# Upper Lillooet Hydro Project

## Weekly Environmental Monitoring Report #63

Reporting Period: May 24 – May 30, 2015

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 |
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| **Name** | **Organization** | |
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| Jennifer McCash | JEM Energy Ltd. – Independent Engineer | |
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| Jean Pelletier | CRT-ebc Construction Inc. | |
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| Ian McKeachie | CRT-ebc Construction Inc. | **Date Prepared:** June 29, 2015 |
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## *Owner Construction Permits and Approvals*

*Environmental Assessment Certificate No. E13-01 (Amendment 1, 2, 3, 4, 5 & 6)*
*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, 6, 7) 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, 6, 7, 8, 9) 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*
*SLRD Building Permit (10864) – Upper Lillooet River HEF Powerhouse*
*SLRD Building Permit (10865) – Boulder Creek HEF Powerhouse*
*Works Permit for Construction within FSR Right-of-Way No. 6123-14-01*
*Works Permit for Construction within FSR Right-of-Way No. 7977-15-01*
*Section 52(1)(b) FRPA Authorization for Ryan River Wet Crossing File No. FOR-19400-01/2014*
*MOTI Permit to Construct, Use and Maintain Works Upon the Right-Of-Way of a Provincial Public Highway No. 2014-06099*

## *Contractor Construction Permits and Approvals*

*Magazine Licence File No. UL76018 (Renewal 1)*
*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 (Renewal 1)*
*Wildlife Act Permits – Pacific Tailed Frog Salvage Permit # SU15-164805*
*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*
*SLRD Building Permits for Mechanic Shop (10862) and Carpentry Shop (10836) dated March 18, 2015*

## *ACRONYMS:*

| | |
|---|---|
| **AMBNS** | Active Migratory Bird Nesting Survey |
| **ASMP** | Archaeological Sites Management Plan |
| **ARD M/L** | Acid Rock Drainage and Metal Leaching |
| **BCEAO** | British Columbia Environmental Assessment Office |
| **BCWQG** | British Columbia Water Quality Guidelines |
| **BDRHEF** | Boulder Creek Hydroelectric Facility |
| **BG** | Background |
| **BKL** | BKL Consultants Ltd. |
| **CE** | CRT-ebc Construction Inc. |
| **DFO** | Fisheries and Oceans Canada |
| **DS** | Downstream |
| **EAC** | Environmental Assessment Certificate |
| **EAO** | Environmental Assessment Office |
| **Ecofish** | Ecofish Research Ltd. |
| **Ecologic** | Ecologic Consulting |
| **EIR** | Environmental Incident Report |
| **ESC** | Erosion and Sediment Control |
| **FAM** | Field Advice Memorandum |
| **FSR** | Forest Service Road |
| **GWR** | Mountain Goat Winter Range |
| **Hedberg** | Hedberg and Associates Ltd. |
| **HWM** | High water mark |
| **IE** | Independent Engineer (True North Energy) |
| **IEM** | Independent Environmental Monitor |
| **INX** | Innergex Renewable Energy Inc. |
| **ISW** | Instream Works |
| **ITM** | Environmental Issue Tracking Matrix |
| **JEM** | JEM Energy Ltd. (Delegate Independent Engineer) |
| **LTC** | Leave to Construct |
| **MFLNRO** | Ministry of Forests, Lands and Natural Resource Operations |
| **MOE** | Ministry of Environment |
| **MOTI** | Ministry of Transportation and Infrastructure |
| **NCD** | Non Classified Drainage |
| **OLTC** | Occupational License to Cut |
| **PAG** | Potentially Acid Generating |
| **ROW** | Right of Way |
| **RVMA** | Riparian Vegetation Management Area |
| **SES** | Sartori Environmental Services |
| **Stringer Line** | Temporary Backfeed Transmission Line |
| **TX Line** | Transmission Line |
| **ULRHEF** | Upper Lillooet Hydroelectric Facility |
| **UWR** | Ungulate Winter Range |
| **VC** | Valued Component |
| **WEL** | Westpark Electric Ltd. |
| **WEMR** | Weekly Environmental Monitoring Report |
| **WHA** | Wildlife Habitat Area |
| **WQ** | Water Quality |

# 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 | Key Monitoring Locations & Activities |
|---|---|---|---|
| Sunday, May 24 | SE, DA | Overcast | ***Construction Camp, Laydown Areas and the Lillooet River FSR***<br>• Capping road from 45km to 46km on the Lillooet River FSR<br>• Ditch maintenance (including rock lining) at 42km on the Lillooet River FSR<br>***ULRHEF Intake***<br>• Drilling, blasting and excavation between downstream cofferdam and intake portal excavation<br>***ULRHEF Downstream Tunnel Portal***<br>• Drilling, blasting and tunnel stabilization<br>***ULRHEF Penstock***<br>• Excavation at 3+325 and 4+050 – 4+075<br>***ULRHEF Powerhouse***<br>• Rebar installation and formwork<br>***BDRHEF Intake, Crane Pad and Access Road***<br>• Rock hammering and excavation above crane pad<br>• Rope access scaling and stabilization works on right bank<br>***BDRHEF Downstream Tunnel Portal***<br>• Drilling, blasting and tunnel stabilization<br>***BDRHEF Powerhouse***<br>• Rebar installation and formwork<br>***TX-Line***<br>• Segment 6<br>➢ Groundworks for pole foundations<br>• Segment 11<br>➢ Stream 261a crossing works<br>• Segment 13<br>➢ Falling for structures 313 – 316<br>• Segment 14<br>➢ Falling for structures 358 – 369<br>• Segment 15<br>➢ Slashing for structures 380.5 – 382.5 |
| Monday, May 25 | BA, DA, TJ | Overcast | ***Construction Camp, Laydown Areas and the Lillooet River FSR***<br>• Culvert installation at 49.7km on the Intake Access Road (river right)<br>• Capping road from 45km to 46km on the Lillooet River FSR<br>***ULRHEF Intake***<br>• Drilling, blasting and excavation between downstream cofferdam and intake portal excavation<br>***ULRHEF Downstream Tunnel Portal***<br>• Drilling, blasting and tunnel stabilization<br>• Re-contouring 45.5km PAG stockpile and capping with organic material<br>***ULRHEF Penstock***<br>• Excavation at 4+050 – 4+075<br>***ULRHEF Powerhouse***<br>• Rebar installation and formwork |

| Date | IEM Team Personnel | Weather Conditions | Key Monitoring Locations & Activities |
|---|---|---|---|
| | | | ***BDRHEF Intake, Crane Pad and Access Road***<br>• Rock hammering and excavation above crane pad<br>• Rope access scaling and stabilization works on right bank<br>***BDRHEF Downstream Tunnel Portal***<br>• Drilling, blasting and tunnel stabilization<br>***BDRHEF Powerhouse***<br>• Rebar installation and formwork<br>• Concrete pour<br>***TX-Line***<br>• Segment 6<br>➢ Groundworks for pole foundations<br>• Segment 11<br>➢ Stream 261a crossing works<br>• Segment 12<br>➢ Falling for structures 296 – 305<br>• Segment 13<br>➢ Falling for structures 308 – 309<br>➢ Building road 322<br>• Segment 14<br>➢ Slashing for structures 343 – 347<br>➢ Falling for structures 364 – 368<br>➢ Building road 371.1 |
| Tuesday, May 26 | BA, DA, TJ | Sunny | ***Construction Camp, Laydown Areas and the Lillooet River FSR***<br>• Culvert installation at 49.7km on the Lillooet River FSR<br>***ULRHEF Intake***<br>• Drilling, blasting and excavation between downstream cofferdam and intake portal excavation<br>***ULRHEF Downstream Tunnel Portal***<br>• Drilling, blasting and tunnel stabilization<br>***ULRHEF Penstock***<br>• Excavation at 4+050 – 4+075<br>***ULRHEF Powerhouse***<br>• Rebar installation and formwork<br>• Concrete pour<br>***BDRHEF Intake, Crane Pad and Access Road***<br>• Rock hammering and excavation above crane pad<br>• Rope access scaling and stabilization works on right bank<br>***BDRHEF Downstream Tunnel Portal***<br>• Drilling, blasting and tunnel stabilization<br>***BDRHEF Powerhouse***<br>• Rebar installation and formwork<br>• Backfill of powerhouse structure<br>***TX-Line***<br>• Segment 5<br>➢ Flying ropes, pulling conductors and clipping<br>• Segment 6<br>➢ Groundworks for pole foundations<br>• Segment 11<br>➢ Stream 261a crossing works<br>• Segment 12<br>➢ Falling for structures 296 – 305 |

| Date | IEM Team Personnel | Weather Conditions | Key Monitoring Locations & Activities |
|---|---|---|---|
| | | | • Segment 13<br>  ➢ Falling for structures 308 – 309<br>  ➢ Building road 322<br>• Segment 14<br>  ➢ Slashing for structures 343 – 347<br>  ➢ Falling for structures 364 – 368<br>  ➢ Building road 371.1 |
| Wednesday, May 27 | TH, DA, TJ, JAS, SS | Sunny | ***Construction Camp, Laydown Areas and the Lillooet River FSR***<br>• No activity<br>***ULRHEF Intake***<br>• Drilling, blasting and excavation between downstream cofferdam and intake portal excavation<br>***ULRHEF Downstream Tunnel Portal***<br>• Drilling, blasting and tunnel stabilization<br>***ULRHEF Penstock***<br>• Excavation from 4+050 – 4+075<br>***ULRHEF Powerhouse***<br>• Rebar installation and formwork<br>***BDRHEF Intake, Crane Pad and Access Road***<br>• Rock hammering and excavation above crane pad<br>• Rope access scaling and stabilization works on right bank<br>***BDRHEF Downstream Tunnel Portal***<br>• Drilling, blasting and tunnel stabilization<br>***BDRHEF Powerhouse***<br>• Rebar installation and formwork<br>***TX-Line***<br>• Segment 5<br>  ➢ Flying ropes, pulling conductors and clipping<br>• Segment 6<br>  ➢ Groundworks for pole foundations<br>• Segment 11<br>  ➢ Stream 261a crossing works<br>• Segment 12<br>  ➢ Falling for structures 296 – 305<br>• Segment 13<br>  ➢ Building road 322<br>• Segment 14<br>  ➢ Slashing for structures 343 – 347<br>  ➢ Building road 371.1 |
| Thursday, May 28 | TH, DA, TJ | Sunny | ***Construction Camp, Laydown Areas and the Lillooet River FSR***<br>• No activity<br>***ULRHEF Intake***<br>• Drilling, blasting and excavation between downstream cofferdam and intake portal excavation temporarily suspended to repair water treatment system (sump liner, discharge pipe to pond 5, discharge pipe to Lillooet River)<br>***ULRHEF Downstream Tunnel Portal***<br>• Drilling, blasting and tunnel stabilization<br>***ULRHEF Penstock***<br>• Fill and compaction works at 2+800<br>• Excavation from 4+050 – 4+075 |

| Date | IEM Team Personnel | Weather Conditions | Key Monitoring Locations & Activities |
|---|---|---|---|
| | | | ***ULRHEF Powerhouse***<br>• Rebar installation and formwork<br>***BDRHEF Intake, Crane Pad and Access Road***<br>• Rock hammering and excavation above crane pad<br>• Rope access scaling and stabilization works on right bank<br>***BDRHEF Downstream Tunnel Portal***<br>• Drilling, blasting and tunnel stabilization<br>***BDRHEF Powerhouse***<br>• Rebar installation and formwork<br>***TX-Line***<br>• Segment 5<br>➢ Flying ropes, pulling conductors and clipping<br>• Segment 6<br>➢ Groundworks for pole foundations<br>• Segment 7<br>➢ Framing and flying ropes<br>• Segment 11<br>➢ Stream 261a crossing works<br>• Segment 12<br>➢ Falling for structures 296 – 305<br>• Segment 13<br>➢ Building road 322<br>• Segment 14<br>➢ Slashing for structures 343 – 347<br>➢ Building road 371.1 |
| Friday, May 29 | TH, DA, AS, VD | Sunny | ***Construction Camp, Laydown Areas and the Lillooet River FSR***<br>• No activity<br>***ULRHEF Intake***<br>• Drilling, blasting and excavation between downstream cofferdam and intake portal excavation temporarily suspended to repair water treatment system (sump liner, discharge pipe to pond 5, discharge pipe to Lillooet River)<br>***ULRHEF Downstream Tunnel Portal***<br>• Drilling, blasting and tunnel stabilization<br>***ULRHEF Penstock***<br>• Fill and compaction works at 2+800<br>• Excavation from 4+050 – 4+075<br>***ULRHEF Powerhouse***<br>• Rebar installation and formwork<br>***BDRHEF Intake, Crane Pad and Access Road***<br>• Rock hammering and excavation above crane pad<br>• Rope access scaling and stabilization works on right bank<br>***BDRHEF Downstream Tunnel Portal***<br>• Drilling, blasting and tunnel stabilization<br>***BDRHEF Powerhouse***<br>• Rebar installation and formwork<br>***TX-Line***<br>• Segment 5<br>➢ Flying ropes, pulling conductors and clipping<br>• Segment 6<br>➢ Groundworks for pole foundations |

| Date | IEM Team Personnel | Weather Conditions | Key Monitoring Locations & Activities |
|---|---|---|---|
| | | | • Segment 7<br>  ➢ Framing and flying ropes<br>• Segment 11<br>  ➢ Stream 261a crossing works<br>• Segment 12<br>  ➢ Falling for structures 296 – 305<br>• Segment 13<br>  ➢ Building road 322<br>• Segment 14<br>  ➢ Slashing for structures 343 – 347<br>  ➢ Building road 371.1 |
| Saturday, May 30 | SE, AS | Sunny | ***Construction Camp, Laydown Areas and the Lillooet River FSR***<br>• No activity<br>***ULRHEF Intake***<br>• Completion of water treatment system repairs<br>• Drilling, blasting and excavation between downstream cofferdam and intake portal excavation resumed<br>***ULRHEF Downstream Tunnel Portal***<br>• Drilling, blasting and tunnel stabilization<br>***ULRHEF Penstock***<br>• Fill and compaction works at 2+800<br>• Excavation from 4+050 – 4+075<br>***ULRHEF Powerhouse***<br>• Rebar installation and formwork<br>• Concrete pour<br>***BDRHEF Intake, Crane Pad and Access Road***<br>• Rock hammering and excavation above crane pad<br>• Rope access scaling and stabilization works on right bank<br>***BDRHEF Downstream Tunnel Portal***<br>• Drilling, blasting and tunnel stabilization<br>***BDRHEF Powerhouse***<br>• Rebar installation and formwork<br>• Concrete pour<br>***TX-Line***<br>• Segment 5<br>  ➢ Flying ropes, pulling conductors and clipping<br>• Segment 6<br>  ➢ Groundworks for pole foundations<br>• Segment 7<br>  ➢ Framing and flying ropes<br>• Segment 11<br>  ➢ Stream 261a crossing works<br>• Segment 12<br>  ➢ Falling for structures 296 – 305<br>• Segment 13<br>  ➢ Building road 322<br>• Segment 14<br>  ➢ Building road 371.1 |

***IEM Team Personnel:*** *TH – Tom Hicks; SS – Stephen Sims; BA – Blake Aleksich; VD – Vanessa Dan; AA – Anthony Andrews; AS—Anne Sutherland; DA – Danita Abraham; TJ – Tammie Jenkins; SE – Stephanie Ellis; JAS – Alex Sartori*

# 2.0 Administrative Summary

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

| Date | Communication Type | Participants | Issues Discussed | ITM ID No. |
|---|---|---|---|---|
| May 24 & 25, 2015 | *Emails* | CE, Ecofish, SES, INX | Ecofish notified the project team that evidence of a Sharp Shinned Hawk (SSHA) nest was recorded during the third AMBNS conducted prior to clearing within the future permanent PAG stockpile area and along the penstock alignment. The nest location was verified and mapped on May 25, 2015. A 300m no clearing buffer was flagged around the active nest and it will remain in place until the young have fledged. On May 25, 2015 Ecofish provided an assessment of the risk to the SSHAs nest by continuing construction activities in the area. They determined that construction activities (with the exception of clearing vegetation) could continue at the ULRHEF powerhouse, penstock, and along the Lillooet River FSR, which are all within 300m of the nest, as the SSHA selected to nest 40m from an active construction site and since the EAC specifies that no clearing can occur within the 300m buffer. | - |
| May 25, 2015 | *Email* | CE, Ecofish, SES, INX | CE distributed the formal AMBNS report prepared by their QP outlining the results of AMBNS and SSHA call-playback surveys completed prior to clearing vegetation for enlargement of the ULRHEF intake spoil area and creation of the sediment ponds. | - |
| May 27, 2015 | *Site inspection* | IE, IEM, INX, CE, WEL | The IE and IEM were onsite to conduct a joint monthly inspection. | - |
| | *Email* | CE, SES, INX | An exceedance of the 75 dbA noise level threshold (2 second duration; 78.6 dbA max) occurred within the Mountain Goat migration corridor on May 24, 2015, (confirmed following BKL's analysis of noise monitoring data collected from the Upper Truckwash Creek monitoring station). The noise generated from truck travel between KM 45 and KM 45.5 of the Lillooet River FSR was determined to be the cause of the exceedance. CE reminded drivers of the need to adhere to project speed limits and to avoid the use of engine brakes to the extent possible while respecting driver safety. | - |
| | *Site discovery and follow-up email* | SES, WEL, INX, MFLRNO, Conservation Officer, CE | The IEM discovered a pile of pig carcasses illegally dumped along the edge of the Ryan South Main access road within Grizzly Bear Habitat polygon ULH - GB42. The IEM removed the carrion in accordance with EAC Condition #13 following its identification, and notified MFLNRO and the Conservation Officer. | - |
| | *Email* | WEL, SES, INX | WEL submitted an update to the RVMA clearing prescription table to include prescriptions for RVMAs within Segment 10 of the TX Line. | - |

| Date | Communication Type | Participants | Issues Discussed | ITM ID No. |
|---|---|---|---|---|
| May 28, 2015 | *Pre-work meeting* | CE, SES, INX, Mumleqs, Ecofish | CE reviewed the permanent PAG stockpile clearing prescriptions and boundary flagging standards with the Mumleqs falling crew prior to beginning clearing activities. Ecofish provided the results of the AMBNS and provided the fallers with the clearing authorization form. Locations of the SSHA nest, black bear den, and CTF buffers were reviewed. | - |
| May 29, 2015 | *Pre-work meeting* | CE, INX, SES | A pre-work meeting was held to review the ULRHEF intake sluiceway excavation Work Plan. Discussion focused on the execution of dewatering and water management activities, as well as blast mitigation measures planned to occur during the works. | - |
| | *Email* | INX, WEL, SES | INX distributed the Works Permit granted by MFLNRO to install a temporary power cable along the Lillooet South FSR. | - |
| May 29 & 30, 2015 | *Email* | CE, INX, SES | BKL analysis of noise monitoring data recorded near the ULRHEF downstream tunnel portal indicated that a blast occurring at 11:20 on May 29, 2015 caused an exceedance of the 75dbA noise level threshold (1-second duration; 88.2 dbA max). After analysis of the blast records CE determined that the number of safety lines involved in the blast was likely the cause of the exceedance. CE committed to minimizing the number of separate safety lines and will continue to ensure future blasts are configured with fewer holes per delay and longer delays between sets. | - |
| | *Email* | CE, SES, INX | CE submitted confirmation from their design engineer that construction of the ULRHEF intake sediment ponds have met the standards of the design and granted approval for their continued use following repairs to the liner of the lower sump. The installation of an oil/water separator and pH adjustment system remain outstanding. Concrete and tunnel drilling/blasting works will not proceed prior to the installation of these outstanding items. | - |

# 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 |
|---|---|---|---|
| All Project Areas | TX Line, ULRHEF, & BDRHEF | Active Migratory Bird Nesting Period | AMBNS must occur prior to clearing vegetation in all Project areas according to the survey schedule and methods outlined in the Project's Active Migratory Bird Nest Survey Plan during the nesting period (May 1 – July 31). All nests identified as active must be protected by a minimum 30m no disturbance buffer until the nest is no longer deemed to be active by a QP (buffer |

| Component | Location | Wildlife/Archeology Concern | Construction/Timing Restrictions & Mitigations |
|---|---|---|---|
| | | | distances vary by species; further details are provided in the AMBNS Plan). |
| TX Line | Segments 8 – 15 | Within 150m of wetlands or 100m of Coastal Tailed Frog Streams | IEM presence is required when clearing within 150m of wetlands or 100m of CTF Streams, to ensure clearing areas are minimized. |
| | | Riparian Vegetation Management Areas (RVMA) | IEM monitoring is required during clearing within RVMAs. |
| | | Surface Water Quality | IEM monitoring is required during culvert installation activities in non-fish bearing waters to document adherence to the Surface Water Quality Protection Plan objectives. |
| | | Suitable Raptor Nesting Habitat | IEM presence is required when clearing within suitable Northern Goshawk (NOGO), SPOW (Spotted Owl) and Western Screech-Owl (WESO) nesting habitat during the breeding period. A QP is to complete a nest survey if working within 600m of suitable Peregrine Falcon (PEFA) nesting habitat during the breeding period. |
| | | 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 areas are minimized. |
| | | Wildlife Habitat Area (WHA) 2-399 | Construction of the transmission line within the Grizzly Bear WHA 2-399 must be constructed outside of April 1 to June 15 and October 15 to December 31 to minimize disturbance to Grizzly Bears expected to use the WHA during spring and fall. |
| | | Ryan River Drainage | Construction of the TX Line into and across the Ryan River drainage will occur during the less critical Grizzly Bear summer foraging period (June 1 – September 1). |
| | | Moose, Deer, & Mountain Goat UWRs | Helicopter flight paths will avoid UWRs and landing locations will be located further than 500m away from the UWRs during the sensitive late winter period (March 1 – May 15). |
| Lillooet River FSR & ULRHEF | Access roads above the lower limit of the 200m buffer Truckwash Creek Migration Corridor to the ULRHEF intake | Mountain Goat UWR & Migration Corridor | Daily construction shutdowns occurred throughout the reporting period beginning one hour before and two hours after sunrise as well as two hours before and one hour after sunset. This timing restriction is effective within the Migration Corridor and 200m buffer throughout the month of May.<br>Noise levels monitoring is occurring near the downstream portal at two monitoring stations within the Truckwash Creek |

| Component | Location | Wildlife/Archeology Concern | Construction/Timing Restrictions & Mitigations |
|---|---|---|---|
| | | | migration route, as well as one location at the ULRHEF intake with guidance from an acoustical consulting firm. If noise levels exceed 75 dBA at the edge of UWR u-2-002 UL 11 or the migration corridor during the critical winter (Nov 1 - Apr 30) and kidding (May 1 - Jun 15) periods, additional mitigation measures are to be implemented to minimize noise levels.<br>If a goat observation occurs within 500 m line-of-sight of construction activities, construction must cease for at least 48 hours. The IEM must record and submit all goat observations to FLNR within 48 hours. |
| ULRHEF & BDRHEF | BDRHEF intake | Mountain Goat UWR habitat (u-2-002 UL 12) | During winter construction and operations (November 1 – June 15), access to Boulder Creek HEF intake must be gated at least 500 m from the original UWR u-2-002 UL 12 to restrict motorized use within the UWR, unless otherwise directed by FLNR.<br>Noise levels are monitored during active construction between May 1 – June 15 within UWR u-2-002 UL 12. The noise level monitoring location is between the intake work area and the portion of the UWR with the highest documented use. If noise levels exceed 75 dBA at this location, activities will cease until additional mitigation measures are proposed and implemented to minimize the possibility of additional noise level exceedances. |

# 4.0 Upper Lillooet River HEF – Monitoring Results

## 4.1 *Construction Camp, KM 38 Laydown, Access Roads & Lillooet River FSR*

*Activities:*

- Water trucks applied water for dust suppression along project access roads and the Lillooet River FSR from KM 37.5 to KM 47, throughout the reporting period.
- Ditch maintenance (including rock armouring) and installation of a culvert within the ditch line at KM 42 of the Lillooet River FSR (Photo 1).
- CE applied road-capping material and performed ditch maintenance along the Lillooet River FSR between KM 45 and KM 46.
- Culvert installation at KM 49.7 of the ULRHEF intake access road (Photo 2, Photo 3, Photo 4).
- Clearing of the permanent PAG stockpile area was completed in areas outside of the established wildlife buffers (Photo 5).

- Routine maintenance of construction equipment within the mechanic shop and fuel management continued at the KM 38 laydown.
- The electric fences were maintained and operational throughout this reporting period.

*Environmental Summary:*

- Water application occurred on Project roads during this reporting period as a dust suppression measure.
- The IEM was onsite to monitor culvert installation works at KM 49.7 of the ULRHEF intake access road on the right (south) side of the Lillooet River. CE installed a 6" electric pump to divert water around the work area during the works. The capacity of the diversion pump was insufficient to handle the volume of seepage emanating from the hillslope; therefore a berm was installed and excess water was directed through a diversion ditch (Photo 2) resulting in a temporary pulse of turbid water (peak = 90 NTU; duration = <30 minutes; See Section 4.6). A second turbid pulse was generated during removal of the berm and watering of the armoured ditch line and culvert (Photo 3 & Photo 4; peak = 69.9 NTU; duration = <30 minutes; See Section 4.6).
- An exceedance of the 75 dbA noise level threshold (2 second duration; 78.6 dbA max) occurred within the Mountain Goat migration corridor on May 24, 2015, which was confirmed by BKL's analysis of noise monitoring data collected from the Upper Truckwash Creek monitoring station. The noise generated from truck travel between KM 45 and KM 45.5 of the Lillooet River FSR was determined to be the cause of the exceedance, and was likely to have occurred during the maintenance of the Lillooet River FSR (addition of capping material followed by a compaction roller). CE reminded drivers of the need to adhere to project speed limits, avoid the use of engine brakes to the extent possible, and minimize noise when working in the Mountain Goat migration corridor while respecting driver safety.
- CE reviewed the permanent PAG stockpile clearing prescriptions and boundary flagging standards with the Mumleqs falling crew prior to beginning clearing activities. Ecofish provided the results of the AMBNS and reviewed the location of the SSHA nest, bear den, and CTF buffers prior to initiation of clearing works.

## *Photos:*

**Photo 1 – Ditch maintenance on going at KM 42 on the Lillooet River FSR (May 25, 2015).**

**Photo 2 – Diversion pump and overflow ditch installed to ensure culvert installation works were performed in the dry at KM 49.7 km the ULRHEF intake access road (May 26, 2015).**

**Photo 3 – Ditch and culvert inlet armouring during culvert installation at KM 49.7 of the ULRHEF intake access road (May 26, 2015).**

**Photo 4 – Culvert outlet during commisioning of the newly installed culvert at KM 49.7 of the ULRHEF intake access road (May 26, 2015).**

**Photo 5 – Clearing completed at the future permanent PAG storage area near KM 42 of the Lillooet River FSR (May 30, 2015).**

## 4.2 *Intake (North & South Sides), and Upstream Tunnel Portal*

*Construction Activities:*

- Drilling, blasting and excavation at the upstream tunnel portal excavation (Photo 6, Photo 7 and Photo 8).
- Dewatering of portal excavation to the intake dewatering and wastewater treatment system (Photo 9 and Photo 10).

*Environmental Summary:*

- Drill and blast works continued at the ULRHEF intake during this reporting period. Drilling and blasting occurred within 500m of the Keyhole Falls Mountain Goat kidding range under the following conditions:
  - Noise suppression measures (delays, minimum charge weights, blast mats, etc.) are used,
  - Noise levels remain below 75 dBA (measured at Keyhole Falls monitoring location), and
  - The blast schedule provided to the IEM in advance to allow for goat monitoring to occur during the blasts.
- CE suspended work activities at the upstream tunnel portal and intake excavation on May 28, 2015 to perform maintenance of the water treatment system after three separate maintenance items were identified as follows:
  - The pumps damaged the impermeable liner of the lower sump, which required the liner be replaced and coated in a layer of concrete to prevent a reoccurrence (Photo 9)'
  - A loaded rock truck collapsed part of the outlet pipe of the sediment ponds, which was installed without sufficient overburden (Photo 10). The outlet pipe was repaired on May 29, 2015; and,
  - The outlet pipe that discharges water to the Lillooet River was leaking in two locations, which required patching. The outlet pipe was repaired on May 30, 2015 (Photo 11).

  Work activities in the excavation were suspended during the maintenance works to ensure WQ remained within BCWQGs, which was verified by the IEM. During this period, all water was directed to the Lillooet River.
- A dedicated CE crewmember is present on day shift and night shift to monitor the pumps within the intake structure and upstream tunnel portal excavation at all times. This person has the responsibility of directing all turbid water to the sediment ponds and must verify with CE environmental staff or the IEM prior to directing any water to the Lillooet River.
- The IEM was onsite to monitor all blasts and construction activities within 30m of the Lillooet River.

## *Photos:*

**Photo 6 – Current conditions at the ULRHEF intake and tunnel portal work areas (May 27, 2015).**

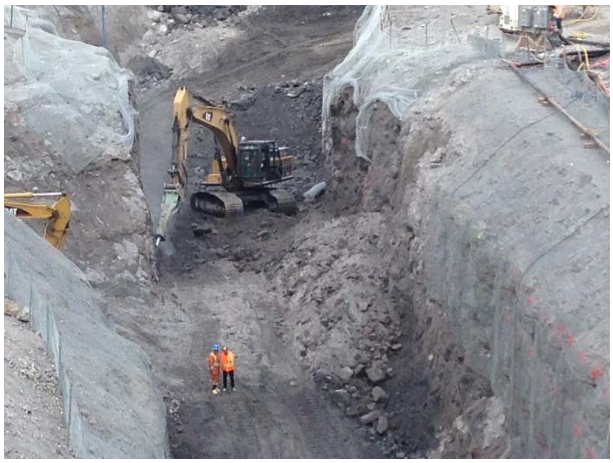

**Photo 7 – Rock hammering withint the ULRHEF intake/ upstream tunnel portal excavation (May 25, 2015).**

**Photo 8 – Work on hold at the upstream tunnel portal and intake area. Clear seepage within the intake excavation was directed to the Lillooet River (May 28, 2015).**

**Photo 9 – Repairs completed on the lower sump, which included re-lining with impermeable membrane and a concrete skim coat (May 30, 2015).**

**Photo 10 – Broken pipe outletting from the ULRHEF intake sediment ponds was repaired on May 30, 2015 (May 28, 2015).**

**Photo 11 – Repairs completed on the outlet pipe that directs water that meets BCWQGs to the Lillooet River (May 30, 2015).**

## 4.3 *Downstream Tunnel Portal*

*Construction Activities:*

- Drilling, blasting, mucking and stabilization works within the tunnel (Photo 12).
- Dewatering to downstream portal settling ponds (Photo 13).

*Environmental Summary:*

- Tunnelling works and dewatering to the downstream portal settling ponds continued during this reporting period (Photo 13). The settling pond water infiltrated to ground in the second cell with no discharge to the surrounding environment.
- BKL analysis of noise monitoring data recorded near the ULRHEF downstream tunnel portal indicated that blasting at 11:20 on May 29, 2015 caused an exceedance of the 75dbA noise level threshold (1-second duration; 88.2 dbA max). After analysis of the blasting records CE determined that the number of safety lines involved in the blast was likely the cause of the exceedance. CE committed to minimizing the number of separate safety lines and will continue to ensure future blasts are configured with fewer holes per delay and longer delays between sets. Should another exceedance occur, CE will need to install a blast curtain at the face of the tunnel portal.

*Photos:*

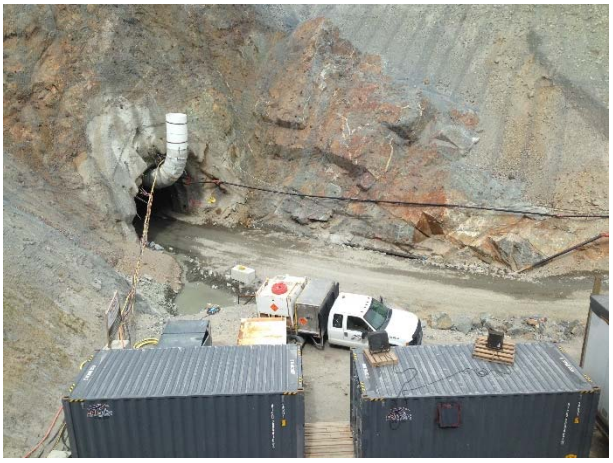

**Photo 12 – Conditions during active mucking at ULRHEF downstream tunnel portal (May 25, 2015).**

**Photo 13 – Infiltration ponds at the ULRHEF downstream tunnel portal (May 30, 2015).**

## 4.4 *Penstock*

*Construction Activities:*

- Penstock excavation is now complete at 3+325 and from 4+050 to 4+075, and the delivery of penstock section began during this reporting period (Photo 14).
- Fill and compaction works are now complete at the 2+800 heading (Photo 15).

### *Environmental Summary:*

- Ecofish notified the project team that evidence of a SSHA nest was recorded during the third AMBNS conducted prior to clearing a section of the penstock alignment. The nest location was verified and mapped on May 25, 2015. A 300m no clearing buffer flagged around the active nest will remain in place until the young have fledged. On May 25, 2015 Ecofish provided an assessment of the risk to the active SSHA nest provided construction activities continued in the area. Ecofish determined that construction activities (with the exception of clearing vegetation) could continue along the penstock alignment, within 300m of the nest, as the SSHAs selected to nest 40m from an active construction site and since the EAC only specifies the 300m buffer as a no clearing area until the young have fledged.

### *Photos:*

**Photo 14 – Penstock delivered and stored along the penstock alignment (May 30, 2015).**

**Photo 15 – Penstock fill completed near Truckwash Creek (May 27, 2015).**

## 4.5 *Powerhouse & Access Road*

### *Construction Activities:*

- Continued rebar installation and formwork for the powerhouse structure (Photo 16).
- Structural concrete pours occurred on May 26 and May 30 (Photo 17).
- Dewatering from the powerhouse sump to the Lillooet River continued (Photo 18 and Photo 19).

### *Environmental Summary:*

- On May 26 and 30, the IEM was onsite to inspect the ULRHEF powerhouse and verify WQ within the dewatering sump during the concrete pour (Photo 17 & Photo 18). The IEM sampled the water discharging from the powerhouse sump (Photo 18), which had a pH of 6.72 and was suitable for discharge to the surrounding environment as per the Surface Water Quality Protection Plan.
- Dewatering of the ULRHEF powerhouse continued without environmental concern throughout the reporting period. The IEM will continue to monitor the works area to confirm

that future concrete pours are adequately isolated from flowing water and protected from precipitation during curing.

*Photos:*

**Photo 16 – Rebar installation and formwork at the ULRHEF powerhouse (May 27, 2015).**

**Photo 17 – Concrete pour at ULRHEF powerhouse (May 26, 2015).**


**Photo 18 – ULRHEF powerhouse clear discharge to the Lillooet River during the concrete pour, pH = 6.72 (May 26, 2015).**

**Photo 19 – ULRHEF powerhouse sump (May 27, 2015)**

## 4.6 *Water Quality Results*

The following table presents the results of the routine WQ 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 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* WQ (turbidity and/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 (*u*S) | Temp (°C) |
|---|---|---|---|---|---|---|
| **Routine Water Quality** | | | | | | |
| May 26, 2015 | 13:42 | ULR Background – ULRHEF Intake | 6.8 | 46.1 | 68 | 9.1 |
| | 13:28 | ULR #0.5 – Downstream of ULRHEF intake at Keyhole Bridge | 6.9 | 50.7 | 70 | 9.2 |
| | 15:25 | ULR # 1 – Upstream of ULRHEF Powerhouse | 6.8 | 42.2 | 62 | 9.1 |
| | 15:34 | ULR #2 – Downstream of ULRHEF Powerhouse between KM 40.5 and KM 41 | 6.9 | 36.1 | 61 | 9.1 |
| | 15:50 | ULR #3 – Lillooet River FSR KM 38 Laydown – D/S of Boulder confluence | 7.0 | 40.7 | 65 | 9.3 |
| | 16:41 | ULR #4 – Lillooet River FSR KM 24 – D/S of all works and Meager confluence | 7.0 | 48.9 | 79 | 9.2 |
| **Water Quality for Specific Works** | | | | | | |
| ULRHEF Intake Access Road at 49.5km - Culvert Installation | | | | | | |
| May 26, 2015 | 7:45 | Background at seepage area | - | 22.9 | - | - |
| | 8:48 | 20m downstream of culvert installation works | - | 23.1 | - | - |
| | 8:54 | 70m downstream of culvert installation works | - | **70** | - | - |
| | 9:05 | 70m downstream of culvert installation works | - | **91** | - | - |
| | 9:15 | 70m downstream of culvert installation works | - | **52.2** | - | - |
| | 9:25 | 70m downstream of culvert installation works | - | 22.4 | - | - |
| | 14:22 | 70m downstream of culvert installation works | - | **69.9** | - | - |
| | 14:34 | 70m downstream of culvert installation works | - | **62** | - | - |
| | 14:50 | 70m downstream of culvert installation works | - | 26.4 | - | - |

* Increased turbidity due to Meager Creek influence and not Project related

## 4.7 *Recommendations*

IEM recommendations for the ULRHEF are as follows:

- All seepage water in the portal excavation should be conveyed to the sediment basins unless approved for discharge directly to the Lillooet River by the IEM or CE environmental manager.
- The IEM recommends that the access roads and tributaries on the penstock alignment be monitored regularly to ensure that no ESC issues develop with the continued excavation/fill works and rock truck traffic.
- The ULRHEF powerhouse sump water should be monitored regularly. Alkaline or turbid water should be pumped to the remaining settling ponds for treatment.

### 4.8 *Upcoming Works*

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

- Drilling and blasting will continue at the ULRHEF intake.
- Dewatering of the upstream portal excavation will continue.
- Tunneling activities will continue at the ULRHEF downstream tunnel portal.
- Penstock installation will begin following work plan approval and a pre-work meeting.
- Rebar installation, formwork and concrete pours will continue at the ULRHEF powerhouse.

## 5.0 Boulder Creek Hydroelectric Facility – Monitoring Results

### 5.1 *Intake Access Road & Crane Pad*

*Construction Activities:*

- Rock hammering and excavation continued above the intake crane pad (Photo 20).

*Environmental Summary:*

- During rock hammering and consolidation activities at the crane pad and right bank, an unquantified volume of material fell on the right bank both above the HWM and into Boulder Creek despite the best efforts of CE. The material is mainly rock and WQ impacts to Boulder Creek have not been observed to date. The material that has fallen from the crane pad is mostly within the intake work area and will be removed during construction of the intake structure.
- Noise monitoring continued from a station 375m northwest of the BDRHEF intake within the identified UWR (UL-11). Noise level monitoring was conducted to ensure that the 75 dBA noise level threshold is not exceeded as outlined in the Mountain Goat Management Plan.
- The gate to restrict public access on the BDRHEF intake access road within 500m of UWR was operated daily during this reporting period.

*Photos:*

**Photo 20 – Rock hammering and excavation at the intake (May 24, 2015).**

**Photo 21 – Conditons along the BDRHEF intake access road (May 28, 2015).**

## 5.2 *Downstream Tunnel Portal and Powerhouse*

*Construction Activities:*

- Rebar installation and formwork for the powerhouse structure continued (Photo 22).
- Backfill works at the powerhouse (Photo 23).
- A structural concrete pour was completed at the powerhouse on May 30.
- Drilling, blasting, mucking and stabilization works continued within the tunnel (Photo 24).
- Dewatering of the tunnel and powerhouse to the oil water separator and settling ponds continued (Photo 25).

*Environmental Summary:*

- No environmental issues were observed during this reporting period at the BDRHEF powerhouse or downstream tunnel portal.

*Photos:*

**Photo 22 – Current conditions at the BDRHEF powerhouse (May 27, 2015).**

**Photo 23 – Backfilled area adjcent to the BDRHEF powerhouse to be used as a crane pad (May 26, 2015).**


**Photo 24 – Mucking blast rock within the BDRHEF tunnel (May 27, 2015).**

**Photo 25 – BDRHEF powerhouse settling ponds (May 27, 2015).**

## 5.3 *Water Quality Results*

The following table presents the results of the routine WQ 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* WQ (turbidity and/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 (uS) | Temp (°C) |
|---|---|---|---|---|---|---|
| **Routine Water Quality** | | | | | | |
| May 26, 2015 | - | **BDR BG** – Upstream of BDRHEF intake *not currently accessible* | - | - | - | - |
| | - | **BDR #1** – Downstream of BDRHEF intake *not currently accessible* | - | - | - | - |
| | 15:58 | **BDR #2** – Upstream of BDRHEF Powerhouse | 6.9 | 22.6 | 36 | 8.9 |
| | 16:05 | **BDR #3** – Downstream of BDRHEF Powerhouse at Pebble Creek Bridge | 6.9 | 21.7 | 31 | 9.0 |

## 5.4 *Recommendations*

IEM recommendations for the BDRHEF are as follows:

- All wastewater related to the BDRHEF tunnelling works should continue to be contained and conveyed to the downstream portal settling ponds for treatment. Regular inspections of the treatment ponds should be performed to ensure the necessary maintenance activities outlined in the work plan are performed.
- CE should continue to exercise caution when working at the BDRHEF crane pad and on slope consolidation to prevent excessive rock fall into Boulder Creek.

## 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):

- Scaling and stabilization works on the BDRHEF intake right bank will continue.
- Rock hammering and excavation at the intake will continue.
- BDRHEF downstream portal tunnelling works will continue.

# 6.0 Transmission Line – Monitoring Results

## 6.1 *Transmission Line Construction Activities*

*Right-of-Way Clearing:*

- Hand falling in Segment 12 from structures 296 – 305.
- Hand falling in Segment 13 from structures 308 – 309, 313 – 316.5.
- Hand falling in Segment 14 from structure 358 – 369, and slashing debris, small trees, and shrubs from 343 – 347.
- Slashing debris, small trees, and shrubs in Segment 15 from structure 380 – 382.5.

### *Existing Road Upgrades and Access Road Construction*

- Building road 322.1 in Segment 13.
- Stream 261a crossing works in Segment 11 (Photo 26).
- Building road 371.1 in Segment 14.

### *Transmission Line Pole Installation, Line Stringing and Clipping*

- Stringing, pulling and clipping conductors in Segment 5 (Photo 27).
- Groundworks for pole foundations in Segment 6.
- Framing structures in Segment 7 and stringing conductors.

### *Environmental Summary:*

- Bridge crossing construction works above the HWM continued at the stream 261a throughout the reporting period (Photo 26). The IEM was present to monitor works within 30m of the watercourse. No impacts to downstream WQ were observed.
- On May 26, 2015, the IEM discovered a pile of pig carcasses illegally dumped along the edge of the Ryan South Main access road within Grizzly Bear Habitat polygon ULH - GB42 (Photo 28). The IEM removed the carrion in accordance to EAC Condition #13 following its identification and notified MFLNRO and the Conservation Officer.
- 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, legally designated Old Growth Management Areas (OGMAs) or within Northern Goshawk, Spotted Owl or Western Screech-Owl nesting habitat (during breeding season). All flagged boundaries were respected during clearing activities. No environmental issues were observed.

### *Photos:*

**Photo 26 – Bridge installation at crossing 261a (May 26, 2015).**

**Photo 27 – Stringing conductor in Segment 5 (May 26, 2015)**

**Photo 28 – Illegally dumped pig carcasses discovered along the Ryan South FSR (May 26, 2015).**

## 6.2 *Water Quality Results*

| Date | Time | Sample Location Description | pH | Turbidity (NTU) | Cond (uS) | Temp (°C) |
|---|---|---|---|---|---|---|
| **No construction activities involving water management were conducted during this reporting period.** | | | | | | |
| | | | | | | |

## 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):

- Stringing poles in Segment 5.
- Groundworks for pole foundations in Segment 6.
- Framing in Segment 7.
- Completion of stream 261a crossing works in Segment 11.
- Hand falling in Segment 12 and 13.
- Road construction in Segment 13 and Segment 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). Wildlife Observation forms will be included in first reporting period following month end. 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

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

- Daily dawn and dusk shutdowns as outlined in the Mountain Goat Management Plan were followed.
- Noise level monitoring to ensure that the 75db noise level threshold is not exceeded as outlined in the Mountain Goat Management Plan.
- As of May 1, the IEM or designate was on site to monitor mountain goat activity within 500m of construction activities at the ULRHEF intake and the ULRHEF downstream tunnel portal. Mountain goats were monitored from three sites:
  - Truckwash Creek viewing river right of the Migration Corridor– MG-OBS01 (10U 467955 5612773):
  - Keyhole Falls viewing the south side u-2-002 UL11 – MG-OBS02 (10U 466593 5613988); and,
  - Garibaldi Pumice mine site viewing u-2-002 UL 19 – MG-OBS03 (10U 467388 561408).

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

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

# 9.0 Environmental Issues Tracking Matrix (ITM)

## 9.1 *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 Date for Completion | Date Completed |
| | | | | | | | *next ITM – ULR#25* |

## 9.2 *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 |
| | | | | | | | *No outstanding environmental issues (next ITM – Tx#3)* |

# Mountain Goat Daily Observation Form

UPPER LILLOOET HYDRO PROJECT

Goat Monitor's Name(s): Danita Abraham

Date (YYYY-MM-DD): 2015-05-24

Weather (*cloud cover*, precipitation *and temperature*): 60% cloud cover. light wind, warm

sartori environmental services

106-185 forester street, north vancouver, bc v7h 0a6
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 **tom@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 | 14h35 | 16h35 |
| MG - OBS02 | UWR u-2-002 UL 11 - Keyhole Falls | 10U 466760 5613967 | 09h15 | 12h15 |
| MG - OBS03 | UWR u-2-002 UL 19 - Garibaldi Pumice | 10U 469155 5614960 | 12h30 | 14h30 |

| Daily form # | 1 | of | 1 |
|---|---|---|---|

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

| Observation Site *(indicate if location other than OBS site)* | Time *(use 24hr clock)* | UTM Coordinates or Waypoint *(10U)* | Species Observed *(indicate Mountain Goat or other species)* | Observations *(be specific - visual sign, track, other sign)* | Total # of Animals | Age/Sex *(if unknown - refer to attached info sheet)* | Description of Activities *(feeding, moving, etc.)* | Comments *(habitat, snow conditions, etc.)* | Photo #s |
|---|---|---|---|---|---|---|---|---|---|
| MG -OBS02 | 10h35 | 466760 5613967 | MG | Visual | 1 | Subadult nanny Patch | Resting, very relaxed. | Down below in the valley underneath the slide. | 633-640 |
| MG -OBS02 | 11h | 466760 5613967 | MG | Visual | 1 | Subadult nanny Patch | Feeding, walking down the slope. | Walked about 3 quarters of the way down to the river eating, turned around started back up and stayed in the shrubs out of site. Pics on cell and camera. | 641 |
| MG - OBS03 | 13h02 | 469155 5614960 | MG | Visual | 3 | Adults (3) Sex unknown Billies? | Two resting, one feeding | On rock bluff below snowline | 643-645 |
| MG - OBS01 | 14h45 | 467898 5612845 | MG | Visual | 5 | 4 adults,1 nanny, 3 Sex u/k 1 kid?unknown (very small)Sex u/k | Feeding and resting | Lost site of nanny and baby, went behind trees right away. Across on south side. Below snow line On rocky bluff beside gully. | - |

# Mountain Goat Daily Observation Form

UPPER LILLOOET HYDRO PROJECT

Goat Monitor's Name(s): Danita Abraham

Date (YYYY-MM-DD): 2015-05-25

Weather (*cloud cover*, precipitation *and temperature*): Overcast and chilly, light wind

sartori environmental services

106-185 forester street, north vancouver, bc v7h 0a6
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 **tom@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 | 12h20 | 14h30 |
| MG - OBS02 | UWR u-2-002 UL 11 - Keyhole Falls | 10U 466760 5613967 | 09h45 | 12h00 |
| MG - OBS03 | UWR u-2-002 UL 19 - Garibaldi Pumice | 10U 469155 5614960 | 14h40 | 16h40 |

| Daily form # | 1 | of | 1 |
|---|---|---|---|

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

| Observation Site *(indicate if location other than OBS site)* | Time *(use 24hr clock)* | UTM Coordinates or Waypoint *(10U)* | Species Observed *(indicate Mountain Goat or other species)* | Observations *(be specific - visual sign, track, other sign)* | Total # of Animals | Age/Sex *(if unknown - refer to attached info sheet)* | Description of Activities *(feeding, moving, etc.)* | Comments *(habitat, snow conditions, etc.)* | Photo #s |
|---|---|---|---|---|---|---|---|---|---|
| MG - OBS02 | 11h20 | 466760 5613967 | MG | Visual | 1 | Yearling sex unknown | Resting | On the mineral slide bedding area, can just barely see him/ her's head. Didn't move the whole two hours. Others were probably behind the ridge as well | One pic on cell |
| MG - OBS01 | 12h45 | 467898 5612845 | None | N/A | 0 | N/A | N/A | No goats on slide area or across on the south side. | - |
| MG - OBS03 | 14h55 | 469155 5614960 | MG | Visual | 1 | Adult Sex unknown | Resting | On rocky bluff below snow line. To the left of rock face. Didn't move for the two hours. | - |
| | | | | | | | | | |

# Mountain Goat Daily Observation Form

UPPER LILLOOET HYDRO PROJECT

Goat Monitor's Name(s): Danita Abraham

Date (YYYY-MM-DD): 2015-05-26

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

sartori environmental services

106-185 forester street, north vancouver, bc v7h 0a6
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 **tom@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 | 09h00 | 10h30 |
| MG - OBS02 | UWR u-2-002 UL 11 - Keyhole Falls | 10U 466760 5613967 | 10h45 | 12h45 |
| MG - OBS03 | UWR u-2-002 UL 19 - Garibaldi Pumice | 10U 469155 5614960 | 12h55 | 14h55 |

| Daily form # | 1 | of | 1 |
|---|---|---|---|

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| Observation Site *(indicate if location other than OBS site)* | Time *(use 24hr clock)* | UTM Coordinates or Waypoint *(10U)* | Species Observed *(indicate Mountain Goat or other species)* | Observations *(be specific - visual sign, track, other sign)* | Total # of Animals | Age/Sex *(if unknown - refer to attached info sheet)* | Description of Activities *(feeding, moving, etc.)* | Comments *(habitat, snow conditions, etc.)* | Photo #s |
|---|---|---|---|---|---|---|---|---|---|
| MG - OBS01 | 09h20 | 467898 5612845 | None | N/A | 0 | N/A | N/A | No sightings on slide or across | - |
| MG - OBS02 | 11h40 | 466760 5613967 | MG | Visual | 2 | 1 yearling sex u/k<br>1 age and sex u/k | Seen them briefly but they were moving up slope, grazing occasionally. | Too far away to tell age of other goat as it was mostly behind trees.<br>There was a lot of dust rising up behind trees every few minutes. | |
| MG -OBS03 | 13h20 | 469155 5614960 | None | N/A | 0 | N/A | N/A | Bear tracks on pumice road.<br>No sightings. Really hot out. | |
| | | | | | | | | | |

# Mountain Goat Daily Observation Form

UPPER LILLOOET HYDRO PROJECT

Goat Monitor's Name(s): Danita Abraham

Date (YYYY-MM-DD): 2015-05-27

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

sartori environmental services

106-185 forester street, north vancouver, bc v7h 0a6
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 **tom@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 | 15h10 | 17h10 |
| MG - OBS02 | UWR u-2-002 UL 11 - Keyhole Falls | 10U 466760 5613967 | 12h45 | 14h45 |
| MG - OBS03 | UWR u-2-002 UL 19 - Garibaldi Pumice | 10U 469155 5614960 | 10h00 | 12h00 |

| Daily form # | 1 | of | 1 |
|---|---|---|---|

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| Observation Site *(indicate if location other than OBS site)* | Time *(use 24hr clock)* | UTM Coordinates or Waypoint *(10U)* | Species Observed *(indicate Mountain Goat or other species)* | Observations *(be specific - visual sign, track, other sign)* | Total # of Animals | Age/Sex *(if unknown - refer to attached info sheet)* | Description of Activities *(feeding, moving, etc.)* | Comments *(habitat, snow conditions, etc.)* | Photo #s |
|---|---|---|---|---|---|---|---|---|---|
| MG - OBS03 | 10h23 | 469155 5614960 | MG | Visual | 3 | Adult Billies | Resting and feeding | Way up close to the top. On the rocky bluffs in the snow line. | 646-651 |
| MG -OBS02 | 14h14 | 466760 5613967 | None | N/A | 0 | N/A | N/A | Hot sunny day. Lots of dust sloughing off on the farthest slide area where they were spotted yesterday. | 652 |
| MG - OBS01 | 16h00 | 467898 5612845 | MG | Visual | 1 | Adult Sex u/k | Laying down in shade. | Near the snow line on Mt Meager. To the right of red rock face. | 653 |
| | | | | | | | | | |

# Mountain Goat Daily Observation Form

UPPER LILLOOET HYDRO PROJECT

Goat Monitor's Name(s): Danita Abraham

Date (YYYY-MM-DD): 2015-05-29

Weather (*cloud cover,* precipitation *and temperature*): Overcast, hazy, hot

sartori environmental services

106-185 forester street, north vancouver, bc v7h 0a6
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 **tom@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 | 15h30 | 17h15 |
| MG - OBS02 | UWR u-2-002 UL 11 - Keyhole Falls | 10U 466760 5613967 | 10h15 | 12h45 |
| MG - OBS03 | UWR u-2-002 UL 19 - Garibaldi Pumice | 10U 469155 5614960 | 13h00 | 15h15 |

| Daily form # | 1 | of | 2 |
|---|---|---|---|

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|---|---|---|---|---|---|---|---|---|---|
| MG - OBS02 | 10h48 | 466760 5613967 | MG | Visual | 1 | Subadult/adult Nanny (Patch) | She came out of forest above mineral slide and made her way down bedding under ribbon. She kept kicking up dirt with her front leg. | Bedding area beside mineral slide. | |
| MG - OBS02 | 11h02 | 466760 5613967 | MG | Visual | 2 | 1 yearling sex u/k 1 subadult sex u/k billy? | They came from above just like Patch, made their way down to bedding area. When they arrived Patch moved out of site behind ridge. | They laid down and were kicking up dirt as well, rubbing the ground with head and neck. Sub laid down under ribbon, yrlg just above. Still resting when I | |
| MG - OBS03 | 13h20 | 469155 5614960 | MG | Visual | 1 | Adult Nanny | Laying down under brush along forest line halfway up top of the rock face. | She laid there for the two hours. She finally stood up @14h50, I spotted a kid. Had to get closer for pictures | |
| MG - OBS03 | 14h54 | 469155 5614960 | MG | Visual | 1 | Kid! Sex u/k | Staying close to nanny feeding. Playing in the dirt kicking and jumping. Getting dirty. | They were along forest line halfway up top of the rock face. Took pictures on cell and camera | |

# Mountain Goat Daily Observation Form

UPPER LILLOOET HYDRO PROJECT

Goat Monitor's Name(s): Danita Abraham

Date (YYYY-MM-DD): 2015-05-28

Weather (*cloud cover*, precipitation *and temperature*): Overcast, hazy, hot

sartori environmental services

106-185 forester street, north vancouver, bc v7h 0a6
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 | 15h30 | 17h15 |
| 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 | | |

| Daily form # | 2 | of | 2 |
|---|---|---|---|

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| Observation Site *(indicate if location other than OBS site)* | Time *(use 24hr clock)* | UTM Coordinates or Waypoint *(10U)* | Species Observed *(indicate Mountain Goat or other species)* | Observations *(be specific - visual sign, track, other sign)* | Total # of Animals | Age/Sex *(if unknown - refer to attached info sheet)* | Description of Activities *(feeding, moving, etc.)* | Comments *(habitat, snow conditions, etc.)* | Photo #s |
|---|---|---|---|---|---|---|---|---|---|
| MG - OBS01 | 15h30 | 467898 5612845 | MG | Visual | 1 | Adult Billy | Feeding moving up in the gully close to creek. | Across on the south side. Beside the big red rock face in gully. | |
| MG - OBS01 | 16h15 | 467898 5612845 | MG | Visual | 2 | 1 adult, nanny 1 kid, sex u/k | Feeding, can see kid kicking around. Staying close to nanny. | In the same area I seen them before across on the south side. Just below snow line to the right of he creek gully near the top. | |
| | | | | | | | | | |
| | | | | | | | | | |

# Mountain Goat Daily Observation Form

UPPER LILLOOET HYDRO PROJECT

Goat Monitor's Name(s): Anne Sutherland and Danita Abraham

Date (YYYY-MM-DD): 2015-05-29

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

sartori environmental services

106-185 forester street, north vancouver, bc v7h 0a6
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 **tom@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 | 15h15 | 16h30 |
| MG - OBS02 | UWR u-2-002 UL 11 - Keyhole Falls | 10U 466760 5613967 | 12h00 | 13h30 |
| MG - OBS03 | UWR u-2-002 UL 19 - Garibaldi Pumice | 10U 469155 5614960 | 09h15 | 11h30 |

| Daily form # | 1 | of | 2 |
|---|---|---|---|

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|---|---|---|---|---|---|---|---|---|---|
| MG - OBS03 | 09h15 | 469155 5614960 | MG | Visual | 2 | Nanny with recently born kid. | Lying down , then up moving around and feeding. Kid was not visible for a while and then it got up and walked over to nanny. | Just saw them for brief periods along the top edge of the forest above the scree slope. This nanny is located on the grey / red rock face . | |
| MG - OBS03 | 10h45 | 469155 5614960 | MG | Visual | 1 | Billy | Eating almost at the very top of atheltol mountain (left of rock bluff) | This goat is usually with 2 other goats. But we did not see them. | |
| MG - OBS02 | 12h05 | 466760 5613967 | N/a | N/a | N/a | N/a | N/a | N/a | |
| MG - OBS01 | 15h40 | 467898 5612845 | N/a | N/a | N/a | N/a | N/a | N/a | |

# Mountain Goat Daily Observation Form

UPPER LILLOOET HYDRO PROJECT

Goat Monitor's Name(s): Danita Abraham and Anne Sutherland

Date (YYYY-MM-DD): 2015-05-29

Weather (*cloud cover*, precipitation *and temperature*): Sun cloud and haze, hot

sartori environmental services

106-185 forester street, north vancouver, bc v7h 0a6
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 | | |
| 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 | | |

| Daily form # | 2 | of | 2 |
|---|---|---|---|

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|---|---|---|---|---|---|---|---|---|---|
| 47 km south side Tracking | 13h50 | 466708 5614244 | MG | Tracks | 1 | Unknown | Moving | 116 cm long stride from heel to heel. Goat tracks going away from fsr | Img_2 9-1 |
| 47 km south side Tracking | 14h00 | 466709 5614294 | Moose | Tracks | 1 | Unknown | Moving | 120 cm long stride from heel to heel. Moose tracks heading up to FSR. | Img_2 9-2 |
| Truckwash Creek | 15h55 | 467993 5612910<br>468028 5612832 | Moose | Tracks | 1 | Unknown | Moving | 99cm stride heel to heel. Walking from Truckwash creek towards penstock. | Img_2 9-3 |
| | | | | | | | | | |

# Mountain Goat Daily Observation Form

UPPER LILLOOET HYDRO PROJECT

Goat Monitor's Name(s): Anne Sutherland

Date (YYYY-MM-DD): 2015-05-30

Weather (*cloud cover,* precipitation *and temperature*): Sunny, 18C, light wind, 10% cloud

sartori environmental services

106-185 forester street, north vancouver, bc v7h 0a6
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 | 08h55 | 11h10 |
| MG - OBS02 | UWR u-2-002 UL 11 - Keyhole Falls | 10U 466760 5613967 | 13h55 | 16h00 |
| MG - OBS03 | UWR u-2-002 UL 19 - Garibaldi Pumice | 10U 469155 5614960 | 11h35 | 13h30 |

| Daily form # | 1 | of | 1 |
|---|---|---|---|

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|---|---|---|---|---|---|---|---|---|---|
| MG - OBS01 | 09h20 | 467898 5612845 | N/a | N/a | N/a | N/a | N/a | N/a | |
| MG - OBS03 | 12h00 | 469760 5613967 | N/a | N/a | N/a | N/a | N/a | Nanny and kid must be out of site in the forested area along the top of the rock face . No goats visible today. | |
| MG - OBS02 | 14h15 | 466760 5613967 | N/a | N/a | N/a | N/a | N/a | Not a good place to be, the ground is so dry it was raining down sand everywhere.. Windy! No goats visible. | Img_1 |
| | | | | | | | | | |