DEPARTMENT OF ECOLOGY
State of Washington

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From: Arthur Buchan
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Date: February 10, 2026

RE: Fish Consumption Rate for BNSF Track Switching Facility (aka Wishram Yard) FSID # 1625461, CSID #230.

Background and Scope

On February 04, 2026 the Washington State Department of Ecology (Ecology) received a request from the Yakama Nation Fisheries, summarized that *"Ecology use, as a starting point, the ninety-fifth percentile of the Tulalip, aldult, all sources value of 268 grams per day (January 2013 Fish Consumption Rates Technical Support Document, version 2.0, publication no. 12-09-058), in lieu of a Yakama Nation-specific FCR in applicable media."* (Yakama Nation, 2026)

Ecology Response: In the document Fish Consumption Rates: Technical Support Document – A Review of Data and Information about Fish Consumption in Washington (Version 2.0 Final) (Ecology, 2013), Section 4.3.1: Columbia River Inter-Tribal Fish Commission survey: the Umatilla, Nez Perce, Yakama, and Warm Springs Tribes of the Columbia River Basin describes the survey of adult tribal members who lived on on near the Yakama, Warm Springs, Umatilla, or Nez Perce Reservations, and was conducted in the fall and winter of 1991-1992. Results of the survey indicate a 90th Percentile of 130.0 grams/day, and a 95th Percentile of 194.0 grams/day (see Table 1).

Table 1: Adult Fish Consumption Rates by Species Group and Source, Consumers Only (Includes Umatilla, Nez Perce, Yakama, and Warm Springs Tribes of the Coumbia River Basin).

Population Tribal	Species Group	Harvest Source of Fish	Descriptive Statistics (g/day)				
			50th Percentile	Mean	75th Percentile	90th Percentile	95th Percentile
The 4 Tribes Affiliated With The Columbia River Inter-Tribal Fish Commission	All finfish	all	40.5	63.2	64.8	130.0	194.0
	Non-anadromous	all	20.9	32.6	33.4	67.0	99.9
	Anadromous	all	19.6	30.6	31.4	63.1	94.1
	All finfish	Columbia River Basin	35.6	55.6	57.0	114	171
	Non-anadromous	Columbia River Basin	18.4	28.6	29.4	58.9	87.9
	Anadromous	Columbia River Basin	17.3	27.0	27.7	55.5	82.8

As a result of the provided background information and Ecology publication (Ecology, 2025), Ecology would propose using the 90th percentile (all finfish) category of 130.0 grams/day Fish Consumption Rate for sites with Yakama Nation Tribal Interest (including the above-mentioned project).

Please Note: The Sediment Cleanup Users Manual, Appendix E: Table E-2 does include evaluation criteria Ecology will consider when reviewing and approving a new fish dietary survey to establish a fish consumption rate (see Table 2).

Table 2: Appendix E: Table E-2 from the Sediment Cleanup Users Manual (Ecology 2025): Evaluation criteria Ecology will consider when reviewing and approving a new fish dietary survey to establish a fish consumption rate.

Criteria	Description
Timing of interviews	To adequately capture fish consumption, a survey should include an appropriate timeframe that minimizes the effect of recall bias yet captures dietary variations.[a]
Training of interviewers	Interviewers should be trained for the study protocol to avoid potential interviewer bias. Interviewers must adhere to the questionnaire wording and format and be culturally sensitive when interacting with the study participants. If possible, interviews should be conducted by members of the target population to avoid adverse impacts associated with cultural differences, language barriers, and participation refusals.[a]
Consideration of all fish species	The types of fish consumed can be highly variable depending on seasonal and geographic availability, market prices, and cultural preferences. Surveys should identify and record each type of fish consumed and any unique preparation methods.[a]
Identification of the source	If known, either the water body where the fish was caught or the purchase location (for example, grocery store or fish market) should be identified. To improve exposure assessment, both locally caught fish and store bought fish should be included in fish consumption rate estimates. This distinction allows the risk assessor to better account for regional and seasonal variations in fish consumption estimates.[b]
Random selection of participants, sample size, and statistical analysis	During the planning phase, statistical analysis helps identify the ideal sample size and how to randomly select participants. This analysis helps minimize bias and sampling error and ensures statistical rigor. After the data have been collected, sound descriptive statistical analysis should ensure that the data are presented accurately. The range of data should be presented with confidence intervals and appropriate distribution values. Weighting schemes should be clearly described to apply survey results to populations of interest. Statistical treatment of perceived outliers should be discussed.
Quality assurance and quality control	The study design should include appropriate quality assurance and quality controls in the planning and execution of the survey. For example, quality control measures would include checking questionnaires for completeness and proper entry of recorded responses, verifying correct data entry, and checking the manual coding operations and comparisons of results and error rates. This reduces bias and random error, improving accuracy.[c]
Accuracy and precision	The study design can affect the overall accuracy of the study. Accuracy can be split into five components: 1) reliability (the variability or repeatability of the response); 2) validity (the ability of the respondent to provide the correct answer); 3) measurement errors (which are associated with the interviewer, the respondent, the questionnaire, and the mode of data collection); 4) bias (the consistent overestimation or underestimation due to survey design and sample selection); and 5) random errors.[c]

References:

Confederated Tribes and Bands of the Yakama Nation. 2026. Memorandum to File: *Screening and Cleanup Level Calculations at the BNSF Track Switching Facility (Facility Site ID: 1625461, Cleanup Site ID: 230).*

Ecology. 2025. Sediment Cleanup User's Manual (SCUM). Publication No. 12-09-057.