



## MTCA Science Advisory Board 14 December 2007 Meeting Summary

### Location

University of Washington, Graham Visitor Center, 2300 Arboretum Dr., Seattle, WA

### SAB Members present

Dr. Bruce Duncan, Acting Chair  
Dr. Elaine Faustman  
Dr. Hank Landau  
Dr. Marjorie Norman  
Dr. Mike Riley

### Ecology staff present

Dave Bradley  
Martha Hankins  
Dawn Hooper  
Peter Kmet  
Craig R. McCormack

### Invited speakers

Larry Dunn, Lower Elwha Klallam Tribal representative  
Bill Beckley, Ridolfi Inc., technical consultant to the Lower Elwha Klallam Tribe  
Lon Kissinger, EPA-Region 10

### Audience members

Bill Beck	Russ Busch	Joan Hardy
Marcia Bailey	Steve Ellis	David McBride
Tom Burbacher	Greg Glass	Linda Mortensen

## Meeting Summary

The meeting started at 9:20 a.m. Dawn Hooper gave a summary of the agenda. Board members had no comments on notes from the previous meeting. Hank Landau stepped down as chair. Bruce Duncan graciously accepted the position of interim chair and welcomed attendees. Board Members and Ecology staff acknowledged Dr. Landau's many years of service as the Chairperson of the SAB with a standing ovation.

Pete Kmet provided a legislative update, briefing the board on 2008 agency request legislation establishing a cleanup settlement account. Hank Landau asked whether legislation is proposed to

address an adverse court decision regarding Private Rights of Action. Pete noted that Ecology does not plan to introduce a bill in this session.

### **Topic I: The Lower Elwha Klallam Tribal Fish Consumption Rate Proposal**

Dave Bradley provided an introduction and overview of changes to the MTCA exposure parameters that have been proposed by the Lower Elwha Klallam Tribe. The Tribe recommends that Ecology and Rayonier use these parameters when preparing the human health risk assessment for the former mill site in Port Angeles. He introduced invited speakers, Lon Kissinger, presenting the EPA-Region 10 Framework,<sup>1</sup> Larry Dunn, representing the Lower Elwha Klallam Tribe; and, Bill (William) Beckley, Ridolfi Inc., technical consultant to the Lower Elwha Klallam Tribe.

Ecology provided SAB members with copies of the EPA-Region 10 Framework and the two reports submitted to Ecology by the Lower Elwha Klallam Tribe (the Tribe).<sup>2</sup> The Tribe derived a fish consumption rate using the EPA Region 10 Framework and Suquamish tribal survey data. The Tribe used the Suquamish Tribal data to derive their Tribal specific fish consumption rate because the Suquamish Tribe has comparable high quality harvestable shellfish habitat and comparable fish consuming habits and rates.

Dr. Landau asked if the questions before the SAB pertain to a site specific fish consumption rate; not general MTCA or statewide rates. Dave Bradley responded that this is a site-specific request for review and that this site specific question is before the SAB because the MTCA Cleanup Regulation requires SAB input when certain default exposure parameters, like the fish consumption rate, are changed. Ecology does not believe the current MTCA default fish consumption rate of 54 grams/day (the effective rate is 27 grams/day using a fish diet fraction of 0.5) is representative of the Tribe's fish consumption rate. The current rate does not result in cleanup levels under MTCA that protect Tribal members who eat lots of fish.

This issue has possible implications for other sites. Dave Bradley reviewed the specific questions being presented and discussion ensued about how the questions were worded. Bruce Duncan noted that questions before the SAB are designed to stimulate discussion and the SAB should apply their usual level of enquiry to "deconstruct" the questions proposed by Ecology.

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<sup>1</sup> Framework for Selecting and using Tribal Fish and Shellfish Consumption Rates for Risk-Based Decision Making at CERCLA and RCRA Cleanup Sites in Puget Sound and the Strait of Georgia. Working Document: To Be Applied in Consultation with Tribal Governments on a Site-Specific Basis. Revision 00, Office of Environmental Cleanup, Office of Air, Waste and Toxics, and Office of Environmental Assessment, United State Environmental Protection Agency, Region 10. August 2007.

<sup>2</sup> (**Report # 1**) Local Sea Food and Lower Elwha Klallam Tribal Health, May 30, 2007, Prepared by the Lower Elwha Klallam Tribe submitted under Frances G. Charles signature, Chairperson, Lower Elwha Klallam Tribe. (**Report # 2**) Lower Elwha Klallam Tribe Fish Consumption and the EPA Region 10 Framework, October 17, 2007, Written by Larry Dunn and William Beckley, submitted under Frances G. Charles signature, Chairperson, Lower Elwha Klallam Tribe and Larry Dunn, LEKT, Rayonier Project Coordinator.

## **Presentation 1: Lon Kissenger, EPA Region 10**

Lon Kissenger presented the EPA Region 10 framework for risk assessment of tribal fish consumption rates. He noted the framework was finalized in August 2007 and recognized the contributions of Dr. Marcia Bailey and several other EPA staff. The framework is a “living document,” and provides a starting point for EPA working with the tribes. A key point is that CERCLA must address site specific risk. While cultural impacts are not quantitatively addressed by the framework, the framework provides for the use of a narrative by a tribe to address cultural issues. Data in the framework comes from surveys of consumption habits of the Suquamish and Tulalip tribes. There is some reluctance by tribes to survey for their current fish consumption information as tribes would prefer numbers indicative of past and potential future consumption rates, not current suppressed rates.

It is EPA policy that quality and quantity of shellfish habitat determines which seafood consumption survey to use to derive the Tribal rate.

- High quality/quantity shellfish habitat leads to use the Suquamish consumption rate of 767 g/day
- Alternate choice – low quality/quantity shellfish habitat – leads to the use of Tulalip consumption rate of 194 g/day

## **Presentation 2. Larry Dunn, Lower Elwah Klallam Tribe**

Larry Dunn represents the Lower Elwah Klallam Tribe, of which his wife is a member. He gave a history of the Tribe with an emphasis on diet and fishing. Historic lands and fishing areas for the Tribe are along Puget Sound around what is now Port Angeles. Historical and anthropological evidence document that the Elwha Band of the Klallam Tribe (Elwha Klallam Tribal People) lived in the Puget Sound area and Strait of Juan de Fuca for thousands of years. The Tse-whit-zen village, near what is now Port Angeles, dates to over 2,500 years. Many tribal members continue to live on tribal lands for their entire lives, and homes return to the Tribe when a member dies.

Because of lost habitat and cultural shifts, the Tribe currently consumes considerably less than historic amounts of fish and shellfish. As recently as 100 years ago, the Tribe took nearly all their food from the Sound. Interviews with Tribal elders provide a description of a diet composed almost exclusively of fish and shellfish, including sea slugs and urchins. Based on interviews, the historical fish consumption rate for the Lower Elwha Klallam people is estimated to range from 900 to 1500 grams/day of fish/shellfish. Limited amounts of birds, berries, and roots supplemented their diet.

Today the Port Angeles harbor is recovering. The Tribe wants to increase fish consumption among members, in part to combat diet-related diseases. One hundred years has been insufficient time for the Klallam people to adapt to a European/Western diet. They believe adverse health effects, including hypertension, obesity, and depression, are consequences of their rapidly westernized (high carbohydrate) diet. No suitable dietary alternatives are available to substitute for their traditional diet.

Larry noted that many tribal members live on the reservation for life. The 70 years represents an upper bound of the lifetime. He also noted that even if tribal members do not live on the reservation, they tend to fish in the area because this is one of the few areas of treaty protected rights and with good habitat.

The Tribe estimates the number of calories needed to maintain a 154 lb adult equates to between 900 and 1476 g of fish per day.

### **Presentation 3. Bill Beckley, Ridolfi Consultants**

Bill Beckley described the process for deriving the Lower Elwha Klallam Tribal fish consumption rates for the Port Angeles site risk assessment. Available Puget Sound tribal fish consumption surveys (Tulalip and Suquamish surveys) were carefully reviewed to help determine appropriate shellfish habitat and tribal fish consumption. Personal tribal interviews were performed using fish models representative of fish meals eaten by tribal members to estimate the amount of fish consumed. Fish consumption rate were adjusted based on percent of fish obtained from Puget Sound by species group, hence, the rates are for current tribal fish consumption and are not based on historical Tribal records.

The EPA framework was applied to the Lower Elwha Klallam Tribe using the Suquamish tribe fish consumption rate. Use of this rate was based in part on an informal survey 5 years ago of Lower Elwha Klallam Tribe members. A letter documenting this survey was sent to Ecology. (Larry Dunn noted that five years ago the Tribe still had salmon; this last year less than 30 salmon returned to the Lower Elwha River).

While no formal fish consumption survey was done, at one of the meetings with tribal adults, dinner plates were put out to illustrate the amount of fish in both the Tulalip and LEKT studies and members were queried as to which was more representative of their meals. (Ecology staff asked the tribe for a copy of a letter describing this survey.) Salmon are excluded from the recommended Tribal fish consumption rate because the Tribe assume that salmon bioaccumulate little site-specific chemical contamination and there are insufficient data to attribute the contaminate body burden of the salmon to site-specific contaminants. Board members discussed contamination of the fish and shellfish, especially salmon. Most but not all salmon migrate, and thus are exposed to site-related contamination over only a short portion of their life. In addition, salmon populations have recently plummeted.

The Lower Elwha Klallam Tribe recommends that Ecology:

- Use the EPA-Region 10 Framework to derive a Tribal-specific fish consumption rate
- Use the Suquamish Tribal survey data to derive a Lower Elwha Klallam Tribal fish consumption rate (**583 grams/day**)
- Exclude salmon from the Tribal rate
- Use a fish diet fraction of **100%**
- Use a lifetime exposure duration of **70 years**
- Use the adult body weight from the Suquamish Tribal survey (**79 kg**)

## Audience Comments

Joan Hardy, WA Department of Health. Aquatic life issues should be addressed, where fish/shellfish are harvested may not be precisely known, and there is seasonal variation for harvesting and consuming fish. She noted that non-consumers were included in the EPA national study the 6.5 gm/day is based on, which is why the number is relatively low.

David McBride, WA Department of Health. Current fish consumption rates for the Puget Sound are depressed (the suppression effect) due, in part, to the public or Tribal perception that fish are contaminated. There are various fish health advisories issued by the Department of Health.

## SAB Discussion

Fish consumption comparison

	All sources, g/day	Puget Sound, g/day	Without Salmon, g/day
Suquamish Tribe	796	767	583
Tulalip Tribe	243	194	97.6
US Nat'l survey of food	216		
LEKT proposed			583

(This table summarizes data presented to the SAB and is provided for convenience only.)

Dr. Faustman stressed the importance of being specific about what a number represents and means. She asked for clarification on the National Continuing Survey of Food, in order to correctly understand what the average national fish consumption rate represents.

Board members raised a number of questions, including:

- Has the EPA framework been accepted by the tribes? (EPA responded by indicating that some tribes are unhappy with parts of the framework)
- Is this cleanup CERCLA based or MTCA based and what are the differences in level of protection between the two? Ecology staff responded that under an agreement with Rayonier, Ecology and the Tribe, this cleanup must comply with both CERCLA and MTCA.
- Are tribal recommendations consistent with recent court cases? For example, the “culverts” case.<sup>3</sup>
- Historical fish consumption rates for the tribe differs from current fish consumption rates due to both degradation of fish and shellfish habitat and the availability of alternative food sources. Given the availability of contemporary food sources, how much fish and shell fish would tribal members actually consume?
- Is it Ecology’s intent to apply this fish consumption rate to the tribes’ entire usual & accustom fishing areas (which extends to the Duwamish River)? Ecology responded

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<sup>3</sup> On August 22, 2007, the U.S. District Court, Western District of Washington, ruled that by building or operating culverts that blocked or hindered fish passages and diminished fish runs, the state was acting in violation of the Supremacy Clause, which prohibits the state from taking actions that conflict with federal treaty obligations, here the Tribes’ rights under the Stevens Treaties. Order on Cross Motions for Summary Judgment, Case No. CV 9213RSM, Document No. 388 (8/22/07) (“SJ Order”), at 12, as amended by Document No. 392 (8/23/07).

by indicating this is related to the cleanup of the former Rayonier paper mill in Port Angeles, not the tribes entire U&A fishing area.

- Fish and shellfish habitat degradation has multiple causes. It can be caused by:
  - humans due to chemical contamination
  - humans due to physical changes
  - natural phenomena

The form of degradation is of concern. It was noted that the Tulalip Tribe does not have access to high quality shellfish beds so the Lower Elwha Klallam Tribe relied on Suquamish survey data for establishing their consumption rate recommendation.

- A copy of an oyster larvae tests done on the sediments was requested by the Board.
- How much tribal population could be supported by a restored fishery? Larry Dunn noted that historically there were 4 tribal villages in or near Port Angeles.
- Does Ecology intend to address just subsistence fisherman or the tribe as a whole?

Dr Faustman noted that the national survey, which is the basis for the 6.5 gm/day used in the EPA standards, includes the non fish eating public. Oregon is considering removing non consumers to derive a fish consumption rate.

Board members considered the questions before the Board. They requested that Ecology reframe the questions being presented to the SAB in terms of the background and context of the Lower Elwha Klallam Tribal proposal.

Board members requested that Ecology present questions in a stepwise approach, starting from the position that for the Lower Elwha Klallam Tribe the MTCA defaults are inappropriate.

1. Provide rationale to support changing from MTCA defaults
2. Establish how the EPA framework is being used
3. Consider scientific evidence, including the tribal fish consumption survey, used to derive the proposed fish consumption rate
4. Identify factors that account for changing the fish diet fraction
5. Summarize the studies on which the framework is based

## **Topic 2: MTCA 5 year review**

Pete Kmet (Ecology) provided an overview of the list of potential issues (see handouts) and requested the SAB provide input as to their relative priority. He introduced Martha Hankins (Ecology) who will be coordinating the review process. Board members provided no objections to Ecology's list of potential issues and suggested a number of additional issues.

Dr. Landau suggested that the rule could be simplified, ambiguities removed, and archaic language updated. He recommended two methods (A and B) rather than three. He suggested changing from "point of compliance" to "compliance zone" and clarifying any intended distinction between "attaining cleanup levels" and "meeting cleanup standards."

### Additional potential area-wide soil contamination issues

Dr. Duncan suggested addressing sensitive populations in a terrestrial ecological evaluation (TEE), and considering exposure pathways versus proximity.

He also mentioned runoff as an area wide issue; affecting both aquatic systems and watersheds.

Dr. Faustman noted that climate change implications may want to be considered.

Dr. Riley and Dr. Duncan pointed out that all three of these area wide issues have a large body of supporting data. The board discussed whether MTCA regulations could incorporate the recommendations made to Governor Gregoire from the Action Agenda for the Puget Sound Partnership, especially as pertaining to sustainability and climate change.

Additional discussion occurred about incorporating background exposures, as for lead and PCBs, and the contribution of background body burden (compared to impact from source of exposure) on a site specific basis.

Dr. Landau recommended developing model remedies for area wide contaminations. He mentioned freshwater sediments, and amphibians.

### Additional issues related to human health

Dr. Faustman noted that consideration of early life exposure provides an explicit way of considering children's risk, and that the National Academy of Sciences is revisiting the "Red Book" and reevaluating different exposure and uptake parameters.

### Additional potential issues related to groundwater cleanup levels

The board agreed that Ecology should clarify the relationship between the SMS rules and MTCA rules.

Dr. Riley questioned whether there is a difference in cleanup times between SMS and MTCA actions. He also recommended that freshwater sediment standards be addressed, and pointed to work done on the Great Lakes as a source of scientific information.

Board members had no further issues related to soil cleanup or vapors.

### Updating rule tables

Dr. Duncan agreed strongly that ecological screening values need to be updated to reflect EPA's ecological soil screening levels.

### Other issues

Should MTCA regulations consider emerging technologies and related contaminants, particularly as related to nano-technologies? Can remedy selection include evaluation of sustainability and greenhouse gas production?

## **Audience Comments**

Steve Ellis, Geomatrix, recommended that Ecology consider the practical implications of rule changes. For example, he noted that proposed risk based sediment cleanup levels for selected contaminants would be below analytical detection limits and target risk levels would not be adhered to in consideration of area background contaminant concentrations.

Greg Glass noted that Ecology and cleanup proponents are grappling with several important issues: (1) methods for defining background concentrations in urban environments; (2) methods for characterizing the relationship between contaminants in sediments and fish tissue; and (3) the relationship between policies and procedures in the SMS rule and the MTCA rule.

## **Conclusion**

Board members were asked to consider the relative importance of the potential issues, and to assist with the prioritization process.

Meeting ended at approximately 4:00 pm.

Meeting summary approved by the Board on March 11, 2008.