

Upper Lillooet Hydro Project

Weekly Environmental Monitoring Report #2

Reporting Period: September 22nd – September 28th, 2013

Lillooet River Forest Service Road (FSR) realignment and Transmission Line Clearing (Seg. 1)

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)

*Environmental Assessment Certificate No. E13-01 (Amendment 1)
Occupant Licence to Cut (FSR realignment) No. L49717
Occupant Licence to Cut (Tx Line S.1, S.2, S.5 Heli Pads) No. L49697
Road Use Permit No. 6123-13-02*

Distribution List		Prepared By
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		Date Prepared: October 2, 2013 Date Submitted: October 5, 2013

ACRONYMS:

BDRHEF	Boulder Creek Hydroelectric Facility
CRT-EBC	CRT-EBC Construction Inc.
ESC	Erosion and Sediment Control
FSR	Forest Service Road
IEM	Independent Environmental Monitor
Innergex	Innergex Renewable Energy Inc.
ITM	Issue Tracking Matrix
MFLNRO	Ministry of Forestry, Lands and Natural Resources
MOE	Ministry of Environment
Mumleqs	Lizzie Bay Logging and Lil'wat Nation Forestry Joint Venture
RVMA	Riparian Vegetation Management Area
SES	Sartori Environmental Services
TX Line	Transmission Line
ULRHEF	Upper Lillooet River Hydroelectric Facility
WQ	Water Quality
WEL	Westpark Electric Ltd.
WEMR	Weekly Environmental Monitoring Report

1.0 Summary of Site Inspections for Reporting Period

The table presented below summarizes the IEM team site presence, weather and monitoring locations by component:

Day	Date	IEM Team Personnel	Weather Conditions	Monitoring Locations & Key Environmental Information
Sunday	Sep 22	-	-	Lillooet River FSR Realignment at Truckwash Creek <ul style="list-style-type: none"> Culvert installation completed in the dry.
Monday	Sep 23	TH	Sun and cloud	Lillooet River FSR Realignment at Truckwash Creek <ul style="list-style-type: none"> Confirmed culvert installation (completed Sept. 22nd). Falling within Class 1 & 2 Grizzly Bear forage habitat Tx Line – Segment 1 <ul style="list-style-type: none"> Clearing with feller buncher within Class 1 & 2 Grizzly Bear forage habitat (pole 0 – 4.5). Installation of Western Toad habitat buffer fencing along Lillooet River FSR (pole 9 – 10.5).
Tuesday	Sep 24	TH	Sun and cloud	Lillooet River FSR Realignment at Truckwash Creek <ul style="list-style-type: none"> Continued FSR realignment works. Tx Line – Segment 1 <ul style="list-style-type: none"> Clearing with feller buncher and completion of falling around Grizzly Bear screen (pole 0 – 4.5) and within 100m of tailed frog habitat (pole 4-5).
Wednesday	Sep 25	-	-	-
Thursday	Sep 26	TH	Sun and cloud	Lillooet River FSR Realignment at Truckwash Creek <ul style="list-style-type: none"> Continued FSR realignment works. Tx Line – Segment 1 <ul style="list-style-type: none"> Hand fallers working within Class 1 & 2 Grizzly Bear forage habitat (pole 0 - 4.5). Feller buncher clearing (pole 5 – 13)
Friday	Sep 27	TH	Sun	Lillooet River FSR Realignment at Truckwash Creek <ul style="list-style-type: none"> Continued FSR realignment works. Work area prepared for forecasted rain. Tx Line – Segment 1 <ul style="list-style-type: none"> No active work
Saturday	Sep 28	TH	Periods of heavy rain	Lillooet River FSR Realignment at Truckwash Creek <ul style="list-style-type: none"> Continued FSR realignment works. Tx Line – Segment 1 <ul style="list-style-type: none"> No active work

IEM Team Personnel:
TH – Tom Hicks

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.
Sep-23	TX Line onsite clearing kickoff	WEL, Mumleqs, Hedberg & Associates, Innergex, SES	<ul style="list-style-type: none"> Reviewed clearing plans for Segment 1 and Segment 2. 	N/A

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 Concern	Construction/Timing Restrictions & Mitigations
ULRHEF	Lillooet River FSR realignment at Truckwash Creek	<i>Grizzly Bear Class 1 suitable fall forage habitat (ULL-GB05)</i>	<i>IEM was onsite during clearing activities to oversee construction activities and ensure clearing boundaries are minimized.</i>
TX Line	Segment 1 Pole location 0 – 4.5	<i>Grizzly Bear Class 1 suitable fall forage habitat (ULL-GB06 & ULH-GB01)</i>	<i>IEM was onsite during clearing activities to oversee construction activities and ensure clearing boundaries are minimized.</i>
	Segment 1 Pole location 4 – 5	<i>Coastal Tailed Frog stream (ULH-TLX107)</i>	<i>IEM was onsite during clearing activities within the 100m stream buffer to ensure falling boundaries and the removal of functional course woody debris was minimized.</i>

4.0 Upper Lillooet River Hydroelectric Facility

4.1 Monitoring Results

4.1.1 Lillooet River FSR Realignment at Truckwash Creek

Construction Activities

- Continued bulk excavation and road base construction on west side of Truckwash Creek from FSR realignment Stn 2+200m – 1+950m.
- Installation of the culvert along Stn 2+056m (Photo 1) was completed in the dry on September 22nd.
- Hand falling within Class 1 Grizzly Bear fall forage habitat (Photo 2).

Environmental Summary:

- IEM was onsite during clearing activities to oversee construction activities and ensure clearing boundaries within Grizzly Bear suitable Class 1 fall forage habitat (ULL-GB05) were minimized. No environmental concerns were noted.
- Drainage upgrades to the Lillooet River FSR were completed this week to channel water off of the road surface and into adjacent vegetated areas.
- No ESC or WQ issues were observed throughout the active works area.

Photos:



Photo 1. Culvert installed within dry ephemeral channel (Stn. 2056.0 – Sept. 23st, 2013)



Photo 2. Result of clearing within Class 1 & 2 Grizzly Bear forage habitat.

Water Quality Results

Date	Time	Sample Location Description	pH	Turbidity (NTU)	Temperature (°C)
Sept. 27	10:40	Truckwash Creek – upstream of works	6.21	1.27	7.8
	10:45	Truckwash Creek – downstream of works	6.16	1.20	7.8
Sept. 28	11:30	Truckwash Creek – upstream of works	6.10	9.05	7.0
	11:40	Truckwash Creek – downstream of works	6.02	9.89	7.1

4.2 Recommendations

Armouring of the inlet and outlet of the newly installed culvert at FSR realignment Stn 2+056m is recommended to prevent slopes from eroding into the ephemeral channel during rain events.

4.3 Upcoming Works

The armoring of the inlet and outlet of newly installed culvert was discussed and scheduled to occur during the next reporting period. The realignment of the Lillooet River FSR and Truckwash Creek Bridge Crossing work is scheduled to continue for the next 6 - 7 weeks. Work will continue on the west heading of the alignment during the next reporting period. Work on the east heading will begin once bedrock is encountered at the base of bulk excavation works on the west heading.

5.0 Transmission Line

5.1 Monitoring Results

5.1.1 Segment 1 Clearing (poles 0 – 13)

Construction Activities

- Feller buncher falling/clearing within Class 1 Grizzly Bear forage habitat (Photo 3) and within 100m of Coastal Tailed Frog habitat.
- Hand falling within Class 1 Grizzly Bear forage habitat (Photo 4).

Environmental Summary:

- IEM was onsite during clearing activities to oversee construction activities and ensure clearing boundaries within Grizzly Bear suitable Class 1 fall forage habitat (ULL-GB06 & ULH-GB01) were minimized. No environmental concerns were noted.
- IEM was onsite during clearing activities within 100m of identified Coastal Tailed Frog stream (ULH-TLX107) to ensure falling boundaries and the removal of functional course woody debris was minimized.
- Below TX Line poles 9 – 10.5, maintaining a 150m wetland buffer is not feasible due to the location of the Lillooet River FSR between the transmission line right-of-way and an identified wetland. To mitigate the potential for wetland disturbance and alert construction workers to the boundaries of valuable habitat, WEL has installed orange fencing on the downslope side of the FSR greater than 30m from wetland perimeter.
- No ESC or WQ issues were observed throughout the active works areas.

Photos:



Photo 3. Feller buncher clearing within class 1 grizzly bear fall forage habitat (Sept. 23rd, 2013)



Photo 4. Visual screen installed along Lillooet River FSR >30m from an identified wetland (Sept. 24, 2013).

Water Quality Results

Date	Time	Sample Location Description	pH	Turbidity (NTU)	Temperature (°C)
No WQ measurements were recorded during this reporting period. No clearing with RVMAs was completed during this reporting period. Construction activities had no visual effect on WQ.					

5.2 Recommendations

No recommendations during this reporting period.

5.3 Upcoming Works

Transmission line clearing work is scheduled to proceed into segment 2 next week. No temporary or permanent access road construction or transmission line infrastructure construction will occur as part of the currently scheduled clearing activities.

6.0 Wildlife Sightings Report, Period

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

Note: Wildlife observations from September 2013 will be attached to the next WEMR.

7.0 Environmental Issues Tracking Matrix (ITM)

7.1 Hydroelectric Facilities (ULRHEF & BRDHEF)

ITM Tracking Legend:

Work Item Open
Work Item Complete
Issue Closed

Issue Tracking		Environmental Issue		Mitigation Measures			
ID No.	Status	Location	Issue Description	Action Taken/Recommended	Date of Identification	Targeted Completion Date	Date Completed
<i>No outstanding environmental issues.</i>							

7.2 Transmission Line

ITM Tracking Legend:

Work Item Open
Work Item Complete
Issue Closed

Issue Tracking		Environmental Issue		Mitigation Measures			
ID No.	Status	Location	Issue Description	Action Taken/Recommended	Date of Identification	Targeted Completion Date	Date Completed
<i>No outstanding environmental issues.</i>							