

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

**STATION ID:** 45F070  
**STATION NAME:** Peshastin Creek at Green Bridge Road  
**WATER YEAR:** 2005  
**AUTHOR:** Tyler W. Burks

**Introduction**

Watershed Description

Peshastin Creek originates in the snowfields of the eastern slopes of the central Cascade Mountain range and flows into the Wenatchee River at river mile 17. The watershed is bounded by both the Stuart Range (Mount Stuart: 9,415 ft) and the Wenatchee Mountains. Land cover above the gage consists of predominantly coniferous forest but also includes alpine shrubland, montane grassland, bedrock/talus slopes, and riparian woodlands. A large portion of the lower watershed is used for agricultural production (tree fruit). Mean annual precipitation across the watershed above this gage location is 36 inches (U.S. Weather Bureau, 1965).

Gage Location

The telemetered stream gaging station on at Peshastin Creek at Green Bridge Road was installed on September 20, 2002. The gage is located at the Green Bridge Road bridge on the right bank, approximately 1.4 miles upstream of the mouth.

Table 1.

Drainage Area (square miles)	134 (USGS, 2013)
Latitude (degrees, minutes, seconds)	47°33'09" N
Longitude (degrees, minutes, seconds)	120°36'13" W

**Discharge**

Table 2. Discharge Statistics.

Mean Annual Discharge (cfs)	111
Median Annual Discharge (cfs)	83
Maximum Daily Mean Discharge (cfs)	1320
Minimum Daily Mean Discharge (cfs)	0.50
Maximum Instantaneous Discharge (cfs)	1830
Minimum Instantaneous Discharge (cfs)	0.50
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	239
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	9.6
Number of Days Discharge is Greater Than Range of Ratings	0
Number of Days Discharge is Less Than Range of Ratings	13

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

**Narrative**

Four discharge measurements were taken, ranging from 1.09 to 126 cfs. A drought was declared statewide in March of 2005. In the Wenatchee River watershed, precipitation and snowpack were below normal. Snowpack was further reduced by notable rain-on-snow events during the winter months. As a result, the duration and magnitude of spring runoff was diminished. Discharge was influenced by upstream seasonal irrigation operations, most notably during the month of September.

**Error Analysis**

Table 3. Error Analysis Summary.

Logger Drift Error (% of discharge)	---
Weighted Rating Error (% of discharge)	8.2%
Total Potential Error (% of discharge)	---

**Rating Table(s)**

Table 4. Rating Table Summary

Rating Table No.	#4		
Period of Ratings	10/01/2004-05/14/2006		
Range of Ratings (cfs)	0.54-2870		
No. of Defining Measurements	9		
Rating Error (%)	8.2%		

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

Rating Table #4 was valid for the duration of this water year. This table was created using BARC beginning at the point of the first unreviewed rating. This rating shares some ancestry with ratings 1 through 3, but with the benefit of additional measurements and enhanced rating-development techniques.

## Stage Record

Table 5. Stage Record Summary

Minimum Recorded Stage (feet)	0.70
Maximum Recorded Stage (feet)	3.93
Range of Recorded Stage (feet)	3.23
Number of Un-Reported Days	16
Number of Days Qualified as Estimates	12
Number of Days Qualified as Unreliable Estimates	0

## Narrative

The maximum valid stage was recorded on January 18, 2005 during a winter storm event. The minimum stage was recorded on September 9, 2005 during baseflow conditions. Unreported days were due to an ice-impacted channel. The stage record is considered a reliable estimate for 12 days during the water year. These days occurred after the period of ice-impacted data, prior to the first ice-free site visit. The staff gage was reported damaged on 1/30/2005 and repaired by straightening on 6/16/2005. During damage, the staff gage observations were reliably calculated from a regression of historical R.P. observations.

## Modeled Discharge

Table 6. Model Summary

Model Type (Slope conveyance, other, 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
N/A	N/A

## Activities Completed

The staff gage was damaged during the winter months, due to high flow. It was replaced without a survey.