

MTCA Science Advisory Board Meeting Summary

January 12, 2004
9:00 am – 3:30 pm

EPA - Region 10
1200 6th Avenue
Nisqually-Pend Oreille Rooms
Seattle, WA

Key Agenda Items:

Area-wide Soil Contamination: Determining Moderate Levels of Lead Contamination and review range of potential upcoming issues

Agenda Items:

Introductory Remarks
Agency Update
Area-wide Implementation Strategy
Defining Moderate Levels – Lead
Update on Leachate Tests
Pending Issues Overview
Public Comment
Meeting Summary and Next Steps

Attendees:

SAB Members:

Dr. Hank Landau; Dr. Bruce Duncan; Dr. Elaine Faustman; Dr. Marjorie Norman

Agency Staff:

Dave Bradley; Curtis Dahlgren; Michael Feldcamp; Dawn Hooper; Pete Kmet; Craig McCormack; Jim Pendowski; Rick Roeder

Public:

Judi Schwarz; Kris Hendrickson; Carla Fisher; Jan Palumbo; Paul Agid; Warren Hanson

Agency Update:

Pete Kmet highlighted recent changes or activities occurring at Ecology including:

- Linda Hoffman is now the Interim Director of Ecology
- Union Negotiations for non-supervisory employees are underway (as a result of the collective bargaining bill)
- Agency transformation efforts continue to be a priority as Ecology refines its working relationship with the public and private sector

Pete informed the Board that Richelle Allen-King is now working in New York State and therefore has submitted her resignation from the SAB. . Ecology will need to proceed with filling the position.

Dr. Landau suggested that the agency consider conducting a survey of MTCA stakeholders to determine how well MTCA is working. Examples of potential queries include whether there are: provisions which are not in use; sections or requirements that could be simplified; or, suggested additions.

Area-wide Soil Contamination Project -- Defining Moderate Levels of Lead

Presented by Dave Bradley

Part 1: Background on the Area-wide Soil Contamination Project

Dave Bradley provided an overview of the agency implementation strategy for the Area-wide Lead and Arsenic Soil Contamination Task Force Recommendations. Materials provided include the PowerPoint presentations and a discussion package.

The Board offered the following comments, questions and requests for additional information:

- How much land within the various areas identified having area wide contamination exceeds cleanup levels? Response: Ecology and local health departments have done extensive sampling, primarily on the west side of the Cascades in areas potentially affected by the ASARCO plant in Ruston. This testing shows the results are highly variable and so it is not known how much of the land within these areas exceeds cleanup levels.
- Are there issues that were not addressed through the area-wide recommendations?
 - Was roadside dust considered? Response: It was recommended that this be considered as part of further studies.
 - Were workers at current agricultural operations considered? Take-home dust is an exposure pathway of concern. Response: The study did not address current agricultural operations.
- Are replicates included in Tables E1 and E2 (as included in the power point presentation)? Yes. It was noted that this might indicate that the number of sample locations exceeding the MTCA Method A cleanup levels is lower than the percentages shown. Ecology noted that the data table would have additional information added prior to the next meeting.
- Dr. Landau noted that most of the areas identified as areas of potential area-wide contamination are below MTCA lead levels and asked why these areas are included as areas likely to have area-wide contamination. The Board also asked whether the sampling was representative. Response: While extensive sampling has been done, there is considerable variability in the data. The areas shown represent our best estimate of the area of area-wide contamination. Kris Hendrickson noted that the

table addresses primarily smelter areas and that there are more exceedances in the old orchard lands.

It was suggested that it would benefit the Board to have a problem statement provided relative to the SAB Discussion Materials – Determining Moderate Levels of Lead (see page 23.) The Board requested more information about the aerial extent of the contamination (e.g., the percentage of contaminated soil at a moderate lead level?)

The Board requested that additional data be provided about the geographic extent of contamination in the Tacoma Smelter Plume area and affected agricultural lands, preferably in a graphic display.

- The Board requested that a table be created that shows Ecology's current definition of low and moderate lead and arsenic levels for different land uses. Dr. Duncan suggested that adding ecological screening levels would be helpful as well.
- Dr. Faustman asked what type of sampling is being conducted and whether any work has been done to correlate soil levels with the levels in people or biological effects. Ecology responded that the sampling data reflects soil sampling results rather than biological sampling.
- Dr. Faustman suggested that averaging data across a large area (vs identifying specific parcels or sample locations) may limit ability to interpret results and expressed concern that with this approach, it may be difficult to identify localized "hot spots". Dr. Duncan asked how clean areas are identified as such in the database. The Board asked if there is a geographic assessment tool that can be used to more accurately show the aerial extent of the areas and level of contamination.
- The Board asked:
 - How area-wide zones will be identified, noting that the way an area-wide zone is defined influences how the data can be displayed and utilized.
 - To see existing maps and for information about the processes for listing properties within the study areas and for documenting cleanups that occur on these properties. They would also like to know whether there are additional studies planned.

Part 2: Working Definition for Moderate Levels of Lead

Dave provided the Science Advisory Board with information about Ecology's working definition for moderate levels of lead describing the current situation and the process used to develop the working definition; and, summarizing the technical and policy rationale for the Ecology working definition of moderate levels of lead in soils.

Ecology asked the Science Advisory Board to consider what additional information they need to support their review of the Ecology working definition; to identify their questions and issues relevant to the review of the working definition; and, to suggest a preferred process and timeline for review.

During the presentation, the Board made the following observations or requests:

- Dave noted that blood lead testing is not required in Washington State and that only about 4% of children ages 0-6 were tested in 2002. Members commented that the low percentage of children in area-wide areas being tested is of concern. Board members asked for information about where the testing occurred; the sources of lead; and, the trigger for testing. Dr. Norman asked if information is available on other sources of blood lead contamination as this might help in interpreting the data. Dr. Faustman noted that there may be additional blood lead data testing done under the federal Head Start program.
- Some of the members commented that it might be useful to look at GIS based figures on blood-lead vs soil lead concentrations. Dave indicated that this information may not be available due to patient confidentiality concerns.

Dr. Faustman, referencing recent studies, commented that there is no threshold for lead effects and therefore the appropriate regulatory level may be even lower. She also noted that data referred to in slide 6 (Health Agencies Consider PbB Levels) appears to be from a 1997 ATSDR study. Dr. Duncan asked at what level blood lead concentrations above background concentrations become detectable in blood.

Dr. Faustman commented that the ability to track lead exposure increases as emission sources decrease so that now, with the phase out of leaded gasoline, it is possible to track exposure in the range of 3-5 ug/dL blood-lead level. Board members suggested that they may want to consider whether 10 ug/dL is still an acceptable target level. Dr. Faustman mentioned that at levels greater than 10 ug/dL other health effects tend to obscure the effect on learning. The Board discussed how a shift to 5 ug/dL could affect the size of the population identified by the IEUBK model.

- The Board recalled earlier discussions about the lead model with regard to whether the IEUBK assumptions were appropriate for use at the DuPont cleanup site. Dr. Landau noted that, at the time, the Board didn't recommend approval since the specific code used in the model wasn't available for review. The Board also decided that site specific issues were not within the purview of the SAB.

Board Decision re: IEUBK Model: *The Board discussed whether the IEUBK model is acceptable, recalling that several years ago the Board considered this model based on the criteria for determining good science. The Board agreed that the IEUBK model is appropriate for use in estimating blood-lead levels in children that might result due to exposure to lead contaminated soils.*

The Board commented that they still need to consider use of the IEUBK model relative to whether the assumptions used in the IEUBK model are scientifically defensible for WA State and requested that Ecology provide additional information. Dr. Faustman noted that the blood lead concentrations recommending certain actions in slide 6 are based on 1997 recommendations from the CDC and that these recommendations are under review and are likely to be updated. She thought we may soon see a recommendation that blood lead levels of less than 10 ug/dL may trigger additional actions. It was suggested that a sensitivity analysis be conducted using newer information from the CDC. Dr. Landau commented that the CDC

guidelines call for blood lead testing and that the area wide task force did not address this issue.

Other questions raised by the Board included:

Should the Board consider whether 5 ug/dL or 10 ug/dL is more defensible?

What is the toxic endpoint used to determine impacts?

What is the 10 ug/dL based on?

Are assumptions consistently protective?

- The Board raised a question regarding whether the moderate range category should include a strategy for addressing soils at the high end of the moderate range.
- Dr. Duncan noted while initial screening levels are lower than human health levels building in the next steps (bioavailability, toxicity) might help. He commented that the agency should apply the MTCA ecological evaluation process to area-wide soil lead contamination. He suggested that this might be an appropriate issue for consideration by an SAB subcommittee. Board members inquired whether there are blood-lead levels available for game birds or other animals.
- Dr. Faustman asked whether the model assumptions were mid-range or upper end values. She asked if the percentile selected from the model depends on the end point being used? Dave noted that the percentile used for decision-making depends on uncertainty in other area of analysis.

Corrections:

- Should label slides and tables as addressing children vs adults.
A Board member observed a typo-error on page 43 (slide #17) noting that 1% is correct rather than 2%. Revise table 5.1 to add P₅ and double check the text.

Dr. Norman assisted the Board in constructing a framework for addressing the area-wide issues raised at the meeting. The Board agreed to the following framework:

Session #1:

- Appropriateness of IEUBK model exposure assumptions and whether to include exposure pathways beyond the model's defaults:
 - Soil/dust
 - Dermal
 - Inhalation
 - Fruits and vegetables
 - Drinking Water

Session #2

- Acceptable level of blood-lead
 - Are appropriate comparisons being used (CDC, WHO or other information like the new information coming from CDC? Dr. Faustman indicated that she would provide information to Ecology staff)
 - How do these levels compare to the acceptable risk used in MTCA for cancer and non cancer effects? What does "equally protective" mean within the MTCA framework?

- Should Ecology be considering moderate effects vs frank (obvious) effects?

Session #3

- Consideration of
 - Groundwater impacts of area wide soil contamination. Dr. Landau noted that the value derived for lead levels protective of ground water (3,000 mg/kg) as part of the rule-making process is not necessarily conservative. For example, while Ecology selected a DAF of 20, EPA recommended a DAF in the range of 5-20. Also, the lead partitioning coefficient of 10,000 is quite high (a value of 1000 was considered earlier in the rule-making process). And, the partitioning coefficient is very sensitive to pH. The Board would like Ecology to look at available ground water data within known area-wide contamination areas to confirm that ground water impacts are not a concern.
 - Ecological effects
 - Uncertainty in data (due to lack of human health monitoring?)

Presentation to Dr. Landau

Jim Pendowski, Toxics Cleanup Program Manager, presented Dr. Landau with a plaque honoring his 15 years of service on the SAB. Pete Kmet also acknowledged Dr. Landau's role in many issues under MTCA including: site hazard assessment and ranking guidelines; cleanup standards; soil to ground water pathway; and, remedy selection criteria.

Soil Leaching Test Report to the Legislature

Pete Kmet provided a copy and brief summary of a recently completed report to the legislature on soil leaching tests. He noted that, based on this report, Ecology was not recommending any statutory or rule changes at this time. He suggested the Board may want to have a more in-depth discussion of this topic at a future meeting.

Potential Issues for Board Review: presented by Pete Kmet

Pete Kmet reviewed the list of potential future issues for Board consideration (see January 12, 2004 list). He noted that work is underway on several of these issues including:

- √ IEUBK soil lead model
- √ WET testing protocols and data interpretation
- √ Bioconcentration/bioaccumulation factors for determining TPH surface water cleanup levels
- √ Natural attenuation
- √ TPH guidance—specifically methanol preservation and methods for evaluating site-specific variability in TPH fraction data
- √ Defining moderate levels of lead and arsenic contamination for area wide sites
- √ Freshwater sediment standards

Dr. Landau noted that in many ways, the approach taken in the MTCA rule is conservative. This was appropriate at the time due to the uncertainty in many aspects of cleanup. However, given the program history and progression of knowledge in many areas, it may be appropriate for the Board to review the level of conservatism built into the rule.

There was also a brief discussion on when it is appropriate to form subcommittees to examine issues. Pete Kmet noted that, in the past, the Board has used subcommittees when issues were being developed from the ground up, jointly by Ecology staff and the SAB. Where issues are well developed and Ecology is asking for Board review and comment, there probably isn't a need for a subcommittee. He suggested the Board consider this approach in the future when deciding whether to form subcommittees.

Dr. Allen-King's Vacancy

There was a brief discussion on the need to fill the vacancy created by Dr. Allen-King's resignation. Ecology staff noted that there was some interest by Ecology Management to appoint someone with expertise in sediments, rather than fate and transport. Board members pointed out that Dr. Bruce Duncan already has considerable expertise in this area and that it would be more helpful to have someone with fate and transport expertise.

Public Comment:

Warren Hanson: Thanked the Science Advisory Board and Ecology for advertising the SAB meetings so that the public may attend. The meetings are informative and useful for staying current with MTCA.

Meeting Adjourned