

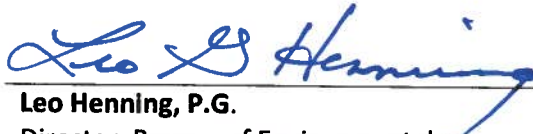
**Site Closure in the  
State Cooperative Program**

**Bureau of Environmental Remediation  
Remedial Section Policy # BER-RS-024**

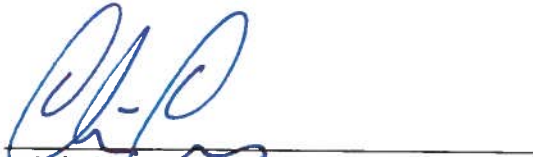


**February 2015**


**Concurrence**

  
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**Leo Henning, P.G.**  
Director, Bureau of Environmental  
Remediation

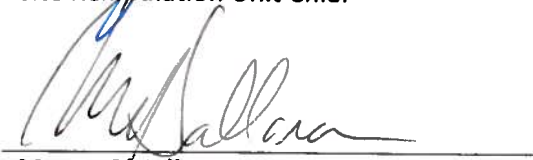
2-26-15  
Date

  
\_\_\_\_\_  
**Chris Carey, P.G.**  
Remedial Section Chief

2/26/15  
Date

  
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**Ryan Weiser, P.G.**  
Site Remediation Unit Chief

2/26/15  
Date

  
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**Maura O'Halloran, P.G.**  
Site Restoration Unit Chief

2/26/15  
Date

# Site Closure in the State Cooperative Program

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## Introduction and Purpose

This policy establishes the Kansas Department of Health and Environment's (KDHE's) procedure to determine if an *Active* site in KDHE's State Cooperative Program is eligible for site closure (*Resolved* status on KDHE's Identified Sites List), conditional closure (*Resolved with Restrictions* status), or if further actions are necessary to protect human health and the environment. This decision is based on the current and future risks posed by site-related contamination and the protection and restoration of the State's natural resources. Responsible Parties intending to seek site closure are encouraged to discuss this process and any potential issues or concerns with KDHE as early in the process as possible.

Please note this policy should not be applied on a well- or location- specific basis to justify changes to performance or compliance monitoring programs. KDHE encourages continual evaluation of these environmental monitoring programs to optimize data collection activities in coordination with KDHE.

## Eligibility for Site Closure

Sites are eligible for closure once data indicate that they no longer pose a threat to human health and/or the environment. In some cases, sites can be closed without any active remedial actions taking place; in other cases, however, extensive remediation is necessary to achieve closure. The scope of remedial actions necessary at a site is determined through the Comprehensive Investigation/Corrective Action Study Process and is documented in the Agency Decision Statement or Corrective Action Decision.

### Cleanup Levels and Closure Criteria

For the majority of sites in the Program, cleanup levels are KDHE's Tier 2 RSK Levels as provided in the Risk-Based Standards for Kansas (RSK) Manual for soil, groundwater and indoor air. Surface water cleanup levels are based on the Kansas Surface Water Quality Standards (K.A.R. 28-16-28b) for the designated use. Sediment cleanup levels are determined in accordance with KDHE's Sediment Policy (BER-ARS-045). In some cases, alternate remediation goals, site-specific cleanup levels, or site-specific background levels are established in the Corrective Action Decision or Agency Decision Statement. Sites are eligible for closure once remedial actions are complete, as demonstrated by performance monitoring and any necessary rebound testing,

### Which sites are eligible for closure?

- Sites where investigation findings demonstrate no response actions are necessary to protect human health and the environment; or
- Sites where active remediation has been completed and no future actions are necessary to protect human health and the environment.

and when the criteria specified below are met for each environmental medium.

– **For Groundwater and Surface Water:**

- **Option 1:** Contaminant concentrations are below established cleanup levels (or background) at representative KDHE-approved indicator monitoring locations (e.g., source area, and down gradient locations) over four semi-annual or annual sampling events;
- **Option 2:** The four-point moving average of contaminant concentrations is below established cleanup levels (or background) at indicator monitoring locations over no less than two years and trend analyses (based on a sufficient dataset) indicate stable or decreasing concentration trends (KDHE may consider other statistical approaches on a case by case basis); or
- **Option 3:** Site-specific risk evaluation demonstrates residual contamination does not pose an unacceptable threat to current and potential future receptors (including the potential for cross-media transfer (e.g., soil to groundwater migration, groundwater to surface water discharge, and vapor intrusion)).

– **For Soil and Sediment:**

- **Option 1:** Contaminant concentrations are below established cleanup levels (or background); or
- **Option 2:** Site-specific risk evaluation demonstrates residual contamination does not pose an unacceptable threat to current and future potential receptors (including the potential for cross-media transfer).

– **For Indoor Air:**

- KDHE anticipates that indoor air impacts attributable to vapor intrusion will dissipate once soil and groundwater cleanup levels are attained.
- Shutdown and decommissioning requirements for vapor mitigation systems are specified in BER-RS-053, *Considerations for Operations, Maintenance and Monitoring of Residential Active Sub-Slab Depressurization Systems* (KDHE, 2011).

Legal agreements and/or orders for sites that meet the requirements for site closure will be terminated once KDHE approves a request for reclassification and all other requirements in the agreements/orders are satisfied.

## Eligibility for Conditional Closure

For sites that do not meet the requirements for site closure above, KDHE, in consultation with the Responsible Party, may determine that *Conditional Closure* is appropriate. Conditionally closed sites no longer require further actions under the State Cooperative Program, but are not suitable for unrestricted use (e.g., some sites with waste-in-place remedies, sites with residual contamination above residential cleanup levels, but below non-residential cleanup levels, etc.). Sites eligible for Conditional Closure typically rely on engineering or institutional controls to manage potential residual risks as opposed to addressing these sites through continued work under the State Cooperative Program.

### Considerations for Closure with Restrictions Status

KDHE considers the following conditions to determine whether a site is eligible for Conditional Closure:

- Institutional controls are in place that provide sufficient means for KDHE to ensure the protectiveness of the remedy through enforcement. Any engineering controls necessary to ensure the protectiveness of the remedy are incorporated into the institutional controls.
- The source area has been remediated to the extent practicable;
- There are no existing or reasonably anticipated exposures above cleanup levels through cross-media transfer;
- For sites with residual groundwater concentrations above cleanup levels, KDHE evaluates each site based on:
  - groundwater plume dimensions (vertical and lateral);
  - contaminant concentrations and trends;
  - groundwater use and receptors in the site vicinity; and
  - potential for the plume to cause an exceedance of cleanup levels in an adjacent aquifer.

### Which sites are eligible for Conditional Closure?

- Sites where institutional and/or engineering controls alone are sufficient to protect human health and the environment; or
- Sites where active remediation has been completed, but institutional and/or engineering controls are necessary to protect human health and the environment.

The status of legal agreements and/or orders for sites that are conditionally closed will be evaluated on a case-by-case basis to determine the appropriate disposition.

### Closure Process

Once site data support closure, the Responsible Party typically prepares a Closure Report. The Closure Report may be combined with another document if approved by KDHE. KDHE may also elect to prepare a Closure Report. Site closure determinations must be supported by a comprehensive evaluation of current and historical site data. Closure Reports should include the following components, with appropriate tables and figures to support the closure determination:

- **Site Background** – a summary of site history, location, ownership, and operations, including any known or suspected releases.
- **Investigation Summary** – a summary of past investigation activities and results, including the nature and extent of contamination, migration pathways, and known or potential human health or ecological risks.
- **Selected Remedy** – a summary of the remedial action objectives, cleanup levels, and remedial action alternative(s) specified in the site decision document.



- **Remediation and Risk Management** – a discussion of any controls, interim remedial measures, and/or remedial actions taken to address environmental impacts or eliminate exposure pathways.
- **Current Site Data and Justification for Site Closure** – a summary of the current site data in the context of the remedial action objectives and cleanup levels specified in the site decision document and the closure conditions presented herein. The discussion should also include any conditions on the closure determination (e.g., institutional and/or engineering controls, etc.).

The Closure Report will be routed through the Bureau Director for concurrence on the closure determination. KDHE will notify the Responsible Party in writing whether it approves or disapproves the closure request.

- If closure is approved, KDHE’s initial notice will specify any specific restrictions or conditions of the site closure and will also identify any requirements that must be completed prior to site closure (e.g., payment of final invoices, plugging and abandonment of monitoring wells, decommissioning of remedial systems, institutional controls in place, etc.). Once these requirements are completed to KDHE’s satisfaction, KDHE will provide a final notice of site closure and will change the site status accordingly in the Identified Sites List. *Please note that Closed or Conditionally Closed status indicates **known** contamination does not pose a significant threat to human health or the environment, based on information available to KDHE at the time of reclassification. Site closure does not imply that a site is free from all contamination or pollution. KDHE may require further action on a closed site if new information becomes available that indicates that the site may pose a threat to human health or the environment and/or if additional releases have occurred.*
- If KDHE determines that a site is not eligible for closure, KDHE will identify the specific criteria that affected the determination, based on this policy and site-specific project documentation and requirements, as well as any additional work necessary to facilitate closure. KDHE will review any additional information provided by the Responsible Party to supplement the initial closure request. Responsible parties may appeal KDHE’s final closure determination in writing to the Director of the Bureau of Environmental Remediation.