

WASHINGTON DEPARTMENT OF ECOLOGY
ENVIRONMENTAL ASSESSMENT PROGRAM
FRESHWATER MONITORING UNIT
STREAM DISCHARGE TECHNICAL NOTES

STATION ID: 30C070
STATION NAME: Little Klickitat River near Wahkiacus
WATER YEAR: WY2009
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Introduction

Watershed Description

The Little Klickitat River flows in south central Washington from the Simcoe Mountains and Horse Heaven Hills west across the Munson Prairie and through the Little Klickitat canyon to its confluence with the Klickitat River. The watershed drains approximately 280 square miles and includes range, agricultural, and forest lands. The river has been designated as Class A and is used primarily for irrigation, stock watering, and aquatic life habitat. Elevation ranges from about 590 ft at the gage up to 5820 ft along ridges at the northeast basin boundary. About 14% of the basin is covered by forest canopy. Annual precipitation averages 24.5 inches per year.

Gage Location

The gage is 15 miles west of Goldendale on the south side of State Highway 142. The gage is on the right bank 400 feet upstream from the Hwy 142 Bridge and 1/4 mile upstream from the confluence with the Klickitat River. The Primary Gage Index is a sloping staff gage on the right bank near the gage house and slant pipe.

Table 1.

Drainage Area (square miles)	280
Latitude (degrees, minutes, seconds)	45, 50, 32 North
Longitude (degrees, minutes, seconds)	121, 03, 29 West

Discharge

Table 2. Discharge Statistics.

Mean Annual Discharge (cfs)	137
Median Annual Discharge (cfs)	71
Maximum Daily Mean Discharge (cfs)	1250
Minimum Daily Mean Discharge (cfs)	18
Maximum Instantaneous Discharge (cfs)	1670
Minimum Instantaneous Discharge (cfs)	17
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	319
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	23
Number of Days Discharge is Greater Than Range of Ratings	0
Number of Days Discharge is Less Than Range of Ratings	0

Note: Statistics displayed in Table 2 may not include values in which the predicted discharge exceeds the range of ratings.

Narrative

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Error Analysis

Table 3. Error Analysis Summary.

Logger Drift Error (% of discharge)	2%
Weighted Rating Error (% of discharge)	12%
Total Potential Error (% of discharge)	14%

Rating Table(s)

Table 4. Rating Table Summary

Rating Table No.	302	402	303
Period of Ratings	10/1 to 11/2/2008	10/1 to 3/4/2009	2/23 to 9/30/2009
Range of Ratings (cfs)	1.0 to 2110 cfs	12 to 2110 cfs	1.0 to 2110 cfs
No. of Defining Measurements	36	32	36
Rating Error (%)	12%	11%	12%

Rating Table No.	403		
Period of Ratings	8/31 to 9/30/2009		
Range of Ratings (cfs)	12 to 2110 cfs		
No. of Defining Measurements	32		
Rating Error (%)	11%		

Rating Table No.			
Period of Ratings			
Range of Ratings (cfs)			
No. of Defining Measurements			
Rating Error (%)			

Narrative

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Stage Record

Table 5. Stage Record Summary

Minimum Recorded Stage (feet)	3.16
Maximum Recorded Stage (feet)	7.94
Range of Recorded Stage (feet)	4.78
Number of Un-Reported Days	15
Number of Days Qualified as Estimates	10
Number of Days Qualified as Unreliable Estimates	0

Narrative

December had 15 days in which data was not reported due to ice impacts. A slope-conveyance model was used to estimate high flows for 10 days during the period from January 2 through March 4.

Modeled Discharge

Table 6. Model Summary

Model Type (Slope conveyance, other, none)	Slope conveyance
Range of Modeled Stage (feet)	6.00 ft to 8.80 ft
Range of Modeled Discharge (cfs)	693 cfs to 2110 cfs
Valid Period for Model	10/1/06 to 9/30/07
Model Confidence	4%

Surveys

Table 7. Survey Type and Date (station, cross section, longitudinal)

Type	Date

Activities Completed

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