Draft Analysis of Brownfield Cleanup Alternatives: Kinneville Service Station, Eaton Rapids, Michigan

This draft Analysis of Brownfield Cleanup Alternatives (ABCA) was developed by the Michigan Department of Environmental Quality (DEQ) Remediation and Redevelopment Division (RRD). The draft ABCA is required as part of the DEQ's Brownfield Cleanup Grant Proposal to the United States Environmental Protection Agency (USEPA) as part of the Proposal Guidelines for 2016.

SITE DESCRIPTION: The property is located at 3989 Silver Street, Eaton Rapids, Ingham County. A previous business dispensed gasoline from at least one underground storage tank (UST) in the 1960s. All buildings on the property have been demolished and there is a pile of concrete near the middle of the property. There are two UST vent pipes sticking up from the pile of rubble. Drinking water wells are present within 100 feet of the site and the Grand River is 1000 feet to the east.

RESPONSE ACTIVITES: In October 2014 the RRD completed eleven soil borings across the site to a maximum depth of 12 feet below the ground surface. The investigation also included a ground penetrating radar (GPR) survey which indicated the presence of at least one UST. Laboratory analytical results verify soil contamination with petroleum constituents at the location of the suspected UST. Four homes next to the site had their drinking water wells sampled for gasoline constituents. No drinking water wells are presently impacted.

RISKS PRESENT: Soil contamination exceeds soil saturation screening levels for 1,2,4-trimethylbenzene. This concentration also exceeds Drinking Water Protection, Groundwater Surface Water Protection, Soil Volatilization to Indoor Air, and Groundwater Contact Protection criteria. Groundwater at the site was not sampled so the Drinking Water, Groundwater Surface Water, Groundwater Contact, and Groundwater Volatilization to Indoor Air pathways are at risk.

CLEANUP OBJECTIVES: Mitigate the ongoing release from the UST(s) and address the impacted soil. Reduce risk to a level that protects the human health and the environment. Leave no impediments to future site redevelopment.

POTENTIAL CLEANUP ALTERNATIVES and EVALUATION of EFFECTIVENESS:
Option 1: No Further Action (NFA): This alternative would involve no further remedial activities at the site. This option would not provide for mitigation of the risks posed by the contamination. This alternative will also leave at least one UST and contaminated soil in place which would be an impediment to redevelopment. Therefore NFA will not be selected.

Option 2: UST(s) Closed-in-Place with In-Situ Soil Remediation: The UST(s) could be closed in place and the impacted soils would be allowed to naturally bio-attenuate with monitored natural attenuation. In-situ treatments could be added to the soil to enhance degradation of the contamination. Closing the UST(s) in place could result in additional future costs if the tank(s) are later removed. This will be an impediment to redevelopment. Designing and implementing an In-situ treatment for contaminated soil would increase cost, and may take years of operation and maintenance to complete. UST(s) Closed-in-Place with In-Situ Soil Remediation may eventually meet the protection of the human health and environment objective, but the presence of the tank(s) will cause an increase in redevelopment costs. For these reasons Option 2 will not be selected.

Option 3: UST(s) and Contaminated Soil Removed for Off-Site Disposal: This option will immediately address all source materials. Clean fill will be brought in to replace the impacted materials that have been disposed of. This option will meet the objectives by protecting the human health and environment and leave the site ready for future redevelopment. Option 3 is the preferred alternative.

PREFERRED ALERNATIVE and CLEANUP PLAN: Option 3 is the preferred alternative because it will meet the remedial objectives in the most efficient and cost effective manner. Removal of the tank(s) and soil will reliably eliminate the exposure pathways now present at the site. Remedial Option 3 would be conducted in the summer and fall of 2016.