessary. For example, it is expected that many of the cut slopes will need to be monitored as thaw settlements occur. Silt fences and other	Section 2.3	

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				erosion protection measures will be installed as necessary to prevent siltation of adjacent drainage courses and water bodies.		
15	TSD 28	N/A	EPP	Excavations will be reduced, especially in areas of known ice-rich permafrost.	Section 2.3	
16	TSD 28	N/A	EPP	In areas where excavation is required, the foundations will be over excavated and backfilled with 1.5 m of non-freeze/thaw susceptible fill to reduce frost heaving and settlement. For high embankment fills on ice-rich materials, the side slopes may be flattened substantially or stabilization berms constructed to reduce the creep deformation potential. To reduce the rate of creep settlement, embankments thicker than three metres should be constructed with side slopes no steeper than 5H:1V or with toe buttresses. For construction during the summer, woven geotextile may be required over unstable ground.	Section 2.3	
17	TSD 28	N/A	EPP	Proper runoff collection and diversion drainage systems will be used to control runoff and erosion from affecting the modified thermal regime.	Section 2.3	
18	TSD 28	N/A	EPP	An Ore Dock Construction Environmental Plan will be prepared to meet Fisheries Act Authorization requirements and implemented during construction of marine facilities in Milne Inlet. Silt curtains will be installed around localized construction areas during the ice break-up period and around the full perimeter of construction including removed sediment disposal area during the open-water season. Silt curtains will be installed prior to any in-water work in order to encapsulate the entire construction footprint and to reduce disturbance to the marine environment in the surrounding area. Construction of concrete components of the dock will consist of installation of prefabricated concrete elements whenever possible. If in-situ concrete production is required, works will be conducted in the way to avoid contact of cement and uncured concrete with surrounding water. The majority of construction work, particularly in shallow water (e.g., access causeway), will take place in winter as land-fast ice is formed. It is expected that, as construction gradually moves offshore, ice will thicken and become grounded. Therefore, ice surrounding construction areas will act as a barrier limiting particulate deposition and spills in surrounding water. To reduce disturbance to the marine environment, the ore dock components will be constructed sequentially, moving from onshore to offshore; the causeway will be constructed in small sections, placing protective layers and armoring immediately after	Section 2.35	

Commitment ID#	Commitment Source	Comment ID	Management Plan	Description of Update/ Commitment	Section Reference	Notes
				core material is placed to minimize erosion. Backfilling of the birth will only occur after a sufficient length of quay is installed so the fill remains within the structure footprint and no material is dispersed. Machine operation in water will be reduced, e.g., piling and filling equipment will operate on the constructed sections of the ore dock and will not enter the water. Use of a suction pump for localized removal of soft sediment layer will reduce dispersal of re-suspended sediment in water. Disposal of removed sediment will be conducted in accordance in a way to minimize effects on water and sediment quality. The material will be removed using a suction pump, which will reduce dispersal of re-suspended sediment in water. Most acoustically sensitive fish will avoid the immediate impact area once impact pile driving is underway. Operators are encouraged to take advantage of this behaviour by adopting a ramp-up / soft-start procedure when operating the impact hammer, when this is technically feasible. A ramp-up procedure consists of initial activation of the equipment using the lowest energy source / pulse and gradually increasing the intensity of the sound until it reaches the required intensity, thus allowing time and incentive for acoustically sensitive fish to leave the area prior to operating the impact driver at full power.		
19	TSD 28	N/A	EPP	Concurrent impact pile driving activities will be minimized when practicable (e.g., avoiding multiple pile driving activities at the same time). Where multiple underwater noise generating activities are planned, they will be sequenced where possible to minimize acoustic impacts. Underwater noise generated during impact pile driving will not exceed 207 dB re 1µPa2·s (SPLPk) at a distance of 200 m from the source. If the sound level exceeds 30 kPa at a distance of 10 m from the source, measures will be undertaken to reduce either the intensity of the sound generated or the level of sound propagation through the water column. The appropriate measure will be chosen based on practicality and effectiveness and may include: The placement of bubble curtains around the wetted pile during impact driving. Bubble curtains are proven to be an effective mitigation measure for dampening underwater noise generated by pile driving, and are reported to reduce peak pressures by up to 30 dB (Buehler et al. 2015). The use of a vibratory hammer in place of an impact hammer for pile driving. Impact pile driving activities will be temporarily suspended if aggregations of fish are spotted within the immediate work area or if any fish spawn is observed attached to equipment or structures in the water.	Section 2.35	

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				Impact pile driving will be scheduled when practical to avoid sensitive fish periods such as fish spawning and migratory periods. During in water construction, a silt curtain will be installed in order to isolate the footprint of the proposed ore dock. The curtain will be designed and procured in sections which relate to the water depth in order to remain buoyant and extend to the ocean floor with sufficient slack. Prior to construction work within the silt curtain area, efforts will be made to salvage fish and release them alive outside of the work area. The silt curtain will also serve as a deterrent to fish re-entering the isolated work area. Construction activities will be managed through development of the Environmental Protection and Monitoring Plan, outlining specific procedures to avoid or reduce effects on the marine environment. Proposed mitigation measures during construction will include the installation of silt curtains around in-water works to minimize disturbance to the surrounding marine environment, turbidity monitoring and underwater noise monitoring during pile installation and dredging, and environmental monitoring with regular inspection audits to verify effectiveness of mitigation measures and compliance of Project activities with existing permits and authorizations. Proposed mitigation measures included the use of a bubble curtain to reduce peak sound pressure levels emitted from the pile (during pile driving).		
20	TSD 28	N/A	EPP	The proposed ore dock will be constructed in succession to limit disturbance to the natural marine environment, with a focus on in-water activities and producing an effective structure for long term, low maintenance operation. The dock face will be oriented parallel to the existing seabed contours to minimize dredging activities. The proposed ore dock will be constructed during the ice-covered season, when ringed seal would be the only marine mammal species present in Southern Milne Inlet. A ramp-up procedure consists of initial activation of the equipment using the lowest energy source / pulse and gradually increasing the intensity of the sound until it reaches the required intensity, thus allowing time and incentive for marine mammals to leave the immediate zone of potential injury before the pile driver is operating at full power. Installation of a bubble curtain around the wetted pile to dampen sound transmission through water during active pile driving. During all pile driving activities, marine mammal monitoring will be undertaken by a qualified and experienced Marine Mammal Observer (MMO), with all sightings communicated to the piling contractor.	Section 2.35	

Commitment ID#	Commitment Source	Comment ID	Management Plan	Description of Update/ Commitment	Section Reference	Notes
				Implementation of a 1-km Marine Mammal Exclusion Zone – defined as the zone within which MM may be potentially exposed to sound levels above the injury threshold criteria (180 dB re 1 µPa SPLrms for cetaceans and 190 dB re 1 µPa SPLrms for pinnipeds). The occurrence of a marine mammal within the exclusion zone will trigger specific mitigation actions (e.g., shut-downs) such to avoid potential for physical injury to animals from pile driving noise. Shut-down procedures –pile driving will be temporarily suspended when a marine mammal enters within the exclusion zone until which time it moves outside the safety zone. Implementation of a 30 minute pre-operational (pre-ops) search for marine mammals prior to start-up of pile driving. This would consist of a visual scan of the water by the MMO to determine that no marine mammals are present within the exclusion zone. If an animal is spotted within the exclusion zone during the pre-ops search, the ramp-up procedure will be delayed 20 minutes from the time the marine mammal has left the exclusion zone, or was last sighted in this zone. The MMO will periodically verify underwater sound levels in the field using a hydrophone and a real-time sound monitor to confirm that sound levels at the modeled exclusion zone radius are below the established injury thresholds for marine mammals. If sound levels are shown to exceed the injury thresholds at the exclusion zone radius, the exclusion zone boundary will be adjusted accordingly. Vessels will reduce speeds to a maximum of 9 knots when transiting along the established shipping corridor, and 5 knots when operating in Milne Port, thus reducing the overall noise output generated by ship propulsion and the potential for ship strikes.		
184	Information Requests	ECCC 23	EPP	Updates for dust management/suppression during construction and operation of North Railway, and water quality monitoring during construction of the ore dock	Sections 2.28, 2.4.2, 2.35.2	
208	Technical Comments	TC 29	EPP	Baffinland acknowledges that Milne Inlet is not an Occasional-Use Marine Facility (OUMF), but is a certified Marine Facility. Reference to this obsolete permit/approval will be removed from the EPP.	Table 1-1	
32	TSD 28	N/A	Fresh Water Supply, Sewage and Wastewater Management Plan	Describe water supply to temporary camps.	Section 4.3.3	

Commitment ID#	Commitment Source	Comment ID	Management Plan	Description of Update/ Commitment	Section Reference	Notes
33	TSD 28	N/A	Fresh Water Supply, Sewage and Wastewater Management Plan	Describe sewage disposal plans for temporary camps.	Section 5.4.3	
34	TSD 28	N/A	Fresh Water Supply, Sewage and Wastewater Management Plan	Add the additional dust suppression water sources within the Northern Transportation Corridor.	Table 4-2	
35	TSD 28	N/A	Fresh Water Supply, Sewage and Wastewater Management Plan	Add that monthly cumulative withdrawals from lakes represent less than 10% of the monthly outflow, unless site-specific conditions indicate that a greater water withdrawal will not be significant in the context of fish habitat (i.e., Camp Lake).	Section 4.2	
36	TSD 28	N/A	Fresh Water Supply, Sewage and Wastewater Management Plan	Add that stream water take stations are selected to be sufficiently large such that the instantaneous water withdrawal rate does not exceed 20% of the 10-year monthly low flow condition if a stream is fish-bearing, or 40% of the 10-year monthly low flow condition if the stream is not fish-bearing.	Section 4.2	
37	TSD 28	N/A	Fresh Water Supply, Sewage and Wastewater Management Plan	Add mitigation that at select streams where the water take exceeds than the applicable threshold under mean flow conditions but not under the 10-year low flow, water withdrawals are permitted only during the months of June and July.	Section 4.2	
38	TSD 28	N/A	Fresh Water Supply, Sewage and Wastewater Management Plan	Update to reflect the changes in water management associated with ore and product stockpiles, including the use of the temporary ore transfer stormwater pond as a water source for dust suppression.	Sections 7.2, 7.3 and 7.4	
39	TSD 28	N/A	Fresh Water Supply, Sewage and Wastewater Management Plan	Update to include the addition of the Milne Port Landfill and associated water quality monitoring locations.	Appendix B	
40	TSD 28	N/A	Fresh Water Supply, Sewage and	Update to reflect new infrastructure and water quality monitoring locations.	Appendix B	

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			Wastewater Management Plan			
41	TSD 28	N/A	Fresh Water Supply, Sewage and Wastewater Management Plan	Update to reflect new infrastructure and water quality monitoring locations.	Appendix C	
47	TSD 28	N/A	Hazardous Materials and Hazardous Waste Management Plan	Provide updated site layout figures identifying hazardous waste storage facilities.	Appendix B	
48	TSD 28	N/A	Hazardous Materials and Hazardous Waste Management Plan	Update to reflect new quantities of ammonium nitrate and explosives.	Section 3.1.2	
49	TSD 28	N/A	Hazardous Materials and Hazardous Waste Management Plan	Update roles and responsibilities for Project departments and personnel related to Phase 2.	Section 5	
50	TSD 28	N/A	Hazardous Materials and Hazardous Waste Management Plan	Update to reflect terms and conditions in amended Type 'A' Water Licence and Project Certificate.	Section 1.1	
51	TSD 28	N/A	Hazardous Materials and Hazardous Waste Management Plan	Update to reflect new Project facilities and infrastructure.	Appendix B	
202	Technical Comments	TC 22	Hazardous Materials and Hazardous Waste Management Plan	Change language on Page 797, Section 3.1, 4th paragraph to: It is recommended that the language above be changed to the following: In Canada, the production, storage, and use of AN and explosive materials are subject to strict precautionary measures under the Explosives Act and Regulations, and the	Section 3.1	

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				Ammonium Nitrate Storage Facilities Regulations. Explosives are subject to the Transportation of Dangerous Act and Regulations during transportation via all modes.		
203	Technical Comments	TC 23	Hazardous Materials and Hazardous Waste Management Plan	Refer to the Safety Data Sheets for classification of Drums-empty and Drums-Residue containers and update the General Management Method	Table 4-2	
22	TSD 28	N/A	Interim Closure and Reclamation Plan	Update to include new Project components and infrastructure.	Sections 1, 4, 5, Appendix A.	
23	TSD 28	N/A	Interim Closure and Reclamation Plan	Update to include North Rail, consistent with the Closure Objectives and Criteria for the South Rail already considered.	Sections 1, 2.1, 4, 5, 8.1, 9, 9.4	
24	TSD 28	N/A	Interim Closure and Reclamation Plan	Update to include new Project components and infrastructure.	Sections 1, 4, 5, Appendix A.	
25	TSD 28	N/A	Interim Closure and Reclamation Plan	Update to include new Project components and infrastructure.	Sections 1, 4, 5, Appendix A.	
26	TSD 28	N/A	Interim Closure and Reclamation Plan	Baffinland will submit a revised version of the ICRP within 60 days following approval of the requested water licence amendment, in accordance to Part J, Item 2 of the Licence. In accordance to Part C of the Licence, Baffinland will update the security requirements for the Project annually, with necessary adjustments accounted for in the results of the Annual Security Review process.	N/A	Post-approval Phase 2 Proposal
27	TSD 28	N/A	Interim Closure and Reclamation Plan	Update to include new Project components and infrastructure.	Sections 1, 4, 5, Appendix A.	
149	Information Requests	ECCC 21	Interim Closure and Reclamation Plan	References to the Metal Mining Effluent Regulations (MMER) under the *Fisheries Act* will be updated to refer to the current Metal and Diamond Mining Effluent Regulations (MDMER)	Sections 2.2.3, 3.3.2, 3.3.3, 5.1.1, 5.2.1, 5.2.2, 7.3.3, 7.3.8, 9.5.1, 12.2,and Appendix D and H	
52	TSD 28	N/A	Life of Mine Waste Rock Management Plan	Quantities of waste rock generated over the mine life and the phasing of waste rock deposition over time will be updated to reflect the higher production rate associated with the Phase 2 Proposal.	N/A	Updated waste rock quantities were provided in response to technical comment QIA 29

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						(March 2019). No updates to the plan required for Phase 2 at the present time.
147	Information Requests	ECCC 21	Life of Mine Waste Rock Management Plan	References to the Metal Mining Effluent Regulations (MMER) under the *Fisheries Act* will be updated to refer to the current Metal and Diamond Mining Effluent Regulations (MDMER)	N/A	No updates to the plan required for Phase 2 at the present time. References will be updated during next revision of plan.
231	Technical Comments	QIA 27	Life of Mine Waste Rock Management Plan	The thickness of PAG and non-PAG placement within the Waste Rock Facility will continue to be evaluated through updates to the Waste Rock Management Plans, which will incorporate the findings of ongoing thermal monitoring and modelling at the facility.	N/A	No updates to the plan required for Phase 2 at the present time. References will be updated during next revision of plan.
151	Information Requests	ECCC 21	Phase 1 Waste Rock Management Plan	References to the Metal Mining Effluent Regulations (MMER) under the *Fisheries Act* will be updated to refer to the current Metal and Diamond Mining Effluent Regulations (MDMER)	N/A	Updates to this plan are progressing parallel to the Phase 2 review and will be provided in December 2019.
196	Technical Comments	CIRNAC 06	Phase 1 Waste Rock Management Plan	Provide relevant updates to closure strategies for the Waste Rock Facility	N/A	Updates to this plan are progressing parallel to the Phase 2 review and will be provided in December 2019.
230	Technical Comments	QIA 27	Phase 1 Waste Rock Management Plan	The thickness of PAG and non-PAG placement within the Waste Rock Facility will continue to be evaluated through updates to the Waste Rock Management Plans, which will incorporate the findings of ongoing thermal monitoring and modelling at the facility.	N/A	Updates to this plan are progressing parallel to the Phase 2 review and will be provided in December 2019.
257	Technical Meetings	CIRNAC 09	Phase 1 Waste Rock Management Plan	The Proponent commits to reassess the NPR inputs and criteria used for classification of waste rock and update the Phase 1 Waste Rock Management Plan and submit for review through the Nunavut Water Board Process.	N/A	Updates to this plan are progressing parallel to the Phase 2 review and will be provided in December 2019.
69	TSD 28	N/A	Spill Contingency Plan	Update to include the location and details of new fuel storage and new spill response equipment.	Section 7	
70	TSD 28	N/A	Spill Contingency Plan	Update to reflect new Project facilities and infrastructure.	Appendix A	

Commitment ID#	Commitment Source	Comment ID	Management Plan	Description of Update/ Commitment	Section Reference	Notes
71	TSD 28	N/A	Spill Contingency Plan	Update to include rail-based emergency response.	Sections 7.1.1, 7.4.1	
72	TSD 28	N/A	Spill Contingency Plan	Update to include updated fuel storage capacities.	Table 7-1	Additional detail will be provided in the Railway Emergency Response Plan. These sections will be aligned with this plan during finalization.
73	TSD 28	N/A	Spill Contingency Plan	Update to include current explosives storage quantities.	Table 7-2	
74	TSD 28	N/A	Spill Contingency Plan	Add detail on potential scenario: Railway Lubricants/Oil Spill.	Section 7.4.1	
75	TSD 28	N/A	Spill Contingency Plan	Update reporting requirements to include Transportation Safety Board reporting requirements.	Section 8, Appendix F	Additional detail will be provided in the Railway Emergency Response Plan. This section will be aligned with this plan during finalization.
76	TSD 28	N/A	Spill Contingency Plan	Add rail-based emergency response vehicles and spill kit supplies to inventory.	Appendix B	
77	TSD 28	N/A	Spill Contingency Plan	Add any additional chemicals that will be used for railway operations to the Safety Data Sheet (SDS) inventory.	Appendix C	Additional detail will be provided in the Railway Emergency Response Plan. These sections will be aligned with this plan during finalization.
241	Technical Comments	CIRNAC 10	Spill Contingency Plan	The sewage spill scenarios presented in Section 7.3 of the Spill Contingency Plan will be reviewed to ensure that the volumes of sewage accurately reflect the Phase 2 Proposal.	Section 7.3	
242	Technical Comments	CIRNAC 10	Spill Contingency Plan	Emergency response equipment will be updated as required.	Appendix B	

Commitment ID#	Commitment Source	Comment ID	Management Plan	Description of Update/ Commitment	Section Reference	Notes
90	TSD 28	N/A	Surface Water and Aquatic Ecosystems Management Plan	Update to describe the Phase 2 Proposal components and activities that interact with surface water quantity and water quality including mitigation measures to address the effects on streams receiving diverted flows, and mitigation measures to address fish passage at select culvert crossings along the railway.	Sections 5 and 6	
91	TSD 28	N/A	Surface Water and Aquatic Ecosystems Management Plan	Update mitigation measures for exposed soils, sedimentation, erosion, dust suppression, stream crossings, flow diversions, and fish habitat based on activities and components in the Phase 2 Proposal. Mitigation measures to be updated/added include: •In-stream work will not be conducted during the restricted activity window, September 1 through June 30, where applicable (i.e., where spawning habitat is present or at sites where fall spawning movements are occurring such as at the bridge crossing sites CV-15-5, CV-70-3, and CV-85-3) to avoid effects on Arctic Char spawning and egg incubation. •Work in watercourses will be conducted in isolation of surface waters, if flow is present. •If dewatering is required, salvage fish prior to dewatering and release to adjacent surface waters; if water is pumped from within a cofferdam prior to fish salvage, screens meeting criteria set out by DFO will be used. •Preserve low vegetative cover within 100 metres (m) of the crossing unless effective erosion and sediment control are in place to protect water quality. •Implement measures as soon as possible to stabilize banks disturbed by construction to avoid erosion or sediment releases to the water. Re-vegetation with natural vegetation is the preferred approach. •Implement measures for managing water flowing onto the site, as well as water being pumped/diverted from the site, such that sediment is filtered out prior to the water entering the waterbody (e.g., by discharging water to a vegetated area). •Deposit all dredged material in a manner to prevent its re-entry into the watercourse. •Stabilize slopes with rocks, geotextiles, and/or hydraulic seed and mulch.	Section 6.3.3	
92	TSD 28	N/A	Surface Water and Aquatic Ecosystems Management Plan	Update mitigation measures for exposed soils, sedimentation, erosion, dust suppression, stream crossings, flow diversions, and fish habitat based on activities and components in the Phase 2 Proposal. Mitigation measures to be updated/added include •Fill material placed below the high water level within the waterbody's flood plain will be either erosion resistant or protected from erosion and only clean fill will be used. •No waste material resulting from work activities will be left in a manner such that it can enter the water (e.g., by being left on the ice).	Section 6.3	

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				•Machinery will be washed, refueled and serviced, and fuel and other materials will be stored in such a way as to prevent any deleterious substances from entering the water. Such activities typically occur at least 50 m from the high water mark. -machinery will arrive at site in a clean condition and be maintained free of fluid leaks, invasive species and noxious weeds. •Limit fording of the watercourse by machinery to a one-time event (i.e., over and back), and only if no alternative crossing method is available. If repeated crossings of the watercourse are required, a temporary crossing structure will be constructed. -design mitigation for potential effects of increased flows on fish habitat include channel widening; regrading, construction of habitat features (in fish bearing streams); and channel stabilization. •Install culverts at the same slope as the existing stream, where feasible. •Minimize culvert lengths. •Culverts with lengths that exceed 50 m may be considered barriers to fish passage due to darkness. Examine and consider methods to provide light inside culverts, where applicable. •Compare culvert velocities to the velocity in the existing watercourse to determine fish passage potential. This information can be used to reassess design velocities under proposed conditions with the culvert installed. With the channelization of flows and conveyance in culverts, the velocity of the flows may increase. This may be mitigated by placing rocks and boulders inside the culverts (stream replication) to provide greater friction, thereby reducing velocities and increasing the flow depth and to provide resting locations for fish. Boulders may be bolted into place.		
93	TSD 28	N/A	Surface Water and Aquatic Ecosystems Management Plan	Update regional hydrology and peak flow estimates.	Section 3.3	
94	TSD 28	N/A	Surface Water and Aquatic Ecosystems Management Plan	Update water management plans for site drainage, laydowns, soil stockpiles, rock cuts, quarries, mine effluent, and dust suppression. Key issues include management of contact water from construction and operations.	Section 10.2.3	
98	TSD 28	N/A	Surface Water and Aquatic Ecosystems Management Plan	Add water management plans for laydowns, soil stockpiles, soil disposal areas, rock cuts, quarries, flow diversions, watercourse crossings, and water takes for dust suppression. Key issues include maintaining minimum flows for fish, fish passage at culverts, and management of contact water and dust from construction and operations. Includes mitigation measures to address the effects on streams receiving diverted flows,	Section 10.2.3	

Commitment ID#	Commitment Source	Comment ID	Management Plan	Description of Update/ Commitment	Section Reference	Notes
				and mitigation measures to address fish passage at select culvert crossings along the railway.		
99	TSD 28	N/A	Surface Water and Aquatic Ecosystems Management Plan	Add monitoring during construction and operation of the North Railway, and where applicable, at new or relocated stream crossings along the Tote Road, to assess fish passage at fish-bearing stream crossings.	Section 10.2.3.2	
100	TSD 28	N/A	Surface Water and Aquatic Ecosystems Management Plan	A survey of the Camp Lake outflow and at water withdrawal site BG32 is recommended in the first year following Project approval in late summer/fall when water withdrawals occur and during a low flow event to ensure there is no stranding of Arctic Char. In the event that stranding is observed, a fish salvage would be undertaken to relocate stranded fish to a local waterbody.	Section 10.2.4.4	
101	TSD 28	N/A	Surface Water and Aquatic Ecosystems Management Plan	Update monitoring plan to include post-construction monitoring for low risk flow diversions.	Section 10.2.3.2	
170	Information Requests	ECCC WL 02	Surface Water and Aquatic Ecosystems Management Plan	Provide mean flows for streamflow record (not just 2015 flows)	N/A	
171	Information Requests	ECCC WL 02	Surface Water and Aquatic Ecosystems Management Plan	Update stormwater management to reflect Phase 2 and the addition of the, North Railway	Section 7.3	This section was removed from the plan during operational updates.
172	Information Requests	ECCC WL 02	Surface Water and Aquatic Ecosystems Management Plan	Add routine inspections for railway.	Section 10.1	
173	Information Requests	ECCC WL 02	Surface Water and Aquatic Ecosystems Management Plan	Add new water monitoring stations.	Section 10.2.4.1	
174	Information Requests	ECCC WL 02	Surface Water and Aquatic Ecosystems Management Plan	Remove 2016 work plan details.	N/A	

Commitment ID#	Commitment Source	Comment ID	Management Plan	Description of Update/ Commitment	Section Reference	Notes
175	Information Requests	ECCC WL 02	Surface Water and Aquatic Ecosystems Management Plan	Update with water balance PFDs.	Appendix A	2016 work plan removed from plan
176	Information Requests	ECCC WL 02	Surface Water and Aquatic Ecosystems Management Plan	Update site layouts showing SNP stations.	Appendix B	
46	TSD 28	N/A	Waste Management Plan	Update to include new landfill facility at Milne Port	Appendix C	
204	Technical Comments	TC 24	Waste Management Plan	Include documentation related to all hazardous wastes subject to the TDG Regulations in the information reported annually. This requirement will be added to the reporting requirements in the management plan.	Table 3-2	