

SCHEDULES

Schedule 1

Freshwater Intakes and Volumes

SCHEDULE 1 - FRESHWATER INTAKE AND VOLUMES

CAMP / SITE	SNP MONITORING ID	INTAKE	COORDINATES LAT/LONG	CONSTRUCTION PHASE		OPERATION PHASE		
				Volume (m ³ /day)	Combined Volume (m ³ /yr)	Domestic Volume (m ³ /day)	Industrial Volume (m ³ /day)	Combined Volume (m ³ /yr)
Milne Port	MP-MRY-2	Phillips Creek (summer)	71.780658 -80.377746	68.5	25,000	14.8	16.2	31
	MP-MRY-3	Km 32 Lake (winter)	71.667202 -80.586877					
Mine Site	MS-MRY-1	Camp Lake	71.327479 -79.381779	657.5	240,000	203.8	151.6	355.4
Steensby (Port)	SP-08	ST 347 Lake (permanent camp)	70.330959 -78.427808	435.8	155,000	101	142.6	243.6
	SP-09	3 Km Lake (dust suppression & other minor uses)	70.289537 -78.430393					
Ravn River Area	TBD	Ravn Camp Lake	71.145367 -78.379005	145.2	53,000	-	-	-
Mid-Rail Area	TBD	Nivek Lake (summer) Ravn Camp Lake (winter)	70.972722 -78.371882	79.5	29,000	-	-	-
Cockburn Lake Tunnels Camp	TBD	Cockburn Lake	70.588740 -78.198503	101.4	37,000	-	-	-
Cockburn South Camp	TBD	Cockburn Lake	70.471518 -78.381563	111.1	41,000	-	-	-

Schedule 2

Discharge Limits for Wastewater

SCHEDULE 2 – DISCHARGE LIMITS FOR WASTEWATER
(from Type A Water Licence)

Table 1a: Treated Sewage Effluent Discharge Quality Standards to Freshwater (Mine Site Sewage Treatment Plants)

Parameter	Maximum Average Concentration
BOD5	30 mg/L
Total Suspended Solids	35 mg/L
Fecal Coliform	1000 CFU/100 mL
Ammonia	average: 4 mg/L ; maximum grab concentration: 8 mg/L
Phosphorus	average: 4 mg/L ; maximum grab concentration: 8 mg/L
Oil and Grease	No visible sheen
pH	between 6.0 – 9.5

Note: For the discharge to Sheardown Lake, the Phosphorus discharge criteria shall be 1 mg/L average concentration and 2 mg/L maximum grab concentration.

Table 1b: Treated Sewage Effluent Discharge to Marine Waters

Parameter	Maximum Average Concentration
BOD5	100 mg/L
Total Suspended Solids	120 mg/L
Fecal Coliform	10,000 CFU/100 mL
Oil and Grease	No visible sheen
pH	Between 7.0 to 9.5

Table 2: Oily Water Treatment Plant Effluent Quality Standards

Parameter	Discharge Limit (mg/L)
pH	6 – 9.5
TSS	35
Ammonia	4 mg/L average concentration; 8 mg/L max. grab concentration
Phosphorous	4 mg/L average concentration; 8 mg/L max. grab concentration
Benzene	0.370
Ethylbenzene	0.090
Toluene	0.002
Oil and Grease	15 and no visible sheen
Arsenic	0.5
Copper	0.30
Lead	0.20
Nickel	0.50
Zinc	0.50

SCHEDULE 2 – DISCHARGE LIMITS FOR WASTEWATER
 (from Type A Water Licence)

Table 3: Containment Areas - Bulk Fuel Storage Facility Stormwater

Parameter	Maximum Average Concentration (µg/L)
Benzene	370
Toluene	2
Ethyl benzene	90
Lead	1
Oil and Grease	15,000 and no visible sheen

Table 4: Landfarm Facility Stormwater

Parameter	Maximum Average Concentration (µg/L)
pH	6.0-9.0
Total Suspended Solids	15,000
Oil and Grease	15 and no sheen
Total Lead	1
Benzene	370
Toluene	2
Ethylbenzene	90

Table 5: Non-Hazardous Waste Landfill Runoff / Seepage

Parameter	Maximum Average Concentration (mg/L)
pH	6.0-9.5
Total As	0.5
Total Cu	0.3
Total Pb	0.2
Total Ni	0.5
Total Zn	0.5
Total Suspended Solids	15
Oil and Grease	No visible sheen

SCHEDULE 2 – DISCHARGE LIMITS FOR WASTEWATER
 (from Type A Water Licence)

Table 6: Waste Rock and Ore Stockpiles Runoff Water Quality Criteria

Deleterious Substance	Maximum Authorized Monthly Mean Concentration (mg/L)	Maximum Authorized Concentration in Composite Sample (Mg/L)	Maximum Authorized Concentration in Grab Sample (mg/L)
pH			6.0 < pH < 9.0
Ammonia			Non-acutely toxic
Nitrate			Non-acutely toxic
Deleterious Substances - mg/L (MMER Schedule 4)			
Arsenic	0.50	0.75	1.00
Copper	0.30	0.45	0.60
Lead	0.20	0.30	0.40
Nickel	0.50	0.75	1.00
Zinc	0.50	0.75	1.00
TSS	15.00	22.50	30.00
Acute toxicity			
Fish species			MMER Schedule 5

Schedule 3

Compliance Monitoring Schedule for Effluent Discharges

SCHEDULE 3 - COMPLIANCE MONITORING SCHEDULE FOR EFFLUENT DISCHARGES

Table 1: Milne Port – Compliance Monitoring for Effluent and Runoff Discharges						
Proposed SNP & Other Station IDs	WASTE WATER TREATMENT FACILITY (WWTF) DISCHARGES	Discharge Coordinates (m)	Compliance Criteria (Refer to Schedule 3)	Monitoring Parameters (Refer to Schedule 6a)	Monitoring Frequency	Receiving Environment
MP-01	Milne Port Sewage WTTF	N: 7975764 E: 503462	Table 1	Groups 1, 2, 3	Monthly (year round).	In ditch downstream of the PWSP which drains to Milne Inlet
MP-01a	Milne Port Polishing/Waste Stabilization Pond (PWSP)	N: 7976118 E: 503344	Table 1	Groups 1, 2, 3	Monthly (summer)	
MP-02	Milne Port Maintenance Shop Oily Water WWTF	N: 7955545 E: 503350	Table 2	Groups 1, 4	Monthly or as required.	
MP-MRY-04	Milne Exploration Phase Sewage WWTF (to become inactive after transition period)	N: 7975764 E: 503462	Table 1	Groups 1, 2, 3	Monthly (year round). Daily flow.	
MP-MRY-04a	Milne Exploration Phase Sewage PWSP (to become inactive after transition period)	N: 7976118 E: 503344	Table 1	Groups 1,2,3	Monthly (summer) Daily flow	
	CONTAINMENT AREA DISCHARGES					
MP-03	Milne Port Bulk Fuel Storage Facility Stormwater	N: 7976209 E: 503641	Table 3	Groups 1, 5	Monthly (summer)	To adjacent land surface
MP-04	Milne Port Landfarm Facility Stormwater	N: 7975528 E: 503740	Table 4	Groups 1, 5 plus TSS	Monthly (summer)	
MP-MRY-7	Milne Exploration Phase Bladder Fuel Storage Facility Stormwater (to become inactive after transition period)	N: 7976097 E: 503309	Table 3	Groups 1, 5	Monthly (summer)	In ditch downstream of the PWSP which drains to Milne Inlet
	RUN-OFF AND SEEPAGE MONITORING					
MP-MRY-12	Bulk Sample Stockpile Area Seepage	N: 7976452 E: 503356	Table 5	Group 6	Monthly (summer)	N/A

SCHEDULE 3 - COMPLIANCE MONITORING SCHEDULE FOR EFFLUENT DISCHARGES

Table 2: Mine Site – Compliance Monitoring for Effluent or Runoff Discharges						
Proposed SNP & Other Station IDs	WASTE WATER TREATMENT FACILITY (WWTF) DISCHARGES	Discharge Coordinates (m)	Compliance Criteria (Refer to Schedule 3)	Monitoring Parameters (Refer to Schedule 6a)	Monitoring Frequency	Receiving Environment
MS-01	Mine Site Sewage WWTF	N: 7912429 E: 562962	Table 1	Groups 1, 2, 3	Monthly. (year round)	Outfall to Mary River
MS-01a	Mine Site Polishing/Waste Stabilization Pond (PWSP)	TBD	Table 1	Groups 1, 2, 3	Monthly (summer)	Sheardown Lake
MS-02	Mine Site Maintenance Shop Oily Water WWTF	N: 7913224 E: 561618	Table 2	Groups 1, 4	Monthly or as required	Outfall to Mary River
MS-MRY-04	Exploration Camp Sewage WWTF		Table 1	Groups 1, 2, 3	Monthly. (year round).	Outfall to Mary River
MS-MRY-04a	Exploration Camp PWSP		Table 1	Groups 1, 2, 3	Monthly (summer)	Mary River
	CONTAINMENT AREA DISCHARGES					
MS-03	Mine Site Bulk Fuel Storage Facility Stormwater	N: 7913050 E: 562031	Table 3	Groups 1, 5	Monthly (summer)	Adjacent land surface.
MS-04	Mine Site Fuel Unloading Station Stormwater	N: 7912973 E: 561360	Table 3	Groups 1, 5	Monthly (summer)	Adjacent land surface.

SCHEDULE 3 - COMPLIANCE MONITORING SCHEDULE FOR EFFLUENT DISCHARGES

Table 2: Mine Site – Compliance Monitoring for Effluent or Runoff Discharges						
MS-05	Mine Site Landfarm Facility Stormwater	TBD	Table 4	Groups 1, 5, plus TSS	Monthly (summer)	Adjacent land surface.
	CONTAINMENT AREA DISCHARGES					
MS-MRY-6	Exploration Camp Bulk Fuel Storage Facility (Bladder Farm) Stormwater	N: 7912603 E: 560852	Table 3	Groups 1, 5	Monthly (summer)	Adjacent land surface.
	MINE CONTACT WATER SEASONAL DISCHARGES (MMER)					
MS-06+	Ore Stockpile Pond Stormwater	N: 7912444 E: 562063	Table 6	Groups 1, 6	Monthly (Summer)	Mary River
MS-07	Run of Mine Ore Stockpile Pond Stormwater	N: 7913507 E: 564159	Table 6	Groups 1, 6	Monthly (summer)	Mary River
MS-08	Waste Rock Stockpile West pond	N: 7916449 E: 564405	Table 6	Groups 1, 6	Monthly (summer).	Camp Lake Tributary
MS-09	Waste Rock Stockpile East pond (include mine pit water)	N: 7915050 E: 561129	Table 6	Groups 1, 6	Monthly (summer)	Mary River
	RUN-OFF AND SEEPAGE MONITORING (SEASONAL)					
MS-MRY-09	Bulk Sample Open Pit – Surface water drainage (to become inactive in future)		Table 5	Groups 1, 3, 7	Monthly (summer)	N/A
MS-MRY-10	Bulk Sample Weathered Ore Stockpile – Downstream surface water drainage (to become inactive in future)		Table 5	Groups 1, 3, 7	Monthly (summer)	N/A
MS-MRY-11	Bulk Sample Processing Stockpile Area – Downstream surface water discharge (to become inactive in future)		Table 5	Groups 1, 3, 7	Monthly (summer)	N/A
MS-MRY-13a & MS-MRY-13b	Non-Hazardous Waste Landfill – Downstream surface water drainage		Table 5	Groups 1, 3, 7	Monthly (summer)	N/A

SCHEDULE 3 - COMPLIANCE MONITORING SCHEDULE FOR EFFLUENT DISCHARGES

Table 3: Steensby Port – Compliance Monitoring for Effluent or Runoff Discharges						
Proposed SNP & Other Station IDs	WASTE WATER TREATMENT FACILITY (WWTF) DISCHARGES	Discharge Coordinates (m)	Compliance Criteria (Refer to Schedule 3)	Monitoring Parameters (Refer to Schedule 6a)	Monitoring Frequency	Receiving Environment
SP-01	Steensby Sewage WWTF	N: 7803154 E: 596181	Table 1	Groups 1, 2, 3	Monthly (year round)	Steensby Inlet via ocean outfall
SP-01a	Steensby Polishing/Waste Stabilization Pond (PWSP)	TBD	Table 1	Groups 1, 2, 3	Monthly (summer)	Steensby Inlet via ocean outfall
SP-02	Steensby Maintenance Shop Oily Water WWTF	N: 7803293 E: 590283	Table 2	Groups 1, 4	Monthly or as required	Steensby Inlet via ocean outfall
SP-03	Floating Construction Camp Sewage WWTF	N: 7801713 E: 593376	Table 1	Groups 1, 2, 3	Monthly	Steensby Inlet (35 m depth)
	CONTAINMENT AREA DISCHARGES					
SP-04	Steensby Bulk Fuel Storage Facility Stormwater	N: 7801713 E: 593376	Table 3	Groups 1, 5	As required (monthly)	Adjacent Land Surface
SP-05	Steensby Marine Fuel Storage Facility Stormwater	N: 7801713 E: 593376	Table 3	Groups 1, 5	As required (monthly)	Adjacent land surface.
SP-06	Steensby Landfarm Facility Stormwater	N: 7804080 E: 597531	Table 4	Groups 1, 5 (plus TSS)	As required (monthly)	Adjacent land surface.
	MINE CONTACT WATER SEASONAL DISCHARGES					
SP-07	Steensby Ore Stockpile Stormwater	N: 7799991 E: 593237	Schedule 3 Table 5	Groups 1, 3, 7	When Flow (MMER)	Steensby Inlet
	RUN-OFF AND SEEPAGE MONITORING					
SP-08	Steensby Landfill Seepage	N: E:	Schedule 3 Table 2	Group 6	As required (monthly)	N/A

NOTE: Non-SNP stations highlighted in blue shading – discharge is directly to ocean. SNP stations are those which may discharge to adjacent land surface or to storm water management ponds.

Schedule 4

SNP Monitoring Parameters

Schedule 4 – SNP Monitoring Parameters

Group	Parameters
Group 1 – Water Volume	Daily water withdrawal in cubic metres from authorized sources. Daily water discharge from WWTFs, Containment areas,
Group 2 – Treated Sewage WWTF and PWSP Parameters	Biological oxygen demand (BOD ₅), pH, total suspended solids, faecal coliforms, oil and grease, ammonia-nitrogen, nitrate-nitrogen, total kjeldahl nitrogen, total phosphorus, total dissolved solids.
Group 3 - Acute Toxicity.	a. Acute lethality to Rainbow Trout, <i>Oncorhynchus mykiss</i> (as per Environment Canada's Environmental Protection Series Biological Test Method EPS/1/RM/13); and b. Acute lethality to Daphnia magna (as per Environment Canada's Environmental Protection Series Biological Test Method EPS/1/RM/14).
Group 4 – Oily Water WWTF Parameters	pH, Total suspended solids, ammonia, benzene, ethylbenzene, oil and grease, total phosphorus, toluene. Total metals: Arsenic, copper, lead, nickel, zinc.
Group 5 – Containment Area Discharge Parameters	Benzene, toluene, ethyl benzene, oil and grease, total petroleum hydrocarbons, lead.
Group 6 – Runoff and Seepage Monitoring Parameters	pH, alkalinity, total suspended solids, total dissolved solids, phenols, total organic carbon, dissolved organic carbon, oil and grease, total petroleum hydrocarbons. Total metals: Aluminum, antimony, arsenic, barium, bromine, cobalt, copper, iron, lead, lithium, manganese, mercury, molybdenum, nickel, selenium, strontium, thallium, titanium, uranium, vanadium, zinc.
Group 7 - Mine Contact Parameters	pH, total suspended solids, total dissolved solids, alkalinity, hardness, turbidity, total Kjeldahl nitrogen, ammonia nitrogen, nitrate nitrogen, dissolved organic carbon, total organic carbon, total phosphorus, sulphate, fluoride, chloride. Total and dissolved metals: Aluminum, arsenic, cadmium, calcium, copper, iron, lead, magnesium, manganese, mercury, molybdenum, nickel, potassium, selenium, sodium, thallium, uranium, zinc, Field parameters: pH, temperature, turbidity, specific conductance.

Schedule 5

EEM and CREMP Monitoring Parameters

SCHEDULE 5 – EEM AND CREMP MONITORING PARAMETERS

GROUP	USE	PARAMETER
Group 2 – Acute Toxicity	EEM and CREMP	<p>Acute Toxicity Testing on sewage effluent and all MMER discharges</p> <p>a. Acute lethality to Rainbow Trout, <i>Oncorhynchus mykiss</i> (as per Environment Canada’s Environmental Protection Series Biological Test Method EPS/1/RM/13); and</p> <p>b. Acute lethality to <i>Daphnia magna</i> (as per Environment Canada’s Environmental Protection Series Biological Test Method EPS/1/RM/14).</p>
Group 3 – Water quality	EEM and CREMP	<p>MMER Required (Schedule 4 and Schedule 5 - Section 7): (Total and dissolved for metals) Aluminum, Cadmium, Iron, Mercury, Molybdenum, Selenium, Ammonia, Nitrate, Temperature, Dissolved oxygen, pH, Hardness, Alkalinity, Conductivity, Total Suspended Solids (TSS), Arsenic, Copper, Cyanide (Exempt), Lead, Nickel, Selenium, Zinc, and Radium 226.</p> <p>Recommended EEM Variables: Dissolved Organic Carbon (DOC), Total Organic Carbon (TOC), Total phosphorus, Uranium, Thallium, Manganese, Major cations (calcium, magnesium, potassium, sodium), Fluoride, Chloride, Sulphate,, Water depth, Secchi disk depth, and discharge (streams)</p> <p>Not Required under MMER but Recommended Supporting Variables: Total Dissolved Solids (TDS), Oil & Grease, Phenols, Turbidity, Total Kjeldahl nitrogen (TKN), Nitrite, True Colour, and In situ depth profiles for turbidity, DO, pH, temperature, and conductivity (at all receiving environment sites where depth sufficient)</p>
Group 4 – MMER effluent	EEM	<p>MMER Schedule 4 – Water Quality Monitoring: Arsenic, Copper, Lead, Nickel, Zinc, TSS, Radium-226, pH, and Discharge rate <i>(For use in the marine environment – Steensby Port)</i></p>

SCHEDULE 5 – EEM AND CREMP MONITORING PARAMETERS

GROUP	USE	PARAMETER
Group 5 – MMER effluent	EEM	<p>MMER Schedule 5 – Effluent Characterization:</p> <p>(in addition to Group 4 – all measured as total forms) Aluminum, Cadmium, Iron, Mercury, Molybdenum, Ammonia, Nitrate, Hardness, Alkalinity, Selenium, Electrical conductivity, and Temperature</p> <p>Additional Recommended Variables</p> <p>Fluoride, Manganese, Uranium, Total phosphorus, Calcium, Chloride, Magnesium, Potassium, Sodium, Sulphate, Thallium, Dissolved organic carbon, TOC</p> <p>Sublethal Toxicity Testing:</p> <ul style="list-style-type: none"> - fish species (either Test of Larval Growth and Survival Using Fathead Minnows or Toxicity Tests Using Early Life Stages of Salmonid Fish (Rainbow Trout); - invertebrate species (Test of Reproduction and Survival Using the Cladoceran <i>Ceriodaphnia dubia</i>); - plant species (Test for Measuring the Inhibition of Growth Using the Freshwater Macrophyte, <i>Lemna minor</i>); and - algal species (Growth Inhibition Using Freshwater Alga <i>Selenastrum capricornutum</i>).

SCHEDULE 5 – EEM AND CREMP MONITORING PARAMETERS

GROUP	USE	PARAMETER
Group 5 - Sediment	EEM and CREMP	MMER Schedule 5 – Part 2 Biological Studies: Sediment quality monitoring: Total metals (including mercury), TOC, Nutrients (total phosphorus, TKN, and nitrate/nitrite) and particle size distribution
Group 8 - Benthos	EEM and CREMP	MMER Schedule 5 – Part 2 Biological Studies: Benthic Invertebrate Endpoints: - benthic invertebrate density, taxa richness, similarity index, and evenness index (minimum indices) - supporting variables: total organic carbon and particle size analysis (where sediments present)
Group 9	EEM and CREMP	Fish Population and Health - Non-lethal sampling of Arctic Char Populations: - Fork length; - Wet weight; - External condition (parasites and deformities, erosion, lesions, and tumours) - age - CPUE NOTE: EEM sampling to consist of juvenile and YOY Arctic Char

SCHEDULE 5 – EEM AND CREMP MONITORING PARAMETERS

GROUP	USE	PARAMETER
Group 10	CREMP	Hydrology: <ul style="list-style-type: none">- Stream discharge- Lake water level
Group 11	CREMP	Primary Production: <ul style="list-style-type: none">- Phytoplankton chlorophyll a/pheophytin a- Dissolved oxygen and temperature profiles- Secchi disk depth

Schedule 6

Site Specific Monitoring Framework

SCHEDULE 6 - SITE SPECIFIC MONITORING FRAMEWORK

Table 6a - Milne Port Monitoring						
Water Body	Location Details	Station ID	Purpose/Monitoring Requirements	Monitoring Parameters	Monitoring Frequency	Sampling Coordinates
Milne Inlet	30 m from ditch discharge into Milne Inlet	TBD	Exposure area monitoring	Schedule 6 – Group 6 Schedule 6 – Group 7 Schedule 6 – Group 8	One under ice (April – water quality). August (all parameters)	N: TBD E:
	East side of Milne (30m from shore)	TBD	Reference site monitoring	Schedule 6 – Group 6 Schedule 6 – Group 7 Schedule 6 – Group 8	One under ice (April – water quality). August (all parameters)	N: TBD E:

Note: Marine monitoring parameters are not covered by the AEMP – Groups 6, 7 and 8

Table 6b - Mine Site Monitoring Areas						
Water Body	Location Details	Station ID	Purpose/Monitoring Requirements	Monitoring Parameters	Monitoring Frequency	Station Coordinates
Camp Lake Tributary	Discharge from Waste Rock Stockpile west sedimentation pond	L1-08	Monitoring of west sedimentation pond discharge water quality (end of pipe)	Schedule 6b – Group 5	Summer. Monthly and Prior to discharge	N:7915068 E:561076
		L1-09	Monitoring of water quality in tributary (MMER NF and FF)	Schedule 6b – Group 3 Schedule 6b – Group 5 Schedule 6b – Group 9	CREMP/MMER will determine parameters and frequency	N: 7916449 E: 558407 N: 7914959 E: 557681
		L0-01				
Camp Lake	Camp Lake at inflow of tributary from waste rock water	JL0-01	Water and sediment quality monitoring	Schedule 6b – Group 3 Schedule 6b – Group 5	April and August	N: 7914369 E: 557108
		J0-01	Water and sediment quality monitoring at outflow of Camp Lake	Schedule 6b – Group 3 Schedule 6b – Group 5	Late June and August	N: 7913773 E: 555701
		TBD	Contingency Fish Sampling (if effect on water quality)	Schedule 6b – Group 9	If effects warrant	N: TBD E:

SCHEDULE 6 - SITE SPECIFIC MONITORING FRAMEWORK

Table 6b (cont'd) - Mine Site Monitoring Areas						
Water Body	Location Details	Station ID	Purpose/Monitoring Requirements	Monitoring Parameters	Monitoring Frequency	Station Coordinates
Tributary to Camp Lake	Passing and Stranding of Fish	TBD	Visual Inspection	TBD	August	TBD
Mary River	Discharge from Waste Rock Stockpile east sedimentation pond (post year 12)	E0-10	Monitoring of east pond water sedimentation quality in Mary River	Schedule 6b – Group 3	Monthly during summer months	N: 7913004 E: 564405
	Discharge from ROM stockpile	G0-10	Monitoring of sedimentation pond water quality in receiving environment	Schedule 6b – Group 3	Monthly during summer months	N: TBD E: (BIM STN.)
	Discharge from Ore Stockpile sedimentation pond	E0-21	Monitoring of sedimentation pond water quality in receiving environment (MRY-NF)	Schedule 6b – Group 3	Monthly during summer months (EEM as req'd)	N: 7911724 E: 562444
	Treated effluent outfall from site WWTP	E0-21	Effluents monitored for quality in receiving environment	Schedule 6b – Group 1	Monthly during summer months	N: 7911724 E: 562444
	Immediately downstream of last discharge	E0-20	Monitoring of Mary River water quality after all discharges (MRY-NF)	Schedule 6b – Group 3 Schedule 6b – Group 5 Schedule 6b – Group 9	Monthly during summer months (EEM as req'd)	N: 7911055 E: 561487
	Inflow into Mary Lake	C0-05	Aquatic Effects Monitoring (MRY-FF)	Schedule 6b – Group 3 Schedule 6b – Group 5 Schedule 6b – Group 9	Monthly during summer months (EEM as req'd)	N: 7909170 E: 558352

SCHEDULE 6 - SITE SPECIFIC MONITORING FRAMEWORK

Table 6b (cont'd) - Mine Site Monitoring Areas						
Water Body	Location Details	Station ID	Purpose/Monitoring Requirements	Monitoring Parameters	Monitoring Frequency	Station Coordinates
Mary Lake	Inflow of Mary River	BL0-05	Water quality monitoring	Schedule 6b – Group 3 Schedule 6b – Group 5	Monthly during summer months	N: 7906031 E: 554632
		BL0-05-B4	Water quality monitoring	Schedule 6b – Group 3 Schedule 6b – Group 5	Monthly during summer months	N: 7906774 E: 555115
Sheardown Lake	Dust	DD-HAB 9-STN1	Water and sediment quality	Schedule 6b – Group 3 Schedule 6b – Group 5	August	N: 7913455 E: 560259
	Treated Sewage Effluent	DL0-01-5	Water and sediment quality	Schedule 6b – Group 3 Schedule 6b – Group 5	August	N: 7913356 E: 559798
	Outfall of Sheardown Lake	DL0-02-3	Water and sediment quality	Schedule 6b – Group 3 Schedule 6b – Group 5	August	N: 7911915 E: 561046
Sheardown Lake Tributary	Monitor fish and passage stranding	TBD	Visual Inspection	TBD	August	N: TBD E: TBD

SCHEDULE 6 - SITE SPECIFIC MONITORING FRAMEWORK

Table 6c - Steensby Port Monitoring Areas					
Station ID	Location Description	Monitoring Coordinates	Purpose/Monitoring Requirements	Monitoring Parameters	Monitoring Frequency
Steensby Inlet (site 1)	Proximity of ocean outfall	N: TBD E:	Water quality	Schedule 6 – Group 6	April (water quality), August (water quality, sediment and benthos)
			Sediment quality	Schedule 6 – Group 7	
			Benthic	Schedule 6 – Group 8	
Steensby Inlet (site 2)	Proximity of Ore stockpile runoff discharge	N: TBD E:	Water Quality	Schedule 6 – Group 6	annually (summer)
			Sediment quality	Schedule 6 – Group 7	
			Environmental Effects monitoring (MMER)	Schedule 6 – Group 4	
Steensby Inlet (site 3)	Proximity to the Ore Dock	N: TBD E:	Water quality	Schedule 6 – Group 6	annually (summer)
			Sediment quality	Schedule 6 – Group 7	
			Biological studies (sediment, benthos, zooplankton, phytoplankton)	Schedule 6 – Group 8	
Steensby Inlet (site 4)	Proximity to the Freight Dock	N: TBD E:	Water quality	Schedule 6 – Group 6	annually (summer)
			Sediment quality	Schedule 6 – Group 7	
			Biological studies (sediment and benthos)	Schedule 6 – Group 8	
Steensby Inlet (site 5)	Reference Site 1	N: TBD E:	Water quality	Schedule 6 – Group 6	annually (summer)
			Sediment quality	Schedule 6 – Group 7	
			Biological studies (sediment and benthos)	Schedule 6 – Group 8	
Steensby Inlet (site 6)	Reference Site 2 (up the coast)	N: TBD E:	Water quality	Schedule 6 – Group 6	annually (summer)
			Sediment quality	Schedule 6 – Group 7	
			Biological studies (sediment and benthos)	Schedule 6 – Group 8	
Steensby Inlet (site 7)	Reference Site 3 (down from port)	N: TBD E:	Water quality	Schedule 6 – Group 6	annually (summer)
			Sediment quality	Schedule 6 – Group 7	
			Biological studies (sediment and benthos)	Schedule 6 – Group 8	

Note: Marine monitoring parameters are not covered by the AEMP – Groups 6, 7 and 8

SCHEDULE 6 - SITE SPECIFIC MONITORING FRAMEWORK

Table 6d - Reference Monitoring Areas				
Receiving Water Body	Reference Station ID/Water Body	Monitoring Parameters	Monitoring Frequency	Sampling Coordinate
Camp Lake Tributary	CLT-REF01 (CV-099, Tote Road)	Schedule 6b – Group 3 Schedule 6b – Group 5	annually	N: 7948851 E: 521853
	CLT-REF02 (CV-078, Tote Road), tributary to Phillips Ck	Schedule 6b – Group 3 Schedule 6b – Group 5	annually	N: 7936771 E: 525943
	CLT-REF03 (CV-004, Rail Alignment)	Schedule 6b – Group 3 Schedule 6b – Group 5	annually	N: 7908363 E: 531184
	CLT-REF04 (CV-006-01, Rail Alignment)	Schedule 6b – Group 3 Schedule 6b – Group 5	annually	N: 7907038 E: 532691
Camp Lake & Sheardown Lake	TBD	Schedule 6b – Group 3	annually	N: TBD E:
	TBD	Schedule 6b – Group 3	annually	N: TBD E:
	TBD	Schedule 6b – Group 3	annually	N: TBD E:
Mary River	MRY-REF01 (Area 2)	Schedule 6b – Group 3 Schedule 6b – Group 5	annually	N: 7899214 E: 501083
	MRY-REF02 (BR-011-1, S2-010)	Schedule 6b – Group 3 Schedule 6b – Group 5	annually	N: 7904175 E: 534761
	MRY-REF03 (BR-025-1)	Schedule 6b – Group 3 Schedule 6b – Group 5	annually	N: 7898429 E: 513446
	MRY-REF04 (G0-09)	Schedule 6b – Group 3 Schedule 6b – Group 5	annually	N: 7916317 E: 571546
Mary Lake	TBD	Schedule 6b – Group 3	annually	N: TBD E:
	TBD	Schedule 6b – Group 3	annually	N: TBD E:
	TBD	Schedule 6b – Group 3	annually	N: TBD E:

Schedule 7

Water Crossing Performance Monitoring Framework

SCHEDULE 7 – WATER CROSSING PERFORMANCE MONITORING FORMS

MARY RIVER PROJECT - TOTE ROAD UPGRADE TURBIDITY MONITORING DATA FORM

CROSSING ID:							
Field Crew:				Date:		Time:	
LOCATION		Datum:		Zone:			
Easting (m):		Northing (m):		Elevation (from mapping):		Other notes:	
CURRENT WEATHER:		Wind:		Air Temp:		Precipitation:	
						Cloud Cover (%):	
Recent Weather Events:							
CONSTRUCTION		Construction Phase (circle one):		Pre-Construction		During Construction	
						Post-Construction	
Type of Activity:				Equipment in Use:			
Date Construction Began:							
Is the crossing location changing? (ie. is this crossing moving upstream or downstream or its original location? How far? (with direction?))							
SITE SKETCH, NOTES, REMARKS: (ie. high water table, high turbidity, natural bank erosion, water colour, char observed in stream, algae in water, etc.)							
<div style="border: 1px solid black; height: 150px; width: 100%;"></div>							
Is there anything unique about this crossing compared to other watercourses? (ie. steep banks, clay in water, etc.)							
Substrate Particles % Areal Coverage (est.) % sand/silt/clay (<2mm) % gravel (2 - 64 mm) % cobble (64 - 256 mm) % boulder (> 256 mm) % bedrock				Riparian Vegetation and Shading (describe):			
IN SITU TURBIDITY READINGS (complete at least one measurement upstream and downstream of crossing)							
Meter Make and Model:							
Location	Distance from crossing (m)	Turbidity (NTU)	Time	Location	Distance from crossing (m)	Turbidity (NTU)	Time
Upstream				Upstream			
Crossing				Crossing			
Downstream				Downstream			
FLOW ESTIMATES Location :							
High Water Width (m):				Distance between points (m):			
Wetted Channel Width:				Time (min): /			
Approx. Average Depth:				Surface velocity estimate:			
				Average Velocity (0.8 th x Surface Velocity) (V) =			
<small>Note (1) : depends on substrate composition: 0.8 for rough, loose rocks or coarse gravel / 0.9 for smooth mud, sand, or hard pan/rock</small>							
PHOTOS: (upstream, crossing, downstream)							
NOTES:							

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SCHEDULE 7 – WATER CROSSING PERFORMANCE MONITORING FORMS

**MARY RIVER PROJECT - TOTE ROAD UPGRADE
 WATERCOURSE CROSSING MONITORING DATA FORM**

CROSSING ID:											
Construction Duration:			Start:			Finish:					
Environmental Inspector:			Start (Date and Time):			Finish (Date and Time):					
Env. Inspector on-site during in-water work:											
LOCATION			Datum:			Zone:					
Easting (m):			Northing (m):			Elevation (from mapping):			Other notes:		
FISH ASSESSMENT PRIOR TO CONSTRUCTION						Date of Inspection:					
Fish Present? Y / N						If Yes, distance from crossing: US / DS					
Spawning Arctic Char present at crossing? Y / N (If yes, contact biologist)											
Spawning site present 20 m upstream or downstream of crossing? Y / N											
CHANNEL CHARACTERISTICS						Date Measured:					
		Pre-Construction				Post Construction					
Location	Distance	Width (m)		Water Depth (m)		Width (m)		Water Depth (m)			
		Wetted	High W	Max	Avg.	Wetted	High W	Max	Avg.		
Crossing											
Upstream											
Downstream											
SEDIMENT AND EROSION CONTROL MEASURES											
Measure installed:						Date installed:					
						Dated removed:					
						Turbidity monitored Y / N					
Measures taken to stabilise disturbed areas:											
CROSSING INSTALLATION DETAILS											
1.2 m	culverts		lengths of culvert		Notes:						
1.0 m	culverts		lengths of culvert								
0.5 m	culverts		lengths of culvert								
PHOTOS View across crossing, view from upstream, view from downstream and any other to illustrate conditions.											
	Photo #	Date	Direction	Vantage point		Photo #	Date	Direction	Vantage point		
Before					After						
across					across						
from US					from US						
from DS					from DS						
During					Sed Con						
across					across						
from US					from US						
from DS					from DS						
NOTES											

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Schedule 8

EEM Photo Gallery



PHOTO 1 – CLT-NF-1 facing upstream towards waterfall barrier.



PHOTO 2 – CLT-NF-3 facing downstream.



PHOTO 3 – CLT-NF-4 and CLT-NF-5 facing upstream.



PHOTO 4 – CLT-NF aerial view including fish barrier upstream.



PHOTO 5 – CLT-FF-1 facing upstream to Tote Road culverts.



PHOTO 6 – CLT-FF-1 facing downstream.



PHOTO 7 – CLT-FF-4 facing downstream.



PHOTO 8 – CLT-FF-5 facing downstream towards Camp Lake.



PHOTO 9 – CLT-REF2-1 facing downstream.



PHOTO 10 – CLT-REF2-1 facing upstream.



PHOTO 11 – CLT-REF2-3 facing downstream.



PHOTO 12 – CLT-REF2-5 facing downstream towards Tote Road.



PHOTO 13 – CLT-REF3-1 facing downstream.



PHOTO 14 – CLT-REF3-2 facing downstream.



PHOTO 15 – CLT-REF3-4 facing downstream.



PHOTO 16 – CLT-REF3 aerial view of study area.



PHOTO 17 – CLT-REF4-1 facing upstream.



PHOTO 18 – CLT-REF4-3 facing downstream.



PHOTO 19 – CLT-REF4-5 facing upstream.



PHOTO 20 – CLT-REF4 aerial view of study area.



PHOTO 21 – MRY-NF-1 facing upstream, Deposit No.1 on horizon.



PHOTO 22 – MRY-NF-4 facing upstream.



PHOTO 23 – MRY-NF sediment characterization and BIC study area.



PHOTO 24 – MRY-NF fish community and water quality study area.



PHOTO 25 – MRY-FF-2 facing upstream.



PHOTO 26 – MRY-FF-4 facing upstream.



PHOTO 27 – MRY-FF-5 facing upstream from right bank.



PHOTO 28 – MRY-FF aerial view of study area facing upstream.



PHOTO 29 – MRY-REF1-1 facing upstream.



PHOTO 30 – MRY-REF1-3 facing downstream.



PHOTO 31 – MRY-REF1-5 facing upstream.



PHOTO 32 – MRY-REF1 aerial view facing upstream.



PHOTO 33 – MRY-REF2-1 facing downstream.



PHOTO 34 – MRY-REF2-2 facing upstream.



PHOTO 35 – MRY-REF2-5 facing downstream.



PHOTO 36 – MRY-REF2-1 to REF2-4 aerial view of study area.



PHOTO 37 – MRY-REF3-1 facing downstream.



PHOTO 38 – MRY-REF3-2 facing upstream.



PHOTO 39 – MRY-REF3-5 facing downstream.



PHOTO 40 – MRY-REF3 aerial view of study area facing upstream.



PHOTO 41 – MRY-REF4-1 facing upstream.



PHOTO 42 – MRY-REF4-2 facing left bank.



PHOTO 43 – MRY-REF4-3 facing downstream.



PHOTO 44 – MRY-REF4-5 facing downstream.