

Importance of Working with Regulatory Agencies for Cost-Effective, Ex Situ Stabilization of Heavy Metals

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Background/Objectives.

A developer near Detroit, Michigan wanted to redevelop a property with an ideal location with ready access to freeways as a freezer and cold storage warehouse. The only problem was the site was historically operated as a junk yard. High levels of lead contamination were identified over a large portion of the site, presumed to be associated with the areas that lead-acid batteries were crushed inside cars and left to drain. Furthermore, a large portion of the site was contaminated with lead at levels that were characteristically hazardous (D008). Several measures were taken with the foundation design and soil management plan to limit the amount of potentially characteristically hazardous waste. Some soil was disposed off-site as D008 waste at great expense, but when a significant area required a large undercut for structural reasons, the disposal cost were threatening the viability of the project. SME reviewed options and found that if regulatory approval could be obtained to treat the soil ex-situ with a heavy metal stabilization reagent and then dispose of the soil as non-hazardous waste, they could save approximately \$1.2 million over hazardous waste disposal. SME received the go-ahead from the developer and they worked with the state environmental agency (MI DEQ) to work through the necessary rules and regulations. The process was further constrained by the on-going construction project and the scheduled construction completion date that couldn't change. The goal was to determine if there was a regulatory option to get an exemption from a RCRA permit to treat the soils ex-situ. If a RCRA permit was necessary, the option was not viable because of the construction schedule. This would require the higher disposal fee that would ruin the viability of the project.

Approach/Activities.

SME worked with the MI DEQ to establish a regulatory path to receive an exemption to a RCRA permit to treat the soil ex-situ on-site through the state Brownfield redevelopment program. Although in-situ treatment of characteristically hazardous soils is a permit-exempt activity under RCRA, the ability to treat the soils ex situ was more regulatorily complex in Michigan. Nonetheless, this less expensive alternative (ex situ stabilization) was given the green light to move forward. SME worked with The TDJ Group to determine which product and at what dose rate would be most effective.

Results/Lessons Learned.

The treatment was a success and the project savings totaled about \$1.2 million. An important lesson is to engage with the appropriate regulatory entity early and often to evaluate potential options. Direct disposal of characteristically hazardous waste is expensive and not the only option. Heavy metal stabilization is a viable option when the regulatory hurdles can be overcome.