

Shuswap River Water Use Plan

Monitoring Programs and Physical Works Annual Report: 2013

Implementation Period: April 2012 to March 2013

- **SHUMON-1 Sugar Lake Reservoir Inflow Monitoring**
- **SHUMON-2 Sugar Lake Reservoir Shoreline Erosion Monitoring**
- **SHUMON-3 Flooding Risks in Middle Shuswap River**
- **SHUMON-4 Sugar Lake Reservoir Archaeology Monitoring**
- **SHUWORKS-1 Flow Disruptions at Wilsey Dam Report on Findings**

For Water Licences 120948, 120949, 120950 and 120951

April 30, 2013

BC Hydro Shuswap River Water Use Plan Monitoring Programs and Physical Works Annual Report: 2013

1 Introduction

This document represents a summary of the status and the results of the Shuswap River Water Use Plan (WUP) monitoring programs and physical works to March 31, 2013, as per the Shuswap Order under the *Water Act*, dated October 12, 2005. There are four monitoring programs and one physical works.

2 Status

The following table outlines the dates that TOR for the Shuswap River WUP monitoring programs and physical works were submitted to and approved by the CWR.

Table 2-1: Dates of Shuswap River WUP TOR Submissions and Approvals by the Comptroller of Water Rights

Monitoring Program & Physical Works TOR	Order Clause	Original ToR Submission		Most Recent ToR Resubmission	
		Date Submitted	Date Approved	Date Submitted	Date Approved
SHUMON-1 Sugar Lake Reservoir Inflow Monitoring	Clause 5 and 7 (c)	Mar 17, 2006	May 09, 2006		
SHUMON-2 Sugar Lake Reservoir Shoreline Erosion Monitoring	Clause 7(a)	Mar 17, 2006	May 09, 2006		
SHUMON-3 Flooding Risks in Middle Shuswap River	Clause 7(d)	Mar 17, 2006	May 09, 2006	Feb 15, 2010	Mar 18, 2010
SHUMON-4 Sugar Lake Reservoir Archaeology Monitoring	Clause 7(b)	Mar 17, 2011	Jun 03, 2011		
SHUWORKS-1 Flow Disruptions at Wilsey Dam Report on Findings	Clause 6	Apr 12, 2007	May 11, 2007		

As outlined in the Shuswap WUP, BC Hydro was to review the results of the monitoring programs five years after implementation of the WUP. As only one monitoring program (SHUMON-2) was complete at the five year time period, BC Hydro has determined that a review would not be conducted. No significant issues have been raised in the interim. A formal review of the WUP is recommended in 2015. A review could be triggered sooner if significant risks are identified through the analysis of monitoring results.

3 Schedule

The following table (Table 3-1) outlines the current schedule for the monitoring programs and physical works being delivered for the Shuswap River WUP.

Table 3-1: Table of WUP Schedule

Monitoring Programs	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	
	WLR	WLR	WLR	WLR	WLR	WLR	WLR	WLR	WLR	WLR	
	YR1	YR2	YR3	YR4	YR5	YR6	YR7	YR8	YR9	YR10	
SHUMON-1 Sugar Lake Reservoir Inflow Monitoring	✓	✓	✓	✓	✓	✓	✓	■	■	■	
SHUMON-2 Sugar Lake Reservoir Shoreline Erosion Monitoring		✓									
SHUMON-3 Flooding Risks in Middle Shuswap River						✓					
SHUMON-4 Sugar Lake Reservoir Archaeology Monitoring							✓	■	■		
Physical Works											
SHUWORKS-1 Flow Disruptions at Wilsey Dam		✓									
SHUWORKS-1 Bypass Valve			✓	✓	✓	✓					
Legend:	■	= Program to be undertaken/initiated in identified year									
	□	= Year work implemented dependent on flow conditions									
	u/w	= Project is underway									
	✓	= Program completed for the year									

4 Monitoring Programs and Physical Works Terms of Reference

The Monitoring Programs and Physical Works being implemented under the Shuswap River WUP are described in Terms of Reference. These Terms of Reference and the reports for work completed to date can be found here:

http://www.bchydro.com/about/sustainability/conservation/water_use_planning/southern_interior/shuswap_sugar_lake.html

5 Summary of Monitoring Programs

5.1 SHUMON-1 Sugar Lake Reservoir Inflow Monitoring

5.1.1 Status

This monitoring program was initiated in May 2006 and will be ongoing through to 2015 (Table 3-1). Water Survey of Canada is maintaining the data. No annual reports are prepared for this program.

5.2 SHUMON-2 Sugar Lake Reservoir Shoreline Erosion Monitoring

5.2.1 Status

This monitoring program was initiated in September 2006 and completed in December 2007.

5.3 SHUMON-3 Flooding Risks in Middle Shuswap River

5.3.1 Status

This monitoring program was conditional on the occurrence of a target discharge, which was met in 2011. Data collection as well as reporting was completed in 2011.

5.4 SHUMON-4 Sugar Lake Reservoir Archaeology Monitoring

5.4.1 Status

This monitoring program was initiated in 2012 and will be ongoing through 2014 (Table 3-1). The report for Year 1 (2012) has been completed but will not be submitted with this annual report for reasons of confidentiality.

6 Summary of Physical Works

6.1 SHUWORKS-1 Flow Disruptions at Wilsey Dam Report on Findings

6.1.1 Status

Attached is the final report dated December 29, 2012, covering the study period from 2009 – 2011. The project is complete.

7 Monitoring Programs and Physical Works Costs

The following table summarizes the Shuswap River WUP monitoring programs and physical works costs approved by the Comptroller and the Actual Costs to March 31, 2013.

Table 7-1: Shuswap River WUP Monitoring Programs and Physical Works Costs

Monitoring Programs	Activity	Costs approved by CWR	Life to Date Actuals (LTD)	Estimated to Complete (Forecast)	Total Forecast (LTD and Forecast)	Variance Total to Approved	Explanation	Corrective Action
Shuswap Annual Report	OR	\$9,674	\$6,479	\$3,195	\$9,674	\$0		
SHUMON#1 SUGAR LAKE RESERVOIR INFLOW MONITORING	OR	\$80,142	\$33,692	\$46,450	\$80,142	\$0		
SHUMON#1 Direct Management 001	OR	\$10,142	\$2,384	\$7,758	\$10,142	\$0		
SHUMON#1 Implementation 002	OR	\$70,000	\$31,308	\$38,692	\$70,000	\$0		
SHUMON#2 SUGAR LAKE RESERVOIR SHORELINE EROSION MONITORING	OR	\$37,520	\$32,659		\$32,659	\$4,861	Project is complete.	
SHUMON#2 Direct Management 001	OR	\$17,120	\$10,899		\$10,899	\$6,221		
SHUMON#2 Implementation 002	OR	\$20,400	\$21,760		\$21,760	(\$1,360)		
SHUMON#3 FLOODING RISKS IN MIDDLE SHUSWAP RIVER	OR	\$71,174	\$45,148		\$45,148	\$26,026	Project is complete.	
SHUMON#3 Direct Management 001	OR	\$17,517	\$11,964		\$11,964	\$5,553		
SHUMON#3 Implementation 002	OR	\$53,657	\$33,184		\$33,184	\$20,473		
SHUMON#4 SUGAR LAKE RESERVOIR ARCHAEOLOGY MONITORING	OR	\$205,563	\$61,881	\$143,682	\$205,563	\$0		
SHUMON#4 Direct Management 001	OR	\$53,260	\$16,441	\$36,819	\$53,260	\$0		
SHUMON#4 Implementation 002	OR	\$152,303	\$45,440	\$106,863	\$152,303	\$0		
SHUWORKS#1 WILSEY DAM FLOW RELEASE MECHANISM	OR	\$245,524	\$195,293	\$50,231	\$245,524	\$0	Project complete pending final invoicing.	
SHUWORKS#1 Direct Management 001	OR	\$48,802	\$26,933	\$21,869	\$48,802	\$0		
SHUWORKS#1 Implementation 002	OR	\$196,722	\$168,359	\$28,363	\$196,722	\$0		
OR - Ordered Remissible								
ONR - Ordered Non-Remissible								

* Red values in parentheses denote overage.