In Situ Treatment Monitoring Issues and Best Practices

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A key component of in situ groundwater treatment is the collection and analysis of groundwater samples to assess treatment performance and to conduct subsequent site characterization. However, in situ groundwater treatment technologies have the potential to create conditions where collected samples or the results of sample analyses are not representative of in situ conditions at the time of sampling. Drawing from the real-world experience of field practitioners, as well as review of current technical literature, EPA identified nine technical challenges (such as well biofouling and contamination of monitoring wells with amendments) site managers may face during performance monitoring and later site characterization when in situ remediation technologies are applied. These issues are listed below. For each technical challenge, the presentation includes potential sampling or analytical issues, mechanisms and resulting impacts on performance monitoring and best practices for monitoring and mitigating each issue.