

OUTFALL MONITORING SCIENCE ADVISORY PANEL
Mussel Tissue Contaminant Focus Group Meeting
Wednesday, March 5, 2003, 1:00 PM – 4:00 PM, MADEP Boston

DRAFT SUMMARY

Purpose of Meeting

At their January 2003 meeting, the Outfall Monitoring Science Advisory Panel (OMSAP) decided to convene a focus group to review the summer 2001 and 2002 caution level exceedances of chlordane and PAHs in mussels from caged mussel deployments over the MWRA outfall.

Focus Group Members

Members are from OMSAP, the Public Interest Advisory Committee (PIAC), the Inter-Agency Advisory Committee (IAAC), and EPA's Narragansett Lab: Judy Pederson (MIT SeaGrant, OMSAP, focus group co-chair), Jim Shine (Harvard School of Public Health, OMSAP, focus group co-chair), Todd Callaghan (MCZM, IAAC), Marianne Farrington (New England Aquarium, PIAC), Sal Genovese (Safer Waters in MA, PIAC), Matt Liebman (EPA, IAAC), Tara Nye (Association to Preserve Cape Cod, PIAC), Rich Pruell (EPA Lab, Narragansett), and Jack Schwartz, (MADMF, IAAC).

Other Attendees:

Cathy Coniaris (MADEP), Winifred Donnelly (MADEP), Maury Hall (MWRA), Ken Keay (MWRA), Ben Kelly (Save the Harbor/Save the Bay), Andrea Rex (MWRA), and Steve Rhode (MWRA).

Background

MWRA has been monitoring contaminant bioaccumulation in mussels suspended in cages in four areas (Boston Inner Harbor, Deer Island Light, Outfall in Mass Bay, and Cape Cod Bay) since 1991. MWRA's outfall in Massachusetts Bay went on-line in September 2000. Mussels are suspended at the edge of the effluent mixing zone, and because they accumulate contaminants from the water, they can be used to detect very low levels of contamination in the surrounding waters. Mussels are sensitive measures of effluent and ambient water quality and also integrate water quality over time.

Meeting Summary

M. Hall presented an overview of the caged mussel monitoring, the caution thresholds for chlordane and PAHs, and the exceedances¹. The focus group discussed the monitoring and then reviewed the questions presented to them in the agenda:

Should we be concerned about low-level bioaccumulation over the long term?

The group agreed that this is something to watch, but that two years of data are not enough to decide whether there is a concern at the present time.

Are the levels of chlordane and PAHs in the MWRA effluent higher now than before the offshore outfall went on-line?

¹ For more information go to: MWRA 2001 Fish and Shellfish Report <http://www.mwra.state.ma.us/harbor/enquad/pdf/2002-14.pdf>, summer 2001 exceedance notice <http://www.mwra.state.ma.us/harbor/html/20020125amx.htm> and summer 2002 exceedance notice <http://www.mwra.state.ma.us/harbor/pdf/20021213amx.pdf>.

MWRA presented data that showed that concentrations of chlordane and PAHs in effluent have not increased since the offshore outfall went on-line. The group agreed that the levels of chlordane and PAH in mussels were very low.

Are other shellfish monitoring efforts measuring elevated levels of chlordane and PAHs?

The group briefly discussed the Gulfwatch program that monitors the bioaccumulation of contaminants in mussels throughout the Gulf of Maine. M. Hall has requested recent data from them.

Are the current thresholds appropriate?

The group agreed that the current thresholds are *not* appropriate. The group could not reach a consensus at the meeting of how to change the thresholds and made no recommendations for changing them at this time.

Is the current caged mussel monitoring approach appropriate?

The focus group suggests that the monitoring approach remain the same for summer 2003.

Conclusions

The focus group agreed that even though the current chlordane and PAH thresholds are not appropriate, there has not been enough analysis of post-discharge data to revise the thresholds. They also agreed that the mussel monitoring program is important to track treatment plant performance and recommend that there are no changes to the caged mussel monitoring for summer 2003. Until the thresholds are revised, future exceedances are expected. The listserver exceedance notice to the public should include a statement explaining that based on past review of the monitoring data, OMSAP has anticipated this exceedance, views the exceedance as a precaution, but more accurate thresholds and/or revisions to the monitoring approach will be incorporated when more data are available.

In the meantime, the focus group asks that MWRA review the following approaches to threshold development and report back to the focus group at a later date. Possible approaches include:

- Use the statistical characteristics of existing data to develop a threshold that shows a significant difference from the expected levels.
- Develop thresholds using some percentage below the concentration of a contaminant that causes mussel narcosis.
- Develop thresholds by evaluating 5-year trends in data. For example, track and report four years of data, then in the fifth year see if there is a trend that causes a threshold exceedance.
- Develop a threshold that uses running averages (e.g. compare one year to the previous three).
- Use FDA levels as thresholds (even though they may be too high).
- Have thresholds for only the contaminants that biomagnify (e.g. PAHs and perhaps chlordane do not biomagnify).

Adjourned

This summary was prepared by Cathy Coniaris and Winnie Donnelly and was reviewed by the focus group prior to submittal to OMSAP.