

# Upper Lillooet Hydro Project

## Weekly Environmental Monitoring Report #9

**Reporting Period: November 10<sup>th</sup> – November 16<sup>th</sup>, 2013**

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)  
Licence of Occupation (Upper Lillooet River HEF #232384) File No. 2409871*

*Licence of Occupation (Boulder Creek HEF #232386) File No. 2409998*

*Licence of Occupation (Transmission Line #2423386) File No. 2410654*

*Occupant Licence to Cut (FSR realignment) No. L49717*

*DFO Letter of Advice File No. 09-HPAC-PA2-00303*



*Occupant Licence to Cut (TX Line S.1-S5, Heli Pads) No. L49697 (Amendment 1)*

*Occupant Licence to Cut (Construction Camp) No. L49698*

*General Wildlife Measure Exemption Approval Letter (Tx Line) File No. 78700-35/06 UWR and 39585-20 WHA*

*Section 57 Authorization (hiking trail construction) File No. 16660-20*

*Road Use Permit No. 6123-13-02*

Distribution List		Prepared By
Name	Organization	
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D'Arcy Soutar	Westpark Electric Ltd.	
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David Dorrans	Lil'wat Nation	

**ACRONYMS:**

BCAO	British Columbia Assessment Office
BCWQG	British Columbia Water Quality Guidelines
BDRHEF	Boulder Creek Hydroelectric Facility
BG	Background
BKL	BKL Consultants Ltd.
CRT-EBC	CRT-EBC Construction Inc.
DFO	Fisheries and Oceans Canada
DS	Downstream
Ecofish	Ecofish Research Ltd.
Ecologic	Ecologic Consulting
ESC	Erosion and Sediment Control
FSR	Forest Service Road
GWR	Mountain Goat Winter Range
Hedberg	Hedberg and Associates Ltd.
IEM	Independent Environmental Monitor
Innergex	Innergex Renewable Energy Inc.
ITM	Issue Tracking Matrix
LTC	Leave to Construct
MFLNRO	Ministry of Forests, Lands and Natural Resource Operations
MOE	Ministry of Environment
RVMA	Riparian Vegetation Management Area
SES	Sartori Environmental Services
TX Line	Transmission Line
ULRHEF	Upper Lillooet River Hydroelectric Facility
UWR	Ungulate Winter Range
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 On-site Environmental Information
Sunday	Nov. 10	AS, VD, ML	Sun and cloud	<p><b>Lillooet River FSR Realignment at Truckwash Creek</b></p> <ul style="list-style-type: none"> <li>Bulk excavation at the east and west headings.</li> <li>Goat Monitoring at MG-OBS01, MG-OBS02 and MG-OBS03.</li> </ul> <p><b>ULRHEF &amp; BDRHEF Seismic Survey Program</b></p> <ul style="list-style-type: none"> <li>Seismic survey on left bank at ULRHEF intake.</li> </ul> <p><b>TX Line – Segment 1-5</b></p> <ul style="list-style-type: none"> <li>No activities.</li> </ul>
Monday	Nov. 11	KR, ML	Sun and cloud	<p><b>Lillooet River FSR Realignment at Truckwash Creek</b></p> <ul style="list-style-type: none"> <li>Drill demobilized and bulk excavation at the east and west heading.</li> <li>Goat Monitoring at MG-OBS01, MG-OBS02 and MG-OBS03.</li> </ul> <p><b>ULRHEF &amp; BDRHEF Seismic Survey Program</b></p> <ul style="list-style-type: none"> <li>Seismic survey on right bank at ULRHEF intake.</li> </ul> <p><b>TX Line – Segment 1-5</b></p> <ul style="list-style-type: none"> <li>No activities.</li> </ul>
Tuesday	Nov. 12	KR, DA, TH	Rain	<p><b>Lillooet River FSR Realignment at Truckwash Creek</b></p> <ul style="list-style-type: none"> <li>Bulk excavation at the east and west headings.</li> <li>Goat Monitoring at MG-OBS01, MG-OBS02 and MG-OBS03.</li> </ul> <p><b>ULRHEF &amp; BDRHEF Seismic Survey Program</b></p> <ul style="list-style-type: none"> <li>Seismic survey completed on right bank at ULRHEF intake. Seismic survey program is now complete.</li> </ul> <p><b>Construction Camp Clearing</b></p> <ul style="list-style-type: none"> <li>Hand falling began at the future construction camp location.</li> </ul> <p><b>TX Line – Segment 1-5</b></p> <ul style="list-style-type: none"> <li>No activities.</li> </ul>
Wednesday	Nov. 13	KR, DA, TH	Periods of rain	<p><b>Lillooet River FSR Realignment at Truckwash Creek</b></p> <ul style="list-style-type: none"> <li>Bulk excavation at the east and west headings.</li> <li>Goat Monitoring at MG-OBS01, MG-OBS02 and MG-OBS03.</li> </ul> <p><b>Construction Camp Clearing</b></p> <ul style="list-style-type: none"> <li>Hand falling continued.</li> </ul> <p><b>TX Line – Segment 1-5</b></p> <ul style="list-style-type: none"> <li>Debris pile burning commenced between Poles 1-4.</li> </ul>
Thursday	Nov. 14	AA, AS, DA, TH	Sun and cloud	<p><b>Lillooet River FSR Realignment at Truckwash Creek</b></p> <ul style="list-style-type: none"> <li>Bulk excavation at the east and west headings.</li> <li>Goat Monitoring at MG-OBS01, MG-OBS02 and MG-OBS03.</li> </ul> <p><b>Construction Camp Clearing</b></p> <ul style="list-style-type: none"> <li>Hand falling continued.</li> </ul> <p><b>TX Line – Segment 1-5</b></p> <ul style="list-style-type: none"> <li>Debris pile burning completed between Poles 1-4.</li> </ul>

Day	Date	IEM Team Personnel	Weather Conditions	Monitoring Locations & Key On-site Environmental Information
Friday	Nov. 15	AA, AS, TH	Overcast	<p><b>Lillooet River FSR Realignment at Truckwash Creek</b></p> <ul style="list-style-type: none"> <li>Bulk excavation at the east and west headings.</li> <li>Goat Monitoring at MG-OBS01, MG-OBS02 and MG-OBS03.</li> </ul> <p><b>Construction Camp Clearing</b></p> <ul style="list-style-type: none"> <li>Hand falling continued.</li> </ul> <p><b>TX Line – Segment 1-5</b></p> <ul style="list-style-type: none"> <li>Debris pile burning commenced between Poles 4-12.</li> </ul>
Saturday	Nov 16	-	-	No construction activities.

**IEM Team Personnel:** AA – Anthony Andrews; AS – Anne Sutherland; DA – Danita Abraham; KR – Kirstie Rendall; ML – Mackenzie Lee; TH – Tom Hicks; 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.
Nov. 12	Onsite Pre-activity meeting	CRT-EBC, Mumleqs, Hedberg, SES	<ul style="list-style-type: none"> <li>Reviewed future construction camp Clearing Plan.</li> <li>CRT-EBC environmental orientation conducted with crew.</li> <li>Walked boundary of clearing area to confirm all falling boundaries were flagged prior to clearing.</li> </ul>	N/A
Nov. 14	Onsite meeting	CRT-EBC, SES	<ul style="list-style-type: none"> <li>Reviewed work procedure for excavating on vertical right bank of Truckwash creek at the west bridge abutment location.</li> </ul>	N/A
Nov. 10 – Nov. 15	Email updates	WEL, SES	<ul style="list-style-type: none"> <li>Daily schedule updates.</li> </ul>	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/Archeology Concern	Construction/Timing Restrictions & Mitigations
<p><b>ULRHEF &amp; BDRHEF</b></p>	<p>Lillooet River FSR realignment at Truckwash Creek</p>	<p><i>Mountain Goat Winter Range Habitat (UL 11, UL 19 and Migration Corridor)</i></p>	<p><i>IEM was onsite to oversee daily construction equipment shutdowns beginning one hour before and two hours after sunrise as well as two hours before and one hour after sunset.</i></p> <p><i>Noise monitoring equipment remained installed to monitor background noise levels and exceedances of the 75dbA noise level maximum resulting from blasting activities. No adaptive drilling/blasting noise mitigation strategies have been implemented at this time.</i></p> <p><i>Completion of daily snow depth monitoring within the Truckwash Creek Migration Corridor according to the Project's Mountain Goat Management Plan. A two week shutdown of work activities will occur once a significant snowfall is recorded (average snow depth of 10cm in forested habitat or 30cm in open terrain). No snow levels were measured on November 16<sup>th</sup> as no construction activities were occurring and no SES personnel were onsite.</i></p> <p><i>Mountain Goat monitoring activities continued, at three established observation stations (MG-OBS01, MG-OBS02 &amp; MG-OBS03). Stations are established to monitor three Mountain Goat critical winter habitats (UL 11, UL 19, and Migration Corridor), and each station was visited (if weather conditions permitted) for a minimum of two hours daily on a rotating schedule. No Mountain Goat monitoring was completed on November 16<sup>th</sup> as no construction activities were occurring within 500m of the UWRs.</i></p>

## 4.0 Upper Lillooet River Hydroelectric Facility

### 4.1 Monitoring Results

#### 4.1.1 Lillooet River FSR Realignment at Truckwash Creek

##### Construction Activities

- Continued grubbing, bulk excavation and road base construction on west side of Truckwash Creek for the FSR realignment. The excavation reached the final road grade elevation on November 13<sup>th</sup> and excavation of the bridge footing foundation was completed on November 14<sup>th</sup> and 15<sup>th</sup> ([Photo 1](#)). Work on the west heading is now complete for the season and will resume in the spring. Winterization measures have been installed at this work heading and the drainage ditches and cross ditches are functioning as intended ([Photo 2](#)).
- Construction at the east heading included clearing and grubbing, bulk excavation and road base construction. Bulk excavation and fill slope construction at the first switchback was the focus of this week's activities at the east heading. Finalized ditching and cross ditching will be installed once the design road grade elevations are achieved. In the short term water is directed to ditches along the existing FSR. No water quality concerns were noted this week.

##### Environmental Summary:

- IEM was onsite periodically throughout this reporting period to oversee general construction activities in Grizzly Bear Class 1 suitable summer and fall forage habitat (ULL-GB05). Clearing limits were minimized.
- Acoustic noise monitoring equipment was installed on October 30<sup>th</sup>, 2013, above and below the west heading of the Truckwash Creek realignment work area. The upper and lower station locations were chosen in coordination with Ecofish and Ecologic Mountain Goat specialists. Acoustic monitoring of blasting activities began November 1<sup>st</sup> to document adherence to blasting noise level restrictions within 500m of the Mountain Goat UWR (specifically UL-11) and within the migration corridor. Blast mats were used as the primary noise reduction mitigation for all blasts beginning November 1<sup>st</sup>, 2013. The data recorded after November 1<sup>st</sup>, 2013 is currently being analysed by BKL (noise monitoring consultants) and results of the data analysis is currently being compiled and will be summarized in the WEMR once complete. The IEM was onsite for seismic survey work at the ULRHEF intake to monitor blasting and ensure noise levels were minimized. No concerns were noted.
- On November 14<sup>th</sup>, an onsite pre-activity meeting was held with the CRT-EBC supervisor, excavator operator, and the IEM to discuss the procedure for excavating on top of the vertical right bank of Truckwash Creek at the west bridge abutment location. Water quality concerns and equipment operation within the riparian area were discussed. As planned, the excavator operator removed material from inside the edge of the bank first and attempted to pull the bank edge into the excavation while minimizing the amount of debris falling over the edge of the bank ([Photo 1](#)).



Some rocks and debris did fall over the edge of the bank during this work; however no material entered the wetted channel and no water quality or environmental concerns were noted. The material remains outside of the main channel and is composed predominantly of large rocks.

- The installation of winterization measures recommended previously (WEMR #7) have been completed within 200m the Mountain Goat Migration Corridor to ensure the site is stabilized prior to the winter shutdown. The remainder of winterization measures will be installed at the east heading as works are finalized or completed for the season. These winterization measures include:
  - repair and armoring of ditch lines along sections of road being actively constructed on the east heading; and,
  - cross ditching across steep road grades along sections of road being actively constructed at the east heading.

Photos:



Photo 1. Boulder debris that fell during excavation of the right bank bridge abutment. The IEM was onsite during the excavation work adjacent to Truckwash creek on Nov 14, 2013.



Photo 2. Ditching on the at the west heading of the Truckwash Creek FSR realignment as part of winterization measures (Nov.12, 2013).

Water Quality Results

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

**4.1.2 ULRHEF & BDRHEF Seismic Survey Program**

Construction Activities

- Seismic survey work was completed at the ULRHEF intake from November 10<sup>th</sup> - 12<sup>th</sup>.

Environmental Summary:

- The IEM was onsite to monitor works and oversee activities within 500m of the identified UWR (UL-11). Brushing of the survey lines was completed with hand tools and did not include any tree falling. No environmental concerns were noted.

Photos:



**Photo 3. Seismic survey work being conducted in the presence of the IEM at the ULRHEF intake left bank. (Nov 10, 2013).**

Water Quality Results

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

**4.1.3 Construction Camp**

Construction Activities

- A pre-activity meeting was conducted with crews on November 12<sup>th</sup> prior to the start of clearing. Environmental constraints were reviewed during an environmental orientation which was conducted with crews and clearing boundaries were confirmed in the field with Hedberg. Hand falling began on November 12<sup>th</sup> and continued to the 15<sup>th</sup>.

Environmental Summary:

- No environmental concerns were noted.



Photos:



**Photo 4. Result of hand falling at the construction camp (Nov 15, 2013).**

Water Quality Results

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

**4.2 Recommendations**

No recommendations are provided for this reporting period.

**4.3 Upcoming Works**

The realignment of the Lillooet River FSR and Truckwash Creek Bridge Crossing work is currently scheduled to continue for the next 1 - 2 weeks. Works at the west heading have been suspended by the contractor as weather forecasts indicate a high likelihood that the two week Mountain Goat shutdown in the vicinity of the Truckwash Creek Migration Corridor will commence by early next week. Work will continue on the east heading of the alignment during the next reporting period. Continued bulk excavation of the switchbacks at the east heading and road grade construction is expected to continue next week. Hand falling at the construction camp is expected to be completed on Monday November 18<sup>th</sup>.

**5.0 Transmission Line**

**5.1 Monitoring Results**

**5.1.1 Segments 1-5**

Clearing Activities

- Debris pile burning began this week between Poles 1- 12.

Environmental Summary:

- Debris pile burning began this week on days with favorable venting indices.
- No environmental concerns were noted.

Photos:



Photo 5. Burning debris piles between Poles 10 – 12 (Nov 15, 2013).

Water Quality Results

Date	Time	Sample Location Description	pH	Turbidity (NTU)	Temperature (°C)
No WQ measurements were recorded during this reporting period.					

**5.2 Recommendations**

No recommendations are provided for transmission line activities during this reporting period.

**5.3 Upcoming Works**

The burning of debris piles will continue as long as venting indices permit the lighting of new piles. 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**

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

following species will trigger notification to identified parties according to the following table.

Species Observed or Detected	Notification Period	Agencies to be Notified
Northern Rubber Boa	Immediately	IEM, Owner
Grizzly Bear	24hrs	IEM, Safety Officer, Conservation Officer, Owner
Wolverine Den	24hrs	IEM, MFLNRO, Owner
Spotted Owls	24hrs	IEM, MOE, Owner
Mountain Goats	48hrs	IEM, MFLNRO, Owner

### **6.1 Mountain Goat Monitoring Program**

As of November 1<sup>st</sup>, the IEM initiated a Mountain Goat Monitoring program. The IEM or designate was on site to monitor Mountain Goat activity within 500 m of clearing/construction activities surrounding the ULR HEF downstream tunnel portal. Mountain Goats will be observed from three sites:

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

Monitoring effort will be split between all three sites between sunrise and sunset, unless safety concerns preclude from doing so. The order of site visits will rotate daily. Construction activities will cease if a goat(s) are observed moving towards the migration corridor at MG-OBS01 and/or if a goat(s) are observed within a 500m line of site of a construction activity, and/or moving towards the migration corridor from MG-OBS03 or other location.

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

## 7.0 Environmental Issues Tracking Matrix (ITM)

### 7.1 Hydroelectric Facilities (ULRHEF & BDRHEF)

ITM Tracking Legend:

Work Item Open
Work Item Complete
Issue Closed

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

# 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](mailto:steve@sartorienv.com) following each day of monitoring.

Mountain Goat Observation Site	UWR/Migration Corridor - Location	UTM Coordinates (approximate center of observation area)	Daily Start Time (24hr clock)	Daily End Time (24hr clock)
MG - OBS01	Migration Corridor - East side of Truckwash Creek	10U 467898 5612845	10h30	11h30
MG - OBS02	UWR u-2-002 UL 11 - Keyhole Falls	10U 466760 5613967	12h00	13h00
MG - OBS03	UWR u-2-002 UL 19 - Garibaldi Pumice	10U 469155 5614960	07h50	10h15

Daily form #	1	of	1
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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
MB-OBS03	07h55	468731 5614862	Mountain Goat	visual with scope	4	1 nanny, 1 ylg, 1 u/k, 1 billy	1 female, 2 unknown, 1 billy	ylg feeding, adults standing and resting	The unknown animal maybe a sub-adult from the nanny. This group of three have been on the same bluff for the last few days. And the billy was standing close.	111-128
MB-OBS03	10h15	468963 5614965	Mountain Goat	visual with scope	3	2 adults, 1 sub-adult	1 nanny, 2 u/k	feeding and standing and then walking up slope	These animals on the same mountain section, but higher up on the slope. Still lots of snow at this level, but they are walking through easily.	
MG-OBS01	10h30			no observations						129-130
MG-OBS02	12h00			no observations						131-133



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Mountain Goat Observation Site	UWR/Migration Corridor - Location	UTM Coordinates (approximate center of observation area)	Daily Start Time (24hr clock)	Daily End Time (24hr clock)
MG - OBS01	Migration Corridor - East side of Truckwash Creek	10U 467898 5612845	7h45	9h45
MG - OBS02	UWR u-2-002 UL 11 - Keyhole Falls	10U 466760 5613967	10h25	12h30
MG - OBS03	UWR u-2-002 UL 19 - Garibaldi Pumice	10U 469155 5614960	12h45	15h10

Daily form #	1	of	2
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If more space is needed in the below table, please fill out additional daily forms and indicate total number of forms above.

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Lillooet FSR @ 20.5 Km	6h55	514665.3 5619388.7	Moose	Visual	1	Adult	Male	Feeding by side of FSR; Headed west	~ 1 " snow Forested area	None
MG-OBS01									No observations	13-15
MG-OBS02	10h56	466889.82 m E 5613951.14 m N	Mountain Goat	Visual with binoculars and scope	2	1 subadult male, 1 smaller u/k	male, u/k	Ruminating Male subadult has one broken horn	Light snow Forested cliff side habitat Centre of range near top	1-9
MG-OBS03	13h38	469600.17 m E 5614881.29 m N	Mountain Goat	Visual with scope	1	Adult	Male	Feeding and moving up in elevation	Forested with ~ 1 ft. snow Centre of range at top ridgeline Headed up over top of ridge, out of sight	None



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MG - OBS01	Migration Corridor - East side of Truckwash Creek	10U 467898 5612845	8h34	9h50
MG - OBS02	UWR u-2-002 UL 11 - Keyhole Falls	10U 466760 5613967	13h17	14h06
MG - OBS03	UWR u-2-002 UL 19 - Garibaldi Pumice	10U 469155 5614960	11h40	13h00

Daily form #	1	of	2
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MG-OBS01	-	-	-	-	-	-	-	-	No observations Poor visibility	162 - 163
MG-OBS03	11h40	467213 5613994	Mule deer	Tracks	1	u/k	u/k	Tracks headed SE across Pumice Rd.	~ 20 cm snow road side	164 - 165
MG-OBS02	8h01	-	-	-	-	-	-	-	No visibility Returned later to observe	160 - 161
MG-OBS03	-	-	-	-	-	-	-	-	Blast @ 11h54; Blast @ 12h01; Blast @ 12h06; Blast @ 12h12; Blast @ 12h19; Blast @ 12h30	None



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Mountain Goat Observation Site	UWR/Migration Corridor - Location	UTM Coordinates (approximate center of observation area)	Daily Start Time (24hr clock)	Daily End Time (24hr clock)
MG - OBS01	Migration Corridor - East side of Truckwash Creek	10U 467898 5612845	8h06	9h30
MG - OBS02	UWR u-2-002 UL 11 - Keyhole Falls	10U 466760 5613967	10h15	11h50
MG - OBS03	UWR u-2-002 UL 19 - Garibaldi Pumice	10U 469155 5614960	-	-

Daily form #	1	of	2
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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-OBS03	7h42	-	-	-	-	-	-	-	No visibility	170 - 171
MG-OBS01	-	-	-	-	-	-	-	-	No goat observations Construction noise audible @ 9h23	172 - 173
Lillooet FSR E. Truckwash Creek	9h44	467983 5612905	Coyote?	Tracks	1	u/k	u/k	Moving SW	~ 10 cm snow on road side	174 - 175
MG-OBS02	10h40	466802.31 5613984.07	Mountain goat	Visual with scope and binoculars	1	Subadult	Male	Standing and looking around; Walked west along cliff face	~ 10 cm snow Habitat: sparsely forested area and bare area on cliff face	176 - 182





# 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

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Mountain Goat Observation Site	UWR/Migration Corridor - Location	UTM Coordinates (approximate center of observation area)	Daily Start Time (24hr clock)	Daily End Time (24hr clock)
MG - OBS01	Migration Corridor - East side of Truckwash Creek	10U 467898 5612845	11h05	12h00
MG - OBS02	UWR u-2-002 UL 11 - Keyhole Falls	10U 466760 5613967	-	-
MG - OBS03	UWR u-2-002 UL 19 - Garibaldi Pumice	10U 469155 5614960	07h45	10h15

Daily form #	1	of	1
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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
MB-OBS03	08h00	468925, 5614722	mountain goat	visual with scope	2	sub-adult	female	feeding	In the larger open area to the south of the small rock bluff surrounded by trees	208
MB-OBS03	08h16	469109 5614896	mountain goat	visual with scope	5	3 adults, 2 sub-adults	1 male, 2 females, 2 unknown	feeding, male standing	Spread out over a wide area, but all could be seen within the field of view of the scope	209
MB-OBS03	10h05	468814 5614566	mountain goat	visual with scope	4	3 adults 1 sub-adult	2 males, 1 female, 1 sub-adult	feeding, one laying down resting	In the lower area of the large rock face by the forest at the bottom of the mountain	210
MB-OBS01	11h05	-	-	-	-	-	-	-	no animals or tracks observed	

