
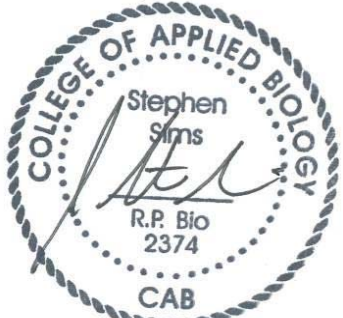


Upper Lillooet Hydro Project

Weekly Environmental Monitoring Report #43

Reporting Period: October 12 – October 18, 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	
Murray Manson	Fisheries and Oceans Canada	 J. Alex Sartori, RPBio <i>Independent Environmental Monitor (IEM)</i>
James Davies	MFLNRO – Water Allocation	
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	JEM Energy Ltd. – 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.	
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.	 J. Stephen Sims, RPBio <i>Delegated IEM</i>
Pontus Lindgren	Westpark Electric Ltd.	
Harriet VanWart	Lil’wat Nation	
		Date Prepared: December 3, 2014 Date Submitted: December 4, 2014

Owner Construction Permits and Approvals

Environmental Assessment Certificate No. E13-01 (Amendment 1, 2, 3, 4 & 5)
Fisheries Act Subsection 35(2)(b) Authorization No. 09-HPAC-PA2-000303 (Amendment 1, 2)
Letter of Advice for the Transmission Line No. 09-HPAC0-PA2-000303
Leave To Commence Construction (ULRHEF) File No. 2002561
Leave To Commence Construction (BDRHEF) File No. 2002453
Leave To Commence Construction (TX Line) File No. 2002561/2002453
Conditional Water Licence (ULRHEF C130613) File No. 2002561
Conditional Water Licence (BDRHEF C129969) File No. 2002453
Conditional Water Licence (BDRHEF C131153) File No. 2003601
Licence of Occupation (ULRHEF #232384) File No. 2409871
Licence of Occupation (BDRHEF #232386) File No. 2409998
Licence of Occupation (TX Line #2423386) File No. 2410654
Occupant Licence to Cut (ULRHEF Amendments 1, 2, 3, 4, 5) No. L49717
Occupant Licence to Cut (BDRHEF – KM 38 laydown) No. L49698
Occupant Licence to Cut (BDRHEF Amendments 1, 2, 3) No. L49816
Occupant Licence to Cut (TX Line Amendment 1, 2, 3, 4, 5) 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 (Amendment 1)
Aeronautical Obstruction Approval (Tx Line - Lillooet River Crossing) File No. 2013-004
Aeronautical Obstruction Approval (Tx Line - Ryan River) File No. 2013-005
Aeronautical Obstruction Approval (Tx Line - North Miller) File No. 2013-006
Aeronautical Obstruction Approval (Tx Line - South Miller) File No. 2013-007
Aeronautical Obstruction Approval (Tx Line - Pemberton Creek) File No. 2013-008
Aeronautical Obstruction Approval (Tx Line - Lillooet River near Pemberton) File No. 2013-009
Aeronautical Obstruction Approval (Tx Line - Lillooet River near Meager Creek) File No. 2013-010
Navigable Water Protection Act (ULRHEF) File No. 8200-2009-500434-001
Navigable Water Protection Act (BDRHEF) File No. 8200-2012-501-032-001
Navigable Water Protection Act (Tx Line – North Creek) File No. 8200-2013-500103-001
Navigable Water Protection Act (Tx Line – Lillooet River) File No. 8200-2013-500101-001
Navigable Water Protection Act (Tx Line – Lillooet River) File No. 8200-2013-500102-01
Navigable Water Protection Act (Tx Line – Ryan River) File No. 8200-2013-500104-001
Navigable Water Protection Act (Tx Line – South Miller River) File No. 8200-2013-500100-001
Navigable Water Protection Act (Tx Line – Boulder Creek) File No. 8200-2013-500099-001
Navigable Water Protection Act – Extension Approval (ULRHEF, BDRHEF, Tx Line)
Navigable Water Protection Act (Bridge – Ryan River) File No. 8200-2013-500381
Navigable Water Protection Act (Bridge – Upper Lillooet Side Channel; Extension Approval) File No. 8200-2013-500383
Section 57 Authorization (ULRHEF) File No. 16660-20/REC202717
SLRD Temporary Use Permit No. 34 – Boulder Creek HEF
SLRD Temporary Use Permit No. 35 – Upper Lillooet River HEF
Works Permit for Construction within FSR Right-of-Way No. 6123-14-01
Section 52(1)(b) FRPA Authorization for Ryan River Wet Crossing File No. FOR-19400-01/2014

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
Wildlife Act Permits – Pacific Tailed Frog Salvage Permit # SU14-95304 & SU13-90538, Fish Salvage Permit # SU14-95329
Section 52 of the Fisheries (General) Regulations – Fish Salvage Licence # XR 139 2014
BC Safety Authority – Temporary Construction Electrical Service Permit EL-140698-2014
Municipal Wastewater Regulation - Authorization # 107032
Water Supply System Construction Permits – VCH-14-613 for Main Camp
Water Supply System Permit to Operate Issued July 30th, 2014 for Main Camp
Section 6(3) and Schedule 3 Wildfire Regulations Fire Exemption for Ryan River Bridge File No. 14350-07
SLRD Building Inspection Report dated August 13, 2014 - Construction Camp Building Permit No. 10830
Lillooet River FSR Temporary Road Closures Approval File No. 11250-32/6123 (Amendment 1, 2)
Lillooet South FSR Temporary Road Closures Approval File No. 11250-32/7977

ACRONYMS:

AMBNS	Active Migratory Bird Nesting Survey	IEM	Independent Environmental Monitor
ASMP	Archaeological Sites Management Plan	INX	Innergex Renewable Energy Inc.
ARD/ML	Acid Rock Drainage and Metal Leaching	ISW	Instream Works
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
CE	CRT-ebc Construction Inc.	NCD	Non Classified Drainage
DFO	Fisheries and Oceans Canada	OLTC	Occupational License to Cut
DS	Downstream	PAG	Potentially Acid Generating
Ecofish	Ecofish Research Ltd.	RoW	Right of Way
Ecologic	Ecologic Consulting	RVMA	Riparian Vegetation Management Area
EDI	Environmental Dynamics Inc.	SES	Sartori Environmental Services
EIR	Environmental Incident Report	TX Line	Transmission Line
ESC	Erosion and Sediment Control	ULRHEF	Upper Lillooet River Hydroelectric Facility
FAM	Field Advice Memorandum	UWR	Ungulate Winter Range
FSR	Forest Service Road	VC	Valued Component
GWR	Mountain Goat Winter Range	WQ	Water Quality
Hedberg	Hedberg and Associates Ltd.	WEL	Westpark Electric Ltd.
IE	Independent Engineer (True North Energy)	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 (on-site)	Weather Conditions	Key Monitoring Locations & Activities
Sunday, October 12	MF, KM, DA, AA	Overcast	<p>ULRHEF Intake Diversion Channel – South Side</p> <ul style="list-style-type: none"> • Continued rebar and formwork for Obermeyer weir • Concrete works – Obermeyer structure pour (190m³) <p>ULRHEF Intake Open Cut – North Side</p> <ul style="list-style-type: none"> • Bulk excavation (including drilling and blasting) continued below elevation 666m <p>ULRHEF Downstream Tunnel Portal</p> <ul style="list-style-type: none"> • Drilling, blasting and stabilization of the tunnel <p>ULRHEF Penstock</p> <ul style="list-style-type: none"> • Grubbing and bulk excavation between station 2+725 – 3+025 <p>ULRHEF Powerhouse</p> <ul style="list-style-type: none"> • Continued rebar installation and formwork <p>BDRHEF Intake Access Road & Crane Pad</p> <ul style="list-style-type: none"> • Continued access road construction • Continued excavation and drilling/blasting on top level of crane pad <p>BDRHEF Downstream Tunnel Portal</p> <ul style="list-style-type: none"> • Drilling, blasting and tunnel stabilization <p>BDRHEF Powerhouse</p> <ul style="list-style-type: none"> • Continued rebar installation and formwork <p>TX-Line</p> <ul style="list-style-type: none"> • Segment 4 <ul style="list-style-type: none"> ➢ Framing at structures 73 and 74 ➢ Stringing from structures 57 – 81 • Segment 6 <ul style="list-style-type: none"> ➢ Ground works at structure 140, 142 and 149 • Segment 7 <ul style="list-style-type: none"> ➢ Machine works near structure 181
Monday October 13	MF, AS, DA	Periods of rain	<p>ULRHEF Intake Diversion Channel – South Side</p> <ul style="list-style-type: none"> • Continued rebar and formwork for Obermeyer weir <p>ULRHEF Intake Open Cut – North Side</p> <ul style="list-style-type: none"> • Bulk excavation (including drilling and blasting) continued below elevation 666m <p>ULRHEF Downstream Tunnel Portal</p> <ul style="list-style-type: none"> • Drilling, blasting and stabilization of the tunnel <p>ULRHEF Penstock</p> <ul style="list-style-type: none"> • Grubbing and bulk excavation between station 2+725 – 3+025 <p>ULRHEF Powerhouse</p> <ul style="list-style-type: none"> • Continued rebar installation and formwork <p>BDRHEF Intake Access Road & Crane Pad</p> <ul style="list-style-type: none"> • Continued access road construction • Continued excavation and drilling/blasting on top level of crane pad <p>BDRHEF Downstream Tunnel Portal</p> <ul style="list-style-type: none"> • Drilling, blasting and tunnel stabilization <p>BDRHEF Powerhouse</p> <ul style="list-style-type: none"> • Continued rebar installation and formwork <p>TX-Line</p> <ul style="list-style-type: none"> • Segment 4 <ul style="list-style-type: none"> ➢ Framing at structures 73 and 74 ➢ Stringing from structures 57 – 81 • Segment 6 <ul style="list-style-type: none"> ➢ Ground works at structure 140, 142 and 149

Date	IEM Team Personnel (on-site)	Weather Conditions	Key Monitoring Locations & Activities
			<ul style="list-style-type: none"> • Segment 7 <ul style="list-style-type: none"> ➢ Machine works near structure 181 • Segment 14 <ul style="list-style-type: none"> ➢ Road works (including blasting) along road 371.1
Tuesday, October 14	TH, AS, AA, MF	Rain	<p>ULRHEF Intake Diversion Channel – South Side</p> <ul style="list-style-type: none"> • Continued rebar and formwork for Obermeyer weir <p>ULRHEF Intake Open Cut – North Side</p> <ul style="list-style-type: none"> • Bulk excavation (including drilling and blasting) continued below elevation 666m <p>ULRHEF Downstream Tunnel Portal</p> <ul style="list-style-type: none"> • Drilling, blasting and stabilization of the tunnel <p>ULRHEF Penstock</p> <ul style="list-style-type: none"> • Grubbing and bulk excavation between station 2+725 – 3+025 • QP conducted CTF salvage/sweep at watercourse ULL-ASTR04 <p>ULRHEF Powerhouse</p> <ul style="list-style-type: none"> • Continued rebar installation and formwork <p>BDRHEF Intake Access Road & Crane Pad</p> <ul style="list-style-type: none"> • Continued access road construction • Continued excavation and drilling/blasting on top level of crane pad <p>BDRHEF Downstream Tunnel Portal</p> <ul style="list-style-type: none"> • Drilling, blasting and tunnel stabilization <p>BDRHEF Powerhouse</p> <ul style="list-style-type: none"> • Continued rebar installation and formwork <p>TX-Line</p> <ul style="list-style-type: none"> • Segment 4 <ul style="list-style-type: none"> ➢ Structure framing from poles 48 – 57 and clipping at 57 – 60 • Segment 5 <ul style="list-style-type: none"> ➢ Grinder working between KM 25.5 and 26 on the Lillooet River FSR ➢ Steel hanging at structures 86 and 98 • Segment 6 <ul style="list-style-type: none"> ➢ Faller slashing at structures 153 and 157 ➢ Ground works at structure 142 • Segment 7 <ul style="list-style-type: none"> ➢ Machine works at structure 180 and 181 • Segment 8 <ul style="list-style-type: none"> ➢ RoW clearing in the vicinity of structures 182 and 183 ➢ Road building (including culvert installation) along access road 197.2 • Segment 9 <ul style="list-style-type: none"> ➢ RoW clearing in the vicinity of structure 214 ➢ Road upgrades (including culvert installations) continued along the Salmon Main FSR and Zorro Road • Segment 14 <ul style="list-style-type: none"> ➢ Continued road upgrades (including drilling and blasting) along road 371.1
Wednesday, October 15	TH, MF, AS, AA	Periods of rain	<p>ULRHEF Intake Diversion Channel – South Side</p> <ul style="list-style-type: none"> • Continued rebar and formwork for Obermeyer weir <p>ULRHEF Intake Open Cut – North Side</p> <ul style="list-style-type: none"> • Bulk excavation (including drilling and blasting) continued below elevation 666m <p>ULRHEF Downstream Tunnel Portal</p> <ul style="list-style-type: none"> • Drilling, blasting and stabilization of the tunnel • Exploratory borehole drilling near KM 46.5 on the Lillooet River FSR <p>ULRHEF Penstock</p> <ul style="list-style-type: none"> • Grubbing and bulk excavation between station 2+725 – 3+025 • Grubbing 30-100m from CTF watercourse ULL-ASTR04

Date	IEM Team Personnel (on-site)	Weather Conditions	Key Monitoring Locations & Activities
			<p>ULRHEF Powerhouse</p> <ul style="list-style-type: none"> Continued rebar installation and formwork <p>BDRHEF Intake Access Road & Crane Pad</p> <ul style="list-style-type: none"> Continued access road construction Continued excavation and drilling/blasting on top level of crane pad <p>BDRHEF Downstream Tunnel Portal</p> <ul style="list-style-type: none"> Drilling, blasting and tunnel stabilization <p>BDRHEF Powerhouse</p> <ul style="list-style-type: none"> Continued rebar installation and formwork <p>TX-Line</p> <ul style="list-style-type: none"> Segment 4 <ul style="list-style-type: none"> Structure framing from poles 47 – 57 Segment 5 <ul style="list-style-type: none"> Grinder working between KM 25.5 and 26 on the Lillooet River FSR Steel hanging at structures 86 and 98 Segment 6 <ul style="list-style-type: none"> Structure winterization Segment 7 <ul style="list-style-type: none"> Grapple yarder working near structure 164 Machine works at structure 175 within 30-100m CTF buffer of stream 174A Segment 8 <ul style="list-style-type: none"> RoW clearing in the vicinity of structures 182 and 183 Road building (including culvert installation) along access road 197.2 Segment 9 <ul style="list-style-type: none"> RoW clearing in the vicinity of structure 212 - 213 Segment 14 <ul style="list-style-type: none"> Continued road upgrades (including drilling and blasting) along road 371.1
Thursday, October 16	TH, BA, AS, TJ	Showers	<p>ULRHEF Intake Diversion Channel – South Side</p> <ul style="list-style-type: none"> Continued rebar and formwork for Obermeyer weir <p>ULRHEF Intake Open Cut – North Side</p> <ul style="list-style-type: none"> Bulk excavation (including drilling and blasting) continued below elevation 666m <p>ULRHEF Downstream Tunnel Portal</p> <ul style="list-style-type: none"> Drilling, blasting and stabilization of the tunnel <p>ULRHEF Penstock</p> <ul style="list-style-type: none"> Grubbing and bulk excavation between station 2+725 – 3+025 <p>ULRHEF Powerhouse</p> <ul style="list-style-type: none"> Continued rebar installation and formwork <p>BDRHEF Intake Access Road & Crane Pad</p> <ul style="list-style-type: none"> Continued access road construction Continued excavation and drilling/blasting on top level of crane pad <p>BDRHEF Downstream Tunnel Portal</p> <ul style="list-style-type: none"> Drilling, blasting and tunnel stabilization <p>BDRHEF Powerhouse</p> <ul style="list-style-type: none"> Continued rebar installation and formwork Concrete works – Structure pour (300m³) <p>TX-Line</p> <ul style="list-style-type: none"> Segment 5 <ul style="list-style-type: none"> Standing and framing at structures 137 and 138 Segment 6 <ul style="list-style-type: none"> Continued structure winterization Segment 7 <ul style="list-style-type: none"> Hoe-chucking continues east of KM 2.5 on the Lillooet South FSR

Date	IEM Team Personnel (on-site)	Weather Conditions	Key Monitoring Locations & Activities
			<ul style="list-style-type: none"> ➢ Machine works at structure 176 • Segment 8 <ul style="list-style-type: none"> ➢ RoW clearing in the vicinity of structures 183 – 185 ➢ Road building along access road 182.2 • Segment 9 <ul style="list-style-type: none"> ➢ RoW clearing in the vicinity of structures 213 – 214 ➢ Road upgrades along Zorro Road
Friday, October 17	BA, AS, DA, TJ	Rain	<p>ULRHEF Intake Diversion Channel – South Side</p> <ul style="list-style-type: none"> • Continued rebar and formwork for Obermeyer weir • Concrete works – Obermeyer structure pour (200m³) <p>ULRHEF Intake Open Cut – North Side</p> <ul style="list-style-type: none"> • Bulk excavation (including drilling and blasting) continued below elevation 666m <p>ULRHEF Downstream Tunnel Portal</p> <ul style="list-style-type: none"> • Drilling, blasting and stabilization of the tunnel <p>ULRHEF Penstock</p> <ul style="list-style-type: none"> • Grubbing and bulk excavation between station 2+725 – 3+025 <p>ULRHEF Powerhouse</p> <ul style="list-style-type: none"> • Continued rebar installation and formwork <p>BDRHEF Intake Access Road & Crane Pad</p> <ul style="list-style-type: none"> • Continued access road construction • Continued excavation and drilling/blasting on top level of crane pad <p>BDRHEF Downstream Tunnel Portal</p> <ul style="list-style-type: none"> • Drilling, blasting and tunnel stabilization <p>BDRHEF Powerhouse</p> <ul style="list-style-type: none"> • Continued rebar installation and formwork <p>TX-Line</p> <ul style="list-style-type: none"> • Segment 5 <ul style="list-style-type: none"> ➢ Grinder working from KM 21 – 23 on the Lillooet River FSR • Segment 6 <ul style="list-style-type: none"> ➢ Continued structure winterization • Segment 7 <ul style="list-style-type: none"> ➢ RVMA falling of stream 172A ➢ Machine works at structures 175 – 179 • Segment 8 <ul style="list-style-type: none"> ➢ Moving of cleared timber to access road 182 • Segment 9 <ul style="list-style-type: none"> ➢ RoW clearing in the vicinity of structures 214 – 215 ➢ Road upgrades along Zorro Road
Saturday, October 18	BA, AS, AA	Periods of rain	<p>ULRHEF Intake Diversion Channel – South Side</p> <ul style="list-style-type: none"> • Rebar and formwork for Obermeyer weir <p>ULRHEF Intake Open Cut – North Side</p> <ul style="list-style-type: none"> • Bulk excavation (including drilling and blasting) continued below elevation 666m <p>ULRHEF Downstream Tunnel Portal</p> <ul style="list-style-type: none"> • Drilling, blasting and stabilization of the tunnel <p>ULRHEF Penstock</p> <ul style="list-style-type: none"> • Grubbing and bulk excavation between station 3+090 – 4+095 <p>ULRHEF Powerhouse</p> <ul style="list-style-type: none"> • Continued rebar installation and formwork • Concrete works – Structure pour (300m³) <p>BDRHEF Intake Access Road & Crane Pad</p> <ul style="list-style-type: none"> • Continued access road construction • Continued excavation and drilling/blasting on top level of crane pad <p>BDRHEF Downstream Tunnel Portal</p> <ul style="list-style-type: none"> • Drilling, blasting and tunnel stabilization <p>BDRHEF Powerhouse</p>

Date	IEM Team Personnel (on-site)	Weather Conditions	Key Monitoring Locations & Activities
			<ul style="list-style-type: none"> • Continued rebar installation and formwork <i>Tx-Line</i> • Segment 5 <ul style="list-style-type: none"> ➢ Grinder working from KM 21 – 23 on the Lillooet River FSR • Segment 6 <ul style="list-style-type: none"> ➢ Continued structure winterization • Segment 7 <ul style="list-style-type: none"> ➢ Machine works at structures 175 – 179 • Segment 8 <ul style="list-style-type: none"> ➢ Moving of cleared timber to access road 182 • Segment 9 <ul style="list-style-type: none"> ➢ RoW clearing in the vicinity of structures 214 – 215 ➢ Road upgrades along Zorro Road

IEM Team Personnel: TH – Tom Hicks; MF – Matt Fuller; KM – Kathy Mai; SS – Stephen Sims; BA – Blake Aleksich; VD – Vanessa Dan; AA – Anthony Andrews; DA – Danita Abraham; TJ – Tammie Jenkins

2.0 Administrative Summary

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

Date	Communication Type	Participants	Issues Discussed	ITM ID No.
October 14 – 15, 2014	<i>emails</i>	CE, SES, INX	Laboratory test results for accumulated sediments within the BDRHEF downstream tunnel portal settling ponds were forwarded to SES and INX. It was confirmed that negligible acid-generating potential (PAG) existed in the sediment and that material could be spoiled at designated locations following established mitigations.	-
October 15, 2014	<i>emails</i>	WEL, SES, INX	Mountain goat observation in Segment 6 of the Tx Line – Sighting was reported to the IEM by WEL and additional precautions surrounding helicopter flight paths were implemented to mitigate potential disturbances to goats prior to the November 1 formal flight restrictions. In addition, WEL indicated to the IEM that the topic of VC sightings and required reporting was reinforced with onsite personnel.	-

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
Tx-Line	Segments 1 –11, & 14	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.
		Riparian Vegetation Management Areas (RVMA)	IEM monitoring is required during clearing within RVMA's.

		Old Growth Management Areas (OGMAs)	IEM monitoring is required when clearing within legally designated OGMAs, to ensure clearing area is minimized.
		Ungulate Winter Range (UWR)	IEM monitoring is required when clearing within identified deer and moose UWR, to ensure clearing area is minimized.
		Suitable Class 1 & 2 Grizzly Bear forage habitat	IEM monitoring is required when clearing within identified Class 1 & 2 Grizzly Bear forage habitat, to ensure clearing area is minimized. Blasting mats (or other noise reduction methods) are to be employed within 500m of Class 1 and Class 2 grizzly bear forage habitat during critical seasonal foraging periods (fall, September – October). ULH-GB33 (Class 1 fall forage habitat) – Clearing and construction activities should avoid the fall season to avoid the displacement of bears (<i>*see Section 6.3 of this report for further information regarding adjusted mitigations</i>).
		Salmon Migration Period and Bald Eagle Roosts	Construction of the transmission line within 500 m of Alena Creek, 29.2 km Tributary, South Creek, Robh Creek must be conducted outside of October 15 – December 31 and Sampson Creek and Railroad Creek must be conducted outside of August 15 to December 31.
ULRHEF powerhouse, and Intake diversion channel	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 50m of the EdRu-3 site boundaries.
	Within 30m of the Upper Lillooet River	Riparian area and fish bearing streams	IEM presence is required when working within 30m of the Upper Lillooet River. Instream acoustic pressure monitoring required when blasting within 30m of the Upper Lillooet River.
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	If a goat is observed within 500m line of sight of construction operations, construction must cease for at least 48 hours. The IEM must record and submit all goat observations to FLNR within 48 hours.
BDRHEF intake	Portion of intake access road and crane pad within UWR	Mountain Goat UWR	IEM monitoring is required when clearing within UWR to ensure that clearing areas are minimized. If a goat is observed within 500m line of sight of construction operations, construction must cease for at least 48 hours. The IEM must record and submit all goat observations to MFLNRO within 48 hours.

4.0 Upper Lillooet River HEF – Monitoring Results

4.1 Intake (North & South Sides), Access Roads and Upstream Tunnel Portal

Construction Activities:

- Bulk excavation, including drilling and blasting, continued at the ULRHEF upstream tunnel portal (north side) below elevation 666m (Photo 1).
- Continued rebar and formworks (Photo 2) at the Obermeyer Weir (south side diversion channel). Concrete works included two structure pours occurring on October 12 and 17 (Photo 3).

Environmental Summary:

- Outstanding issues from *FAM04* (issued September 29, 2014) pertaining to slope stabilization and spoil pile winterization at the ULRHEF intake have been included in the Project's ITM as *ULR#20 – open*. Additional and outstanding ESC items observed during this reporting period at the ULRHEF intake include:
 - ULRHEF intake north side settling pond adjacent to cofferdam access road (Photo 4) – Increasing precipitation events and seepage into the ULRHEF upstream tunnel portal works area led to increased volumes of sediment laden water requiring treatment. Although no WQ exceedances were observed within the Lillooet River, it is the opinion of the IEM that the settling pond should be closely monitored to ensure adequate treatment.
 - ULRHEF intake north side cofferdam access road (Photo 5) – Ditching is currently inadequate and is leading to increased sediment inputs to the above mentioned settling pond.
 - ULRHEF intake north side cut slopes above the Lillooet River FSR (Photo 6) – Initial Curlex installation has been completed along a portion of the slope, however inadequate coverage is leading to further rilling.
 - ULRHEF north side spoil area (Photo 7) – Spoil area requires attention prior to the onset of winter as slopes are unconsolidated and no ESC measures are currently in place. A winterization plan for the ULRHEF spoil area was submitted to the IEM on October 17, however the ITM will remain open until works are complete and slopes are stabilized.
- The IEM was onsite for works (including concrete pours) within 30m of the Lillooet River.

Photos:



Photo 1 – Overview of the north side of the ULRHEF intake (October 12, 2014).



Photo 2 – ULRHEF intake diversion channel, Obermeyer weir formworks (October 12, 2014).



Photo 3 – ULRHEF Obermeyer weir concrete pour (October 17, 2014).



Photo 4 – ULRHEF intake north side settling pond adjacent to cofferdam access road (October 14, 2014).



Photo 5 – ULRHEF intake north side cofferdam access road, ditching requires attention (October 14, 2104).



Photo 6 – ULRHEF intake north side cut slopes with hydroseed and initial Curlex log installation, requires further attention (October 14, 2014).



Photo 7 – ULRHEF intake spoil are (north side) requiring additional mitigation prior to winter shutdown (October 16, 2014).

4.2 Downstream Tunnel Portal

Construction Activities:

- Drilling, blasting, mucking and stabilization (anchoring and shotcrete application) continued within the tunnel (Photo 8). Seepage water from the tunnel portal was conveyed effectively through an oil water separator (Photo 9) and into the settling ponds for treatment and storage.
- Exploratory borehole drilling for the ULRHEF tunnel near KM 46.5 on the Lillooet River FSR was completed on October 15 and 16 (Photo 10).

Environmental Summary:

- No environmental issues were observed at the ULRHEF downstream tunnel portal during this reporting period. The settling ponds installed adjacent to Truckwash Creek were used to treat the seepage and process water emanating from the tunnel. No surface discharge from the sediment ponds was observed this week; therefore no WQ measurements were taken by the IEM.
- A gravity fed water extraction system was used for drilling activities according to the conditions of the Short Term Water Use Approval (No.A2006123).
- Exploratory borehole drilling was completed with no ESC issues. Water required for drilling was contained within a bladder (Photo 11).
- Planting of the ULRHEF downstream tunnel portal temporary access road was completed as per the Truckwash Creek Revegetation Plan (Photo 12).

Photos:



**Photo 8 – ULRHEF downstream tunnel portal
(October 16, 2014)**



**Photo 9 – ULRHEF downstream portal oil water separator
(October 16, 2014)**



Photo 10 – ULRHEF tunnel exploratory borehole drilling at KM 46.5 on the Lillooet River FSR (October 15, 2014).



Photo 11 – Water bladder for ULRHEF tunnel exploratory borehole drilling at KM 46.5 on the Lillooet River FSR (October 16, 2014).



Photo 12 – Truckwash Creek Mountain goat migration corridor temporary access road revegetation (October 16, 2014).

4.3 Penstock

Construction Activities:

- Grubbing and bulk excavation/fill continued from penstock station 2+725 to 3+025m (Photo 13 and Photo 14) and from 3+090 to 4+095m.

Environmental Summary:

- No environmental issues were observed along the ULRHEF penstock alignment during this reporting period.
- A QP was onsite on October 14 to complete a CTF salvage/sweep at watercourse ULL-ASTR04. On October 15, grubbing within 30-100m of the CTF watercourse was monitored by the IEM.

Photos:



Photo 13 – ULRHEF penstock grubbing and bulk excavation from 2+725 to 3+090m (October 12, 2014).



Photo 14 – ULRHEF penstock fill from 2+725 to 3+090m (October 15, 2014).

4.4 Powerhouse & Access Road

Construction Activities:

- Continued rebar installation and formworks for the powerhouse structure (Photo 15). A structure pour was completed on October 18.
- Two pumps (6" and 10") previously installed in the sump draining seepage waters in the powerhouse excavation continued to convey water to the existing settling ponds. No flowing surface water was observed within the excavation and pump capacity appears to be adequate to maintain isolation from active work areas.

Environmental Summary:

- A portion of the slopes above the ULRHEF powerhouse were hydroseeded (Photo 16) to address ESC concerns outlined in FAM#04 and tracked in *ULR#20 – open*.
- Dewatering of the ULRHEF powerhouse continued without environmental concerns. The IEM will continue to monitor the works area to confirm that future concrete pours are adequately isolated from flowing waters and protected from precipitation during curing.

Photos:



Photo 15 – Continued rebar and formworks at ULRHEF powerhouse (October 3, 2104).



Photo 16 – Current conditions at ULRHEF powerhouse, hydroseeding commenced on upper slopes (October 12, 2014).

4.5 Water Quality Results

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

Date	Time	Sample Location Description	pH	Turbidity (NTU)	Cond (µS)	Temp (°C)
Routine Water Quality						
October 17, 2014	10:15	ULR Background – ULRHEF Intake	7.3	40.8	76	5.0
	10:30	ULR #0.5 – Downstream of ULRHEF intake at Keyhole Bridge	7.2	44.8	78	5.0
	10:55	ULR # 1 – Upstream of ULRHEF Powerhouse	7.1	38.8	80	6.0
	11:10	ULR #2 – Downstream of ULRHEF Powerhouse between 40.5k and 41k	7.2	37.3	77	6.0
	12:15	ULR #3 – Lillooet River FSR KM 38 Laydown – D/S of Boulder confluence	7.4	39.8	76	6.0
	13:30	ULR #4 – Lillooet River FSR 24km – D/S of all works and Meager confluence	7.2	38.3	69	6.0

4.6 Recommendations

IEM recommendations for the ULRHEF are as follows:

- As a follow up to *FAM04* (issued September 29, 2014) and additional ESC issues identified in this reporting period, the IEM continues to recommend that all necessary measures be implemented to mitigate sediment mobilization and provide for adequate treatment capacity and efficiency prior to conveyance towards the Upper Lillooet River.

4.7 Upcoming Works

The following new and/or environmentally sensitive construction activities are scheduled to occur at the ULRHEF in the upcoming reporting period(s):

- Continued bulk excavation at the north side ULRHEF intake open cut below elevation 666m will continue.
- Structure works at the ULRHEF intake Obermeyer weir will continue for the structure foundation and walls.
- Continued cut/fill along the ULRHEF penstock alignment.
- Completion of outstanding ESC items outlined in *FAM04* will continue.

5.0 Boulder Creek Hydroelectric Facility – Monitoring Results

5.1 Intake Access Road & Crane Pad

Construction Activities:

- Sequences of drilling, small controlled blasts, and blast rock excavation continued on the top bench of the crane pad throughout the reporting period (Photo 17). Care was taken to prevent material from escaping down the slope adjacent to the excavation; however some large boulders were lost to Boulder Creek during this monitoring period.
- Intake access road construction continued.

- Mobilization of 300 tonne crane to the BDRHEF intake occurred on October 17 (Photo 18).

Environmental Summary:

- Construction activities occurred along the BDRHEF intake access road and crane pad with the IEM onsite for construction activities within 30m of Boulder Creek. No environmental issues were observed.

Photos:



Photo 17 – BDRHEF crane pad excavation and drilling/blasting at top level of crane pad (October 14, 2014).



Photo 18 – 300 tonne crane mobilization at BDRHEF intake (October 17, 2014).

5.2 Downstream Tunnel Portal and Powerhouse

Construction Activities:

- Rebar installation and formworks at the powerhouse continued throughout the reporting period. Concrete works include a structure pour on October 16 (Photo 19)
- Drilling, blasting, mucking and stabilization (anchoring and shotcrete application) continued within the tunnel (Photo 20).

Environmental Summary:

- On October 14, CE provided the IEM with laboratory results from the accumulated sediments within the BDRHEF downstream tunnel portal settling ponds. It was confirmed that that negligible PAG material existed in the sediment and that material, once removed from the sediment ponds, could be spoiled within designated spoil areas following established mitigations.
- No environmental issues were observed during this reporting period at the BDRHEF powerhouse or downstream tunnel portal.
- 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 KM 37.5 of the Lillooet River FSR and on active construction site access roads.

Photos:



Photo 19 – Current conditions at BDRHEF powerhouse, continued rebar/formworks and concrete structure pour (October 16, 2014).



Photo 20 – BDRHEF downstream tunnel portal (October 16, 2014).

5.3 Water Quality Results

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

Date	Time	Sample Location Description	pH	Turbidity (NTU)	Cond (µS)	Temp (°C)
Routine Water Quality						
NA	NA	BDR Background –Upstream of BDRHEF intake *not currently accessible*	-	-	-	-
NA	NA	BDR #1 – Downstream of BDRHEF intake *not currently accessible*	-	-	-	-
October 17, 2014	12:25	BDR #2 – Upstream of BDRHEF Powerhouse	7.2	8.3	77	7.0
	12:35	BDR #3 – Downstream of BDRHEF Powerhouse at Pebble Creek Bridge	7.2	7.8	71	7.0

5.4 Recommendations

IEM recommendations for the BDRHEF are as follows:

- The IEM recommends that ESC issues identified in FAM04 be addressed in a timely manner to ensure erosion potential is mitigated.

5.5 Upcoming Works

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

- Following setup of the 300 tonne crane at the BDRHEF intake, rock consolidation and diversion tunnelling works are proposed to commence.

6.0 Transmission Line – Monitoring Results

6.1 Transmission Line Construction Activities

Right-of-Way Clearing:

- ROW occurred in Segment 6, Segment 8 (Photo 21), Segment 9, and Segment 14 (south side of Pemberton Creek).
- RVMA clearing in Segment 7.
- A grinder continued processing slash in Segment 5 (KM 21 – 23 and 25.5 – 26.0 of the Lillooet River FSR).

Existing Road Upgrades and Access Road Construction

- Transmission line access road upgrades/construction (including brushing, ballasting and drilling/blasting where necessary) were conducted in Segment 8 (road 197.2, includes culvert installations), Segment 9 (Zorro Road) and Segment 14 (road 371.1).

Transmission Line Pole Installation, Line Stringing and Clipping

- Foundation construction (ground works including blasting and use of heavy machinery) was conducted in Segments 6 – 7.
- Structure framing, steel hanging and stringing occurred in Segments 3 – 5.
- Structure winterization occurred in Segment 6.

Environmental Summary:

- The IEM was onsite during the installation of two cross drain culverts in Segment 8 along access road 197.2. Pumps were used to divert water around the work area during the culvert installations (Photo 22). Following the culvert installations, the existing road surface was raised with ballast rock across the low lying area. Water quality was monitored by the IEM during the installations and no environmental issues were observed.
- The IEM was present as required when clearing activities occurred within 150m of wetlands, 15m RVMAs (30m for CTF streams), 100m of Coastal Tailed Frog Streams, Class 1 & 2 suitable Grizzly Bear WHA and/or suitable forage habitat, moose and deer UWR, and within legally designated Old Growth Management Areas (OGMAs). All flagged boundaries were respected during clearing activities. No environmental issues were observed.

Photos:



**Photo 21 – Segment 8 ROW timber management
(October 17, 2014).**



**Photo 22 – Segment 8 cross drain culvert installation
(October 15, 2014)**

6.2 Water Quality Results

Date	Time	Sample Location Description	pH	Turbidity (NTU)	Temperature (°C)
Segment 8 – access road 197.2 cross drain culvert installation					
October 15	10:05	Background – upstream of works	7.88	1.31	N/A
October 15	10:36	Downstream – During construction	7.40	2.91	N/A
October 15	11:03	Downstream – flows through culvert	7.34	2.86	N/A

6.3 Recommendations

- The IEM has no recommendations at this time.

6.4 Upcoming Works

The following new and/or environmentally sensitive construction activities are scheduled to occur along the Tx line in the upcoming reporting period(s):

- Road upgrades will continue in Segments 8, 9 and 14.

7.0 Wildlife Sightings

As per the CEMP, a wildlife sightings record has been implemented and will be updated regularly by Project Personnel. It is mandatory for all personnel to report wildlife sightings including, but not limited to bears, cougars, mountain goats and deer. Wildlife sighting will be reported and recorded by the contractor(s) 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

8.0 Mountain Goat Monitoring Program

Mountain Goat Monitoring has been temporarily suspended until the fall monitoring period as outlined in the Mountain Goat Management Plan.

A mountain goat was observed in the vicinity of the Tx Line in Segment 6 near structure 142 on October 15, 2014. The sighting was reported to the IEM by WEL and additional helicopter flight path precautions were implemented to mitigate the potential for disturbances to goats in advance on the November 1 formal flight path restrictions; specifically, a 48 hour no fly-zone was established around structure 142. WEL ensured the IEM that subcontractors have been reminded of the importance to report VC's immediately to the IEM or Environmental Manager as to ensure a prompt response in the event a goat is spotted within 500m line of sight of construction activities.

9.0 Environmental Issues Tracking Matrix (ITM)

9.1 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: blue;">Issue Closed</td> </tr> </table>						Work Item Open	Work Item Complete	Issue Closed
Work Item Open										
Work Item Complete										
Issue Closed										
ULR#17	Open	BDR Intake Access Road	Damage to standing timber and impacts outside of minimized clearing boundary & approved OLTC limit (both within and adjacent to UWR)	<ol style="list-style-type: none"> Prepare and submit EIR#011 outlining the root cause of the incident and how it will be avoided in future. Assess damage to standing timber and impacts outside of the minimized clearing boundaries and approved OLTC (both within and adjacent to UWR). Preliminary information has been provided to satisfy the requirements of ULR#18, however detailed survey is necessary to confirm impacted areas and access is currently not available due to slope stability issues. 	July 25, 2014	July 30, 2014	August 1, 2014			
ULR#20	Open	Various location at ULRHEF, BDRHEF and along the Lillooet FSR	FAM04 (attached) was issued to the contractor to address ESC concerns at HEF component sites	<ol style="list-style-type: none"> ULRHEF Intake (north and south sides) <ol style="list-style-type: none"> Ditch installation/maintenance Slope protection Spoil area winterization (plan submitted October 17, 2014) ULRHEF Powerhouse <ol style="list-style-type: none"> Slope protection BDRHEF Intake Access Road <ol style="list-style-type: none"> Slope protection 	September 29, 2014	October 17, 2014	-			
ULR#21	Open	38km Laydown	Reportable spill – 300L of diesel spilled to ground at the fueling station	<ol style="list-style-type: none"> Prepare and submit EIR#013 outlining the root cause of the incident and how it will be avoided in future. Provide confirmation that the spill has been fully remediated through the lab analyses of the confirmatory samples. 	October 6, 2014	October 21, 2014	-			
next ITM – ULR#22										

9.2 Transmission Line

ITM Tracking Legend:	<i>Work Item Open</i>
	<i>Work Item Complete</i>
	<i>Issue Closed</i>

Issue Tracking		Environmental Issue		Mitigation Measures			
ID No.	Status	Location	Issue Description	Action Taken/Recommended	Date of Identification	Targeted Date for Completion	Date Issue Closed
<i>No outstanding environmental issues (next ITM – Tx#2)</i>							