

## **RSR Amendments "Wave 2" Summary Document July 8, 2019**

The Remediation Division of the Bureau of Water Protection and Land Reuse is proposing revisions to Sections 22a-133k-1 to 22a-133k-3, inclusive, of the Regulations of Connecticut State Agencies, also known as the Remediation Standard Regulations (RSRs). The RSRs specify the standards for the remediation of environmental pollution in soil and groundwater at polluted properties, including but not limited to, parcels eligible to become revitalized and redeveloped brownfields.

The RSRs have been in place since 1996 and were revised in 2013, referred to as "Wave 1." The current proposed revisions are known as "Wave 2." The Remediation Division has engaged in extensive public participation to facilitate the Wave 2 revisions, which revisions are based on information gathered and lessons learned from 23 years of implementation experience. The Wave 2 amendments allow for faster cleanups and increased predictability of remedial outcomes while continuing to protect human health and the environment.

This document is intended to supplement the text of the proposed amendments to the RSRs, and does not, for any purpose, substitute for the actual proposed text. While you may use this document as an aid when reviewing that text, reading this document should in no way substitute for reading the text of the proposed amendments. This document does not - and is not intended to - identify each and every proposed modification to the text of the currently adopted RSRs. Instead, it identifies what, in the sole opinion of the Department, are significant modifications, including the addition of new compliance exit points and areas where standards or requirements that are more protective of human health and the environment than the regulations currently in force are proposed. To the extent modifications to the existing regulations are identified and characterized in this document, this document is intended to be advisory; the actual proposed text stands on its own.

The proposed amendments create new exits and compliance tools, including many which can be implemented by an LEP without the Department's prior approval. These include certain types of engineered controls, calculation of certain alternative criteria, and in conjunction with the forthcoming Environmental Use Restriction ("EUR") Regulations, the implementation of Notice of Activity and Use Limitations ("NAULs"), which under certain circumstances can be used as an alternative to Environmental Land Use Restrictions ("ELURs"). The new provisions create streamlined exits when soil and groundwater at a site are polluted as the result of the application of pesticides. The process for providing public notice has been standardized and simplified to allow the publication of a single notice in most instances. Soil reuse provisions provide flexibility regarding the reuse of

polluted soil on the parcel being remediated, on abutting parcels, and on parcels impacted by the same release, and provide for reuse of pesticide-contaminated soils on other agricultural properties. The proposed amendments also make certain changes aimed at ensuring human health and the environment remain protected. These changes include updates to volatilization criteria for chlorinated organic substances, require certain compliance tools or exits to use EURs when it may not have been previously required, and apply volatilization criteria to a depth of thirty feet below ground surface or the lowest level of a building.

Since the last time conceptual language was shared publicly in late 2016, an extensive internal process has been undertaken to review and improve the proposed amendments. This review has resulted in language modifications and organizational changes to the prior draft that are focused on strengthening and streamlining language, increasing consistency, and formalizing concepts. This includes, for example, the movement of language previously repeated in both the soil and groundwater sections to section 22a-133k-1 because it is generally applicable to both sections. In addition, in that time, some substantive language changes have been made to the definitions section, to the public participation section, to the rules regarding reuse of polluted soil, and to the structure of the groundwater section which was made to be more consistent with the structure of the soils section. Requirements regarding the use of EURs were also updated as a result of changes made to Conn. Gen. Stat. § 22a-133o during the 2018 legislative session.

**Goal of Summary Notice:**

The summary document below identifies proposed modifications to the RSRs. This document is to be used in conjunction\*\* with the regulations themselves to help navigate the revisions. Page numbers refer to the Red-Line/Blue-Line version of Proposed Revised Remediation Standard Regulations posted on the Remediation's RSR webpage [www.ct.gov/deep/rsr](http://www.ct.gov/deep/rsr).

**Detailed Summary:**

**22a-133k-1**

***22a-133k-1(a) (1)-(100) Definitions***

**Page  
(1)**

- Key Definitions added:
- “Application of pesticides”
  - “Conceptual site model”
  - “Diminishing state groundwater plume”
  - “Maximum extent prudent”
  - “Water Quality Criteria”
  - “Monitored Natural Attenuation”

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“Polluted Material”

Key Definitions modified: “Background concentration”

“Residential activity”

***22a-133k-1(b) Applicability*** (12)

Specifies that, to apply the RSRs, a valid conceptual site model needs to be developed through representative site characterization.

***22a-133k-1(d) Public Participation*** (14)

Simplifies public notice requirements by ensuring that only a single notice is required to be published in most instances.

***22a-133k-1(e) Environmental Use Restrictions*** (17)

This subdivision complements the EUR Regulations - to be formally proposed shortly. The proposed RSRs implement the ability to use NAULs, an LEP approved EUR which can be used instead of an ELUR under certain specified circumstances, and clarifies when an EUR must be in effect as part of a remedy.

***22a-133k-1(f) Financial Assurance*** (19)

Details general financial assurance requirements for engineered control variances or technical impracticability variances; allows for an exemption if total surety is less than \$10,000.

***22a-133k-1(g) Use of Form Prescribed by the Commissioner*** (21)

Lists universal requirements for submitting a notice or request to the Commissioner.

***22a-133k-1(h) General Requirements for Analytical Data*** (21)

Identifies standards for analytical data to be used to demonstrate compliance with the RSRs, including laboratory reporting limits, data quality assessments, and evaluations of the usability of data. Consistent with Reasonable Confidence Protocols, specifies process for laboratory analysis of samples when matrix interference or instrument limitations are encountered.

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**22a-133k-2 Standards for Soil** (27)

**22a-133k-2(a) Soil Criteria** (27)

Compliance with RSRs for polluted soil is achieved when soil has been remediated to DEC, PMC, or the background concentration for soil.

**(b)(3) Conditional Exemptions for Inaccessible Soil** (29)

**(b)(4) Conditional Exemption for Inaccessible Soil Polluted with PCBs** (29)

Substantive language formerly in the definition for “inaccessible soil” was moved here, and the need for an EUR or ELUR was clarified.

**(b)(6) Conditional Exemption for Soil Polluted with Pesticides** (31)

Provides that certain soil that is polluted with pesticides through the “application of pesticides” does not require remediation to meet the DEC.

**(b)(7) Direct Exposure Criteria for Additional Polluting Substances** (31)

Equations relocated to Appendix G.

**22a-133k-2(c) Pollutant Mobility Criteria** (34)

**(c)(1) Pollutant Mobility Criteria** (34)

Provides that remediation shall occur to the seasonal low water table in a GA area and to the seasonal high water table in a GB area.

**(c)(2) Optional Criteria for Polluted Soil in a GA Area** (35)

**(c)(2)(A) Polluted Soil in GA Area**

Seasonal low/seasonal high language was relocated into subdivision (c) (1).

**(c)(2)(B) Polluted Soil in a GA Area, Except for Soil Polluted with PCBs and ETPH**

PCBs were excluded from the optional criteria.

**(c)(2)(C) Inorganic, semi-volatile, PCB or pesticide contamination in a GA area**

Optional criteria for inorganics, semi-volatiles and pesticides were moved to (c) (2) (B). PCBs were excluded due to federal regulations.

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***(c)(5) Conditional Exemptions to Pollutant Mobility Criteria*** (42)

***(c)(5)(A) Environmentally Isolated Soil***

Detail was added on the type of building or permanent structure that can be used to render soil environmentally isolated.

***(c)(5)(B) Polluted Material***

Clarifies applicability of PMC when such criteria is exceeded as a result of “polluted material,” as newly defined.

***(c)(5)(C) Soils Subject to Infiltration***

Clarifies applicability of PMC when 80% of the mass of substance remaining has been infiltrated.

***(c)(5)(E) Conditional Exemption for Soil Polluted with Pesticides***

Provides that certain soil that is polluted with pesticides through the “application of pesticides” does not require remediation to meet the PMC.

***22a-133k-2(d) Alt. Soil Criteria and Alt. Dilution or Dilution Attenuation Factor*** (45)

***(d)(1) Information Required in a Request for Approval*** (45)

Revised language includes information that is required prior to requesting the use of an alternative soil criteria or dilution attenuation factor.

***(d)(2)(A) Soils Polluted with Substances Other Than PCBs***

The commissioner may require an EUR when approving alternative soil criteria.

***(d)(2)(B) Inaccessible Soil Polluted with PCBs***

Relocated from (d) (7) to (d) (2) (B).

**(d)(3) Commissioner Approval of Alt. Release-Specific Pollutant Mobility Criteria** (47)

**(d)(3)(A) Approval of Alternative Release-Specific Pollutant Mobility Criteria**

Relocated some language from (d) (3) and (d) (5) to (d) (3) (A).

**(d)(3)(B) Alternative Release-Specific Dilution or Dilution Attenuation Factor**

Relocated some language from (d) (4) and (d) (6) to (d) (3) (B).

**(d)(3)(C) Condition for Approval**

Clarifies that, when an alternative PMC or alternative dilution or dilution attenuation factor is approved for a specific substance, an Alternative GWPC cannot be used for the same substance.

**(d)(4) LEP Calculation and Use of Alt. Release-Specific Pollutant Mobility Criteria** (48)

Allows an LEP to calculate a release-specific alternative PMC, for criteria in Appendix C, based on site-specific conditions, without DEEP approval. Formulas and inputs are provided in Appendix H.

**22a-133k-2(e) Determining Compliance with the Soil Criteria** (50)

**(e)(3) Background Concentrations** (51)

Relocated a portion of the definition of “background” into this new subdivision.

**22a-133k-2(f) Soil Criteria Variances** (52)

**(f)(1) Widespread Polluted Fill** (52)

**(f)(1)(A) Eligibility**

Clarifies that a release into widespread polluted fill (“WSPF”) is not exempt from compliance with the RSRs. Requires an ELUR to prevent the movement of WSPF to another parcel.

**(f)(1)(B) LEP Certification for Widespread Polluted Fill Variance**

Allows an LEP to approve a WSPF variance in certain circumstances.

**(f)(1)(C) Commissioner Approval of a Widespread Polluted Fill Variance**

Expands the potential use of the WSPF variance outside coastal areas.

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***(f)(2) Engineered Controls Variance*** (54)

***(f)(2)(B) LEP Certification of an Engineered Control Variance***

Allows an LEP to certify use of an Engineered Control for various types of DEC soil exceedances.

***(f)(2)(C) Commissioner Approval of an Engineered Control Variance***

Modifications to provisions regarding an engineered control where VOCs exceed the PMC, the use of immobilization as an engineered control, and the measures that are necessary to ensure that engineered controls remain effective.

***(f)(2)(D) Actions Required for Maintaining an Engineered Control Variance***

Specifies required actions and deadlines associated with an engineered control variance.

***(f)(3) Public Roadways Variance*** (60)

Allows the Commissioner to approve a variance from DEC or PMC under an existing “public roadway,” as newly defined, under certain specified circumstances.

***22a-133k-2(g) Non-Aqueous Phase Liquids and On-going Source of Pollution*** (61)

Eliminates the distinction between LNAPL and DNAPL, clarifies that compliance with the groundwater criteria is still necessary, and that an ELUR is required if using this provision.

***22a-133k-2(h) Use of Polluted Soil and Reuse of Treated Soil*** (62)

***(h)(3) Polluted Soil***

Includes provisions regarding the reuse of polluted soil on the parcel being remediated, on abutting parcels, and on parcels impacted by the same release. In certain specified circumstances and under the supervision of an LEP, polluted soil may be reused without the Commissioner’s approval.

***(h)(5) Polluted Soil Containing Pesticides***

Provides for reuse of soil polluted by the “application of pesticides” on other parcels used for agriculture.

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**22a-133k-3 Standards for Groundwater** (66)

**22a-133k-3(a) Groundwater Criteria** (66)

**(a)(1) Groundwater in a GA Area** (66)

Compliance with the RSRs for a groundwater plume in a GA area is achieved when groundwater has been remediated to background concentration, SWPC, and VolC.

**(a)(2) Groundwater in a GB Area** (66)

Compliance with the RSRs for a groundwater plume in a GB area is achieved when groundwater has been remediated to the SWPC and VolC or background concentration. Clarified that when a groundwater plume migrates from a GB area into a GA area, that portion of the plume needs to meet GA criteria.

**(a)(3) Groundwater Plume Discharging to a Low-Dilution Surface Water Body** (66)

Relocated from 22a-133k-3(b) (1).

**22a-133k-3(b) Alternative Surface Water Protection Criteria** (67)

**(b)(1) Groundwater Plume Discharge to a Watercourse** (67)

Replaced the stream flow value 7Q10 with Q99 in the LEP-implemented alternative SWPC calculation. Allows an LEP-implemented alternative calculation for a groundwater plume discharging to a tidally influenced water body and establishes a cap on the maximum alternative SWPC allowable.

**(b)(2) Aquifer Dilution** (69)

Allows an LEP to calculate an alternative SWPC using aquifer dilution, under certain specified circumstances.

**22a-133k-3(c) Volatilization Criteria** (71)

**(c)(1) Volatilization Criteria for Groundwater** (71)

Revised the depth for which groundwater must comply with VolC from 15 feet to 30 feet for VOCs, other than “volatile petroleum substances,” as newly defined. The 15 feet depth still applies to volatile petroleum substances.

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*(c)(2) Alt. Demonstration of Compliance with Groundwater Volatilization Criteria* (72)

Subparagraph (2) (B), which allows vapor to be mitigated prior to entering a building, was relocated to subdivision (3). A new provision was created to determine compliance when the uppermost portion of the water column meets applicable criteria.

*(c)(3) Exemption from Volatilization Criteria through Vapor Mitigation* (73)

Relocated from subdivision (c) (2) and added an EUR requirement.

*(c)(4) Alternative Release-Specific Volatilization Criteria* (74)

Removed LEP-implemented option that was only available for substances with VolC criteria.

*(c)(5) Exemption from Volatilization Criteria through a No Build Restriction* (75)

Modified to require evaluation of a vapor intrusion pathway if a building exists within 30 feet of a groundwater plume that exceeds criteria.

*(c)(6) Exemption from Volatilization Criteria through Indoor Air Monitoring* (76)

An ELUR requirement was added, replacing the additional conditions that the commissioner may impose.

***22a-133k-3(d) Groundwater Protection Criteria*** (79)

*(d)(1) Exemption from Attaining Background Concentration in a GA Area* (79)

Combined all exemptions from background in a GA area into this subdivision. Relocated *prior to any groundwater remediation* provision [subdivision (d) (2)] and *technically impracticable* provision [subsection (e) (1)] into this subdivision.

*(d)(2) Alternative Groundwater Protection Criteria* (80)

Added a mapped area for the application of alternative GWPC.

*(d)(2)(A) LEP Calculation of Alternative Groundwater Protection Criteria*

Allows an LEP, in certain specified circumstances, to calculate an alternative GWPC without Commissioner approval.

*(d)(2)(B) Commissioner Approval of Alternative Groundwater Protection Criteria*

Allows for Commissioner approval of an alternative GWPC, in certain specified circumstances.

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**22a-133k-3(e) Technical Impracticability Variance of Groundwater Remediation** (81)

Establishes a two-step process for requesting a technical impracticability (“TI”) variance.

*(e)(1) Request for Technical Impracticability Variance*

Address information needed in the first step for requesting a TI variance.

*(e)(2) Additional Information to be Submitted Upon Request*

Addresses information needed in the second step for requesting a TI variance, after the commissioner has determined that a TI variance is appropriate.

**22a-133k-3(g) Conditional Exemption for Groundwater Polluted with Pesticides** (85)

Provides that groundwater polluted by the “application of pesticides” may not need to be remediated, under certain specified circumstances.

**22a-133k-3(h) Applying the Groundwater Criteria** (85)

*(h)(1) Groundwater Monitoring* (86)

Specifies that groundwater monitoring must validate the CSM, determine the background concentration at a site, and be capable of determining the effectiveness of “monitored natural attenuation,” as newly defined.

*(h)(2) Prerequisites for Compliance with Groundwater Criteria* (86)

Simplified the conditions precedent to groundwater compliance monitoring.

*(h)(3) Determining Compliance with Groundwater Criteria* (87)

*(h)(3)(B) Determining Compliance with Surface Water Protection Criteria*

Clarified language regarding compliance SWPC and 95% UCL and revised the timeframe when using the 95% UCL calculation.

*(h)(3)(D) Alt. Methods to Determine Compliance with the Groundwater Criteria*

Relocated from prerequisites subdivision, 22a-133k-(3)(h)(2) to (h)(3)(D).

*(h)(4) Upgradient Groundwater Plume* (90)

Addresses substances in groundwater from upgradient sources.

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**22a-133k-3(I) Additional Polluting Substances** (91)

*(I)(2) Surface Water Protection Criteria for Additional Polluting Substances* (93)

Clarified by adding language that mirrors the language for GWPC additional polluting substances, to provide consistency in the terminology used to identify the option to obtain SWPC for a substance not listed in Appendix D of the RSRs.

*(I)(3) Volatilization Criteria for Additional Polluting Substances* (93)

Clarified by adding language that mirrors the language for GWPC additional polluting substances, to provide consistency in the terminology used to identify the option to obtain VolC for a substance not listed in Appendix E and F of the RSRs.

*22a-133k-Appendix E Volatilization Criteria for Groundwater* (123)

Updated the criteria for chlorinated VOCs.

*22a-133k-Appendix F Volatilization Criteria for Soil Vapor* (125)

Updated the criteria for chlorinated VOCs.

*22a-133k-Appendix G* (132)

*Equations, Terms, and Values for Calculating Release-Specific Additional Polluting Substances for Direct Exposure Criteria, Pollutant Mobility Criteria, Groundwater Protection Criteria, Surface Water Protection Criteria, and Volatilization Criteria and Alternative Volatilization Criteria.*

Deleted existing provision in Appendix G: Calculations for site specific Volatilization Criteria for Groundwater and Soil Vapor.

Moved all soil and groundwater APS calculations into Appendix G.

*22a-133k-Appendix H* (144)

*Equations, Terms, and Values for Calculating Release-Specific Pollutant Mobility Criteria*

Appendix H provides the calculation (formulas and inputs) that will be used when calculating the LEP-implemented Release-Specific PMC.

*22a-133k-Appendix I Alternative GWPC Map* (149)

Map of the area regarding the applicability of Alternative GWPC. Map will be available on the Department's internet website.

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