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COMMENTARY

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Sustainable remediation column

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Abstract

This is a continuation of the *Remediation* column highlighting sustainable and resilient remediation sponsored by the Sustainable Remediation Forum (or "SURF"). In this column we have two active members of U.S. SURF collaborate from two different perspectives, one from a consultant and a second perspective from industry on the following question.

1 | INTRODUCTION

This is a continuation of the *Remediation* column highlighting sustainable and resilient remediation sponsored by the Sustainable Remediation Forum (or "SURF"). In this column we have two active members of U.S. SURF collaborate from two different perspectives, one from a consultant and a second perspective from industry on the following question:

2 | ENVIRONMENTAL, SOCIAL, AND CORPORATE GOVERNANCE (ESG) CRITERIA ARE AN INCREASINGLY VALUABLE WAY FOR COMPANIES TO BE EVALUATED. HOW HAS THIS FOCUS ON ESG AFFECTED YOUR WORK IN REMEDIATION?

The term ESG was first coined in 2005 via the "Who Cares Wins" conference in Zurich. ESG was initiated for investment analysis, processes, and decision-making (International Finance Corporation, 2005). Unless you are an investment analyst, green investor, or sustainability professional the term ESG is likely only a few years old. From continual global, national, and financial pressure ESG has now become an everyday term in the corporate world that has permeated corporate culture. ESG reporting and investing has actually been around in some capacity for over a decade, but the information being disclosed is continually evolving as standardization is beginning to occur. For the sustainable remediation practitioner this is welcome news.

The ESG framework is used by publicly traded companies to evaluate business operations' impacts on the environment and people. Before ESG implementation, a remediation practitioner could discuss sustainable remediation within the environmental industry but that it would be unlikely to translate to a company's C-suite or boardroom. Many sustainable remediation concepts and vernacular overlap with corporate ESG programs. Companies are now enacting goals to reduce greenhouse gas (GHG) emissions, promote social and community benefits, and apply the United Nations Sustainable Development Goals (UN SDGs) into core operations. While sustainable remediation has been incorporating similar metrics into cleanup projects and portfolios for over a decade (Favara et al., 2019).

Historically, an environmental remediation liability has been considered only a "liability" disclosed as a cost in a company's financial reporting. While remediation sites are still an expense line item on the corporate balance sheet, ESG programs have revealed an opportunity to highlight successes in sustainable remediation efforts. Successes in remediation can spotlight community improvement (social), corporate programs and standards (governance), and reduction in use of natural resources (environmental). The narrative in remediation can change from being a blemish on a balance sheet to becoming a feature in ESG corporate reporting.

ESG programs are influencing remediation practitioners to take a more holistic view of remediation portfolios. The responsibilities for remediation are expanding beyond identifying risk, cleanup technologies, and cost, to now including practice areas related to the Environmental (E), Social (S), and Governance (G) factors. Remediation teams are no longer limited to experts within the science and

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engineering disciplines, but now must consider including other fields like economists, urban planners, and social equity advocates.

This has not only changed the consultant and industry role but now armed with more data the regulatory discussion and decision-making process is changing. According to the Interstate Technology & Regulatory Council (ITRC) Sustainable Resilient Remediation Guidance (ITRC, 2021), currently 30 of the 50 US state regulatory agencies have some form of sustainable remediation guidance or standards. The increase in sustainability guidance coupled with the increasing pressure for environmental justice has led to remediation considering areas beyond the typical conceptual site model.

In a recent example, a site owner with multiple legacy contaminated sites in a remote area worked with the regulatory agency to develop a sustainable solution considering ESG metrics. The typical cleanup approach in that area had been excavation and off-site disposal at a landfill. Dig and haul had always been preferred as a low-risk remedy due to the fact it was effective and implementable. As part of the planning, "E" and "S" topics were discussed with the agency, such as, GHG emissions, waste, nuisance truck traffic, and safety. An off-grid mobile solar powered in-situ system was proposed to remediate each of the sites in a sequential fashion. Although cleanup goals would take longer to achieve, the proposed method would eliminate hundreds of roundtrip truck trips that result in road degradation, noise, and dust which were known public complaints from nearby communities. The site owner had internal economists, tax specialists, and internal sustainability experts review the projects for ESG considerations to include in corporate reporting. The resulting cleanup using renewable energy to power an onsite remediation system resulted in a number of successes including reduced environmental footprint of cleanup activities, eliminated truck traffic to nearby communities, prevented unnecessarily filling local landfills with soil, and informed the state agency of sustainable considerations.

When evaluating the "S" during remediation it is important to evaluate possible impacts to communities. Remediation projects can turn an abandoned property or old industrial plant, that is not only an eyesore for the local community but a potential hazard, into a greenspace or mixed-use economic benefit. These types of efforts are often able to include nature-based solutions such as using phytoremediation systems to cleanup soil and groundwater contamination. Phytoremediation will remove contaminants, provide greenspace for residents, and reintroduce biological biodiversity back into neighborhoods. Transforming a contaminated property into a greenspace offers many benefits to the local area. However, remediation is learning from social equity experts about the unintended consequences associated with this type of property transformation. A potential outcome could be the displacement of long-term residents due to factors like increasing property values as a result of the new greenspace. As remediation practitioners continue to work with experts from the ESG community, we will also learn solutions to mitigate these types of challenges.

ESG investors have identified concerns around the concept of "greenwishing" which occurs when there are good intentions to achieve sustainability goals, but the efforts do not actually achieve the expected results (Austin, 2019). This is different than greenwashing and may be more relatable to the remediation industry. The intentions of sustainable remediation are to remediate contaminated sites using means that provide a net benefit on human health and the environment maximized through the judicious use of limited resources (Ellis & Hadley, 2009). However, even cleanup actions that would be defined as sustainable can sometimes cause unanticipated impacts. Each site is inherently different, and a "sustainable" technology may not necessarily be sustainable at each site. As the practice advances the remediation industry is learning to address these types of issues and make sure our efforts make a positive impact. Publications and organizations such as SURF can help us avoid these negative consequences as information and lessons learned are shared throughout the industry.

We have discussed site evaluation and decision making but ESG is directly beginning to affect procurement and the supply chain. At WSP USA, an engineering and consulting company, 68% of GHG emissions are associated with purchased goods and services. The company's ESG program has established a corporate goal of net zero by 2040 and 30% reduction in scope 3 emissions by 2030. These goals are going to directly affect drilling, laboratory, and remediation vendor procurements to reach company goals within the ESG program. Site owners (responsible parties) are starting to request ESG information for their procurement of consulting services. A well-developed ESG program is becoming a differentiator in the competitive bidding process and in some cases a requirement to do business. Overall, these changes in procurement have a net benefit to our communities and the environment, but we must proceed with caution that small disadvantaged businesses that might not have the resources to develop a comprehensive ESG program are not precluded or overlooked.

Overall, the remediation practitioner should expect a wider audience that will seek a more comprehensive site evaluation that includes "E," "S," and "G" metrics. Companies' ESG frameworks are influencing remediation programs for the better that now include overall corporate strategy. ESG reporting will continue to push and advance sustainable remediation as successes are identified and measured, resulting in the practice to go beyond cleaning up sites to providing tangible community and environmental benefits.

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