

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

STATION ID: 32A120
STATION NAME: Walla Walla River at Pepper Bridge
WATER YEAR: WY 2012
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Introduction

Watershed Description

The Walla Walla River is a tributary of the Columbia River, joining the Columbia River just above Wallula Gap in southeastern Washington. The headwaters of the Walla Walla River lie in the Blue Mountains of northeastern Oregon. Ninety-five percent of the watershed above this station lies within the state of Oregon. The Walla Walla River supports populations of spring Chinook salmon, summer steelhead, and bull trout. Land use in the watershed is mostly dry land and irrigated agriculture.

Gage Location

The station is located on the left bank, downstream of the Pepper Bridge Road crossing, near the Oregon/Washington state line. It is located at river mile 39.6.

Table 1.

Drainage Area (square miles)	38.7 (Streamstats)
Latitude (degrees, minutes, seconds)	46° 00' 09" N
Longitude (degrees, minutes, seconds)	118° 22' 56" W

Discharge

Table 2. Discharge Statistics.

Mean Annual Discharge (cfs)	148
Median Annual Discharge (cfs)	89
Maximum Daily Mean Discharge (cfs)	879
Minimum Daily Mean Discharge (cfs)	27
Maximum Instantaneous Discharge (cfs)	924
Minimum Instantaneous Discharge (cfs)	25
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	298
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	32
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

Statistics in the above table only cover the period 10/01/2011 to 3/5/2012. Monitoring by the Washington State Department of Ecology (Ecology) was discontinued on 3/5/2012. Operation of this station was transferred to the Walla Walla Basin Watershed Council.

Error Analysis

Table 3. Error Analysis Summary.

Logger Drift Error (% of discharge)	1.2
Weighted Rating Error (% of discharge)	9.6
Total Potential Error (% of discharge)	10.8

Rating Table(s)

Table 4. Rating Table Summary

Rating Table No.	15		
Period of Ratings	10/1/11 to 3/5/12		
Range of Ratings (cfs)	6.3 to 2350		
No. of Defining Measurements	13		
Rating Error (%)	9.6		

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

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

Narrative

Four discharge measurements were taken between 10/1/11 and 3/5/12, ranging from 33 to 287 cfs.

Stage Record

Table 5. Stage Record Summary

Minimum Recorded Stage (feet)	2.85
Maximum Recorded Stage (feet)	5.83
Range of Recorded Stage (feet)	2.98
Number of Un-Reported Days	0
Number of Days Qualified as Estimates	0
Number of Days Qualified as Unreliable Estimates	0

Narrative

Statistics in the above table cover only the period 10/01/2011 to 3/5/2012. In situations when the staff gage was underwater, the staff reading was calculated based on a regression between known staff readings and a secondary gage index. The secondary gage index at this site is a tapedown from a reference point on the bridge.

Modeled Discharge

Table 6. Model Summary

Model Type (Slope conveyance, other, none)	Slope Conveyance
Range of Modeled Stage (feet)	6.5 to 8.5
Range of Modeled Discharge (cfs)	1190 to 2350
Valid Period for Model	10/1/11 to 3/5/12
Model Confidence	9.6%

Surveys

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

Type	Date

Activities Completed

Due to budget cuts, monitoring by Ecology at this station was discontinued on 3/5/2012. The operation of this station was taken over by the Walla Walla Basin Watershed Council.