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Standard Guide for Risk-Based Corrective Action for Protection of Ecological Resources[1]

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INTRODUCTION

This guide for risk-based corrective action for the protection of ecological resources (Eco-RBCA) provides a flexible framework for a tiered approach to ecological risk assessment (ERA) and risk management decision-making at chemical release sites. The framework of the Eco-RBCA guide parallels the framework in Guide E 2081 with respect to the tiered approach for data gathering, evaluation and decision-making, and should, when possible, be conducted concurrent with the broader RBCA process activities. The Eco-RBCA guide directs the user to Guide E 2081 for development and implementation of a corrective action program. This guide supplements Guide E 2081 and was developed after careful consideration of the peer-reviewed published literature and existing federal, regional, and state ecological risk–assessment guidance. The user of this guide, as defined in 3.1.44, needs to be familiar with Guide E 2081 and the overall RBCA process. The RBCA process provides a flexible, technically defensible framework for corrective action that has applicability to a wide range of sites and chemicals of concern.

ASTM guides are not federal or state regulations; rather, they are consensus standards that can be followed voluntarily. It is not within the scope of this standard to provide the details of specific regulatory requirements. Collectively, the Eco-RBCA and RBCA guides provide an integrated framework to corrective action. Eco-RBCA is intended to complement rather than replace the decision-making structures of regulatory programs. In addition, Eco-RBCA is intended to provide a framework for sites not covered under regulatory programs, for sites under regulatory programs that lack guidance, or for sites under programs with guidance that lack detail. Eco-RBCA may also provide a useful framework to help merge an approach when multiple regulatory programs apply. Even when a site is not currently governed by a regulatory program, consultation with the appropriate regulatory agency(ies) will ensure regulatory compliance and provide technical guidance.

The Eco-RBCA process is intended to accommodate a diversity of sites and conditions by providing a framework that can address site-specific needs. The appendixes provide useful technical details and case study examples, although the application of this guide does not require their use. Eco-RBCA is a process for evaluating ecological risk and decision making. To facilitate the implementation of Eco-RBCA, the framework is organized into ten steps and three risk assessment tiers that begin with relatively simple analyses and progress to more complex assessments as site conditions warrant (see Fig. 1). Although organized into steps and tiers, the user should recognize that Eco-RBCA progresses conceptually in a linear manner, but may not be implemented in a linear manner. The objective should be to conduct the evaluation in the manner that most appropriately meets the needs and goals of the assessment. Each tier includes five types of activities that increase in complexity and level of effort as the evaluation progresses through the RBCA process. These activities are (*1*) planning and scoping, (*2*) data and information acquisition, (*3*) analysis and evaluation, (*4*) decision making, and (*5*) remedial actions. The details of the activities and how they are implemented can vary, depending on the nature and complexity of the site and the tier level. Early in the Eco-RBCA process, assumptions are biased toward being overly protective (that is, "conservative") because of uncertainties inherent in non–site-specific data. Typically, as the site progresses through the tiered evaluation, more site-specific information is collected and uncertainty decreases; therefore, less-conservative assumptions can be used in the evaluation. As understanding of site conditions improves, confidence often increases. The progression of the evaluation through the tiered process is accompanied by an increasing degree of

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