

Update on OEHHA's Activities under SB 509

Presentation to
Green Ribbon Science Panel Meeting
January 28, 2009

Office of Environmental Health Hazard Assessment

Background on Clearinghouse

Toxics Information Clearinghouse established by SB 509:

- “Decentralized Web-based system for the collection, maintenance, and distribution of specific chemical hazard trait and environmental and toxicological end-point data”
- “Accessible to the public through a single Internet Web portal”
- DTSC shall “operate the clearinghouse at the least possible cost to the state”

OEHHA SB 509 Mandate

- On or before January 1, 2011, OEHHA shall:
 - “...evaluate and specify the hazard traits and environmental and toxicological end-points and any other relevant data that are to be included in the clearinghouse.”

Overview of Activities

- Initial draft proposal on nomenclature and “hazard trait taxonomy”
 - Developed in response to suggestions by the GRSP co-chairs
- Draft pilot scientist questionnaire
 - Designed to elicit expert opinion on hazard traits to be included in the Clearinghouse and scientifically valid “indicators”
- Planning for workshop series with UCLA and UCB, funded by UC TS RTP
- Developing hazard trait framework

Workshop series with UCLA and UCB

- Workshop 1: March 15-16, 2010 in Sacramento
 - Focus on human health hazard indicators
- Workshop 2: May 10-11, 2010 in Berkeley (note date change)
 - Focus on indicators for environmental endpoints, exposure potential
- Findings will help shape recommendations on hazard traits and use of hazard indicators

Preview of Workshop 1

- Three sessions:
 - State of the science on identifying chemical hazards
 - Human health hazard indicators for carcinogenicity, developmental toxicity and endocrine disruption
 - Moving forward with human health hazard indicators
- Experts drawn from: NIEHS, US EPA, universities, pharmaceutical industry and other organizations

Development of Hazard Trait Framework for Clearinghouse

- Goals:
 - Prioritized, interrelated framework of hazard traits for Clearinghouse
 - Include recommendations on use of hazard indicators
- Draft framework and recommendations to be based on research, UC TS RTP workshops, ongoing consultations, scientist questionnaire and other input
- Public workshops to seek comment
- Framework and recommendations by late 2010

OEHHA Draft Pilot Scientist Questionnaire

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Purpose of questionnaire

- Seek expert input on:
 - Nomenclature
 - Hazard traits to be included in the Clearinghouse
 - Use of indicators to evaluate human health and environmental hazard and exposure potential

Nomenclature

- SB 509 does not provide definitions for “hazard trait”, “environmental and toxicological endpoints” or “other relevant data”
- GRSP co-chairs recommended clarifying the nomenclature for the purpose of the questionnaire

Possible hazard trait taxonomy

- To stimulate discussion and organize questionnaire, OEHHA described a possible “hazard trait taxonomy”
 - Taxonomy shown in handout is one option
 - Other options are also being considered by OEHHA
- GRSP and public input is welcome on the nomenclature and taxonomy

Hazard trait nomenclature

- Hazard trait is used as an overarching term in the possible taxonomy and includes:
 - General types of human health toxicity, environmental effects (including ecotoxicity) and exposure properties;
 - Specific toxicological and environmental endpoints and exposure potential parameters; and
 - Indicators for all of the above.

Organization of possible taxonomy

- Three categories of hazard traits
 - Category 1: General types of human health toxicity, environmental effects and exposure properties
 - Category 2: Toxicological and environmental endpoints and exposure potential parameters
 - Category 3: Indicators for all of the above
- Categories are inter-related
 - Category 3 predicts Categories 1 and 2
 - Category 1 or 2 might predict another type of toxicity

Examples of Category 1 Hazard Traits

Health

Carcinogenicity

Neurotoxicity

Reproductive
Toxicity

Developmental
Toxicity

Immunotoxicity

Major Organ Toxicity

Environmental

Species Loss

Habitat Loss

Aquatic Toxicity

Avian Toxicity

Deforestation

Loss in Biodiversity

Global Warming

Ozone Depletion

Exposure

Environmental
Persistence

Bioaccumulation

Examples of Categories 2 and 3

- Category 2 Hazard Traits

- Lung cancer
- Bronchiolitis obliterans
- Growth retardation
- Feminization in a fish population
- Impaired timber growth
- Long half-life in sea water

- Category 3 Hazard Traits

- Positive *in vitro* assay for chromosomal aberrations
- High $\log K_{ow}$
- High vapor pressure

Questionnaire topics

Covers the following general areas:

- Possible nomenclature/taxonomy
- Highest priority hazard traits to be included in Clearinghouse
- Other important hazard traits
- Scientifically valid indicators useful in the absence of full data
- Professional experience in evaluating hazard and exposure
 - Details on the process a scientist would use to screen a chemical
 - Experience in the use of indicators

Follow up

- OEHHA will revise questionnaire based on GRSP input
- Revised questionnaire will be sent to all GRSP members and other expert scientists

Discussion Questions

- Is the hazard trait taxonomy in the pilot clear? Do you have comments?
- Do you have any comments on the draft questionnaire? Do you recommend deleting any of the questions or adding questions?
- What do you consider the highest priority general types of human health toxicity and environmental effects (including ecotoxicity) for inclusion in the Clearinghouse?
- What do you consider the highest priority exposure properties for inclusion in the Clearinghouse?