

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

STATION ID: 32B100
STATION NAME: Touchet River at Bolles Road
WATER YEAR: WY 2008
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Introduction

Watershed Description

The Touchet River, the largest tributary of the Walla Walla River, flows out of the Blue Mountains in southeast Washington. Spring Chinook, steelhead, and bull trout are present within the watershed. Land use is primarily agricultural, consisting of dryland crops and irrigated farming in the lower portions.

Gage Location

This gage is located on the right bank, downstream of the Highway 125 Bridge, 3.5 miles west of the town of Waitsburg. It is located at river mile 40.4.

Table 1.

Drainage Area (square miles)	357 (Streamstats)
Latitude (degrees, minutes, seconds)	46° 16' 28" N
Longitude (degrees, minutes, seconds)	118° 13' 16" W

Discharge

Table 2. Discharge Statistics.

Mean Annual Discharge (cfs)	251
Median Annual Discharge (cfs)	173
Maximum Daily Mean Discharge (cfs)	1070
Minimum Daily Mean Discharge (cfs)	40
Maximum Instantaneous Discharge (cfs)	1140
Minimum Instantaneous Discharge (cfs)	38
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	572
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	48
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

Nine discharge measurements were taken throughout the water year, ranging from 47 to 563 cfs.

Error Analysis

Table 3. Error Analysis Summary.

Logger Drift Error (% of discharge)	1.4
Weighted Rating Error (% of discharge)	9.2
Total Potential Error (% of discharge)	10.6

Rating Table(s)

Table 4. Rating Table Summary

Rating Table No.	2	3	4
Period of Ratings	01/17/07 to 10/26/07	10/27/07 to 5/12/08	5/13/08 to 1/11/09
Range of Ratings (cfs)	17 to 7780	25 to 7780	24 to 7780
No. of Defining Measurements	11	15	15
Rating Error (%)	7.7	10.4	7.7

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

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

Narrative

WY 2008 began under rating #2. In mid November, the rating shifted to #3. This was caused by a late-fall precipitation event that resulted in channel fill. Rating #4 began in mid-May. The cause of this shift was channel scour caused by seasonal run-off.

Stage Record

Table 5. Stage Record Summary

Minimum Recorded Stage (feet)	2.94
Maximum Recorded Stage (feet)	5.25
Range of Recorded Stage (feet)	2.31
Number of Un-Reported Days	8
Number of Days Qualified as Estimates	3
Number of Days Qualified as Unreliable Estimates	0

Narrative

Unreported days were due to ice-impacted data. The estimated days were three days following the ice-impacted period. These were qualified as estimates due to the uncertainty following an ice-impacted period without a verifiable manual staff reading. The staff gage was underwater a few times during the water year. These recordings were calculated based on a regression between the staff gage and a secondary gage index, in this case a tapedown from the bridge.

Modeled Discharge

Table 6. Model Summary

Model Type (Slope conveyance, other, none)	Slope Conveyance
Range of Modeled Stage (feet)	6.0 to 9.48
Range of Modeled Discharge (cfs)	1800 to 7784
Valid Period for Model	WY 2008
Model Confidence	2.1%

Surveys

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

Type	Date
X-Sec., Longitudinal	09/27/2011

Activities Completed

No significant activities were completed.