WASHINGTON DEPARTMENT OF ECOLOGY

ENVIRONMENTAL ASSESSMENT PROGRAM

FRESHWATER MONITORING UNIT

STREAM DISCHARGE TECHNICAL NOTES

STATION ID: 25E060

STATION NAME: Abernathy Creek

WATER YEAR: 2006

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Introduction

Watershed Description

Abernathy Creek is a right bank tributary to the Columbia River located approximately 9 miles west of Longview, Washington. Historically, the stream supported runs of coho and chinook salmon, steelhead and cutthroat trout. Land use is primarily commercial forestry with state and private holdings. Flow basalt with interbedded sandstone defines the underlying geology. Precipitation varies with elevation but typically ranges between 60 and 70 inches annually. Hydrology is almost entirely driven by rainfall.

Gage Location

The gage is on the right bank near the downstream side of the Slide Creek Road Bridge.

Table 1.

Drainage Area (square miles)	20.3
Latitude (degrees, minutes, seconds)	46 12 20.7 north
Longitude (degrees, minutes, seconds)	123 09 14.0 west

Discharge

Table 2. Discharge Statistics.

Mean Annual Discharge (cfs)	11
Median Annual Discharge (cfs)	9.2
Maximum Daily Mean Discharge (cfs)	26
Minimum Daily Mean Discharge (cfs)	7.1
Maximum Instantaneous Discharge (cfs)	43
Minimum Instantaneous Discharge (cfs)	6.2
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	19
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	7.4
Percent of Time Discharge is Greater Than Range of Ratings	0
Percent of Time 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

The station was moved to current its location on 6/28/2006. All the statistics noted abover were generated for the period from 6/28/2006 to 10/01/2006. The absence of fall and winter discharge values drastically reduced all calculated metrics. This location appears to be much more favorable for generating accurate discharge predictions.

Error Analysis

Table 3. Error Analysis Summary.

Logger Drift Error (% of discharge)	1.9
Weighted Rating Error (% of discharge)	9.9
Total Potential Error (% of discharge)	11.8

Rating Table(s)

Table 4. Rating Table Summary

Rating Table No.	3			
Period of Ratings	6/28-10/01			
Range of Ratings (cfs)	3.8-379			
No. of Defining Measurements	6			
Rating Error (%)	9.9			

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

Narrative

Rating table 3 is the first rating constructed since the station was moved to its present location at the Slide Creek road bridge. Rating 3 was in effect for all of Water Year 2006.

Stage Record

Table 5. Stage Record Summary

Minimum Recorded Stage (feet)	4.18
Maximum Recorded Stage (feet)	4.74
Range of Recorded Stage (feet)	0.56
Number of Un-Reported Days	0
Number of Days Qualified as Estimates	0
Number of Days Qualified as Unreliable Estimates	0

Narrative

The stage record for WY2006 is complete.

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
Station	10/04/2006

Activities Completed

Relocating the station to the current location should improve the quality of the discharge record.