

**From:** [Kilburg-Basnyat, Brita J - DHS](#)  
**To:** [Graham, Joseph R - DNR](#); [Koch, Amanda A - DHS](#); [Endsley, Erin A - DNR](#); [Sager, John E - DNR](#)  
**Cc:** [Irving, Roy M - DHS](#); [Hedman, Curtis J - DHS](#)  
**Subject:** DHS Overview of Crawford Creek Assumptions  
**Date:** Wednesday, June 30, 2021 11:19:02 AM

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Dear Erin, John, and Joe,

After review of the proposed suggestions by the EPA and Beazer we had some concerns about the changes being proposed to the site-specific recreational clean-up levels that were developed especially given the carcinogenic nature of some of the contaminants of concern. Below, we have outlined our concerns with the exposure time, exposure frequency, and the application of the fraction intake level. We also would like the reference list, particularly for the time-weighted average and for the fraction intake level assumptions, when that information becomes available.

**General assumptions the new recommendations doesn't consider:**

- Future flooding events could shift soil contamination around and expand or decrease contamination in the area that is taken into account with the fractional intake level. Other events (soil removal to other portions of the property, removing/adding vegetation or trees, gardening, filling in wholes or ditches, heavy rain on slopes or inclines) could alter where the contamination is on the property.
- Assumption is based on current residents at the property and is not indicative of future use or habits of future inhabitants at the property (may use the area for other/different recreational activities than for the current use).
- Does not take into consideration: visitors (family members, children, others in at risk age groups), trespassers, or people that be trespassing onto county property for recreational land use.
  - For example, children are known to spend more time playing outside than adults and due to their size, may require less exposure than an adult to be at risk.

**Fraction intake level changed from 1.0 (assumed--not used in original calculations) to 0.25**

- Concerned that this value is based on percentages of homeowners' land in the flood plain and assumes that the time spent in areas of their property is equal (i.e. if I'm in my yard, and it were split into 4 quadrants, I wouldn't consciously split my time between all 4 quadrants)
- Concerned this is an underestimate of contamination on the property (variation on other sections of the property?)
  - I also have some concern that the contamination is not well enough defined on individual properties to estimate percentage of properties impacted by contaminated soil.
- Assumes no contamination outside of the flood plain area (no migration of soil off sight)

**Exposure frequency (days) from 175 days to 75 days based on 95% UCL of homes interviewed**

- Even something as simple as having a dog increased estimated days for one individual up to 105 days per year in the flood zone and the 95% UCL was used instead of 105 days which was 1) an estimate by the individual and 2) was related to taking a pet out for walks (i.e. there was a specific reason for the increase in time spent outdoors).
- Concerns about basing assumptions on the home owners' self-reported data:
  - Basing it on the hunting season in combination with non-frozen weeks may underestimate time outside especially if there are other activities or future activities that would increase outside time (such as gardening, walking, having pets, health conditions where people are encouraged to walk to increase mobility, ATV usage in summer, etc).
  - It seems that there is no indication if people are doing projects that would increase soil exposure such as: home improvement projects, gardening, planting, digging, fencing, or disturbing the soil in other ways or in areas that lack vegetative covering.
  - Unclear if people take precautions to prevent contaminated soil into the home such as: not bringing shoes into the house, washing wild or garden grown vegetation or other sources of food brought in that may have contact with the contaminated area, pets, washing hands, wearing gloves when working with soils, wearing long pants when in exposed soil areas outside, or other activities that would prevent both skin and hand-to-exposure to contaminants.
  - Would like to see stats for the temperature/snow coverage as these can change year to year and it's unclear where this information came from and whether it is based on one year or several (climate change may increase ground access over the years so may be better to be conservative with the number of days that the ground may be exposed).
    - [Wis blank map frost depth analysis.png \(960x720\) \(weather.gov\)](#)
    - Northern Wisconsin is listed as having first temporary frost from 11/22 to the last temporary frost of 4/13 (approx. 5 months \* 30 days= 150 days minus 365 is 215 days)

**Exposure time (hours, for inhalation) from 4 hours to 1 hour/visit (based on 4 hours \* 0.25 for fraction of property in flood zone)**

- People's self-reported data of the time outside in a specific area might be limited to their memory and not an accurate estimate of tracked or exact time in the area (may not be comparable to more formal assessments such as the EPA factor handbook values that takes an average of a larger sample size of people).

Thanks and please feel free to reach out to us if you have any additional questions or require clarification of any of the information covered in this email.

Brita

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