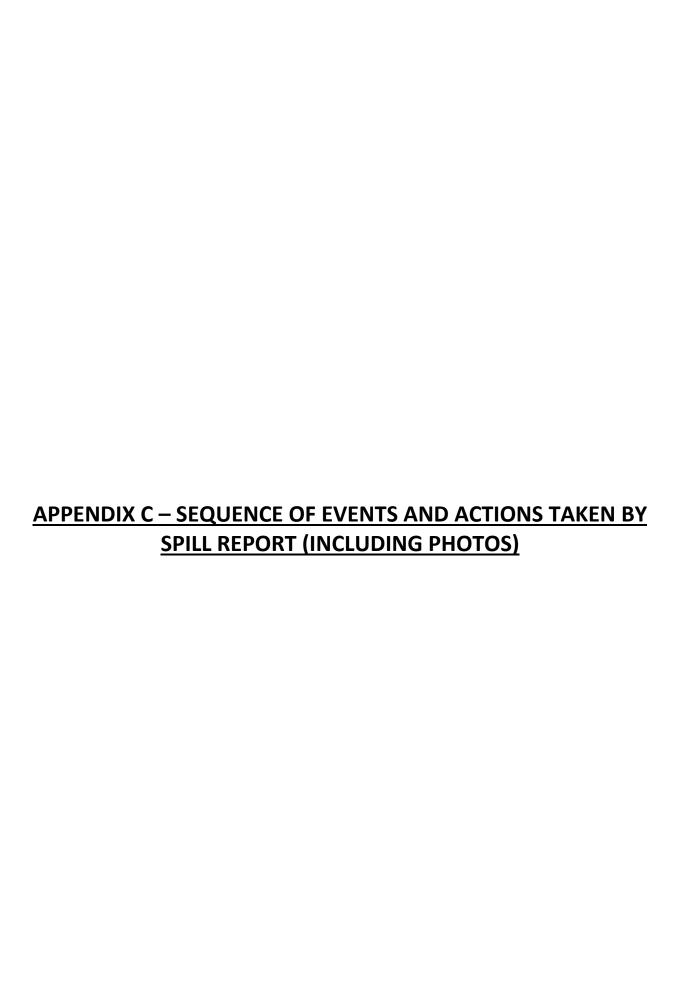




# APPENDIX E.10 2018 FRESHET MONITORING REPORT (PART 2 OF 2)



<u>APPENDIX C.1 – Spill Report 18-180 – Camp Lake Settling</u>
<u>Ponds</u>







May 17, 2018: Downstream View of CLSP-OUT



May 18, 2018: Downstream View of Frozen Conditions at CLSP-OUT





May 28, 2018: Downstream View of Frozen Conditions at CLSP-OUT



May 28, 2018: Downstream view of CLSP-OUT





June 23, 2018: Downstream view of CLSP-OUT



May 20, 2018: Camp Lake Settling Ponds Before Construction Upgrades







May 21, 2018: Berm Expansion of Camp Lake Settling Ponds During Construction Upgrades



May 22, 2018: Camp Lake Settling Ponds After Construction Upgrades





May 20, 2018: Check Dams in Camp Lake Settling Pond Drainage Channel Before Construction Upgrades



May 22, 2018: Check Dams in Camp Lake Settling Pond Drainage Channel After Construction Upgrades





May 22, 2018: Typical Check Dam Cross Section After Construction

<u>APPENDIX C.2 – Spill Report 18-182 – Sheardown Lake and</u>
<u>Camp Lake Tributaries</u>







May 13, 2018: BG-01-DS Road Crossing Upstream of CLT-OUT Before Snow Removal



May 13, 2018: BG-01-DS Road Crossing Upstream of CLT-OUT During Snow Removal





May 13, 2018: BG-01-DS Road Crossing Upstream of CLT-OUT After Snow Removal



May 13, 2018: BG-01-US Road Crossing Upstream of CLT-OUT After Snow Removal





May 17, 2018: Downstream View of CLT-OUT



May 18, 2018: Downstream View of CLT-OUT





June 25, 2018: Downstream View of CLT-OUT



August 7, 2018: Silt Curtain Installation at CLT-OUT



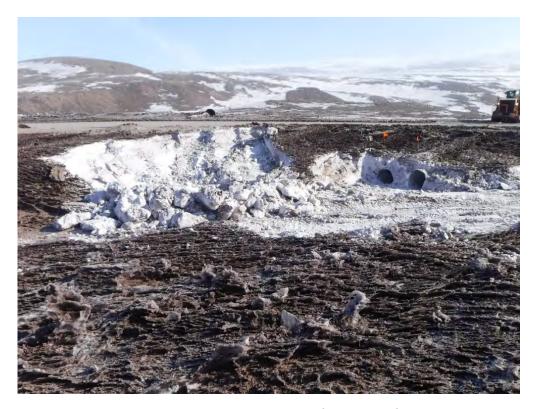


May 8, 2018: CV-186-DS Road Crossing Upstream of SDLT-OUT Before Snow Removal



May 9, 2018: CV-186-DS Road Crossing Upstream of SDLT-OUT During Snow Removal





May 9, 2018: CV-186-DS Road Crossing Upstream of SDLT-OUT After Snow Removal



May 9, 2018: CV-186-US Road Crossing Upstream of SDLT-OUT After Snow Removal







May 17, 2018: Downstream View of SDLT-OUT



May 19, 2018: Downstream View of SDLT-OUT





May 20, 2018: Downstream View of SDLT-OUT



May 22, 2018: Downstream View of SDLT-OUT



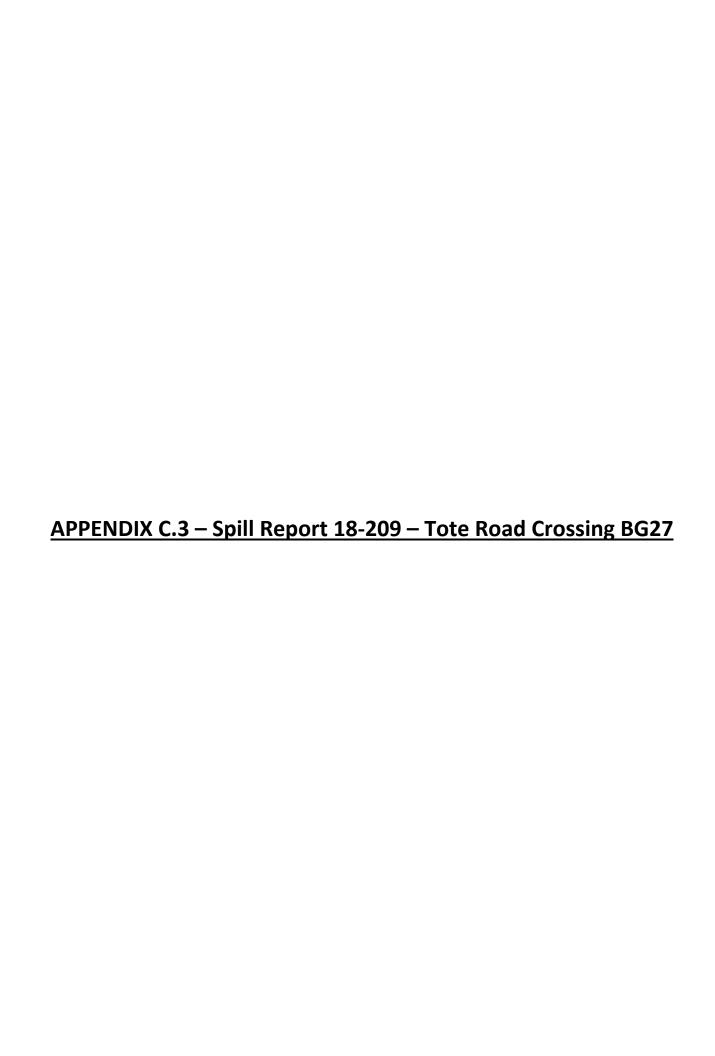




June 2, 2018: Silt Fence Installation at Road Crossing Upstream of SDLT-OUT



June 24, 2018: Downstream View of SDLT-OUT







May 30, 2018: Viewing Downstream BG27 Entering Waterbody



May 30, 2018: Upstream View of BG27 Looking Downstream





June 6, 2018: Upstream View of BG27 Looking Downstream After Silt Fence Installation



June 6, 2018: Bank Armoring with Riprap Downstream of Crossing





June 6, 2018: Bank Armoring with Riprap Downstream of Crossing



June 6, 2018: Silt Fence Installation Upstream of Crossing





June 7, 2018: Water flowing clear following mitigation measure in place



June 7, 2018: Water flowing clear following mitigation measure in place









June 23, 2018: Map Illustrating Location of Sedimentation Event

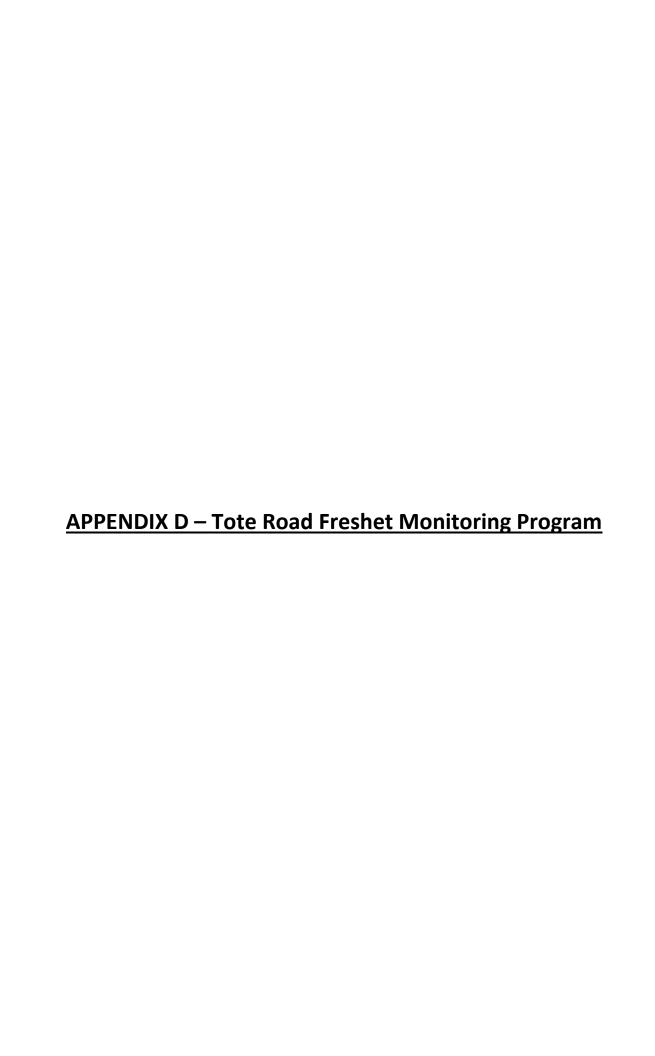


June 23, 2018: Downstream View of MP-NS-01





June 23, 2018: Cross-Section View of MP-NS-01





# **Tote Road Freshet Monitoring 2018**

(start of flow to mid-June)

#### **Formal Visual Inspection**

(A water quality visual inspection of fish-bearing streams (culverts) along the Tote Road will be conducted every 5 days during freshet by onsite Environmental personnel)



# **Identify Areas of Concern and Source**

(Identify areas of concern and the sources of sedimentation)



#### **Project Related Source**



#### Implement Appropriate Sedimentation Controls

(E.g. silt fences, silt curtains, check dams, rip-rap, geotextile, etc.)



# **Document and Monitor**

- Document on inspection form (see Attachment A)
  - New areas of concern and controls implemented
  - Status of previous areas of concern identified and the effectiveness of implemented controls
- Photos (new and previous areas of concern identified)
- Collect in-situ parameters (pH, turbidity, Sp. Cond.
   DO) and water samples (TSS, TDS, pH, turbidity, Sp. Cond.)
  - ) Initial samples at new areas of concern
  - Follow-up samples (within 120 hours) at previous areas of concern if TSS was greater than applicable guideline



#### **Non-Project Related Source**



### **Document and Monitor**

- Document on inspection form (see Attachment A)
  - ) New natural sedimentation events
  - Status of natural sedimentation events identified during previous inspection
- Photos (new and previously identified natural sedimentation events)
- Collect in-situ parameters (pH, turbidity, Sp. Cond., DO) and water samples (TSS, TDS, pH, turbidity, Sp. Cond.)
  - Initial samples at new sedimentation events
  - Follow-up samples for sedimentation events identified in previous inspections if TSS was greater than applicable guideline

**Note:** A list of fish bearing streams (culverts) along the Tote Road that will be monitored is provided as Attachment B to this flow chart.



# **Attachment A - Tote Road Freshet Monitoring Inspection Form**

	Tote	e Ro	oad I	Fis	heries	Cı	ılvert I	Moni	tori	ng		
Culvert	Culvert ID:			Date:			Time:		Photos:			
									Upstream:			
Sample ID:												
Samplers:				Car	mera ID	:	Weather:		Cross Sec		ction:	
YSI Model:				Calibration:					Downstrean		ream:	
Visual Observations												
Water Level (Dry, Stagnant, Low, Moderate, High):												
Water Clarity (Turbid, Clear, Sheen):												
Debris in Water (Y/N):												
Upstream Observations:												
Downstream Observations:												
Sampling Inconsistencies or Concerns:												
			Su	bst	rate Co	mp	osition (	%)				
Boulders			Cobble				Gravel			Sand/Silt/Clay		
(>256 mm)			(64-256 mm)				(2-64 mm)		(<2 mm)			
				F	ield Pa	ram	eters					
Time (24- Te		Te	emp.		рН	ı	Cond.	Turbidity		DO (%)		
		(			<u> </u>	(ŀ	ıs/cm)	(NT	U)			
QA/QC Samples (Y o I				M)·	I): Proximity to Cul					lvert		
QA/QC	QA/QC Salliples (1 0			w).		Upstream or Downstream						
Field			Travel		Equip. Blank	of Culvert?						
Dup.			Blank			Distance from Culvert						
(01) (02)		(03)		(04)	Inlet/Outlet?							
Flow Measurements												
Bankfull Width Wet (m):				ted Width (m			Depth: Velo		city:			
Notes:												



CV216

# Attachment B - Fish-Bearing Streams (Culverts) Along the Tote Road

Culvert ID	Culvert ID
CV176	BG30
CV169	BG29
CV167	BG27
CV129	BG24
CV128	BG17
CV114	BG04
CV112	CV001
CV111	CV223
CV106	CV224
CV104	CV225
CV102	BG01
CV099	CV186
CV087	CV187
CV080	
CV079	
CV078	
CV076	
CV072	
CV071	
CV060	
CV059	
CV058	
CV057	
BG50	
CV049	
CV030	
BG32	
CV217	

**Note:** Additional monitoring locations will be established as required.