Tool 4.2: Considerations for Determining the Feasibility of Ex Situ Water Treatment

LIMITATION: The following table represents the state of technologies as of January 2022. EPA, DoD, and other agencies are leading ongoing research and technology evaluation, and users of this guidebook should refer to those agencies for the most up-to-date information on technologies and their applicability to the remediation project in question.

Ex Situ Water Treatment Technologies — Major Factors Affecting Costs		
Item	**Potential to Affect Costs**	**Rationale**
	Capital	
System Design	High	Selection of a GAC system may be less costly than a regenerative IX system up front but have significant O&M cost implications.
PFAS Concentrations	High	PFAS concentrations will determine optimal treatment design.
Presence of Co-Contaminants (VOCs, sulfate, etc.)	High	Co-contaminants will have a significant impact on media consumption.
Influent Flow Rates	Medium-High	Flow rates will have significant impact on design requirements, retention times, etc.
Treatment Goals	Medium-High	Goals will affect the degree of treatment (e.g., number of units required, type of units).
	O&M	
Hazardous Waste Regulations	High	Pending changes in PFAS hazardous waste classification will have significant impacts on long-term disposal costs for GAC, spent resins, etc.

Ex Situ Water Treatment Technologies — Major Factors Affecting Costs		
Item	**Potential to Affect Costs**	**Rationale**
Spent Media Generation Rates	High	Site-specific spent media generation rates are critical to determining costs; spent media generation may be impacted by co-contaminant loadings.
Spent Media Disposal/ Regeneration Methods	High	Regeneration of GAC, incineration of single use GAC, or incineration of IX regeneration brine have different costs/volumes.
Electrical Costs	Low-Medium	Operating costs for the system will be relatively low compared to media replacement/disposal costs.
Other Fees	Low	

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