

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

**STATION ID:** 35D100  
**STATION NAME:** Asotin Creek above George Creek  
**WATER YEAR:** 2014  
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**Introduction**

Watershed Description

Asotin Creek is a tributary of the Snake River, flowing through the town of Asotin in southeastern Washington. The area is semi-arid, with land used for pasture/rangeland, forest, and cropland.

Asotin Creek contains summer steelhead, spring Chinook, and bull trout. All of these are listed as threatened under the Endangered Species Act.

Gage Location

The Asotin Creek above George Creek stream gage is located on the left bank, one mile above the confluence with George Creek.

Table 1. Basin Area and Legal Description

Drainage Area (square miles)	172 (Streamstats)
Latitude (degrees, minutes, seconds)	46° 19' 23" N
Longitude (degrees, minutes, seconds)	117° 08' 06" W

Table 2. Discharge Statistics.

Mean Annual Discharge (cfs)	76
Median Annual Discharge (cfs)	43
Maximum Daily Mean Discharge (cfs)	378
Minimum Daily Mean Discharge (cfs)	29
Maximum Instantaneous Discharge (cfs)	504
Minimum Instantaneous Discharge (cfs)	25
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	157
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	31
Number of Days Discharge is Greater Than Range of Ratings	0
Number of Days Discharge is Less Than Range of Ratings	0
Number of Un-Reported Days	15
Number of Days Qualified as Estimates	9
Number of Modeled Days	100

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

Table 2 Discussion (Discharge Statistics)

The unreported days are a result of ice-impacted data.

Nine discharge measurements were taken throughout the water year, ranging from 31 to 148 cfs.

Table 3. Error Analysis Summary.

Potential Logger Drift Error (% of discharge)	1.4
Potential Weighted Rating Error (% of discharge)	14.8
Total Potential Error (% of discharge)	16.2

Table 3 Discussion (Error Analysis)

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Table 4. Stage Record Summary

Minimum Recorded Stage (feet)	0.93
Maximum Recorded Stage (feet)	3.10
Range of Recorded Stage (feet)	2.17

Table 4 Discussion (Stage Record)

The staff gage was damaged during the December flow event. A secondary gage index (SGI) was used until the staff gage was repaired. The SGI at this site is laser level, measured from a staff gage relative point.

Table 5. Rating Table Summary

Rating Table No.	7	8	9
Period of Ratings	10/1/13 to 11/8/13	10/1/13 to 12/12/13	12/3/13 to 3/6/14
Range of Ratings (cfs)	16.0 to 524	16.0 to 524	20 to 524
No. of Defining Measurements	11	13	3
Rating Error (%)	13.2	13.3	20.2

Rating Table No.	801		
Period of Ratings	3/5/14 to 9/30/14		
Range of Ratings (cfs)	16.0 to 524		
No. of Defining Measurements	13		
Rating Error (%)	13.3		

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

Table 5 Discussion (Rating Tables)

In early December, there was significant ice buildup in the channel. This period was followed by a warm precipitation event. The increased flow with ice breakup led to a tree falling into channel immediately downstream of the gage. This downed tree led to channel fill, changing the stage discharge relationship. This resulted in a shift from rating #8 to rating #9.

The following rating change, in March was caused by seasonal runoff.

Table 6. Model Summary

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

Table 6 Discussion (Modeled Data)

No model was used during the water year.
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Table 7. Survey Type and Date (station, cross section, longitudinal)

Type	Date
n/a	n/a

Table 7 Discussion (Surveys)

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Activities Completed

The staff gage was knocked over during the flow event in December. It was repaired in early September.
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## Appendix