Upper Lillooet Hydro Project

Weekly Environmental Monitoring Report #95

Reporting Period: May 22 – June 04, 2016

Upper Lillooet River Hydroelectric Facility (Water File No. 2002561, Water licence No. C130613), Boulder Creek Hydroelectric Facility (Water File No. 2003049, Water licence No. C129969) & Transmission Line (TX Line)

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Owner Construction Permits and Approvals

Environmental Assessment Certificate No. E13-01 (Amendment 1, 2, 3, 4, 5, 6, 7)
Fisheries Act Subsection 35(2)(b) Authorization No. 09-HPAC-PA2-000303 (Amendment 1, 2)
Letter of Advice for the Transmission Line No. 09-HPAC0-PA2-000303
Leave To Commence Construction (ULRHEF) File No. 2002561
Leave To Commence Construction (BDRHEF) File No. 2002453
Leave To Commence Construction (TX Line) File No. 2002561/2002453
Conditional Water Licence (ULRHEF C130613) File No. 2002561
Conditional Water Licence (BDRHEF C129969) File No. 2002453
Conditional Water Licence (BDRHEF C131153) File No. 2003601
Licence of Occupation (ULRHEF #232384) File No. 2409871
Licence of Occupation (BDRHEF #232386) File No. 2409998
Licence of Occupation (TX Line #2423386) File No. 2410654
Occupant Licence to Cut (ULRHEF) No. L49717(Amendments 1, 2, 3, 4, 5, 6, 7)
Occupant Licence to Cut (BDRHEF – KM 38 laydown) No. L49698
Occupant Licence to Cut (BDRHEF) No. L49816 (Amendments 1, 2, 3)
Occupant Licence to Cut (TX Line) No. L49697 (Amendments 1, 2, 3, 4, 5, 6, 7, 8, 9)
General Wildlife Measure Exemption Approval Letter (TX Line & BDRHEF) File No. 78700-35/06 UWR and 39585-20 WHA
Heritage Conservation Act – Alteration Permit (ULRHEF) File No. 11200-03/2014-0033
Road Use Permit No. 6123-13-02 (Lillooet River FSR); 5673-13-01 (Rutherford Creek FSR); 7977-13-01 (Lillooet South FSR); 8015-13-01 (Ryan River); 8188-13-01 (Pemberton Creek FSR); and 9717-13-01 (Miller Bench FSR)
Junction Permit (ULRHEF & BDRHEF) File No. 11250-32/6123 (Amendment 1)
Aeronautical Obstruction Approval (Tx Line - Lillooet River Crossing) File No. 2013-004
Aeronautical Obstruction Approval (Tx Line - Ryan River) File No. 2013-005
Aeronautical Obstruction Approval (Tx Line - North Miller) File No. 2013-006
Aeronautical Obstruction Approval (Tx Line - South Miller) File No. 2013-007
Aeronautical Obstruction Approval (Tx Line - Pemberton Creek) File No. 2013-008
Aeronautical Obstruction Approval (Tx Line - Lillooet River near Pemberton) File No. 2013-009
Aeronautical Obstruction Approval (Tx Line - Lillooet River near Meager Creek) File No. 2013-010
Navigable Water Protection Act (ULRHEF) File No. 8200-2009-500434-001
Navigable Water Protection Act (BDRHEF) File No. 8200-2012-501-032-001
Navigable Water Protection Act (Tx Line – North Creek) File No. 8200-2013-500103-001
Navigable Water Protection Act (Tx Line – Lillooet River) File No. 8200-2013-500101-001
Navigable Water Protection Act (Tx Line – Lillooet River) File No. 8200-2013-500102-01
Navigable Water Protection Act (Tx Line – Ryan River) File No. 8200-2013-500104-001
Navigable Water Protection Act (Tx Line – South Miller River) File No. 8200-2013-500100-001
Navigable Water Protection Act (Tx Line – Boulder Creek) File No. 8200-2013-500099-001
Navigable Water Protection Act – Extension Approval (ULRHEF, BDRHEF, Tx Line)
Navigable Water Protection Act (Bridge – Ryan River) File No. 8200-2013-500381
Navigable Water Protection Act (Bridge – Upper Lillooet Side Channel; Extension Approval) File No. 8200-2013-500383
Section 57 Authorization (ULRHEF) File No. 16660-20/REC202717
SLRD Temporary Use Permit No. 34 – Boulder Creek HEF
SLRD Temporary Use Permit No. 35 – Upper Lillooet River HEF
SLRD Building Permit (10864) – Upper Lillooet River HEF Powerhouse
SLRD Building Permit (10865) – Boulder Creek HEF Powerhouse
Works Permit for Construction within FSR Right-of-Way No. 6123-14-01
Works Permit for Construction within FSR Right-of-Way No. 7977-15-01
Section 52(1)(b) FRPA Authorization for Ryan River Wet Crossing File No. FOR-19400-01/2014
MOTI Permit to Construct, Use and Maintain Works Upon the Right-Of-Way of a Provincial Public Highway No. 2014-06099
Magazine Licence File No. UL76018 (Renewal 1)
Section 8 Approval – Short Term Use of Water File (Lillooet River and Tributaries) No. A2006123 (Amendment 1)
Section 8 - Special Use Permit issued for the operation of an avalanche weather station on Crown land (File No. S25988)

Contractor Construction Permits and Approvals

Waste Discharge under the Code of Practice for the Concrete and Concrete Products Industry under the Environmental Management Act (Authorization No. 107204) Tracking No. 349424 (Renewal 2)
Wildlife Act Permits – Pacific Tailed Frog Salvage Permit # SU15-164805; Fish Salvage Permit # SU15-174722
Fisheries and Oceans Canada – Anadromous Fish Salvage Permit #XR 178 2015
BC Safety Authority – Temporary Construction Electrical Service Permit EL-140698-2014
Municipal Wastewater Regulation - Authorization # 107032
Water Supply System Construction Permits – VCH-14-613 for Main Camp
Water Supply System Permit to Operate Issued July 30th, 2014 for Main Camp
Section 6(3) and Schedule 3 Wildfire Regulations Fire Exemption for Ryan River Bridge File No. 14350-07
SLRD Building Inspection Report dated August 13, 2014 - Construction Camp Building Permit No. 10830
Lillooet River FSR Temporary Road Closures Approval File No. 11250-32/6123 (Amendment 1, 2)
Lillooet South FSR Temporary Road Closures Approval File No. 11250-32/7977
SLRD Building Permits for Mechanic Shop (10862) and Carpentry Shop (10836) March 18, 2015
SLRD Building Permit Stages 1 - 4 – Boulder Powerhouse Architectural, Electrical and Mechanical (10865) October 8, 2015
SLRD Building Permit Stages 1 - 4 – Upper Lillooet Powerhouse Architectural and Mechanical (10864) October 6, 2015
Water Sustainability Act Section 10(1) Use Approval dated March 24, 2016
Section 7 Explosives Act – Magazine Licence (U76018) Renewal April 30, 2016

ACRONYMS:

AMBNS	Active Migratory Bird Nesting Survey
Andritz	Andritz Hydro Canada Inc.
ANFO	Ammonia nitrate fuel oil (industrial explosive)
ARD M/L	Acid Rock Drainage and Metal Leaching
BCEAO	British Columbia Environmental Assessment Office
BCWQG	British Columbia Water Quality Guidelines
BDRHEF	Boulder Creek Hydroelectric Facility
BEBO	ULRHEF Intake Concrete Arch & Foundation Wall
BG	Background
BKL	BKL Consultants Ltd.
CE	CRT-ebc Construction Inc.
CEMP	Construction Environmental Management Plan
CTF	Coastal Tailed Frog
DFO	Fisheries and Oceans Canada
DS	Downstream
EPP	Environmental Protection Plan
EAC	Environmental Assessment Certificate
EAO	Environmental Assessment Office
Ecofish	Ecofish Research Ltd.
Ecologic	Ecologic Consulting
EIR	Environmental Incident Report
ESC	Erosion and Sediment Control
FAM	Field Advice Memorandum
FSR	Forest Service Road
Golder	Golder Associates
GWR	Mountain Goat Winter Range
Hedberg	Hedberg and Associates Ltd.
HWM	High water mark
IE	Independent Engineer (True North Energy)
IEM	Independent Environmental Monitor
INX	Innergex Renewable Energy Inc.
ISW	Instream Works
ITM	Environmental Issue Tracking Matrix
JEM	JEM Energy Ltd. (Delegate Independent Engineer)
LTC	Leave to Construct
MFLNRO	Ministry of Forests, Lands and Natural Resource Operations
MOE	Ministry of Environment
MOTI	Ministry of Transportation and Infrastructure
OGMA	Old Growth Management Area
OLTC	Occupational License to Cut
PAG	Potentially Acid Generating
QP	Qualified Professional
ROW	Right of Way
RVMA	Riparian Vegetation Management Area
SES	Sartori Environmental Services
SLRD	Squamish-Lillooet Regional District
True North	True North Energy (Independent Engineer)
TX Line	Transmission Line
ULRHEF	Upper Lillooet Hydroelectric Facility
UWR	Ungulate Winter Range
VC	Valued Component
WEL	Westpark Electric Ltd.
WEMR	Weekly Environmental Monitoring Report
WHA	Wildlife Habitat Area

1.0 Summary of Site Inspections for Reporting Period

The table presented below summarizes the IEM team site presence, weather and monitoring locations by component:

Date	IEM Team Personnel	Key Monitoring Locations & Activities
May 22 – 28, 2016	MC, TH, SE, AS	***Construction Camp, Laydown Areas, and the Lillooet River FSR*** • Road maintenance on the Lillooet River FSR ***ULRHEF Intake & Upstream Tunnel Portal*** • Umbrella support system (lattice girders, meshing, shotcrete) installation, mechanical excavation, and canopy tube grout injection • Rock hammering/excavation for BEBO wall • BEBO wall rebar, formwork, and concrete • ULHP intake formwork, rebar, and concrete ***ULRHEF Downstream Tunnel Portal*** • Drilling, blasting, shotcrete and tunnel stabilization • Removal of portions of the deposited soil and snow within UWR replacement area ***ULRHEF Penstock*** • Excavation within 30m of Truckwash Creek (east bank) • Completion of road over penstock on the east side (right bank) of ASTR-03 • Welding and coating works • Backfill and compaction ***ULRHEF Powerhouse & Tailrace (above the HWM)*** • Tailrace excavation • Tailrace perforated drain pipe installation and backfill • Andritz mechanical installation of the Turbine Inlet Valve (TIV) ***BDRHEF Intake & Upstream Tunnel Portal*** • Rock face consolidation and excavation • Installation of the discharge line from Stormtec water treatment system ***BDRHEF Downstream Tunnel Portal*** • Drilling, blasting and tunnel stabilization ***BDRHEF Powerhouse*** • Andritz electrical works • Dry commissioning ***TX-Line*** • Segment 11 – MSE wall Installation – 272A creek crossing • Segment 11 – Machine ground prep – 267-262, 269, 271 • Segment 14 – Slashing felled timber – 323-328 • Segment 15 – O'Briens ground prep (digging, blasting) – 372, 374-375, 382
May 29 – June 04, 2016	SE, AS, MC, TH, DA, A. Sartori, SS	***Construction Camp, Laydown Areas, and the Lillooet River FSR*** • Road maintenance on the Lillooet River FSR ***ULRHEF Intake & Upstream Tunnel*** • Umbrella support system (lattice girders, meshing, shotcrete) installation, mechanical excavation, and canopy tube grout injection • Intake rebar, formwork, and concrete • BEBO wall rebar, formwork, and concrete ***ULRHEF Downstream Tunnel Portal*** • Drilling, blasting and tunnel stabilization • Vacuum truck sediment removal from Stormtec treatment system • Repairing of generators at Truckwash 2 ***ULRHEF Penstock*** • Excavation of Truckwash Creek (east and west bank) • Relocation of Stormtec discharge hose • Truckwash Creek Diversion – Instream works • Blast for Penstock excavation (east side Truckwash) at 17:00h • Welding and coating works • Backfill and compaction

Date	IEM Team Personnel	Key Monitoring Locations & Activities
		ULRHEF Powerhouse & Tailrace (above the HWM) • Tailrace excavation and rock hammering • Tailrace backfill and compaction • Tailrace rebar, formwork, and concrete works. • Andritz mechanical installation of the Turbine Inlet Valve (TIV) ***BDRHEF Intake & Upstream Tunnel Portal*** • Consolidation of rock face and excavation • Stormtec system installation and commissioning ***BDRHEF Downstream Tunnel Portal*** • Drilling, blasting and tunnel stabilization • Removal of sediment from settling ponds ***BDRHEF Powerhouse*** • Andritz electrical works ***TX-Line*** • Segment 11 – MSE wall Installation, approach to bridge completion – 272A creek crossing • Segment 11 – Machine ground prep – 271, 273-275 • Segment 11 – Slashing felled timber – 227-228, 261 • Segment 15 – O'Briens ground prep (digging, blasting) – 372, 374-375, 382

IEM Team Personnel: *A. Sartori – Alex Sartori; TH – Tom Hicks; SS – Stephen Sims; DA – Danita Abraham; SE – Stephanie Ellis; AS – Anne Sutherland; ML – McKenzie Lee; MC – Mike Champion; TJ – Tammie Jenkins*

2.0 Administrative Summary

Key communications and meetings the IEM team had with the licensees, contractors and/or environmental authorities:

Date	Communication Type	Participants	Issues Discussed	ITM ID No.
May 24	*Email*	INX, SES, Hedberg	RE: Boulder Creek MG Helicopter Survey - Formal Reporting Commitments. INX distributed a memo prepared by Ecofish detailing the results of the helicopter survey within UL12 conducted on May 10, 2016. A nanny and yearling were observed approximately 850 m straight-line distance from the BDRHEF intake during the flight; therefore, blasting was permitted at the intake, as the goats were outside the 500 m blasting disturbance buffer zone. However, helicopter flights to the intake may not to proceed prior to June 15, 2016.	-
May 26	*Pre-Work Meeting*	CE, SES, INX	A pre-work meeting was held for the diversion of Truckwash Creek. The work plan was reviewed and safety, environmental, and construction items were discussed. The IEM will be onsite to monitor water quality during the diversion works.	-
May 27	*Email*	CE, SES, INX	RE: Penstock excavation west of Truckwash Creek. CE provided a follow up to questions raised at the Truckwash Creek diversion pre-work meeting. Clarification on the start date of construction, contact information for supervising engineers and supervisors, proximity of works to the watercourse, confirming that advanced notice will be given to the IEM in the event of night shift works, and confirming	-

Date	Communication Type	Participants	Issues Discussed	ITM ID No.
			that no construction activities will occur during the daily mountain goat shutdown periods.	
May 30	*Email*	CE, SES	RE: Truckwash diversion pipe and instream works. CE notified the IEM that Truckwash diversion would occur on May 31 due to unforeseen schedule changes.	-
	Email	WEL, SES, INX	RE: WEL's Environmental Manager reminded TX Line crews that the Ryan River drainage grizzly bear restriction ends on May 31. Construction can begin throughout Segments 9b, 10, and 11 on June 1, with the exception of structures within 1500m of UWR RY14, where no helicopter activity is permitted until June 16 to protect sensitive mountain goat habitat.	-
May 31	*Email*	CE, SES, INX	RE: 2016-05-30 Grizzly Bear Observation Card. CE notified the IEM that construction personal observed a grizzly bear feeding on the side of the Upper Lillooet FSR at KM49.5 on May 30, 2016. The bear did not appear to be aware or disturbed by construction activities.	-
	Email	INX, JEM, SES, CE	RE: IE Concerns for 2016. INX provided the IE with CE's 'ULHP Water Treatment Management Plan' which has been approved by both INX and the IEM.	*ULR#54*
June 1	*Email*	SES, MFLNRO, MoE, CE, INX, WEL, Mumleqs	RE: Upper Lillooet Hydro Project – Bear Sighting (May 29, 2016). The IEM notified MFLNRO and MoE that an adult grizzly bear had been observed foraging on grass at KM49.5 of the Lillooet River FSR opposite of the intake structure. The IEM notes that confidence in the identification of the bear species is not high and no pictures were taken to confirm the identification.	-
	Email	CE, SES	RE: Tailrace footing excavation with non-biodegradable oil machine. CE requested to use an excavator that was not equipped with biodegradable oil to finish the excavation at the ULRHEF tailrace that was above the HWM but within 15m of the watercourse, because all other excavators equipped with biodegradable oil were in use at Boulder Creek intake. CE committed to additional mitigation measures for the use of an excavator without biodegradable oil: 1. The excavator will be carefully inspected prior to commencing works. 2. A monitor will closely observe the excavator at all times to ensure immediate identification of any leaks or signs of failure on the equipment. 3. In the event of a spill, all pumps will be shut down immediately. 4. Additional spill kits will be placed in the immediate vicinity of the operating excavator. Based on the good working condition of the excavator (free of leaks and excess grease), and additional mitigation measures in place the IEM permitted the use of an excavator without biodegradable oil. The IEM monitored the remaining works and no environmental issues were observed.	-

Date	Communication Type	Participants	Issues Discussed	ITM ID No.
	Email	INX, SES, CE, WEL	RE: ULHP EAO Compliance & Enforcement Site Visit Friday, June 10. INX notified Westpark and CE of an upcoming site inspection by the EAO Compliance & Enforcement officer on Thursday, June 9 (civil) and Friday June 10 (transmission line).	
	Email	WEL, SES, INX,	RE: Recap of wildlife restrictions in Seg. 9b, 10, and 11. WEL notified their subcontractors of ongoing wildlife restrictions along the TX Line, including: 1. Structures 213-233; no blasting until June 16, 2. Structures 206-240; no helicopter disturbance until June 16, 3. No construction activities of any kind is permitted within the Camel's Back mountain goat UWR (structures 219-228).	-
	Email	WEL, SES, INX,	WEL notified their subcontractors, INX, and the IEM that the no construction timing window associated with grizzly bear forage habitat within segment 15 (structure 376) had passed, and work could now commence. Construction activities requiring helicopter access in Segment 15 will require IEM monitoring until June 16th to verify that the area remains unoccupied by mountain goats.	-
June 4	*Email*	SES, INX	RE: Truckwash Creek Diversion update. The IEM provided INX with an update on the construction progress of Truckwash Creek diversion.	-

3.0 Current Work Restrictions and Timing Windows

The table presented below outlines work restrictions applicable during the reporting period for each active Project component location:

Component	Location	Wildlife/Archeology Concern	Construction/Timing Restrictions & Mitigations
All Project Areas	TX Line, ULRHEF, & BDRHEF	Active Migratory Bird Nesting Period	AMBNS must occur prior to clearing vegetation in all Project areas according to the survey schedule and methods outlined in the Project's Active Migratory Bird Nest Survey Plan during the nesting period (May 1 – July 31). All nests identified as active must be protected by a no disturbance buffer until the nest is no longer deemed to be active by a QP (buffer distances vary by species and location; further details are provided in the AMBNS Plan).

Component	Location	Wildlife/Archeology Concern	Construction/Timing Restrictions & Mitigations
Lillooet River FSR & ULRHEF	Access roads above the lower limit of the 200m buffer Truckwash Creek Migration Corridor to the ULRHEF intake	Mountain Goat UWR & Migration Corridor	Daily construction equipment shutdowns occurred in May beginning one hour before and two hours after sunrise as well as two hours before and one hour after sunset. CE had guards stationed on either side of the migration corridor 15 minutes before and during the morning and evening shutdown periods to stop all project related travel through the migration corridor. This timing restriction is effective within the Migration Corridor and 200m buffer throughout the month of May. Noise monitoring equipment is in place to monitor background noise levels and exceedances of the 75dbA noise level maximum resulting from blasting activities. Adaptive drilling/blasting noise mitigation strategies will be developed and implemented should activities show persistent exceedances of the noise level threshold. Mountain Goat monitoring activities will occur daily throughout the winter and spring (November 1 – June 15) when construction activities are occurring at the ULRHEF lower tunnel portal and/or the ULRHEF intake. If a mountain goat is observed within 500m line of sight of construction operations, construction must cease for at least 48 hours. The IEM must record and submit all goat observations to FLNR within 48 hours.
BDRHEF intake	Portion of intake access road and intake structure within UWR u-2-002 UL 12	Mountain Goat UWR	Access to BDRHEF intake must be gated at least 500m from UWR to restrict public access within the UWR u-2-002 UL 12 from November 1 – June 15, unless otherwise directed by MFLNRO. If a mountain goat is observed within a 500 m line of site of a construction activity within UWR u-2-002 UL 12, construction activities will cease for at least 48 hours. Approval from the IEM must be obtained prior to recommencing construction activities.
TX Line	Segments 8 – 15	Mountain Goat UWRs SO-04 & SO-08	If a mountain goat is observed within 500 m line of sight of construction operations, construction must cease for at least 48 hours. The IEM must record and submit all goat observations to MFLNRO within 48 hours.
		Moose, Deer, & Mountain Goat UWRs	Helicopter flight paths will avoid UWRs and landing locations will be located further than 500m away from the UWRs during the sensitive late winter period and natal period (March 1 – May 15; May 15 – June 15).

Component	Location	Wildlife/Archeology Concern	Construction/Timing Restrictions & Mitigations
		Suitable Class 1 & 2 Grizzly Bear forage habitat	IEM monitoring is required when clearing within identified Class 1 & 2 Grizzly Bear forage habitat, to ensure clearing areas are minimized.
		Riparian Vegetation Management Areas (RVMA)	IEM monitoring is required during clearing within RVMAs.
		Ryan River Drainage	Construction of the TX Line into and across the Ryan River drainage will occur during the less critical Grizzly Bear summer foraging period (June 1 – September 1).
		Within 150m of wetlands or 100m of Coastal Tailed Frog Streams	IEM presence is required when clearing within 150m of wetlands or 100m of CTF Streams, to ensure clearing areas are minimized.

4.0 Upper Lillooet River HEF – Monitoring Results

4.1 *Construction Camp, KM 38 Laydown, Access Roads & Lillooet River FSR*

Activities:

- Routine maintenance of construction equipment within the mechanic shop and fuel management continued at the KM 38 laydown. All hazardous substance materials (waste oil, contaminated soil, used oil/hydraulic fluid containers, etc.) were stored temporarily for off-site disposal in a designated area at the laydown. The materials were all well contained and protected from the weather.
- CE continued to apply water to the Lillooet FSR and construction access roads to minimize fugitive dust production throughout the reporting period (Photo 1).

Environmental Summary:

- No environmental issues were observed during the monitoring period.

Photos:

Photo 1 – CE water truck in use for dust suppression on the Lillooet River FSR (May 26, 2016).

4.2 *Intake, Concrete Arch Foundation Walls, and Upstream Tunnel*

Construction Activities:

- Grout injection operations and canopy tube installation at the ULRHEF upstream tunnel continued from May 22 – June 4, 2016 (Photo 2).
- Formwork, rebar, and concrete works on the transition between the intake structure and BEBO wall throughout the reporting period (Photo 3).
- Rebar, formwork, and concrete works continue on the intake and sluiceway structures throughout the reporting period (Photo 4).

Environmental Summary:

- During grout injection and tunnel excavation rounds in the upstream tunnel, all seepage water was directed to the ULRHEF intake sediment basins for treatment (Photo 5). CE's environmental management team ensured that the active water treatment system was functioning and well maintained. Water quality sampling results are available upon request (Photo 7).
- CE is assembling and installing an additional 12" HDPE hard line from the concrete sump to the setting ponds and water treatment system (Photo 6). This new line will increase pumping capacity and ensure all water from the tunnel and BEBO construction work areas can be directed to the settling ponds for treatment.

Photos:

Photo 2 – Upstream Tunnel Portal and BEBO wall (May 23, 2016).

Photo 3 – Works on the transition between the intake structure and the BEBO wall (May 29, 2016).

Photo 4 – Rebar, formwork, and concrete works at the ULRHEF sluiceway and intake (June 04, 2016).

Photo 5 – Pond 6 and 7 of ULRHEF intake water treatment system (June 04, 2016).

Photo 6 – Assembely and installation of 12" HDPE discharge line (May 23, 2016).

Photo 7 – Discharge of ULRHEF intake water treatment system (June 01, 2016).

4.3 *Downstream Tunnel Portal*

Construction Activities:

- Drilling, blasting, mucking and stabilization works (shotcrete application) within the tunnel.
- Removal of portions of the sediment deposited within the mountain goat UWR replacement area at lower tunnel portal parking area (Photo 8).
- Maintenance and sediment removal from the active water treatment system installed near ASTR-03.

Environmental Summary:

- Discharge from the active water treatment system was monitored daily for compliance with BCWQGs. Water discharged to ASTR-03 did not exceed >8 NTU above background turbidity during the reporting period. Water quality sampling results are available upon request.

- CE continued to remove snow and associated material sediment deposited within the mountain goat UWR replacement area at the Downstream Tunnel Portal parking area with an excavator (Photo 8). Not all material was removed. An assessment of impacts to the area will be completed once the snow melts.

Photos:

Photo 8 – Removal of sediment from Mountain Goat Winter Range (May 24, 2016).

4.4 *Penstock and Truckwash Creek Penstock Crossing*

Construction Activities:

- Installation of steel pipes for Truckwash Creek diversion from June 1-3, 2016 (Photo 9 - Photo 10).
- On June 3, CE diverted Truckwash Creek through steel bypass pipes to permit the start of the penstock crossing works in the dry (Photo 11 - Photo 12).
- Welding, coating, backfill, and compaction of penstock east of Truckwash Creek.

Environmental Summary:

- On June 2, a kick-off meeting was held to discuss safety, environmental and engineering concerns for the diversion of Truckwash Creek.
- On June 3, the IEM monitored the instream works associated with the Truckwash Creek diversion. No salvages were required as Truckwash Creek is non fish-bearing and is non CTF-bearing. Two steel diversion pipes were installed in a dry portion of the channel at the right bank of Truckwash Creek (Photo 9). Instream excavation was performed to direct the creek through the newly installed steel bypass pipes (Photo 11). During the diversion works, temporary pulses of turbid water were observed approximately 300 meters downstream of the construction activities. The first pulse began at 08:35, when the excavator placed puncheon and crossed Truckwash Creek to access the location where instream excavation was required to divert the creek into the newly installed bypass pipes. A second pulse occurred at 09:50, as instream excavation diverted the creek to the steel bypass pipes (Photo 12). Between 8:35 – 11:30 turbidity levels were measured above BCWQGs (Average = 21.6 NTU; max = 1563 AU). The final two

sediment pulses were short lived and associated with armouring the inlet of the diversion pipes and excavation of the isolation berms at 14:40 (30 minute duration; max = 16.7 NTU) and 15:30 (20 minute duration; max = 43.1 NTU), respectively. The IEM conducted water quality sampling throughout the diversion works and detailed results are available upon request. CE successfully employed BMPs throughout the diversion works and minimized the amount of instream works required to complete the diversion to the extent possible. Based on the results of water quality monitoring, the periods of elevated turbidity generated by the diversion works are unlikely to have impacted downstream fish habitat.

- Once diversion activities were completed, CE installed a sump upstream of the construction activities, to capture clean seepage water. All clean seepage water was pumped into the steel diversion pipes. Sediment laden water was pumped into the oil water separator, and directed to the Downstream Tunnel Portal active water treatment system.

Photos:

Photo 9 – Installation of steel bypass pipes prior to the Truckwash Creek diversion (June 02, 2016).

Photo 10 – Armoured outlet of Truckwash Creek bypass pipe outlet (June 02, 2016).

Photo 11 – Actively diverting Truckwash Creek (June 03, 2016).

Photo 12 – Inlet of Truckwash Creek temporary bypass pipes following the diversion works (June 03, 2016).

4.5 *Powerhouse, Tailrace & Access Road*

Construction Activities:

- Excavation of the tailrace (in the dry behind the natural earth berm) at the ULRHEF powerhouse.
- Installation of an impermeable barrier between the two clean water 6" pumps at the ULRHEF tailrace to separate clean water from construction wastewater (Photo 13).
- Installation and backfill of a perforated drain pipe in ULRHEF tailrace (Photo 14).
- Backfill and compaction for tailrace footing (Photo 15).
- Rebar, formwork, and concrete works for the tailrace (Photo 16).
- Installation of the turbine inlet valve (TIV) in the ULRHEF powerhouse (Photo 17).

Environmental Summary:

- On May 23, CE installed an impermeable barrier between the two clean water 6" pumps in the ULRHEF tailrace (Photo 13). Dividing these pumps allowed clean seepage water to be pumped directly to the Lillooet River, and sediment laden construction wastewater to be pumped to the ULRHEF powerhouse water treatment system. Discharge from the water treatment system was monitored daily for compliance with BCWQG and no exceedances were documented. Water quality sampling results are available upon request.
- On May 26, CE filled a depression that developed in the ULRHEF tailrace backfill material with 2.5m^3 of concrete (Photo 18). All works were conducted in the dry and no environmental issues were observed during the concrete pour.

Photos:

Photo 13 – Division of clean water sump at ULRHEF tailrace (May 23, 2016).

Photo 14 – Installation of perforated pipe at ULRHEF tailrace (May 25, 2016).

Photo 15 – Backfill and compaction of ULRHEF tailrace (May 27, 2016).

Photo 16 – Rebar, formwork, and concrete at ULRHEF tailrace (June 02, 2016).

Photo 17 – Installation of turbine inlet valve at ULRHEF powerhouse (June 02, 2016).

Photo 18 - Filling of ULRHEF tailrace depression (May 26, 2016).

4.6 *Water Quality Results*

The following table presents the results of the routine WQ sampling program for the ULRHEF. The IEM is undertaking a weekly monitoring program according to the conditions outlined in the Surface Water Quality Protection Plan. The regular monitoring sites have been selected to quantify WQ conditions within the Lillooet River upstream and downstream of active construction areas. The IEM acknowledges the natural variability of instream WQ conditions in the Lillooet River due to seasonal fluctuations in snowmelt. In the event that an exceedance of *in-situ* WQ (turbidity and/or pH) is deemed to be caused by project-related activities, the IEM will highlight the exceedance, discuss the cause, and outline measures undertaken by the Contractor to correct the issue. When an exceedance cannot be attributed to project related activities, the exceedance will be marked by an asterisk (*). The table also presents the results of WQ sampling collected at both the ULRHEF intake and downstream tunnel portal water treatment systems.

Date	Time	Sample Location Description	pH	Turbidity (NTU)	Cond (*u*S)	Temp (°C)
Routine Water Quality						
May 27, 2016	10:32	ULR Background – ULRHEF Intake	6.82	18.5	43	6.5

Date	Time	Sample Location Description	pH	Turbidity (NTU)	Cond (*u*S)	Temp (°C)
	10:53	ULR #0.5 – Downstream of ULRHEF intake at Keyhole Bridge	6.97	19.5	45	6.7
	14:20	ULR # 1 – Upstream of ULRHEF Powerhouse	6.81	21.5	46	8.7
	14:36	ULR #2 – Downstream of ULRHEF Powerhouse between KM 40.5 and KM 41	6.98	19.4	42	8.1
	10:10	ULR #3 – Lillooet River FSR KM 38 Laydown – D/S of Boulder confluence	6.84	13.3	46	6.4
	07:49	ULR #4 – Lillooet River FSR KM 24 – D/S of all works and Meager confluence	7.07	9.88	74	7.0
June 02, 2016	13:48	ULR Background – ULRHEF Intake	7.25	40.7	33	8.8
	13:31	ULR #0.5 – Downstream of ULRHEF intake at Keyhole Bridge	7.28	40.3	33	9.8
	15:05	ULR # 1 – Upstream of ULRHEF Powerhouse	6.56	45.6	31	10.0
	15:20	ULR #2 – Downstream of ULRHEF Powerhouse between KM 40.5 and KM 41	6.61	46.6	31	9.5
	17:25	ULR #3 – Lillooet River FSR KM 38 Laydown – D/S of Boulder confluence	7.54	43.4	31	9.0
	7:45	ULR #4 – Lillooet River FSR KM 24 – D/S of all works and Meager confluence	6.97	604 AU*	50	8.7

4.7 *Recommendations*

IEM recommendations for the ULRHEF are as follows:

- All water from the ULRHEF upstream tunnel heading should be conveyed to the sediment basins for treatment. CE should perform regular monitoring to ensure that the water treatment system is functioning as intended and that discharge to the Lillooet River continues to meet BCWQGs.
- CE should continue to remove material deposited within the mountain goat UWR replacement area, as the snow melts. Once CE has removed as much of the deposited material as possible, and the snow is fully melted, the area should be inspected by a QP to determine what remedial actions are needed (ITM ULR#49; FAM#11).
- CE should continue to monitor the clean water sump at the Truckwash Creek diversion to ensure pumps are sufficient to handle seepage water during excavation.
- CE should continue to monitor the oil water separator to ensure that the pumps have the capacity to handle additional water from the penstock excavation within Truckwash Creek.

4.8 *Upcoming Works*

The following new and/or environmentally sensitive construction activities are scheduled to occur at the ULRHEF:

- Canopy tube installation, umbrella lattice structure installation, grout injection, drilling, and blasting in class 4CT material will continue at the ULRHEF upstream tunnel.

- Drilling, blasting and tunnel stabilization at the ULRHEF downstream tunnel.
- Excavation, formwork, rebar, and concrete works for the Truckwash Creek penstock crossing.
- Formwork, rebar, and concrete works at the ULRHEF tailrace.
- Pump removal and backfill at ULRHEF tailrace.
- Sandblasting of ULRHEF powerhouse turbine manifold.

5.0 Boulder Creek Hydroelectric Facility – Monitoring Results

5.1 *Access Road & Intake*

Construction Activities:

- Rock face consolidation and stabilization (Photo 19).
- Bulk excavation of the intake structure footprint (including blasting) occurred in isolation from Boulder Creek and above the water table throughout the reporting period (Photo 19).
- CE completed the installation of a water treatment system that will be used to treat any seepage water entering the intake excavation (Photo 20).

Environmental Summary:

- No environmental issues were observed or reported during consolidation or stabilization of Boulder Creek intake rock, or during excavation for the intake structure.
- The water treatment system was installed and commissioned during the reporting period. Water quality was monitored from the commissioning date and all discharged water was within BCWQGs. Additional water quality sampling results are available upon request.

Photos:

Photo 19 – Consolidation and stabilization of Boulder Intake rock face, and excavation for concrete works (May 23, 2016).

Photo 20 – Installation of water treatment system at Boulder Intake (May 23, 2016).

5.2 *Downstream Tunnel Portal and Powerhouse*

Construction Activities:

- Drilling, blasting and tunnel stabilization in the downstream tunnel portal.
- Electrical component installation in the BDRHEF powerhouse.
- Tailrace construction including stripping formwork, and concrete curing was completed greater than 15m from Boulder Creek and in the dry during this reporting period (Photo 21).

Environmental Summary:

- All wastewater related to the BDRHEF tunnelling works continued to be contained and conveyed to the downstream settling ponds for treatment (Photo 22).

Photos:

Photo 21 – Conditions at BDRHEF powerhouse and tailrace (May 29, 2016).

Photo 22 – BDRHEF Downstream Tunnel Portal settling ponds (May 29, 2016).

5.3 *Water Quality Results*

The following table presents the results of the routine WQ sampling program for the BDRHEF. The IEM is undertaking a weekly monitoring program according to the conditions outlined in the Surface Water Quality Protection Plan. The regular monitoring sites have been selected to quantify WQ conditions within Boulder Creek upstream and downstream of active construction areas. The IEM acknowledges the natural variability of instream WQ conditions in Boulder Creek due to seasonal fluctuations in snowmelt. In the event that an exceedance of *in-situ* WQ (turbidity and/or pH) is deemed to be caused by project-related activities, the IEM will highlight the exceedance, discuss the cause, and outline measures undertaken by the Contractor to correct the issue. When an exceedance cannot be attributed to project related activities, the exceedance will be marked by an asterisk (*).

Date	Time	Sample Location Description	pH	Turbidity (NTU)	Cond (uS)	Temp (°C)
Routine Water Quality						
May 27, 2016	15:25	BDR BG – Upstream of BDRHEF intake	6.84	8.52	45	7.1

	15:39	BDR #1 – Downstream of BDRHEF intake	6.69	5.66	43	6.9
	11:46	BDR #2 – Upstream of BDRHEF Powerhouse	6.82	5.22	38	5.2
	11:25	BDR #3 – Downstream of BDRHEF Powerhouse at Pebble Creek Bridge	7.03	5.60	38	5.2
June 03, 2016		BDR BG – Upstream of BDRHEF intake	Inaccessible			
	16:00	BDR #1 – Downstream of BDRHEF intake	7.09	39.3	21	6.5
	18:26	BDR #2 – Upstream of BDRHEF Powerhouse	7.19	37.4	25	8.2
	17:41	BDR #3 – Downstream of BDRHEF Powerhouse at Pebble Creek Bridge	7.36	38.3	22	7.1

5.4 *Recommendations*

IEM recommendations for the BDRHEF are as follows:

- All construction related wastewater should continue to be directed to the water treatment systems. CE to continue regular inspections of the water treatment systems to ensure that the systems are in good condition, and all maintenance activities are performed as outlined in the work plan.

5.5 *Upcoming Works*

The following new and/or environmentally sensitive construction activities are scheduled to occur at the BDRHEF during the upcoming reporting period:

- BDRHEF downstream tunnelling works will continue.
- Electrical component installation and dry testing will continue at BDRHEF powerhouse.
- Formwork, rebar, and concrete works at BDRHEF intake.
- Blasting and consolidation of BDRHEF upstream tunnel portal.
- Conduit installation along Boulder intake access road.

6.0 Transmission Line – Monitoring Results

6.1 *Transmission Line Construction Activities*

Construction Activities:

Segment 11

- Machine ground preparation for towers 271, 273-275.
- Installation of an engineered wall to support the approach to the newly installed bridge at the 272a crossing.

Segment 9b

- Mumlegs – Slashing for towers 261, 227-228.

Segment 13

- Machine ground preparation from tower 317 to the end of Segment 13.

Segment 14

- Slashing to clear the area around towers 323-328.

Segment 15

- Slashing felled timber throughout the segment.
- O'Briens – ground preparation (digging, blasting) for towers 372, 374-375, 382 (Photo 24).

Environmental Summary:

The IEM continued to perform mountain goat monitoring from the station on the Rutherford Creek FSR to monitor the UWRs during active construction and helicopter work in Segment 15 (Photo 23 & Photo 24). The monitoring was performed to ensure that no mountain goats moved into the area. No mountain goats were observed by the IEM on either UWRs during this reporting period.

Photos:

Photo 23 – View of Segment 15 (May 24, 2016).

Photo 24 – Ground prep in Segment 15 (May 24, 2016).

6.2 *Recommendations*

IEM recommendations for the Transmission Line are as follows:

- WEL's Environmental Manager continues to provide regular scheduling updates to permit the IEM to assess environmental risks and coordinate monitoring requirements. Any changes to the weekly schedule and/or updates should continue to be provided with a minimum of 48 hours' notice if the need for IEM presence is required or expected to be required.

6.3 *Upcoming Works*

The following new and/or environmentally sensitive construction activities are scheduled to occur at the Transmission Line:

- Pole foundation construction within 500m of UWR in Segment 15.

7.0 Wildlife Sightings

As per the CEMP, a wildlife sightings record has been implemented and will be updated regularly by Project Personnel. It is mandatory for all personnel to report wildlife sightings including, but not limited to bears, cougars, mountain goats and deer. Wildlife sighting will be reported and recorded by the contractor(s). Wildlife Observation forms will be included in first reporting period following month end. Observation or detection of the following species will trigger notification to identified parties according to the following table.

Species Observed or Detected	Notification Period	Agencies to be Notified
Northern rubber boa	Immediately	IEM, Owner
Grizzly bear	24hrs	IEM, Safety Officer, Conservation Officer, Owner
Wolverine den	24hrs	IEM, MFLNRO, Owner
Spotted owls	24hrs	IEM, MOE, Owner
Mountain goats	48hrs	IEM, MFLNRO, Owner

The Owner, Contractors, and IEM team reported the following wildlife sightings in May 2016:

Upper Lillooet Hydro Project - Wildlife Observation Form					
Date	**Time**	**Observer (Company)**	**Species or Description**	**Location**	**Comments**
5/1/2016	6:50	Ian McKeachie	Black Bear	Boulder Intake 4KM	
5/1/2016	21:45	Angel Orejas	Moose	39KM FSR	
5/2/2016	19:30	Angel Orejas	Black Bear	Boulder Intake 4KM	
5/3/2016	9:00	Steve Gale (Stormtec)	Black Bear	Truckwash Creek	Cub by itself
5/3/2016	15:50	Mick O'Siddhachain	Black Bear	42KM FSR	Cub by itself
5/4/2016	11:35	Ian McKeachie	Black Bear	Penstock 3+200	
5/4/2016	15:25	Mick O'Siddhachain	Black Bear	Boulder Intake 4.5KM	
5/6/2016	10;00	Mikael Aubin	Black Bear	Boulder intake 0.75	Mother and 2 cubs
5/7/2016	6:00	Cameron Jones (Andritz)	Wolverine	FSR KM 38.2	
5/7/2016	14:30	Marie-Claude	Black Bear	UL downstream portal	Mother and 4 cubs
5/8/2016	8:30	Claude Lacroix	Moose	FSR 42.5 - Truckwash	
5/8/2016	8:45	Lianne Leblond	Moose	KM 43.8	
5/8/2016	18.25	Jean Pelletier	Black Bear	KM 47.5	
5/9//2016	7:00	Kevin Barns	Black Bear	Penstock near 42.5 km	Mother and 4 cubs
5/10/2016	6:30	Ian McKeachie	Moose	10KM FSR	
5/10/2016	am	Lisa and Sheena	Moose	44 km on fsr	adult
5/11/2016	19:15	Angel Orejas	Black Bear	12KM FSR	
5/11/2016	13:40	J Pelletier	Black Bear	FSR 39.5 km	Mother and 2 cubs
5/11/2016	19:00	Angel Orejas	Sharp Shinned Hawk	1KM FSR	
5/11/2016	7:30	Anne Sutherland	Black Bear	by 43 km	mother and 2yr old?
5/14/2016	8:00	Richard Vandervelden (Andritz)	Black Bear	39.7KM FSR	Mother and 2 cubs
5/14/2016	14:20	Stephanie Ellis	Black Bear	KM 42 hotsprings parking lot	Juvenile black bear in box of truck!!
5/15/2016	8:00	Ian McKeachie	Black Bear	UL downstream portal	

Upper Lillooet Hydro Project - Wildlife Observation Form					
Date	**Time**	**Observer (Company)**	**Species or Description**	**Location**	**Comments**
5/15/2016	8:30	Julia Dan	Black Bear	FSR 7.5 Km (gate)	
5/16/2016	16:41	Claude Lacroix	Black Bear	FSR km 46.5	
5/17/2016	9:00	Robert Robinson (RDH)	Black Bear	KM 44.7 FSR	Young bear
5/17/2016	11:30	Stephanie Ellis	Black Bear	KM 47 FSR	Mother and 4 cubs
5/17/2016	16:00	Stephanie Ellis	Black Bear	KM 8 FSR	Ran accross road
5/17/2016	18:00	Real Dupont	Black Bear	KM 49 FSR (Keyhole Bridge)	Mother and 4 cubs
5/18/2016	9:00	Robert Robinson (RDH)	Black Bear	KM 44.7 FSR	Young bear
5/18/2016	13:00	Real Dupont	Black Bear	KM 49 FSR (Keyhole Bridge)	Mother and 2 cubs
5/18/2016	8:52	Lisa and Sheena	black bear	km 46 fsr	adult
5/18/2016	12h10	Anne Sutherland	black bear	above 49 laydown in forest	Mother and 2 cubs
5/18/2016	7:35	Alexandre Mathieu	Black bear	FSR 43.5 KM	
5/18/2016	17:30	Miners	Black bear	KM 49 FSR (Keyhole Bridge)	Mother and 4 cubs
5/18/2016	19:35	Miners	Black bear	FSR 43KM	
5/18/2016	17:30	Stephanie Ellis	Moose	KM 11 FSR	Black bear
5/18/2016	17:30	Stephanie Ellis	Black bear	KM 32 FSR	2 big moose!
5/18/2016	18:30	Stephanie Ellis	Mountain Goats	KM 5 FSR	2 Nannies with 2(3?) kids
5/19/2016	7:20	Oliver James	Black bear	FST 44 KM	Scrawny and skinny little bear
5/19/2016	13:45	Alexandre Mathieu	Black bear	Km 46.5	Mohter and 2 cubs
5/19/2016	7:00	Eric (Forumla Contractors)	Cinnamon black bear	2.5KM of the Ryan South FSR	Adult
5/21/2016	8:50	David Bourgouin	Cinnamon black bear	FSR 46 KM	Mother and 4 cubs
5/22/2016	7:30	Alain Pageau	Black bear	FSR KM 45.5	
5/23/2016	15:00	Eric Codere	Black bear	FSR KM 37.5	Adult
5/24/2016	13:20	Cindi McPherson	Coyote	Camp Road KM 0.25	
5/24/2016	10:00	Francois Pelletier	Black bear	FSR KM 45.5	Mother and 4 cubs
5/25/2016	7:20	Oliver James	Black bear	FSR KM 43.5	
5/25/2016	10:15	Danny Dugas	Black bear	Boulder Intake KM 2	
5/25/2016	7:00	Stephanie Ellis	Black Bear	FSR KM 6	Mother and 2 cubs
5/28/2016	10:30	Stephanie Ellis	Coyote	KM 38 Laydown (A-Frame)	Walking around laydown
5/28/2016	11:00	Sheena Wallace	Black Bear	FSR KM 44.7	Mother and 2 cubs
5/29/2016	18:10	Alain Pageau	Black Bear	Upper Lillooet 48.5KM	2 cubs
5/29/2016	9:30	Danita Abraham	Black Bear	Pumice Mine Rd.	Mother and 2 cubs
5/29/2016	18:45	Danita Abraham	Coyote	FSR KM 43	Ran accross road
5/30/2016	14:00	Dominic Provost	Grizzly Bear	FSR KM 49.5	
5/31/2016	6:40	Cory Newsome	Wolf	FSR KM 18	4 or 5 wolf pups ran across the road
5/31/2016	7:20	Tom Hicks	Moose	FSR KM 17	Juvenile

8.0 Mountain Goat Monitoring Program

The following mitigation measures related to mountain goats were implemented during this monitoring period:

- As of May 1, CE successfully implemented the daily sunrise/sunset equipment shutdown periods within the Truckwash Creek mountain goat migration corridor as outlined in the Mountain Goat Management Plan. CE staff are assigned the responsibility for stopping project related traffic at each end of the migration corridor during the shutdown periods, to prevent any accidental travel through the migration corridor.
- The BDRHEF intake access road was gated and manned by CE staff to restrict motorized public access to the UWR (UL-12). The gate will continue to be manned by CE until June 15, 2016.
- Noise level monitoring data continued to be collected at three monitoring locations (upper and lower Truckwash Creek and at Keyhole Falls) and used to adaptively manage construction noise and ensure that the 75db noise level threshold is not exceeded as outlined in the Mountain Goat Management Plan. Construction related noise at the BDRHEF intake was also monitored beginning on May 3, but ended on May 6 following communications between MFLNRO and INX concerning the requirements for ongoing mountain goat acoustic threshold monitoring given conflicts with other industrial users operating helicopters in the vicinity of the BDRHEF intake. The requirement to monitor construction related noise at the BDRHEF intake was rescinded by MFLNRO on May 6, due to conflicts with nearby heli-logging activities.
- The IEM or designate was on site to monitor Mountain Goat activity within 500m of construction activities at the ULRHEF intake and the ULRHEF downstream tunnel portal. Mountain goats were monitored from four sites:
    - Truckwash Creek viewing river right of the Migration Corridor– MG-OBS01 (10U 467955 5612773);
    - Keyhole Falls viewing the south side u-2-002 UL11 – MG-OBS02 (10U 466593 5613988); and,
    - Garibaldi Pumice mine site viewing u-2-002 UL 19 – MG-OBS03 (10U 467388 561408); and,
    - Salal Creek monitoring site viewing u-2-002 UL 8 – MG-OBS04 (10U 466133 5613991).
- Monitoring effort was split between all sites during daylight hours, unless safety concerns or weather conditions interfered. The order of site visits rotated daily. Construction activities must cease if a goat(s) is/are observed moving towards the ULRHEF intake and/or if a goat(s) is/are observed within a 500m line of site of a construction activity. No goats were observed within 500m line of sight of construction activities and no work stoppages were required.
- A pre-work helicopter flight was conducted on May 2, 2016 to assess mountain goat presence in UWRs SO-08 and SO-04 adjacent to the Segment 15 ROW. Both UWRs were unoccupied during the assessment. To mitigate potential impacts to any mountain goats moving into the UWRs or that were missed during the pre-work assessment, the IEM monitored the UWRs via spotting scope from a monitoring station on the South Rutherford FSR. Monitoring occurred during active construction and helicopter work in Segment 15 to ensure no mountain goats were present within the UWRs. The helicopter pilots were reminded that no landing is permitted within 500m of mountain goats and that the

observation of a mountain goat on the UWRs would trigger a halt in works and immediate IEM notification. No Mountain Goats were observed by the IEM from the monitoring station or during the helicopter flights on either UWRs during this reporting period.

9.0 Environmental Issues Tracking Matrix (ITM)

9.1 *Hydroelectric Facilities (ULRHEF & BDRHEF)*

ITM Tracking Legend:	*Work Item Open*
	Work Item Complete
	Issue Closed

Issue Tracking		Environmental Issue		Mitigation Measures			
ID No.	Status	Location	Issue Description	Action Taken/Recommended	Date of Identification	Targeted Date for Completion	Date Completed
ULR#51	*OPEN*	*Woodbox Culvert at KM41.2 if the Lillooet River FSR*	*The watercourse over topped the woodbox culvert requiring emergency works to install an additional culvert next to the woodbox to handle the additional flow. The woodbox culvert may have been compromised by the additional flows and the temporary culvert installed as an emergency measure may need to be extended.*	*1. Assess the woodbox culvert and develop a plan to replace it with QP designed crossing structure during the instream work window or according to the recommendations of a QP if it has been compromised. Update April 18 – CE indicated that they will be reviewing the permanent drainage plan in this area and will distribute the plan to the IE, IEM, and INX for approval once the permanent drainage and crossing structure designs are finalized.*	*April 8, 2016*	*April 22, 2016*	-
ULR#54	*OPEN*	*ULRHEF intake concrete sump pumping capacity & pumping shutdown*	*The IEM issued FAM#12 as untreated water that did not meet BCWQGs was discharged directly to the Lillooet River to prevent overtopping of the concrete sump.*	*1. Upgrade the pumping capacity in the concrete sump to ensure all water from the BEBO wall excavation, intake and upstream tunnel can be directed to the treatment ponds simultaneously when water quality conditions require. Update May 20 – CE has ordered pumps and will upgrade the pumping capacity once the material arrive.*	*May 17, 2016*	*May 24, 2016*	-
				2. Stage work activities at the intake, sluiceway, tunnel and BEBO wall to ensure that all water not meeting BCWQGs can be pumped to the treatment ponds through the concrete sump. This may require that some work activities remain on hold until the pumping capacity of the system is increased. Update May 20 – CE confirmed that works will be staged to prevent exceeding the existing pumping capacity.			*May 20, 2016*

Issue Tracking		Environmental Issue		Mitigation Measures			
ID No.	Status	Location	Issue Description	Action Taken/Recommended	Date of Identification	Targeted Date for Completion	Date Completed
ULR#55	*CLOSED*	*Water treatment facilities at the ULRHEF intake, downstream tunnel, powerhouse and BDRHEF intake*	*In response to FAM#12 and EIRs #20, #21, & #22 , on May 19 the IE requested updates to all work plans involving water treatment system*	*Provide a step-by-step work plan outlining:* *1. Contact information for personnel to be reached if a problem with each of the systems is observed.* *2. The step-by-step procedure for stopping water feeding the treatment systems, or other measures to be implemented if the systems overflow or if water quality discharging from the system does not meet the intent of the Surface Water Quality Protection Plan.* *2. A step-by-step procedure should be outlined for all active onsite treatment systems (ULRHEF intake, downstream tunnel, powerhouse, and BDRHEF intake. The contact information and shut-off procedures should be posted as a reference near all of the treatment systems.*	*May 19, 2016*	*May 26, 2016*	*June 1, 2016*
No outstanding environmental issues (next ITM – BDR#28 & ULR#56)							

9.2 *Transmission Line*

ITM Tracking Legend:	
	Work Item Open
	Work Item Complete
	Issue Closed

Issue Tracking		Environmental Issue		Mitigation Measures			
ID No.	Status	Location	Issue Description	Action Taken/Recommended	Date of Identification	Targeted Date for Completion	Date Completed
No outstanding environmental issues (next ITM – Tx#3)							