Environmental Professionals Organization of Connecticut
P.O. Box 176
Amston, Connecticut 06231-0176
Phone: (860) 537-0337, Fax: (860) 603-2075

EPOC Questions/Clarifications on
IMMEDIATE ACTIONS PART 2
as presented by CT DEEP staff on 9/12/23

1. Slide 8: SERs – Drinking Water Wells: the slide indicates that identification and sampling of drinking water wells on adjacent parcels is required within 2 days of discovery. Identification of drinking water wells on adjacent parcels within 2 days is achievable, however, any sampling that requires the completion of a legal access agreement is unlikely to be completed within 2 days. Has DEEP made any provisions for this circumstance?
2. Slide 8: SERs - Drinking Water Wells: the slide indicates drinking water wells on adjacent parcels must be identified and sampled within 2 days and then drinking water wells within 200 feet of the impacted well and within 500 feet downgradient must be identified and sampled. Isn't the latter requirement duplicative? Is there a scenario in which the sampling required within 2 days wouldn't include wells that would be included within the sampling required within 15 days?
3. Slide 9: Immediate Action Plan for Drinking Water Well: The slide indicates that an appropriate treatment system must be installed within 15 days or a connection to a public water supply must be completed within 30 days. Similar to the previous question, any installation that requires a legal access agreement may not be completed in 15 days. Has DEEP made any provision for this circumstance?
4. Similar questions apply to Slide 10: SERs Near Drinking Water Wells.
5. There are no timeframes included on the SERs: Vapor Intrusion Slide. Have timeframes for this SER response been established?
6. There are no timeframes listed on the SERs – Surface Water slide. Have timeframes for this SER response been established?
7. Slide 12: SERs – Soil: the slide indicates that within 90 days the impacted soil would need to be remediated to the applicable DEC. If the intent of the proposed regulation is to eliminate the significant hazard, shouldn't the required level of cleanup be less than 15 times the DEC (the SER trigger concentration) rather than the more stringent DEC value? Requiring cleanup within 90 days to the DEC seems contrary to DEEP's proposed Tiering system, which would allow up to one year to meet RSR standards before a site is tiered.

Environmental Professionals Organization of Connecticut
P.O. Box 176
Amston, Connecticut 06231-0176
Phone: (860) 537-0337, Fax: (860) 603-2075

EPOC Questions/Clarifications on
BACKGROUND FOR RELEASE DETERMINATION (NATURAL METALS IN SOIL)
as presented by CT DEEP staff on 9/12/23

1. Can the Department provide the raw data and calculations for review?

2. Please confirm the statistical parameter used to calculate the statewide background ranges. We assume that is a 95% Upper Confidence Level of the Mean and if so....

   a. Is the Department aware that this statical parameter measures the central tendency of the data set with approximately 50% of the values falling below and 50% falling above the calculated statistic with 95% confidence and is not a measurement of the upper end of the range of background concentrations?

   b. The Interstate Technolgy Regulatory Council (ITRC) has an extensive soil background guidance document. In chapter 11 they discuss statistical analysis. They state that a 95% UCL of the Mean is not appropriate for determining background threshold values (BTV)…

   ....since the mean is a measure of the central tendency of a dataset, UCL of the mean should not, under all but select circumstances, be used as a BTV because the result would be excessive false positive results.

   Does the Department not agree with this observation?

   c. Massachusetts used the 90 to 95 percentiles to calculate their BTVs. ITRC states

   Estimates of upper percentiles are reliable (not prone to over- or underestimation) if the background dataset is adequately large and representative of a single population.

   Did the Department consider the use of upper percentiles for calculation of background threshold values?

   d. The ITRC document also discusses upper tolerance limits (UTL)....

   The UTL is the UCL of an upper percentile of the observed values...For example, the 99-95 UTL represents the 95% upper confidence level (95% UCL) of the 99th percentile value....The 95-95 UTL has become the most common measure of BTV in practice.

   Did the Department consider the use of upper tolerance limits using a 95% confidence level for calculation of Connecticut's background threshold values?

Environmental Professionals Organization of Connecticut
P.O. Box 176
Amston, Connecticut 06231-0176
Phone: (860) 537-0337, Fax: (860) 603-2075

3. The Brown & Thomas data used by the Department is a robust data set from undeveloped public owned lands including parks and State forests. According to the paper, sample locations were selected to represent background conditions and collection was avoided within 200 meters of a major highway, within 50 meters of a rural road, within 100 meters of a building or structure, and within 5 kilometers downwind of major industrial activity. The study also included the collection of samples from three different statistical populations including:
    I. 100 results from surface soil less than 5 centimeters deep
    I. a slightly deeper data set of organic material containing A horizon soil (86 samples)
    II. a deeper set of non-organic material containing C horizon soil (79 samples).

a. Why did the Department choose just the C horizon data for their evaluation?

b. The Surface and A horizon soil data has the highest potential to be impacted by minor anthropogenic sources. Also, as this soil contains the highest proportions of organic matter, which many metals tend to bind to, higher concentrations of metals are typically present at these shallow depths when compared to samples free of organic matter from deeper depths. The Brown & Thomas paper states the following:

> Element concentrations in C-horizon soils in CT were compared with those in samples collected from shallower depths. Concentrations of most major elements were highest in C-horizon soil samples, including Al, Ca, Fe, K, Na, and Ti, but element concentrations showed a relatively similar pattern in A-horizon and surficial soil samples among the underlying geologic provinces. Trace element concentrations, including Ba, W, Ga, Ni, Cs, Rb, Sr, Th, Sc, and U, also were higher in C-horizon soil samples than in overlying soil samples. Concentrations of Mg, and several trace elements, including Mn, P, As, Nb, Sn, Be, Bi, Hg, Se, Sb, La, Co, Cr, Pb, V, Y, Cu, Pb, and Zn were highest in some A-horizon or surficial soils, and indicate possible contributions from anthropogenic sources. Because element concentrations in soils above the C horizon are more likely to be affected by anthropogenic factors, concentration ranges in C-horizon soils and their spatially varying geologic associations should be considered when estimating background concentrations of elements in CT soils.

Did the Department consider a background data set for 0–2-foot below grade soil that would be used for surficial releases and a sperate set for soil greater than two feet that could be used for subsurface releases?

Environmental Professionals Organization of Connecticut
P.O. Box 176
Amston, Connecticut 06231-0176
Phone: (860) 537-0337, Fax: (860) 603-2075

September 12, 2023

Graham Stevens, Bureau Chief
Bureau of Water Protection and Land Reuse
CT DEEP

Sent via Email to: DEEP.Cleanup.Transform@ct.gov, graham.stevens@ct.gov

Dear Graham,

EPOC is pleased to submit the following initial comments on the discussion of the *Tiers Checklist and Immediate Actions* as presented by CTDEEP staff during the monthly meeting of the Release-based Working Group on August 8, 2023.

Release Tiering

The EPOC Board supports the concept of tiering releases that have not been Verified prior to one year from discovery and understands that tiering meets the following objectives:

- Allows for CTDEEP, and in turn, the public, to be notified when certain milestones are reached;
- Allows CTDEEP to identify and intervene at releases that are not moving through the process, especially higher risk releases which will need to tier at the CTDEEP oversight level (Tier 1A), one year following discovery;
- Allows CTDEEP to implement a prescribed schedule for the investigation and remediation of releases that cannot be closed one year following discovery; and
- Forms the basis for a fee structure.

As you heard during the meeting on August 8, there is concern in the regulated community that the current draft Tiers Checklist will capture too many releases in Tier 1A (CTDEEP oversight) because the first page addresses the requirements to move from Tier 1A (CTDEEP oversight) to Tier 1B (LEP oversight).The EPOC Board does not share this concern because one year will have passed since the release discovery and a significant number of releases will either already be closed or have met the requirements to be able to initially tier at an LEP oversight tier (1B, 2, or 3).

We appreciate CTDEEP's willingness to form an Ad hoc committee to further evaluate the Tiers Checklist and we are encouraged by CTDEEP technical staff's open willingness to work with LEPs, environmental legal counsel, and environmental advocates to address the potential for

unintended consequences. Although not perfect, we believe that the adjustments that were made will help to address the main concern that too many releases would get captured by Tier 1A and that CTDEEP would not have the resources to address all those releases. We also appreciate CTDEEP's stated willingness to continue to work on the wording of the Tiers Checklist in the future.

With that said, we believe the following items need additional clarification and discussion:

- CTDEEP introduced the concept of tier characterization, which is the amount of characterization required to be comfortable that the impacts of a release have been sufficiently evaluated to move from Tier 1A (CTDEEP oversight) to Tier 1B, 2 or 3 (LEP oversight). The EPOC Board understands that CTDEEP is proposing that an investigation has achieved characterization for the purpose of completing the tiers evaluation when the horizontal and vertical extent of a release has been determined to one-half applicable clean-up standard, the detection limit (if that is higher than one-half the standard), or background to meet the tier characterization threshold with certain exemptions for specific cases. We understand that CTDEEP's intention with establishing numeric thresholds was to limit the subjectiveness inherent in professional judgment and the conceptual modeling process, as well as to recognize that delineation to non-detect is not required for the tiering process.

  To avoid unintended consequences with the tier characterization definition, we recommend that additional discussions focus on exemptions and/or exceptions. The following possible exceptions to tier characterization were discussed:

  - Presence of residual concentrations of pesticides which can be present site-wide and in some instances have extremely low clean up criteria,
  - Presence of historic fill, that can be present site wide,
  - PFAS in groundwater due to widespread presence and parts per trillion clean up criteria. Similar situation for some common chlorinated VOC breakdown products.

  Representatives of the EPOC Board would be happy to meet with you to discuss further.

- We understand that LEPs will be required to stamp the tier form and be subject to audit. We further understand that CTDEEP does not intend to review and approve each tier form, similar to current LEP verifications, but will audit some portion of the submitted forms.

- We also understand that a tier fee structure will be developed by CTDEEP and implemented for each tier checklist submittal. We hope that the tiers fee structure will be introduced soon. On the one hand, we hope that tier fees are reasonable. On the other hand, we believe that the requirement to tier a release should be an incentive to completing cleanups and closing releases prior to the one-year anniversary from discovery.

- We understand that there was discussion regarding a formal process to correct or amend an incorrect tier classification and we encourage further discussion on this.

- There was discussion at the August 8 meeting regarding sites with multiple releases that may be going through a site-wide closure and how tiering would apply to these sites. We believe there should be further discussion on this issue.

Emerging Reporting Releases (ERR) and Immediate Actions (IA)

Thank you for your presentation on ERRs and associated IAs. We provide the following comments below, organized by presentation page and slide title:

Presentation Page 8, Slide "The World of Releases"

The EPOC Board was surprised to see that 1,236 reports of historical releases that do not require reporting under 22a-450 are actually reported annually.

Presentation Page 9, Slide "What is Immediate Action"

This slide indicates that it is CTDEEP's position that removal of a release is required by a permitted spill contractor within 2 hours of reporting. The regulated community requests additional discussion on this topic. Is it two hours from discovery? Two hours from reporting? Is a permitted spill contractor required for all releases, even smaller ones?

Presentation Page 10, Slide "Types of Releases for Which IA is Required"

The Department has developed a new term (ERR) for those spills that were referred to as "contemporaneous" in the past. As stated on the slide the term ERR means:

1. a release to the land and water of the state
2. discovered by an observed change in condition
3. that is required to be reported by the regulations adopted pursuant to Section 22a-450 of the Connecticut General Statutes.

Regarding item 2, "observed change in condition" is a broad and abstract idea and additional clarification and discussion is required. Is an "observed change in condition" just something seen visually or does it include other senses? "Change" can mean many things, as well as "condition" to different people in different settings and situations. We understand the need for a definition but want to avoid unintended consequences.

The CTDEEP has also developed a definition for Significant Existing Release (SER) as:

1. a release to the land and waters of the state
2. discovered pursuant to section 22a-134tt-2 of the Regulations of Connecticut State Agencies

3. that is present in the location identified by or creating one or more of the impacts to public health or the environment identified in, subsection [placeholder] of this section.

We understand the SERs will be a subset of what we have come to identify as historical releases over the past several years. We believe that the difference between a contemporaneous/emerging release and a historical release, including the subset of ERRs, can be better articulated for clearer understanding. In Massachusetts, what we are now referring to as an emergent release is known as a sudden, continuous or intermittent release that has or is likely to have occurred in a period of 24 consecutive hours or less. The Massachusetts Contingency Plan (MCP) requires reporting for these sudden, continuous, or intermittent releases based on the quantity of material released and, in specific circumstances, if certain receptors are impacted by the release even if the volume is smaller than reportable quantities. The MCP requires that these releases be reported to the Massachusetts Department of Environmental Protection (MassDEP) within 2 hours of discovery. What we now refer to as a historical release is reportable in Massachusetts based on the concentration present in soil or groundwater samples collected from the release area. These releases must be reported to MassDEP within 120 days of discovery. The difference between the two is based on whether the release likely occurred in a period of 24 consecutive hours or less and whether the releases impacted certain, specific receptors (such as surface water). (See the MCP at 310 CMR 40.0311 and 40.0315). This 24-hour rule is well defined, easily understood and has worked for decades. We recommend CTDEEP consider something similar.

We welcome the opportunity to continue to participate in the development of the Release-Based Remediation Program.

Hi all,

I'm just wondering if 15 days is enough time to get an appropriate treatment system installed with the current state of delays in getting equipment? I don't have any particular experience with treatment systems but I do know it's difficult to get almost anything quickly.

Also, please confirm that 30 days is sufficient time to get the site connected to public water. I know we sometimes run into delays getting approvals from the towns to complete work.

Thanks

Amy
Amy Velasquez, CHMM
Environmental Compliance and Sustainability Lead
South Central Connecticut Regional Water Authority
90 Sargent Drive | New Haven, CT 06511
Phone: 203-401-2734 | Fax: 203-603-4918
Email: avelasquez@rwater.com | Website: http://www.rwater.com

Question regarding Natural Metals in Soil and Background for Release Determination.

As stated, there are more than 6000 open Connecticut Transfer Act Sites. Many of these Sites have natural occurring arsenic above the CT Res DEC (10 mg/kg) and above the Option 2 (High UCL) of 6 mg/kg.

Do these Sites require Option 3 – additional sampling for arsenic and if Option 3 fails (95 UCL>Res DEC) will they require DEEP approval?

To me, this seems like a waste of DEEP resources and will continue to result open Connecticut Transfer Act sites that cannot be closed out in a reasonable fashion.

Arsenic in Connecticut is ubiquitous, commonly detected above the RES DEC and not typically related to a site release.

George Gurney

George G. Gurney, LEP, PG
Weston Solutions, Inc.

Kevin/Carl,

In general, the approaches for evaluating background seem logical and straightforward evaluations. I looked over this table (attached) from the presentation Graham sent out and have some concerns regarding the values and unintended consequences, specifically for fill materials from bedrock sources that have been imported or derived at the site:

1. Why is Cr(6) criteria listed? The naturally occurring presence of the form of chromium is rare and any presence of it in a sample would trigger further evaluation. Please explain.
2. Why aren't comparison being made to the PMC?
3. Is an exception for certain fill materials possible? I bring this up because numerous sites across Connecticut have used quarried rock from several different formations as fill materials, the concentrations of several metals (As, Cr, Cr, V, Ni, Zn) may not meet the C horizon soil background levels or RSR.
4. The baseline does not account for fill materials that may have been imported from adjacent states.

I'll try to attend the Workgroup meeting today and raise these concerns but may not be available, unless DEEP is already looking to accommodate metals in fill that are above soil background and below the RSRs in the new regs.

Thank you,

Avangrid
A member of the Iberdrola Group

Eric J. Boswell
Project Manager / Projects / Remediation Group

Hi Graham – here are my questions, for now:

The SER/IA approach is a wholesale change to the existing SEH program and certain elements deemed significant to SEH is missing in SER. As you recall, SEH was designed to "make safe" most conditions (excepting impacts to drinking water wells, which required a more rigorous approach) until resources were available to address the remedial action. Having said that, any deadline for completion of any remedial action was absent, but at least the site was made safe. Keeping this in mind:

1. What if there are no or minimal resources available, particularly in that time frame. For example, there are municipal and small business constraints and to require permanent remedially actions (e.g., within 90 days all impacted soil has to be removed) and/or full remediation, may not be achievable. Why not continue with the concept of "making safe" in the short term and then require a plan that can be implement in the longer term.
2. Relative to SERs found during a transaction where due diligence may be ongoing, what if during the due diligence of a property that is for sale, a SER condition is discovered in soil or volatiles:
    a. Why does soil have to be fully remediated in 90 days if the site is going to be sold and a longer term redevelopment will occur and the remedy will be built into the redevelopment?
    b. Did you consider building exceptions into the time frames for SER remediation ? Largely these SEH/SER conditions have existed for awhile; they are not immediate spills so more time may be needed to fully evaluate the condition as well.
    c. Regarding volatilization, if the building is vacant and awaiting sale and a new user, can the remedy for volatiles be deferred?
3. How will the new SER approach be integrated with the existing SEH approach for properties with existing SEHs? Put another way, will property owners with existing SEHs who are compliant with the existing SEH have to act with the new SER requirements?

I should note that I am still perplexed a bit by the naturally occurring substances and when/when not to test. Will DEEP be developing a map of areas where such substances are generally naturally occurring so that there is published information as well about an area or region so that a property owner doesn't have to prove it when the owner has, by way of example, a 1 acre site in a larger area that is known for such substances (e.g., high levels of arsenic in a region)? For example, if the soil will have to be tested for disposal and heavy metals are detected (even though they weren't the release compelling the excavation), should a property owner have to go back and test for heavy metals on the site to prove it was naturally occurring if the area generally is known to have high levels of such metals?

Thanks.

Ann

HALLORAN SAGE

Ann M. Catino, Esq.
Halloran & Sage LLP

When the implementing statute for all of these efforts was passed in 2020, it was a statute that was jointly proposed by DEEP and DECD, with the idea that the elimination of the Transfer Act would as Commissioner Daum noted on today's call, move contaminated pits into productive re-use. When I look at the proposed changes that have already been discussed, as well as some of what I know is coming on the horizon, I have an overarching question, which is this: With the proposed changes, what is the estimate of increased numbers of sites that will be put into the system? As we evaluate regulatory changes, I think it would be good to know what the Departments' estimates are as to whether the number of sites captured in the system will increase, decrease or stay the same, and the basis for that estimate.

Thanks in advance.

Lee

Lee D. Hoffman
Attorney

Graham,

Please see the below questions on immediate actions for SERs.

Emilee

- Would these requirements apply to homeowners? How does DEEP envision that homeowners would access the funding to take such actions in the timelines envisioned?
- How were the timelines set forth on pages 8 and 9 developed? Will DEEP be prepared to assist private parties access properties to test wells, install systems, etc.? Will there be provisions to provide bottled water as an interim step if the tight timelines are not achievable?
- On page 7 of the slide deck there is a table comparing proposed SER triggers with the current SEH triggers.
    - The first line indicates that the SER trigger for water supply wells impacted from a release will be greater than or equal to the detection limit.
        - Will this mean that all wells with detectable contaminants will be considered SERs? How will it be determined whether the constituents are from a "release" or background? How will that determination be made within two days?
    - For soil (line 3) how is the applicable DEC to be determined? Will it be based on actual use like Conn. Gen. Stat. 22a-6u(d)(1)?
        - Why is 15x DEC being used for everything, rather than 30x DEC for some substances as it is today?
    - For volatile petroleum substances and volatile organic substances (lines 4 and 5) how was the 10x GWVC threshold selected?
    - The last line indicates that polluted groundwater at or above ten times the SWPC (or NAPL) and within 500 feet of surface water will be considered an SER.
        - What definition of surface water is DEEP using? Will vernal pools count? Will stormwater detention basins count? What percentage of Connecticut's surface area is within 500 feet of surface water using that definition?
        - Why is DEEP proposing to consider any detection within 500 feet of surface water an SER when the present SEH trigger is for "groundwater which is discharging to surface water" under Conn. Gen. Stat. § 22a-6u(f)(1)?
- On page 12 of the slide deck, the presentation lists actions required within 90 days for discovery for SERs in soil.
    - One of the listed options is "remediate all impacted soil to the applicable DEC." How is the "applicable" DEC determined? Will it be based on actual use (i.e., commercial/industrial versus residential) or would there need to be a no-residential EUR in place to rely on the IC DEC?
    - One of the listed options is "remove or mitigate soils to prevent exposure and submit immediate action plan." What sorts of mitigation strategies does DEEP envision, and how if at all would they differ from present SEH mitigation strategies (e.g., fence).

- One of the listed options is “render soils inaccessible (as defined in the RSRs).” Does DEEP envision any changes from the present definition? What sorts of documentation (e.g., EUR) would be expected within 90 days? In the longer term?

As Subgroup #1 laid out in its paper, "background" and "naturally occurring" are not the same thing. While conditions resulting from air deposition from automotive use are not "releases," the subgroup urged the department to consider other ubiquitous uses of chemicals that should similarly not be considered a release for purposes of this new program.

As an example of how other states handle "background", I'd suggest a review of the California TSCA memo on background arsenic in southern California. This takes into account both naturally occurring arsenic and anthropogenic arsenic, which is widespread in southern CA. See link below. I think this shows that (1) it is possible to consider both naturally occurring and anthropogenic presence of metals, and (2) it is possible to treat certain metals differently than others, as they are not similarly situated – e.g., some are much more likely to be present as background (whether natural or not).

So here's the question – how is the department handling "background," anthropogenic metals?

Human Health Risk Assessment (HHRA) Note Number 11 - Southern California Ambient Arsenic Screening Level

Pamela K. Elkow *(she/her/hers)*
Environmental Advisor and Attorney
Corporate Law Partners, PLLC