
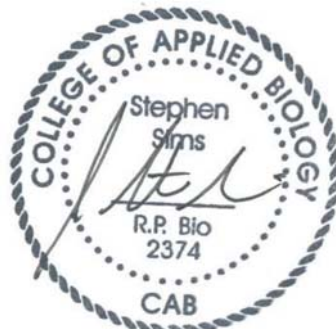


Upper Lillooet Hydro Project

Weekly Environmental Monitoring Report #98

Reporting Period: July 03 – July 16, 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)

Distribution List		Prepared By
Name	Organization	
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Carrie Lester	Lil'wat Nation	

Date Prepared: September 28, 2016
Date Submitted: October 6, 2016

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 & Modification Agreement (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
 - Works Permit for Construction within FSR Right-of-Way No. 6123-16-01
- 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	IE	Independent Engineer (True North Energy)
Andritz	Andritz Hydro Canada Inc.	IEM	Independent Environmental Monitor (SES)
ANFO	Ammonia nitrate fuel oil (industrial explosive)	INX	Innergex Renewable Energy Inc.
ARD M/L	Acid Rock Drainage and Metal Leaching	ISW	Instream Works
BCEAO	British Columbia Environmental Assessment Office	ITM	Environmental Issue Tracking Matrix
BCCOS	British Columbia Conservation Officer Service	JEM	JEM Energy Ltd. (Delegate Independent Engineer)
BCWQG	British Columbia Water Quality Guidelines	LTC	Leave to Construct
BDRHEF	Boulder Creek Hydroelectric Facility	MFLNRO	Ministry of Forests, Lands and Natural Resource Operations
BEBO	ULRHEF Intake Concrete Arch & Foundation Wall	MOE	Ministry of Environment
BG	Background	MOTI	Ministry of Transportation and Infrastructure
BKL	BKL Consultants Ltd.	OGMA	Old Growth Management Area
CE	CE-ebc Construction Inc.	OLTC	Occupational License to Cut
CEMP	Construction Environmental Management Plan	PAG	Potentially Acid Generating
CTF	Coastal Tailed Frog	QP	Qualified Professional
DFO	Fisheries and Oceans Canada	ROW	Right of Way
DS	Downstream	RVMA	Riparian Vegetation Management Area
EPP	Environmental Protection Plan	SES	Sartori Environmental Services
EAC	Environmental Assessment Certificate	SLRD	Squamish-Lillooet Regional District
EAO	Environmental Assessment Office	True North	True North Energy (Independent Engineer)
Ecofish	Ecofish Research Ltd.	TX Line	Transmission Line
Ecologic	Ecologic Consulting	ULRHEF	Upper Lillooet Hydroelectric Facility
EIR	Environmental Incident Report	UWR	Ungulate Winter Range
ESC	Erosion and Sediment Control	VC	Valued Component
FAM	Field Advice Memorandum	WEL	Westpark Electric Ltd.
FSR	Forest Service Road	WEMR	Weekly Environmental Monitoring Report
Golder	Golder Associates	WHA	Wildlife Habitat Area
GWR	Mountain Goat Winter Range		
Hedberg	Hedberg and Associates Ltd.		
HWM	High water mark		

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
July 3 – 9, 2016	SE, MC, TH	<p>Construction Camp, Laydown Areas and the Lillooet River FSR</p> <ul style="list-style-type: none"> • Road maintenance on the Lillooet River FSR • Silt fence replacement at watercourse crossing and along the Lillooet River FSR <p>ULRHEF Intake & Upstream Tunnel Portal</p> <ul style="list-style-type: none"> • Umbrella system excavation and consolidation (class 4CT) • Construction of slab and superstructure for control room structure • Formwork, rebar, and concrete works at the intake structure <p>ULRHEF Downstream Tunnel Portal</p> <ul style="list-style-type: none"> • Drilling, blasting, shotcrete application and tunnel stabilization <p>ULRHEF Penstock</p> <ul style="list-style-type: none"> • Drill and grout anchors at Truckwash • Formwork, rebar, and concrete works for Truckwash Creek penstock walls • Penstock installation • Penstock welding and coating • Backfill, compaction and reclamation of the penstock <p>ULRHEF Powerhouse</p> <ul style="list-style-type: none"> • Andritz mechanical works • Tailrace concrete pours and concrete finishing <p>BDRHEF Intake & Upstream Tunnel Portal</p> <ul style="list-style-type: none"> • Reclamation of spoil pile at KM0.5 on the Boulder Intake access road • Intake rebar, formwork and concrete works • Upstream tunnel portal blasting, shotcrete and consolidation • Excavation and rock armoring of ditching from KM3.5 – KM4.5 on the Boulder intake access road <p>BDRHEF Downstream Tunnel Portal</p> <ul style="list-style-type: none"> • Drilling, blasting and tunnel stabilization <p>BDRHEF Powerhouse</p> <ul style="list-style-type: none"> • Andritz electrical work • Riprap placement in the tailrace <p>TX-Line</p> <p>Segment 9</p> <ul style="list-style-type: none"> • O'Briens ground prep, including blasting for pole structures 227 and 228 • Setting and framing poles for pole structures 203-218 <p>Segment 10</p> <ul style="list-style-type: none"> • Flying ropes and stringing conductor at pole structures 229-241 <p>Segment 11</p> <ul style="list-style-type: none"> • Site mobilization • O'Briens machine ground preparation for pole structures 271, 277, and 278-280 <p>Segment 12</p> <ul style="list-style-type: none"> • Road building (slashing, drilling, excavation) for pole structures 300-305 • Mumleqs slashing felled logs at pole structures 281, 282, 283 <p>Segment 13</p> <ul style="list-style-type: none"> • Altitude machine ground prep for pole structures 306, 307, 316
July 10 – 16, 2016	SE, MC	<p>Construction Camp, Laydown Areas and the Lillooet River FSR</p> <ul style="list-style-type: none"> • Road maintenance on the Lillooet River FSR • Electric fence repair around camp

Date	IEM Team Personnel	Key Monitoring Locations & Activities
		<p>ULRHEF Intake & Upstream Tunnel Portal</p> <ul style="list-style-type: none"> • Umbrella system excavation and consolidation (class 4CT) • Intake formwork, rebar, and concrete works • Construction of slab and superstructure for control room structure • Installation of new pumps in the concrete lined sump • Testing and commissioning of BEBO pump system • Rock hammering for pull box installation • BEBO rock anchors and grouting <p>ULRHEF Downstream Tunnel Portal</p> <ul style="list-style-type: none"> • Drilling, blasting, shotcrete application, and tunnel stabilization • Sediment removal from the lower-portal active water treatment system <p>ULRHEF Penstock</p> <ul style="list-style-type: none"> • Installation of sub-drains • Penstock welding and coating works • Backfill, compaction and reclamation of the penstock <p>ULRHEF Powerhouse</p> <ul style="list-style-type: none"> • Andritz mechanical works • Tailrace concrete pours and concrete finishing <p>BDRHEF Intake & Upstream Tunnel Portal</p> <ul style="list-style-type: none"> • Intake rebar, formwork, and concrete works <p>BDRHEF Downstream Tunnel Portal</p> <ul style="list-style-type: none"> • Drilling, blasting, and tunnel stabilization <p>BDRHEF Powerhouse</p> <ul style="list-style-type: none"> • Brushing, grubbing of Boulder Creek RVMA (above high water mark), and construction of access berm for tailrace construction • Andritz electrical work <p>TX-Line</p> <p>Segment 9b</p> <ul style="list-style-type: none"> • O'Briens ground prep, including blasting for pole structures 227 and 228 • Framing for poles set, straightening, backfilling poles, ground prep for pole structures 228 and 229. <p>Segment 10</p> <ul style="list-style-type: none"> • Clipping in conductors for pole structures 230-242 <p>Segment 12</p> <ul style="list-style-type: none"> • Mumleqs road building and slashing for pole structures 305, 281, and 282 <p>Segment 13</p> <ul style="list-style-type: none"> • O'Brien's ground prep, including blasting for pole structures 311 and 312

IEM Team Personnel: TH – Tom Hicks; SS – Stephen Sims; SE – Stephanie Ellis; MC – Mike Champion

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.
July 4	<i>Email</i>	INX, CE, SES, JEM, WEL	RE: BC EAO Follow-up site inspection – INX informed CE that BC EAO would conduct follow-up site inspection on July 6 to confirm the project's adherence to the Section 34 Order – Attractant Management, completion of the action items identified on June 9, and inspect the site for any other	<i>ULR#56</i>

Date	Communication Type	Participants	Issues Discussed	ITM ID No.
	<i>Email</i>	SES, CE, INX	EAC related items. INX also extended the invite for the follow-up site inspection to Westpark.	
			RE: Upper Lillooet Penstock Reclamation Pre-Restoration Site Survey – The IEM responded to CE’s Pre-Restoration Site Survey email with the following comments: <ol style="list-style-type: none"> 1. CE should re-establish the drainage patterns along the penstock to pre-disturbance conditions, as two watercourses at KM42.5-KM41.2 remain diverted. The IEM request that a QP assess these drainages and provide an updated drainage plan. 2. The goal of the pre-restoration site survey is to assess the area post-disturbance, to ensure that CE develops site-specific restoration measures to address the actual post-disturbance field conditions. In the future, the IEM expects CE to conduct pre-restoration surveys, develop restoration plans, and to submit these plans for approval prior to the start of restoration activities. 3. CE should document the pre-restoration survey with photos and recommendations from a QP, to meet the intent of the Soil Salvage, Site Reclamation, and Landscape Restoration Plan. 	-
	<i>Email</i>	CE, SES, INX	RE: Lillooet River FSR, KM45.2 works – The IEM identified the placement of material along the downslope side of KM45.2 of the Lillooet River FSR, which resulted in some material sloughing into the mountain goat migration corridor. The IEM was not notified of these works and requested that CE provide the following information: <ol style="list-style-type: none"> 1. What work was completed? 2. What work is left? 3. When will CE complete the works? CE placed the material at the request of one of the pumice mining companies in the valley to create a safety berm on the downslope side of the road. Based on the IEM’s email and potential impacts to the mountain goat migration corridor, CE removed the material from the side of the road.	-
July 5	<i>Site Inspection</i>	JEM (IE), IEM, INX, CE	IE Monthly Site Inspection – The IE delegate conducted a monthly site inspection with INX, the IEM delegate and CE environmental staff.	-
July 6	<i>Site inspection</i>	BCEAO, COSBC, INX, SES, CE	BC EAO compliance and enforcement officer and Tim Schumacher from BCCOS conducted a follow-up site audit with members of the IEM, INX, and CE environment team in attendance.	-

Date	Communication Type	Participants	Issues Discussed	ITM ID No.
July 7	<i>Email</i>	INX, CE, SES, JEM	<p>RE: ACTION: ULHP BC EAO C&E Follow-up Inspection – Hydroelectric Facilities Letter of Non-Compliance – INX provided an email summarizing the results of the BC EAO and Compliance and Enforcement (COS) follow-up site inspection. The officers observed improvements in CE's attractant management (food, fuel, and oil) especially at all ULRHEF work areas and the BDRHEF intake. However, the officers identified areas where attractant management was still out of compliance and required immediate improvement:</p> <ol style="list-style-type: none"> 1. Boulder Tunnel and Mechanic Laydown – CE placed geofabric and crush rock in designated parking area. However, the officers identified leaky equipment not parked fully on the pads, and areas where oil/fuel were leaking on the ground, which could attract animals. Additionally, CE needs to improve food waste management in this area. The officers found food waste in a spill kit and lunchroom doors were open with food visible inside. 2. KM39 Hazardous Material Storage – Food waste was in bags on the ground, not in appropriate containers within a closed structure. 3. KM39 Mechanic/Carpentry general area – Various food waste items observed in garbage only bins, within open storage huts. 4. Camp/Kitchen area –The officers requested that CE fix the gaps between the electric fence and perform maintenance on the electrified access mats, ensure that the electric fence fully surrounded the kitchen, scrape up the grease under the compactor, and keep all temporary garbage bins closed at all times. 5. Batch Plant – The concrete waste/washout pit required maintenance. <p>INX informed CE that the COS might be issuing a letter of non-compliance and suggested additional measures for contractor consideration, including:</p> <ol style="list-style-type: none"> 1. Adding additional signage at all work areas on site about closing doors and food management. 2. Installation of self-closing door hinges. 3. Daily leak/spill clean-up and tracking logs. 4. Installing a berm around the geo-fabric lined parking areas at tunnel laydowns. 5. Designating a team or to incorporate waste cleanup into the start or end of shift tasks for each crew. 6. Create a new plan for how food is distributed/managed when not at the camp. 	<i>ULR#56, ULR#58</i>
July 8	<i>Email</i>	CE, SES, INX	<p>RE: Food waste and attractant inspection form – The IEM provided CE with a draft food waste and attractant inspection form. The intent of this form was</p>	-

Date	Communication Type	Participants	Issues Discussed	ITM ID No.
			to provide CE with an internal tool to record food waste and wildlife attractants found on the project site.	
July 9 - 10	<i>Email</i>	CE, SES, INX	RE: Potential large spill at Crusher pad – CE notified the IEM and INX of a large spill at the crusher pad that occurred when the crusher’s main hydraulic hose failed. Crews immediately stopped work and contained the spill with spill pads, created a berm to prevent the spill from spreading, and covered the area with a tarp to protect it from rain. CE’s mechanics confirmed (July 10, 2016) that 83L of hydraulic oil spilled from the crusher. Because a portion of the spill occurred under the crusher, final clean up did not occur until July 10, 2016. The IEM and CE’s environmental manager visited the site to monitor the cleanup. CE took soil samples from the excavated area to ensure that they had removed all contaminate materials. Final remediation will be confirmed when laboratory results are returned.	<i>Spill Report 2016-27</i>
July 10	<i>Email</i>	CE, SES, INX	RE: New pump system at KM49 – CE informed the IEM and INX that the two pumps located in the ULRHEF concrete lined sump did not have sufficient capacity to pump the volume of water from the upper tunnel portal, the BEBO wall, and the intake sluice simultaneously. CE committed to staging construction activities to ensure that they can treat all construction related wastewater before discharging it to the Lillooet River.	<i>ULR#54 - closed</i>
July 11	<i>Site tour / Email</i>	SES, INX, CE	RE: Food waste and attractant inspection form, July 11 – The IEM notified CE of minor issues with the management of wildlife attractants at ULRHEF penstock, BDRHEF intake and powerhouse, and the concrete batch plant on July 11. The IEM also highlighted that a number of issue identified during the BCEAO inspection were still outstanding, including: <ol style="list-style-type: none"> 1. The elimination of gaps between the electric fence and the electrified mats at all construction camp entrances, the kitchen delivery entrance, and the garbage compactor entrance. 2. Clean-up garbage and oil around the garbage compactor. 3. Installation of secure access to the food storage area next to the kitchen. 4. Installation of a self-closing door hinges or means to ensure that doors to the lunchrooms remain closed. 5. Installation of berms around the lined parking areas at the mechanic laydown areas. 6. Lining of the ULRHEF intake concrete wash pit and the removal of excess material within the concrete batch plant wash pit. 	<i>ULR# 57 & 58</i>
July 13	<i>Email</i>	CE, SES, INX,	RE: Use of non-bio excavator at Truckwash Creek penstock backfill – CE requested to use an excavator	-

Date	Communication Type	Participants	Issues Discussed	ITM ID No.
			<p>not equipped with biodegradable hydraulic oil within 30m of Truckwash Creek. CE proposed mitigation measures, including:</p> <ol style="list-style-type: none"> 1. The operator will perform and document inspection of the equipment (to be performed outside of 30m of Truckwash Creek) prior to operating the machine at the beginning of shift and following any breaks in the work. 2. If any leaks in the equipment are detected during inspection, work with that machine must cease until the leak is repaired. 3. The equipment will be parked more than 30 meters from the creek when not in use. 4. Additional spill kits will be placed in close proximity to the operating excavator. 5. A monitor will observe the excavator while it is in operation to ensure immediate identification of any leaks or signs of failure on the equipment. <p>The IEM granted CE permission to use an excavator without biodegradable hydraulic oil, given the low risk of spills connecting with surface water at the penstock backfill and CE's increased mitigation measures.</p>	
	<i>Email</i>	CE, SES, INX	RE: Pre-reclamation site surveys – CE scheduled a site wide pre-reclamation survey with INX and the IEM for Tuesday, July 19.	-
July 14	<i>Pre-Work Meeting</i>	CE, SES, INX	CE held a pre-work meeting for instream construction activities at the ULRHEF and BDRHEF tailraces. All attending reviewed the work plan and discussed safety, environmental, and construction items. The IEM will be onsite to monitor water quality during instream works. Ecofish will be on site to conduct fish and amphibian salvages prior to the start of instream activities, where it is safe to do so.	-
	<i>Email</i>	INX, SES, CE	RE: INN-1691E - FW: Culvert replacement at KM41.2 of the Lillooet River FSR – CE forwarded Ecofish's assessment of the culvert at KM41.2 of the Lillooet River FSR. Based on the current conditions of the watercourse (dry channel), Ecofish informed CE that they could proceed with the temporary culvert installation outside of the least risk fisheries window (August 1 – September 15) given that the streambed is dry and that no species at risk are present. INX and the IEM were satisfied with Ecofish's report and informed CE that they could proceed with the development of a work plan and design for a closed bottom temporary culvert.	-
	<i>Email</i>	INX, SES, MFLNRO, IE, Lil'wat Nation	RE: Notice of Incident – Deer Struck Truck and died : INX forwarded an incident report for a deer that was struck and killed by a truck at KM 42.2 of the Lillooet River FSR on July 13, 2016.	<i>EIR 027</i>
July 15	<i>Email</i>	INX, MFLNRO, DFO, BCEAO, IE, Lil'wat Nation	Leave to Commence Diversion application for the Upper Lillooet River HEF was submitted to agencies for review and approval.	-

Date	Communication Type	Participants	Issues Discussed	ITM ID No.
July 16	Email	CE, INX, SES	RE: Spill report 2016-30 – CE provided INX and the IEM with a report documenting the spill of 2L from the concrete pump truck at BDRHEF intake on July 15.	Spill report 2016-30

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).
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	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	If a mountain goat is observed within a 500m 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 - 16	Mountain Goat UWRs SO-04 & SO-08	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 MFLNR within 48 hours.
		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).

Component	Location	Wildlife/Archeology Concern	Construction/Timing Restrictions & Mitigations
		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, KM38 Laydown, Access Roads & Lillooet River FSR

Activities:

- CE continued routine fuel management and maintenance of construction equipment within the mechanic shop at the KM38 laydown. CE temporarily stored all hazardous substance materials (waste oil, contaminated soil, used oil/hydraulic fluid containers, etc.) in a designated area at the laydown prior to off-site disposal. The materials were all well contained and protected from the weather.
- CE continued to apply water to the Lillooet River FSR and construction access roads to minimize fugitive dust production throughout the reporting period.
- CE continued to maintain sediment and erosion control measures along the Lillooet River FSR (Photo 1).
- CE repaired and maintained the electric fences surrounding camp during the reporting period (Photo 2).
- The crusher and screener were operating throughout the reporting period to crush 0-28mm backfill aggregates.

Environmental Summary:

- On July 4, CE removed material they dumped at KM45.3 of the Lillooet River FSR (Photo 3), to prevent any impacts to the mountain goat migration corridor.
- During the BC EAO and Conservation Officer Service (COS) site audit on July 6, 2016, the officers identified gaps between the electric fences and the electric matting surround the construction camp, as well as post-compaction food waste leakage under and surrounding the trash compactor. The seal on the compactor was faulty, resulting in liquid leakage that would normally be contained within the unit. Additionally, the officers identified food waste and wildlife attractants (spilled oil and fuel) on the ground at the concrete batch plant and the KM38 lay down area. As a result, the conservation officer indicated be issuing CE with a Letter of Non-Compliance for wildlife attractant management. Overall, the officers noted improvements in CE’s attractant management (food, fuel, and oil) especially at all ULRHEF work areas (ITM ULR #56), however they identified areas where attractant management still required improvement. Based on the improved attractant management, the IEM closed ITM ULR #56 and opened ITM ULR #58 to track the issues identified on the July 6 site inspection.

- On July 9, a spill occurred (83L) at the crusher pad when a hydraulic hose ruptured on the crusher. The operator immediately stopped the machine and contained the spill with spill pads. He then built a berm around the crusher to prevent the spill from migrating off site (Photo 4). The IEM monitored CE's crews while excavating the contaminated soil surrounding the crusher. CE sent soil samples to a lab for confirmation of complete remediation. CE temporarily stored the contaminated soil in 55-gallon drums prior to its removal by an approved contaminated soils vendor.
- On July 12, CE fixed the gaps between the construction camp fence and the electric entrance mats, as requested by the BC EAO during their site audit on July 6, 2016 (Photo 2, ITM ULR #58).

Photos:



Photo 1 – Silt fence repairs at KM41.2 Lillooet River FSR (July 5, 2016).



Photo 2 – Removal of the gap between the electric mat and electric fence at pad 3 entrance to the construction camp (July 12, 2016).



Photo 3 – Clean-up of material dumped at KM45.3 of the Lillooet River FSR (July 4, 2016).

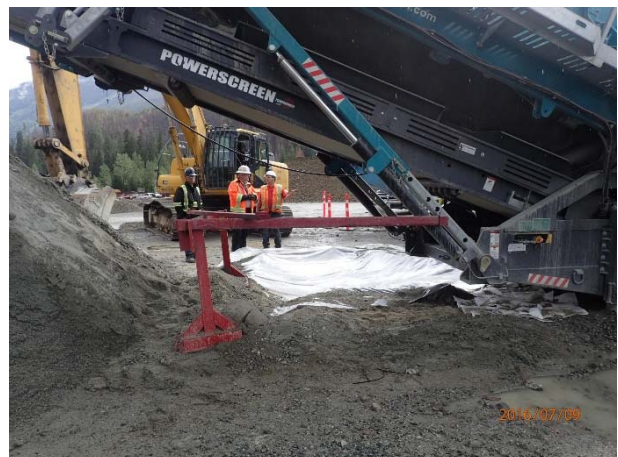


Photo 4 – Hydraulic leak on the crusher (July 9, 2016).

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 July 3 – July 15, 2016. Photo 5 shows the current conditions at the ULRHEF headworks during the reporting period
- Formwork, rebar, and concrete works on the transition between the intake structure and BEBO wall throughout the reporting period.
- Rebar, formwork, and concrete works continue on the intake and sluiceway structures throughout the reporting period.

Environmental Summary:

- During grout injection and tunnel excavation rounds in the upstream tunnel, CE directed all seepage water to the ULRHEF intake sediment basins for treatment (Photo 7). CE's environmental management team ensured that the active water treatment system was functioning and well maintained. Additional water quality sampling results are available upon request (Photo 8).
- CE installed an additional 12" hard discharge water line from the concrete lined sump to the setting ponds and water treatment system (Photo 9). This new water line will increase pumping capacity and ensure that CE can pump all construction wastewater from the tunnel, BEBO wall, and the sluiceway to the treatment system simultaneously. CE will continue to monitor the capacity of this system and stage works in a manner that prevent the concrete lined sump from overflowing. The IEM is satisfied with CE's new pumping system, *ULR#54* is now closed.

Photos:



Photo 5 – ULRHEF u/s tunnel portal and BEBO wall (July 6, 2016).



Photo 6 – ULRHEF intake (July 5, 2016).



Photo 7 – Pond 7 of the ULRHEF (July 14, 2016).



Photo 8 – Discharge of ULRHEF intake water treatment system back to Lillooet River meeting BCWQG (July 3, 2016).



Photo 9 – New discharge water line from the concrete lined sump at ULRHEF (July 11, 2016).

4.3 *Downstream Tunnel Portal*

Construction Activities:

- Drilling, blasting, mucking and stabilization works (shotcrete application) within the tunnel.
- Maintenance and sediment removal from the active water treatment system installed near ASTR-03 (Photo 10).

Environmental Summary:

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

Photos:



Photo 10 – Sediment removal from the active water treatment system at ASTR-03 (July 13, 2016).

4.4 **Penstock**

Construction Activities:

- Welding, coating, backfill, compaction and reclamation of the penstock east and west of Truckwash Creek (Photo 11).
- Formwork, rebar, and concrete works for the Truckwash Creek protection slab (Photo 11).

Environmental Summary:

- The IEM monitored construction activities throughout the monitoring period and observed no environmental issues. CE crews pumped all construction wastewater to the lower portal active water treatment system via the oil-water separator. The IEM monitored the discharge from the active water treatment system for compliance with BCWQG. Water discharged to ASTR-03 did not exceed > 8 NTU above background turbidity during the reporting period. Additional water quality sampling results are available upon request.

Photos:



Photo 11 – Welding and coating works on the ULRHEF penstock through the Truckwash Creek diversion (July 15, 2016).

4.5 Powerhouse, Tailrace & Access Road

Construction Activities:

- Andritz mechanical works in the powerhouse.
- Rebar, formwork, and concrete works on the tailrace structure (Photo 12).
- Installation of a new clean water sump outside of the tailrace structure (Photo 13).

Environmental Summary:

- CE continued with concrete works for the tailrace of the ULRHEF powerhouse structure (Photo 12). The IEM did not observe any environmental issues associated with these works.
- CE installed a new clean water sump outside of the tailrace structure. The sump consists of a 1 m diameter steel pipe, with large holes cut in the bottom (Photo 13). The pipe was backfilled and a 10” pump was lowered into the sump. The IEM monitored the installation of the new sump and all associated water quality. The IEM did not observe any environmental issues associated with these works.

Photos:



Photo 12 – Concrete curing at ULRHEF tailrace (July 5, 2016).

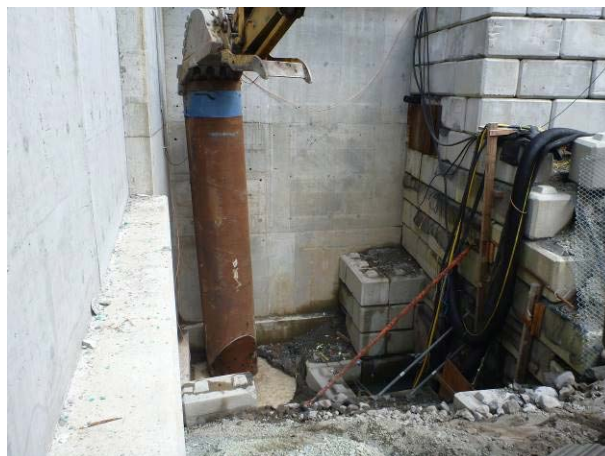


Photo 13 – Installation of new clean water sump at the ULRHEF powerhouse (July 16, 2016).

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 IEM selected the regular monitoring 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 of an exceedance of *in-situ* WQ (turbidity and/or pH) because of 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, an asterisk (*) will be used to denote it.

Date	Time	Sample Location Description	pH	Turbidity (NTU)	Cond (uS)	Temp (°C)
Routine Water Quality						
July 8, 2016	10:20	ULR Background – ULRHEF Intake	7.5	46.5	26	4.6
	11:10	ULR #0.5 – Downstream of ULRHEF intake at Keyhole Bridge	7.5	43.9	26	5.2
	15:49	ULR # 1 – Upstream of ULRHEF Powerhouse	7.7	32.6	56	9.1
	16:04	ULR #2 – Downstream of ULRHEF Powerhouse between KM 40.5 and KM 41	7.6	36.2	20	8.2
	9:20	ULR #3 – Lillooet River FSR KM 38 Laydown – D/S of Boulder confluence	7.6	44.6	23	5.6
	8:53	ULR #4 – Lillooet River FSR KM 24 – D/S of all works and Meager confluence	7.6	31.8	54	5.8
July 13, 2016	15:05	ULR Background – ULRHEF Intake	6.9	40.9	123	9.3
	16:00	ULR #0.5 – Downstream of ULRHEF intake at Keyhole Bridge	7.4	43.9	29	10.1

Date	Time	Sample Location Description	pH	Turbidity (NTU)	Cond (µS)	Temp (°C)
	11:05	ULR # 1 – Upstream of ULRHEF Powerhouse	7.8	38.1	70	5.6
	13:55	ULR #2 – Downstream of ULRHEF Powerhouse between KM 40.5 and KM 41	7.8	47.0	23	9.4
	10:14	ULR #3 – Lillooet River FSR KM 38 Laydown – D/S of Boulder confluence	7.6	41.9	27	8.7
	16:36	ULR #4 – Lillooet River FSR KM 24 – D/S of all works and Meager confluence	7.3	37.5	51	10.5

4.7 Recommendations

IEM recommendations for the ULRHEF are as follows:

- CE should review open issues on the ITM (*ULR #51, #57 and #58*) and work to rectify the outstanding environmental issues in a timely manner.
- CE should continue to convey all water from the ULRHEF upstream tunnel heading 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 monitor the oil water separator to ensure that the pumps have the capacity to handle additional water from the penstock excavation within Truckwash Creek.
- CE should continue to ensure that the electric fence and matting surrounding camp are in good working condition and that all food waste is properly disposed of, as per the BC EAO officer’s recommendations.
- CE should continue to clean up and properly dispose of all oil and fuel spills at the various maintenance laydown areas.
- CE should continue to conduct daily site inspection and ensure the proper disposal of wildlife attractants.

4.8 Upcoming Works

New and/or environmentally sensitive construction activities 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.
- Formwork, rebar, and concrete works for the Truckwash Creek penstock crossing.
- Excavation of the ULRHEF tailrace.
- Placement and grouting of rip rap at the ULRHEF tailrace.
- Installation of turbines and secondary concrete works in the ULRHEF powerhouse.

5.0 Boulder Creek Hydroelectric Facility – Monitoring Results

5.1 Access Road & Intake

Construction Activities:

- Formwork, rebar, and concrete works continue on the BDRHEF intake structure (Photo 14).
- Crews continued with blasting, excavation, and stabilization of the first 10 metres of the upstream tunnel, to allow for the construction of the intake-tunnel transition structure (Photo 15).
- Night shift crews excavated and maintained ditches along BDRHEF intake access road (Photo 16).

Environmental Summary:

- The IEM did not observe any environmental issues with concrete works or blasting activities during the monitoring period.
- The IEM monitored the discharge from the active water treatment system for compliance with BCWQG. Water discharged to Boulder Creek did not exceed >8 NTU above background turbidity during the reporting period. Additional water quality sampling results are available upon request.

Photos:



Photo 14 – Concrete works on BDRHEF intake structure (July 7, 2016).



Photo 15 – Stabilization and Shotcrete activities on BDRHEF upper tunnel portal (July 3, 2016).



Photo 16 – Rock lined ditch at KM4.5 of BDRHEF intake access road (July 5, 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.
- Vegetation was hand cleared and machine grubbed along the tie-in zone of the BDRHEF tailrace. After all vegetation had been cleared, CE placed large boulders along the high water mark and constructed a berm to create access for the second stage of the tailrace excavation and concrete works (Photo 17 - Photo 20).

Environmental Summary:

- CE conveyed all wastewater related to the BDRHEF tunnelling works to the downstream settling ponds for treatment (Photo 21).
- During a site audit, on July 6, 2016, the BC EAO officer identified the improper staging, storage, and containment of leaky equipment at the BDRHEF lower tunnel portal and mechanic laydown area. The officer instructed CE to clean up all affected soil and to improve maintenance of construction equipment.
- The IEM monitored all vegetation clearing and construction activities along the high water mark of Boulder Creek. CE conducted all works in the dry, and the IEM did not observe any environmental issues associated with these works during the monitoring period.

Photos:



Photo 17 – Hand clearing of Vegetation at the tie-in location of BDRHEF tailrace (July 15, 2016).



Photo 18 – Placement of large boulders for debris berm along the high water mark of Boulder Creek (July 15, 2016).



Photo 19 – Berm for constructed behind the high water mark at BDRHEF tailrace (July 15, 2016).



Photo 20 – Excavation for the second stage of the BDRHEF tailrace concrete works (July 16, 2016).



Photo 21 – BDRHEF downstream portal settling ponds (July 6, 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 IEM selected the regular monitoring 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 of an exceedance of *in-situ* WQ (turbidity and/or pH) because of 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, an asterisk (*) will be used to denote it.

Date	Time	Sample Location Description	pH	Turbidity (NTU)	Cond (uS)	Temp (°C)
Routine Water Quality						
July 8, 2016	10:10	BDR BG – Upstream of BDRHEF intake	7.5	44.2	31	5.1
	10:40	BDR #1 – Downstream of BDRHEF intake	7.6	38.6	32	5.2
	17:03	BDR #2 – Upstream of BDRHEF Powerhouse	7.5	20.4	25	5.4
	9:47	BDR #3 – Downstream of BDRHEF Powerhouse at Pebble Creek Bridge	7.5	35.6	28	5.4
July 13, 2016	9:30	BDR BG – Upstream of BDRHEF intake	7.5	25.8	28	9.7
	9:50	BDR #1 – Downstream of BDRHEF intake	7.3	24.9	26	9.8
	14:07	BDR #2 – Upstream of BDRHEF Powerhouse	7.3	25.5	24	9.8
	14:25	BDR #3 – Downstream of BDRHEF Powerhouse at Pebble Creek Bridge	7.3	28.3	25	9.3

5.4 Recommendations

IEM recommendations for the BDRHEF are as follows:

- CE should continue to direct all construction related wastewater to the active water treatment systems/settling ponds. CE should continue regular inspections of the water treatment systems/settling ponds to ensure that they are in good condition, and preform all maintenance activities as outlined in the work plan.
- CE should continue to maintain the BDRHEF intake access road, and continue excavation/maintenance of ditch lines as discussed after the BC EAO site audit on June 9, 2016.
- CE should continue to park all equipment in designated areas at the BDRHEF lower tunnel portal and mechanic laydown and continue to clean-up all fuel and oil spills immediately and dispose of them properly.

5.5 Upcoming Works

New and/or environmentally sensitive construction activities scheduled to occur at the BDRHEF:

- BDRHEF downstream tunnelling works will continue.
- Electrical component installation and dry commissioning will continue at BDRHEF powerhouse.
- Formwork, rebar, and concrete works at BDRHEF intake.
- Formwork, rebar, concrete, and riprap placement at BDRHEF tailrace.
- Conduit installation along Boulder intake access road.

6.0 Transmission Line – Monitoring Results

6.1 Transmission Line Construction Activities

Construction Activities:

Segment 9

- O'Briens ground prep (blasting) for pole structures 227 and 228.
- Setting poles for pole structures 203-218.

Segment 10

- Flying ropes for pole structures 229-241.
- Clipping in conductors on pole structures 230-242.

Segment 11

- O'Briens machine ground preparation for pole structures 271, 277, and 278-280.

Segment 12

- Road construction (slashing, drilling, and excavation) for pole structures 300-305.
- Mumlegs slashing felled logs at pole structures 281-283.
- Mumlegs building road for tower 305.

Segment 13

- Machine ground preparation for pole structures 306, 307, and 316.

Environmental Summary:

The TX Line contractor and their sub-contractors did not perform environmentally sensitive works requiring IEM monitoring during this reporting period.

6.2 Recommendations

IEM recommendations for the Transmission Line are as follows:

- WEL's Environmental Manager continues to provide regular scheduling updates that permits the IEM to assess environmental risks and coordinate monitoring requirements. WEL should continue to provide the IEM with a minimum of 48 hours' notice if IEMs presence is required or expected for construction activities.

6.3 Upcoming Works

New and/or environmentally sensitive construction activities scheduled to occur at the Transmission Line:

Segment 9

- Straightening and backfilling poles at structure locations 203-217.
- Ground preparations for pole structures 219, 228, and 229.

Segment 11

- Bucking felled timber at pole structures 273-278.

Segment 12

- Ground preparation at pole structures 285-305.
- Road building for access to pole structure 305.

Segment 14

- Blasting for pole foundations at structure locations 349-353.

7.0 Wildlife Sightings

As per the CEMP, the IEM implemented a wildlife sightings record. Project Personnel are required to regularly update the record and it is mandatory for all personnel to report wildlife sightings including, but not limited to bears, cougars, mountain goats and deer. 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

8.0 Mountain Goat Monitoring Program

The spring 2016 Mountain Goat Monitoring Program is complete as of June 15, 2016 according to conditions of the Mountain Goat Management Plan. The mountain goat monitoring program will resume in November 2015.

To mitigate potential impacts to mountain goats during the summer months, Construction activities will cease if a mountain goat(s) is/are observed within a 500m line of site of a construction activity. No mountain goats were observed within 500m line of sight of construction activities and no work stoppages were required during this monitoring 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 if it has been compromised. Update June 8, 2016 – CE is working on a revised design for drainage currently being diverted to the crossing structure at KM41.2. A drainage plan and/or crossing structure repair or replacement remains outstanding. The IEM understands that the repairs must be completed prior to the delivery of the ULRHEF generators. This item will continue to be tracked until repairs are completed and the drainage design finalized; however the current conditions do not present an imminent risk to the environment. The ditch lines remain sufficiently armoured against erosion and the IEM has been informed that the crossing structure is currently stable.	April 8, 2016	April 22, 2016	-
ULR#54	CLOSED	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. Update July 10, 2016 – Additional pumping capacity was installed to ensure water from the BEBO wall and tunnel excavation can be pumped directly to the treatment ponds. If the intake is added however the system cannot keep up; therefore, work will be staged to ensure the intake seepage remains clean while active works are occurring on the BEBO wall. 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 17, 2016	May 24, 2016	July 10, 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#56	CLOSED	All ULRHEF and BDRHEF work areas.	BCEAO Inspection & Section 34 Order	1. <i>Improper waste management</i>	June 9, 2016	June 30, 2016	June 29, 2016
				a. <i>Prepare EIR024 to document American marten attraction to waste in the KM48 construction waste.</i>			June 12, 2016
				b. <i>Prepare a Waste Management Protocol/Strategy to clean-up all mis-managed waste onsite and improve onsite waste management procedures. INX submitted the WEL and CE Waste Management and Wildlife Attractant Protocols in response to the BC EAO Section 34 Order.</i>			June 29, 2016
				1. <i>Improve equipment maintenance and storage practices to prevent soil contamination from small leaks (use spill trays/tarps/absorbent pads, etc.) and perform regular clean-up of any leaks or spills that reach the ground. All parking areas have been cleaned of hydrocarbons resulting from leaking equipment. CE will maintain equipment to prevent chronic leaks or will use drip trays/tarps/containment to manage small leaks in parking areas.</i>			July 10, 2016
				2. <i>Improve ditches and road run-off management along the BDRHEF intake access road. Ditches have been lined along the majority of the BDRHEF intake access road and ESC risk has been appropriately mitigated.</i>			July 2, 2016
ULR#57	OPEN	Batch plant and ULRHEF intake concrete wash pits	Concrete washing in occurring outside of designated wash pits or in wash pits that are not properly lined to contain cement waste. Maintenance and/or repairs to these pits are required.	1. <i>Line wash pit at the ULRHEF intake with geo-textile to contain all cement powder waste. Concrete waste should be used to make lock blocks at the batch plant or should be cured in designated areas to prevent cement-laden runoff. This wash pit should not be used until repairs are completed.</i>	July 6, 2016	July 9, 2016	-
				2. <i>Restore capacity of the batch plant concrete wash pit. The IEM recommends:</i>			
				a. <i>Removing cured concrete from within the wash pit, and re-lining the wash pit with geo-textile.</i>			
				b. <i>Cured concrete and cement laden runoff along the edge of the access road adjacent to the wash pit should be removed, broken into smaller pieces, and buried in a designated spoil area.</i>			July 11, 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#58	OPEN	All work areas	Conservation Officer and BCEAO Compliance and Enforcement Officer Inspection noted non-compliance with regard to wildlife attractant management.	<ol style="list-style-type: none"> Develop, implement and document internal waste and attractant management auditing tool. Tool will be available for use by the IEM and CE's EM Team. Records of inspections and noted non-compliances should be tracked internally with clean up documented in each report. This tracking tool will be available to agencies upon request. This tool should be used similarly to the Spill Reporting tool currently being employed onsite. Repair and adjust the electric fences and charged entrance mats at the construction camp (perimeter fence, camp kitchen fence, and waste compactor fence) and surrounding the septic field. Install self-closing door hinges in all site lunchrooms and anywhere food is being stored temporarily (lunchrooms, kitchen storage area) OR adjust how food is transported, stored and consumed onsite to eliminate the possibility of food and food waste attractants onsite. Perform maintenance to clean-up grease and liquid waste around and underneath the garbage compactor. Install berms surrounding parking areas that are lined with impermeable fabric in areas where tunneling equipment is parked. All leaks could be considered wildlife attractants; therefore all leaky equipment should be repaired and leaks or spills to ground in parking areas must be cleaned up daily and be disposed of in appropriate contaminated soil bins. 	July 6, 2016	July 9, 2016	-
<i>No outstanding environmental issues (next ITM – BDR#28 & ULR#59)</i>							

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
<i>No outstanding environmental issues (next ITM – Tx#3)</i>							











Environmental Incident Reporting Form

General Information	
Project Name: Upper Lillooet Hydro Project	Project Component Lillooet River FSR @km 42.4
Time/Date of Incident Start: 2016-07-12, 10:00 PM	Time/Date Incident Stopped: 2016-07-12, 10:00PM
Date of Report: 2016-07-13	Project Incident Report Number: 2016-07-12 CE-EIR-027
Report Prepared By: Jean M. Pelletier	
Contractors Environmental Manager: Jean M. Pelletier	
Independent Environmental Monitor: Tom Hicks, Stephanie Ellis	
Licensee's Environmental Coordinator: Julia Mancinelli	

Contact Information for Company Involved in Incident	
Company: CRT-ebc, s. e. n. c.	Address: PO Box 585, Pemberton BC – V0N 2L0
Phone #: 604-894-5002	Email: jdrapeau@crtconstruction.ca
Contact Person: Jonathan Drapeau	Position: Project Manager

Incident Type (check all that apply)			
Encroachment of an Environmentally Sensitive Area (e.g. Riparian/Wildlife Buffer) Please provide details in "Description" section below.	<input type="checkbox"/>	Adverse Impacts to Fish/Wildlife (e.g. Mortality/Injury) Please provide details in "Description" section below.	<input checked="" type="checkbox"/>
Water Quality/Quantity Please provide details in "Description" section below.	<input type="checkbox"/>	Hazardous Material Spills (to ground or water) Please provide details in description section in regards to: <ul style="list-style-type: none"> Perceives extent of damage Type, quantity and area of the spill Containment Procedures Environmental features in close proximity to the spill 	<input type="checkbox"/>
Disturbance of known or unknown archeological /heritage site Please provide details in "Description" section below.	<input type="checkbox"/>	Air Quality Please provide details in "Description" section below.	<input type="checkbox"/>
Spill reported to external agencies If yes, describe the receiving environment and substance/quantity spilled.	<input type="checkbox"/>	Other Please provide details in "Description" section below.	<input checked="" type="checkbox"/>

Incident Profile								
Weather at time of incident	 <input type="checkbox"/> Clear	 <input checked="" type="checkbox"/> Partly Cloudy/ Variable	 <input type="checkbox"/> Cloudy	 <input type="checkbox"/> Showers/ Periods of Rain	 <input type="checkbox"/> Rain	 <input type="checkbox"/> Heavy Rain (>25mm in 24hr)	 <input type="checkbox"/> Storm (Heavy rain and high winds)	 <input type="checkbox"/> Snow
Specific Location: Upper Lillooet Downstream Portal – Lunchroom (near 44.7 on the FSR)								
Description and Cause of Incident:								
<p><u>Description:</u> At 10:00 PM, a deer struck the truck driven by an engineer driving down the Lillooet River FSR near KM42.4. The driver was not injured and there was no passenger in the vehicle. The doe died later of the injuries sustained in the collision. According to the driver, the doe jumped in front of his pick-up from the right bank of the FSR. The left front portion of the pick-up is where the doe's rear collided with the truck as it attempted to cross the road. The driver then called Safety to report the incident. A few minutes later, the night shift Environment Manager was informed of the accident. She followed the protocol outlined in the Accident, Malfunction and Emergency Response Plan (EPP) and notified a conservation officer through the RAPP line. The Sr Environment Manager was informed of the accident at 5:05 am this morning. He also called the RAPP line to get instruction how to dispose of the deer carcass. Mike, the CO on duty required that it be buried. So, around 8:30 am this morning, the deer was buried close to the accident location. The burial site is in a spoil, on the other side of the road. The deer is buried at more than 3 meter deep, far enough from the road to allow the digging of a ditch for the road when reclamation work will be completed. The location was approved by the IEM on site, who supervised the burial with the Sr Environment manager. It was also documented with pictures. (See attached).</p> <p><u>Cause:</u> There is plenty of deer on site and they often jump right in front of pick-ups. In this particular situation, the doe might have jumped to close to the pick-up for the driver to react quick enough. Unfortunately, this occurrence resulted in the death of the deer.</p>								
Incident Witness: No witness of the event as the driver was alone in his pick-up.								
Were there any Potential Environmental impacts as a result of the incident? (e.g., surface contamination, storm sewers, or fish/wildlife mortalities)		Yes <input checked="" type="checkbox"/>	None Observed <input type="checkbox"/>					
If Yes, please describe: See incident description above								
Has Wildlife Salvage Protocol been followed? i.e. Carrion Removal		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>					
If No, please explain:								
Water Quality Samples Collected?		Yes <input type="checkbox"/>	No <input type="checkbox"/>					
N/A <input checked="" type="checkbox"/>								
If yes, attach results of water quality analysis to report in table format. Include Laboratory analysis if completed.								
If No please explain:								



Have applicable photos and/or drawings been attached to the incident report?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Incident Response Measures			
See incident description above			
Actions to Prevent Incident Recurrence			
Workers will be reminded tomorrow at the mass safety meeting of the danger of deer on the road, and to drive slowly to reduce the risk of colliding with wildlife.			

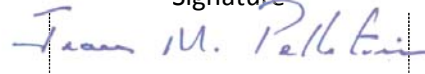
Notification Record						
Agency Reported to	Contact Information	Agency Contacted		Date Reported	Reported By	Method of Reporting
		Yes	No			
External						
MFLNRO	James Davies	<input checked="" type="checkbox"/>	<input type="checkbox"/>	July 14th , 2016	Innergex	Email
BCEAO	Justin Carlson	<input checked="" type="checkbox"/>	<input type="checkbox"/>	July 14th , 2016	Innergex	Email
Lil'wat Nation	Harriet VanWart	<input checked="" type="checkbox"/>	<input type="checkbox"/>	July 14th , 2016	Innergex	Email
RAPP	Conservation Officer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	July 12/13, 2016 July 14 th 2016	CRT-ebc Innergex	Phoned & Follow-up Call Email
PEP	1-800-663-3456	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
DFO	Herb Klassen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14th		
Environment Canada	604-666-6100	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Canadian Coast Guard	604-666-6011	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Local Fire Rescue	911	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Internal						
Innergex	Oliver Robson	<input checked="" type="checkbox"/>	<input type="checkbox"/>	July 13, 2016	J M.Pelletier	Phoned: July 13 Emailed: July 13
IEM	Tom Hicks	<input checked="" type="checkbox"/>	<input type="checkbox"/>	July 13, 2016	J M.Pelletier	Phoned: July 13 Emailed: July 13
IE	Jenn McCash	<input checked="" type="checkbox"/>	<input type="checkbox"/>	July , 2016	Innergex	Email



Independent Environmental Monitor:

Tom Hicks	IEM - SES		July 14 th 2016
Print Name	Position and Company	Signature	Date

Contractor's Manager:

Serge Moalli	Project Director – CRT-ebc	 for Serge Moalli	July 14 th 2016
Print Name	Position and Company	Signature	Date



1. Doe in the ditch near km 42.4 of the FSR.



2. Larger view



3. Excavator digging the hole to bury the animal.



4. The deer at the bottom of the hole



5. View of the burial site once the job was done.