# Upper Lillooet Hydro Project

## Weekly Environmental Monitoring Report #101

Reporting Period: August 14 - 27, 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 |
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| Pontus Lindgren | Westpark Electric Ltd. | |
| Harriet VanWart | Lil'wat Nation | |
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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 & 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*
*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 |
| **BCCOS** | British Columbia Conservation Officer Service |
| **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 |
| **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 |
|---|---|---|
| August 14 - 20, 2016 | SE, MC, TH | ***Construction Camp, Laydown Areas and the Lillooet River FSR***<br>• Road maintenance on the Lillooet River FSR<br>• Generator delivery and transfer in KM39 laydown adjacent to the Lillooet River FSR<br>***ULRHEF Intake & Upstream Tunnel***<br>• Shutdown due to elevated landslide risk<br>***ULRHEF Downstream Tunnel***<br>• Tunnel stabilization (rock bolts, shotcrete, concrete protection slab for tunnel floor)<br>• Water treatment system maintenance<br>***ULRHEF Penstock***<br>• Welding and coating works<br>• Backfill, compaction and reclamation<br>• Rebar, formwork, and concrete pours for Truckwash Creek crossing<br>***ULRHEF Powerhouse & Tailrace***<br>• Mechanical and electrical works<br>• Second stage concrete pours inside the powerhouse<br>• Backfill of concrete encased manifold and along north side of powerhouse structure<br>***BDRHEF Intake & Upstream Tunnel Portal***<br>• Rebar, formwork, and concrete pours for intake superstructure<br>• Water treatment system maintenance<br>***BDRHEF Downstream Tunnel Portal***<br>• Drilling, blasting and tunnel stabilization<br>***BDRHEF Powerhouse & Tailrace (above the HWM)***<br>• Switchyard electrical equipment installation<br>• Tailrace instream works including isolation berm extension and instream excavation<br>• Rip-rap placement and grouting (tailrace)<br>• Concrete works (tailrace rip-rap grouting)<br>***TX-Line***<br>Segment 6<br>• Temporary bridge installation to access and install Pole 140 foundation protection (including bin walls and rock armouring)<br>Segment 9a & 9b<br>• Pole framing and conductor stringing<br>Segment 10<br>• Deficiency work (ditch repairs, debris management, and helipad/pole corrections)<br>Segment 11<br>• Pole framing<br>Segment 12<br>• Pole installation and framing upon completion of ground preparations<br>Segments 12, 13, and 14<br>• Ground preparation (including blasting and by hand) for pole and pole anchors |
| August 21 – 27, 2016 | SE, MC | ***Construction Camp, Laydown Areas and the Lillooet River FSR***<br>• Road maintenance on the Lillooet River FSR (KM46 – KM48 ditch maintenance)<br>• Dust suppression application (calcium chloride) from KM37 – KM39<br>• Conduit installation KM46.5 – 48.5 and capping<br>***ULRHEF Intake & Upstream Tunnel***<br>• Shutdown due to elevated landslide risk throughout the week |

| Date | IEM Team Personnel | Key Monitoring Locations & Activities |
|---|---|---|
| | | ***ULRHEF Downstream Tunnel***<br>• Final lining and rock support (including shotcrete)<br>• Concrete works (tunnel floor slab)<br>• Maintenance of primary water treatment system<br>***ULRHEF Penstock***<br>• Backfill and compaction<br>***ULRHEF Powerhouse & Tailrace***<br>• Mechanical and electrical works<br>• Formwork and concrete inside powerhouse<br>• Backfill of manifold and north side of the powerhouse<br>• Generator delivery<br>• Riprap placement in the dry for tailrace armouring<br>• Instream works for tailrace tie-in (excavation, rip-rap placement, rock hammering)<br>***BDRHEF Intake & Upstream Tunnel Portal***<br>• Rebar and formwork<br>• Conduit installation along TX Line alignment between the BDRHEF powerhouse and BDRHEF intake access road<br>• Concrete works (superstructure, stop logs and sluice gate)<br>***BDRHEF Downstream Tunnel Portal***<br>• Drilling, blasting and tunnel stabilization<br>***BDRHEF Powerhouse & Tailrace (above the HWM)***<br>• Tailrace rip rap placement and grouting (in the dry)<br>• Electrical work<br>• Switchyard installation<br>***TX-Line***<br>Segment 6<br>• Installing Pole 140 foundation protection (including bin walls and rock armouring)<br>Segment 9a & 9b<br>• Conductor tensioning and clipping<br>Segment 10<br>• Deficiency work (ditch repairs, debris management, and helipad/pole corrections)<br>Segment 11<br>• Ground preparation (including blasting) for pole anchors<br>• Pole framing<br>Segment 12<br>• Pole installation and framing<br>Segments 13 & 14<br>• Ground preparation (including blasting and by hand) for pole and pole anchors<br>Segment 15<br>• Setting poles via helicopter and pole structure framing<br>Segment 16<br>• Clearing ROW and construction the Canadian National Railway crossing. |

***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. |
|---|---|---|---|---|
| August 15 | *Pre-work meeting* | WEL, SES, Mumleqs, Hedberg | The structure 140 reinforcement workplan was reviewed. The discussion focused on the methods to be used to construct and later remove temporary crossings over two small side channels of the Lillooet River required to access and reinforce structure 140. The first channel was wetted while the second was dry at the time of the pre-work meeting. Both crossing locations were isolated using fish exclusion fencing and salvaged by Ecofish prior to initiating instream works during the approved instream works window. | - |
| | *Email* | INX, SES, MFLNRO, BCEAO, Hedberg | In accordance with Clause 4.1(y) of Licence of Occupation #242386 (File 2410654) and Condition 6 of Environmental Assessment Certificate #E13-01, INX submitted their QP prepared ULHP Transmission Line Access Road Deactivation Plans and a summary of consultation with the industrial users. | - |
| August 16 | *Email* | CE, SES, INX | CE provided analytical results confirming successful remediation of a spill of 83 liters of hydraulic oil to ground at the crusher pad. As the spill was under the reportable threshold (<100L) it has been internally document and reviewed by the IEM as Spill report #2016-27. Confirmatory lab testing was completed due to the volume of the spill and to verify that the spill was appropriately remediated. | - |
| August 17 & 18 | *Emails* | WEL, SES, INX | Grizzly Bear polygon GB59 in Segment 15: WEL discussed that stringing, tensioning, and clipping at structure 376 would need to take place after September 1st. According to the Human-Bear Conflict Management Plan: Clearing and construction should avoid the fall season to avoid displacing bears at GB59. To ensure Grizzly bears are not displaced WEL confirmed that no physical alteration to the habitat would occur during stringing by helicopter, clipping by hand, and tensioning with equipment located far away from GB59, and an aerial survey would be completed to assess grizzly bear presence and the GB59 habitat prior to conducting the works. | - |
| August 18 | *Email* | CE, SES, INX | CE informed the IEM that a barbeque was planned for August 30 at the ULHP camp to celebrate the achievement of completing both tunnel excavations. Additional mitigation measures were outlined to prevent attracting wildlife, which included containing all food within the designated area behind the electric fence and the removal of all food, food waste, and barbeque equipment immediately following the 3-hour event. | - |
| | *Email, Teleconference* | CE, INX, SES | The bi-weekly environmental coordination meeting was held and the meeting minutes were distributed by CE. | - |
| August 18 & 20 | *Emails* | WEL, INX, SES | WEL provided notification of a non-project related wildfire burning at the south end of Segment 10 (Ryan River Drainage) that appeared to have originated within a forestry cut-block. All crews responded with fire | - |

| Date | Communication Type | Participants | Issues Discussed | ITM ID No. |
|---|---|---|---|---|
| | | | suppression efforts until the Coastal Fire Centre was able to take over firefighting operations. On August 20, WEL provided confirmation that the fire had been extinguished and that no damage to the TX Line occurred. | |
| August 21 & 23 | *Email* | CE, SES, INX | CE requested permission to operate an excavator not equipped with biodegradable hydraulic oil within 30m of Truckwash Creek to complete penstock backfill and at the ULRHEF to place rip-rap outside of the wetted perimeter of the Lillooet River. Additional mitigation measures were proposed including;<br>a. The operator will perform and document inspections 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.<br>b. If any leaks in the equipment are detected during inspection, work with that machine must cease until the leak is repaired.<br>c. The equipment will be parked more than 30 meters from the creek when not in use.<br>d. Additional spill kits will be placed in close proximity to the operating excavator.<br>e. 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.<br>The IEM confirmed that works could proceed as the additional mitigation measures proposed were acceptable to reduce the risk of a spill to water. | - |
| August 24 | *Site review* | DFO, INX, SES, CE, Ecofish | DFO representatives conducted a site tour with the IEM and INX to visit all project areas, the identified sensitive stranding sites, and Alena Creek fish compensation channel. | - |
| August 24 & 26 | *Email, phone calls* | SES, CE, INX, DFO, Lil'wat Nation, BCEAO, JEM | The IEM reported a spill to water (<1L of bio-degradable hydraulic oil was spilled to the Lillooet River during ULRHEF tailrace works) to the Environmental Emergency Program and DFO. Crews responded immediately according to procedures outlined in the Spill Response and Emergency Response Plan to contain and clean-up the spill under IEM supervision. An environmental incident report (EIR029) was also prepared and submitted to agencies. | EIR 029 |

# 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). |
| | ULRHEF intake & tailrace, BDRHEF tailrace, and fish accessible tributaries of the Lillooet River | Reduced Risk Project Specific Instream work windows for the protection of Bull Trout, Cutthroat Trout and Pacific Salmon (Coho, Sockeye), during sensitive life stages | All instream work will be conducted within Project specific timing windows. They are as follows:<br>ULRHEF intake: August 1 – October 31<br>ULRHEF and BDRHEF powerhouses: July 15 – September 15 |
| Lillooet River FSR, ULRHEF, & BDRHEF intake | Access roads above the lower limit of the 200m buffer to the Truckwash Creek Migration Corridor to the ULRHEF intake, as well as a portion of BDRHEF intake access road and intake structure within UWR u-2-002 UL 12 | Mountain Goat UWRs & Migration Corridor | If a mountain goat is observed within 500m line of sight of construction operations, construction must cease for at least 48 hours. Approval from the IEM must be obtained prior to recommencing construction activities, and the IEM must record and submit all goat observations to MFLNRO within 48 hours. |
| TX Line | Segments 8 - 16 | Mountain Goat UWRs<br>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. Approval from the IEM must be obtained prior to recommencing construction activities, and the IEM must record and submit all goat observations to MFLNRO 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). |
| | | 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*

### *Construction 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 (Photo 1).
- The laydown at KM39 of the Lillooet River FSR continues to be used to transfer the ULRHEF generators being delivered onto smaller trucks prior to proceeding to the powerhouse for final delivery and installation (Photo 2).
- CE dug trenches to install electrical conduit along the edge of the ULRHEF lower tunnel portal access road (Photo 3).

### *Environmental Summary:*

- During the conduit trench backfill and road reconstruction, the grader pushed a portion of the trenching material over the downslope side of the Lillooet River FSR from KM46.5 – 48. The material sloughed over understory vegetation, however it did not damage trees. The IEM recommends that this material be pulled off of the slope, where possible, or hydro-seeded areas of exposed loose soil to prevent erosion during rain events (ITM *ULR#60*).

### *Photos:*

**Photo 1 – Dust suppression at KM43.5 of the Lillooet River FSR (August 15, 2016).**

**Photo 2 – Generator being transfer to a smaller specialized transport truck at the laydown at KM39 of the Lillooet River FSR (August 14, 2016).**

**Photo 3 – Trenching and conduit installation along the ULRHEF lower tunnel portal access road (August 15, 2016).**

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

### *Construction Activities:*

- No activities occurred at the ULRHEF intake from August 14 - August 27, 2016 due to elevated landslide risk according to conditions of the Landslide Risk Management Plan.

### *Environmental Summary:*

- CE redirected all water from the dewatering system to the Lillooet River as water remained clear and undisturbed due to the intake site closure.
- On August 22, the IEM noted that some of the discharge hoses from the dewatering system were leaking into the intake work area, causing minor erosion on the backside of the downstream cofferdam and the input of minor amounts of sediment laden water to the Lillooet River (Photo 4). On August 23, CE repaired the leaking connection and resolved the issue (Photo 5). No downstream water quality effects were measured as a result of the temporary leak in the discharge pipes.

*Photos:*

**Photo 4 – Conditions at the ULRHEF intake, note minor leak (August 22, 2016).**

**Photo 5 – Repairs to the leaking dewatering pipes (August 23, 2016).**

## 4.3 *Downstream Tunnel Portal*

*Construction Activities:*

- Final lining and rock stabilization of the ULRHEF tunnel began on August 7, and continued through the monitoring period (Photo 6).

*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.
- The primary water treatment system was serviced on August 15, 2016 and water was temporarily directed to the secondary system during the service; however, one treatment system was sufficient to treat the volume of water from tunneling activities. The secondary system will remain in place as a backup and for use during servicing of the primary treatment system.

*Photos:*

**Photo 6 – Concrete truck backing into the lower tunnel to pour the tunnel floor liner at lower tunnel portal (August 22, 2016).**

## 4.4 *Penstock and Truckwash Creek Penstock Crossing*

*Construction Activities:*

- Backfill and compaction near the ULRHEF powerhouse (Photo 7).
- Rebar, formwork, and concrete works for the Truckwash crossing protection slab (Photo 8).

*Environmental Summary:*

- The IEM monitored construction activities throughout the monitoring period and observed no environmental issues.

*Photos:*

**Photo 7 – Backfill and compaction near the powerhouse (August 19, 2016).**

**Photo 8 – Conditions at the Truckwash Creek crossing following the final pour for the protection slab/end wall (August 21, 2016).**

## 4.5 *Powerhouse, Tailrace & Access Road*

*Construction Activities:*

- Excavation, rip rap placement, and grouting of rip rap in the ULRHEF tailrace. All works were completed behind the natural earth berm and in the dry (Photo 9 - Photo 12).
- Backfill surrounding the powerhouse/tailrace dewatering sump (Photo 13).
- Andritz mechanical works in the ULRHEF powerhouse (Photo 14).

*Environmental Summary:*

- CE completed instream excavation and rip rap placement at part of tailrace tie-in works from August 24 – 27, 2016 (Photo 9 - Photo 12). Ecofish was onsite each day prior to instream excavation to conduct a fish salvage/scare along the wetted edge of the instream works area. The IEM measured downstream water quality during instream works at 20 minute intervals and found that turbidity remained within BCWQGs for the majority of the works. Turbidity levels exceeded BCWQGs for a total of 3hours and 35 minutes over the course of the 4 day period, with turbidity levels reaching a maximum of 105.4NTU (when background was 88.2 NTU). Additional water quality data is available upon request.
- On August 24, at the start of the instream excavation for the tailrace tie-in, a hydraulic hose on an excavator equipped with bio-degradable oil ruptured, resulting in a spill (less than 1L of bio-degradable oil) to the Lillooet River. The IEM was onsite during the hose failure, and noted that CE immediately shut-off the equipment and enacted spill response procedures to contain and clean-up the spill. As the spill occurred to water the IEM reported the spill to the Environmental Emergency Program and DFO, however no serious harm to fish is expected to have occurred as a result of the minor spill. CE prepared and INX submitted EIR029 in addition to the initial spill notification.

## *Photos:*

**Photo 9 – Start of instream works at ULRHEF tailrace (August 24, 2016).**

**Photo 10 – Instream excavation of the tailrace tie-in. (August 24, 2016).**

**Photo 11 – Excavation of the final portion of the tailrace tie-in following 2 days of rock hammering bedrock (August 26, 2016).**

**Photo 12 – Tailrace tie-in complete with continued rip-rap armoring placement in the dry (August 27, 2016).**


**Photo 13 – Backfill and compaction around the powerhouse dewatering sump. (August 26, 2016).**


**Photo 14 – Andritz mechanical works in the ULRHEF powerhouse (August 15, 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 (*u*S) | Temp (°C) |
|---|---|---|---|---|---|---|
| **Routine Water Quality** | | | | | | |
| August 16, 2016 | - | ULR Background – ULRHEF Intake | Intake site closed due to elevated landslide risk | | | |
| | - | ULR #0.5 – Downstream of ULRHEF intake at Keyhole Bridge | | | | |
| | 10:50 | ULR # 1 – Upstream of ULRHEF Powerhouse | 7.8 | 61.2 | 36 | 8.6 |
| | 16:41 | ULR #2 – Downstream of ULRHEF Powerhouse between KM40.5 and KM41 | 7.3 | 89.6* | 35 | 10.7 |
| | 15:14 | ULR #3 – Lillooet River FSR KM38 Laydown – D/S of Boulder confluence | 7.4 | 64.5 | 31 | 11.5 |
| | 7:55 | ULR #4 – Lillooet River FSR KM24 – D/S of all works and Meager confluence | 7.6 | 82.1* | 44 | 11.0 |

## 4.7 *Recommendations*

IEM recommendations for the ULRHEF are as follows:

- Prior to resuming works at the ULRHEF intake once the landslide risk subsides, CE should direct water that is likely to be impacted by construction activity 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 provide a QP's assessment of the mountain goat UWR replacement area affected by last winter's snow clearing operations (ITM *ULR #49*; FAM#11), and provide recommendations for remediation.
- CE should remove material deposited on the downslope of the Lillooet River FSR between KM46.5 – 48 and hydroseed exposed areas to prevent erosion during fall rains (*ULR#60*).
- CE should perform regular inspections at all parking areas and ensure all spilled fuel and/or oil is cleaned up and disposed of in the proper disposal container, as per the Human-Bear Conflict Management Plan, and Hazardous Materials Management Plan.
- CE should continue to remind crews of proper food and wildlife attractant management, as per the Human – Bear and Human – Wildlife Interaction Management Plans.

### 4.8 *Upcoming Works*

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

- Final lining, rock support and concrete floor slab of the ULRHEF tunnel.
- Riprap armouring over the Truckwash Creek protection slab and removal of the bypass pipes.
- Use of the ULRHEF intake sediment basins once work resumes for the BEBO wall.

## 5.0 Boulder Creek Hydroelectric Facility – Monitoring Results

### 5.1 *Access Road & Intake*

*Construction Activities:*

- Formwork, rebar, and concrete works continue on the intake and sluiceway structures (Photo 15 - Photo 16)
- Conduit trenching on the BDRHEF intake access road and along the Tx Line alignment between the intake access road and the BDRHEF powerhouse.

*Environmental Summary:*

- The IEM did not observe any environmental issues associated with construction activities at the BDRHEF intake during this 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 15 – Formwork and rebar placement works at BDRHEF intake (August 19, 2016).**

**Photo 16 – Concrete pour at BDRHEF intake (August 21, 2016).**

## 5.2 *Downstream Tunnel Portal and Powerhouse*

### *Construction Activities:*

- Drilling, blasting, and tunnel stabilization in the downstream tunnel portal.
- Extension of a work pad along the edge of Boulder Creek at the tailrace tie-in location (Photo 17).
- Excavation, rip rap placement, and rip rap grouting of the tailrace apron armouring (Photo 18).
- Instream excavation and rip rap armouring of the tailrace tie-in (Photo 19 - Photo 21)
- Andritz electrical work in the BDRHEF powerhouse.
- BDRHEF switchyard installation (Photo 22).

### *Environmental Summary:*

- CE conveyed all wastewater related to the BDRHEF tunnelling works to the downstream settling ponds for treatment.
- On August 17, CE extended a berm and working pad to the wetted edge of Boulder Creek under IEM supervision (Photo 17Photo 18). The extension was required to ensure that placement and grouting of the rip rap apron protecting the downstream edge of the concrete tailrace, could be completed in the dry (Photo 18). Minor instream excavation was required as part of the pad extension and Ecofish was onsite to conduct a CTF sweep/salvage prior to working instream. The IEM recorded downstream turbidity levels at 15 minute intervals throughout the works and found that BCWQGs were exceeded temporarily for ~1 hour total time (max turbidity was 44.8NTU when background was 26.1NTU). Additional water quality sampling results are available upon request.
- Instream works for the BDRHEF tailrace resumed again on August 22, with the armouring of the upstream bank of the tailrace. This work was completed with a narrow berm in place to maintain dry working conditions to the extent possible (Photo 19). Once the armouring was complete, instream excavation and armouring continued and was completed on August 23 (Photo 20 - Photo 21). The IEM recorded downstream turbidity levels throughout the works and found that BCWQGs were exceeded temporarily for less than 20 minutes on August 23 (max turbidity was 32.7NTU when background was 17.6NTU) and remained within BCWQGs during all activities on August 22. Additional water quality sampling results are available upon request.

## *Photos:*

**Photo 17 – Extension of a working pad to faciliate BDRHEF tailrace works (August 17, 2016).**

**Photo 18 – Grouted riprap apron at BDRHEF tailrace completed in the dry (August 20, 2016).**

**Photo 19 – Excavaton and armouring of the upstream tailrace wall completed with an isolation berm in place (August 22, 2016).**

**Photo 20 – BDRHEF tailrace excavation and armouring (August 23, 2016).**

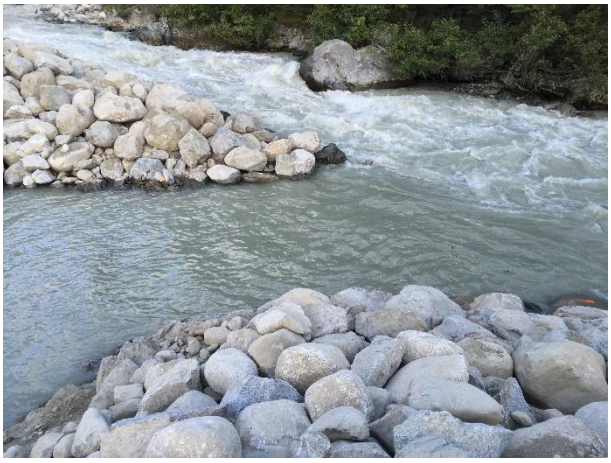

**Photo 21 – Final condition of the BDRHEF tailrace (August 24, 2016).**

**Photo 22 – Construction of switch yard adjacent to the BDRHEF powerhouse (August 17, 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** | | | | | | |
| August 16, 2016 | 15:45 | BDR BG – Upstream of BDRHEF intake | 7.6 | 64.3 | 32 | 10.5 |
| | 15:55 | BDR #1 – Downstream of BDRHEF intake | 7.4 | 74.3* | 28 | 10.4 |
| | 9:10 | BDR #2 – Upstream of BDRHEF Powerhouse | 7.6 | 31.8 | 35 | 7.6 |
| | 9:50 | BDR #3 – Downstream of BDRHEF Powerhouse at Pebble Creek Bridge | 7.6 | 27.6 | 36 | 7.5 |

## 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 to monitor the newly constructed settling/infiltration pond to ensure that it remains in good working condition, and preform all maintenance activities as outlined in the work plan. If water begins to discharge from the newly constructed channel, CE should conduct regular inspections to ensure that it meets BCWQG prior to infiltration near or connection to with the Boulder Creek side channel.
- CE should regularly monitor the BDRHEF intake active water treatment system to ensure the system is functioning as intended and that discharge into Boulder Creek is within BCWQGs. The water treatment system capacity should be regularly assessed to ensure the system can handle the necessary volumes of water.
- CE should continue to maintain the BDRHEF intake access road, and continue excavation/maintenance of ditch lines as discussed after the BC EAO site tour on June 9, 2016 and subsequent environmental meetings.
- CE should ensure that all culvert inlets and outlets are free of sediment and other construction related debris and armoured with non-erodible materials.

### 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 will continue at the BDRHEF powerhouse.
- Rebar, formwork, and concrete works will continue for the Intake structures.
- Switch yard installation will continue.

## 6.0 Transmission Line – Monitoring Results

### 6.1 *Transmission Line Construction Activities*

*Construction Activities:*

**Segment 6**

- Temporary bridge installation to access and install Pole 140 foundation protection.

**Segment 9a & 9b**

- Pole framing and conductor stringing via helicopter throughout the segment.

**Segment 10**

- Ditch repairs, debris management, and helipad/pole corrections.

**Segment 11**

- Pole framing and conductor tensioning

**Segment 12**

- Pole installation and framing

**Segment 13 & 14**

- Pole foundation and pole anchor ground preparation/excavation (blasting and by hand)

**Segment 15**

- Pole setting via helicopter and pole structure framing

**Segment 16**

- Clearing ROW and construction of the Canadian National Railway crossing.

*Environmental Summary:*

- Mumleqs began construction of a temporary access path to cross two small side channels of the Lillooet river and access pole structure 140. The access was required to install foundation protection and armouring which required the use of heavy machinery and could not be completed by helicopter or other means. At the time of the work the first channel was conveying a small amount of flow that was isolated from the Lillooet River

(Photo 23 - Photo 24), and the second side channel was dry. The IEM monitored these works full time and no water quality or environmental concerns were noted.

*Photos:*


**Photo 23 – Preparing sill logs for temporary bridge crossing (August 17, 2016).**

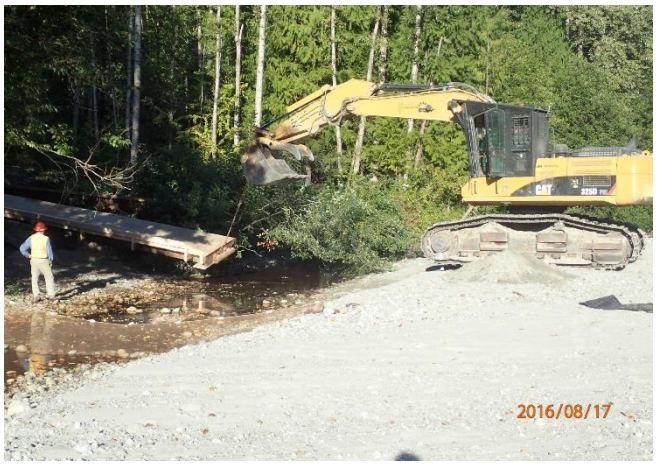


**Photo 24 – Installing temporary bridge deck (August 17, 2016).**


**Photo 25 – Temporary access path used to access structure 140 (August 18, 2016).**


**Photo 26 – Bin wall construction at structure 140 (August 22, 2016).**

## 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 along the Transmission Line alignment:

**Segment 6**

- Temporary bridge removal and reclamation of the access path upon completion of the foundation protection for pole structure 140.

**Segment 15**

- Stringing, clipping, and tensioning conductor in the vicinity of grizzly bear habitat polygon GB59. A pre-works aerial assessment is to be completed prior to initiating these works should they occur after September 1, 2016.

# 7.0 Wildlife Sightings

As per the CEMP, the IEM implemented a wildlife sightings record. Project Personal 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 2016.

To mitigate potential impacts to mountain goats during the summer months, Construction activities will cease if a mountain goat(s) is (are) observed moving towards the ULRHEF intake and/or 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#58* | OPEN | All work areas | Conservation Officer and BCEAO Compliance and Enforcement Officer Inspection noted non-compliance with regard to wildlife attractant management. | *1. 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.* | *July 6, 2016* | *July 9, 2016* | *July 8, 2016* |
| | | | | *2. 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.* | | | *July 21, 2016* |
| | | | | *3. Install self-closing door hinges in all site lunchrooms and anywhere food is being stored temporarily (lunch rooms, kitchen storage area) OR adjust how food is transported, stored and consumed onsite to eliminate the possibility of food and food waste attractants onsite.* | | | *July 21, 2016* |
| | | | | *4. Perform maintenance to clean-up grease and liquid waste around and underneath the garbage compactor* | | | *July 21, 2016* |
| | | | | *5. 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.*<br>*Update August 9, 2016: CE continues to park equipment on designated parking areas lined with geotextile. However, equipment parked in these areas continues to leak. CE should ensure that the removal of contaminated soil from parking areas is documented and should continue regular maintenance of the equipment as needed.* | | | - |

| 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#60* | OPEN | Lillooet River FSR from 46 – 48 Km | *The road fill slope of the Lillooet River FSR between KM46 – KM48 requires ESC measures to ensure slope stability and prevent rill erosion from transporting material into the forested area below.* | 1. *Assess the road fill slope conditions following conduit installation in the Lillooet River FSR in this section.*<br>2. *Provide a plan to protect the slope from an erosion and sediment transport perspective and/or a plan to initiate reclamation of the impacted area.* | *August 8, 2016* | *August 16, 2016* | - |

## 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)* | | | | | | | |

# Environmental Incident Reporting Form

## General Information

| | |
|---|---|
| **Project Name:** Upper Lillooet Hydro Project | **Project Component** Upper Powerhouse tailrace |
| **Time/Date of Incident Start**: 2016-08-24 around 10:55 AM | **Time/Date Incident Stopped:** 2016-08-24 around 10:55 AM |
| **Date of Report**: 2016-08-24 | **Project Incident Report Number**: 2016-08-24 CE-EIR-029 |
| **Report Prepared By**: Jean M. Pelletier | |
| **Contractors Environmental Manager:** Jean M. Pelletier | |
| **Independent Environmental Monitor:** Tom Hicks - Mike Champion –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**: serge.moalli@ebcinc.com |
| **Contact Person**: Serge Moalli | **Position**: Project Director |

## Incident Type *(check all that apply)*

| | | | |
|---|---|---|---|
| **Encroachment of an Environmentally Sensitive Area (*e.g.* Riparian/Wildlife Buffer)**<br>**Please provide details in "Description" section below.** | ☐ | **Adverse Impacts to Fish/Wildlife**<br>**(*e.g.* Mortality/Injury)**<br>**Please provide details in "Description" section below.** | ☐ |
| **Water Quality/Quantity**<br>**Please provide details in "Description" section below.** | ☐ | **Hazardous Material Spills (to ground or water)**<br>**Please provide details in description section in regards to:**<br>• Perceives extent of damage<br>• Type, quantity and area of the spill<br>• Containment Procedures<br>• Environmental features in close proximity to the spill | ☑ |
| **Disturbance of known or unknown archeological /heritage site**<br>**Please provide details in "Description" section below.** | ☐ | **Air Quality**<br>**Please provide details in "Description" section below.** | ☐ |
| **Spill reported to external agencies**<br>**If yes, describe the receiving environment and substance/quantity spilled.** | ☐ | **Other**<br>**Please provide details in "Description" section below.** | ☐ |

## Incident Profile

| Weather at time of incident | Clear | Partly Cloudy/ Variable | Cloudy | Showers/ Periods of Rain | Rain | Heavy Rain (>25mm in 24hr) | Storm (Heavy rain and high winds) | Snow |
|---|---|---|---|---|---|---|---|---|
| | ☑ | ☑ | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

**Specific Location:** Upper Lillooet Tailrace

**Description and Cause of Incident:**

Description:

At around 10:55 AM, a Caterpillar 345D excavator (unit 50-0524) equipped with bio-oil, was working on the Upper Lillooet Powerhouse Tailrace excavating about 4- to 5 meters inside the protective berm, when a hose broke, creating a spray of bio friendly oil. The sprayed oil landed mostly on the excavator and on rock between the excavator and the river. The soil closest to the excavator was the most contaminated. Rocks and boulder closest to the river were contaminated by a very light spray. The foreman immediately informed his operator who shut down the engine. Clean-up operation started right away.

A few minutes later, Ian McKeachie CRT—EBC Env. Manager, and Mike Champion, IEM arrived on site to inspect current excavation works. The contaminated area is about 5 meters in diameter They assisted in the clean-up operation, consisting mainly of removing contaminated rock from the inside of the berm. Contaminated rocks outside the berm and close to the river were wiped clean of oil, as they were lightly contaminated. The excavator was also wiped down to remove the sprayed oil on it. They confirm there was no trace of oil visible in the water. All clean-up operations were thus conducted under their supervision and to their satisfaction.

Potential damage was limited to contaminated soil and rocks, as a small quantity of biodegradable hydraulic oil (<1L) entered the Lillooet River. It has been removed from site and stored in a contaminated soil container pending final disposal off site by a specialised contractor.

Cause: A hydraulic hose failed under normal operating conditions. This is an unpreventable occurrence.

**Incident Witness:** Nicolas Grondin – foreman, Paulo Lévesque, operator. Later Ian McKeachie, CRT-EBC Env. Manager and Mike Champion, IEM

| **Were there any Potential Environmental impacts as a result of the incident?** (e.g., surface contamination, storm sewers, or fish/wildlife mortalities) **Minor surface contamination** | **Yes** ☑ | **None Observed** ☐ |
|---|---|---|

**If Yes, please describe**: See incident description above.

| **Has Wildlife Salvage Protocol been followed? i.e. Carrion Removal** | **Yes** ☐ | **No** ☑ | **N/A** ☐ |
|---|---|---|---|

**If No, please explain**:
There is no direct evidence of biodegradable oil in the river, and no lasting impacts or mortalities are expected to have occurred.

| **Water Quality Samples Collected?** | **Yes** ☐ | **No** ☑ | **N/A** ☐ |
|---|---|---|---|

| | | | |
|---|---|---|---|
| **If yes, attach results of water quality analysis to report in table format. Include Laboratory analysis if completed.**<br>**If No please explain**: It was not collected because water flow is too fast, there is no way we could have collected water sample fast enough in a safe way. | | | |
| **Have applicable photos and/or drawings been attached to the incident report?** | **Yes**<br>☑ | **No**<br>☐ | **N/A**<br>☐ |

## Incident Response Measures

See incident description above

## Actions to Prevent Incident Recurrence

Unpreventable occurrence

## Notification Record

| Agency Reported to | Contact Information | Agency Contacted | | Date Reported | Reported By | Method of Reporting |
|---|---|---|---|---|---|---|
| | | Yes | No | | | |
| **External** | | | | | | |
| MFLNRO | James Davies | ☑ | ☐ | August 26, 2016 | Julia Mancinelli | email |
| BCEAO | Monica Perry<br>Sheldon Foote<br>Justin Carlson | ☑ | ☐ | August 26, 2016 | Julia Mancinelli | email |
| Lil'wat Nation | Harriet VanWart<br>Carrie Lester | ☑ | ☐ | August 26, 2016 | Julia Mancinelli | email |
| RAPP | Conservation Officer | ☐ | ☑ | | | |
| EEP<br>File# 161494 | 1-800-663-3456 | ☑ | ☐ | August 24, 2016 | Tom Hicks<br>IEM | Phone call |
| DFO<br>File# 2016-0924 | 24hr reporting line | ☑ | ☐ | August 24, 2016 | Tom Hicks<br>IEM | Phone call |
| Environment Canada | 604-666-6100 | ☐ | ☑ | | | |
| Canadian Coast Guard | 604-666-6011 | ☐ | ☑ | | | |
| Local Fire Rescue | 911 | ☐ | ☑ | | | |
| **Internal** | | | | | | |
| Innergex | Julia Mancinelli | ☑ | ☐ | August 24, 2016 | Tom Hicks<br>IEM | Phone call |

## Notification Record

| Agency Reported to | Contact Information | Agency Contacted | | Date Reported | Reported By | Method of Reporting |
|---|---|---|---|---|---|---|
| | | Yes | No | | | |
| IEM | Mike Champion – Stephanie Ellis – Tom Hicks | ☑ | ☐ | August 24, 2016 | Present on site during occurrence | Phone call on Aug 24th 2016 |
| IE | Jenn McCash | ☑ | ☐ | August 24, 2016 | Tom Hicks IEM | email |

**Independent Environmental Monitor:**

| Tom Hicks | IEM - SES | | August 24, 2016 |
|---|---|---|---|
| Print Name | Position and Company | Signature | Date |

**Contractor's Manager:**

| Jean Pelletier | Sr Environmental Manager– CRT-ebc | | August 24th 2016 |
|---|---|---|---|
| Print Name | Position and Company | Signature | Date |

2016-08-24-CE-EIR-029 Pictures


Picture 1 – Operator wiping down the excavator


Picture 2 – Absorbent pads on the ground near the excavator

Picture 3 – General view


Picture 4 – Contaminated rock transferred to the contaminated soil container in the yard, pending final disposal.