

**BUREAU OF ENVIRONMENTAL REMEDIATION/REMEDIAL SECTION
POLICY and SCOPE OF WORK
REMOVAL SITE EVALUATION (RSE)/REMOVAL ACTION
DESIGN (RAD)/REMOVAL ACTION (RA)**

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Date: 11/21/08

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INTRODUCTION

This Kansas Department of Health and Environment—Bureau of Environmental Remediation (KDHE—BER) Remedial Section policy and scope of work establishes a management strategy and general framework for implementation of removal action activities at sites under various state cleanup programs. There are several such programs within the Remedial Section responsible for direction and/or oversight of investigation and cleanup of sites throughout Kansas. This policy and scope of work has been developed to promote consistency across Remedial Section programs for which removal action implementation may be appropriate. Where site issues posed are relatively uncomplicated yet must be addressed expeditiously, the U.S. Environmental Protection Agency (EPA) can approach the problem by exercising their removal action authority. On occasion, when dealing with an orphan site or a recalcitrant/reluctant potentially responsible party, KDHE—BER has been able to refer certain sites to EPA to avail ourselves to federal removal action authority. This typically results in sites (or portions of sites) being addressed in a more timely manner with the added benefit of work being accomplished at lesser cost to the State of Kansas. KDHE—BER also applies the more streamlined RSE/RAD/RA approach to presumptive remedy-type sites which have similar characteristics (e.g., former smelter sites) to facilitate overall program efficiency.

DEFINITION AND GENERAL FRAMEWORK

The National Oil and Hazardous Substances Contingency Plan (NCP) has defined a removal action as the *cleanup or removal of released hazardous substances from the environment; such actions as may be necessary taken in the event of the threat of release of hazardous substances into the environment; such actions as may be necessary to monitor, assess, and evaluate the release or threat of release of hazardous substances; the disposal of removed material; or the taking of such other actions as may be necessary to prevent, minimize, or mitigate damage to the public health or welfare or to the environment, which may otherwise result from a release or threat of release.* Within the EPA universe, removal actions are categorized as emergency, time-critical or non-time-critical, dependent upon the circumstances posed, urgency and threat of release or potential release, and timeframe in which the action must be initiated.

For more complex removal actions implemented under the auspices of the KDHE—BER Remedial Section, or as requested by the implementing party, a goal will be to achieve general NCP consistency to the extent practicable. Individual programs within the KDHE—BER Remedial Section may have other unique or possibly less rigorous requirements associated with a removal action. Therefore, it is incumbent upon each KDHE—BER project manager to have a clear understanding of all program-specific guidelines, policies and regulatory requirements that may have bearing on removal action implementation at a particular site. On a final introductory note, this policy and scope of work was written using more familiar, universally recognized

terminology from the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) realm and is not intended to supplant other analogous Remedial Section program elements. Any removal action or presumptive remedy would be expected to comply with all applicable or relevant and appropriate requirements (ARARs) and to be considered (TBC) guidance identified to that point in time consistent with BER Policy #BER-RS-015.

EXAMPLES AND APPLICABILITY

In determining the appropriateness of any removal action, the following factors, as identified in the NCP (300.415), are to be considered:

- Actual or potential exposure to nearby human populations, animals or the food chain from hazardous substances, pollutants or contaminants;
- Actual or potential contamination of drinking water supplies or sensitive ecosystems;
- Hazardous substances in drums, barrels, tanks or other bulk storage containers that may pose a threat of release;
- High levels of hazardous substances, pollutants or contaminants in soils largely at or near the surface that may migrate;
- Weather conditions that may cause migration or release of hazardous substances, pollutants or contaminants;
- Threat of fire or explosion;
- Availability of other appropriate mitigative response mechanisms; and,
- Other situations or factors that may pose threats to public health, welfare or the environment.

There are numerous types of removal actions, or combinations thereof, to be considered by KDHE—BER for a given site including, but not limited to, the following:

- Fences, warning signs or other access control measures;
- Run-off or run-on surface drainage controls;
- Lagoon closure or stabilization of existing retention structures (e.g., berms or dikes);
- Consolidation and capping of contaminated soil or sludge within the area of contamination (AOC);
- Excavation, consolidation or removal of highly contaminated soils from drainage features or other areas;
- Removal of drums, barrels, tanks or other bulk containers;
- Residential yard removal;
- Containment, treatment or disposal of hazardous materials; and,
- Provision of alternate water supply or point-of-use treatment.

As circumstances dictate, the expectation is that each program, through whatever agreement or enforcement mechanism might be available (e.g., administrative order, consent agreement, voluntary agreement, etc.), will contemplate the need for possible removal action measures at a site. Often times, a removal action is the stand-alone response or presumptive remedy action

taken at a site; however, there are instances where a removal action is implemented to address a single issue and subsequent remedial action is performed to comprehensively address all site risks posed.

RSE/RAD/RA OBJECTIVES

A removal action is generally intended for less complex circumstances resulting in more focused characterization and presumptive/streamlined response action implementation, thereby precluding unnecessary treatability study or pilot testing activities. Minimal design effort with emphasis on “off-the-shelf” system components would be typical. Implementation of a removal action under this RSE/RAD/RA policy and scope of work is intended to be a flexible process in which elements can be waived or modified at the discretion of the KDHE—BER project manager to ensure appropriate action is taken in as expeditious and cost-effective a manner as possible. Depending on site-specific circumstances, KDHE—BER may determine the need for additional tasks, including submittal of associated planning and reporting documents, to be conducted concurrently with RSE/RAD/RA activities.

The primary objectives of the RSE/RAD/RA are described as follows:

- 1) Determine the full extent of contamination for all contaminants of concern (COCs) and evaluate the threat to human health and/or the environment;
- 2) Assess the migration of and the chemical/physical properties of the contaminants;
- 3) Collect the data necessary to select an appropriate removal action;
- 4) Gather a sufficient amount of data to support the design parameters of the proposed removal action;
- 5) Evaluate the feasibility, effectiveness and cost of at least two (2) viable removal actions based on the findings of the RSE in comparison with the "no action" alternative;
- 6) Recommend and justify a specific removal action for the site consistent with long-term goals;
- 7) Determine the health and environmental effects of the removal action;
- 8) Establish performance monitoring criteria for the removal action;
- 9) Provide adequate documentation to support the removal action as being consistent with long-term goals for the site; and,
- 10) Implement the removal action to successfully abate, prevent, minimize, stabilize, mitigate or eliminate the release or threat of release.

RSE/RAD/RA PROCESS

This policy and scope of work outlines the activities to be completed as part of the RSE/RAD/RA process. At the discretion of the KDHE—BER project manager, and with the approval of KDHE—BER management, some of the steps in the process may be combined or eliminated to best serve project needs.

STEP 1 RSE Work Plan—An RSE Work Plan must be prepared and submitted to KDHE—BER for review and approval before any removal action activities commence, unless otherwise requested or approved by KDHE—BER. The RSE Work Plan shall minimally include the following project- or site-specific elements: 1) site assessment/evaluation plan (field sampling plan-equivalent); 2) quality assurance project plan; 3) health and safety plan; and, 4) preliminary screening of potential removal actions, particularly for presumptive remedy-type sites. An RSE implementation schedule must be included in the RSE Work Plan.

The RSE portion of the work plan shall at a minimum include a review of available information and documented findings; a description of the physical site characteristics (e.g., geology, hydrogeology, surface hydrology, land use, etc.); a detailed description of the type(s) of contaminants involved, release characteristics and contaminated media; evaluation or investigation objectives; and, detailed procedures for determining the nature and extent of contamination and evaluating all exposure pathways of concern. A screening level risk assessment appropriate for determining the risk and removal goals for the site may be required at the discretion of the KDHE—BER project manager. RSE requirements may be modified or waived by the KDHE—BER project manager if adequate site information is already available to satisfy the stated RSE objectives listed above.

The preliminary screening of potential removal actions should provide a brief description of possible removal action(s), general response action(s) or presumptive remedy to address threats to human health and the environment. At this stage, it would be appropriate to contemplate the need for and timing of establishment of environmental use controls. In addition, the work plan should present preliminary removal action objectives; ARARs; and, cleanup standards or cleanup goals (e.g., Tier 2 screening levels in the *Risk-Based Standards for Kansas RSK Manual*).

STEP 2 RSE Report—The RSE Report shall present the results of the RSE and shall evaluate at least two possible removal action alternatives in comparison to the "no action" alternative in the following format:

- 1) Summary of site assessment/evaluation work completed (as applicable);
- 2) Description of COCs, including a discussion and summary of data collected (with appropriate quality assurance/quality control (QA/QC) and data validation information);
- 3) An evaluation of possible exposure pathways including areal extent of all COCs;
- 4) Removal action goals and appropriate cleanup levels;

- 5) Detailed rationale for any presumptive remedy and/or a description of at least two potential removal action alternatives and a “no action” alternative for the site, including an evaluation of the effectiveness of the removal action alternatives in terms of the long-term objectives and reduction of risk to health and the environment;
- 6) A comparison and justification of the costs of each removal action;
- 7) A consideration of appropriate regulations, ARARs, etc. pertinent to each removal action alternative evaluated;
- 8) Recommendation of appropriate removal action giving adequate supporting rationale for its selection based on the above-defined criteria; and,
- 9) Establishment of adequate post-removal confirmation sampling and/or monitoring to assess removal action performance.

STEP 3 RAD Plan—After KDHE issuance of a decision statement or Corrective Action Decision (CAD), a RAD Plan presenting the preferred removal alternative will be submitted to KDHE for review and approval according to the KDHE-approved schedule.

This RAD Plan may vary in detail depending on the requirements of the participating Remedial Section program. The RA package will include, at a minimum, a summary of available site information and available investigation results; a detailed description of the proposed removal action or presumptive remedy; justification and benefit of implementation including removal action objectives; depending on the complexity of the removal action, complete design specifications and drawing/schematics, including any relevant figures and/or site system engineering layouts (e.g., process flow diagram, piping and instrumentation diagram, etc.) and engineering design basis; cost estimate; and, a detailed working schedule presented graphically in the form of a milestone chart (e.g., Gantt chart) to show the duration and interdependencies of the various activities. Depending on the complexity of the proposed removal action and requirements of the specific Remedial Section program, the RAD Plan may need to address operation and maintenance (O&M) as well as performance monitoring needs. Please refer to BER Policy #BER-RS-023 (Section 1.4), for a discussion of typical performance monitoring elements, and to Attachment A, as an example outline of a RAD Plan. Attachment A is not intended to be prescriptive in nature, rather a model from which to work. The exact elements and content of any RAD Plan will be determined by the KDHE—BER project manager dependent upon the overall complexity of the anticipated removal action while being consistent with the specific requirements of the respective Remedial Section program.

STEP 4 RA Implementation—Pursuant to the KDHE decision statement or CAD, the RA will be implemented in accordance with the KDHE-approved RAD Plan. Emergency or time-critical removal actions may occur before a decision statement or CAD is issued; however, public involvement activities may be warranted. Ultimately, KDHE—BER will determine whether or not the actions taken are deemed complete or fully operational and functional.

STEP 5 RA Summary Report—An RA Summary Report shall be submitted after completion of the removal action or presumptive remedy activities. The RA Summary Report shall include a final summary of removal action activities and an evaluation of the post-removal action confirmation sampling relative to removal action goals. The KDHE—BER project manager will determine the appropriate form or content of the RA Summary Report. If the removal action or presumptive remedy continues as an on-going effort, then the implementing party must submit a monitoring/progress report at a frequency specified in the KDHE—approved Performance Monitoring Plan.

PUBLIC INVOLVEMENT

Public involvement activities must be performed as required by KDHE—BER. An NCP-consistent Community Involvement Plan may be necessary at certain sites and will be implemented upon the discretion of the KDHE—BER project manager. Note that public involvement requirements may vary for the various Remedial Section programs.

KDHE DECISION DOCUMENT

Minimally, KDHE will make available for public comment a draft removal action or presumptive remedy decision statement. The removal action decision statement would be finalized with consideration of public comment received. Alternatively, depending on the complexities posed at the site, KDHE may opt to proceed with a formal CAD. A draft CAD would be made available for public comment and the CAD finalized with consideration of public comment regarding the removal action or presumptive remedy.

REFERENCES

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. § 9601 et seq. as amended by the Superfund Amendments and Reauthorization Act)

National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR 300)

EPA/540-R-93-057 (August 1993) entitled “Guidance on Conducting Non-Time-Critical Removal Actions Under CERCLA”

U.S. EPA OSWER Directive 9360.0-32FS (December 1993) entitled “Conducting Non-Time-Critical Removal Actions Under CERCLA”

U.S. EPA Memorandum from Stephen Luftig and Barry Breen (February 14, 2000) entitled “Use of Non-Time Critical Removal Authority in Superfund Response Actions”

KDHE—BER *Risk-Based Standards for Kansas RSK Manual – 4th Version* (June 2007 as revised)

Attachment A
RAD Plan
Example Outline

- I. Site Background
- II. Previous Investigations and Summary of Results
- III. Description of Proposed Removal Action or Presumptive Remedy
- IV. Removal Action Objectives
- V. Removal Action or Presumptive Remedy Design
 - a. Design Basis
 - b. Design Specifications
 - c. Drawings/Schematics
 - d. Cost Estimate
 - e. Detailed Working Schedule (to be periodically updated)

APPENDICES

- Appendix A – Quality Assurance Project Plan (or reference existing document)
- Appendix B – Health and Safety Plan (or reference existing document)
- Appendix C – Operations and Maintenance Plan (as necessary)
- Appendix D – Performance Monitoring Plan (as necessary)