

GOLDER SEES MORE CONTRACTUAL RISK TRANSFER AND BUNDLING OF SITES AS STAKES GROW HIGHER IN REMEDIATION

Golder is a leading global employee-owned engineering and consulting firm with nearly six decades of successful service to its clients. With over 165 offices in over 30 countries, Golder's 6,500 professionals are driven by a passion to deliver results, offering unique specialized skills to address the ever-evolving challenges that earth, environment and energy present to clients across the infrastructure, mining, oil and gas, manufacturing and power sectors.

Stefano Marconetto, Global PFAS Practice Leader, has extensive experience in the characterization and remediation of PFAS impacted sites. With a background ranging from site investigation and conceptual site model development to risk assessment, remedial options evaluation and implementation, Mr. Marconetto has worked on projects for government and private clients across all market sectors globally.

Archana Kukreti, Senior Consultant, has extensive experience in environmental consulting with a focus on investigation and remediation of chlorinated solvents and emerging contaminants like 1,4-dioxane, PFAS, and nitrosamines at landfills and manufacturing facilities. Her technical expertise is in developing and implementing soil vapor, groundwater, and soil sampling strategies to determine environmental media impacts. She is well versed in evaluating multi-media environmental impacts at sites.

EBJ: Besides the attention that has been brought to emerging contaminants, what are some of the biggest changes you have seen in the remediation segment over the last couple of years?

Golder: We see more and more contractual risk transfer, some of which is uninsurable. We also see a tendency to bundle sites into larger bidding portfolios to leverage the variations in quality and site conditions. Furthermore, the evolving regulatory scenario with respect to site closures, especially with regards to emerging contaminants, is forcing the continued need for remediation and further investigation at sites.

EBJ: What customer types have been the most responsive in 2019 and what are you expecting over the next couple of years?

Golder: All the sectors we service have grown for us, whether due to increasing our market share, or an overall increase in the size of market.

EBJ: In which areas of the country do you believe that the remediation sector has a higher potential?

Golder: We see potential across the U.S. due to the wide range of client sectors and locations requiring remediation services, however the coastal regions tend to be most active.

EBJ: To what extent has the cost of site cleanup has come down?

Golder: Overall, we observed the cost of site cleanup to generally be stable to slightly down with the site bundling described above. Some opposing factors play a significant role here. For example, the more challenging conditions associated with emerging contaminants for some sites are balanced by increased efficiency due to technological advances and development of more robust passive remediation systems for other sites.

EBJ: Is average project size getting smaller with less regulatory strictness?

Golder: Not necessarily.

EBJ: How likely do you think will be a national and global elimination of production of PFOS & PFOA as well as other PFAS?

Golder: Production of PFOS and PFOA ceased in the US, and we may see a global elimination in the medium term as stricter environmental regulations are developed in China and public and regulatory pressure mounts. Production of some other PFAS may also stop or shift as more robust toxicological data are identified, but we do not expect to see a global elimination of production of all PFAS. PFAS with lower toxicity will continue to be produced since their use is critical for many sectors of the economy and modern society. In the short- to medium-term we expect to see elimination of PFAS from firefighting foams, since more effective fluorine-free foams are being developed.

EBJ: Is it a matter of concentration or is it a matter of a different variety of compounds that will make the remediation more complex?

Golder: The complexity is primarily associated with the number of PFAS compounds with different physical and chemical properties often present at a given site, the recalcitrant nature of many of these compounds and the risk to transform some PFAS compounds (precursors) into more toxic and more mobile PFAS species if the site investigation or remediation is not done correctly. In some cases, e.g. landfill leachate and leachate-impacted groundwater, we see a very complex cocktail of contaminants (in addition to PFAS) that is difficult to treat in general, requiring and driving the need for contaminant-specific treatment, which increases remediation complexity and costs. The remediation targets also play an important role, and this will further increase as maximum contaminant levels are developed or lowered.

We expect the issues of source attribution and determination of what is “exposure” versus “reference or background” concentrations to become even more important in the near future because we have started to see environmental standards in some jurisdictions that are similar to, or lower than, regional background concentrations.

EBJ: What types of PFAS are getting the most attention in your region?

Golder: PFOS and PFOA are by far the compounds that have received the most attention in the US and internationally. We see some states and jurisdictions worldwide also focusing on C4, C6 and C9 compounds and some precursors including fluorotelomer sulfonates. There are some more concrete discussions about moving from environmental standards for specific compounds to regulating classes of compounds considering the thousands of PFAS in the environment.

EBJ: When it comes to PFAS, are there areas that have been overlooked or underestimated in terms of their contaminant impact?

Golder: Now that many of the main PFAS sources have been documented and are being investigated, we expect that the assessment will focus more on secondary uses of PFAS (as surfactants or others) in industries such as manufacturing, transportation, oil & gas and mining, and a

more comprehensive focus on PFAS in the context of Environmental, Health and Safety (EHS). With the current trend of setting ultra-low environmental standards, many sites with only a marginal role in terms of PFAS use to date will become relevant. If this trend continues, there is a tangible risk of reaching a “PFAS pandemic” where exceedance of some PFAS will be found at almost every site being tested, and environmental management of all these sites may become unsustainable.

EBJ: What PFAS aspects are the more challenging for your clients?

Golder: The number one issue is the fragmented and evolving regulatory framework across the globe. Clients are faced with the challenge of dealing with widely different approaches from state and federal regulators and having to adapt to changes in the types of PFAS to analyze, analytical methods, type of media to sample, detection limits, sampling protocols due to ubiquitous nature of PFAS etc. while being asked to develop mitigation measures sufficiently flexible so that they can be adapted to future regulatory changes. At Golder we have created a global PFAS team to best overcome these challenges and be able to share lessons learned and innovation seamlessly across the globe.

EBJ: Do you anticipate a federal program for innovative technology grants or accelerated efforts and funding to support innovation in PFAS?

Golder: In May 2019, EPA awarded grants to two universities for research that improves understanding of PFAS fate and transport, human and ecological exposure, and toxicity in the environment. We anticipate that more grants will be made available to support EPA’s PFAS Action Plan, which includes a long-term research approach to understanding and reducing potential human health and environmental risks associated with PFAS, costing models, and corresponding PFAS treatment to reduce impacts.

EBJ: How do you expect the PFAS remediation to evolve?

Golder: Sustainability is going to play a large role in the evolution of the remediation and environmental standards. Most of the treatment options currently used for soil and water do not destroy PFAS but transfer them to other media or reduce their mobility. We expect to see a lot of progress on solutions that can effectively and sustainably destroy PFAS, and Golder has seen positive results for some of them.

With environmental standards reaching single or low double-digit parts per trillion, it is going to be challenging to find sites without PFAS “impacts” and the resources required to address these issues may have a significant impact on our society, business community and public administrations. It is critical to incorporate sound sustainability analysis when developing or revising environmental standards as well as to continue the quest towards more effective and affordable remedial technologies. □

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