



Upper Lillooet Hydro Project

Weekly Environmental Monitoring Report #26

Reporting Period: June 15th – June 21st, 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		Prepared By
Name	Organization	
Trevor Andrews	Fisheries and Oceans Canada	 <p>J. Alex Sartori, RPBio Independent Environmental Monitor (IEM)</p>  <p>J. Stephen Sims, RPBio Delegated IEM</p> <p>Date Prepared: July 2, 2014 Date Submitted: July 9, 2014</p>
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	
Peter Ramsden	Innergex Renewable Energy Inc.	
Oliver Robson	Innergex Renewable Energy Inc.	
Greg Davis	Innergex Renewable Energy Inc.	
Julia Mancinelli	Innergex Renewable Energy Inc.	
Jackie Boruch	Innergex Renewable Energy Inc.	
Liz Scroggins	Innergex Renewable Energy Inc.	
Bas Brusche	Innergex Renewable Energy Inc.	
Matt Kennedy	Innergex Renewable Energy Inc.	
Renaud DeBatz	Innergex Renewable Energy Inc.	
Richard Blanchet	Innergex Renewable Energy Inc.	
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.	
Pontus Lindgren	Westpark Electric Ltd.	
Harriet VanWart	Lil'wat Nation	

Owner Construction Permits and Approvals

Environmental Assessment Certificate No.E13-01 (Amendment 1, 2, 3 & 4)
Fisheries Act Subsection 35(2)(b) Authorization No. 09-HPAC-PA2-000303 (Amendment 1)
Letter of Advice for the Transmission Line No. 09-HPAC0-PA2-000303
Leave To Commence Construction (ULRHEF) File No. 2002561
Leave To Commence Construction (BDRHEF) File No. 2002453
Leave To Commence Construction (TX Line) File No. 2002561/2002453
Conditional Water Licence (ULRHEF C130613) File No. 2002561
Conditional Water Licence (BDRHEF C129969) File No. 2002453
Conditional Water Licence (BDRHEF C131153) File No. 2003601
Licence of Occupation (ULRHEF #232384) File No. 2409871
Licence of Occupation (BDRHEF #232386) File No. 2409998
Licence of Occupation (TX Line #2423386) File No. 2410654
Occupant Licence to Cut (ULRHEF 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, 2) 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
Works Permit for Construction (TX Line) within FSR Right-of-Way No. 6123-14-01

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 (Amendment 1)
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	IE	Independent Engineer (True North Energy)
ASMP	Archaeological Sites Management Plan	IEM	Independent Environmental Monitor
ARD/ML	Acid Rock Drainage and Metal Leaching	Innergex	Innergex Renewable Energy Inc.
BCEAO	British Columbia Environmental Assessment Office	ITM	Environmental Issue Tracking Matrix
BCWQG	British Columbia Water Quality Guidelines	JEM	JEM Energy Ltd. (Delegate Independent Engineer)
BDRHEF	Boulder Creek Hydroelectric Facility	LTC	Leave to Construct
BG	Background	MFLNRO	Ministry of Forests, Lands and Natural Resource Operations
BKL	BKL Consultants Ltd.	MOE	Ministry of Environment
CRT-ebc	CRT-ebc Construction Inc.	NCD	Non Classified Drainage
DFO	Fisheries and Oceans Canada	PAG	Potentially Acid Generating
DS	Downstream	RVMA	Riparian Vegetation Management Area
Ecofish	Ecofish Research Ltd.	SES	Sartori Environmental Services
Ecologic	Ecologic Consulting	TX Line	Transmission Line
EDI	Environmental Dynamics Inc.	ULRHEF	Upper Lillooet River Hydroelectric Facility
EIR	Environmental Incident Report	UWR	Ungulate Winter Range
ESC	Erosion and Sediment Control	VC	Valued Component
FAM	Field Advice Memorandum	WQ	Water Quality
FSR	Forest Service Road	WEL	Westpark Electric Ltd.
GWR	Mountain Goat Winter Range	WEMR	Weekly Environmental Monitoring Report
Hedberg	Hedberg and Associates Ltd.		

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 June 15	DA, TH	Overcast	<p>Construction Camp</p> <ul style="list-style-type: none"> Sewer and water line installation Camp facility installation <p>BDRHEF Portal</p> <ul style="list-style-type: none"> Portal excavation; drilling and blasting <p>ULRHEF Intake</p> <ul style="list-style-type: none"> Right bank diversion channel excavation <p>ULRHEF Powerhouse</p> <ul style="list-style-type: none"> Powerhouse excavation <p>Truckwash Creek Bypass – FSR realignment</p> <ul style="list-style-type: none"> Excavating to final grade at the west heading
Monday June 16	DA,MS,TH, VD	Periods of rain	<p>Construction Camp</p> <ul style="list-style-type: none"> Sewer and water line installation Camp facility installation <p>BDRHEF Portal</p> <ul style="list-style-type: none"> Excavation, shotcrete, and rock bolt application to the rock face <p>ULRHEF Intake</p> <ul style="list-style-type: none"> Right bank diversion channel excavation <p>ULRHEF Downstream Portal</p> <ul style="list-style-type: none"> Stripping and grubbing of the spoil areas following pre-work meeting <p>ULRHEF Powerhouse</p> <ul style="list-style-type: none"> Powerhouse excavation and hauling decked merchantable timber <p>Upper Lillooet River Trail</p> <ul style="list-style-type: none"> Trail construction and preparation for the installation of a temporary pedestrian crossing over Truckwash Creek <p>Truckwash Creek Bypass – FSR realignment</p> <ul style="list-style-type: none"> Excavating to final grade at the west heading <p>TX-Line</p> <ul style="list-style-type: none"> Segment 2 – RVMA topping Segment 4 – Access road construction Segment 4 & 5 – slashing crew clearing
Tuesday June 17	AA,DA,MS, TH,VD	Sun and Cloud	<p>Construction Camp</p> <ul style="list-style-type: none"> Sewer and water line installation Camp facility installation <p>BDRHEF Portal</p> <ul style="list-style-type: none"> Mapping blasted rock face and installing shotcrete/rock bolt stabilization Excavation and site grading <p>ULRHEF Intake</p> <ul style="list-style-type: none"> Right bank diversion channel excavation Installation of slope stabilization where a seepage was encountered <p>ULRHEF Downstream Portal</p> <ul style="list-style-type: none"> Stripping and grubbing of the lower spoil area <p>Upper Lillooet River Trail</p> <ul style="list-style-type: none"> Trail construction and installation of a temporary pedestrian crossing over Truckwash Creek AMBNS conducted at trail head to permit brushing of understory <p>Truckwash Creek Bypass – FSR realignment</p> <ul style="list-style-type: none"> Excavating to final grade at the west heading <p>TX-Line</p> <ul style="list-style-type: none"> Segment 1 & 2 – pole dressing Segment 2 – RVMA topping Segment 4 – Access road construction Segment 10 – Feller buncher clearing

Date	IEM Team Personnel	Weather Conditions	Monitoring Locations & Key On-site Environmental Information
Wednesday June 18	AA,DA,MS	Sun and Cloud	<p>Construction Camp</p> <ul style="list-style-type: none"> • Sewer and water line installation • Camp facility installation <p>BDRHEF Portal</p> <ul style="list-style-type: none"> • Sediment pond construction • Installing shotcrete/rock bolt stabilization to blasted rock face <p>ULRHEF Intake</p> <ul style="list-style-type: none"> • Right bank diversion channel excavation • Installation of slope stabilization where a seepage was encountered <p>ULRHEF Powerhouse</p> <ul style="list-style-type: none"> • Powerhouse excavation <p>ULRHEF Downstream Portal</p> <ul style="list-style-type: none"> • Stripping and grubbing of the lower spoil area <p>Upper Lillooet River Trail</p> <ul style="list-style-type: none"> • Trail construction and installation of a temporary pedestrian crossing over Truckwash Creek • Brushing understory to connect the trail head with the new parking area <p>TX-Line</p> <ul style="list-style-type: none"> • Segment 1 & 2 – pole dressing • Segment 4 – Access road construction • Segment 6 – Helipad clearing • Segment 10 – Feller buncher clearing
Thursday June 19	MS,TJ,VD	Sun and Cloud	<p>Construction Camp</p> <ul style="list-style-type: none"> • Sewer and water line installation • Camp facility installation <p>BDRHEF Portal</p> <ul style="list-style-type: none"> • Sediment pond construction • Installing shotcrete/rock bolt stabilization to blasted rock face <p>ULRHEF Intake</p> <ul style="list-style-type: none"> • Right bank diversion channel excavation <p>ULRHEF Powerhouse</p> <ul style="list-style-type: none"> • Powerhouse excavation <p>ULRHEF Downstream Portal</p> <ul style="list-style-type: none"> • Stripping and grubbing of the lower spoil area complete • Stripping and grubbing of the upper spoil area began <p>Upper Lillooet River Trail</p> <ul style="list-style-type: none"> • Construction of the pedestrian bridge and trail are now complete <p>TX-Line</p> <ul style="list-style-type: none"> • Segment 4 – Access road construction • Segment 6 – Helipad clearing • Segment 10 – Feller buncher clearing
Friday June 20	ML,MS,TJ, VD	Sun and Cloud	<p>Construction Camp</p> <ul style="list-style-type: none"> • Sewer and water line installation • Camp facility installation <p>BDRHEF Portal</p> <ul style="list-style-type: none"> • Sediment pond construction • Installing shotcrete/rock bolt stabilization to blasted rock face <p>ULRHEF Intake</p> <ul style="list-style-type: none"> • Right bank diversion channel excavation <p>ULRHEF Powerhouse</p> <ul style="list-style-type: none"> • Powerhouse excavation <p>ULRHEF Downstream Portal</p> <ul style="list-style-type: none"> • Grading of the lower spoil area • Stripping and grubbing of the upper spoil area <p>TX-Line</p> <ul style="list-style-type: none"> • Segment 2 – Pole installation and staging materials • Segment 6 – Helipad clearing • Segment 10 – Feller buncher clearing; merchantable timber management; road building

Date	IEM Team Personnel	Weather Conditions	Monitoring Locations & Key On-site Environmental Information
Saturday June 21	DA,ML,MS, TJ	Sun and Cloud	<p>Construction Camp</p> <ul style="list-style-type: none"> Sewer and water line installation Camp facility installation <p>BDRHEF Portal</p> <ul style="list-style-type: none"> Sediment pond construction Installing shotcrete/rock bolt stabilization to blasted rock face Installation of gravity feed diversion for water use, in accordance with work plan and Short-Term Use of Water Approval (File #A2006123) <p>ULRHEF Intake</p> <ul style="list-style-type: none"> Right bank diversion channel excavation <p>ULRHEF Powerhouse</p> <ul style="list-style-type: none"> Powerhouse excavation Drilling and blasting boulders <p>ULRHEF Downstream Portal</p> <ul style="list-style-type: none"> Grading of the lower spoil area Stripping and grubbing of the upper spoil area <p>Truckwash Creek Bypass – FSR realignment</p> <ul style="list-style-type: none"> Drilling and blasting at the west heading <p>TX-Line</p> <ul style="list-style-type: none"> Segment 2 – Pole dressing and staging materials Segment 3 – Clearing Segment 4 - road upgrades and spur road construction Segment 10 – Feller buncher clearing; merchantable timber management; road building

IEM Team Personnel: AA – Anthony Andrews; DA – Danita Abraham; ML – Mackenzie Lee; MS – Mandala Smulders; TH – Tom Hicks; TJ – Tammie Jenkins; 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.
June 15	Email	SES, CRT- ebc, Innergex	<ul style="list-style-type: none"> Submission of <i>EIR#008</i> related to stripping and grubbing of the north side of the ULRHEF intake without a work plan, IEM notification, or LTC. Details of the incident are included in the appended <i>EIR#008</i>. The issue has been updated in the ITM. 	ULR#15
June 16	Pre-work Meeting	SES, CRT- ebc, Innergex	<ul style="list-style-type: none"> Reviewed the work plan for the ULRHEF portal spoil area stripping and grubbing; highlighting the results of the AMBNS completed in the area. No active nests were present. 	-
June 16	Conference Call	SES, CRT- ebc, Innergex, Ecofish, Ecologic	<ul style="list-style-type: none"> Discussed recent Mountain Goat sightings and management strategy to minimize impacts to Mountain Goats during helicopter use in the vicinity of Truckwash Creek following the end of the timing window restriction (June 15). Ecofish has recommended extension of the 1,500m horizontal and 400m distance helicopter restriction from UWR-2-002 UL11 past the initial timing window (May 1 – June 15) to July 15 or until such a time that the IEM 	-

Date	Communication Type	Participants	Issues Discussed	ITM ID No.
			confirms that nannys and kids are no longer present within the UWR.	
June 17	Pre-work Meeting	SES, CRT- ebc, Innergex	<ul style="list-style-type: none"> Reviewed the work plan for the BDRHEF tunnel portal excavation; highlighting water quality management, blasting mitigation, and material management in accordance with the ARD/ML Monitoring and Control Plan. No active nests or nesting activities were observed. 	-
	Email	SES, Innergex	<ul style="list-style-type: none"> Completion of AMBNS at the ULR Trail head. No active songbird nests or nesting activities were observed. 	-
June 19	Email	SES, CRT- ebc, Innergex	<ul style="list-style-type: none"> Innergex informed the IEM that a stockpile containing ~2270m² of rock at the Truckwash west heading was tested according to the ARD/ML Monitoring and Control Plan and found to be potentially acid generating (PAG). 	-

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	Segments 1 – 6, & 10	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. A nest survey is required by WEL QPs prior to clearing within 600m of suitable Peregrine Falcon (PEFA) nesting habitat.
Tx-Line (continued)		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.
		Old Growth Management Areas (OGMAs)	IEM monitoring is required when clearing within legally designated OGMAs, to ensure clearing area is minimized.

Component	Location	Wildlife/Archeology Concern	Construction/Timing Restrictions & Mitigations
<i>Tx-Line (continued)</i>	<i>Segments 1 – 6, & 10</i>	<i>Ungulate Winter Range (UWR)</i>	<i>IEM monitoring is required when clearing within identified deer and moose UWR, to ensure clearing area is minimized.</i>
	<i>(continued)</i>	<i>Suitable Class 1 & 2 Grizzly Bear forage habitat</i>	<i>IEM monitoring is required when clearing within identified Class 1 & 2 Grizzly Bear forage habitat, to ensure clearing area is minimized.</i>
<i>ULRHEF powerhouse</i>	<i>Within 50m of identified archeologically significant area</i>	<i>Archaeologically significant site EdRu-3</i>	<i>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.</i>
	<i>Within 30m of the Upper Lillooet River</i>	<i>Riparian area</i>	<i>IEM presence is required when working within 30m of the Upper Lillooet River as outlined in the ULRHEF Powerhouse Stripping and Grubbing work plan.</i>
<i>Lillooet River FSR; ULRHEF intake access; FSR realignment at Truckwash Creek</i>	<i>Access roads above the lower limit of the 200m buffer Truckwash Creek Migration Corridor to the ULRHEF intake; including FSR realignment at Truckwash Creek</i>	<i>Mountain Goat UWR</i>	<i>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. Mitigations surrounding Helicopter use within 1,500m horizontal and 400m distances of UWR-2-002 UL 11 have been adjusted by the IEM and Innergex' s QP past the initial timing window (May 1 – June 15) to July 15 or until such a time that the IEM confirms that nannys and kids are no longer present within the UWR.</i>

4.0 Hydroelectric Facilities

4.1 Ancillary Components – Monitoring Results

Construction Camp

- Hauling of trailers and equipment to the construction camp site continued.
- Camp sewer and water utility installation continued this week. No environmental concerns were noted.

38km Laydown

- A material crushing and screening plant operation continued this week. A watering hose was used effectively for dust control at the screening plant.

Upper Lillooet River Trail

- Construction of the Upper Lillooet River Trail was complete on June 19th. Trail work included minor brushing, clearing a foot path with hand tools and the construction of a temporary footbridge over Truckwash Creek (Photo 1). No environmental concerns were noted.

Environmental Summary:

- The IEM completed an AMBNS (June 17th) prior to the clearing of a foot path through understory vegetation between the 42.5km parking area and the Upper Lillooet Trail head. The IEM determined that a reduced survey effort was applicable at this location, as minimal understory vegetation was slated for clearing and detectability of nests in the area was high given the vegetation type. No active nests or nesting activities were observed, and permission to complete brushing and foot path construction was granted following the survey (Photo 2).

Photos:



Photo 1. Temporary Truckwash Creek crossing (June 19, 2014).



Photo 2. Brushing of trail between 42.5km parking area and trail head completed on June 18th. No trees were felled.

4.2 Boulder Creek Hydroelectric Facility – Monitoring Results

BDRHEF Downstream Portal and Powerhouse Access Road

- The drilling/blasting of the boulder portal rock face was completed on June 15th.
- Shotcrete and rock bolt stabilization of the lower sections of the downstream tunnel portal rock face began this week (Photo 4).
- Installation of a gravity-fed water diversion through a holding tank began on June 20th and was completed on June 21st.
- Installation of a series of three settling ponds began this week. The ponds are being constructed to manage water quality from potential seepages that may be encountered during tunnelling activities and to manage excess process water.

BDRHEF Intake Access Road

- No construction activities were completed during this reporting period.

Environmental Summary:

- Instream acoustic pressure monitoring was completed during a blast on June 15th which did not exceed the trigger level of 30kPa. The IEM will continue to perform instream acoustic pressure monitoring once blasting for the tunnel begins until the results are consistently below the 30kPa threshold and blast mitigations are deemed to be appropriate.
- 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.
- The gravity fed water diversion system was installed under IEM supervision and in accordance with Short Term Water Use Approval (No.A2006123). The intake of the system was fitted with an intake end-of-pipe fish exclusion screen according to specifications in the DFO guidelines (Photo 3). The diversion flows through 6`` PVC pipes into a holding tank and overflow is directed back into Boulder Creek through an outlet hose. No fish screen is installed on the outlet hose as it is placed outside of the wetted perimeter and the risk of fish access is currently nil. During commissioning of the system, overflow water was directed to a vegetated area until the system was flushed and water quality was recorded to be within allowable limits. Water is extracted from the holding tank via a pump and will be used for tunnel drilling activities. No environmental concerns were noted.
- Dust suppression between 0-37.5km of the Lillooet River FSR remains an outstanding issue. 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 – open*).

Photos:



Photo 3. Installing the gravity-fed water diversion in Boulder Creek (June 21, 2014).



Photo 4. Stabilization works at the tunnel portal. (June 21, 2014).

Water Quality Results – Gravity-Fed Water Diversion Installation

Date	Time	Sample Location Description	pH	Turbidity (NTU)	Temperature (°C)
June 21	7:40	Upstream of intake	6.7	15.1	-
June 21	7:55	Downstream at return hose location	7.3	15.7	-
June 21	13:01	Outlet of holding tank hose direct back into Boulder Creek	7.7	18.8	-
June 21	13:45	Downstream at Boulder Creek bridge	7.5	12.1	-

4.3 Upper Lillooet River Hydroelectric Facility – Monitoring Results

ULRHEF Powerhouse and Access Road

- Excavation at the ULRHEF powerhouse continued outside of the Lillooet River riparian area this week. The excavated material was used as fill for a future laydown within the limits of the powerhouse spoil area and was hauled to the crushing/screening plant located at the 38km of the Lillooet River FSR.

ULRHEF Intake and Access Roads

- The right bank diversion channel excavation continued this week. From June 16th – 18th CRT-ebc installed geo-textile fabric and rock riprap as a slope stabilization measure where a small seepage was encountered. No environmental concerns were noted (Photo 5).

ULRHEF Downstream Portal

- Stripping and grubbing of the upper and lower spoil areas was completed this week following a pre-work meeting on June 16th.

Truckwash Creek Bypass Road – Lillooet River FSR Re-alignment

- Excavation to final grade was completed at the west heading during this reporting period.

Environmental Summary:

- On June 16th, Innergex informed the IEM that a stockpile containing ~2270m² of rock at the Truckwash west heading was tested according to the ARD/ML Monitoring and Control Plan and found to be potentially acid generating (PAG). The IEM will monitor run-off emanating from this stockpile and submit water quality samples for lab analysis on a monthly basis according to the ARD/ML management plan. No seepage or surface run-off from this stockpile has been observed to date (Photo 6).
- Noise monitoring stations were removed on June 16th, signalling the end of the spring noise monitoring requirement. The results are currently being analyzed and results will be communicated once the data has been reviewed. No Mountain

Goat disturbance was noted as a result of construction noise within the Migration Corridor this week.

Photos:



Photo 5. Slope protection installed at the right bank diversion excavation (June 18, 2014).



Photo 6. PAG stockpile at Truckwash Creek west heading (June 20, 2014).

Water Quality Results

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

4.4 Hydroelectric Facilities – Recommendations

Dust suppression between 0 and 37.5km on the Lillooet River FSR continues to be an issue. The IEM recommends that CRT-ebc develop a FSR-specific dust suppression plan to supplement the Air Quality and Dust Control EPP and mitigate potential environmental effects (*ULR#12 – Open*)

CRT-ebc should continue to employ blasting mitigation measures during all future blasts at the BDRHEF tunnel portal work area. Instream acoustic pressure monitoring will continue during tunnelling blasts until readings are shown to be consistently below 30kPa.

4.5 Hydroelectric Facilities – Upcoming Works

Excavation of the intake diversion channel is scheduled to continue next week at the ULRHEF intake. Bench excavation at the ULRHEF powerhouse will continue next week. Installation of the sediment ponds and drilling and blasting of the BDRHEF tunnel portal will continue with revised blasting procedures. Clearing and construction of the BDRHEF intake access road will continue once a Terrain Stability Assessment has been completed by a QP and the clearing boundaries are confirmed.

5.0 Transmission Line

5.1 Monitoring Results

Segment 1 & 2

- Continued RVMA topping (Photo 7) in Segment 2.
- Pole installation and dressing continued in Segments 1 and 2 this week (Photo 8). Temporary access tracks to the pole locations were constructed. No environmental concerns were noted.

Segment 3-6 & 10

- Clearing occurred in Segment 3, 4, 5, and 10 following the completion of AMBNS.
- Access roads branching from the Lillooet River FSR were constructed in Segment 4 & 5 this week.
- Clearing of helicopter access pads continued in Segment 6 during this reporting period. Due to the steep terrain and access limitation, the IEM conducted raptor monitoring from the north side of the Lillooet River from a good vantage point located at 17km of the Lillooet River FSR. The monitoring was conducted via spotting scope and no raptor activity was observed in the vicinity of the clearing areas. Clearing within identified Grizzly Bear habitat in Segment 6 was minimized by the nature of the work as a minimal amount of trees necessary for safe landing of a helicopter landing were cleared.

Environmental Summary:

- The IEM was present during clearing activities within 150m of wetlands, 100m of Coastal Tailed Frog Streams, Class 1 & 2 suitable Grizzly Bear forage habitat, moose and deer UWR, legally designated Old Growth Management Areas, 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.
- AMBNS were completed prior to all vegetation clearing along the Tx-line alignment during this reporting period.

Photos:



Photo 7. RVMA topping in Segment 2 (June 17, 2014).



Photo 8. Pole installation work in Segment 2 (June 21, 2014).

Water Quality Results

Date	Time	Sample Location Description	pH	Turbidity (NTU)	Temperature (°C)
No WQ measurements were recorded at active Tx-line work areas during this reporting period. Construction and clearing 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 – 6 and in Segment 10 following the results of AMBNS. Upcoming transmission line works will be focused on road construction, pole installation, and completing the clearing within the Segments 3-5 and 10.

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 be 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

All parties identified in the above table were notified within 48hr of the Mountain Goat monitoring form submission. *Please refer to the attached Mountain Goat Monitoring Daily Observation Forms for a summary of observations from this reporting period.*

7.0 Mountain Goat Monitoring Program

The following summarizes Mountain Goat mitigation measures for work activity within the Migration Corridor during this monitoring period;

1. Mountain Goat monitoring was completed this week focusing on the Truckwash Creek and Keyhole falls monitoring sites as works were occurring within 500m of Mountain Goat habitats and 200m of the migration routes. Mountain goat monitoring will continue to occur periodically, but daily monitoring is no longer required as the project identified critical winter and kidding period (Nov. 1 – June 15) has ended.
2. Noise level monitoring equipment was removed on June 16th as the project identified critical winter and kidding period (Nov. 1 – June 15) has ended and noise monitoring is no longer required.
3. 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 June 15th, the IEM will continue periodic Mountain Goat monitoring as works continue within the Mountain Goat Migration Corridor at Truckwash creek (ULRHEF downstream tunnel portal) and within 500 m of UWR-2-002 UL11 with a focus on works at the Truckwash Creek Bypass road and the ULR right bank intake diversion works. At the discretion of the IEM, periodic monitoring efforts will be shifted to the established monitoring sites closest to active construction areas:

- 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

Monitoring effort will be split between these two sites during early morning hours, unless safety concerns precluding from doing so. Construction activities will cease 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 during this reporting period.

8.0 Environmental Issues Tracking Matrix (ITM)

8.1 Hydroelectric Facilities (ULRHEF & BDRHEF)

Issue Tracking		Environmental Issue		Mitigation Measures						
ID No.	Status	Location	Issue Description	Action Taken/Recommended	Date of Identification	Targeted Date for Completion	Date Completed			
ITM Tracking Legend:		<table border="1"> <tr> <td style="background-color: yellow;">Work Item Open</td> </tr> <tr> <td style="background-color: green;">Work Item Complete</td> </tr> <tr> <td style="background-color: lightblue;">Issue Closed</td> </tr> </table>						Work Item Open	Work Item Complete	Issue Closed
Work Item Open										
Work Item Complete										
Issue Closed										
ULR#4	Open	47km – Lillooet River FSR	A log box structure failed while being crossed by an excavator (see appended EIR002).	<ol style="list-style-type: none"> CRT-ebc to prepare an EIR detailing the cause, description and actions items related to the incident. IEM to review and approved the EIR. CRT-ebc employees will be reminded of spill response procedures and how to use the spill kits in a potential future event. CRT-ebc to confirm that load ratings of equipment adhere to maximum crossing structure load ratings. Complete FSR and temporary access road crossing assessment by a Qualified Professional. Determine the requirements for crossing structure remediation or replacement and execute according to the appropriate work planning protocols. 	May 23, 2014	May 26, 2014.	-			
ULR#5	Open	39.9km – Lillooet River FSR	Rock truck rollover and spill (see appended EIR003).	<ol style="list-style-type: none"> CRT-ebc to prepare an EIR detailing the cause, description and actions items related to the incident. IEM to review and approved the EIR. CRT-ebc employees will be reminded of spill response procedures and how to use the spill kits in a potential future event. Road shoulder delineation (where applicable). CRT-ebc to develop and implement communication protocols for environmental incident response. Road stability assessment to be completed on Lillooet River FSR and temporary roads. 	May 27, 2014	June 3, 2014	-			

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#7	Open	34.9km – Lillooet River FSR	Silva Creek log structure failed while being crossed by a Megaton Truck (see appended EIRO05).	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. CRT-ebc to confirm that load ratings of equipment adhere to maximum crossing structure load ratings.	May 27, 2014	June 3, 2014	-
				5. Complete FSR and temporary access road crossing assessment by a Qualified Professional. 6. Complete repairs of the crossing structure as per MFLNRO recommendations (May 30, 2014) in accordance with appropriate work planning protocols and construction procedures. ¹		Completion of action items 5 and 6 to be determined	
ULR#8	Open	39.7km – Lillooet River FSR	Stream 9 – log box structure failure (see appended EIRO04).	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. CRT-ebc to confirm that load ratings of equipment adhere to maximum crossing structure load ratings.	May 28, 2014	June 3, 2014	-
				5. Complete FSR and temporary access road crossing assessment by a Qualified Professional. 6. Determine the requirements for crossing structure remediation or replacement and execute according to the appropriate work planning protocols and construction procedures.		Completion of action items 5 and 6 to be determined	

¹ The Lillooet River FSR Primary Road Use Permit holder (Squamish Mills) will be completing crossing structure repair.

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#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.	May 28, 2014	May 30, 2014	-
				2. Conditional Rescission of the Stop Work Order for Heavy Hauling on the Lillooet River FSR was issued on June 1 st , 2014 subject to the following: <ul style="list-style-type: none"> a. CRT-ebc obtained approval from MFLNRO for the temporary steel plate modifications. 		June 1, 2014	
				<ul style="list-style-type: none"> b. Crossing assessments completed by a QP and recommendations submitted to MFLNRO for review and approval. c. Hauling above 38km of the Lillooet River FSR to be restricted to BCL-625 until modifications are approved by MFLNRO. 		June 4, 2014	
						To be determined	
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	-
ULR#15	Open	North side (left bank) of the ULRHEF intake	Stripping and grubbing proceeded without an approved work plan or LTC (<i>EIRO08 – further information will be included in the EIR once finalized</i>)	1. The IEM reported the incident to CRT-ebc environmental personnel. No further unauthorized construction activities occurred after the initial detection of the incident.	June 12, 2014	June 12, 2014	-
				2. CRT-ebc to prepare an EIR detailing the cause, description and actions items related to the incident.		June 15, 2014	
				3. IEM to review and approved the EIR.		Completion of action items 4 and 5 to be determined	
				4. CRT-ebc to prepare and submit a work plan for bulk excavation of the left bank for review and approval prior to resuming work on the left bank.			
				5. Issuance of LTC prior to resuming work on the left bank.			

next ITM – ULR#16

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 Date for Completion	Date Completed
<i>No outstanding environmental issues (next ITM – Tx#1)</i>							



Environmental Incident Reporting Form









General Information	
Project Name: Upper Lillooet Hydro Project	Project Component: ULR HEF – Intake (North; River Left)
Time/Date of Incident Start: June 12 th – 2014 at 12:30PM	Time/Date Incident Stopped: June 12 th – 2014
Date of Report: Draft Submitted: 2014-06-14 Final Submitted: 2014-06-15	Project Incident Report Number: 2014-06-15 CE-EIR-008 Incident Description: ULR HEF – Intake (North; River Left) grubbing & stripping
Report Prepared By: Jordan Gagné/Ian McKeachie	
Contractors Environmental Manager: Jordan Gagné / Ian McKeachie	
Independent Environmental Monitor (Sartori Environmental Services): Stephen Sims/ Tom Hicks	
Initial IEM Contact: 2014-06-12, IEM identified the non-compliance on site and informed CRT-ebc the same night via phone at 7:30PM	
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 / smunneke@crtconstruction.ca
Contact Person: Jordan Gagné/Ian McKeachie/Simon Munneke	Position: Environmental Manager/Field Engineer

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

/heritage site Please provide details in "Description" section below.		Please provide details in "Description" section below.	
Spill reported to external agencies If yes, describe the receiving environment and substance/quantity spilled.	<input type="checkbox"/>	Other Please provide details in "Description" section below.	<input checked="" type="checkbox"/>

Incident Profile

Weather at time of incident	 <input checked="" type="checkbox"/> Clear	 <input type="checkbox"/> Partly Cloudy/ Variable	 <input type="checkbox"/> Cloudy	 <input type="checkbox"/> Showers/ Periods of Rain	 <input type="checkbox"/> Rain	 <input type="checkbox"/> Heavy Rain (>25mm in 24hr)	 <input type="checkbox"/> Storm (Heavy rain and high winds)	 <input type="checkbox"/> Snow
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Specific Location:
 ULR HEF – Intake (North; River Left)

Description and Cause of Incident:
Description:

- On June 12th, grubbing & stripping of the ULR HEF intake (North; River Left) was carried out by CRT-ebc Superintendent (Roger Pelletier) and Foreman (Nicholas Grondin) without an approved workplan/LTC, without a kick-off meeting, and without notifying the IEM of works within the riparian area.
- On the same day at the end of shift (4:30pm), the IEM (Tom Hicks) observed the non-compliance and reported it to CRT-ebc (Ian McKeachie) via phone that night. There were no observed environmental impacts associated with the grubbing works, but CRT-ebc is aware that in this case the approval process and IEM notification protocol were improperly followed, and this has the potential to have environmental impacts.

Cause:

- The cause is two-fold.
 - 1) The Provincial process overseen by the IE on behalf of MFLNRO was not followed, and
 - 2) The IEM was not notified of work occurring within the riparian area and was therefore not on site. No approved work plan was in place prior to the initiation of works by the Superintendent (Roger Pelletier) and Foremen (Nicholas Grondin), resulting in grubbing being completed prior to receiving formal approval.

Incident Witness: CRT-ebc environmental team and the IEM (Tom Hicks)

Were there any Potential Environmental impacts as a result of the incident? (e.g., surface contamination, storm sewers, or fish/wildlife mortalities)	Yes <input type="checkbox"/>	None Observed <input checked="" type="checkbox"/>
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If Yes, please describe:

Has Wildlife Salvage Protocol been followed?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
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If No, please explain:



Water Quality Samples Collected?				Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
If yes, attach results of water quality analysis to report in table format. Include Laboratory analysis if completed. If No please explain:						
Have applicable photos and/or drawings been attached to the incident report?				Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Incident Response Measures						
When CRT-ebc was made aware of the potential incident by the IEM (Tom Hicks) on June 12 th the following response measures were taken: <ul style="list-style-type: none">• On June 13th 7:00AM CRT-ebc managing team advised the superintendent on site (Roger Pelletier) to stop all work activities on north side/river left of the ULR HEF intake.• On the morning of June 13th, CRT-ebc environmental manager (Ian McKeachie) went on site to assess the situation.• On the morning of June 13th, CRT-ebc environmental team (Jordan Gagné) communicated with the superintendent on site (Roger Pelletier) to make sure no work activities were performed at the ULR HEF intake (north; river left).• On the same morning at 9:05AM, CRT-ebc reported the potential incident to Innergex and the IEM.• CRT-ebc environmental manager (Ian McKeachie) conducted a site investigation to collect information on the incident.• At 1:59PM, CRT-ebc confirmed the incident to Innergex after being in contact with the IEM (Tom Hicks) and Ian McKeachie via satellite phone.• At 5:33PM, Claude Denault, CRT-ebc Project Manager, sent an official Stop Work order at ULR HEF intake (North; River left) to all staff members, superintendents, owner and IEM via email (copy forwarded to the IE via Innergex). The stop work order will be lifted following review and approval of the work plan by the IEM and LTC issuance by the IE for the next phase of work at this location.						
Actions to Prevent Incident Recurrence						
Before the incident the mitigation measures in place were: <ul style="list-style-type: none">• Work plans are being reviewed during kick-off meetings and include the presence of CRT-EBC Superintendents, Foreman, Field Engineer and Environmental Manager; the IEM; and the Owner.• The work plans are referenced on site by foremen and superintendents during construction activities.• All steps and hold points were highlighted during kick-off meetings.						
After the incident, additional mitigation measures were put in place:						



- Superintendents and foremen will review work plans daily with CRT-ebc field engineers and environmental managers prior to commencing any new steps in construction.
- All foremen, field engineers and superintendents will be provided with a copy of the LTC authorization (and the associated work plan).
- Additionally, all foremen, field engineers and superintendents need to have their work plan with them at all times. Foreman, field engineers and superintendents are responsible for understanding the site and task-specific work plans, identifying the limits to the work areas, implementing the prescribed Hold Points, and ensuring adherence to the required environmental mitigations/constraints.
- CRT-ebc's environmental management team will determine necessity for IEM presence on site when construction works require it. As discussed with the owner, a 3-week schedule highlighting the tentative dates for kick-off meetings and IEM requirements will be provided every week.
- The IEM will also be notified 48h prior to any construction activity within a sensitive area, which requires their presence.

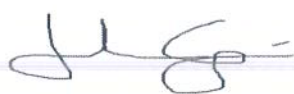
Notification Record

Agency Reported to	Contact Information	Agency Contacted		Date and Time Reported	Reported By	Method of Reporting
		Yes	No			
External Notifications						
MFLNRO	Andrea Cowgill	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2014-06-16	Julia Mancinelli	Submission of EIR 008 via email.
BC EAO	Chris Parks	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2014-06-16	Julia Mancinelli	Submission of EIR 008 via email.
PEP	1-800-663-3456	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
MOE Staff		<input type="checkbox"/>	<input type="checkbox"/>			
DFO		<input type="checkbox"/>	<input type="checkbox"/>			
DFO		<input type="checkbox"/>	<input type="checkbox"/>			
Environment Canada	604-666-6100	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Canadian Coast Guard	604-666-6011	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Local Fire Rescue	911	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
Reported to	Contact Information	Contacted		Date and Time Reported	Reported By	Method of Reporting
		Yes	No			
Internal Notifications						
CRT-ebc	Ian McKeachie 250.516.9427	x		2014-06-12 7:30PM	Tom Hicks	Phone




Notification Record						
Agency Reported to	Contact Information	Agency Contacted		Date and Time Reported	Reported By	Method of Reporting
		Yes	No			
Owner Innergex	Krys Muniak KMuniak@innergex.com	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2014-06-13 9:05AM	Jordan Gagné	Email
Owner Innergex	Julia Mancinelli jmancinelli@innergex.com	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2014-06-13 9:05AM	Jordan Gagné	Email
IEM Sartori Environmental	Stephen Sims steve@sartorienv.com	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2014-06-13 9:05AM	Jordan Gagné	Email
Owner Innergex	Krys Muniak KMuniak@innergex.com	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2014-06-13 1:59PM	Jordan Gagné	Email
Owner Innergex	Julia Mancinelli jmancinelli@innergex.com	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2014-06-13 1:59PM	Jordan Gagné	Email
IEM Sartori Environmental	Stephen Sims steve@sartorienv.com	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2014-06-13 1:59PM	Jordan Gagné	Email
Owner Innergex	Julia Mancinelli 604.633.9990	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2014-06-13 2:30PM	Jordan Gagné	Phone
IE True North Energy	Jenn McCash			2014-06-13 2:45 PM	Julia Mancinelli	Phone (2:45 PM) and follow up email confirming discussion and incident reporting requirements (4:15 PM)

Contractor's Environmental Manager:

Jordan Gagné	Environmental Manager, CRT-ebc		2014-06-15
Print Name	Position and Company	Signature	Date

Contractor's Environmental Manager:

Ian McKeachie	Environmental Manager, CRT-ebc		2014-06-15
Print Name	Position and Company	Signature	Date

Reviewed by:

J. Stephen Sims	Independent Environmental Monitor, Sartori Environmental Services		2014-06-15
Print Name	Position and Company	Signature	Date



Photo 1: Grubbed and stripped area at
Upper Lillooet River HEF Intake (North; River
Left)

MOUNTAIN GOAT DAILY OBSERVATION FORM

UPPER LILLOOET HYDRO PROJECT

Goat Monitor's Name(s):

Date (YYYY-MM-DD):



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

Weather (cloud cover, precipitation and temperature):

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 <i>(approximate center of observation area)</i>	Daily Start Time <i>(24hr clock)</i>	Daily End Time <i>(24hr clock)</i>	Daily form #	1	of	2
MG - OBS01	Migration Corridor - East side of Truckwash Creek	10U 467898 5612845	11:50	13:50				
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	11:40				

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

Observation Site <i>(indicate if location other than OBS site)</i>	Time <i>(use 24hr clock)</i>	UTM Coordinates or Waypoint <i>(10U)</i>	Species Observed <i>(indicate Mountain Goat or other species)</i>	Observations <i>(be specific - visual sign, track, other sign)</i>	# of Animals	Age <i>(if known - refer to attached info sheet)</i>	Sex <i>(if known - refer to attached info sheet)</i>	Description of Activities <i>(feeding, moving, etc.)</i>	Comments <i>(habitat, snow conditions, etc.)</i>	Photo #s
MG - OBS02	07:55	10U 466760 5613967	Mountain Goat	Visual	3	Nanny, kid, yearlin	F, Unk x2	Resting Under tree, kid becoming playful.	Below the usual resting place by the minerals near the bottom.	
MG - OBS02	8:10	10U 466760 5613967	Mountain Goat	Visual	4	Nanny, kid, x2 yearlin	F, Unk x3	Feeding, moving up hill	Above resting spot, on steep forested slope with lots of deciduous.	
MG - OBS02	09:30	10U 466760 5613967	Mountain Goat	Visual	5	Nanny, kid, 3 yearlins	F, Unk x4	Feeding, moving to upper resting spot. When arrived they rested.	Tried to get a pic with all 5 but needed to be further away.	

MOUNTAIN GOAT DAILY OBSERVATION FORM

UPPER LILLOOET HYDRO PROJECT

Goat Monitor's Name(s):

Date (YYYY-MM-DD):

Weather (cloud cover, precipitation and temperature):



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 <i>(approximate center of observation area)</i>	Daily Start Time <i>(24hr clock)</i>	Daily End Time <i>(24hr clock)</i>	Daily form #	1	of	2
MG - OBS01	Migration Corridor - East side of Truckwash Creek	10U 467898 5612845	13:00	15:00				
MG - OBS02	UWR u-2-002 UL 11 - Keyhole Falls	10U 466760 5613967	08:30	10:30				
MG - OBS03	UWR u-2-002 UL 19 - Garibaldi Pumice	10U 469155 5614960	10:45	12:45				

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

Observation Site <i>(indicate if location other than OBS site)</i>	Time <i>(use 24hr clock)</i>	UTM Coordinates or Waypoint <i>(10U)</i>	Species Observed <i>(indicate Mountain Goat or other species)</i>	Observations <i>(be specific - visual sign, track, other sign)</i>	# of Animals	Age <i>(if known - refer to attached info sheet)</i>	Sex <i>(if known - refer to attached info sheet)</i>	Description of Activities <i>(feeding, moving, etc.)</i>	Comments <i>(habitat, snow conditions, etc.)</i>	Photo #s
MG-OBS02	8:40	10U 466760 5613967	None	N/A	0	N/A	N/A	N/A	No species observed. Can hear trucks going by above	2
MG-OBS02	10:25	10U 466760 5613967	Deer	Visual	1	Fawn	Unknown	Wobbling down slope. New baby. No site of mother.	Above MG lower Bedding area. Seen briefly.	0
MG - OBS03	11:00	10U 469155 5614960	Mountain Lion	Track	1	Unknown	Unknown	Headed southwest down towards Keyhole.	Entrance to side road off pumice road.	3-5
	12:45		Unk	Scat	1	Unk	Unk	N/A	Day old	7-8

MOUNTAIN GOAT DAILY OBSERVATION FORM

UPPER LILLOOET HYDRO PROJECT

Goat Monitor's Name(s):

Date (YYYY-MM-DD):

Weather (cloud cover, precipitation and temperature):



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 <i>(approximate center of observation area)</i>	Daily Start Time <i>(24hr clock)</i>	Daily End Time <i>(24hr clock)</i>	Daily form #	1	of	1
MG - OBS01	Migration Corridor - East side of Truckwash Creek	10U 467898 5612845	11:00	14:00	If more space is needed in the below table, please fill out additional daily forms and indicate total number of forms above.			
MG - OBS02	UWR u-2-002 UL 11 - Keyhole Falls	10U 466760 5613967	07:30	10:30				
MG - OBS03	UWR u-2-002 UL 19 - Garibaldi Pumice	10U 469155 5614960						

Observation Site <i>(indicate if location other than OBS site)</i>	Time <i>(use 24hr clock)</i>	UTM Coordinates or Waypoint <i>(10U)</i>	Species Observed <i>(indicate Mountain Goat or other species)</i>	Observations <i>(be specific - visual sign, track, other sign)</i>	# of Animals	Age <i>(if known - refer to attached info sheet)</i>	Sex <i>(if known - refer to attached info sheet)</i>	Description of Activities <i>(feeding, moving, etc.)</i>	Comments <i>(habitat, snow conditions, etc.)</i>	Photo #s
MG-OBS02	09:40	10u4667605613967	Nanny	Visual	1	Adult Nanny	Nanny	Laying down. Moved before I could take picture	Very poor visibility	2
MG-obs01-a	11:00	10u4678985612845	Mg	Old tracks maybe last night	2-3	Unk	Unk	Tracks on path to the site	Cold wind and rain	464 465
MG-OBS01-b	11:00		None	None	N/A	N/A	N/A	No MG present today	South side of river	