

CONTAMINATED SITES AND RISK MANAGEMENT OPTIONS

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Contaminated sites in Florida are generally addressed in accordance with the following Florida Department of Environmental Protection (FDEP) cleanup program rules: Petroleum (Chapter 62-770), Drycleaning (Chapter 62-782), Brownfields (Chapter 62-785); and Contaminated Site Cleanup Criteria (Chapter 62-780). While these rules have been designed to address the specific objectives of each program area, they all incorporate risk based corrective action (RBCA) principles in order to achieve protection of public health, public safety, and the environment in a cost-effective manner. Several fundamental concepts to the understanding of how RBCA principles can achieve protection of public health/safety in a cost effective manner are:

1. The risk to human health and safety at a contaminated site is based upon the toxicity of the contaminants of concern (COC) and the potential for exposure to the COCs.
2. The toxicity of the COCs is generally not considered to be a variable that can be changed from site to site with the application of RBCA principles. For instance, arsenic would have the same toxicity if found in the soil in a yard or beneath a six story office building.
3. The potential for exposure is generally considered to be a variable that can change from site to site with the application of RBCA principles. Using the above example, the current potential for exposure to the arsenic in a yard would be much greater than the potential for exposure to the soil beneath the six story building.

The No Further Action (NFA) sections of FDEP's Cleanup Program rules utilize RBCA principles to provide for site "closure" via Risk Management Option (RMO) Level 1, 2, and/or 3. A brief summary of each of these options is as follows:

1. RMO Level 1 - Cleanup target levels for soil and water have been developed and included within FDEP Chapter 62-777 (Contaminant Cleanup Target Levels). The person responsible for site rehabilitation can choose to meet these "default" cleanup target levels or may utilize site specific information, such as soil properties, to develop site specific "alternative" cleanup target levels in order to obtain a "Site Rehabilitation Completion Order (SRCO) Without Conditions" from the Department. An example of a RMO Level 1 closure is as follows:
 - COCs are identified within soil and groundwater samples above Chapter 62-777 Soil Cleanup Target Levels (SCTLs) and Groundwater Cleanup Target Levels (GCTLs) due to a release of petroleum products from underground storage tanks.
 - A Site Assessment is completed to delineate the level and extent of contamination at and/or migrating from the site.
 - Interim source removal, natural attenuation monitoring, and/or active remediation site rehabilitation strategies are conducted until the contaminated site meets the Chapter 62-777 default and/or site specific alternative SCTLs and GCTLs.
2. RMO Level 2 - The person responsible for site rehabilitation may also choose to seek RMO Level 2 closure, which utilizes institutional and/or engineering controls, if the criteria discussed above are exceeded and the site meets the default risk exposure criteria of RMO Level 2. Institutional controls, such as deed restrictions, or engineering controls, such as physical barriers, are used to ensure that potential exposure to contamination allowed to remain at the site is controlled. When institutional or engineering controls are utilized to facilitate site closure, the Department issues a "Site Rehabilitation Completion Order (SRCO) With Conditions." An example of a RMO Level 2 closure is as follows:
 - COCs are identified within soil and groundwater samples above Chapter 62-777 SCTLs and GCTLs due to a release of petroleum products from underground storage tanks.
 - A Site Assessment is completed to delineate the level and extent of contamination at and/or migrating from the site.
 - Interim source removal, groundwater monitoring, and/or active remediation strategies are conducted only as required to meet the owner's site rehabilitation objectives and the requirements of RMO Level 2.

- An engineering control is utilized to prevent direct exposure to or leaching from contaminated soils allowed to remain at the site. This engineering control may consist of at least two feet of clean fill and/or an impermeable barrier over the contaminated soils.
 - Groundwater monitoring is utilized to demonstrate the following: groundwater contamination is present only at the source property; the impacted groundwater is less than ¼ acre; and the area of contaminated groundwater is stable (i.e. not expected to migrate).
 - An institutional control, such as a restrictive covenant, is utilized to prevent exposure to the soil and groundwater contamination allowed to remain at the site. These restrictive covenants will generally allow excavation activities as long as the excavated contaminated soils are properly managed, but generally preclude the construction/utilization of on-site water wells.
3. RMO Level 3 - The person responsible for site rehabilitation may also choose to seek RMO Level 3 closure, which utilizes institutional and/or engineering controls if the criteria discussed above are exceeded and the site does not meet one or more of the default risk exposure criteria of RMO Level 2. As with RMO Level 2, when institutional or engineering controls are utilized to facilitate site closure, the Department issues a “Site Rehabilitation Completion Order (SRCO) With Conditions.” An example of a RMO Level 3 closure would be a site that generally meets the RMO Level 2 criteria, but the area of contaminated groundwater is greater than ¼ acre. In this case, a RMO Level 3 closure, which generally requires an expanded risk assessment and/or groundwater fate and transport modeling evaluation, will be required. If this evaluation determines that the RMO Level 3 criteria are met, the engineering and/or institutional controls would be designed and implemented in a manner similar to RMO Level 2.

In summary, FDEP’s cleanup program rules incorporate RBCA principles. CSI is experienced in a variety of tasks associated with the application of RBCA principles within the state of Florida. Through this experience working on behalf of clients involved in contaminated site cleanup, CSI is well qualified to provide guidance and assistance regarding the selection and implementation of RBCA principles in order to achieve site closure that is protective of public health, public safety, and the environment in a cost-effective manner.

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