



# Draft TCE Toxicity Values for Risk Assessment and the Vapor Intrusion Pathway

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# Context of TCE Toxicity

- TCE is very prevalent at hazardous waste sites
- EPA reassessment of TCE toxicity will not be completed for several years
- Regions left to make independent decisions resulting in inconsistency across the country



# Current EPA Practices

- Maximum Contaminant Level (MCL) of 5 ppb is risk management standard for potential drinking water sources.  
Guidance will not effect groundwater MCL
- No similar EPA standard for vapor intrusion pathway
- Chemical toxicity hierarchy when no EPA values for risk assessment



# OSWER Chemical Toxicity Hierarchy

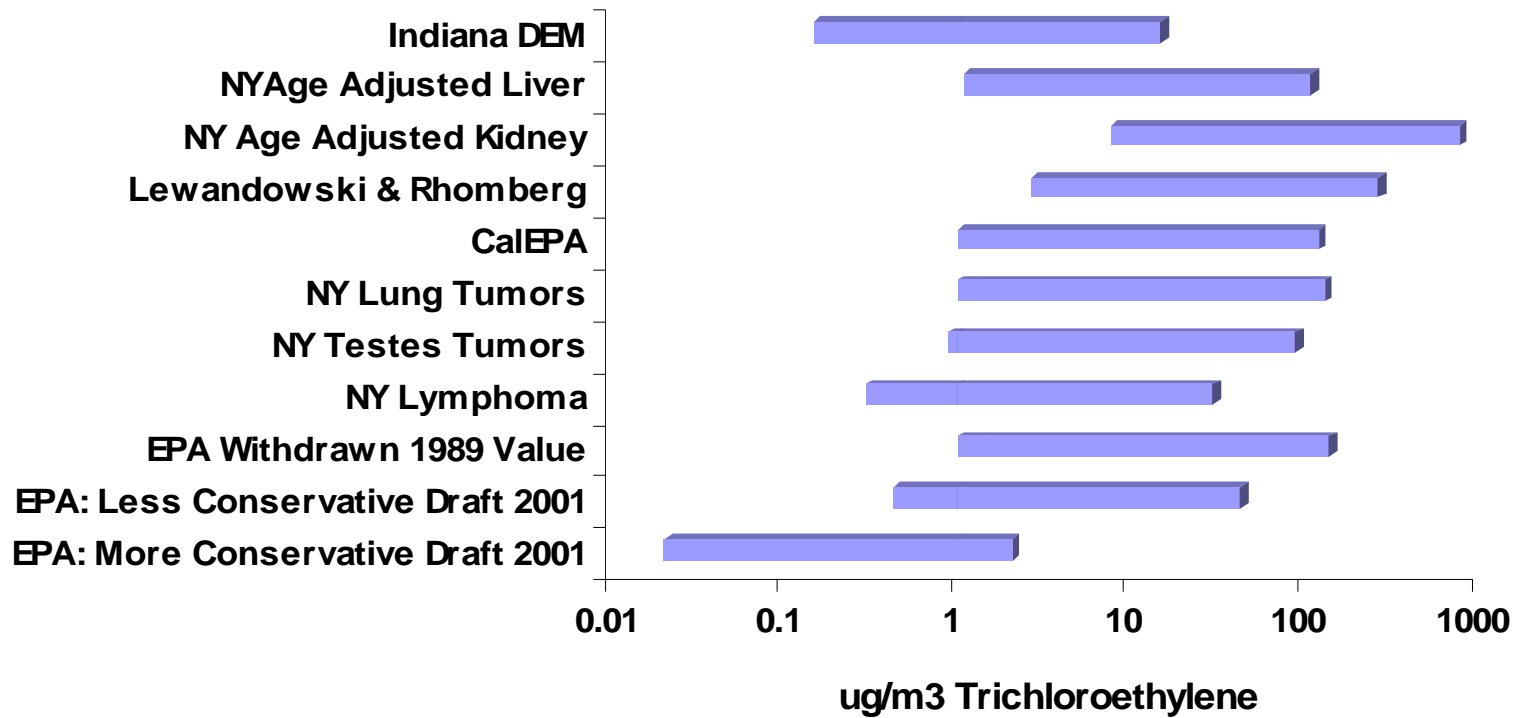
- Tier 1: IRIS values, where available
- Tier 2: Preliminary Peer-Reviewed Toxicity Values, if developed
- Tier 3: Other peer-reviewed, publicly available values developed with similar methodology to IRIS and PPRTVs



# Evaluation of Tier 3 Sources

- Primarily focused on California EPA and New York State Dept of Health
- Others considered but were not as consistent with the criteria recommended in the ECOS paper

## 1E-06 to 1E-04 Risk-Based TCE Indoor Air Concentrations





# Preliminary Approach

- Use of Cal EPA inhalation unit risk value of  $2.0 \text{ E-}6(\text{ug}/\text{m}^3)^{-1}$ . Cancer risk of  $1 \times 10^{-6}$  is approximately  $1 \text{ ug}/\text{m}^3$  in indoor air
- Manage risks within a concentration range of 1 to  $10 \text{ ug}/\text{m}^3$  because of other non-cancer endpoints and new studies



# Preliminary Approach (con't.)

- Use Cal EPA oral cancer slope factor of  $0.013 \text{ (mg/kg-day)}^{-1}$  for risk assessment
- Continue to use MCL of 5 ug/L for risk management of potential drinking water



# Vapor Intrusion (VI) Approach

- Use multiple lines of evidence to evaluate VI, which may include data on: 1) site history and geology, 2) ground water, 3) soil gas, 4) sub-slab soil gas, 5) crawlspace data, 6) indoor air, 7) outdoor air, 8) tracer compounds, 9) chemical ratios, 10) modeled concentrations, 11) chemical use.



## VI Approach (con't.)

- Indoor air samples are useful where other data suggest a potential VI problem
- May be more expeditious to collect indoor air data in parallel with sub-slab soil gas or ground water data
- May be more efficient to mitigate before construction for new development



# Next Steps

- Seek Intra-agency approval for outside discussion on draft
- Inter-Agency review and discussion: OMB, DOD, NASA
- State Agency review
- Peer-Review
- Issue final document



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