

Regional Background Definition - Options

“Hydro dynamically-defined area based on mechanisms of contribution and distribution of persistent, ubiquitous and uncontrollable contaminants.”

- Other proposed definitions of background for setting cleanup levels:
 - Habitat-stratified background.
 - Tie regional background to conceptual site model – relevance of sources, resuspension.
 - Use watershed approach. Have regional background determined in each watershed – what is attainable looking at sources, prioritizing sites for cleanup.
 - Set regional background at projected level of “recontamination”.
 - “Local conditions” – background concentrations resulting from permitted NPDES discharges.
 - Background concentrations based on what is attainable after “All Known and Reasonable Treatment” (AKART) has been applied to sources.
 - Sample sites located away from point sources.
 - Set regional background based on a “pay-off” point – what cleanup goal would get the most cleanups done.
 - Background based on levels where it is not feasible to remediate.
 - Background based on levels where you cannot identify discharges or there are too many discharges to name all as PLP.

MTCA Natural Background Definition

How could it work for sediment sites?

Concentration of HS consistently present in the env. that has not been influenced by localized human activities. For example, several metals & radionuclides naturally occur in the bedrock, sediments, and soils of WA due solely to the geologic processes that formed these materials & the conc. of these HS would be considered NB. Also, low concentrations of some particularly persistent organic compounds such as PCBs can be found in surficial soils and sediment throughout much of WA due to global distribution of these HS. These low conc. would be considered NB. Similarly, conc. of various radionuclides that are present at low conc. throughout the state due to global dist. of fallout from bomb testing and nuclear accidents would be considered NB.

MTCA Area Background Definition

Means the concentrations of hazardous substances that are consistently present in the environment in the vicinity of a site which are the result of human activities unrelated to releases from that site.

Human Health/Background Discussion

- Continue to explore the feasibility of Option 2 regional background approach.
- Explore Option 1 (MTCA approach) and the use of cost and feasibility during remedy selection.
- How to set cleanup standards that are technically achievable but still make progress towards a long-term, more conservative cleanup goal.
- How to resolve PLP liability.
- How to get to final clean up when recontamination is not from the PLP.

Implementation of Cleanup Standards Based on Background

- 1) What areas in the SMS have or do not have flexibility for making cleanups feasible and final?

- 2) How can we use the following to reach a “natural” or “regional” background cleanup standard:
 - Remedial alternatives analysis
 - Cost and feasibility
 - Partial settlements
 - Institutional controls
 - Remediation levels
 - Recovery time frames
 - Sediment Recovery Zones
 - Points of compliance
 - Site definition

Potential Tools for Implementation & Final Cleanups

Set Cleanup Standard

- **Consideration of background**
- **Exposure assumptions**
- **Acceptable risk range or range of effects.**

Remedy Selection and Implementation

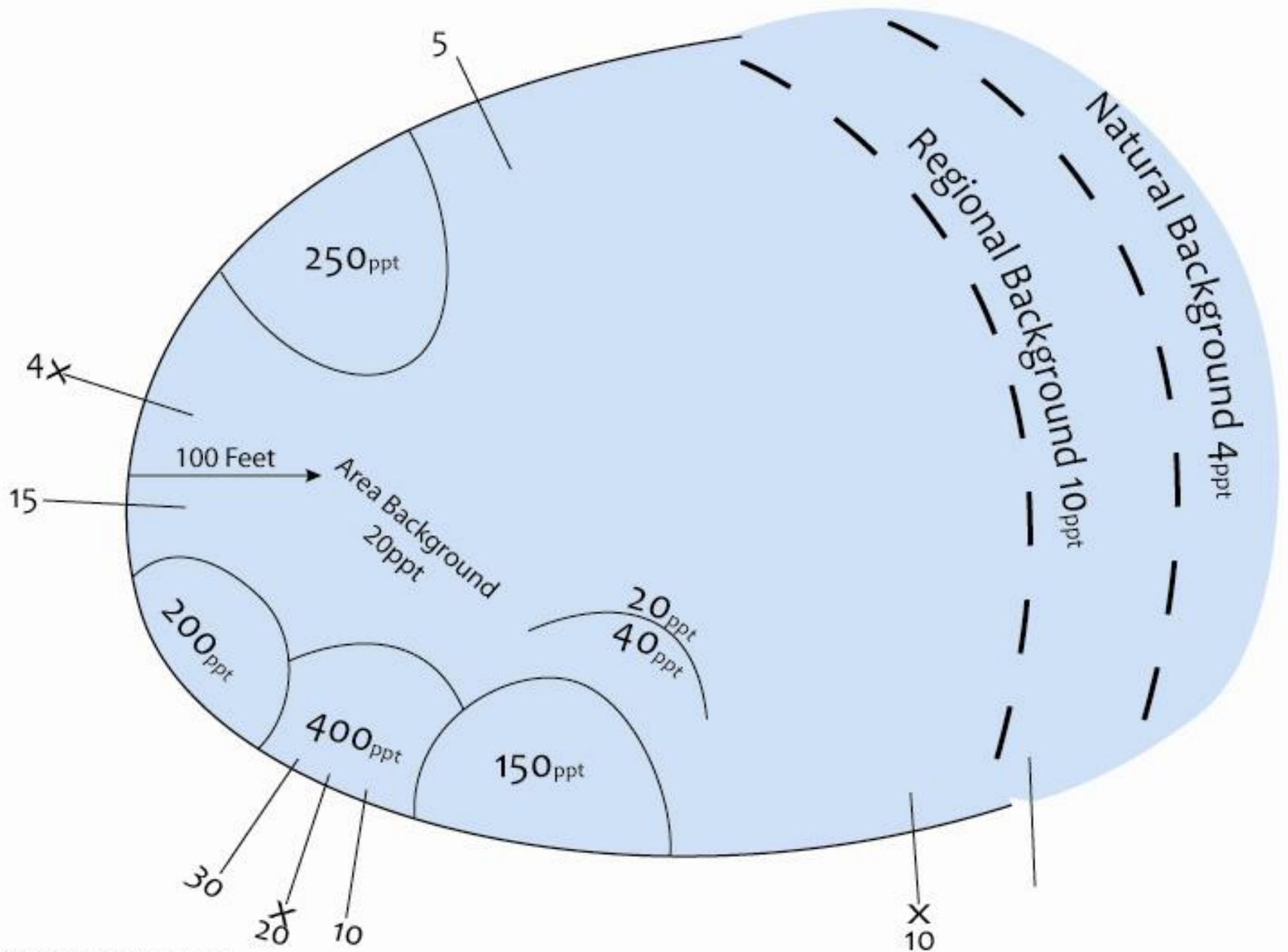
- **Engineered controls**
- **Institutional controls**
- **Remediation Levels**
- **Recovery Time Frame**
- **Site Definition**
- **Cost and Feasibility**

PLP Resolution

- **Points of Compliance**
 - **Location**
 - **Concentration**
(Statistical comparison)
 - **Time**
- **Interim actions**
- **Sediment Recovery Zones**
- **Partial Settlements**

The following slides are the cleanup scenarios that were developed during the meeting to illustrate how to implement a final cleanup with a low cleanup standard and potential for recontamination

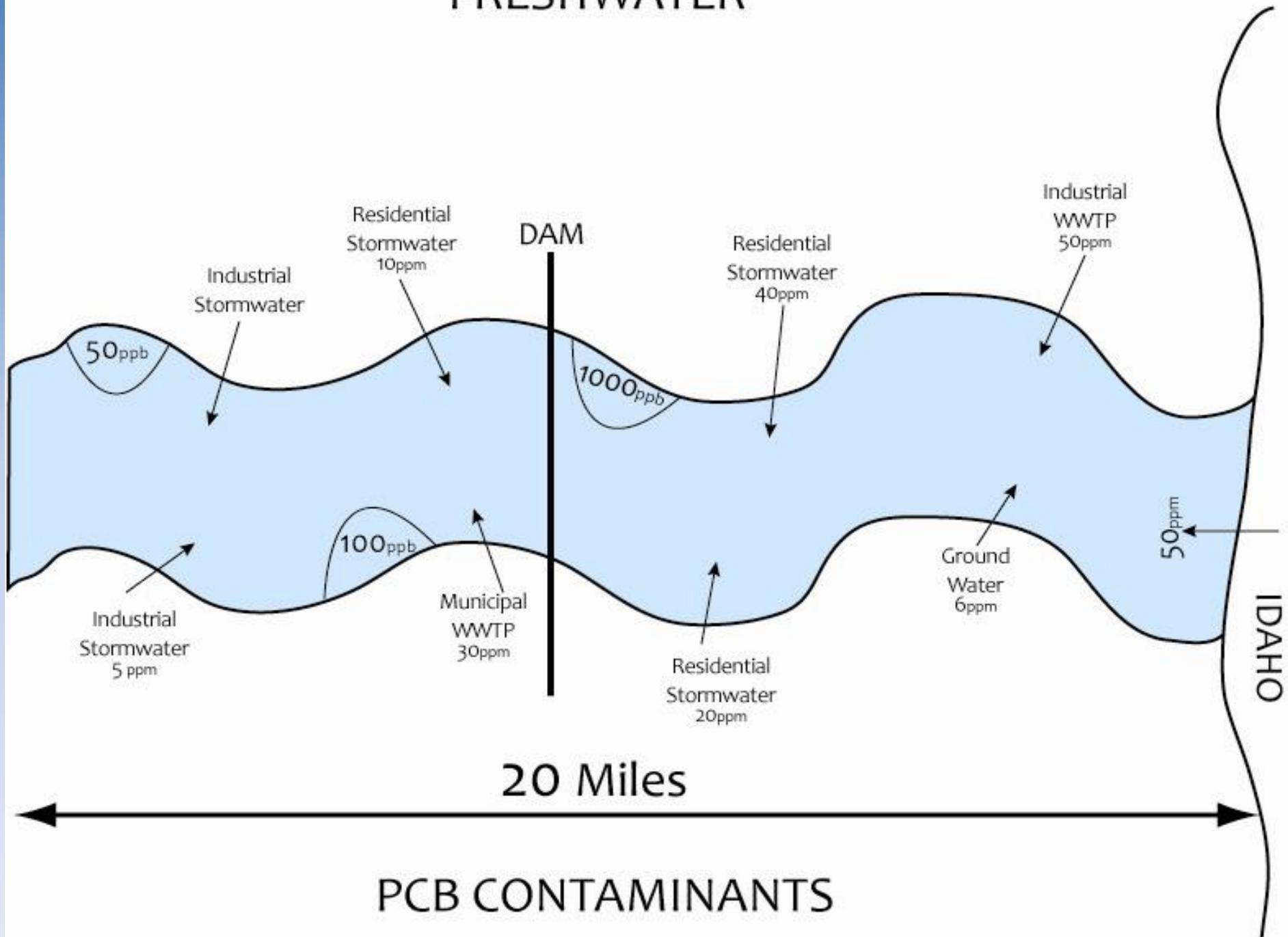
IMPLEMENTATION SCENARIOS



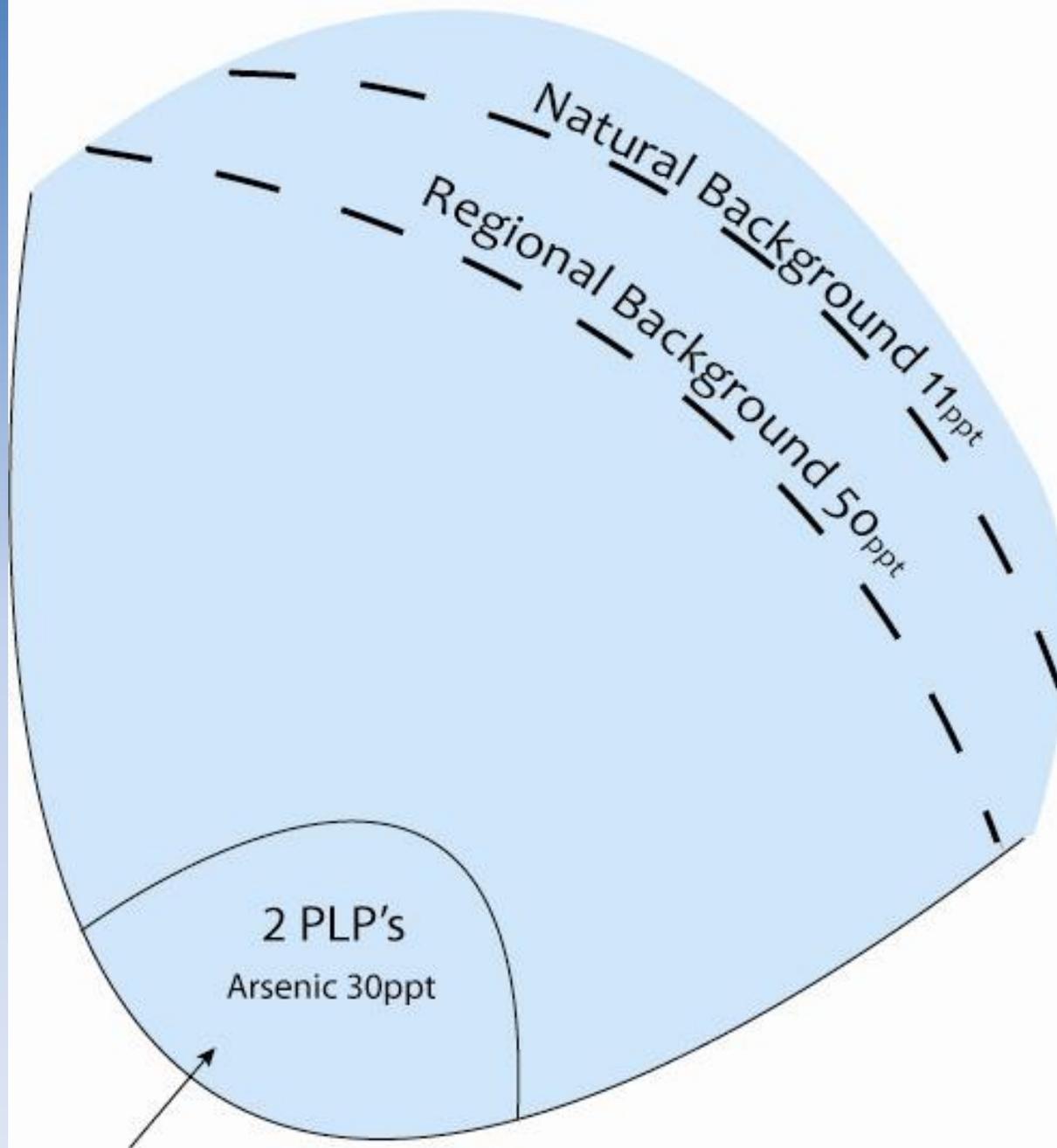
X = Permitted Stormwater

DIOXIN CONCENTRATION

FRESHWATER



PCB CONTAMINANTS



Arsenic Contamination