


Indoor Air Guidance Update

Liz Callahan, BWSC

Waste Site Cleanup Advisory Committee Meeting
June 26, 2008



Recap

- MassDEP's Indoor Air Standard Operating Procedures (SOP)
 - Overview presented at March SAC meeting
 - Made available to public shortly thereafter with cover letter from AC Commerford
- Draft UPV Document (1/23/08) 
 - Comments discussed at March SAC meeting
 - 2nd review drafts available today



1st Draft UPV Document (1/23/08)

- Provided “Typical Indoor Air Concentrations” for 43 OHMs developed from measured values from 7 selected studies
- Identified 75th and 90th percentile values (Upper Percentile Values or UPVs) and provided guidance on use of UPVs in evaluating measured indoor air concentrations in an investigation of a potential vapor intrusion pathway



Comments on 1/23/08 UPV Draft

- Lines of Evidence Term Vague
- Reads like de facto regulation
- UPVs Relationship to 21E/MCP Background
- Use of Risk Management Criteria
- Development of UPVs
 - Studies used, percentiles, mean v. median



2nd Review Drafts

First document has been reworked into two separate stand alone documents

- "Typical Indoor Air Concentrations"
(TIAC6_26_08.doc)
- "Indoor Air Threshold Values for the Evaluation of a Vapor Intrusion Pathway"
(threshold values6_26_08.doc)



Guidance, Not a Required Approach

- Both documents clearly indicate they are guidance on what MassDEP considers acceptable for meeting MCP requirements, but not the only acceptable approach



"Typical Indoor Air Concentrations"

(TIAC6_26_08.doc)



"Typical Indoor Air Concentrations" Draft

- Describes the process used to identify appropriate studies for use in developing concentrations
- Provides the 50th, 75th and 90th percentile values from 8 selected studies
- Typical Indoor Air Concentrations may be used as a line of evidence in evaluating the likelihood of a vapor intrusion pathway



Consider Addt'l Studies

- MassDEP reviewed recommendations and included one additional study (Kinney, 2005)
 - Kinney study affected 75th percentile for several chemicals
- Other studies did not meet screening criteria (PCE source nearby, smoking, did not report percentiles)



MassDEP v. EPA 90th Percentile Values

	MassDEP 90 th	EPA 90 th *
Benzene	11 ug/m³	10
Carbon tetrachloride	0.9	0.9
Chloroform	3.0	4.1
Ethylbenzene	7.4	8.9
MTBE	39	32
PCE	4.1	3.8
Toluene	54	54
TCE	0.5	0.8
Xylene	28	32

* Presentation by Helen Dawson, Ph.D, USEPA, AEHS Vapor Intrusion Workshop, San Diego 2008

"Indoor Air Threshold Values for the Evaluation of a Vapor Intrusion Pathway"

(threshold values6_26_08.doc)



"Indoor Air Threshold Values for the Evaluation of a Vapor Intrusion Pathway" Draft

- Intended to expedite evaluation of indoor air data
- In absence of evidence to the contrary, parties using the guidance may conclude that a vapor intrusion pathway is not present if measured concentrations are below the threshold values



"Indoor Air Threshold Values for the Evaluation of a Vapor Intrusion Pathway" Draft

- Concentrations above threshold values may indicate presence of a pathway; multiple lines of evidence should be considered before any conclusion that a pathway is not present or likely



Lines of Evidence

- Document is focused on the evaluation of one of potentially several lines of evidence – measured indoor air concentration
- Introduction identifies other lines of evidence relevant to vapor intrusion pathway investigation

Bases for Threshold Values

- 90th percentile value
- Risk-based concentration
 - HI 0.2 ELCR 1×10^{-6} ; for single chemical HI 1 ELCR 1×10^{-5}
- 50th percentile value
- Reporting Limit

Algorithm

- Attachment A



Draft Documents Available

- <http://www.mass.gov/dep/cleanup/laws/policies.htm#drpol>
- Please send comments by August 15, 2008 to elizabeth.j.callahan@state.ma.us or
MassDEP
One Winter Street
Boston, MA 02108 Attn: Elizabeth Callahan

