



AMERICAN COUNCIL OF ENGINEERING COMPANIES  
*of Maine*

Mr. David Wright  
Division of Remediation  
Bureau of Remediation and Waste Management  
Maine Department of Environmental Protection  
17 State House Station  
Augusta, Maine 04333-0017

RE: ACEC Comments on “Implementation of Maine Remedial Action Guidelines for Soil” & Maine DEP and CDC June 2009, “Revised Guidance For Human Health Risk Assessments for Hazardous Substance Sites in Maine”.

The Maine Chapter of American Council of Engineering Companies (ACEC) members of the Maine Department of Environmental Protection Task Force (DEP Task Force) reviewed the DRAFT “Implementation of Maine Remediation Action Guidelines for Soil (MERAGs)” published for public comment dated July 20, 2009 and the Maine DEP and CDC June 2009, Revised Guidance For Human Health Risk Assessments for Hazardous Substance Sites in Maine..

The following presents a summary of our comments regarding the DRAFT “Implementation of Maine Remediation Action Guidelines for Soil (MERAGs)”:

1. **General.** In general, the document is very well written and provides a very thorough background and description of how to interpret and implement these guidelines.
2. **Page 8, Part V, Section G.1, First Paragraph.** Footnote number 4 should be relabeled as footnote number 3. General consistency and continuity check of footnotes is needed throughout.
3. **Page 9, Part V, Section G.1.** It may be helpful to define the terms “Contaminants of Potential Concern (COPC)” and “Indoor Air Targets (IATs)” in Section III, Definitions.
4. **Page 9, Part V, Section H.** It may be helpful to expand on this section as to provide more specific guidance or examples as to when the Department may require ecological assessment before applying the MERAGs to a hazardous substance site. See Massachusetts Contingency Plan 310 CMR 40.0995(3). Also see Part VI. Section I, which explains that the DEP does not address ecological risk assessment methodology.
5. **Page 18, Part VII, Section B.2** – The variance from the Groundwater MERAGs should also address the case when area residences utilize the surrounding aquifer (yet is not considered a Public Water supply source) and there is offsite migration of contaminants. Based on our interpretation of this section, this would be an acceptable case to provide a variance to groundwater MERAGs, which may put the area residences at risk. Please consider replacing “on-site groundwater extraction” with “groundwater extraction at potentially hydraulically connected on-site or off site resource areas” or “sites within 500 feet of the source or potential groundwater plume” are suggestions.
6. **Page 18, Part VII, Section B.2, Last Bullet** – There is a reference to “... as in b”. Please clarify this reference.

7. **Page 19, Part VII, Section B.2, Fourth Bullet from Top of Page** – The DEP should consider deleting this bullet regarding prior discharges. We believe that environmental covenants and deed restrictions can still be an effective and appropriate remediation approach for this situation.
8. **Page 20, Part VII, Section C.1** – The DEP should consider expanding this section to include guidance on the use of deed restrictions including soil excavation and groundwater withdrawal with the goal of eliminating exposure pathways as remediation alternatives for the site.
9. **Page 21, Part VII, Section D** - It would appear that when evaluating sites with multiple contaminants, DEP allows for consideration of incremental risks (i.e., risks that are over and above background risks). This should be clarified.
10. **Page 21, Part VII, Section D.1** – The DEP should consider adding additional language clarifying the fact that even though the DEP is not requiring remediation of soils with contaminants within background concentrations, it does not necessarily mean that those revised cleanup guidelines are protective of health, they are just not enforceable by the DEP. It should be made clear that it is the responsibility of the party conducting the cleanup to ensure that a condition of no significant risk is present regardless of the relationship of current concentrations to established or determined background conditions.
11. **Page 25, Part IX** – The second sentence indicates that the MERAGs are “default direct contact cleanup guidelines”. This sentence should be revised to indicate that it is also for other exposure pathways.
12. **Appendices** – The values presented for PAHs are very conservative. For example, the background concentration of benzo(a)pyrene documented in urban soil is 10X the action level specified in Table 3 ([metaenv.com/files/bkgd\\_pah\\_paper\\_v1.pdf](http://metaenv.com/files/bkgd_pah_paper_v1.pdf)). Massachusetts DEP identified benzo(a) pyrene in “natural soil” at 2 mg/kg which is approximately 100X the action level presented in Table 3. (<http://www.mass.gov/dep/cleanup/laws/backtu.pdf>). Switching over to the Massachusetts EPH/VPH analytical methodology may cause significant regulatory issues, particularly for sites in urban areas, which may hinder the completion of remediation efforts. Either the MERAG PAH guidance should be revised to be consistent with analogous state-level regulatory levels or provisions must be made to categorically exclude those soils which have been impacted by non carbon fraction range EPH-related sources. For example, sites impacted by runoff from active roadways or soil sample matrices containing degraded asphalt, coal, coal ash or wood ash.
13. **Appendices** – As noted above, the RAGs values for the construction worker scenario are substantially lower than the RAGs values for the residential scenario for some constituents, notably light-end non-carcinogenic PAHs. This is presumably due to the combination of low VF and use of the RfC for naphthalene as a surrogate toxicity value. However, it is not realistic that vapor inhalation is the most substantial (i.e., risk-driving) exposure pathway for SVOCs. We recommend that DEP re-evaluate the parameters that were used in the modeling and the toxicity values to determine if uncertainty in the derived RAGs values can be reduced.
14. **Page 18, Section VII, Part B.2** - It appears that soil leaching values must be applied to any soil for which the variances identified in VII.B.2 do not apply. The empirically derived soil leaching values provided in Appendices I – III are highly conservative and in many cases actual field verification of site conditions may demonstrate these values to be too conservative for site-specific conditions. We recommend that the department allow for alternative means of evaluating soil leaching, including use of SPLP data and groundwater quality beneath and downgradient of the release area.

15. **Appendices** - The RAGS values for aluminum and iron default to the ceiling concentration of 10,000 mg/kg. In contrast, the risk-based values for these constituents are more than one order of magnitude higher than the ceiling concentrations. Background concentrations of these constituents are also often higher than the ceiling concentrations. However, DEP did not establish background values for aluminum and iron. If RAGS values for these constituents are established at 10,000 mg/kg, remediation due to aluminum and/or iron will likely be necessitated at numerous sites. We strongly recommend that DEP remove aluminum and iron from the list of substances for which RAGS values are established. Alternatively we recommend that RAGS values for aluminum and iron be set at the risk-based values and not the ceiling or background concentrations.
16. **General** - The RAGs guidance allows for several methods for determining compliance, including use of standard risk assessment. The RAGs guidance also establishes the soil concentration to be used to evaluate compliance with the RAGs values as the 95% UCL. We concur with these approaches and are encouraged that DEP is integrating scientifically-defensible flexibility into the RAGs guidance.
17. **General** – We suggest that the DEP consider adding a subsection to the guidance document providing guidance for the offsite disposal of soil as fill that contain contaminants in exceedance of background concentrations. For example, can soil with contaminants in exceedance of residential standards yet within commercial standards be relocated to a commercial site as fill? It may be helpful to provide some guidance on these types of situations. See Massachusetts Contingency Plan 310 CMR 40.0032(3) known as the “antidegradation policy.” There should be something similar for Maine.
18. **General** – We recommend that the guidance regarding deed restrictions and environmental covenants be consistent with other DEP guidance documents and are currently inconsistent with “Remediation Guidelines for Petroleum Contaminated Sites in Maine”.

In addition, we are also providing some comments regarding the Maine DEP and CDC June 2009, Revised Guidance For Human Health Risk Assessments for Hazardous Substance Sites in Maine. They are as follows:

- 1) The guidance indicates that risk assessments should be submitted using the RAGS Part D reporting format. The guidance should clarify exactly what is meant by 'RAGS Part D reporting format'.
- 2) Iron should be included as an essential nutrient. DEP cites RAGS Part A as rationale for including only Ca, K, Mg, Na as essential nutrients, but the standard of practice in most EPA Regions and most other states is to include iron as an essential nutrient as well.
- 3) Section 4.2 COPC selection for dermal exposure to contaminants in water' is not clear. It appears that this section is stating that tapwater RSLs should be used to select COPCs in groundwater (drinking water) but that RAGS Part E should be consulted for additional chemicals to be included as COPCs based on dermal exposure. If that is the case, then the guidance also needs to clarify under what circumstances the chemical(s) that are significant for dermal exposure get included as COPCs – e.g., whenever they are detected regardless of the concentration?

- 4) Section 6.1 should identify what the exposure points are for vapor intrusion.
- 5) Gardening scenario: The guidance indicates that a gardening scenario should be included as part of the residential (baseline) resident scenario. This exposure pathway often leads to elevated risks even at low (near background) concentrations due to the inherent uncertainty and conservatism in the exposure assumptions and bioconcentration factors. Notably, DEP did not include this pathway in the derivation of the residential RAGS values, which appears to be a disparity in application of policy. We note that MassDEP now includes the gardening scenario in the derivation of Method 1 S-1 standards, but only for a limited list of chemicals that are recognized to be potential bioaccumulation concerns in produce and for which a sufficient data base of bioaccumulation factors exists (e.g., cadmium). We recommend that Maine DEP consider establishing a limited list of chemicals to which bioaccumulation in produce should be considered in risk assessment.
- 6) Section 8 should include a discussion on background policy and how background factors into evaluation of site-related risks (e.g., incremental risk evaluation).

I hope these comments are helpful. If you have any questions or would like clarifications on any of these comments, please contact me at [rpatten@crederellc.com](mailto:rpatten@crederellc.com) or at (207) 828-1272 X 35.

Sincerely,

A handwritten signature in blue ink that reads "Rip Patten". The signature is written in a cursive style and is positioned above the typed name.

Rip Patten, P.E.  
ACEC of Maine

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