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Subject Comments on DNAPL

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1. Defining a DNAPL zone is difficult. The most common method is to define based on observed concentrations in groundwater (1% and 10% rule). Sites with visible DNAPL are rare, and the zone of visible DNAPL is typically a small portion of the DNAPL zone. In addition, drilling for DNAPL is risky - drilling might open new pathways to migration. So, the definition of the "DNAPL zone" is murky, and there are significant barriers to physically bounding the DNAPL zone.

2. DNAPL remediation might not reduce the cost of remediation of the plume as a whole while risking significant capital. Implementing a source removal is often many times the monitoring cost and O&M costs for the total plume. However, the only savings are often in monitoring and O&M costs at the end of the project (often many years in the future). Thus, when considering total cost (as government agencies tend to do), it may require elimination of many years of monitoring and O&M to justify source removal financially. When considering present value of remediation (as industry often does), the cost expenditure may not ever be justified by financial benefit.

3. There is another potential benefit to source remediation: if the remediation reduces the mass flux of contaminants from the source area into the plume it could cause the plume to shrink, particularly if the plume is at or near steady-state due to mass losses (such as volatilization, degradation, etc). However, this same benefit could also be attained by controlling mass flux by other (containment) methods at a lower cost.

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