

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

**STATION ID:** 45K090  
**STATION NAME:** White River near Plain, WA  
**WATER YEAR:** 2012  
**AUTHOR:** Tyler W. Burks

**Introduction**

Watershed Description

White River originates in the glaciers and snowfields of prominent peaks and ridgelines (White Mountain, Tenpeak Mountain, High Pass, and Buck Mountain) located due south of Glacier Peak, and flows southeast into Lake Wenatchee. The watershed is bound on the east by Chiwawa Ridge and the west by Wenatchee Ridge. Land cover above the gage consists of predominantly coniferous forest, but also includes riparian woodlands, alpine shrubland, montane grassland, and bedrock/talus slopes. Mean annual precipitation across the watershed above this gage location is 107 inches (U.S. Weather Bureau, 1965).

Gage Location

The telemetered stream gaging station on the White River near Plain was installed on September 19, 2002. The gage is located off Forest Service Road 6400, at the Forest Service Road 6434 (Sears Creek) bridge on the left bank. This location is approximately seven river miles upstream from Lake Wenatchee.

Table 1.

Drainage Area (square miles)	149 (USGS, 2014)
Latitude (degrees, minutes, seconds)	47°52'28" N
Longitude (degrees, minutes, seconds)	120°52'15" W

**Discharge**

Table 2. Discharge Statistics.

Mean Annual Discharge (cfs)	924
Median Annual Discharge (cfs)	296
Maximum Daily Mean Discharge (cfs)	4,600
Minimum Daily Mean Discharge (cfs)	142
Maximum Instantaneous Discharge (cfs)	5,290
Minimum Instantaneous Discharge (cfs)	127
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	2,630
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	198
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**

Seven discharge measurements were taken, ranging from 199 to 3,910 cfs. Snowmelt runoff began early April, and reached its peak on July 10, 2012, after a period of warm weather. The minimum discharge was recorded on December 22, 2011, when base flow dropped during a cold spell.

**Error Analysis**

Table 3. Error Analysis Summary.

Logger Drift Error (% of discharge)	0.30%
Weighted Rating Error (% of discharge)	15.2%
Total Potential Error (% of discharge)	15.5%

**Rating Table(s)**

Table 4. Rating Table Summary

Rating Table No.	#601		
Period of Ratings	10/01/2011-09/30/2012		
Range of Ratings (cfs)	52.8-12,600		
No. of Defining Measurements	26		
Rating Error (%)	15.2%		

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

The water year began with Table 601, carrying over from the previous water year, and it remained valid for the duration.

## Stage Record

Table 5. Stage Record Summary

Minimum Recorded Stage (feet)	2.88
Maximum Recorded Stage (feet)	12.01
Range of Recorded Stage (feet)	9.13
Number of Un-Reported Days	20
Number of Days Qualified as Estimates	42
Number of Days Qualified as Unreliable Estimates	0

## Narrative

Due to the presence of strong sensitivity drift between the logger and the PGI observations, the following equation was applied to the stage record for this water year:  $-0.035X+0.099$   $r^2=-0.99$ . Unreported days were due to an ice-impacted channel in which the stage-discharge relationship was not valid. The stage record was qualified as an estimate for 42 days because they followed periods of ice-impacted data prior to the first observation of an ice free channel.

## Modeled Discharge

Table 6. Model Summary

Model Type (Slope conveyance, other, none)	None
Range of Modeled Stage (feet)	---
Range of Modeled Discharge (cfs)	---
Valid Period for Model	---
Model Confidence	---

## Surveys

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

Type	Date
None	

## Activities Completed

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