

From: [Klatt, David/CHC](#)
To: [Patarcity, Jane \(Pittsburgh\) USA \(Jane.Patarcity@TRMI.Biz\)](#); [cieniawski.scott](#); [Klinkhamer, Christopher](#); [Isom, Kristen](#); [Stuart Messur](#); [Bessingpas, David](#); [Seaman, Jennifer/CHC](#); [Selcoe, Barrie/HOU](#); [Pfeiffer, Danielle](#); [Anderson, Paul](#); [Graham, Joseph R - DNR](#); [Sager, John E - DNR](#); [Saari, Christopher A - DNR](#); [Endsley, Erin A - DNR](#); [Fassbender, Judy L - DNR](#)
Subject: RE: Further Crawford Creek CUL Discussion
Date: Tuesday, July 20, 2021 9:02:13 AM
Attachments: [2021-07-15 Response to 6-9-21 WDNR Email \(Part 2\).pdf](#)

Hi All,

Attached to this email is part 2 of the responses to comments regarding cleanup levels and related exposure assumptions.

We anticipate focusing on the topics covered in this memo on the call scheduled for 7/26.

Let us know if there are any questions or input in advance of the call.

Thanks,

Dave

[David Klatt](#)
[Jacobs](#)
Senior Project Manager
M 1 312 480 9875
Upcoming Vacation August 6-13
David.Klatt@Jacobs.com
www.jacobs.com

-----Original Appointment-----

From: Klatt, David/CHC
Sent: Wednesday, May 26, 2021 3:44 PM
To: Klatt, David/CHC; Patarcity, Jane (Pittsburgh) USA (Jane.Patarcity@TRMI.Biz); cieniawski.scott; Klinkhamer, Christopher; Isom, Kristen; Stuart Messur; Bessingpas, David; Seaman, Jennifer/CHC; Selcoe, Barrie/HOU; Pfeiffer, Danielle; Anderson, Paul; Graham, Joseph R - DNR; Sager, John E - DNR; Saari, Christopher A - DNR; Endsley, Erin A - DNR; Judy.Fassbender
Subject: Further Crawford Creek CUL Discussion
When: Monday, July 26, 2021 2:30 PM-4:30 PM (UTC-06:00) Central Time (US & Canada).
Where: Microsoft Teams Meeting

Hi Everyone,

Scheduling a call for July 26 per our discussion yesterday.
The proposed agenda and materials are forthcoming.

Dave

David Klatt

Jacobs

Senior Project Manager

M 1 312 480 9875

David.Klatt@Jacobs.com

www.jacobs.com | [LinkedIn](#) | [Twitter](#) | [Facebook](#) | [Instagram](#)

Microsoft Teams meeting

Join on your computer or mobile app

[Click here to join the meeting](#)

Join with a video conferencing device

493366865@t.plcm.vc

Video Conference ID: 117 707 689 9

[Alternate VTC dialing instructions](#)

Or call in (audio only)

[+1 872-813-0592,795734658#](tel:+18728130592795734658) United States, Chicago

Phone Conference ID: 795 734 658#

[Find a local number](#) | [Reset PIN](#)

[Learn More](#) | [Meeting options](#)

NOTICE - This communication may contain confidential and privileged information that is for the sole use of the intended recipient. Any viewing, copying or distribution of, or reliance on this message by unintended recipients is strictly prohibited. If you have received this message in error, please notify us immediately by replying to the message and deleting it from your computer.

**Responses to WDNR Comments/Requests (John Sager 6/9/2021 email) – Part 2
Crawford Creek and Tributary GLLA Project – Superior, WI**

This document provides responses to certain comments and requests submitted via an email from John Sager of WDNR dated June 9, 2021, related to the Crawford Creek and Tributary Great Lakes Legacy Act Project in Superior, WI. Mr. Sager's email was sent in response to a May 26, 2021 conference call between USEPA, Beazer and WDNR, where Beazer presented proposed modified human health risk-based clean-up levels (CULs) for floodplain materials and the use of data averaging for comparison of sample data to CULs. Certain of WDNR's comments/requests (those related to CULs) are repeated below in bold, followed by responses in italics. Responses to the remaining WDNR comments/requests (those related to data averaging and NAPL) were provided separately on July 7, 2021.

The land use assumptions based on interviews with the current owners of the properties do not account for future potential use of these residential properties. Property ownership can change and new owners may not use the property the way the current property owners do.

*Response: We acknowledge that property ownership could change in the future, and the new property owners may use the property differently than the current owners. However, the information obtained from interviews with the current owners (including past, present, **and anticipated future use**) provides valuable site-specific information to develop reasonable and representative, yet conservative, assumptions for a recreational use scenario that are appropriate for current uses as well as future uses.*

Assuming that future use of the floodplain would be similar to current use, is reasonable and representative of the most likely reasonable future use given:

- *the relatively remote location of the floodplain;*
- *the wetland nature of the floodplain making it difficult to recreate in;*
- *the presence of ticks/mosquitoes and bears making it an undesirable place to recreate;*
- *the large percentage of the properties available for recreation outside of the floodplain;*
- *that most of the area being evaluated other than Sub-Area A is a wetland and within the 100-year floodplain; and*
- *that local, state and/or federal ordinances and statutes typically preclude building of structures in such areas as well as limit any type of a construction that can occur in wetlands.*

Based on all the above, it does not seem reasonable to assume that future uses would lead to greater exposures than current uses.

Also, as stated to you previously, the DNR does not believe we have the legal authority to impose the types of land use restrictions on property owners that are contemplated in the presentation. Therefore, it is necessary to make conservative use assumptions to account for potential property use. The cleanup levels (CULs) DNR provided take this into account. DHS was consulted on the parameters the DNR used to develop those numbers. The DNR will consult with DHS on the appropriate property use assumptions for the Koppers site.

Response: We would like to have further discussions with DNR to better understand DNR's statement that "DNR does not believe we have the legal authority to impose the types of land use restrictions on property owners that are contemplated in the presentation." Is DNR referring to land use restrictions such as "the floodplain may not be used for residential purposes (e.g., cannot construct a house)?" If so, please note that such development is already prohibited per Douglas County's Floodplain Zoning Ordinance. In addition, the presence of wetlands throughout the floodplain also limits the potential for future development.

Responses to WDNR Comments/Requests (John Sager 6/9/2021 email) – Part 2
Crawford Creek and Tributary GLLA Project – Superior, WI

Or, is DNR referring to restrictions tied to assumptions used to derive site-specific CULs, such as the exposure frequency, exposure time or exposure duration? If the latter, it must be noted that all numeric CULs, including the default non-industrial RCLs, are based on a set of exposure assumptions (e.g., exposure frequency, exposure time, body weight, skin surface area, etc.) and would represent a “land-use restriction,” if that is DNR’s interpretation of the exposure assumptions used to derive RCLs and site-specific CULs. Yet DNR’s comment implies DNR believes it has “the legal authority to impose” those land use restrictions on property owners.

DNR stated in the June 24, 2020 CUL memorandum that landowner consent will be needed in order to apply a recreational use exposure scenario that differs from the default non-industrial RCL exposure scenario. The site-specific CULs presented during the May 26, 2021 call build upon and extend the modifications adopted by DNR in its recreational CULs, and are based on site-specific information provided by the property owners.

When default RCLs are used, it is our understanding that WDNR does not impose land use restrictions/continuing obligations specific to the exposure assumptions used to derive the RCLs (e.g., exposure frequency, exposure time, body weight, skin surface area, etc.). So, if DNR were to approve alternate CULs based on site-specific exposure assumptions (which DNR is allowed to do per NR 720.12(2)), why does DNR need to impose certain land use restrictions/continuing obligations, as long as the exposure assumptions are deemed to be protective for the assumed property use/receptor (e.g., recreator). For the Howards Bay project, where DNR used site-specific exposure assumptions to develop dredged sediment disposal criteria, was DNR required to impose exposure assumption related restrictions for recreational use of the closed landfill?

Regardless of what land use restrictions/continuing obligations may or may not be necessary based on the final CUL selected for this project, we fully expect that land use restrictions/continuing obligations will be necessary for impacted materials that remain in place after remedial action is implemented. Any alternative other than complete excavation will not remove deeper impacts, including the presence of NAPL, and will require land use restrictions/continuing obligations.

The DNR does not believe it is appropriate to compare the exposure frequency assumptions applied for disposal of dredged material from the Howards Bay GLLA project to the Koppers site. The Howards Bay evaluation was done to develop appropriate reuse criteria for placement of amended dredged material, which largely did not exceed industrial direct contact (DC) RCLs, and was also being covered by 6 inches of clean cover. The land use is also different, as the placement location is a former landfill with limited recreational use, is not a residential property, nor is it proximal to any residential properties.

Response: We mentioned the Howards Bay GLLA project during our May 26, 2021 presentation as an example where DNR used site-specific exposure assumptions to develop a site-specific RCLs/placement criteria for re-use of dredged sediments. Based on the memoranda from WDNR included as Appendix B to the 100% Design Document Report, GLLA Sediment Cleanup in Howards Bay (Arcadis, 2020), we understand that the following criteria are being used for placement of Howards Bay dredge material at the Wisconsin Point Landfill:

- 1) Material from dredge management units in which the average constituent concentrations were less than the site-specific RCLs/placement criteria were deemed acceptable for use as surface cover soil at the Wisconsin Point Landfill;*
- 2) Material from dredge management units in which the average constituent concentrations were less than five times the site-specific RCLs/placement criteria were deemed acceptable for*

**Responses to WDNR Comments/Requests (John Sager 6/9/2021 email) – Part 2
Crawford Creek and Tributary GLLA Project – Superior, WI**

subsurface placement (below 24 inches of soil or dredge material meeting the site-specific RCLs/placement criteria) at the Wisconsin Point Landfill; and

- 3) *Material from dredge management units in which the average constituent concentrations were greater than five times the site-specific RCLs/placement criteria were deemed unacceptable for placement at the Wisconsin Point Landfill.*

Further, based on discussions with staff who worked on the Howards Bay design, it is our understanding that materials meeting the site-specific RCLs/placement criteria – and therefore deemed acceptable for use as surface cover soil at the Wisconsin Point Landfill – are being covered with clean soils only because of pH concerns (treatability testing showed that the use of Portland cement as a stabilization agent would result in materials with a pH over 12, which would not be conducive to sustaining vegetation growth).

DNR’s June 9 email states that “The land use is also different, as the placement location is a former landfill with limited recreational use, is not a residential property, nor is it proximal to any residential properties.” While we agree that there are land use differences between the Wisconsin Point Landfill and the Crawford Creek floodplain, our understanding is that following placement of the dredged material, the landfill will be converted to a recreational park with mowed grass, walking paths/trails, benches, picnic tables, open-sided shelters, and a pet exercise area. It seems reasonable to assume that a park specifically designed for public recreational use with nearby parking facilities would be used more intensely than a remote floodplain/wetland area, most of which is private property, and does not contain benches, picnic tables, or open-sided shelters. DNR’s September 27, 2016 memo states that “recreational use of the closed landfill is not expected to be as popular as other areas of Wisconsin Point such as beaches or beach access points.” The same could be said of the Crawford Creek floodplain – there are other nearby areas, including unimpacted forested areas between property owners’ homes and the floodplain, where more frequent use is more likely.

For comparison, the following table summarizes the exposure frequency and exposure time assumptions proposed by DNR for Howards Bay, proposed by DNR for the Crawford Creek/Tributary Site, and proposed by USEPA/Beazer for the Crawford Creek/Tributary Site:

Parameter	DNR – Howards Bay (9/27/16 Memo)	DNR – Howards Bay (4/19/17 Memo)	DNR – Crawford Creek/Tributary (6/24/20 Memo)	USEPA/Beazer – Crawford Creek/Tributary (5/26/21 Presentation)
<i>Exposure Frequency (EF) (day/yr)</i>	<i>Child – 10 Adult – 20</i>	<i>Child/Adult - 90</i>	<i>Child/Adult - 175</i>	<i>Child/Adult - 75</i>
<i>Exposure Time (ET) (hr/event)</i>	<i>Child/Adult - 1</i>	<i>Child/Adult - 4</i>	<i>Child/Adult - 4</i>	<i>Child/Adult - 1</i>

Note: EF and ET initially proposed by DNR for Howards Bay in memo dated 9/27/16, and subsequently revised per memo dated 4/19/17.

Based on the rationale used by DNR to support the use of site-specific exposure frequency and exposure time assumptions for the Howards Bay project (as presented in DNR’s September 17, 2016 and April 19, 2017 memos), we believe that the site-specific exposure frequency (75 days) and exposure time (1

Responses to WDNR Comments/Requests (John Sager 6/9/2021 email) – Part 2
Crawford Creek and Tributary GLLA Project – Superior, WI

hour/event) assumptions we have proposed for the Crawford Creek floodplain are defensible and appropriate given the site location/setting and known use (based on property owner interviews), and are similarly protective compared to those used by DNR for Howards Bay.

Slide number 27 references the USEPA residential non-cancer RSL for TCDD as 51 ppt. However, the carcinogenic RSL for TCDD is 4.8 ppt. The DNR applies the lower of the two values as the appropriate RCL. As such, it is more appropriate to compare any site-specific value for TCDD to 4.8 ppt, which would be considered the default RCL and RSL for the site.

*Response: USEPA has an allowable carcinogenic risk range of 1×10^{-6} to 1×10^{-4} . For TCDD, carcinogenic RSLs range from 4.8 ppt (1×10^{-6} risk level) to 480 ppt (1×10^{-4} risk level) (for residential exposures). In our recent experience, the TCDD cleanup level typically applied by USEPA at residential properties is the non-cancer RSL (51 ppt), which falls within the range of carcinogenic risk-based RSLs. On Slide 27, we included reference to the 51 ppt RSL to point out that USEPA considers this to be a protective CUL for residential exposures. So, for the Crawford Creek floodplain, where residential exposures are not applicable because they overstate potential exposures, a TCDD CUL of 51 ppt (and likely greater) would be considered by USEPA to be protective of recreational exposures per USEPA guidance. It is important to note that USEPA's RSL User's Manual states "**It should be emphasized that SLs are not cleanup standards**" (USEPA 2021). The USEPA RSL User's Manual also states that it is typical that more generic Preliminary Remediation Goals (such as the Residential RSLs) are used "early in the process and to become more refined and site-specific as data collection and assessment progress" and "PRGs developed in the FS will usually be based on site-specific risks and Applicable or Relevant and Appropriate Requirements (ARARs) and not on generic SLs." The site-specific recreator CULs presented during the May 2021 call are entirely consistent with the refinement of initial screening levels based on site-specific information to derive PRGs based on site-specific risks.*

Slide 27 represents the proposed cleanup levels as a factor of the DNR site-specific CULs (4x and 9x increase for the two scenarios presented). The DNR site-specific CULs already represent a 44x increase over the default non-industrial DC RCL for BaP, and a 2.5x increase for TCDD. The DNR site-specific values already represent a significant amount of flexibility, and perhaps the maximum flexibility that is possible for a site-specific RCL. When comparing the proposed values for the two scenarios presented to the default non-industrial DC RCLs, the proposed values represent a 177x increase for BaP and a 11x increase for TCDD for the first scenario, and a 413x increase for BaP and a 26x increase for TCDD for the second scenario. It will be difficult to justify site-specific cleanup levels for the site that represent an increase of several orders of magnitude over default RCLs, and far exceed any site-specific RCLs that have been applied in Wisconsin.

Response: On Slide 27 we showed the proposed CULs as a multiple of the DNR-proposed recreator CUL to convey the effect the proposed exposure assumption changes would have on the CULs. As described above and during the May 26, 2021 call, we believe that the proposed exposure assumption modifications, that are based on site-specific information obtained from actual property owners, are appropriate and are scientifically and technically justifiable. Rather than focus on the end result of the CULs, we request that DNR evaluate the proposed exposure assumption modifications based on their scientific and technical merit. Once a set of exposure assumption modifications are agreed upon, those can be used to derive site-specific CULs.

Please note that the proposed rule revisions allowing a 1×10^{-5} estimated lifetime cancer risk (ELCR) for PAHs were not approved by the Natural Resources Board. Per current Wis. Admin. Code, risk from direct contact with soil must currently use a target risk of 1×10^{-6} for individual compounds, and evaluate cumulative risk using a 1×10^{-5} target risk for all compounds.

**Responses to WDNR Comments/Requests (John Sager 6/9/2021 email) – Part 2
Crawford Creek and Tributary GLLA Project – Superior, WI**

Response: We are disappointed to hear that the proposed rule revisions allowing a 1×10^{-5} ELCR for PAHs were not approved by the Natural Resources Board. We were told by DNR on a September 29, 2020 call that the draft rule revision would become final and we could use 1×10^{-5} ELCR-based CULs for PAHs for this project. Are the 1×10^{-5} ELCR-based CULs proposed in DNR's June 24, 2020 memo now incorrect and can no longer be used, or is it that the Board has not yet met to review/approve them? Is DNR's 2017 guidance document for calculating soil RCLs for PAHs (RR-087) still applicable? Note too, that the very large multiples of default BaP CULs referred to in the comment are based on our understanding from the June 24, 2020 memorandum that the acceptable risk level for PAH is 1×10^{-5} . The difference between the site-specific CULs presented during the May 26 call and DNR's recreational CULs from the June 24, 2020 comment is much smaller.

As we point out above, we contend that whether a site-specific CUL is protective should be based on information about site-specific exposures and not the size of the difference between default RCLs and site-specific CULs. If the site-specific CULs are based on assumptions that represent current and reasonable expected future exposures, they should be appropriate for use in remedial decision-making, regardless how much larger or smaller they are than a default RCL.

The DNR requests full citation for the references shown in the various slides presented during the May 26, 2021 meeting:

- **Slide 13, table note 2 – “USEPA’s Exposure Factor Handbook (2011)”**

USEPA 2011. Exposure Factors Handbook 2011 Edition (Final Report). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-09/052F, 2011.

- **Slide 17 – “Definition: A term to account for the fraction of soil contacted that is presumed to be contaminated (USEPA 2003, USEPA 1989).”**

USEPA 2003. Recommendations for Assessing Short-Term Exposure Scenarios Involving Lead at Superfund Sites. Technical Review Workgroup for Lead. EPA-540-R-03-001. January.

USEPA 1989. Risk Assessment Guidance for Superfund Volume I Human Health Evaluation Manual (Part A). Office of Emergency and Remedial Response: Washington, DC, EPA/540/1-89/002.

In addition, please provide the DNR with the equations used to develop the cleanup levels presented by Beazer and EPA on May 26.

Response: The equations used to determine the cleanup levels presented by Beazer and EPA on May 26, 2021 are consistent with the equations used to determine the WDNR recreational RCLs in the WDNR CUL Memo dated June 24, 2020 and routinely used by the EPA (EPA 2021 [<https://www.epa.gov/risk/regional-screening-levels-rsls-equations>]). Consistent with the WDNR recreational RCLs (WDNR 2020), the target risk used to derive the BaP CUL was 1×10^{-5} and the target risk used to derive the TCDD CUL was 1×10^{-6} .