Upper Lillooet Hydro Project

Weekly Environmental Monitoring Report #23

Reporting Period: May 25th – May 31st, 2014

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	
Name	**Organization**
Trevor Andrews	Fisheries and Oceans Canada
James Davies	MFLNRO – Water Allocation
Andrea Cowgill	MFLNRO – Land and Resources
Danielle Cunningham	MFLNRO – Land and Resources
Frank DeGagne	MFLNRO – Land and Resources
Nathan Braun	BC Environmental Assessment Office
George Steeves	True North Energy – Independent Engineer
Jennifer McCash	True North Energy – Independent Engineer
Thomas Hicks	Sartori Environmental Services
Krys Muniak	Innergex Renewable Energy Inc.
Peter Ramsden	Innergex Renewable Energy Inc.
Oliver Robson	Innergex Renewable Energy Inc.
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Matt Kennedy	Innergex Renewable Energy Inc.
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Claude Denault	CRT-ebc Construction Inc.
Jonathan Drapeau	CRT-ebc Construction Inc.
Éric Ayotte	CRT-ebc Construction Inc.
Jordan Gagne	CRT-ebc Construction Inc.
Ian McKeachie	CRT-ebc Construction Inc.
D'Arcy Soutar	Westpark Electric Ltd.
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Prepared By
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Date Prepared: June 15, 2014 **Date Submitted:** June 17, 2014

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Owner Construction Permits and Approvals

Environmental Assessment Certificate No.E13-01 (Amendment 1, 2, 3)
Fisheries Act Subsection 35(2)(b) Authorization No. 09-HPAC-PA2-00303
Letter of Advice for the Transmission Line No.09-HPAC0-PA2-00303
Leave To Commence Construction (ULRHEF) File No. 2002561
Leave To Commence Construction (BDRHEF) File No. 2002453
Leave To Commence Construction (TX Line) File No. 2002561/2002453
Conditional Water Licence (ULRHEF C130613) File No. 2002561
Conditional Water Licence (BDRHEF C129969) File No. 2002453
Conditional Water Licence (BDRHEF C131153) File No. 2003601
Licence of Occupation (ULRHEF #232384) File No. 2409871
Licence of Occupation (BDRHEF #232386) File No. 2409998
Licence of Occupation (TX Line #2423386) File No. 2410654
Occupant Licence to Cut (ULRHEF Amendments 1, 2, 3) No. L49717
Occupant Licence to Cut (BDRHEF – km 38 laydown) No. L49698
Occupant Licence to Cut (BDRHEF Amendments 1, 2) No. L49816
Occupant Licence to Cut (TX Line Amendment 1) No. L49697
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
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

Contractor Construction Permits and Approvals

Magazine Licence File No. UL76018
Section 8 Approval – Short Term Use of Water File (Lillooet River and Tributaries) No.A2006123
Waste Discharge under the Code of Practice for the Concrete and Concrete Products Industry under the Environmental Management Act (Authorization No. 107204) Tracking No. 326969

ACRONYMS:

AMBNS	Active Migratory Bird Nesting Survey
ASMP	Archaeological Sites Management Plan
BCEAO	British Columbia Environmental Assessment Office
BCWQG	British Columbia Water Quality Guidelines
BDRHEF	Boulder Creek Hydroelectric Facility
BG	Background
BKL	BKL Consultants Ltd.
CRT – ebc	CRT – ebc Construction Inc.
DFO	Fisheries and Oceans Canada
DS	Downstream
Ecofish	Ecofish Research Ltd.
Ecologic	Ecologic Consulting
EIR	Environmental Incident Report
ESC	Erosion and Sediment Control
FAM	Field Advice Memorandum
FSR	Forest Service Road
GWR	Mountain Goat Winter Range
Hedberg	Hedberg and Associates Ltd.
IE	Independent Engineer (True North Energy)
IEM	Independent Environmental Monitor
Innergex	Innergex Renewable Energy Inc.
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
NCD	Non Classified Drainage
RVMA	Riparian Vegetation Management Area
SES	Sartori Environmental Services
TX Line	Transmission Line
ULRHEF	Upper Lillooet River Hydroelectric Facility
UWR	Ungulate Winter Range
VC	Valued Component
WQ	Water Quality
WEL	Westpark Electric Ltd.
WEMR	Weekly Environmental Monitoring Report

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	Weather Conditions	Monitoring Locations & Key On-site Environmental Information
Sunday May 25	AA,MS,VD	Overcast	***BDRHEF Intake Access Road*** • Road and ditch repairs/upgrades ***BDRHEF Portal and Powerhouse Access Road*** • Portal excavation • Access road construction and removal of temporary culvert ***ULRHEF Intake*** • Bridge reinforcement continued at 48km of non-status road (intake access road) • Hand falling at left bank spoil area ***ULRHEF Powerhouse*** • Bench excavation and material hauling to 38 km Laydown ***Laydown Area at 38km of the Lillooet FSR*** • Screener and crusher active ***Truckwash Creek Bypass – FSR realignment*** • Bulk excavation and road works continued • Drilling and blasting at the west heading
Monday May 26	DA,MS,VD	Periods of rain	***BDRHEF Portal and Powerhouse Access Road*** • Portal excavation • Access road construction ***ULRHEF Intake*** • Bridge reinforcement works completed at 48km of non-status road (intake access road) • Hand falling on the north side (left bank) ***ULRHEF Powerhouse and Powerhouse Access Road*** • Bench excavation and material hauling to 38 km Laydown • Cable yarding/decking fallen trees roadside • Hand falling completed along access road alignment ***Laydown Area at 38km of the Lillooet FSR*** • Screener and crusher active ***Truckwash Creek Bypass – FSR realignment*** • Bulk excavation and road works continued • Drilling and blasting at the west heading ***TX-Line*** • Pebble D.1 branch new access road construction (Segment 3) • Segment 3 clearing • Pole installation in Segments 1 & 2

Date	IEM Team Personnel	Weather Conditions	Monitoring Locations & Key On-site Environmental Information
Tuesday May 27	DA, TH, VD	Sun and Cloud	***BDRHEF Portal and Powerhouse Access Road*** • Portal excavation; drilling and blasting. Hydrophone monitoring • Access road construction ***ULRHEF Intake*** • Hand falling on the north and south side ***ULRHEF Powerhouse and Powerhouse Access Road*** • Bench excavation and material hauling to 38 km Laydown • Cable yarding/decking fallen trees roadside ***Laydown Area at 38km of the Lillooet FSR*** • Screener and crusher active ***Truckwash Creek Bypass – FSR realignment*** • Bulk excavation and road works continued ***TX-Line*** • Pebble D.1 branch new access road construction (Segment 3) • Segment 3 clearing • Pole installation in Segments 1 & 2
Wednesday May 28	AA, DA, TH, VD	Sun and Cloud	***BDRHEF Portal and Powerhouse Access Road*** • Portal excavation & access road construction ***ULRHEF Intake*** • Removing fallen trees at the north side spoil area • Hand falling completed at the south side spoil area ***ULRHEF Powerhouse and Powerhouse Access Road*** • Bench excavation and material hauling to 38 km Laydown • Cable yarding/decking fallen trees roadside ***Laydown Area at 38km of the Lillooet FSR*** • Screener and crusher active ***Truckwash Creek Bypass – FSR realignment*** • Bulk excavation and road works and blasting at east heading • Bridge footing excavation at the west heading (See Section 9.0; ULR #009) ***TX-Line*** • Pebble D.1 branch new access road construction (Segment 3) • Segment 3 clearing • Pole installation in Segments 1 & 2

Date	IEM Team Personnel	Weather Conditions	Monitoring Locations & Key On-site Environmental Information
Thursday May 29	AA, TH, TJ, VD,SS	Sun and Cloud	***BDRHEF Portal and Powerhouse Access Road*** • Portal excavation & access road construction ***ULRHEF Intake*** • Removing fallen trees at the north side spoil area • Hand falling completed at the south side spoil area ***ULRHEF Powerhouse and Powerhouse Access Road*** • Bench excavation and material forwarding for access road fill • Cable yarding/decking fallen trees roadside • Spoil area stripping and grubbing ***Truckwash Creek Bypass – FSR realignment*** • Bridge footing excavation at the east heading • Hand scaling and slope protection installation at the west heading. ***TX-Line*** • Pebble D.1 branch new access road construction (Segment 3) • Segment 3 & 5 clearing • Pole installation in Segments 1 & 2
Friday May 30	AA, TH, TJ, VD	Sun and Cloud	***BDRHEF Portal and Powerhouse Access Road*** • Portal excavation & access road construction ***ULRHEF Intake*** • Removing fallen trees at the north side spoil area ***ULRHEF Powerhouse and Powerhouse Access Road*** • Bench excavation and material forwarding for access road fill • Cable yarding/decking fallen trees roadside • Spoil area stripping and grubbing ***Truckwash Creek Bypass – FSR realignment*** • Bridge footing riprap placement at the east heading, compacting footing foundation at west heading • Hand scaling and slope protection installation at the west heading. ***TX-Line*** • Pebble D.1 branch new access road construction (Segment 3) • Segment 3 clearing • Pole installation in Segments 1 & 2
Saturday May 31	TJ, VD	Sun and Cloud	***BDRHEF Portal and Powerhouse Access Road*** • Portal excavation & access road construction ***ULRHEF Intake*** • Removing fallen trees at the south side spoil area ***ULRHEF Powerhouse and Powerhouse Access Road*** • Bench excavation and material forwarding for access road fill • Spoil area stripping and grubbing ***Truckwash Creek Bypass – FSR realignment*** • Base plate - footing grouting on the west heading • Concrete form work at the east heading ***TX-Line*** • Segment 3 & 5 clearing

IEM Team Personnel: *AA – Anthony Andrews; DA – Danita Abraham; MS – Mandala Smulders; TH – Tom Hicks; TJ – Tammie Jenkins; SS – Stephen Sims; VD – Vanessa Dan*

2.0 Administrative Summary

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

Date	Communication Type	Participants	Issues Discussed	ITM ID No.
May 27	*Pre-work meeting*	Mumleqs, WEL, SES, Innergex,	• Reviewed the Segment 4 & 5 clearing work plans and access road construction in these segments, highlighting Segment 4 & 5 specific environmental constraints.	N/A
	Onsite incident response, phone communications EIR #003	SES, CRT- ebc, Innergex	• The IEM attended the scene following the roll-over of a rock truck over the road edge at 40km of the Lillooet FSR. The IEM arrived after the response effort was initiated and documented the recovery and clean-up works. Details of the incident will be appended to the weekly report once the environmental incident report (EIR#003) is finalized by CRT-ebc and reviewed/accepted by the IEM.	ULR #5
	Email, field communications	SES, CRT- ebc, Innergex	• Slight acoustic instream overpressure resulted from blasting at the BDR tunnel portal excavation. Peak acoustic pressure was measured at 38.5kPa; 8.5kPa over the limits set out in the CEMP.	ULR #6
	Phone communication, email. EIR #005	SES, CRT- ebc, Innergex	• Failed log-box culvert over the dry Silva Creek channel. Details of the incident will be appended to the weekly report once the environmental incident report (EIR#005) is finalized by CRT-ebc and reviewed/accepted by the IEM.	ULR #7
May 28	*Onsite incident response EIR #004*	SES, CRT- ebc, Innergex	• The IEM attended the scene following the collapse of a log box culvert at Stream 9. The IEM arrived after the response effort was completed. Details of the incident will be appended to the weekly report once the environmental incident report (EIR#004) is finalized by CRT-ebc and reviewed/accepted by the IEM.	ULR #8
	Email, field communications EIR #006	CRT- ebc, SES, Innergex	• IEM noticed additional rock deposits within the channel and on left and right bank of Truckwash Creek. Details of the incident will be appended to the weekly report once the environmental incident report (EIR#006) is finalized by CRT-ebc and reviewed/accepted by the IEM.	ULR #9
	Email, letter	Innergex, SES, CRT - ebc	• Owner issued a stop work order for heavy hauling on the Lillooet River FSR pending confirmation of maximum load weights being hauled and an assessment of the load ratings on all log-box crossing structures.	ULR#10

Date	Communication Type	Participants	Issues Discussed	ITM ID No.
May 29	*Kick-off meeting*	SES, Innergex, CRT – Ebc, Formula,	• Reviewed Truckwash creek bridge abutment work plan with Formula crew, highlighting the need for IEM presence when working near the stream banks and for concrete pours at the abutment locations.	ULR #9
	Site Assessment	SES, Innergex, CRT-ebc, MFLNRO	• An onsite assessment of log-box crossing structures from 0-47km of the Lillooet River FSR. Load ratings decreased at some structures and a prescription for the repair of the Silva Creek crossing structure was provided by MFLNRO.	ULR#10
	Pre-work meeting	SES, Innergex, CRT-ebc	• Reviewed the Right Bank Diversion Channel Bulk Excavation work plan, highlighting the need to develop a water management plan for the tributary stream that flows through the work area and conduct a fish salvage prior to diverting water.	N/A
May 30	*FAM #01*	SES, Innergex, CRT-ebc	• The IEM issued FAM#01 requesting improvements to CRT – ebc's environmental incident response protocols.	ULR#11

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
ULRHEF, BDRHEF, and Tx Line	*All ULRHEF BDRHEF, and Tx Line areas*	*Nesting Birds*	*Vegetation clearing must take place outside of the breeding bird season (May 1 – July 31) to prevent disturbance of bird nests. If not feasible, nest surveys must be conducted by qualified professionals following the Active Migratory Bird Nest Surveys prior to clearing and protective buffers surrounding discovered nests will be maintained until young are fledged and approval has been obtained from the IEM or designate.*
Tx-Line	*Segment 3 & 5*	*Suitable Raptor Nesting Habitat*	*IEM presence is required when clearing within suitable Northern Goshawk (NOGO) and SPOW (Spotted Owl) nesting habitat during the breeding period.*
		Within 150m of wetlands or 100m of Coastal Tailed-Frog Streams	*IEM presence is required when clearing within 150m of wetlands or 100m of Coastal Tailed-Frog Streams, to ensure clearing area is minimized.*
ULRHEF powerhouse	*Within 50m of identified archeologically significant area*	*Archaeologically significant site EdRu-3*	*The ASMP recommends that an archaeological technician from the Lil'wat Nation be present to monitor initial ground-disturbance activities within 50 m of the EdRu-3 site boundaries.*
	Within 30m of the Upper Lillooet River	*Riparian area*	*IEM presence is required when working within 30m of the Upper Lillooet River as outlined in the ULRHEF Powerhouse Stripping and Grubbing work plan.*
ULRHEF powerhouse access road	*Full length of new access road construction*	*Potential Archaeologically significant chance finds*	The potential archaeologically sites were visited by a QP on May 20th who performed an assessment. The sites were not deemed archaeologically significant and works were permitted to resume with the presence of an archaeological monitor. An archaeological monitor from the Lil'wat Nation was present full time for initial ground disturbances along the access road.

Lillooet River FSR; ULRHEF intake access; FSR realignment at Truckwash Creek	*Access roads above the lower limit of the 200m buffer Truckwash Creek Migration Corridor to the ULRHEF intake; including FSR realignment at Truckwash Creek*	*Mountain Goat UWR*	*Construction noise must be minimized within 500 m of* legally established *UWR during winter (November 1 – April 30) to the satisfaction of the IEM or designate.* *If a goat is observed within 500 m 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.* *In May, daily operational shutdowns within 200 m of GWR (u-2-002 UL 11, UL 19) and migration corridor will be implemented to allow migrating Mountain Goats to access valuable habitat. Shutdowns will occur 1 hour before and 2 hours after sunrise, and 2 hours before and 1 hour after sunset).*

4.0 Hydroelectric Facilities

4.1 Boulder Creek Hydroelectric Facility – Monitoring Results

4.1.1 ***Active Construction Areas***

Construction Camp

- Camp trailers and equipment continued being hauled to site this week. Installation of the camp facilities is pending. No environmental concerns were noted.

38km Laydown

- A material crushing and screening plant was setup and material sorting/stockpiling began this week. A watering hose was used effectively for dust control at the screening plant.
- On May 27th a truck hauling a load of sand to the 38km Laydown broke through the log-box structure spanning a dry stream bed at Silva Creek (EIR#005). Further details of the incident, potential environmental impacts, action items and targeted completion dates will be appended to the WEMR and updated in the ITM once the EIR is finalized by CRT-ebc and reviewed/accepted by the IEM.
- Concrete was poured into lock block forms at the batch plant this week. Washout was completed within the designated geotextile lined infiltration pit. No environmental concerns were noted.

Explosive Magazine Area

- Final grading is complete. A concrete slab will be poured at the loading deck next week.

BDRHEF Downstream Portal and Powerhouse Access Road

- Excavation and blasting of the tunnel portal occurred this week. A hydrophone was installed to monitor instream acoustic pressure during the blast on May 27th, 2014 (ULR #6). The blasted rock face will require the installation of rock bolts and shotcrete to secure the slope.
- Construction of the access road and removal of the temporary road culvert was completed this week. As site grading was altered this week, drainage patterns should be inspected following the next rain event to assess the new site flow paths to ensure surface water management is maintained.
- Water from the Boulder Creek water withdrawal site authorized in the Short Term Water Use Approval (*No.A2006123)* was used effectively for dust suppression above 37.5km of the Lillooet River FSR and on active construction site access roads.

Environmental Summary:

- On May 27th, a hydrophone was installed to monitor instream acoustic pressure within Boulder Creek during the first blast at this location. A slight instream overpressure (38.5kPa; 8.5kPa above the threshold limit of 30kPa) was recorded as a result of the blast (ULR#6). CRT-ebc was notified following the blast and revised blasting procedures were developed and submitted via email to the IEM the following morning (May 28th, 2014). Revised mitigations included;
    1. *Reduced charge weights*
    2. *Adding appropriate delays to pre-shear blasts*
    3. *Blast fewer holes per delay*
- Instream acoustic pressure monitoring will occur during the next blast at the tunnel portal location to verify that the revised blasting procedures will successfully maintain instream acoustic pressure below the 30kPa threshold.
- No dust suppression occurred between 0-37.5km of the Lillooet River FSR this week. The IEM recommends that the application of water by water truck or an alternative approved dust control product be applied in this area to ensure adherence to the Air Quality and Dust Control Plan, the Road–Use Permit, and to protect the health and safety of those traveling to and from site (ULR#12).
- On May 23rd, 2014, the IEM was notified via email of a tree felled containing a potentially active bird nest at the BDRHEF powerhouse access road (EIR#001). The environmental incident has been included in the ITM as ULR#003. Further details of the incident, potential environmental impacts, action items and targeted completion dates are appended in the finalized environmental incident report EIR#001 and the findings have been updated in the ITM.

Photos:

Photo 1. Excavation of the BDRHEF downstream portal location (May 28, 2014).

Photo 2. Grade changes along Boulder Creek powerhouse access road. (May 27, 2014).

Water Quality Results

Date	Time	Sample Location Description	pH	Turbidity (NTU)	Temperature (°C)
No WQ measurements were recorded at BDRHEF facility locations during this reporting period. Construction activities had no visual effect on WQ.					

4.2 Upper Lillooet River Hydroelectric Facility - Monitoring Results

4.2.1 ***Active Construction Areas***

ULRHEF Powerhouse and Access Road

- Clearing of the powerhouse access road was completed on May 26th following a review of the AMBNS results. An archaeological monitor form the Lil'wat Nation was onsite to monitor for chance finds during initial ground disturbance along the length of the powerhouse access road. Following the completion of hand falling in the area, Mumleqs began yarding and decking merchantable timber road side along the FSR.
- Bench excavation at the ULRHEF continued outside of 30m from the Lillooet River this week. The excavated material was used on road surfaces of the Lillooet River FSR, and was hauled to the material screening plant installed at the 38km laydown area. Two environmental incidents were directly related to this material hauling (EIR#3 & EIR#4), and both incidents involved rock trucks tipping over while traveling between 40km and 39.5 km of the Lillooet FSR. Further details of these incidents, potential environmental impacts, action items and targeted completion dates will be appended to the WEMR and updated in the ITM once the EIRs are finalized by CRT-ebc and reviewed/accepted by the IEM.

ULRHEF Intake and access roads

- Re-enforcement of the bridge deck located at 48km of the non-status road (the Upper Lillooet River Bridge located upstream of Keyhole Falls), was completed on May 26th.
- Tree clearing on the north and south side of the Lillooet River was completed following AMBNS this week. Once clearing was complete, the trees were removed and the spoil areas were stripped and grubbed in preparation to received bulk excavation material from the right bank diversion channel excavation.
- A kick-off meeting was held on May 29th and the Right Bank Diversion Channel Bulk Excavation began following a review of the work plan. It was noted during the kick-off meeting that a fish salvage and tributary channel diversion will be required as part of these works.

Truckwash Creek Bypass Road - FSR Re-alignment

- Bulk excavation and road works occurred throughout the reporting period on the eastern portion and western portion of the road alignment. Bridge abutment work began on May 28th prior to notifying the IEM (ULR#9).

Environmental Summary:

- On May 28th, 2014 during a site inspection the IEM noticed that additional rock had slide down the banks and was deposited next to Truckwash creek. The IEM was not notified of work occurring within 30m of Truckwash Creek at the bridge abutments and was not onsite when the rock deposition occurred; therefore, the rock deposition was treated as an environmental incident. Further details of the incident, potential environmental impacts, action items and targeted completion dates will be appended to the WEMR and updated in the ITM once the EIR#006 is finalized by CRT-ebc and reviewed/accepted by the IEM.
- Noise monitoring stations remained operational during this reporting period; however the results have yet to be analyzed. No Mountain Goat disturbance was noted as a result of construction noise within the Migration Corridor this week.
- On May 23rd, 2014, the IEM was immediately notified in the field and helped direct and document environmental incident response following a log box culvert failure at 47km of the Lillooet River FSR (EIR#002). The environmental incident has been included in the ITM as ULR#4. Details of the incident, potential environmental impacts, action items and targeted completion dates are appended and summarized in EIR#002, and have been updated in the ITM.

Photos:

Photo 4. Truckwash Creek bridge abutment works monitored on May 29, 2014.

Photo 5. Bench excavation at the ULRHEF powerhouse. (May 27, 2014).

Water Quality Results

Date	Time	Sample Location Description	pH	Turbidity (NTU)	Temperature (°C)
No WQ measurements were recorded during this reporting period. Clearing, Stripping, Grubbing, and Grading activities had no visual effect on WQ.					

4.3 Hydroelectric Facilities – Recommendations

On May 28th, following the failure of three log-box structures along the Lillooet River FSR, Innergex issued a Stop-work-order to CRT-ebc for all heavy hauling on the Lillooet FSR (ULR#10). Their Stop-work-order is active until they receive confirmation that maximum load weights being hauled are appropriate for the current crossing structure load ratings and an assessment is completed of the load ratings on all log-box crossing structures.

On May 30th, the IEM submitted a FAM (#1) requesting that CRT-ebc improve their environmental incident response communication protocols and provide training to onsite personnel. This request will be tracked at ULR#11 in the ITM.

4.4 Hydroelectric Facilities – Upcoming Works

Clearing and construction associated with the intake diversion area scheduled to continue next week at the ULRHEF intake. Excavation of the BDRHEF portal will continue with revised blasting procedures. Bench excavation at the ULRHEF powerhouse and access road construction will continue next week.

5.0 Transmission Line

5.1 Monitoring Results

5.1.1 ***Active Construction Areas***

Pebble Main and Branch Road D.1 Upgrades

- Road upgrade work continued along Pebble Main Branch Road D.1 and began along the Athel Main spur road Cross drains and ditch upgrades were performed within NCDs to eliminate surface flows over the access roads. No new culverts were installed within identified watercourses this week.

Segment 1 & 2

- Pole installation and dressing began in Segments 1 and 2 this week. Temporary access tracks to the pole locations were constructed. No environmental concerns were noted.

Segment 3-5

- Clearing was completed in Segment 3, 4, and 5 following the completion of AMBNS. The IEM was present during clearing activities within 150m of wetlands, and within NOGO and SPOW suitable nesting habitat. No raptors were observed during the monitoring of clearing activities and all flagged boundaries were respected.
- Some short sections of access road branching from the Lillooet River FSR were conducted in Segment 5 this week.

Environmental Summary:

- The IEM was present during clearing activities within 150m of wetlands, and within NOGO and SPOW suitable nesting habitat. No raptors were observed during the monitoring of clearing activities and all flagged boundaries were respected. No water quality concerns were noted

Photos:

Photo 6. Access road construction; Pebble D.1 Branch road (May 28, 2014).

Photo 7. Pole installation work in Segment 1 (May 28, 2014).

Water Quality Results

Date	Time	Sample Location Description	pH	Turbidity (NTU)	Temperature (°C)
No WQ measurements were recorded during this reporting period. Clearing, Stripping, Grubbing, and Grading activities had no visual effect on WQ.					

5.2 Transmission Line – Recommendations

No recommendations are provided for this reporting period.

5.3 Transmission Line – Upcoming Works

Transmission line access road upgrades will continue next week and pole installation and dressing is scheduled to continue in Segment 1 and 2 next week. Clearing is scheduled to continue in Segment 3 - 5 following the results of AMBNS. Upcoming transmission line works will be focused on road construction, pole installation, and completing the clearing within the Segments 1-5.

6.0 Wildlife Sightings

As per the CEMP, a wildlife sightings record has been implemented and will be updated regularly by Project Personnel. It is mandatory for all personnel to report wildlife sightings including, but not limited to bears, cougars, mountain goats and deer. Wildlife sighting will be reported and recorded by the contractor(s) and will submitted to the IEM on a weekly basis. Wildlife Observation forms will be summarized on a monthly basis and appended to the first WEMR of the following month. 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

Two Grizzly Bear sightings were reported during this monitoring period (May 25th and 28th). All parties identified in the above table were notified within 24hr of the sighting log submission to the IEM. The sighting logs are appended to this report.

A Northern Rubber Boa was observed during this reporting period and was reported as per the above table. Observation details are included in the monthly Wildlife Observation forms and information will be submitted to the BC Conservation Data Center by the IEM.

All parties identified in the above table were notified within 48hr of the Mountain Goat monitoring form submission. Mountain goat monitoring forms are appended to this report.

7.0 Mountain Goat Monitoring Program

The following mitigation measures were implemented for work activity within the Migration Corridor during this monitoring period;

1. Daily dawn and dusk shutdowns as outlined in the Mountain Goat Management Plan.

2. Mountain Goat monitoring when works are occurring within 500m of Mountain Goat habitats and migration routes.

3. Noise level monitoring to ensure that the 75db noise level threshold is not exceeded as outlined in the Mountain Goat Management Plan.

4. Works must be immediately suspended and the IEM notified if Mountain Goats are observed within 500m of the line of sight of work activities. Works will resume in consultation with the IEM.

As of May 19th, the IEM reinitiated a Mountain Goat Monitoring program as works resumed within the Mountain Goat Migration Corridor at Truckwash creek and near the ULRHEF intake. The IEM or designate was on site to monitor Mountain Goat activity within 500 m of construction activities at the Truckwash Creek Bypass road, and Keyhole bridge reinforcement works. Mountain Goats were monitored from three sites:

- Truckwash Creek viewing river right of the Migration Corridor– MG-OBS01 (10U 467955 5612773);
- Keyhole Falls viewing the south side u-2-002 UL11 – MG-OBS02 (10U 466593 5613988); and
- Garibaldi Pumice mine site viewing u-2-002 UL 19 – MG-OBS03 (10U 467388 561408).

Monitoring effort will be split between all three sites between sunrise and sunset, unless safety concerns precluding from doing so. The order of site visits will rotate daily. Construction activities will cease if a goat(s) are observed moving towards the ULRHEF intake and/or if a goat(s) are observed within a 500m line of site of a construction activity. No goats were observed within 500m line of sight of construction activities and no work stoppages were required.

Please refer to the attached Mountain Goat Monitoring Daily Observation Forms for a summary of observations from this reporting period.

8.0 Environmental Issues Tracking Matrix (ITM)

8.1 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/ Completion Date**	**Date Completed**
ULR#3	**Closed**	BDRHEF powerhouse access road	Tree fallen containing potentially active bird nest (see appended ***EIR001***).	1. CRT-ebc to prepare an EIR detailing the cause, description and actions items related to the incident. 2. IEM to review and approved the EIR. 3. Flagging standard confirmation and re-orientation of fallers and operators. 4. CRT-ebc presence during sub-contractor clearing operations when active nests are identified. 5. Field report communication protocols and sign-off.	May 23, 2014	May 26, 2014	May 26, 2014
ULR#4	**Open**	47km – Lillooet River FSR	A log box structure failed while being crossed by an excavator (see appended ***EIR002***).	1. CRT-ebc to prepare an EIR detailing the cause, description and actions items related to the incident. 2. IEM to review and approved the EIR. 3. CRT-ebc employees will be reminded of spill response procedures and how to use the spill kits in a potential future event. 4. Complete FSR and temporary access road crossing assessment by a Qualified Professional. CRT-ebc to confirm that load ratings of equipment adhere to maximum crossing structure load ratings.	May 23, 2014	May 26, 2014.	-
				5. Determine the requirements for crossing structure remediation or replacement and execute according to the appropriate work planning protocols.		*Completion of action item 5 to be determined*	

Issue Tracking		Environmental Issue		Mitigation Measures			
ID No.	Status	Location	Issue Description	Action Taken/Recommended	Date of Identification	Targeted/ Completion Date	Date Completed
ULR#5	**Open**	39.9km – Lillooet River FSR	Rock truck rollover and spill (***EIR003***). *(further information will be included in the EIR once finalized)*	1. CRT-ebc to prepare an EIR detailing the cause, description and actions items related to the incident. 2. IEM to review and approved the EIR.	*May 27, 2014*	*May 29, 2014*	-
ULR#6	**Closed**	BDRHEF tunnel portal	Instream acoustic overpressure resulting from blasting at the BDR Tunnel Portal	1. Submit revised blasting mitigation/procedures.	*May 27, 2104*	*May 28, 2014*	*May 28, 2014*
ULR#7	**Open**	34.9km – Lillooet River FSR	Silva Creek log structure failed while being crossed by a Megaton Truck (***EIR005***). *(further information will be included in the EIR once finalized)*	1. CRT-ebc to prepare an EIR detailing the cause, description and actions items related to the incident. 2. IEM to review and approved the EIR.	*May 27, 2014*	*May 29, 2014*	-
ULR#8	**Open**	39.7km – Lillooet River FSR	Stream 9 – log box structure failure (***EIR004***). *(further information will be included in the EIR once finalized)*	1. CRT-ebc to prepare an EIR detailing the cause, description and actions items related to the incident. 2. IEM to review and approved the EIR.	*May 28, 2014*	*May 30, 2014*	-
ULR#9	**Open**	Truckwash Creek at new bridge crossing	Rock into Truckwash Creek (***EIR006***). *(further information will be included in the EIR once finalized)*	1. CRT-ebc to prepare an EIR detailing the cause, description and actions items related to the incident. 2. IEM to review and approved the EIR.	*May 28, 2014*	*May 30, 2014*	-

Issue Tracking		Environmental Issue		Mitigation Measures			
ID No.	Status	Location	Issue Description	Action Taken/Recommended	Date of Identification	Targeted/ Completion Date	Date Completed
ULR#10	**Open**	Lillooet River FSR	Innergex issued stop work order for heavy hauling on Lillooet River FSR	1. CRT-ebc to confirm load ratings of equipment adhere to maximum crossing structure load ratings. 2. CRT-ebc to commission an assessment of all crossing structures by a QP approved by MFLNRO to review load ratings.	*May 28, 2014*	*May 30, 2014*	-
				3. Rescission of the stop work order for heavy hauling by the Owner.		*To be determined*	
ULR#11	**Closed**	CRT-ebc Project site	SES issued FAM#1 (see appended) Improvement of environmental incident response communication protocols	1. CRT-ebc to prepare environmental incident response protocols specific to communications 2. CRT-ebc to complete and document training of environmental incident communication protocols for on-site personnel by CRT-ebc environmental staff	*May 29, 2014*	*May 30, 2014*	*May 30, 2014*
ULR#12	**Open**	Lillooet River FSR	Inadequate dust suppression between 0-37.5km of the Lillooet River FSR	1. The IEM recommends that the application of water by water truck or an alternative approved dust control product be applied in this area to ensure adherence to the Air Quality and Dust Control Plan, the Road–Use Permit, and to protect the health and safety of those traveling to and from site.	*May 31, 2014*	*June 14, 2014*	-

8.2 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 Completion Date	Date Completed
No outstanding environmental issues.							

Mountain Goat Daily Observation Form

UPPER LILLOOET HYDRO PROJECT

Goat Monitor's Name(s): Vanessa J Dan-Anthony Andrews

Date (YYYY-MM-DD): 2014-05-25

Weather (*cloud cover*, precipitation *and temperature*): 100% high cloud cover

sartori environmental services

106-185 forester street, north vancouver, bc v7h 2m9
office 604.987.5588 fax 604.987.7740

Submit completed **Mountain Goat Daily Observation Form** to by email to **goats@sartorienv.com** following each day of monitoring. Please ensure forms are complete and saved in the appropriate format (YYYY-MM-DD_Goat Monitoring Daily Observation Form (Observers Initials)

Mountain Goat Observation Site	UWR/Migration Corridor - Location	UTM Coordinates *(approx. center of area)*	Daily Start Time *(24hr clock)*	Daily End Time *(24hr clock)*
MG - OBS01	Migration Corridor - East side of Truckwash Creek	10U 467898 5612845	10:00	12:00
MG - OBS02	UWR u-2-002 UL 11 - Keyhole Falls	10U 466760 5613967	07:30	09:30
MG - OBS03	UWR u-2-002 UL 19 - Garibaldi Pumice	10U 469155 5614960	09:40	09:50

Daily form #	1	of	1

If more space is needed in the below table, please fill out additional daily forms and indicate total number of forms above.

Observation Site *(indicate if location other than OBS site)*	Time *(use 24hr clock)*	UTM Coordinates or Waypoint *(10U)*	Species Observed *(indicate Mountain Goat or other species)*	Observations *(be specific - visual sign, track, other sign)*	# of Animals	Age *(if known - refer to attached info sheet)*	Sex *(if known - refer to attached info sheet)*	Description of Activities *(feeding, moving, etc.)*	Comments *(habitat, snow conditions, etc.)*	Photo #s
MG-OBS02	08:05	10U466760 5613967	Mountain Goat	Visual	3	Nanny, yearling	Nanny kid	Walking across the cliff north bound	No snow lots of green	Battery die
MG-OBS03	09:40	10U469155 5614960	None	None	None	N/A	N/A	N/A	Low cloud cover, zero visiblity	413 414 ipad
MG-OBS01	10:05	10U467898 5612845	Mountain Goat	Tracks from this morning	0	0	0	Tracks on trail to the site	Low cloud cover	Battery died
MG-OBS02	9:05	10U 466760 5613967	Grizzly Bear	Visual	3	Adult 2 cubs	Female and Unknov	Feeding, cubs were in hiding	No snow present. Grizzly form completed	Battery died

Mountain Goat Daily Observation Form

UPPER LILLOOET HYDRO PROJECT

sartori environmental services

106-185 forester street, north vancouver, bc v7h 2m9
office 604.987.5588 fax 604.987.7740

Goat Monitor's Name(s): Danita Abraham

Date (YYYY-MM-DD): 2014-05-26

Weather (*cloud cover*, precipitation *and temperature*): Overcast with preciptation

Submit completed **Mountain Goat Daily Observation Form** to by email to **goats@sartorienv.com** following each day of monitoring. Please ensure forms are complete and saved in the appropriate format (YYYY-MM-DD_Goat Monitoring Daily Observation Form (Observers Initials)

Mountain Goat Observation Site	UWR/Migration Corridor - Location	UTM Coordinates *(approx. center of area)*	Daily Start Time *(24hr clock)*	Daily End Time *(24hr clock)*
MG - OBS01	Migration Corridor - East side of Truckwash Creek	10U 467898 5612845	06:55	08:55
MG - OBS02	UWR u-2-002 UL 11 - Keyhole Falls	10U 466760 5613967	09:15	11:15
MG - OBS03	UWR u-2-002 UL 19 - Garibaldi Pumice	10U 469155 5614960	11:35	12:00

Daily form #	1	of	2

If more space is needed in the below table, please fill out additional daily forms and indicate total number of forms above.

Observation Site *(indicate if location other than OBS site)*	Time *(use 24hr clock)*	UTM Coordinates or Waypoint *(10U)*	Species Observed *(indicate Mountain Goat or other species)*	Observations *(be specific - visual sign, track, other sign)*	# of Animals	Age *(if known - refer to attached info sheet)*	Sex *(if known - refer to attached info sheet)*	Description of Activities *(feeding, moving, etc.)*	Comments *(habitat, snow conditions, etc.)*	Photo #s
MG-0BS01 trail	07:00	10U 46788 561	Mountain goat	Fur and Fresh Tracks	Unkow n	Unkno wn	Unkno wn	Heading down trail	Observation along trail to obs site Trail we	567-570
MG-OBS01	07:10	10U 46788 5612845	None	N/A	None	N/A	N/A	N/A	No species at observation site Heavy precipitation	571
MG-OBS02	10:07	10U 466760 5613967	Grizzly Bear	Visual	1	Cub	Unkow n	Climbing up and down cottonwood tree several times be	No visual of mother or other cub	0
MG-0BS02	10:27	10U 466760 5613967	Mountain Goat	Visual	2	Yearlin gs	Unkno wn	On a far ledge Traveling south east into woods	Kept looking down into valley not far from where GB cub was spo	573-596

Mountain Goat Daily Observation Form

UPPER LILLOOET HYDRO PROJECT

sartori environmental services

106-185 forester street, north vancouver, bc v7h 2m9
office 604.987.5588 fax 604.987.7740

Goat Monitor's Name(s): Danita Abraham

Date (YYYY-MM-DD): 2014-05-26

Weather (*cloud cover*, precipitation *and temperature*): Cloudy with sunny breaks

Submit completed **Mountain Goat Daily Observation Form** to by email to **goats@sartorienv.com** following each day of monitoring. Please ensure forms are complete and saved in the appropriate format (YYYY-MM-DD_Goat Monitoring Daily Observation Form (Observers Initials)

Mountain Goat Observation Site	UWR/Migration Corridor - Location	UTM Coordinates *(approx. center of area)*	Daily Start Time *(24hr clock)*	Daily End Time *(24hr clock)*
MG - OBS01	Migration Corridor - East side of Truckwash Creek	10U 467898 5612845		
MG - OBS02	UWR u-2-002 UL 11 - Keyhole Falls	10U 466760 5613967		
MG - OBS03	UWR u-2-002 UL 19 - Garibaldi Pumice	10U 469155 5614960	13:00	15:00

Daily form #	2	of	2

If more space is needed in the below table, please fill out additional daily forms and indicate total number of forms above.

Observation Site *(indicate if location other than OBS site)*	Time *(use 24hr clock)*	UTM Coordinates or Waypoint *(10U)*	Species Observed *(indicate Mountain Goat or other species)*	Observations *(be specific - visual sign, track, other sign)*	# of Animals	Age *(if known - refer to attached info sheet)*	Sex *(if known - refer to attached info sheet)*	Description of Activities *(feeding, moving, etc.)*	Comments *(habitat, snow conditions, etc.)*	Photo #s
MG - OBS03	13:35	10U 469155 56	Mountain Goat	Visual	3	2 adults,	Unkno wn	Foraging on bluffs above rock face	Moved in to wooded area quickly	597-602
MG-OBS03	2:27	10U49155 5614960	Mountain Goat	Visual	1	Adult	Billy	Foraging, on way up mountain	Rocky area with little forest cover. Billy looks very dirty.	603-610

Mountain Goat Daily Observation Form

UPPER LILLOOET HYDRO PROJECT

sartori environmental services

106-185 forester street, north vancouver, bc v7h 2m9
office 604.987.5588 fax 604.987.7740

Goat Monitor's Name(s): Danita Abraham

Date (YYYY-MM-DD): 2014-05-27

Weather (*cloud cover*, precipitation *and temperature*): Sunshine with 40% cloud

Submit completed **Mountain Goat Daily Observation Form** to by email to **goats@sartorienv.com** following each day of monitoring. Please ensure forms are complete and saved in the appropriate format (YYYY-MM-DD_Goat Monitoring Daily Observation Form (Observers Initials)

Mountain Goat Observation Site	UWR/Migration Corridor - Location	UTM Coordinates *(approx. center of area)*	Daily Start Time *(24hr clock)*	Daily End Time *(24hr clock)*
MG - OBS01	Migration Corridor - East side of Truckwash Creek	10U 467898 5612845	12:10	14:10
MG - OBS02	UWR u-2-002 UL 11 - Keyhole Falls	10U 466760 5613967	07:30	9:35
MG - OBS03	UWR u-2-002 UL 19 - Garibaldi Pumice	10U 469155 5614960	10:00	12:00

Daily form #	1	of	2

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Observation Site *(indicate if location other than OBS site)*	Time *(use 24hr clock)*	UTM Coordinates or Waypoint *(10U)*	Species Observed *(indicate Mountain Goat or other species)*	Observations *(be specific - visual sign, track, other sign)*	# of Animals	Age *(if known - refer to attached info sheet)*	Sex *(if known - refer to attached info sheet)*	Description of Activities *(feeding, moving, etc.)*	Comments *(habitat, snow conditions, etc.)*	Photo #s
MG-OBS02	07:40	10U 466760 56	Mountain Goat	Visual	1	Adult	Unknown	Foraging, licking minerals.	Walked slide to lick minerals. Seen briefly	0
MG-OBS02	08:12	10U 466760 5613967	Mountain Goat	Visual	1	Yearling	Unknown	Foraging on cliff	Rocky ledge, shrub. Seen for a brief moment. Behind ridge.	0
MG-OBS02	08:56	10U 466760 5613967	Mountain Goat	Visual	2	Yearlings	Unknown	Moving quickly into forest	Came out from behind ledge together.(One same as last sighting)	611-613
MG-OBS02	09:10	10U 466760 5613967	Mountain Goat	Visual	2	1 nanny, 1 kid	Female, unknow	Foraging & non-construction related disturbance	disturbance occurred southeast above them and then all 4 ran awa	614-656

Mountain Goat Daily Observation Form

UPPER LILLOOET HYDRO PROJECT

sartori environmental services

106-185 forester street, north vancouver, bc v7h 2m9
office 604.987.5588 fax 604.987.7740

Goat Monitor's Name(s): Danita Abraham

Date (YYYY-MM-DD): 2014-05-27

Weather (*cloud cover*, precipitation *and temperature*): Sunshine with 25% cloud cover

Submit completed **Mountain Goat Daily Observation Form** to by email to **goats@sartorienv.com** following each day of monitoring. Please ensure forms are complete and saved in the appropriate format (YYYY-MM-DD_Goat Monitoring Daily Observation Form (Observers Initials)

Mountain Goat Observation Site	UWR/Migration Corridor - Location	UTM Coordinates *(approx. center of area)*	Daily Start Time *(24hr clock)*	Daily End Time *(24hr clock)*
MG - OBS01	Migration Corridor - East side of Truckwash Creek	10U 467898 5612845	12:15	2:15
MG - OBS02	UWR u-2-002 UL 11 - Keyhole Falls	10U 466760 5613967	07:30	09:35
MG - OBS03	UWR u-2-002 UL 19 - Garibaldi Pumice	10U 469155 5614960	10:00	12:00

Daily form #	2	of	2

If more space is needed in the below table, please fill out additional daily forms and indicate total number of forms above.

Observation Site *(indicate if location other than OBS site)*	Time *(use 24hr clock)*	UTM Coordinates or Waypoint *(10U)*	Species Observed *(indicate Mountain Goat or other species)*	Observations *(be specific - visual sign, track, other sign)*	# of Animals	Age *(if known - refer to attached info sheet)*	Sex *(if known - refer to attached info sheet)*	Description of Activities *(feeding, moving, etc.)*	Comments *(habitat, snow conditions, etc.)*	Photo #s
MG-OBS03	10:10	10U 469155 56	Mountain goat	Visual	1	Adult	Unknown	Lying on rock bluff	No snow, forested cliff	0
MG-OBS03	10:40	10U 469155 561397	Mountain Goat	Visual	1	Adult	Billy	Foraging, moving down.	Rocky area above among burnt dead trees	657-659
MG-OBS03	11:52	10U 469155 5614960	Mountain Goat	Visual	2	Adult	Unknown	Foraging	Rocky area, shrubs. Heat wave made it difficult to tell sex.	660-669
MG-OBS01	12:20	10U 469155 5614960	None	N/A	0	N/A	N/A	N/A	Can hear construction above truckwash	670

Mountain Goat Daily Observation Form

UPPER LILLOOET HYDRO PROJECT

sartori environmental services

106-185 forester street, north vancouver, bc v7h 2m9
office 604.987.5588 fax 604.987.7740

Goat Monitor's Name(s): Anthony Andrews

Date (YYYY-MM-DD): 2014-05-28

Weather (*cloud cover*, precipitation *and temperature*): Clear sky,sunny

Submit completed **Mountain Goat Daily Observation Form** to by email to **goats@sartorienv.com** following each day of monitoring. Please ensure forms are complete and saved in the appropriate format (YYYY-MM-DD_Goat Monitoring Daily Observation Form (Observers Initials)

Mountain Goat Observation Site	UWR/Migration Corridor - Location	UTM Coordinates *(approx. center of area)*	Daily Start Time *(24hr clock)*	Daily End Time *(24hr clock)*
MG - OBS01	Migration Corridor - East side of Truckwash Creek	10U 467898 5612845	11:40	13:40
MG - OBS02	UWR u-2-002 UL 11 - Keyhole Falls	10U 466760 5613967	07:20	09:20
MG - OBS03	UWR u-2-002 UL 19 - Garibaldi Pumice	10U 469155 5614960	09:30	11:30

Daily form #	1	of	1

If more space is needed in the below table, please fill out additional daily forms and indicate total number of forms above.

Observation Site *(indicate if location other than OBS site)*	Time *(use 24hr clock)*	UTM Coordinates or Waypoint *(10U)*	Species Observed *(indicate Mountain Goat or other species)*	Observations *(be specific - visual sign, track, other sign)*	# of Animals	Age *(if known - refer to attached info sheet)*	Sex *(if known - refer to attached info sheet)*	Description of Activities *(feeding, moving, etc.)*	Comments *(habitat, snow conditions, etc.)*	Photo #s
MG-OB02	07:30	10U46676 05613967	Mountain goat	Visual	3	Adult	nanny billy	Foraging; south side of slide paths	Foraging Licking rocks, moved to trees a	
MG-OBS03	09:45	10U 469155 5614960	Mountain goat	Visual	1	Adult	Male	Licking the rocks travelling below the snow line	Moving at a good pace cloud cover 10:30	
MG-BS03	11:10	10U 469155 5614960	Mountain goat	Visual	1	Adult	Nanny	Foraging, salt licks	Foraging along the rock face and licking rocks	
MG-OBS01	N/A	10U 476898 5612845	0	N/A	N/A			N/IA	N/A	

Mountain Goat Daily Observation Form

UPPER LILLOOET HYDRO PROJECT

Goat Monitor's Name(s): Tammie Jenkins

Date (YYYY-MM-DD): 2014-05-29

Weather (*cloud cover*, precipitation *and temperature*): Over cast/low cloud

106-185 forester street, north vancouver, bc v7h 2m9
office tel 987.5588 fax 987.7740

Please submit **Mountain Goat Daily Observation Form** in person to a representative of Sartori Environmental Services (**Tom Hicks** or **Stephen Sims**) or by email to **steve@sartorienv.com** following each day of monitoring.

Mountain Goat Observation Site	UWR/Migration Corridor - Location	UTM Coordinates *(approximate center of observation area)*	Daily Start Time *(24hr clock)*	Daily End Time *(24hr clock)*
MG - OBS01	Migration Corridor - East side of Truckwash Creek	10U 467898 5612845	7:30	9:30
MG - OBS02	UWR u-2-002 UL 11 - Keyhole Falls	10U 466760 5613967	9:45	11:45
MG - OBS03	UWR u-2-002 UL 19 - Garibaldi Pumice	10U 469155 5614960	12:00	1400

Daily form #	1	of	1

If more space is needed in the below table, please fill out additional daily forms and indicate total number of forms above.

Observation Site *(indicate if location other than OBS site)*	Time *(use 24hr clock)*	UTM Coordinates or Waypoint *(10U)*	Species Observed *(indicate Mountain Goat or other species)*	Observations *(be specific - visual sign, track, other sign)*	# of Animals	Age *(if known - refer to attached info sheet)*	Sex *(if known - refer to attached info sheet)*	Description of Activities *(feeding, moving, etc.)*	Comments *(habitat, snow conditions, etc.)*	Photo #s
MG - OBS01	9:21	467898 5612845	Mg	Tracks n fur	Unknown	Unk	Unk	Walking on trail to obs	Cold n damp	On I pad
MG - OBS02	10:30	466760 5613967	Black bear	Visual	1	Young	Unk	Feeding on top of cotton wood tree close to river	Cold n windy unaware of my presents	On I pad
MG - OBS03	12:10	469155 5614960	MG	Visual	3	1 sm 2 lrg	Unk	Walking in and out of timber on right side of bluff	Below snow line visibility limited due to low cloud	/

Mountain Goat Daily Observation Form

UPPER LILLOOET HYDRO PROJECT

Goat Monitor's Name(s): Tammie Jenkins

Date (YYYY-MM-DD): 2014-05-30

Weather (*cloud cover*, precipitation *and temperature*): 75% cloud cover

106-185 forester street, north vancouver, bc v7h 2m9
office tel 987.5588 fax 987.7740

Please submit **Mountain Goat Daily Observation Form** in person to a representative of Sartori Environmental Services (**Tom Hicks** or **Stephen Sims**) or by email to **steve@sartorienv.com** following each day of monitoring.

Mountain Goat Observation Site	UWR/Migration Corridor - Location	UTM Coordinates *(approximate center of observation area)*	Daily Start Time *(24hr clock)*	Daily End Time *(24hr clock)*
MG - OBS01	Migration Corridor - East side of Truckwash Creek	10U 467898 5612845	12:00	1400
MG - OBS02	UWR u-2-002 UL 11 - Keyhole Falls	10U 466760 5613967	7:30	9:30
MG - OBS03	UWR u-2-002 UL 19 - Garibaldi Pumice	10U 469155 5614960	9:40	11:40

Daily form #	1	of	1

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Observation Site *(indicate if location other than OBS site)*	Time *(use 24hr clock)*	UTM Coordinates or Waypoint *(10U)*	Species Observed *(indicate Mountain Goat or other species)*	Observations *(be specific - visual sign, track, other sign)*	# of Animals	Age *(if known - refer to attached info sheet)*	Sex *(if known - refer to attached info sheet)*	Description of Activities *(feeding, moving, etc.)*	Comments *(habitat, snow conditions, etc.)*	Photo #s
MG -obs02	7:55 8:50	466760 5613967	MG	Visual Visual	3 4	Unk	Billy Nanny Yearlin Kid	Lying there observing me 8:10 now sleeping	Lower than usual Still on cliff between trees	652-656
MG - obs03	9:55	469155 5614960	Mg	Visual	2	Unk	Unk	Lying in shaded area	Below snow line 10:35 goats climbing and licking minerals	0
MG -obs01	12:05 1400h	467898 5612845	Deer Griz scat a	Visual	1	Unk	Femal e	Walking up on trail 5ft mark beside tree	let me get 5feet away before she moved	656-658 659-66

Mountain Goat Daily Observation Form

UPPER LILLOOET HYDRO PROJECT

Goat Monitor's Name(s): Tammie jenkins

Date (YYYY-MM-DD): 2014-05-31

Weather (*cloud cover*, precipitation *and temperature*): Sunny

106-185 forester street, north vancouver, bc v7h 2m9
office tel 987.5588 fax 987.7740

Please submit **Mountain Goat Daily Observation Form** in person to a representative of Sartori Environmental Services (**Tom Hicks** or **Stephen Sims**) or by email to **steve@sartorienv.com** following each day of monitoring.

Mountain Goat Observation Site	UWR/Migration Corridor - Location	UTM Coordinates *(approximate center of observation area)*	Daily Start Time *(24hr clock)*	Daily End Time *(24hr clock)*
MG - OBS01	Migration Corridor - East side of Truckwash Creek	10U 467898 5612845	9:40	11:40
MG - OBS02	UWR u-2-002 UL 11 - Keyhole Falls	10U 466760 5613967	12:00	1400
MG - OBS03	UWR u-2-002 UL 19 - Garibaldi Pumice	10U 469155 5614960	7:30	9:30

Daily form #	1	of	1

If more space is needed in the below table, please fill out additional daily forms and indicate total number of forms above.

Observation Site *(indicate if location other than OBS site)*	Time *(use 24hr clock)*	UTM Coordinates or Waypoint *(10U)*	Species Observed *(indicate Mountain Goat or other species)*	Observations *(be specific - visual sign, track, other sign)*	# of Animals	Age *(if known - refer to attached info sheet)*	Sex *(if known - refer to attached info sheet)*	Description of Activities *(feeding, moving, etc.)*	Comments *(habitat, snow conditions, etc.)*	Photo #s
MG - OBS03	8:36 9:00	469155 5614960	MG MG	Visual Visual	1 2	Adult Adult Yearlin	Unk Unk	Feeding Laying down	In snow line up higher than usual and more to left of usual cliff	0
Mg - OBS01	10:30	467898 5612845	Deer	Visual	1	Adult	Femal e	Feeding	Walked right to obs	O
MG -OBS02	12:15 12:30	466760 5613967	Mg Blk bear	Visual Visual	2 1	Adult n baby Adult	Billy n baby Unk	Lying down Feeding in cottonwood	Out on the edge of cliff Seen 4 altogether Close to river	666-667 668-669

Appendix B. Bear sighting log.

BEAR OBSERVATION CARD

BC 9587

Return to: Local BC Parks Office

14 05 28 (YY/MM/DD) | 12:30 (Time (24 hrs)) | 31 (District) | Upper Lillooet River (Squamish-Lillooet Regional District) (Name of Protected Area)

Observer Name, Address and Phone Number: Daniel Filotas, (604) 894-5002

Location in protected area (i.e., name of campground, campsite, dayuse area, trail name, lake, stream, nearest geographic feature, etc.) near Truckwash Creek | N/A (Elevation (metres or feet)) | 10 meters (Observer Distance (metres or feet))

U.T.M. Zone | Easting or Longitude | Northing or Latitude

Weather: Rain, (Overcast), Cloudy, Clear Map Datum: NAD27 ☐ NAD83 ☐ GPS ☐

Bear Species: (Grizzly bear) Black bear Unknown ID Confidence: (High) Medium Low

Colour code: Reddish-brown, Black, Grey, Dark brown, (Light brown), Blond, Other:

Distinguishing features (tag, collar, scars):

Abundance: Common, Frequent, Occasional, (Rare)

Observation Type: (sighting), track, scat, digging, hair, foraging sign, rub tree, bed, den

Number Observed:

Adult male	Adult fem.	Young of yr.	Sub-Adult	Unclassified
☐	☐	☐	☐	1

Was the bear aware of your presence? (Yes) No N/A

Food association: (none) odour unattended garbage vehicle cache

Bear(s) activity: a) feeding b) hunting c) fishing d) scavenging e) drinking (f) travelling g) bedded h) courtship/mating i) playing j) call k) fighting Other :

Reaction: a) indifferent (b) flee c) curious d) food seeking e) illegally fed f) threatening g) charge h) rut i) fight j) play (k) travel Other:

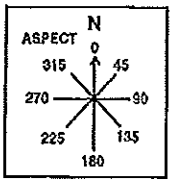
Estimated level of habituation: (a) sighting or sign (b) normal behaviour - avoids people c) reacts defensively after surprise or provocation d) tolerates but ignores people e) shows repeated interest in people f) habituated to people and their food g) displays aggressive behaviour, threat to humans h) unknown

Repeat offender: Yes (No)

If yes, provide background information (i.e., complaint/occurrence report)

Photographs: Yes (No)

Aspect Diagram



Slope ___%

Notes: Bear emerged from trees at side of road. Sniffed briefly and left area. Walked away from excavator and driller and into trees on opposite side of road. Sighting occurred 1st 2nd switchback on Truckwash realignment.

N.B. Ensure complaint / occurrence report and BC problem wildlife form (if required) are completed, if there was property damage or if further action required in dealing with bear sighting, i.e., destroy, relocation or aversive conditioning.

FM 602

Environmental Incident Reporting Form

General Information

Project Name: Upper Lillooet Hydro Project	**Project Component**: BDR HEF – Powerhouse access road
Time/Date of Incident Start: May 12th – 2014	**Time/Date Incident Stopped**: May 12th - 2014
Date of Report: Draft Submitted: 2014-05-23 Final Submitted: 2014-05-26	**Project Incident Report Number**: 2014-05-26 CE-EIR-001
Report Prepared By: Jordan Gagné	
Contractors Environmental Manager: Jordan Gagné / Ian McKeachie	
Independent Environmental Monitor: Stephen Sims/ Tom Hicks – Sartori Environmental Services	
Licensee's Environmental Manager: Julia Mancinelli	

Contact Information for Company Involved in Incident

Company: CRT-ebc	**Address**: 11-7339 Old Mill Road, PO Box 585, Pemberton, BC, V0N 2L0
Phone #: 604-894-5002	**Email**:jgagne@crtconstruction.ca/imckeachie@crtconstruction.ca
Contact Person: Jordan Gagné/Ian McKeachie	**Position**: Environmental 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.**	☑	**Potential to have Adverse Impacts to Fish/Wildlife** **(*e.g.* Mortality/Injury)** **Please provide details in "Description" section below.**	☑
Water Quality/Quantity **Please provide details in "Description" section below.**	☐	**Hazardous Material Spills (to ground or water)** **Please provide details in description section in regards to:** • Perceives extent of damage • Type, quantity and area of the spill • Containment Procedures • Environmental features in close proximity to the spill	☐
Disturbance of known or unknown archeological /heritage site **Please provide details in "Description" section below.**	☐	**Air Quality** **Please provide details in "Description" section below.**	☐

Spill reported to external agencies **If yes, describe the receiving environment and substance/quantity spilled.**	☐	**Other** **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:
BDR HEF – Power House Access Road

Description and Cause of Incident:

Description:

- From May 8-10, 2014, 3 consecutive AMBNS surveys were performed at BDR HEF Powerhouse Access Road.
- On May 8th, one potentially active nest was discovered and was well-flagged at the base of the tree with wildlife tape as well as 3 yellow strips hanging from the branches.
- Following the final survey on May 10, verbal approval to clear the road and laydown area was provided to CRT-ebc by our wildlife qualified professional. The location of the potentially active nest was shown to CRT-ebc staff. A discussion ensued, to confirm the falling boundary as the potentially active nest was located on the flagged cut line at the edge of the road. Based on this location, CRT-ebc agreed that the nest would not be cut. A buffer was not flagged because of those 2 reasons.
- Clearing was not initiated within 24h following the last survey; consequently a 4th survey was performed on May 12th.
- The potentially active nest was still present during the 4th survey, and the flags were still present on the tree. All 4 parties (IEM, Ecofish, fallers and CRT-ebc) were present. Final verbal approval to clear the Access Road area was made on May 12, at 9:00 AM. A map was used on site to describe the nest location to the attending parties.
- Following the survey, on the morning of May 12, 2014 CRT-ebc was supposed to send the excavator to remove all the trees in the area, because there was no merchantable timber.
- Instead, CRT-ebc decided to send the fallers to clear the area as they are more accustomed to flagging standards and also because they were present and available, and they had just cleared the BDR HEF downstream tunnel portal at the powerhouse.
- The fallers were made aware by CRT-ebc of the presence of the potentially active nest. Because it was located on the clearing boundary, no further mitigation measures have been taken as it was already flagged with wildlife tape. (As previously mentioned above)
- During clearing activities, the potentially active nest was mistakenly felled by the fallers.
- On May 17th, 2014 CRT-ebc environmental team received, by email, the Final Clearing Approval Report for Boulder Creek HEF Portal, Access Road and Laydown Area from Ecofish.
- After reviewing the report, CRT-ebc environmental team realized that an ¨active¨ nest might have been destroyed during clearing activities. CRT-ebc environmental team then contacted Ecofish, to request Ecofish to

confirm if the nest tree had been cleared.

- On May 19th, 2014, CRT-ebc received the confirmation from Ecofish that the potentially active nest had been felled.
- On May 21st, 2014 a conference call was held between CRT-ebc environmental team and Ecofish. The decision to mark the nest as active was discussed. The nest was never confirmed as active as defined by the *Wildlife Act*, which defines an active nest as being occupied by a bird or an egg. No bird was observed in the nest during the stand watches and eggs were not confirmed; however the nest appeared newly built with green materials. Ecofish did not take the standard steps to confirm occupancy, such as using mirrors, as the nest was located on the falling boundary. We also discussed how the incident could direct future strategies to ensure adequate communication between Ecofish, CRT-ebc and the fallers.
- On May 23rd, 2014 CRT-ebc received the Updated AMBNS BDR laydown-road & portal Report.
- On the same day (May 23rd, 2014), CRT-ebc communicated the incident to Innergex via phone then a follow up email to Innergex and the IEM.

Cause:

- The fallers mistakenly felled the tree even though it was flagged with wildlife tape, thinking it was representing the location of an inactive nest instead of ¨active¨. There has been miscommunication between parties involved.

Incident Witness: CRT-ebc environmental team and Ecofish

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

If Yes, please describe:

- The nest was deemed "active" because of the presence of fresh material. However, it was never confirmed as being occupied.
- As stated in Ecofish's report, the *Wildlife Act* (1996) defines an active when it is occupied by a bird or egg.
- Even though the nest was destroyed, there is no evidence showing that egg or bird was occupying the nest.

Has Wildlife Salvage Protocol been followed?	**Yes**	**No**	**N/A**
	☐	☐	☑

If No, please explain:

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.
If No please explain:

Have applicable photos and/or drawings been attached to the incident report?	Yes	No	N/A
	☐	☑	☐

Incident Response Measures

When CRT-ebc was made aware of the potential incident:

- CRT-ebc environmental team then contacted Ecofish, to confirm the nest tree had been felled.
- On May 19th, 2014 CRT-ebc received the confirmation by Ecofish that the potentially active nest had been felled.
- On May 21st, 2014 a conference call was held between CRT-ebc environmental team and Ecofish.
- On May 23rd, 2014 CRT-ebc received the Updated AMBNS BDR laydown-road & portal Report.
- On the same day (May 23rd, 2014), CRT-ebc communicated the incident to Innergex via phone then a follow up email to Innergex and the IEM.
- During the whole process, better communication measures were put in place on the field by CRT-ebc and Ecofish to facilitate the transfer of information to the fallers.

Actions to Prevent Incident Recurrence

Before the incident the mitigation measures in place were:

- All parties (i.e. CRT-ebc, IEM, Ecofish & fallers) attended the CRT-ebc Health – Safety & Environmental orientation. The orientation includes all relevant information regarding the mitigation measures that CRT-ebc has to comply with before clearing activities. (i.e. AMBNS, Clearing Plan, Flagging Protocol, etc.).
- Clearing Plan was prepared for this component of the Project.
- Flagging Standards: The clearing boundary is flagged with orange tape, and trees that are marked with a flag are not to be felled. When a nest is found, the tree is marked with yellow wildlife tape. If the nest is deemed to be active, the species' associated buffer is put in place to avoid disturbance around the nest.
- The AMBNS were performed before clearing activities could start in the area. 3 surveys were done from May 8-10, 2014 and a 4th one was made on the morning of May 12th, 2014 because the clearing had not started inside 24h following the 3rd survey.
- The location of the potentially active nest was transferred to CRT-ebc from Ecofish, who then transferred the information to the fallers.
- The final verbal approval was provided by Ecofish on May 12th, 2014 at 9:00 AM. The location of the potentially active nest was again shown to the fallers using a map.

After the incident, additional mitigation measures were put in place:

- The fallers have been re-familiarized with flagging standards.
- When an active nest is identified, at least one CRT-ebc crew member walks the area with the fallers to make sure they are well aware of its location.
- The AMBNS results are transferred to the fallers before clearing activities can start through an official document, which provides a map with the nest's locations as well as the dates at which each surveys were performed and

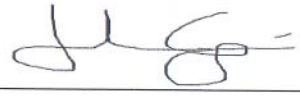
the timeframe in which clearing has to start and be finished.

- All parties present at the transfer of field reports sign the conditional approval notice that is provided to the fallers.

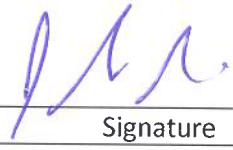
Notification Record

Agency Reported to	Contact Information	Agency Contacted		Date and Time Reported	Reported By	Method of Reporting
		Yes	No			
External						
Authority		☐	☑			
		☐	☑			
PEP	1-800-663-3456	☐	☑			
MOE Staff		☐	☑			
DFO		☐	☑			
FLNRO		☑	☐	2014-05-26	Innergex	Email and Phone Call
Environment Canada	604-666-6100	☐	☑			
Canadian Coast Guard	604-666-6011	☐	☑			
Local Fire Rescue	911	☐	☑			
Internal						
QP Ecofish	250.334-3042 Deborah Lacroix	☑	☐	2014-05-19	Jordan Gagné	Phone
Owner Innergex	604.633-9990 Julia Mancinelli	☑	☐	2014-05-23	Jordan Gagné	Phone Call and follow up email at 4:14 pm with the Ecofish Memo and draft EIR.
IEM Sartori	604.987-5588 Stephen Sims	☑	☐	2014-05-23	Jordan Gagné	Email at 4:14 pm with the Ecofish Memo and draft EIR.
		☐	☐			
		☐	☐			
		☐	☐			

Contractor's Environmental Manager:

Jordan Gagné	Environmental Manager CRT-ebc		2014-05-26
Print Name	Position and Company	Signature	Date

Independent Environmental Monitor:

J. Stephen Sims	Independent Environmental Monitor, Sartori Environmental Services		2014-05-26
Print Name	Position and Company	Signature	Date

Environmental Incident Reporting Form

General Information

Project Name: Upper Lillooet Hydro Project	**Project Component**: ULR HEF Intake Access Road
Time/Date of Incident Start: May 23rd, 2014 at 1:30PM	**Time/Date Incident Stopped**: May 24th, 2014 @ 2:00PM
Date of Report: Draft Submitted: 2014-05-26 Final Submitted: 2014-05-27	**Project Incident Report Number**: 2014-05-27 CE-EIR-002
Report Prepared By: Jordan Gagné	
Contractors Environmental Manager: Jordan Gagné/Ian McKeachie	
Independent Environmental Monitor (Sartori Environmental Services): Stephen Sims/Tom Hicks	
Licensee's Environmental Manager: Julia Mancinelli	

Contact Information for Company Involved in Incident

Company: CRT-ebc	**Address**: 11-7339 Old Mill Road, PO Box 585, Pemberton, BC, V0N 2L0
Phone #: 604-894-5002	**Email**:jgagne@crtconstruction.ca/imckeachie@crtconstruction.ca
Contact Person: Jordan Gagné/Ian McKeachie	**Position**: Environmental 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.**		**Adverse Impacts to Fish/Wildlife** **(*e.g.* Mortality/Injury)** **Please provide details in "Description" section below.**	
Water Quality/Quantity **Please provide details in "Description" section below.**		**Hazardous Material Spills (to ground or water)** **Please provide details in description section in regards to the:** • perceived extent of damage, • type, quantity and area of the spill, • containment procedures, and • environmental features in close proximity to the spill.	
Disturbance of known or unknown archeological /heritage site **Please provide details in "Description" section below.**		**Air Quality** **Please provide details in "Description" section below.**	

Spill reported to external agencies **If yes, describe the receiving environment and substance/quantity spilled.**		**Other** **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: Box culvert along the non-status road (heading to the Upper Lillooet River HEF Intake just past the KM 47 Lillooet River FSR box culvert)

Description and Cause of Incident:

Description:

- In early afternoon of May 23rd, CRT-ebc excavator #50-0522 345D (45 tons) was doing road repairs on the non-status road going to the ULR HEF intake, past km 47 of Lillooet River FSR.
- At 1:30 PM, when travelling across the box culvert installed at km47, the box culvert failed and the excavator fell through the culvert. Normal hydraulic oil is used in this excavator, but no spills occurred in the watercourse and within the High Water Mark
- The watercourse is a fish-bearing and flows into the Upper Lillooet River. Cutthroat Trout are known to be present in this watercourse.
- The excavator's operator (William Jobin) informed the superintendent (Roger Pelletier) who was in charge of managing the incident with Simon Munneke (Field Engineer).
- The IEM (Mandala Smulders) was at the incident's location moments after it occurred. She was able to be part of the decision making process as to which mitigation measures would be taken. She was also monitoring water quality, as well as overseeing all activities to ensure they were conducted in environmentally conscious manner.
- The incident was also reported to Innergex moments after it happened.
- A second excavator from CRT-ebc (336 – bio-oil) removed material in front of the 345 to allow the excavator #50-0522 345D to pull himself out using its bucket as an anchor.
- The culvert woody debris and the road material were removed as much as possible from the watercourse, under the supervision of the IEM. This was done with the the bio-oil excavator.
- During the incident and the machine removal, turbid water was observed due to disturbance of the wetted channel (see water quality section for more details). No fish mortalities were observed and no spills occurred to the watercourse.
- Spill kits were available on site in case of spills, as every piece of CRT-ebc's equipment has one inside their cabs.
- Vehicles and crews were stuck on the other side of the failed box culvert. In order to get them back onto the Lillooet River FSR we had to create an access track to connect the non-status road (below the box culvert) to the FSR (before the upper box culvert at km 47). The access track goes through brush (i.e. no merchantable timber).
- The IEM was monitoring water quality, as well as overseeing all activities to ensure they were conducted in environmentally conscious manner and limited footprint disturbances.
- Furthermore, the bank was stabilized with boulders to prevent sediment from entering the fish-bearing

watercourse.

- The stabilization was completed the next day around 2:00 PM by CRT-ebc crew.

Cause:

- The box culvert collapsed under the weight of CRT-ebc 45 tons excavator.

Incident Witness: William Jobin (operator – CRT-ebc), Roger Pelletier (Superintendent – CRT-ebc), Simon Munneke (Field Engineer – CRT-ebc), Mandala Smulders (IEM – Sartori Environmental Services)

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

If Yes, please describe:
During the incident and the machine removal, turbid water was observed due to disturbance of the wetted channel. No fish mortalities were observed and no spills occurred to the watercourse.

Has Wildlife Salvage Protocol been followed?	**Yes** ☐	**No** ☐	**N/A** ☑

If No, please explain:

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.
If No please explain: See enclosed water quality table. Turbidity exceeded the background level by more than 22 NTU in the minutes following the incident (0.4 to 22.6). 2 hours after the incident, the downstream turbidity level had already dropped by more than 20 NTU (22.6 to 2.3). The next morning, water samples were taken at 8:00 AM and the turbidity level was 1.6 NTU above background level. It took less than 2 hours for the total suspended solids concentration to reach the allowable exceedance level and less than 24 hours to reach the actual background level.

Have applicable photos and/or drawings been attached to the incident report?	**Yes** ☑	**No** ☐	**N/A** ☐

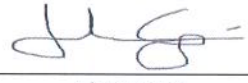
Incident Response Measures

- Immediate response measures were to insure the safety of CRT-ebc's personnel.
- Then mitigation measures were taken in consultation with the IEM to prevent any spills from occurring, and to minimize the impact on the watercourse during machine removal and bank stabilization.
- Another CRT-ebc excavator (336 bio-oil) was used to remove material in front of the 345 to allow him to pull himself out using its bucket as anchor. The same bio-oil excavator was then used to remove woody debris and road material from the watercourse.
- Because we had crews and equipment stuck on the other side of the failed box culvert, a temporary access track was built between the Lillooet River FSR and the non-status road that gives access to the ULR HEF intake.
- The footprint was limited as much as possible, and there was only brush removed (i.e. non-merchantable timber).

Notification Record

Agency Reported to	Contact Information	Agency Contacted		Date and Time Reported	Reported By	Method of Reporting
		Yes	No			
Canadian Coast Guard	604-666-6011	☐	☐			
Local Fire Rescue	911	☐	☐			
Internal						
Owner Innergex	604 633-9990 Julia Mancinelli	☑	☐	2014-05-24	IEM on site & Jordan Gagné	Phone and follow up by Email at 3:43 PM with EIR draft.
IEM Sartori	604.987-5588 Stephen Sims	☑	☐	2014-05-24	IEM on site & Jordan Gagné	On site during incident and follow up by Email at 3:43 PM with EIR draft.
		☐	☐			
		☐	☐			
		☐	☐			
		☐	☐			

Contractor's Environmental Manager:

Jordan Gagné	Environmental Manager, CRT-ebc		2014-05-27
Print Name	Position and Company	Signature	Date

Reviewed and accepted by:

J. Stephen Sims	Independent Environmental Monitor, Sartori Environmental Services		2014-05-27
Print Name	Position and Company	Signature	Date

Water Quality Results:

Water quality information for 47km tributary to the Upper Lillooet River along the non-status road to the Upper Lillooet intake area			
Date	**Time**	**Location**	**Turbidity**
May 23, 2014			
5/23/2014	13:50	Downstream	22.6
5/23/2014	13:51	Upstream	0.4
5/23/2014	14:55	Downstream	10.1
5/23/2014	14:56	Upstream	0.4
5/23/2014	15:55	Downstream	2.3
5/23/2014	15:56	Upstream	0.7
May 24, 2014			
5/24/2014	8:03	Downstream	1.6
5/24/2014	8:04	Upstream	0
5/24/2014	13:49	Downstream	0.6
5/24/2014	13:50	Upstream	0
May 25, 2014			
5/25/2014	13:56	Downstream	0
5/25/2014	13:57	Upstream	0.3

Photo documentation (Also attached to the EIR are the IEM (Sartori) photos):

Photo 1: The CRT-ebc 45 tons excavator, moments after the box culvert collapsed.

Photo 2: Box culvert post-excavator removal.

Photo 3: Condition of the creek bed following removal of the excavator and some material obstructing the flows. Debris and material was removed from the watercourse with an excavator equipped with biodegradable hydraulic oil.

Photo 4: The slope above the creek was stabilized with boulders to avoid sediment from entering the watercourse.