Using EPA's 'Contained-In' Policy
for Cost-Effective Remediation Waste Management

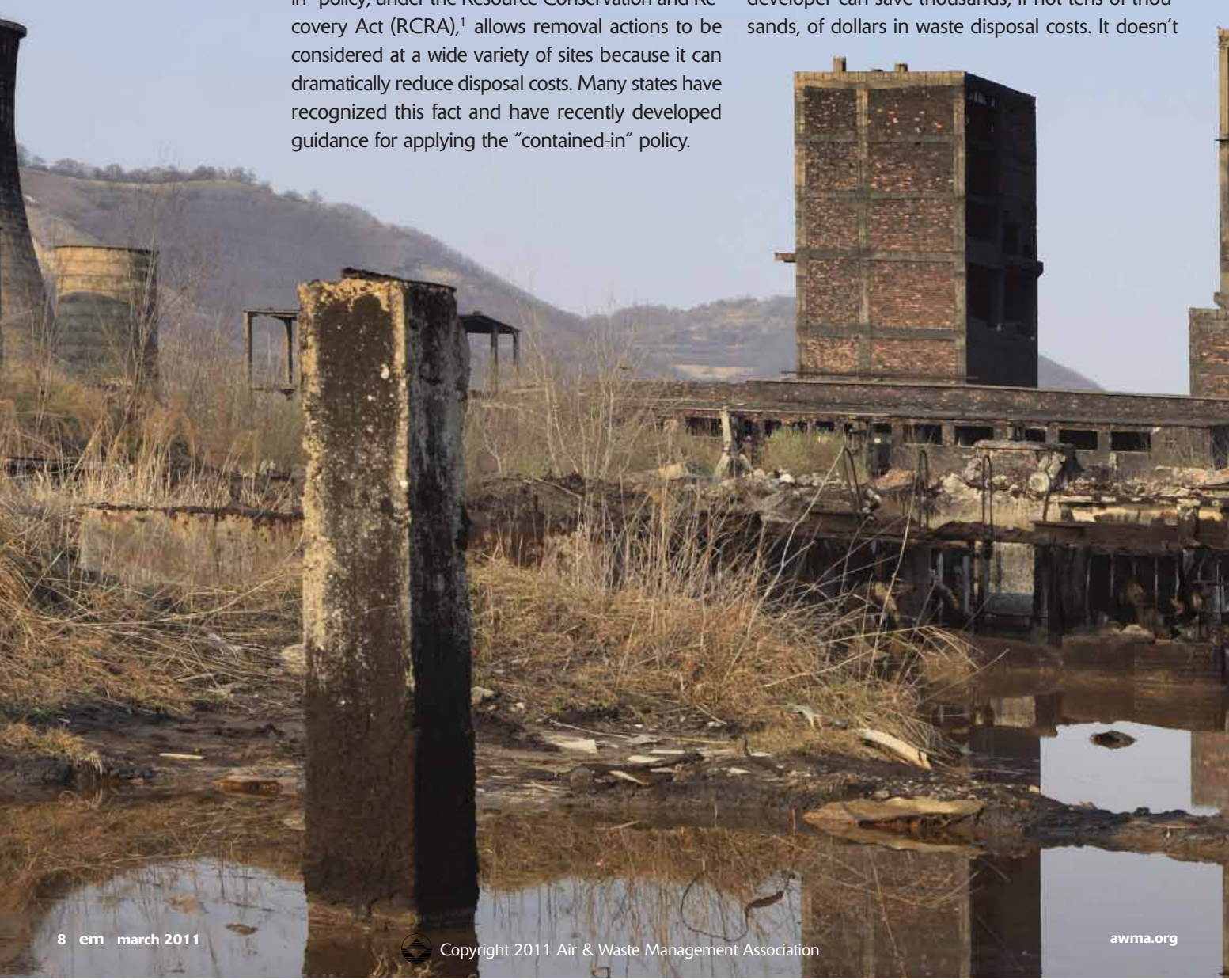
by William Glaze

William (Bill) Glaze is a senior project manager with August Mack Environmental Inc., Dublin, OH. E-mail: bglaze@augustmack.com.

Removal actions at brownfield and other infield sites hold a distinct advantage over other remediation strategies because of the permanence of the actions. Removing and disposing of contaminated media off-site allows redevelopment to occur unimpeded by institutional controls or long-term remediation system operation and maintenance. This enhances property value and makes the remediated property more attractive to buyers, sellers, developers, and lenders.

In many instances, removal actions are not considered because of the high cost of hazardous waste disposal. However, correct application of the U.S. Environmental Protection Agency's (EPA) "contained-in" policy, under the Resource Conservation and Recovery Act (RCRA),[1] allows removal actions to be considered at a wide variety of sites because it can dramatically reduce disposal costs. Many states have recognized this fact and have recently developed guidance for applying the "contained-in" policy.

So what makes this policy so important when discussing remediation options? It is simply a function of dollars and sense (a deliberate play on words). By applying the "contained-in" policy, an owner or developer can save thousands, if not tens of thousands, of dollars in waste disposal costs. It doesn't



make sense to spend extensive fees for the disposal of a hazardous waste, if the contaminated media is not considered by EPA or the state agency to be hazardous. This article presents ways in which the "contained-in" policy can be applied to reduce disposal costs for removal actions.

Land Disposal Restrictions

On November 8, 1984, Congress passed the Hazardous and Solid Waste Amendments to RCRA, which, in part, prohibited the land disposal of any untreated hazardous waste. It also required EPA to specify concentration levels or methods of treatment for hazardous constituents to either decrease the toxicity of a waste or prevent the likelihood that constituents would migrate from a waste into environmental media (i.e., soil and/or groundwater). EPA responded to this requirement with the establishment of Land Disposal Restrictions (LDRs),[2] identified in 40 CFR Part 268.

LDRs were designed to ensure that wastes are properly treated prior to land disposal by immobilizing harmful constituents and thus reducing a waste's toxicity, or by destroying and removing harmful constituents. The program was developed around three main focus areas: requiring minimum treatment standards that must be met prior to the land disposal; eliminating the "dilution is the solution" mentality for the management and disposition of hazardous waste; and implementing a timeline for the storage and handling of hazardous materials. Unfortunately, LDRs were not a cure-all and created unforeseen obstacles.

Top Photo: Excavation related to the transaction of a contaminated property, the result of a historic leaking underground storage tank.

Bottom Photo: Emergency response to product in a creek. Source was a historic heating oil leaking underground storage tank.

Photos courtesy of August Mack Environmental Inc.

As part of the restrictions, EPA clarified that contaminated media is not considered solid waste in the sense it is not recycled material, an abandoned waste stream, or inherently waste-like such as those covered by the RCRA regulations. EPA reiterated its long-standing position that environmental media containing a listed hazardous waste must be managed as a hazardous waste.

Strict application of this requirement means, for example, that if soil being excavated as a part of corrective remediation action is associated with a listed hazardous waste, the soil must itself be handled as listed waste, regardless of the concentration of hazardous waste constituents present in the soil. Handling remediation waste in this manner makes site cleanup very expensive and unintentionally creates a deterrent to the potential remediation of many hazardous waste sites. It also uses up valuable disposal resources by disposing of soil that is only minimally contaminated with hazardous waste constituents.

The 'Contained-In' Policy

To help resolve this, EPA passed a series of regulations and policies, one of which is known as the "contained-in" policy.[3] The intent of the "contained-in" policy is to clarify the application of RCRA hazardous waste regulations, as they apply to environmental media generated during a site cleanup. By applying the "contained-in" policy, soil minimally impacted with hazardous waste constituents does not necessarily itself need to be handled as a hazardous waste, even if it contains constituents associated with listed hazardous waste subject to the RCRA regulations.

To obtain a "contained-in" determination, the applicant must work with EPA or an authorized state agency to secure approval for disposal of environmental media that would otherwise be considered listed hazardous waste. Many authorized states have established policies allowing "contained-in" determinations to proceed much more economically than before.

The "contained-in" policy recognizes that contaminated media is physically different from "as generated" process waste. The policy also recognizes that trace quantities of hazardous waste constituents in contaminated media does not represent a migration threat when disposed of in a permitted nonhazardous disposal facility.

Correct application of the "contained-in" policy requires the applicant to demonstrate that the media—soil and/or groundwater—meets two basic criteria: (1) it is not characteristically hazardous waste and (2) the concentration of hazardous waste constituents present in the media do not represent a threat to human health and the environment after placement in a nonhazardous waste disposal facility.

Because remediation waste often consists of mixtures of multiple constituents, which may vary in composition, agencies typically require extensive testing of the material for both hazardous waste characteristics and chemicals-of-concern (COCs) to ensure all constituents have been fully identified and characterized. Although such testing can be expensive and time consuming, the cost is far less than disposing of impacted media as hazardous waste. In fact, disposal costs can be reduced by one half to one third by applying the "contained-in" policy to remediation wastes.

The results of these tests are compared to typical hazardous waste thresholds; however, the COCs

test results are compared to media- and contaminant-specific health-based action levels established by the states in which the remediation site and disposal facility are located. Typically, these action levels represent constituent concentrations protective of the direct contact route of exposure to the contaminated soils. Due to the complexity of establishing the appropriate exit level from the RCRA regulations and the importance of maintaining consistency with EPA policy, most disposal facilities will require a written "contained-in" determination from the state regulatory agency prior to the waste stream being accepted.

Summary

The primary goal of RCRA is to protect human health and the environment from the improper handling, treatment, transportation, and storage of hazardous waste. The implications imposed by LDRs were in alignment with RCRA's program goal and objectives, but created a barrier to cleanups by requiring remediation wastes to be subject to the same RCRA requirements as newly generated hazardous waste. As a result, the RCRA requirements were not proactive for cleanup scenarios and were more prevention-oriented than response-oriented.

To help resolve some of these hurdles, EPA continued to provide additional clarification on which wastes are subject to RCRA waste disposal requirements and, more importantly, which wastes are not. The "contained-in" policy was developed in alignment with RCRA, but provides additional clarification on the handling of impacted environmental media resulting from a hazardous waste cleanup process. Proper application of this policy to remediation sites can dramatically reduce the costs of implementing a removal action and allow for the unimpeded development of brownfield and infield sites. **em**

References

1. Resource Conservation and Recovery Act, 42 U.S.C. §6901 et seq. (1976). See www.epa.gov/lawsregs/laws/rcra.html.
2. See *Overview of RCRA Land Disposal Restrictions (LDRs)*; 9347.3-01FS; U.S Environmental Protection Agency, Office of Solid Waste and Emergency Response, July 1989; available at www.epa.gov/superfund/policy/remedy/pdfs/93-47301fs-s.pdf.
3. Hazardous Remediation Waste Management Requirements (HWIR-Media) Final Rule; 40 CFR Part 260; *Fed. Regist.* **1998**, *63* (229).