

# The Sustainable Remediation Forum

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This issue of *Remediation* includes the first Sustainable Remediation Forum, a column in question-and-answer format that addresses challenging issues facing sustainable remediation. The column's purpose is to offer *Remediation* readers an opportunity to gain insights from environmental professionals who have been intimately involved with the concepts and implementation of sustainable remediation. The column will touch on technical, social, and regulatory issues related to sustainable remediation and will provide *Remediation's* readers with opinions from some of the most authoritative professionals involved with sustainable remediation. The column will be led by the panel members listed in Exhibit 1.

In this inaugural column, we have two active members of the U.S. Sustainable Remediation Forum (or "SURF") providing an opinion to the following two questions related to integrating sustainable remediation into the regulatory framework in the United States:

How should regulatory agencies incorporate sustainable remediation into cleanup programs? Can this be completed within the existing structure of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Resource Conservation and Recovery Act (RCRA), and state voluntary programs, or would legislation amending the regulations be warranted?

## KARIN S. HOLLAND

Longstanding and well-defined remediation selection, implementation, and optimization processes exist within the United States. However, as stated in the SURF white paper, "Integrating Sustainable Principles, Practices, and Metrics Into Remediation Projects," federal, state, and local laws currently do not explicitly require (or prohibit) the incorporation of sustainability principles into remediation projects. Some voluntary programs are considering sustainability during site cleanup on a project-by-project basis. For example, the California Department of Toxic Substances Control and the Illinois Environmental Protection Agency have considered sustainability issues in specific voluntary projects. A broader, U.S.-wide approach for sustainable remediation may provide additional consistency during regulatory oversight of remedial projects, resulting in a more equitable regulation of responsible parties.

A number of methods could be employed by regulatory agencies to incorporate sustainability into cleanup programs. Perhaps the most straightforward approach would be the application of sustainability principles into current regulatory regimes (such as CERCLA and RCRA). The white paper describes two alternatives for integrating

**Exhibit 1.** Sustainable Remediation Panel

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Julia Bussey AMEC Geomatrix Inc. Oakland, CA	John A. Simon <i>Remediation</i> WSP Environment & Energy Reston, VA
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sustainability within the present regulatory framework: (1) incorporating sustainability into the existing National Contingency Plan (NCP) nine criteria or performance standards when developing feasibility studies or (2) having a separate sustainability criterion (i.e., a tenth criterion).

Some evaluation criteria within CERCLA and RCRA—namely, overall protection of human health and the environment, cost, and state acceptance—could be viewed as already incorporating sustainability principles. However, in practice, other sustainability aspects, such as atmospheric emission impacts (e.g., local air pollutants from waste trucks or greenhouse gas emission), and health and safety of construction workers are often overlooked. Such aspects are often outside the purview of the regulators of remediation projects who generally focus on human health impacts to people on- and off-site from chemicals in the soil and groundwater, and the protection of water resources. Should the approach of incorporating sustainability into the existing nine NCP criteria be employed, it is recommended that guidance is developed, describing how to address the different components of sustainability within the available remediation criteria. The guidance should also address whether and how weighing should be applied to different sustainability aspects within the decision-making process.

Alternatively, a stand-alone sustainability criterion (the tenth NCP criterion) could be required within the current framework to assess different sustainability aspects in a dedicated and focused evaluation. This would likely make a feasibility study or remedial design document more transparent, providing the reader greater clarity with respect to

how the sustainability aspects that are most relevant to the key stakeholders were evaluated in the decision-making process. A separate criterion may place additional pressure on the regulator when weighting the benefit of the sustainability criterion against the other criteria, but it would not necessitate separate regulation, provided that suitable guidance is available to remedial teams.

Aside from the two alternatives described above, separate legislation could instead be implemented to regulate sustainability principles within the remediation process. However, it is proposed that this would be more burdensome to all stakeholders due to the additional cost, time, and stakeholder cooperation associated with the development of new regulations compared to the amendment of existing regulations. Agencies are experienced in enforcing CERCLA and RCRA and could be trained to incorporate sustainability principles within such regulations. Applying sustainability thinking within the current framework therefore seems more efficient and less resource-intensive, and it could be argued that new regulations addressing sustainability are not warranted.

As stated above, some federal and state regulatory agencies are already encouraging the application of sustainability principles within the remedial process (from remedy selection to remediation process optimization) and are accepting remedial documents that contain a discussion of sustainable remediation approaches, in advance of regulation. Additionally, according to the SURF survey referenced in the white paper, most regulators agree that sustainability plays an important part in the decision-making process when selecting a remedial approach. However, as discussed in the white paper, a number of barriers currently impede regulators from requesting that sustainability is consistently considered within remediation projects. These barriers must be understood before a compelling case can be made for the widespread integration of sustainability thinking within the remediation process, whether through guidance or regulation.

## PAUL FAVARA, P.E.

Components of sustainability are already rapidly being assimilated into regulatory programs. The US EPA and several states have provided initial guidance on how sustainability might be integrated into programs by providing technical guidance on sustainable implementation best practices, green technologies, and useful tools/resources. While the guidance released by regulatory agencies has been very helpful, it has not addressed the role of sustainability in remedy selection or changing an ongoing remedial action.

To determine how sustainable remediation impacts the selection/changing of a remedial action, regulatory agencies and industry stakeholders must first agree on a definition and scope of sustainable remediation. Today, the definition and scope of sustainable remediation is anything but consistent. To some, sustainable remediation is the “greening” of the selected alternative and operating systems. To others, it is something that should be integral to the decision-making process and something that should be addressed in regulatory reviews of existing projects (e.g., CERCLA five-year reviews). Still, others look at sustainable remediation as an excuse to “do nothing”—some people refer to this as “green washing.”

This diversity of viewpoints likely exists because the US EPA has not yet issued a policy statement or comprehensive guidance regarding the scope and role of sustainability

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in remedial decision making. It seems possible that this type of policy or guidance can be developed without amending legislation. But since I am not a policy expert or lawyer, I'll leave this part of the question for others to debate.

The Sustainable Remediation Forum has taken a bold step forward in helping to define the scope and role of sustainability by developing the first comprehensive view of sustainable remediation. This information is presented in a white paper entitled "Integrating Sustainable Principles, Practices, and Metrics Into Remediation Projects" and is published in this issue of *Remediation*. This document addresses, in detail, regulatory and integration issues with sustainability. It is hoped that this white paper will spark discussion and represent a point of reference for industry stakeholders to agree, or disagree, on topics associated with sustainable remediation.

Regulatory agencies can help accelerate the adoption and integration of more comprehensive sustainable remediation tenets into remediation cleanup programs by being more proactive in helping to define the scope of sustainable remediation as it applies to different regulatory frameworks. This is already occurring, to some extent, on a project-by-project basis. Responsible parties, regulatory project managers, and consultants have been integrating various "degrees" of sustainable remediation into their remedial planning and design projects. The fact that this is occurring at a grassroots level, and appears to be gaining momentum, shows there is a value and a need for better sustainability integration. These project-level successes need to be replicated at state and federal program levels.

Where regulatory programs do not have flexibility in considering additional criteria (e.g., CERCLA), the least controversial is to map sustainability criteria to existing regulatory evaluation criteria or references. For example, if you are looking at greenhouse gases as one of several sustainability criteria to be evaluated in a CERCLA feasibility study, you could evaluate it under the short-term effectiveness criteria (specifically, environmental impacts). However, not all sustainability criteria may be easily mapped to existing evaluation criteria. It is recognized that fitting some sustainability parameters into standard evaluation criteria may involve a broader interpretation of regulatory guidance criteria. It may also involve "force-fitting" sustainability criteria into evaluation criteria so that sustainability criteria can be appropriately integrated into a decision.

Another approach would be for project teams to work with their regulators and agree upon how sustainability will be addressed. Some regulatory programs have more flexibility than others, and it may be acceptable to project stakeholders to have sustainability stand by itself as an evaluation criteria.

The best solution would be for regulatory agencies to provide clear guidance and/or policy on how sustainability could be implemented into different cleanup programs. Until this happens, the integration of comprehensive sustainability tenets will take longer and will be inconsistently applied throughout the remediation industry.

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