



Province of British Columbia

Water Act

CONDITIONAL WATER LICENCE

Upper Toba Hydro Inc. is hereby authorized to divert and use water as follows:

- a) The streams on which the rights are granted are Jimmie Creek and Exit Creek.
- b) The point of diversion on Jimmie Creek denoted by PD80363, and the point of diversion on Exit Creek, denoted by PD82573, are located as shown on the attached plan 1 of 2.
- c) The date from which this licence shall have precedence is September 21, 2006.
- d) The purpose for which this licence is issued is power and the category for the power is general. The power is to be generated with the Jimmie Creek Generating Station.
- e) The maximum quantity of water which may be diverted and used under this licence is 15.65 cubic metres per second, subject to the following:
The licensee shall maintain in Jimmie Creek, measured immediately downstream of the point of diversion:
 - 1. a minimum flow as set out in the attached Schedule A dated May 12, 2009; or
 - 2. a minimum flow as ordered by the Engineer under the *Water Act*.
- f) The water may be diverted and used throughout the year.
- g) This licence is appurtenant to:
 - 1. the undertaking of the licensee to construct and operate the Upper Toba Valley Hydroelectric Project approved by Environmental Assessment Certificate E09-02 (the EAC) and any amendments thereto, issued under the *Environmental Assessment Act*, and
 - 2. the lands on which the Jimmie Creek Powerhouse is to be located described as Unsurveyed Right of Way over Unsurveyed Crown Land in the vicinity of Jimmie Creek, Range 1, Coast District held under *Land Act* tenure on File 2409238.
- h) The works authorized for the Jimmie Creek Generating System are:
 - 1. an intake and diversion channel for the Exit Creek diversion;
 - 2. a dam with provisions for instream flow requirements, headpond and intake for the Jimmie Creek diversion;
 - 3. a penstock, including surge facility if required;
 - 4. a powerhouse, tailrace and switch yard;

5. a "T" interconnection from Jimmie switchyard to East Toba - SALTERY Bay transmission line; and
 6. access roads from Toba Valley Road to Jimmie Creek powerhouse and intake; all of which shall be located approximately as shown on the attached plan 1 of 2; and
 7. a 230 kV transmission line from the switchyard at East Toba powerhouse to SALTERY Bay, which is joint works with the transmission line for the East Toba Montrose Hydro Project authorized under Conditional Water Licences 119308 and 119309, and which is located approximately as shown on the attached plan 2 of 2.
- i) The construction of the works authorized under clause (h) 7) has been completed by the holder of Conditional Water Licences 119308 and 119309. The construction of the works authorized under clause (h) 1), 2), 3), 4), 5) and 6) of this licence must be completed and the water must be beneficially used on or before December 31, 2017. Thereafter, the licensee must continue to make regular beneficial use of the water in the manner authorized herein.
 - j) Before commencing construction of the works authorized under clause (h) 1), 2), 3), 4), 5) and 6) of this licence, the licensee must to the satisfaction of the Engineer under the *Water Act* (the "Engineer"):
 1. advise the Engineer in writing that the report on compliance with the pre-construction EAC Conditions & Commitments has been submitted to the Executive Director of the Environmental Assessment Office in accordance with EAC Condition 4;
 2. retain a professional engineer registered in the province of British Columbia (the "Independent Engineer") who will provide services to the Engineer for the regulation of construction of the works (details in Attachment A - Scope of Services - Independent Engineer);
 3. retain a person with professional qualifications (the "Environmental Monitor") who will monitor environmental impacts from the construction of works (details in Attachment B - Scope of Services - Environmental Monitor);
 4. submit, the following:
 - a. plans that show the general arrangement of the works;
 - b. criteria for the design of the works;
 - c. criteria for the operation of the works;
 - d. a schedule for the construction of the works; and
 - e. an environmental management plan (EMP) for the management and mitigation of construction impacts;
 5. obtain Leave to Commence Construction (LCC) in writing from the Engineer.
 - k) Before undertaking construction of any component of works for which LCC issued under (j) 5), the licensee must:
 1. ensure that the design drawings for the works to be constructed are signed and sealed by a professional engineer registered in the province of British Columbia (the "Design Engineer");
 2. ensure that a professional engineer registered in the province of British Columbia (the "Construction Engineer") supervises the construction of the works; and
 3. obtain a letter from the Independent Engineer that the actual construction of that

component work may proceed.

- l) Before commencing operation of the works authorized under clause (h) the licensee must:
 - 1. advise the Engineer in writing that the report on compliance with the pre-operation EAC Conditions & Commitments has been submitted to the Executive Director of the Environmental Assessment Office in accordance with EAC Condition 4;
 - 2. submit a report for acceptance by the Engineer on the parameters and procedures for the operation of the works authorized under clause (h);
 - 3. submit and implement a plan to the satisfaction of the Engineer for the measurement of in-stream flows and the flow of water diverted from the stream under this licence; and
 - 4. obtain leave to commence the diversion and use of water authorized in this licence, in writing, from the Engineer.
- m) The licensee must operate the works authorized under clause (h) above in accordance with:
 - 1. procedures ordered by the Engineer, including any order for the regulation of the diversion, rate of diversion and use of water as may be required for the preservation of fish or fish habitat; and
 - 2. any amendment of the procedures ordered by the Engineer.
- n) The licensee must:
 - 1. design an operational in-stream flow monitoring program to the satisfaction of the Engineer, suitable to determine the nature of any impacts on fish and fish habitat;
 - 2. implement the program to the satisfaction of the Engineer, so that monitoring is in place at least one year prior to operation of the works;
 - 3. continue the program to the satisfaction of the Engineer, following commencement of operation of the works; and
 - 4. at the completion of the monitoring program, prepare a report that identifies the nature of any impacts on fish and fish habitat, and implement the appropriate mitigation and/or compensation to the satisfaction of the Engineer.
- o) The licensee must submit to the Engineer, and as directed by the Engineer, within six months of receiving the leave to commence the diversion and use of water, the drawings of record that show the works as they were constructed.
- p) The licence expires on January 31, 2053.
- q) This licence is issued in substitution of Conditional Water Licence 126700.



Glen Davidson
Comptroller of Water Rights

Upper Toba Valley Hydroelectric Project

Schedule A

Instream Flow Requirements

	Jimmie Creek
January	1.79 cubic metres per second ("cms")
February	1.67 cms
March	2.15 cms
April	3.78 cms
May	8.53 cms
June	14.29 cms
July	19.36 cms
August	16.87 cms
September	11.41 cms
October	5.41 cms
November	4.60 cms
December	1.82 cms

Dated: May 12, 2009

ORDER
Section 88
Water Act of British Columbia

File: 2002874

IN THE MATTER of Conditional Water Licence 130914, held by Upper Toba Hydro Inc. (the "licensee") for its Jimmie Creek Generating Station:

WHEREAS:

The Jimmie Creek Generating Station is a component of the Upper Toba Valley Hydroelectric Project ("the Project").

The Project was reviewed under the *Environmental Assessment Act* and Environmental Assessment Certificate E09-02 ("the EAC") was issued for the Project.

Commitment #1 of the EAC requires "*The proponent shall provide monthly instream flows at each of the facilities:*

- a) *in accordance with thresholds for fish bearing streams described in the Instream Flow Guidelines for BC (Hatfield et al., 2003) and presented in the proponent's Supplementary Report dated January 19, 2009 Attachment E: "Upper Toba Valley Hydroelectric Project – Operational Flows, Sediment Transport and Instream Flow Analysis" 'Recommended IFR for fish bearing streams' in Tables 1, 9 & 18; or*
- b) *lesser instream flows acceptable to Ministry of Environment, Environmental Stewardship Division, Lower Mainland Region Manager".*

The role of the former Lower Mainland Region Manager, Environmental Stewardship Division, Ministry of Environment is now the responsibility of the Director, Resource Management, Ministry of Forests, Lands and Natural Resource Operations, Surrey ("the Director - RM").

In August 2012, the licensee submitted the report titled "*Instream Flow Requirements Assessment*" by Knight Piesold Consulting. The licensee submitted a revised version in April 2013 ("the IFR Assessment Report").

Following a review of the IFR Assessment Report, the Director – RM informed the Comptroller in a letter dated July 12, 2013 that in accordance with Commitment #1) b) of the EAC, the lesser instream flow of 0.68 cubic metres per second was acceptable subject to four interim ramping conditions. The four interim ramping conditions are required as default criteria until the ramping study is completed with appropriate ramping criteria proposed and the proposal accepted by agency staff.

Clause e) of Conditional Water Licence 130914 states;

e) *The maximum quantity of water which may be diverted and used under this licence is 15.65 cubic metres per second, subject to the following:*

The licensee shall maintain in Jimmie Creek, measured immediately downstream of the point of diversion:

1. *a minimum flow as set out in the attached Schedule A dated May 12, 2009; or*
2. *a minimum flow as ordered by the Engineer under the Water Act.*

NOW THEREFORE, in accordance with Clause e) 2) of Conditional Water Licence 130914, I, the Comptroller of Water Rights, hereby order pursuant to Section 88 of the *Water Act*, the licensee to maintain in Jimmie Creek, measured immediately downstream of the point of diversion, a minimum flow of 0.68 cubic metres per second at all times, subject to the following conditions:

1. The licensee will provide a detailed work plan and schedule for a ramping study to the satisfaction of the Engineer under the *Water Act*. Written acceptance of the plan and schedule by the Engineer under the *Water Act* is a prior requirement for the commissioning of Jimmie Creek Generating Station.
2. Until the Ramping Study is completed and appropriate ramping criteria are proposed and accepted, a default ramping criterion of $Q/15^1$ applies under both normal operation and unplanned shutdowns.

In addition, the Jimmie Creek Generating Station must not ramp-down in the first five hours of an East Toba River Generating Station ramp-down episode.

3. A conservative approach to commissioning is required to minimize the likelihood of ramping violations due to malfunctions or other causes. Practicable redundancy in operation control would be required in the Operating Parameters and Procedures Report (OPPR). Details are to be developed by the Independent Engineer and approved in writing by the Engineer under the *Water Act* before "wet" commissioning starts².
4. The ramping criteria during "flow-following" mode of operation have yet to be clarified and must be resolved and approved by the Engineer under the *Water Act* before a Leave to Commence Operation (LCO) is issued.

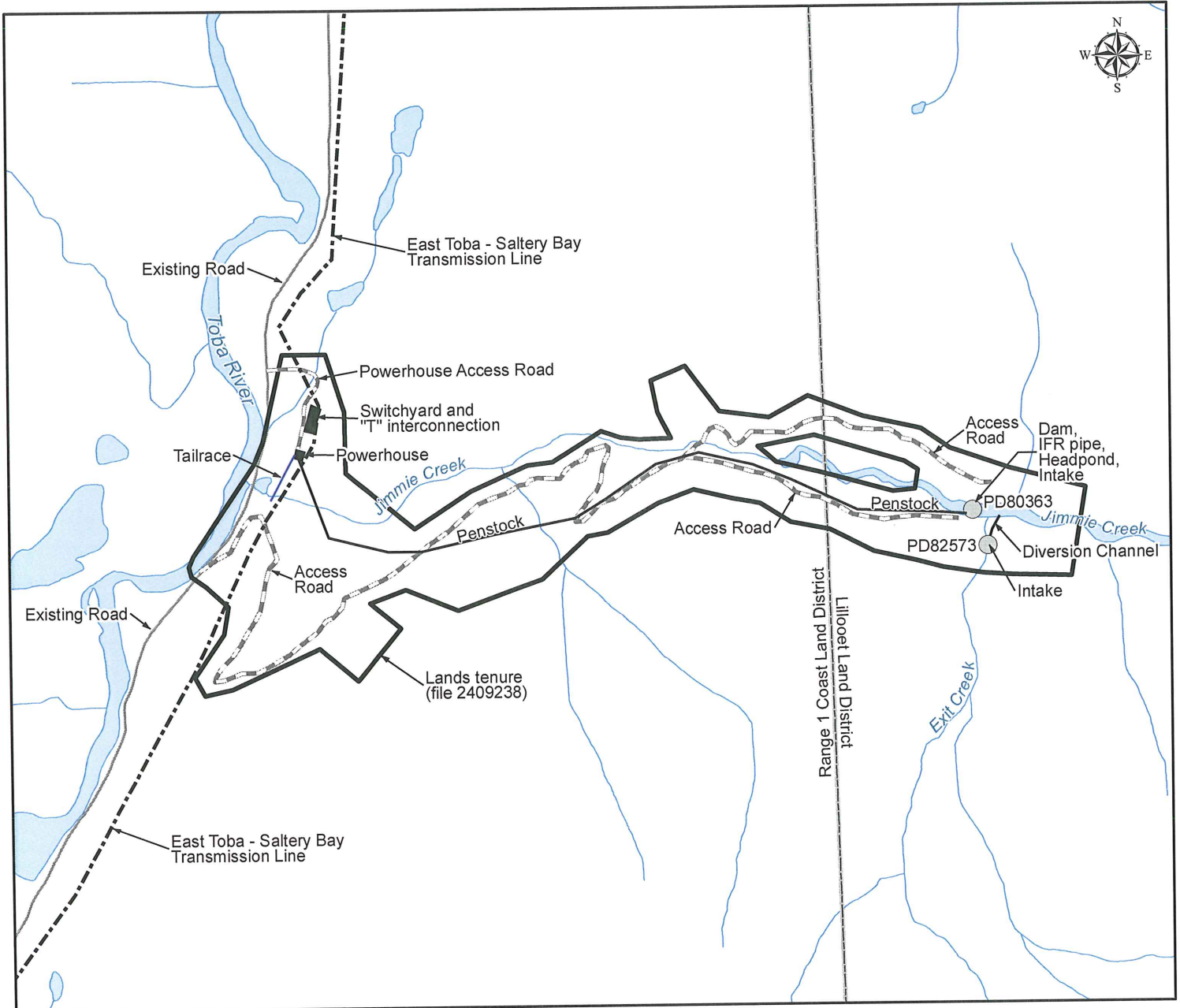
DATED AT Victoria, British Columbia, October 24, 2013.

Glen Davidson, P.Eng.
Comptroller of Water Rights



¹ Q is the instantaneous flow at the intake. As the diversion is lower because of the IFR, a maximum ramping rate of $Q/15$ would take 7.5 and 12.0 hours to ramp down when the intake flow is 2 and 5 times the IFR, respectively. It would take 14.4 hours when the intake flow is just sufficient to maintain the IFR and licensed diversion, and approaches 15 hours at high flow.

² "Wet" commissioning is defined here as when diversion of river flows into the penstock begins.



WATER DISTRICT: VANCOUVER

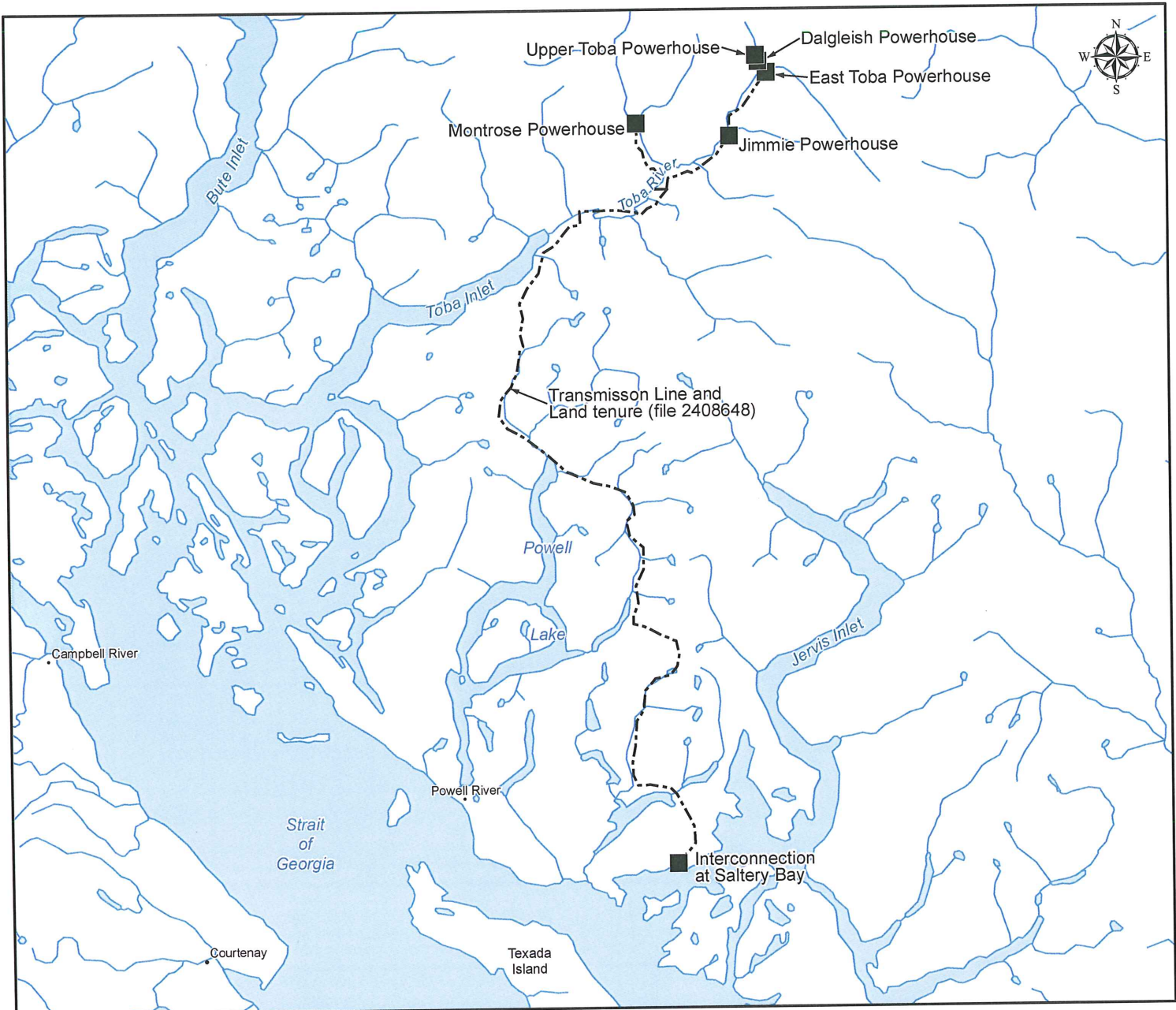
PRECINCT: JERVIS

Signature: 

Date: October 24, 2013

LEGEND:


Scale 1:20,000
Point of Diversion 
BCGS Map Number 92J.061, 92K.070



WATER DISTRICT: VANCOUVER

PRECINCT: JERVIS

LAND DISTRICT: various

Signature: 

Date: October 24, 2013

LEGEND:

Scale 1:750,000

Transmission Line -----