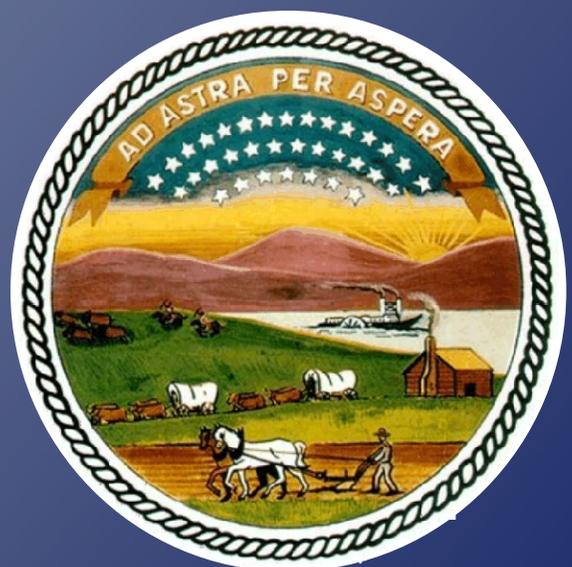

STATE COOPERATIVE PROGRAM: *protecting human health on a path to restoration and revitalization*

Kansas Department of Health and Environment
Bureau of Environmental Remediation
Remedial Section

June 2011



Our Vision– Healthy Kansans Living in Safe and Sustainable Environments

Disclaimer

This document was developed to provide a general overview of the State Cooperative Program. Although this document references various regulations and statutes, this document does not convey regulatory or statutory requirements per se. KDHE has made every attempt to present the information in a clear and concise manner for a variety of users. However, KDHE is not responsible for the misuse or misinterpretation of the information presented herein.

In general, this document should be used as a reference; it does not supplant policy or guidance pertaining to the various activities discussed herein. Differences may exist between the processes described in this document and what may be required based on site-specific circumstances. Mention or representation of trade names, commercial products, or specific practitioners does not constitute endorsement or recommendation for use.

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Common Acronyms and Abbreviations

ADS	Agency Decision Statement	O&M	Operations and Maintenance
AO	Administrative Order	PCB	Polychlorinated Biphenyl
ARARs	Applicable or Relevant and Appropriate Requirements	PIP	Public Information Plan
ATSDR	Agency for Toxic Substances and Disease Registry	PRP	Potentially Responsible Party
BER	Bureau of Environmental Remediation	QA	Quality Assurance
CA	Corrective Action	QAPP	Quality Assurance Project Plan
CAD	Corrective Action Decision	QC	Quality Control
CAP	Corrective Action Plan	RA	Remedial Action or Removal Action
CAS	Corrective Action Study	RAD	Removal Action Design
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980	RAO	Remedial Action Objective
CFR	Code of Federal Regulations	RCRA	Resource Conservation and Recovery Act of 1976
CI	Comprehensive Investigation	RD	Remedial Design
CIP	Community Involvement Plan	RI	Remedial Investigation
CO	Consent Order	ROD	Record of Decision
DWR	Division of Water Resources	RP	Responsible Party
EA	Environmental Agreement	RSE	Removal Site Evaluation
EPA	United States Environmental Protection Agency	SARA	Superfund Amendments and Reauthorization Act of 1986
ERA	Environmental Remediation Agreement	SCP	State Cooperative Program
ESD	Explanation of Significant Difference	SMPE	Site Monitoring and Performance Evaluation Plan
EUC	Environmental Use Control	SOW	Scope of Work
FS	Feasibility Study	USC	United States Code
FSP	Field Sampling Plan	UST	Underground Storage Tank
HHRA	Human Health Risk Assessment	VCPRP	Voluntary Cleanup and Property Redevelopment Program
HI	Hazard Index	VI	Vapor Intrusion
HSP	Health and Safety Plan	VOC	Volatile Organic Compound
IM	Interim Measure		
ISL	Identified Sites List		
KAR	Kansas Administrative Regulations		
KARB	Kansas Agricultural Remediation Board		
KDA	Kansas Department of Agriculture		
KDHE	Kansas Department of Health and Environment		
KORA	Kansas Open Records Act		
KSA	Kansas Statutes Annotated		
LUST	Leaking Underground Storage Tank		
NAPL	Non-Aqueous Phase Liquid		
NCP	National Oil and Hazardous Substances Pollution Contingency Plan		
NELAC	National Environmental Laboratory Accreditation Conference		
NPL	National Priorities List		

Contact Information

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Introduction and Overview

This document was prepared to provide a general overview of the State Cooperative Program (SCP) for various stakeholders, including: the general public, consultants, and potentially responsible parties (PRPs). The document includes an explanation of typical process components for SCP sites, links to valuable resources for addressing environmentally contaminated sites, and frequently asked questions from community stakeholders and PRPs. This document does not represent new Agency policy or guidance; it is intended to be a helpful resource for those parties interested in or already participating in the SCP.

The SCP was formed in the early 1990s within the Remedial Section of the Kansas Department of Health and Environment's (KDHE's) Bureau of Environmental Remediation (BER). The SCP was originally established as the State Deferral Program, intended to provide a more reasonable and cost-effective framework for Kansas businesses in lieu of participation in the more rigorous U.S. Environmental Protection Agency (EPA's) Superfund program. The SCP provides regulatory oversight of PRP-lead environmental investigation, risk assessment, interim measure implementation, evaluation of remedial alternatives, and subsequent design and implementation of remedial actions conducted at environmentally contaminated sites across the State. Although somewhat similar, the SCP facilitates more streamlined investigation and cleanup of contaminated sites than the federal Superfund program (i.e., the Comprehensive Environmental Response, Compensation, and Liability Act [CERCLA]). Industry participation in the KDHE SCP is intended to preclude possible duplicative enforcement or Superfund action by the EPA. The program provides an alternative for industry to address their environmental issues outside of federal purview. Through the SCP, KDHE is able to ensure that anthropogenic human health and environmental threats are appropriately addressed and sites restored to allow for their most beneficial use with consideration of current and future land use.

KDHE and EPA entered into a Memorandum of Agreement in 2001 to acknowledge the adequacy of the SCP in attaining timely and CERCLA-protective cleanups. Accordingly, participation of a PRP within the SCP promotes both state and federal acceptance of the investigative and remedial work performed while avoiding duplication of effort. The SCP and participating site files are periodically reviewed by EPA. A copy of the Memorandum of Agreement is available in Appendix A.

PRPs participating in the SCP to address non-Superfund sites typically follow a streamlined process employing KDHE guidance and scopes of work or, since the SCP process is parallel to that specified in the National Oil and Hazardous Substances Contingency Plan (NCP), responsible parties may also wish to pursue consistency with the NCP and the legal privileges and protections afforded therein. While KDHE does not determine whether specific actions are NCP consistent, at a minimum, more formal elements such as site-specific human health and ecological risk assessments and a Community Involvement Plan are typically needed to potentially connote "NCP consistency." PRPs are encouraged to consult their legal counsel regarding the possible need for NCP consistency. Should a PRP desire to more explicitly follow the NCP at non-Superfund sites, this preference must be identified upfront to KDHE.

The SCP was structured to provide flexibility, as appropriate, to facilitate investigation and remediation of a wide universe of sites generally independent of direct EPA involvement. These include high priority sites, state-lead Superfund Sites, sites not eligible for participation in KDHE's Voluntary Cleanup and Property Redevelopment Program (VCPRP), and sites with non-responsive or recalcitrant responsible parties such as enforcement-based sites. The SCP works cooperatively with industry, municipalities, private citizens, and other parties potentially responsible for environmental contamination to investigate and remediate environmentally contaminated sites. The SCP oversees investigative and remedial work at sites including but not limited to the aerospace industry, refineries, manufacturing facilities, chemical handling facilities, and agribusiness facilities. The program endeavors to remediate and restore the State's natural resources including soil, groundwater, surface water, and sediment, and to ensure safe drinking water supplies for private water well owners and public water supplies which are contaminated or threatened by environmental contamination resulting from releases of chemicals into the environment. Program staff provide professional and objective technical oversight of environmental investigation and remediation activities at contaminated sites to ensure consistency and timely completion of requisite work. This function is critical to ensure and protect the health of all Kansans and the environment both now and for future generations.

Regulatory Authority and Legal Instruments

Statutes and Authority for the SCP

The Secretary of KDHE has the general authority and responsibility to protect the water and soil of the state ([K.S.A. 65-161, et seq.](#)), order removal of public nuisances ([K.S.A. 65-159](#)), prevent discharge of sewage into the waters of the state ([K.S.A. 65-164](#)), conduct cleanup operations and recover costs when a water or soil pollutant is discharged ([K.S.A. 65-171v](#)) require the safe and sanitary disposal and management of solid wastes and hazardous wastes ([K.S.A. 65-3401, et seq.](#)), and to investigate and cleanup hazardous substances ([K.S.A. 65-3452\(a\), et seq.](#)). Links to these key statutes are included in Appendix B; please be advised this list is not intended to be comprehensive.

The SCP was developed based primarily on [K.S.A. 65-3452\(a\), et seq.](#), which provides the framework of the Environmental Response Act. These statutes give the Secretary of KDHE the authority to determine that cleanup of a site is necessary to protect public health or the environment; to expend monies from the environmental response fund; to issue cleanup orders to parties that are responsible for health or environmental hazards caused by hazardous substances; to recover money from responsible parties; to assign personnel and equipment necessary to carry out the Environmental Response Act; and to enter into contracts or agreements with a person or company to conduct the necessary cleanup activities. The Secretary of KDHE is authorized to adopt rules and regulations necessary to administer and enforce provisions of the Environmental Response Act; however, no rules or regulations have been formally adopted specifically for the SCP to date.

Legal Instruments between KDHE and PRPs

The party responsible for addressing contamination at a site is commonly referred to as a PRP. The term PRP can be applied to a broad class of entities ranging from private individuals to large corporations and is legally defined within CERCLA as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA). PRPs may include: current owners or operators of a facility; former owners or operators of a facility at the time of disposal; persons who arranged for treatment or disposal of hazardous substances; and, transporters of hazardous substances who selected the disposal site.

Pursuant to [K.S.A. 65-3453\(a\), et seq.](#), contaminated sites are addressed through legal instruments such as environmental agreements, environmental remediation agreements, consent orders, administrative orders, or other legal documents. This variety of legal agreements allows KDHE to accommodate Kansas

businesses by tailoring the legal instrument relative to the complexity of the site. Some of these agreements may allow simple sites to progress towards clean up more quickly. KDHE has developed model legal documents that serve as a foundation from which all executed legal agreements are developed. Essential elements common to most legal documents executed by KDHE generally include a description of the work to be performed, jurisdiction and authority, and implementation schedules.

The PRP will usually retain the services of an attorney for negotiating legal agreements with KDHE. Although not a requirement, it is advisable that the PRP retain legal counsel familiar with environmental law. The PRPs and their attorneys will negotiate the terms of the legal instrument with KDHE. Once a legal agreement has been signed by the PRP, it is considered fully executed when the Secretary of KDHE signs the document.

KDHE Oversight Costs

As outlined in [K.S.A. 65-3453\(a\)\(4\)](#) and [K.S.A. 65-3455](#), the Secretary of KDHE has the authority to “recover moneys from persons responsible for the health or environmental hazard created by the hazardous substance.” SCP activities are generally funded through cost recovery billing to PRPs participating in either consent orders, environmental agreements, environmental remediation agreements, or unilateral administrative orders. Oversight costs can include but may not necessarily be limited to the costs of labor associated with review of technical documents, studies and test results, field oversight, collection of split samples, laboratory analysis, community involvement activities, SCP administration and other associated costs. BER may retain outside experts for specialized tasks such as preparing or reviewing site-specific risk assessments, review of models, or community involvement activities where costs incurred by KDHE are reimbursed by the PRPs. If a responsible party fails to reimburse KDHE for funds expended for activities associated with SCP sites, payment can be recovered in an action brought to the district court by the Secretary of KDHE.

SCP Process



Site Identification



Initial PRP Involvement



Site Investigation



Evaluation of Remedial Alternatives



Public Comment and Selection of Remedy

Site Identification refers to the referral of a site to the SCP and/or the discovery of environmental contamination at an SCP-eligible facility.

Initial PRP Involvement refers to the point at which those responsible for addressing environmental contamination are approached by the SCP.

As part of the **Site Investigation**, the extent and magnitude of contamination affecting all environmental media is determined and risks posed by contamination are evaluated.

The **Evaluation of Remedial Alternatives** weighs the pros and cons of various cleanup methods with respect to threshold, balancing and modifying criteria.

KDHE develops a draft decision document to facilitate public review of the Agency's preferred remedial alternative with consideration of the Administrative Record file. Upon completion of the **Public Comment Period**, KDHE issues the final decision document which describes the **Selected Remedy** for the site.

Interim Measures are typically short term actions intended to abate a known or suspected immediate threat posed by contamination at a site. Interim measures can be implemented anytime prior to the selection of the final remedy for the site and are encouraged by KDHE.

Environmental monitoring refers to those ongoing activities conducted to evaluate, for example, plume orientation and dynamics over time and identify potential receptors to contamination. Environmental monitoring continues throughout the investigation and cleanup process.

Community involvement encompasses all of KDHE's interactions with the community. Community involvement continues throughout the investigation and cleanup process.

SCP Process—Continued



Remedial Design

The **Remedial Design** describes in detail the remedial actions planned for the site and serves as the basis for remedy implementation.



Remedial Action

The **Remedial Action** constitutes the implementation of the remedy. This is the phase where most active cleanup occurs.



Operation and Maintenance

Operation and Maintenance (O&M) refers to those tasks needed to ensure ongoing performance of the remedy. O&M is necessary throughout the lifecycle of the remedial system.



Reclassification

Once cleanup levels have been achieved and maintained, a site may be eligible for **Reclassification**.

Site Identification and PRP Searches

Site Identification

Contaminated sites are routinely brought to KDHE's attention through a variety of sources (Figure 1). These include but are not limited to:

- contaminants detected in samples collected from public water supplies;
- spill reports through KDHE's Spill Response Program or through the National Response Center;
- referral from various federal programs;
- citizen complaints;
- environmental audits performed during real property transactions; and,
- unrelated environmental investigations that identify dissimilar contaminant types or discrete sources of contamination.

Most sites referred to KDHE are initially evaluated by the Remedial Section's Site Assessment Unit to determine the source of contamination (i.e., where the release occurred) and who/what caused the release. However, depending on the information available at the time of referral, KDHE may proceed directly to the PRP search.

PRP Search and Evaluation

Once KDHE has determined the source(s) of contamination at an identified site, a PRP search is initiated. The PRP search is intended to establish evidence of liability by identifying PRPs and associating their current and historical chemical inventory and management practices with the contaminants present at the Site. KDHE's PRP searches may include evaluating site data, reviewing historical deed and ownership records, evaluating changes of land use over time, conducting interviews, researching corporate history, and/or sending PRPs information request letters to gather specific information.

KDHE uses the results of the PRP search to determine which parties are

responsible for contamination at a site. In most cases, the entity responsible for releasing the contaminants into the environment, or their successor(s) is responsible for cleanup; however, in cases where the original entity is no longer viable or has transferred the environmental liability to others, the current property owner or others may be held responsible for the site investigation and cleanup. Once the PRP search and evaluation process is complete, KDHE sends formal notification to identified parties of their status as a PRP for a site and requests that they enter into negotiation of a legal instrument to facilitate investigation and/or remediation of the contamination under SCP oversight.

Figure 1. Sources of SCP Sites.



Sites Identified by KDHE (Examples)

Acid Drainage Site

KDHE identified contamination at this site in southeastern Kansas in late 2008. A parking lot pad was constructed of concrete, coal combustion byproducts and clean fill that resulted in acidic storm water runoff and, as shown, affected nearby surface water. KDHE worked with PRPs to implement interim measures and complete the site investigation. Additional work is planned in the future to ensure protection of human health and the environment.



Drum Recycling Facility

KDHE identified contamination at this site in southeastern Kansas in 2006, when high concentrations of trichloroethene, a common solvent, were detected in a groundwater sample collected at a nearby underground storage tank site. Haphazard drum storage and drum handling practices may have resulted in releases of various chemicals to the environment. KDHE is working with the responsible party to address the contamination.

Sites Identified by KDHE (Examples)

Solvent Storage Site

A fire at a solvent storage facility in south-central Kansas caused a catastrophic release of solvents to the environment. After emergency response actions were completed, KDHE worked with the facility owner to implement a plan to excavate and remediate contaminated soil. While some contaminated soils were removed from the site as hazardous waste, lesser contaminated soils were treated onsite in a lined land treatment cell to remove the volatile organic compounds.



Former Refinery Site

The oily sheen from seeps of petroleum hydrocarbons is visible in a creek in south-central Kansas. The source of the seeping hydrocarbons is a former petroleum refinery located adjacent to the creek. Booms containing oil absorbent material have been placed in the creek to control the hydrocarbons from migrating downstream. Response actions at the former refinery are ongoing.

Site Investigation

Background

Once an agreement or order is in place between KDHE and the PRP, the first step in the cleanup process is conducting a site investigation. The purpose of the investigation is to determine the source(s), extent, and magnitude of contamination attributable to the site. To perform this work, the PRP will retain the services of a consultant with expertise in conducting environmental investigations.

Site investigations are conducted through various KDHE-provided scopes of work that are broad enough in scope to fit the needs of most sites. The legal instrument between KDHE and the PRP will identify the appropriate scope(s) of work for a particular site. KDHE's scopes of work are intended to provide clear objectives and framework to assist the PRP in readily obtaining KDHE approval of work conducted at a site. These may include scopes of work for: Comprehensive Investigation (CI)/Corrective Action Study (CAS); Remedial Investigation (RI)/Feasibility Study (FS); and Removal Site Evaluation (RSE)/Removal Action Design (RAD)/Removal Action (RA), among others. These scopes of work are available online at <http://www.kdheks.gov/ber/policies.htm>.

Objectives

Although the exact field activities to satisfy the objectives of the individual scope(s) of work vary on a site-specific basis, the following list paraphrases some common objectives to be met during the investigation:

- identify and characterize known and potential source areas for recognized and potential contami-

- nants of concern;
- delineate and characterize the full lateral and vertical extent of contamination in each potentially affected medium;
- characterize the environmental setting;
- characterize the physicochemical properties of the contaminants;
- identify human and ecological targets that may be affected by the site; and,
- develop a preliminary list of remedial action objectives (RAOs) and corresponding potential remedial action alternatives.

Planning

Before proceeding with the site investigation work, the first step for the PRP is to submit a work plan describing in detail the activities proposed to satisfy the investigation objectives for KDHE review and approval. KDHE encourages the PRP and consultant to participate in scoping conference calls or meetings with the KDHE project manager during the development of the work plan.

There are a variety of field activities which may be necessary to satisfy investigation objectives. These may include:

- collecting samples of soil, groundwater, soil vapor, surface water, sediment, indoor air, ambient air, among others;
- installing monitoring wells and/or other permanent monitoring equipment;
- conducting aquifer tests; and/or,
- conducting treatability studies and/or pilot tests.

Site investigations are often conducted in phases to take advantage of information gained initially and focus subsequent data collection efforts. If a phased investigation program is proposed, the initial work plan should describe the anticipated scope, and schedule of each investigation phase to avoid unnecessary delays in the investigation process. In addition, the supporting project planning documentation (i.e., quality assurance project plan (QAPP), field sampling plan (FSP), and site-specific health and safety plan (HSP) must be sufficiently robust to cover anticipated future investigation phases. Plans for subsequent investigation phases can then be documented through letter proposals.

Reporting

Upon completion of site investigation activities necessary to achieve investigation objectives, a report must be submitted to KDHE by the PRP or their consultant. If a phased implementation, it may be necessary to provide interim reports or preliminary data transmittals. The investigation report should include the information and data collected during the investigation and describe investigation findings in terms of the stated objectives. The investigation report should include appropriate tables, figures, boring and well logs, survey data, laboratory analytical data and validation summary, references, appendices, etc. to effectively portray the data generated during the investigation, support any conclusions drawn in the report, and provide recommendations for interim measures and/or additional investigation to fill any remaining data gaps.



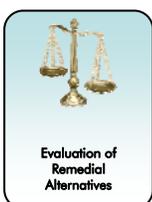
Site Identification



Initial PRP Involvement



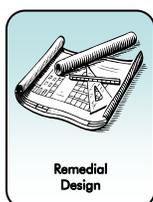
Site Investigation



Evaluation of Remedial Alternatives



Public Comment and Selection of Remedy



Remedial Design



Remedial Action

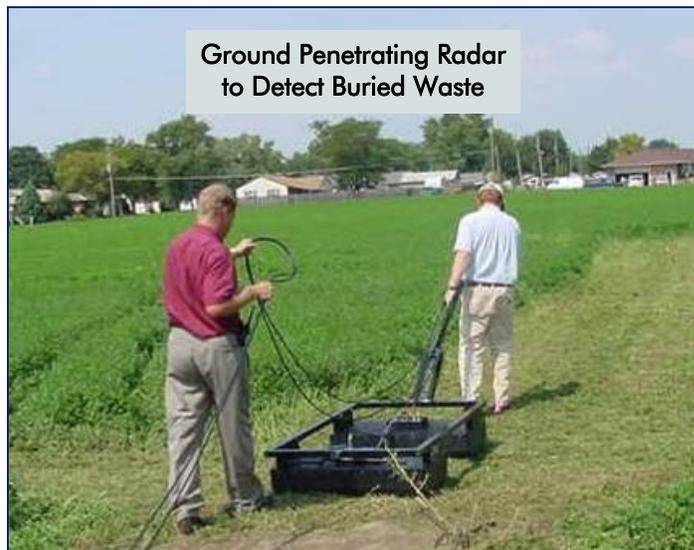


Operation and Maintenance

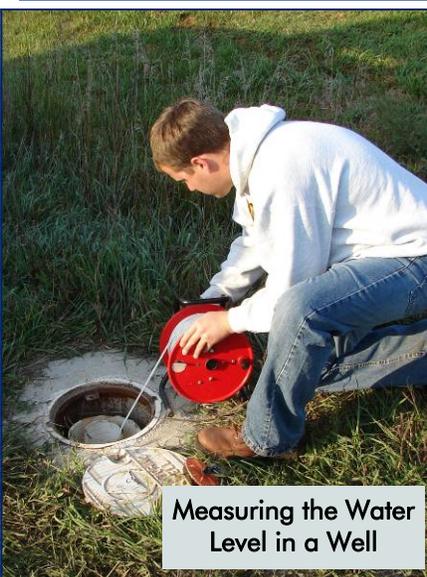
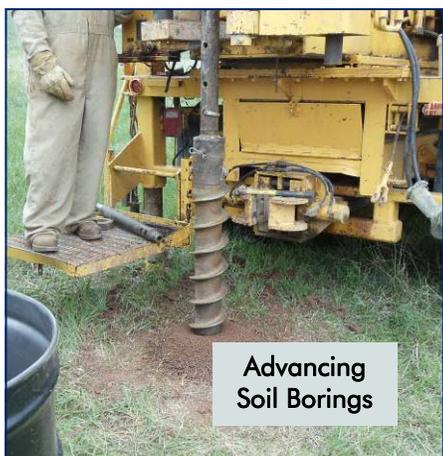
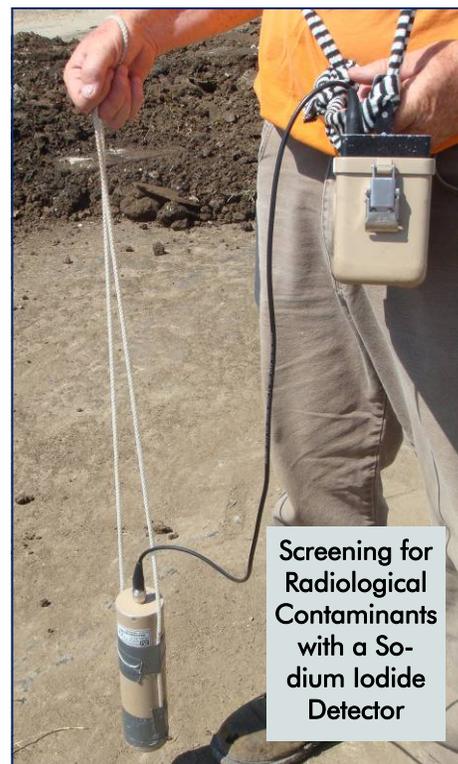
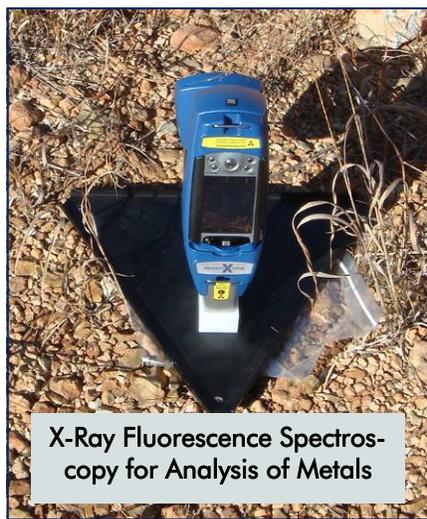
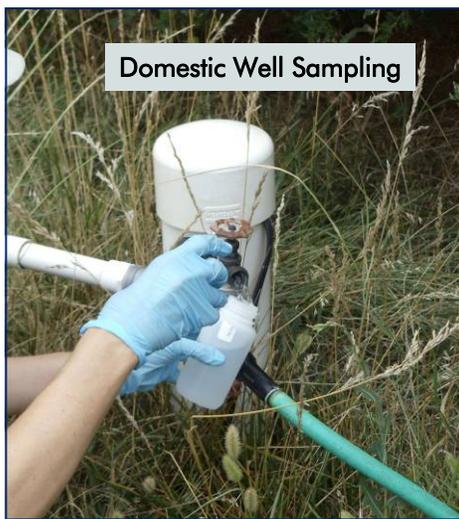


Reclassification

Examples of Site Investigation Activities



Examples of Site Investigation Activities



Interim Measures

Interim measures are actions taken to correct or mitigate risks or threats posed by a contaminated site prior to selection of the final remedy. Some interim measures are implemented to mitigate sources of contamination (e.g., waste material or highly-contaminated soil); these are often referred to as source controls. KDHE's Scope of Work for Interim Measures is available online at <http://www.kdheks.gov/ber/policies.htm>.

The primary objective of an interim measure is to control or abate threats to human health and/or the environment from releases of or exposures to contaminants, and to prevent or minimize the further spread of contamination while long-term remedies are evaluated. An interim measure is intended to provide a partial, albeit more immediate, solution while being consistent with the final site remedy and may be conducted without extensive investigation at any time prior to KDHE's selection of the final remedy.

In emergency cases, interim measures can be implemented quickly with limited documentation up front and more thorough reporting upon completion of the interim measure. Such emergency cases may include actions necessary to protect drinking water supplies or natural resources from imminent threats. It is important for KDHE and the PRP to discuss the scope of necessary planning and reporting documentation for emergency interim measures in advance.

In most cases, a thorough Interim Measure Work Plan/Design must be

submitted for KDHE review and approval prior to interim measure implementation. The Work Plan/Design should include, at a minimum:

- a summary of available site information and sample results;
- a detailed description of the proposed interim measure;
- justification and benefit of interim measure implementation including interim RAOs;
- complete design specifications;
- cost estimate; and,
- a detailed working schedule

Upon completion of the interim measure, an Interim Measure Report documenting the nature of the threat, the action(s) taken and the success in mitigating the threat must be submitted. If the interim measure continues as an on-going effort (e.g., subsur-

face interceptor trench operation), then the implementing party must submit a monitoring/progress report at a frequency specified by KDHE.

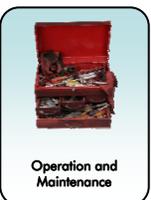
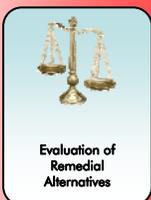
The most common interim measures at SCP sites include:

- excavation and offsite disposal of contaminated soil or wastes;
- removal of abandoned drums;
- removal of non-aqueous phase liquid (NAPL);
- provision of alternate water supplies;
- installation of vapor mitigation systems;
- perimeter fencing to limit access to the site;
- groundwater extraction for hydraulic containment; and,
- subsurface barriers (e.g., French drain or interceptor trench).

CASE-IN-POINT: Interim Measures Help Preclude Contaminant Migration

Releases of grain fumigants from an underground tank at this south-central Kansas site resulted in carbon tetrachloride impacts to groundwater at concentrations nearly 500 times higher than the federal drinking water standard. In 2009, the PRP installed two permeable reactive barriers (PRBs) that created a strong reducing environment and facilitated reductive dechlorination of carbon tetrachloride to reduce contaminant mass and to limit further migration of the plume beyond the property boundary. As of early 2011, carbon tetrachloride concentrations are below drinking water standards at downgradient locations and have been reduced by almost 98 percent near the former underground tank. Additional monitoring of the PRBs is ongoing to determine what, if any, additional remedial actions will be needed as part of the final remedy. The implementation of interim measures in this case sped up the overall timeframe for cleanup of the site and limited the downgradient extent of the contaminant plume, likely reducing the overall cost of site remediation.

Interim Measures



Interim Measure Example—Old Waste Pit Excavation



Excavation—Waste Exposed

A south-central Kansas site that contained an old waste disposal pit for an aircraft manufacturing plant was excavated in 2010. Waste disposal at the site dates back to the 1960s and early 1970s. A variety of wastes were identified during the excavation and included construction/demolition debris, drums, paint waste, solvents, polychlorinated biphenyls (PCBs), and small amounts of radium waste from old airplane instruments.

Excavation—Waste Removed

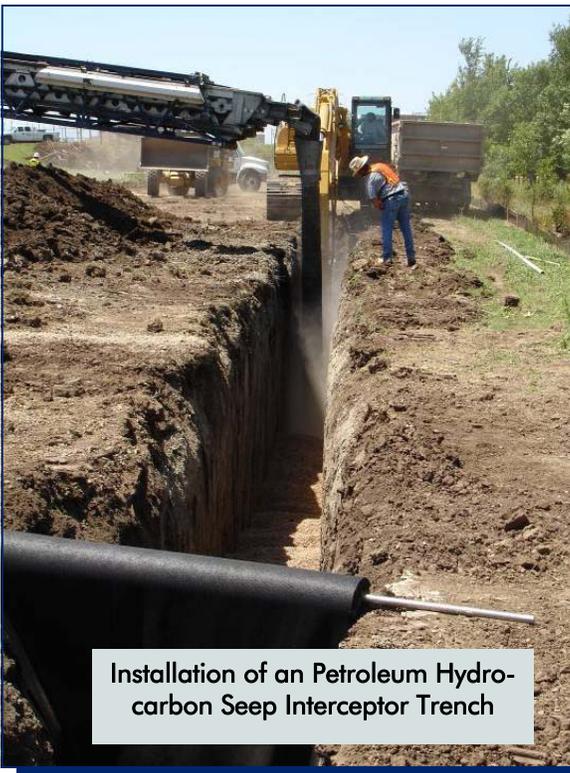
The waste has been removed from the disposal pit and transported by truck to a permitted off-site disposal facility. Visual observations and field screening were used initially to determine the extent of the excavation. Samples of soil were then collected from the base and sidewalls of the excavation to confirm that cleanup goals were achieved.



Excavation—Backfilled and Seeded

The excavation has been backfilled with clean soil. A layer of topsoil has been spread on the backfill material and seeded with an appropriate seed mixture for south-central Kansas to establish the vegetative cover.

Interim Measures Examples



Evaluation and Selection of Remedial Alternatives

The evaluation of remedial alternatives provides an objective and standardized process for comparing at least two plausible remedial action alternatives and the "no action" alternative, recommending and justifying a specific remedial action for the site, and determining the benefits and consequences of the proposed remedial action. For many less complicated sites, a presumptive remedy approach can be used that decreases the time and expense of selecting, planning and implementing the remedial action. Presumptive remedies are discussed in more detail on the following page. In all cases, KDHE works with PRPs to identify protective remedial strategies that are achievable with consideration of their financial wherewithal.

These evaluations are conducted through various scopes of work that are broad enough in scope(s) to fit the needs of a most of sites. The legal instrument between KDHE and the PRP will identify the appropriate scope of work for a particular site. These may include scope(s) of work for: CI/CAS; RI/FS; and RSE/RAD/RA, among others. These scopes of work are available online at <http://www.kdheks.gov/ber/policies.htm>.

The evaluation of remedial alternatives must include:

- a description of the contaminants of concern and media affected;
- identification of human and environmental targets and an evaluation of all direct and indirect exposure pathways;
- a description of the site-specific Remedial Action Objectives (RAOs);

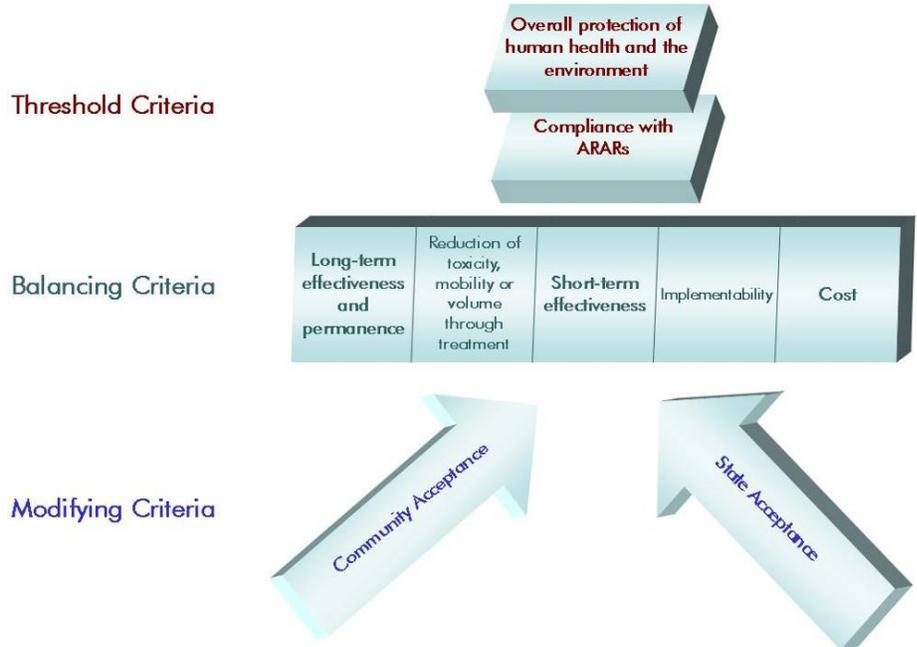


Figure 2. Nine Criteria for Evaluating Remedial Alternatives

- a detailed individual analysis of each alternative ; and,
- a comparative analysis of each of the proposed remedial action alternatives.

The detailed evaluation of potential remedial action alternatives provides the basis for recommending and supporting a specific remedial action or group of remedial actions for the site. In addition, any remedy selected for a site must satisfy the threshold criteria shown in Figure 2. There are nine criteria used for the evaluation of alternatives as specified in the NCP: protection of human health and the environment; compliance with applicable, or relevant and appropriate requirements (ARARs); long-term effectiveness and permanence; reduction of toxicity, mobility or volume through treatment; short-term effectiveness;

implementability; cost; state acceptance; and community acceptance. Once KDHE has reviewed and approved the report on the evaluation of remedial alternatives, KDHE will prepare a draft decision document that identifies KDHE's preferred remedy for the site.

In some cases, implementation of a pilot test or treatability study may be necessary based on the recommendations provided in the evaluation of remedial alternatives to demonstrate the technology's viability prior to development of the draft decision document. In such cases, KDHE may defer approval of the evaluation document until completion of the pilot test or treatability study. It may also be necessary to identify a contingent remedy up front in the event the selected remedy is not able to achieve RAOs.



Presumptive Remedies

KDHE has identified presumptive remedies to promote where possible expedited and cost-effective cleanups of some common types of sites in Kansas. A presumptive remedy incorporates the preferred remedial technology for a particular classification of site based on environmental media impacted, type of release and contaminants of concern. KDHE's presumptive remedies are based on past performance of particular remedial strategies, cost, and available guidance.

Presumptive remedies often speed up the cleanup process while ensuring protection of human health and the environment and satisfying federal and state requirements. Because the selection of a presumptive remedy for a site may allow the evaluation of remedial alternatives to be more streamlined, there may be a considerable cost savings associated with implementation of the presumptive remedial strategy as opposed to an alternative approach.

Although the presumptive remedies for various types of sites vary, there are a number of potential common elements for these remedial strategies:

- Preventing exposure to or leaching of contamination from contaminated soils through treatment, excavation, and/or capping;
- Preventing contaminant migration and restoring the groundwater resource through groundwater extraction and treatment/beneficial use; and,
- Limiting future use of a property through institutional controls.

Nitrate Presumptive Remedy Expedites Site Cleanup



At this southwestern Kansas site, KDHE worked with the responsible party to excavate contaminated soil from a nitrate source area to reduce the potential for ongoing leaching of contamination from the soil source into groundwater. Contaminated soil was beneficially applied on nearby agricultural lands as a source of nitrogen.

Type of Site	Environmental Medium	Typical Presumptive Remedies
Nitrate/Ammonia Sites	Soil	Soil excavation and off-site land application for beneficial reuse
	Groundwater	Groundwater extraction and beneficial reuse
Chloride Sites	Soil	Excavation and off-site disposal, capping, and soil washing, among others
	Groundwater	Groundwater extraction and treatment or disposal to permitted underground injection control wells
Smelter Sites	Soil/Waste	Soil/waste consolidation and capping

Selection of Remedy (Decision)

Once KDHE approves the evaluation of remedial alternatives, the site remedy is memorialized through a formal process which provides the opportunity for public comment. Although community involvement is critical throughout the cleanup process, the community involvement activities associated with the draft and final decision documents are the minimum 'required' community involvement activities under the SCP process.

KDHE will prepare a draft decision document (e.g., Draft Corrective Action Decision [CAD], Proposed Plan, or Draft Agency Decision Statement [ADS]) for public review and comment. Also, an Administrative Record file that contains key documents and site information that form the basis and rationale for selecting the remedy will be made available to the public at the KDHE office in Topeka and a local repository. Public comment periods (15- or 30-days) are noticed once in a local newspaper publication with the best distribution proximal to the site. If requested, a public meeting may be scheduled to present the preferred remedial strategy.

The primary purposes of the draft decision document are to:

- summarize information from the key site documents including the investigation and evaluation of remedial alternatives reports;
- briefly describe the remedial alternatives evaluated for site remediation;
- identify and describe KDHE's preferred remedy for contamination at a site; and,
- provide an opportunity for public comment on the KDHE preferred remedy.

After the public comment period has ended, a final decision document (e.g., Final CAD, Record of Decision [ROD], or Final ADS) will be issued by KDHE. This document identifies the selected remedial strategy including a responsiveness summary to address comments received from both the general public and other interested parties. Upon finalization of the decision document, the PRP is required to implement the selected remedy.

Changes to the Remedy

Although decision documents are intended to represent the 'final' remedy for a site, sometimes new information or changes in site conditions warrant modifications to the selected remedy necessitating proper documentation. Changes are evaluated with respect to scope, performance and cost to determine their classification (i.e., Non-Significant and Minor, Significant, and Fundamental). Each type of change is subject to different documentation procedures. **Non-significant and Minor** changes should be documented in the project file. It may also be appropriate to develop a fact sheet which summarizes the change.

Significant changes constitute a modification to a component of the remedy but not the overall remedial approach. Significant changes should be documented in an Explanation of Significant Difference (ESD). The ESD must describe the nature of the change, summarize the information that led to the change and document that the remedy will still protect human health and the environment and comply with ARARs. ESDs must be noticed and made available to the public but do not necessitate a public comment period.

Fundamental changes constitute a substantial change in the performance, scope and/or cost of a remedy and must be documented in the form of an amendment to the decision document which includes a reevaluation of the proposed remedy with consideration of the nine criteria. The community involvement requirements applicable to draft decision documents are also applicable to amendments.

Contingent Remedies

The purpose of a contingent remedy is to help ensure that remedy implementation is protective while satisfying project RAOs. Although not always required, upfront contingency identification provides an additional level of security when PRPs recommend implementation of innovative remedial technologies or technologies that may take some time to demonstrate effectiveness (e.g., phytoremediation, monitored natural attenuation). Contingent remedies are often selected from those alternatives already evaluated but, were not selected as the preferred alternative (often due to higher cost). It is important that clear contingency implementation triggers be identified in the decision document along with any necessary testing. Upfront contingency identification allows the PRP to move quickly to implementation without restarting the remedy selection process.



Site Identification



Initial PRP Involvement



Site Investigation



Evaluation of Remedial Alternatives



Public Comment and Selection of Remedy



Remedial Design



Remedial Action



Operation and Maintenance



Reclassification

Remedial Design

After the remedy selection process has been memorialized in a decision document (e.g. Final ADS, Final CAD, or ROD) and a consent order or other legal agreement is in place for the cleanup phase of the project, the PRP will retain qualified contractors to design and implement the selected remedy. The KDHE scope(s) of work for the remedy design and implementation phase of the project include the Corrective Action Plan (CAP)/ Corrective Action (CA), Remedial Design (RD)/Remedial Action (RA), and RSE/RAD/RA. These scopes of work are available at <http://www.kdheks.gov/ber/policies.htm>.

The PRP should refer to the consent order or other legal agreement to determine which scope(s) of work are applicable to their project.

The remedies for SCP sites can range from the very simple to the very complex. Some remedies will need to be designed by a Kansas-licensed engineer while other remedies may not necessitate engineering support. Work is typically overseen by a consultant with expertise in environmental investigation and remediation. The primary objectives of the design phase include:

- development of preliminary conceptual design for the remedy and;
- obtain additional data, if needed, to support design basis;
- development of detailed design plans and specifications;
- identify and obtain necessary easements and permits;
- development of a contingency plan; and,

- development of a detailed schedule for remedy implementation.

During the design scoping, KDHE and the PRP determine whether additional information is needed for design of the remedy. If pre-design data acquisition is necessary, appropriate work plans for data collection must be submitted to KDHE for review and approval.

The PRP's consultant will prepare and submit detailed design plans and specifications for KDHE review and approval. Depending on the scale and complexity of the remedy, there may be some sites that require preliminary, intermediate and pre-final/final design submittals. Also, depending on the specific design, supplemental plans that may be incorporated into the design submittal may include, but are not limited to, an O&M Plan; a Site Monitoring and Performance Evaluation Plan; a Con-

struction Quality Assurance Project Plan; a Contingency Plan; and a Health and Safety Plan.

The PRP and their consultant are ultimately responsible for designing and implementing the remedy such that it can achieve the RAOs established for a site. KDHE works with PRPs and their consultants to allow as much flexibility as possible during the remedy selection and implementation process. Generally, the remedial alternative is designed for the current and anticipated future uses of the property so that disruptions of active facility operations are minimized. If the remedy is determined to be ineffective, the PRP may be required to modify, augment or supplant the overall remedial strategy for the site, including implementing the identified contingency remedy.

Examples of Remedial Technologies

Groundwater

- Groundwater extraction for hydraulic containment
- In-situ enhanced bioremediation
- In-situ chemical oxidation
- In-situ thermal treatment
- In-situ chemical reduction
- Air sparging
- In-well stripping
- Permeable reactive barriers
- Monitored natural attenuation
- Phytoremediation

Soil or Waste

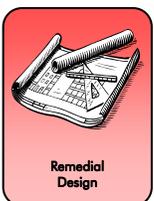
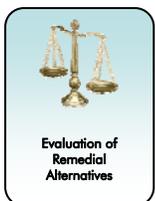
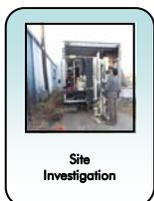
- Excavation and off-site disposal
- Soil vapor extraction
- Phytoremediation
- In-situ thermal treatment
- Capping

Surface Water and Sediment

- Sediment catchment basins

Indoor Air

- Subslab depressurization systems



Remedial Action

The remedy for the site is implemented after the design is approved by KDHE in accord with the implementation schedule contained within the design plan. The primary objectives of remedy implementation are:

- to implement the design;
- to operate and maintain the remedy;
- to evaluate and monitor the performance of the remedy; and
- to confirm attainment of RAOs or cleanup goals by conducting post-remedial action monitoring.

Once a remedy has been constructed and implemented, the PRP or their consultant will provide KDHE with a report on the remedy implementation, typically including as-built drawings. The PRP will monitor performance of the remedy as approved in the Site Monitoring and Performance Evaluation Plan. For more information on the remedy implementation requirements, KDHE's scopes of work are available at <http://www.kdheks.gov/ber/policies.htm>



Operation and Maintenance and Performance Monitoring

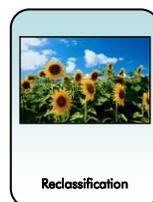
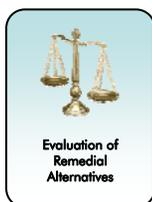
Most site remedies necessitate long-term operation and maintenance (O&M) to ensure that the RAOs and/or cleanup goals are attained. The O&M requirements vary widely based on the remedial technology selected, the complexity of the remedy, and the estimated timeframe for cleanup. The costs associated with O&M activities must be factored into the remedy selected for a site. Operation and maintenance activities include, but are not limited to: routine system inspections, pump repair or replacement, filter/media change outs, cleaning or treating system compo-

nents, additional injections (for in-situ remedies), among others.

Every remedial system requires a performance monitoring program to evaluate the system's short-term and long-term effectiveness relative to the RAOs specified in the decision document. If monitoring results indicate that the system has achieved its maximum effectiveness (e.g., asymptotic removal) and RAOs have not been attained, it might be necessary to expand or otherwise modify the remedial system or implement any pre-determined contingent remedy.



Above: Installation of a large-diameter boring air sparge/soil vapor extraction system in northwestern Kansas. Left: Down-hole view of large-diameter boring.



Remedial Action Example—Solidification/Stabilization of Contaminated Soil with Capping

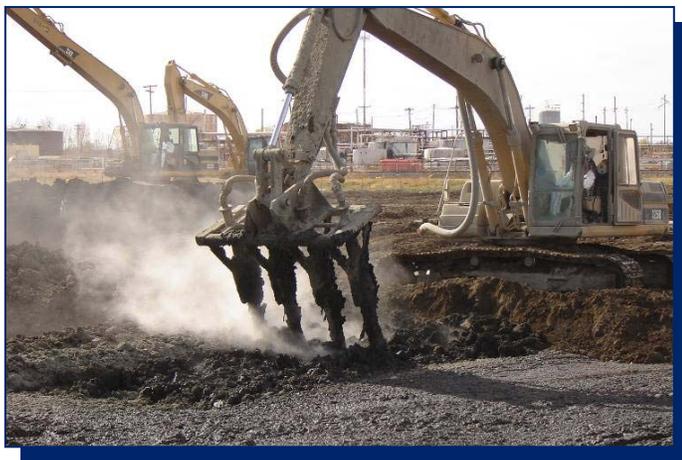
Sludge in Former Refinery Burn Pond

A former refinery burn pond was used to dispose of petroleum waste products generated by refinery operations. Waste disposal at the site dates back to the late 1950s through the mid-1980s. The pond was de-watered and the pond sludge removed, treated, and disposed at a permitted land-fill leaving behind residual contaminated soil at the site. After other remedial technologies were implemented and found not to be fully effective, the remedial approach was changed.



Solidification/Stabilization

The residual contaminated soil was solidified and stabilized in place. A specialized pneumatic injector system was used to mix the soil with the stabilizing material based upon extensive treatability study testing.



Engineered Cap and Environmental Use Controls

An engineered low-permeability cap was placed on top of the solidified/stabilized waste material consisting of a layer of clay and then topsoil. The topsoil was seeded with a native seed mixture appropriate for the area to establish a vegetative cover. An environmental use control was placed on the property to restrict land use, prevent human exposure to contaminants, and require upkeep and maintenance of the engineered cap.



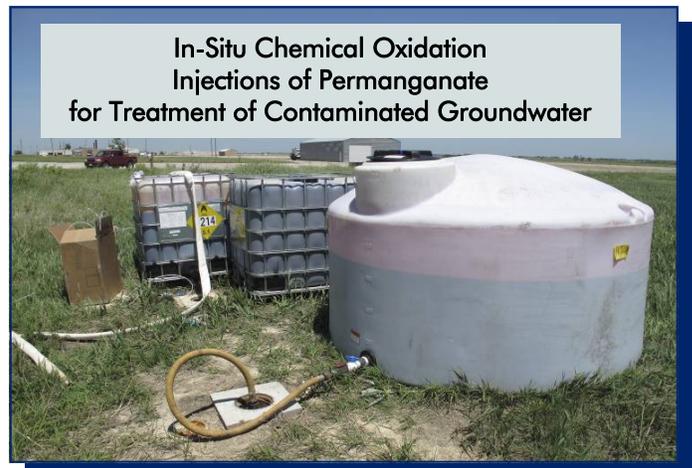
Remedial Action Example—Former Zinc Smelter



A large zinc smelter operated in southeast Kansas from 1898 to 1976 resulting in environmental impacts to the soil, groundwater, sediment, and a nearby surface water body. Photos above (upper left) show the smelter wastes present at the site. Remedial activities included the consolidation of excavated waste and contaminated soils in an on-site disposal cell that was capped and seeded with an appropriate seed mixture for the area (above right). An environmental use control was placed on the property to restrict land use and protect the cap. Impacts to the nearby surface water body (below left) were dealt with by removing visually impacted sediment followed by the construction and operation of a sediment catchment basin (below right).



More Remedial Action Examples



Reclassification

When a PRP believes that remedial action or monitoring at a contaminated site has achieved the cleanup goals, the PRP may request that KDHE reclassify the site from *Active* to *Resolved* status. The PRP seeking reclassification of a site must provide the necessary documentation to support reclassification in the form of a reclassification request in accord with KDHE's *Reclassification Plan Policy* available at <http://www.kdheks.gov/ber/policies.htm>.

For a site to be eligible for reclassification, four equally-spaced groundwater and surface water sampling episodes over a period of no less than two years must indicate contaminant concentrations below applicable cleanup goals (e.g., maximum contaminant levels or Kansas Surface Water Quality Standards), with consideration of background and site-specific determinations. In addition, confirmation soil and sediment samples must also be below applicable cleanup goals.

Based on the reclassification request, KDHE will prepare a reclassification report for internal agency review. The reclassification report will present the Agency's recommendation regarding potential reclassification of the site. In some cases, when the thresholds described in the preceding paragraph are not applicable to a site, the PRP may submit a reclassification petition along with a reclassification report, which would be subject to Agency review.

KDHE will make the final determination concerning reclassification of the site and will document that decision accordingly. KDHE may determine that the collection of additional data is necessary to demonstrate that reclassification is appropriate. Upon KDHE approval, the site will be reclassified as "*Resolved*". KDHE will maintain the Administrative Record file for the site for public inquiry and review after a site is reclassified.

For SCP sites, emphasis is given on determining site-specific cleanup goals that are protective of human health and the environment with consideration of current and future land use. Sites that do not attain cleanup goals, either due to technical impracticability or because the selected remedy involves non-clean closure such as capping waste in place, may be assigned "*Resolved with Restrictions*" status provided that Environmental Use Controls have been established which limit use of the property to effectively manage residual contamination risks. This allows for cost-effective cleanup approaches that facilitate reuse of contaminated properties and are protective of human health and the environment.

The reclassification of a site indicates known contamination does not pose an unacceptable human health or environmental threat based on information available to KDHE at that time. Reclassification does not necessarily imply a site is free from all contamination or pollution. A reclassified site may be reactivated for further evaluation by KDHE if new or supplemental information indicates a potential threat to human health or the environment exists at the site or if future releases occur.



Choosing a Consultant and a Laboratory

Environmental Consultants

Selection of a qualified environmental consultant for investigation and remediation projects is an important first step when working with the SCP. There are many things to consider when selecting a qualified environmental consultant including the skills, experience, and track record, since these things can vary widely from consultant to consultant. Benefits of selecting a qualified environmental consultant include satisfactorily completing projects the first time, thereby saving time and money, while establishing a positive working relationship resulting in overall satisfaction by all parties. Some things to consider when choosing a consultant for an environmental project are the type of contamination, the environmental media impacted, the overall scope of work for the project, consultant services offered, client references and the relative time and capital cost for services provided by the consultant.

The PRP should choose a consultant that has expertise in conducting environmental investigations and remediation. Without endorsement, KDHE can provide a general list of environmental contractors upon request.

Many consultants maintain working relationships with environmental laboratories and other subcontractors. It is critical for consultants to work and communicate well with their subcontractors to maximize project efficiency.

Laboratory Services

Analysis of samples will be conducted during various phases of a project. The PRP must use the services of a KDHE-certified laboratory for analytical work conducted during site investigations. The State of Kansas is a nationally recognized accrediting authority under the National Environmental Laboratory Accreditation Conference (NELAC). The KDHE Laboratory Improvement Program Office maintains a list of NELAC accredited laboratories on the KDHE website at <http://www.kdheks.gov/envlab/disclaimer.html>.

Considerations when selecting a laboratory for a project include:

- whether the laboratory is certified to analyze the media and the analytes/compounds necessary for the investigation;
- the laboratory's capability to handle the number of samples collected for analysis;

- the sample holding time relative to the time needed to transport the sample to the laboratory;
- the amount of time it takes for the laboratory to analyze and report the results relative to implementation schedule for the project; and
- the cost for analysis.

If analytical methods are proposed to be used that KDHE has not certified, the PRP should obtain approval from the KDHE project manager prior to using these methods. Mobile laboratories are not certified by KDHE; therefore, a standard operating procedure for analysis in the field should be submitted with the investigation work plan for KDHE approval. Another example of analytical methods that are not currently certified by the KDHE Laboratory Improvement Program Office are methods for analysis of air samples.



Risk Characterization and the RSK Manual

Risk Characterization

The risk characterization process is used to evaluate the risk posed to human health and/or the environment by the conditions at a contaminated site. The PRP can choose between two different approaches to evaluating risk posed by a contaminated site determining: 1) using the Risk-Based Standards for Kansas Manual (RSK Manual), available at http://www.kdheks.gov/remedial/rsk_manual_page.htm, or 2) performing a site-specific risk assessment. Either approach will facilitate determination of site-specific cleanup goals. The primary benefit of the RSK Manual is the predetermination of acceptable cleanup goals without requiring the performance of costly and time-consuming baseline risk assessment and/or contaminant fate and transport modeling. The RSK Manual provides a streamlined, cost-effective approach to determine whether some form of remedial action is warranted at a contaminated site with consideration of current and anticipated future use of the affected area. For sites that are cleaned up to non-residential standards, environmental use controls limiting future use of the affected area may be required. The RSK Manual and risk assessment approaches are described briefly below.

RSK Manual

The RSK Manual establishes a tiered-approach process for determining cleanup objectives at a site and is intended only for use on projects being conducted with KDHE oversight. The tiers include:

Tier 1 Analysis: For sites where naturally occurring metals, radionuclides,

and other inorganics, such as nitrate, ammonia, and chloride, are the contaminants of concern, there is a need to distinguish between naturally occurring and anthropogenic levels to identify appropriate cleanup levels. For these types of sites, KDHE may allow the background concentration to be the cleanup goal. More information on determining Tier 1 Levels is available in KDHE's *Determining Background Levels for Chemicals of Concern* Policy available at <http://www.kdheks.gov/ber/policies.htm>.

Tier 2 Analysis: For most SCP sites, the PRP elects to make direct comparison of contaminant concentration data with the Tier 2 Levels presented in the RSK Manual. The Tier 2 Levels are chemical-specific, risk-based cleanup values for over 190 contaminants in soil and groundwater for residential and non-residential settings. For a finite number of compounds, Tier 2 Levels have been calculated that are meant to be protective for residential indoor air. The equations used to calculate Tier 2 Levels consider exposure to contaminants through ingestion, dermal contact, and inhalation in various potentially-affected media. KDHE has also calculated Tier 2 Levels for soil that are protective of groundwater.

Tier 3 Analysis: A Tier 3 analysis incorporates site-specific information to establish cleanup levels that are protective of human health and the environment. Cleanup levels derived through a Tier 3 analysis do not supplant ARAR-based threshold levels such as federal Maximum Contaminant Levels (MCLs) for drinking water aquifers. More information regarding Tier 3 analysis is available in the RSK Manual.

Risk Assessment

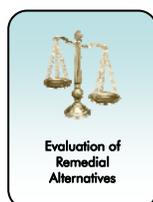
If the PRP elects to conduct a quantitative risk assessment, a baseline risk assessment work plan must be submitted for KDHE review and approval. A baseline risk assessment includes determination of both human health and ecological risk. The risk assessment needs to be included within the planning and implementation of the site investigation. Both the human health risk assessment and the ecological risk assessment follow similar processes. The human health risk assessment includes:

- identification of the contaminants of concern;
- identification of the types of receptors and pathways of exposure;
- evaluation of the toxicity of contaminants; and,
- characterization of cancer causing and non-cancer causing risk from contaminants at a site if no remediation is performed.

In addition to the components identified above for the human health risk assessment, the ecological risk assessment includes:

- an evaluation of habitat;
- ecological effects on different environmental media such as air, soil, sediment, and water; and,
- toxicity levels that affect the receptors and the habitat in which they live.

Because of the level of data collection and evaluation, baseline risk assessments tend to be costly. Coordination with KDHE is required throughout the risk characterization and cleanup goal determination process.



Developing Remedial Goals

Remedial goals for a site are identified based on its setting, risks posed, and current and anticipated future land use. For most SCP sites, remedial goals are established based on KDHE's Tier 2 Levels and the presence of inherently waste-like materials and/or non-aqueous phase liquid (NAPL). However, when a human health and ecological risk assessment is performed, the process for establishing remedial goals is more complicated as shown in the Figure below.

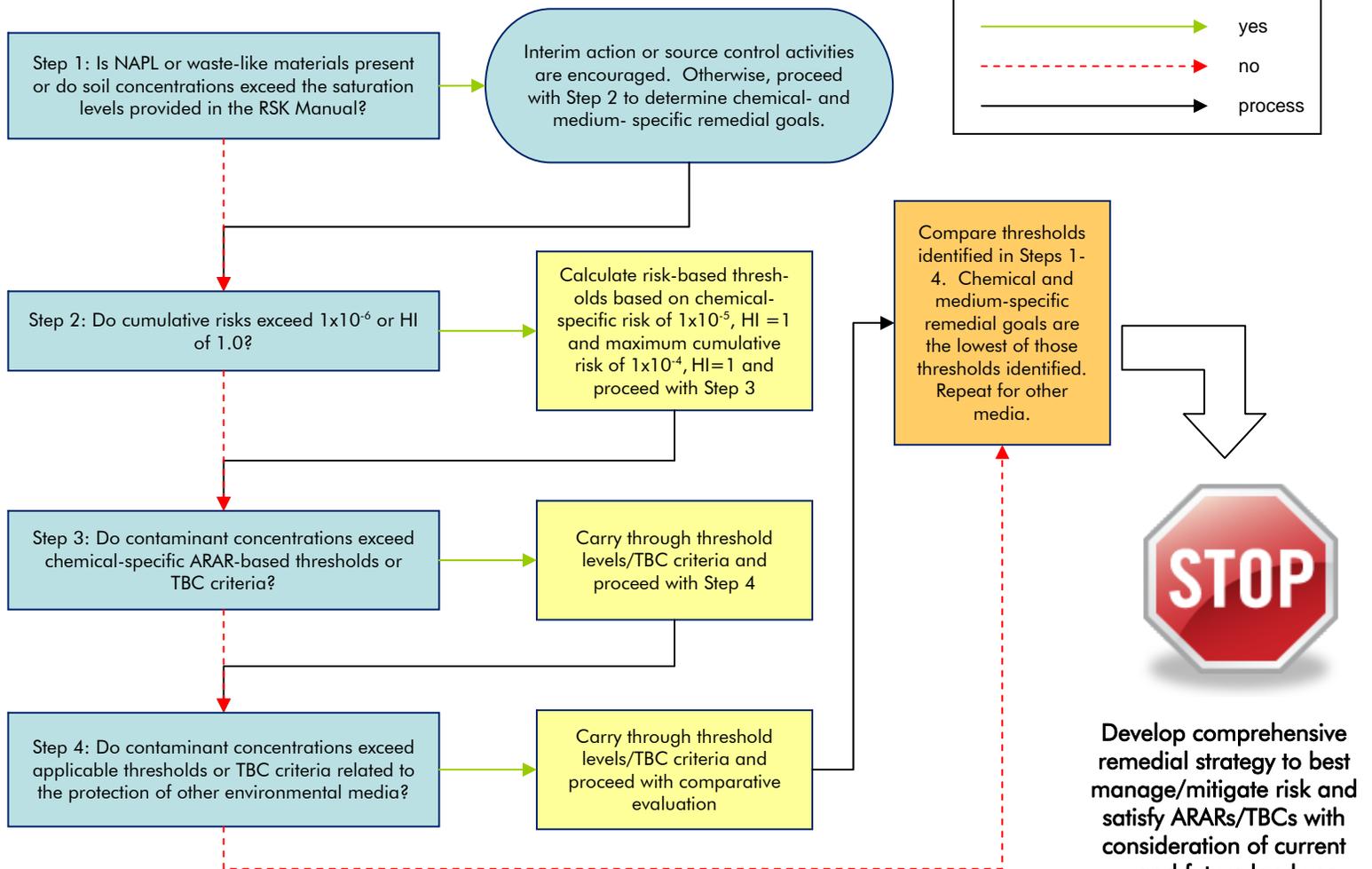
ment output (i.e., cumulative risk in terms of lifetime excess cancer risk and hazard index), KDHE considers whether site data exceed chemical-specific ARAR-based thresholds or to-be-considered (TBC) criteria and if there is a potential for contaminants to migrate from one environmental medium to another (e.g., contamination leaching from soil to groundwater). These other considerations are already factored into KDHE's Tier 2 Levels.

alternatives when cumulative risks posed by a site exceed a lifetime excess cancer risk of 1×10^{-6} or hazard index (HI) greater than 1. To ensure that site risks do not exceed the upper bound of the acceptable risk range established in the NCP of 1×10^{-4} , KDHE has determined that when cumulative cancer risks exceed 1×10^{-6} or the hazard index exceeds 1, chemical specific remedial goals will be based on a lifetime excess cancer risk of 1×10^{-5} and $HI = 1.0$ with cumulative risks not exceeding 1×10^{-4} and $HI = 1$.

In addition to factoring in risk assess-

Consistent with the NCP, KDHE requires careful evaluation of remedial

Figure 3. Remedial Goal Determination Flow Chart *



* Note flow chart is for sites where Tier 2 Levels or other Tier analyses from the RSK Manual are not used.

Applicable or Relevant and Appropriate Requirements

During the evaluation of remedial alternatives, the PRP will evaluate each alternative being considered to determine if it can meet all applicable or relevant and appropriate requirements (ARARs) established under federal, state, or local jurisdiction. A description of the different types of requirements (i.e., Applicable, Relevant and Appropriate, and To Be Considered) are provided below.

Applicable requirements are those cleanup standards or controls that specifically address a hazardous substance, pollutant or contaminant,

action, location or other situation at a site. If a requirement is not applicable, it still may be relevant and appropriate. Once a requirement is deemed relevant and appropriate, it must be complied with as if it were applicable. KDHE may also identify policies or guideline that are To-Be-Considered (TBC) standards for a site. TBC standards are used in conjunction with ARARs to achieve effective and protective site cleanup. There are three general categories of ARARs: chemical-specific, location-specific, and action-specific.

The PRP, consultant, and KDHE project manager should work together to comprehensively identify in a timely manner the site-specific ARARs and other standards that pertain to the contemplated remedial action(s) for the site. Additional information is available in the KDHE's *Potential Applicable or Relevant and Appropriate Requirements (ARARs) Policy* available at <http://www.kdheks.gov/ber/policies.htm>.

Examples of Typical ARARs/TBCs for Various Remedial Technologies

Technology Type	ARAR or TBC	Citation
Groundwater Pump and Treat, Discharge of Treated Water to a Stream	Kansas Water Appropriations Act National Pollutant Discharge Elimination System National Primary and Secondary Drinking Water Regulations and Implementation Water Well Construction and Abandonment	KAR 5-1-1 through 5-10-6 and KAR 5-50-1 to 5-50-8 40 CFR 122 40 CFR 141, 142 and 143 KAR 28-30-1 through 28-30-10
In-Situ Chemical Oxidation	Underground Injection Control Program	40 CFR 144 to 148 KAR 28-46-1 through 28-46-44
Consolidation and Capping of Waste	Land Disposal Restrictions Flood Control Act of 1944 Storm Water Discharge Requirements Storm Water Management for Construction Activities Environmental Use Controls	40 CFR 268 16 U.S.C. § 460 40 CFR 122.26 EPA 832-R-92-005 KAR 28-73-1 through 28-73-7
Air Sparging and Soil Vapor Extraction	Underground Injection Control Program National Emission Standards for Hazardous Air Pollutants for Source Categories including Site Remediation	40 CFR 144 to 148 KAR 28-46-1 though 28-46-44 40 CFR 63
Monitored Natural Attenuation	KDHE BER Policy on Monitored Natural Attenuation KDHE BER Risk-Based Standards for Kansas, RSK Manual	BER-RS-042 RSK Manual, October 2010 as amended.

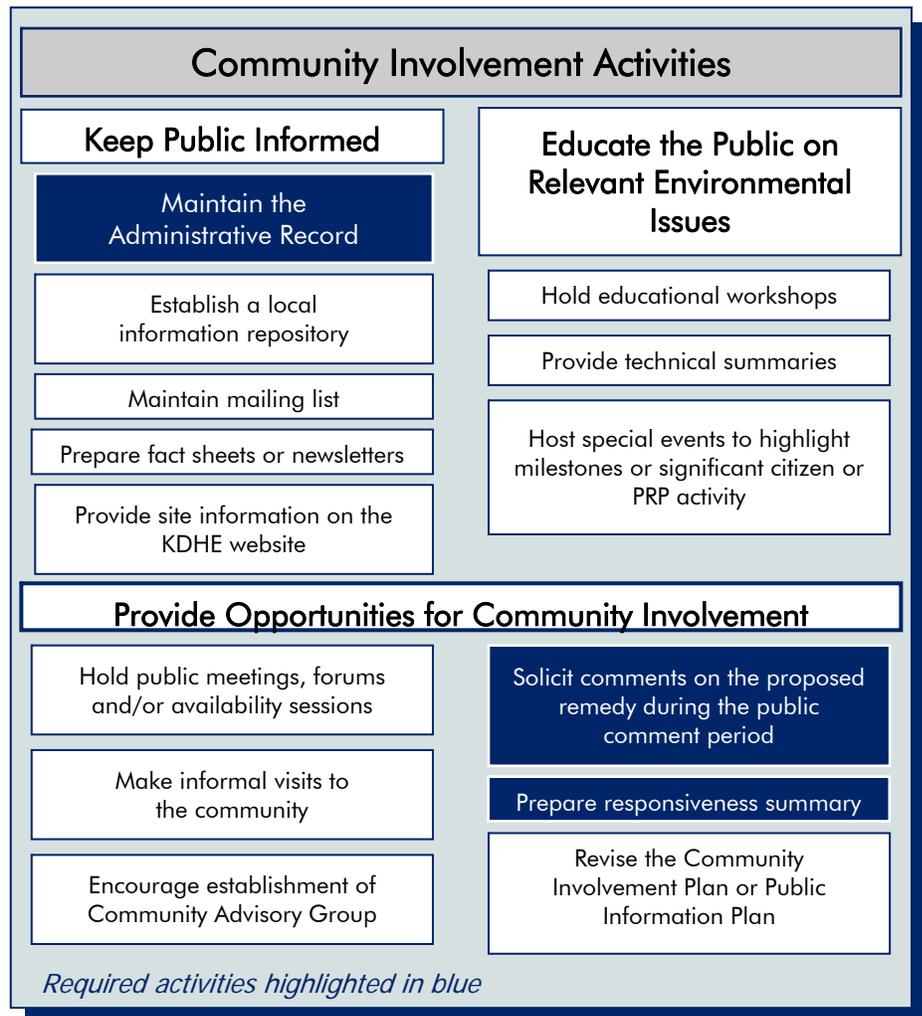
Note: ARAR examples provided above are not intended to be all inclusive.

Community Involvement

KDHE encourages community involvement through its Public Information Program. The program facilitates development of a consistent and standardized approach for community involvement throughout a project's life cycle. Community involvement is critically important to the success of all projects in the Remedial Section. For each project in the SCP, KDHE prepares a plan to provide a framework to promote two-way communication between KDHE and other stakeholders; encourage meaningful community involvement in project activities; and solicit input on proposed cleanup strategies. Through the Public Information Program, KDHE ensures that residents are informed on a routine basis and provides opportunities for interested parties to be involved, at a minimum during the decision-making stage but also, as necessary, throughout the investigation and cleanup process.

For state-lead Superfund Sites, or sites where consistency with the NCP is desired, a Community Involvement Plan (CIP) is developed by KDHE. The development of CIPs typically necessitates public availability sessions and/or one-on-one interviews with community stakeholders to ensure that the Agency understands the community's concerns and can tailor the CIP appropriately. Although CIPs are intended to frame community involvement efforts from the beginning to end of a project, CIPs may need to be revised or updated to account for new information or to better fit the needs of the community.

For the majority of SCP sites, a Public Information Plan (PIP) is prepared by KDHE. While achieving the same



goals, PIPs are intended to be more streamlined than CIPs.

Through a CIP or PIP, certain community involvement activities are required to satisfy SCP requirements. At a minimum, KDHE will: (1) maintain the Administrative Record file in our offices in Topeka, which is open for public inspection; (2) establish a comment period to provide the community with an

opportunity to review and comment on draft decision documents; and, (3) respond to all comments received during the public comment period in a responsiveness summary, which is incorporated into the final decision document. In particular cases where there is heightened public interest or involvement in a site, KDHE may develop a dedicated website page to post information or status updates for the public.

Community Involvement



Data Quality Considerations

Quality Assurance Project Plans

Data quality is of critical importance to the success of SCP projects because decisions about how to appropriately manage the relative risk to human health and the environment depend on the quality of data collected for a project. Therefore, as noted in the various Scopes of Work referenced in this document, Quality Assurance Project Plans (QAPPs) are required for all projects in the SCP to ensure that all project data are of acceptable quality. QAPPs are documents that describe the necessary site-specific quality assurance, quality control, and other technical activities that must be implemented to ensure the results of the work performed will satisfy the stated performance criteria. It is often necessary to update QAPPs throughout a project's lifecycle to ensure that the document encompasses all site-related activities.

KDHE has not developed a scope of work or guidance for writing QAPPs. Instead, KDHE requires that such documents be prepared in general accord with *EPA Requirements for Quality Assurance Project Plans (QA/R-5)* (EPA 2001) and *Guidance for Quality Assurance Project Plans (G-5)* (EPA 2002). EPA has compiled a set of helpful references pertaining to data quality at <http://www.epa.gov/quality/index.html>. Important major components of a QAPP include quality assurance objectives for data, sample custody and handling, data generation and acquisition, standard operating procedures, report and data management, project management elements, laboratory QAPP, and data validation and usability.

Types of Quality Control Samples

Quality Control (QC) samples are collected during each sampling event to help evaluate data quality and usability. The number and types of QC samples collected is typically specified in the QAPP and will vary depending on the types of sampling being performed, types of equipment used, number of samples collected, analytical methodology, and intended use of the data. The list below highlights the most common types of QC samples collected and analyzed at SCP Sites.

- Field Duplicate Samples
- Equipment Rinse Samples
- Trip Blank Samples
- Field Blank Samples
- Matrix Spike and Matrix Spike Duplicate Samples
- Performance Evaluation Samples
- Split Samples
- Laboratory Control and Laboratory Control Duplicate Samples
- Method Blank Samples

Data Validation

Once samples have been collected and data reported by the laboratory, it is tempting to start using the data immediately to guide site decisions; however, it is important to consider the quality of the data to ensure it is precise, accurate, representative, complete, and comparable before relying on it to support project decisions.

The procedures and thresholds for evaluating data quality are typically spelled out in the QAPP. It is KDHE's general expectation that data validation be performed in accord with EPA Contract Laboratory Program's *National Functional Guidelines for Superfund Organic Methods Data Review* (EPA 2008) and *National Functional Guidelines for Superfund Inorganic Methods Data Review* (EPA

2010a). Together, these documents identify methods for evaluating and documenting the quality of analytical data for the majority of contaminants affecting SCP sites.

In all cases, data validity must be incorporated into reporting documentation in the form of a data validation summary. The data validation summary should describe all data validation activities and discuss, in detail, the results of analysis of quality control samples and their effect on primary data. The summary should provide an overall assessment of the data evaluated with respect to precision, accuracy, representativeness, completeness, comparability, and the general acceptability and usability of the data.

Environmental Use Controls (EUCs)

The Environmental Use Control Act was enacted on July 1, 2003, with regulations becoming effective on April 7, 2006, and amended on January 30, 2009. EUCs are a form of institutional control, which are legal controls intended to restrict or prohibit human activities and land use in such a way as to prevent or reduce exposures to contamination.

The purpose of an EUC is to allow a property owner to voluntarily restrict the use of their property in order to mitigate risk posed by residual environmental contamination at concentrations exceeding KDHE standards for unrestricted residential use remaining on the property after appropriate assessment and or remedial activities. EUCs provide property owners and developers a method of potentially limiting or reducing the amount of remediation performed at a site while still remaining protective of human health and the environment. This is accomplished by establishing limits on the future use of the property, which allows the remedial standards for that property to be based on the actual future use of the property, rather than requiring cleanup standards to be based on unrestricted residential use. KDHE works with PRPs to determine the appropriate cleanup levels and property use restrictions through the SCP process.

EUCs can be an effective component of the remedial alternative for sites where:

- it is not technically or economically feasible to remove residual contamination that exceeds unrestricted use standards, and
- restricting access to or activities on the property is a viable option

for reducing potential exposure to contamination.

Some examples of EUC restrictions include:

- preventing disturbance of soil caps, covers, or berms;
- prohibiting drilling of water wells for domestic or other purposes;
- restricting and/or providing notification during excavation on a property;
- restricting use of a property to only non-residential purposes;
- requiring engineering controls for mitigating vapor intrusion;
- restricting access to a property; and,
- requiring assessment/cleanup once structural impediments are removed.

To be eligible for an EUC, the site must be participating in a KDHE-approved program with oversight authority, such as the SCP. While EUCs can be approved for an eligible site at any point during the investigative or remedial process, they must be applied as part of the overall approved clean-up plan. EUCs alone are not intended to be used as a default remedy in lieu of evaluating remedial alternatives and are not to be used as a substitute for active remediation that is otherwise technically and economically practicable.

Additional information regarding application to the EUC Program is available online at <http://www.kdheks.gov/remedial/euc/euc.html>.



Protective cap at a site in southeastern Kansas.

Identified Sites List Database

KDHE maintains and updates the ISL database of known or suspected contaminated sites within the State of Kansas. Sites on the ISL are designated as *Active* until it can be confirmed that no contamination is present over appropriate cleanup standards or until remedial action has attained appropriate cleanup standards designated by KDHE. When a PRP believes that remedial action at a contaminated site has achieved those standards, the PRP may request that KDHE reclassify the site on the ISL to a status of *Resolved*.

It should be noted that the database does not include sites that are being investigated and remediated in KDHE Petroleum Storage Tank Programs. In addition, the ISL should not be considered a comprehensive database of all contaminated sites in Kansas. For example, Sites being man-

aged under Federal authority or other State programs may not be included in the ISL database.

The ISL is a publically-accessible database that is available online at http://www.kdheks.gov/remediation/isl_disclaimer.htm. The ISL interactive website provides the public with the ability to perform searches on contaminated properties in the State of Kansas. Users can search for contaminated sites in Kansas by name, city, county, river basin, district office, or section/township/range (Figure 4). In addition, the ISL website includes an interactive mapping feature that allows users to locate contaminated sites anywhere in the state (Figure 5). The ISL website provides access to printable fact sheets for contaminated sites. Each fact sheet provides general detail about the status of the site and the environmental conditions. If

digital photos of the site are available online, a link is included on the fact sheet. In addition, many fact sheets also include a link to commonly requested documents which are available online.

Common users of the ISL interactive mapping feature are community stakeholders, developers, bankers, real estate agents, and environmental consultants who are buying, selling, or redeveloping property in the state of Kansas. Prospective purchasers of potentially contaminated property should always conduct due diligence on the property they are attempting to purchase to determine what environmental liabilities, if any, are associated with the property. The ISL is a tool that is available to aid in these types of assessments.

**Bureau of Environmental Remediation
Identified Sites List Information**

This site is best viewed with Internet Explorer 7 or above

The Identified Sites List is a public record of environmentally contaminated sites (Excluding underground and above-ground tank sites). This web page allows the public to conduct a web-based search to find contaminated sites within a specific community or area.

Enter search criteria into the following areas then click on list button to find a specific site.

Search By

Site Name:

County:

City:

River Basin:

District:

Section Township Range

Database Last Updated: 04-21-2011

Figure 4. Search Page from the ISL Website

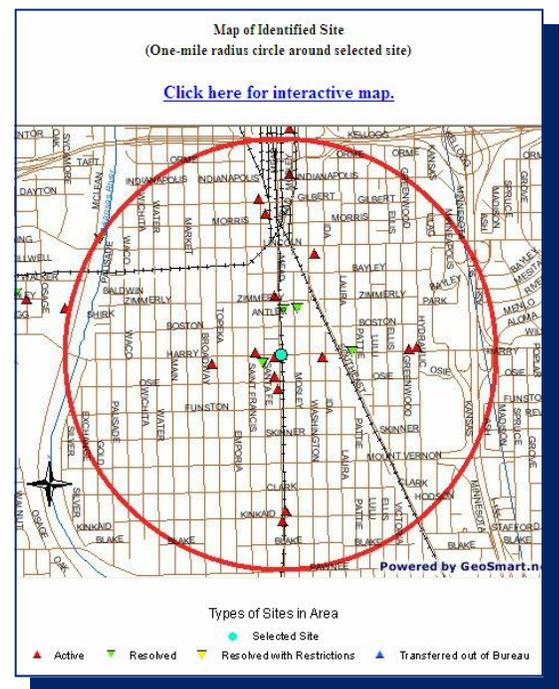
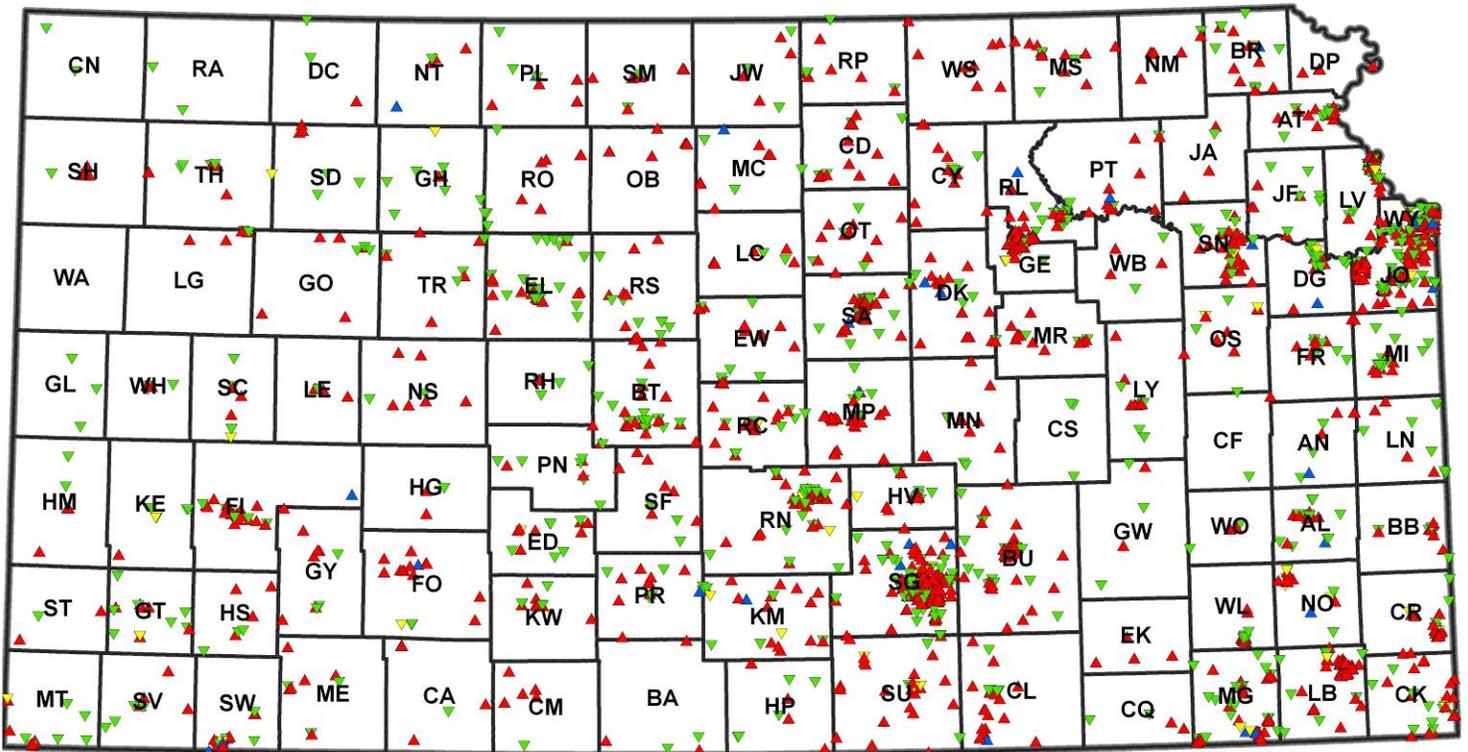


Figure 5. Interactive Map on the ISL Website

Identified Sites in Kansas



Legend

KDHE Identified Sites

- ▲ Active
- ▼ Resolved
- ▼ Resolved with Restrictions
- ▲ Transferred out of Bureau



Frequently Asked Questions

FAQs for Community Stakeholders

Where can I find more information regarding a particular site? KDHE maintains the Administrative Record file for all SCP sites at its offices in Topeka, Kansas. These files are available for public inspection during normal business hours by appointment. Please contact the Remedial Section at 785-296-1673 to schedule an appointment. In addition, for some SCP Sites, KDHE has established local information repositories. To find out if a local repository exists, please contact the KDHE project manager. Finally, many site documents, photographs and site descriptions are available through KDHE's Identified Sites List (ISL)—available online at http://www.kdheks.gov/remedial/isl_disclaimer.htm.

How long does it take to clean up an SCP site? In most cases, imminent human health or environmental threats are addressed early in the process through Interim Measures (IMs) - such as establishment of alternate drinking water supplies, installation of vapor mitigation systems, or preventing groundwater from discharging contaminants to surface water. However, to fully restore a contaminated site to allow for its most beneficial use in the future often times requires long-term remedial actions. Many SCP sites are the result of years of improper or inadequate pollution control and may take many years to clean up.

As a member of the community, how can I provide input regarding the cleanup strategy proposed for a site? For each site in the SCP, KDHE develops a Public Information Plan or Community Involvement Plan to ensure that the public is informed and has the opportunity to comment on the proposed cleanup. The public comment period follows KDHE's issuance of the draft decision document. KDHE typically publishes notice of the public comment period in local newspapers and provides press releases through its Office of Communications.

Finally, depending on the level of interest across the community, it may be beneficial to establish a Community Advisory Group. If you have questions or would like to provide input on a specific site, please contact the KDHE project manager.

Who pays for the cleanup? The party responsible for the contamination pays for the cleanup. The PRP also reimburses KDHE for the agency's oversight costs.

FAQs for PRPs

Should I consult legal counsel before entering the SCP? As discussed in the preceding pages, participation in the SCP necessitates a legal agreement between KDHE and the PRP. While KDHE cannot require a PRP to consult legal counsel before entering into an agreement, PRPs are encouraged to do so early in the process.

Is financial assistance available to help cleanup my site? In most cases, the answer is no; however, in 2000, the Kansas Legislature passed the Kansas Agricultural Remediation Act which allowed for reimbursing responsible, eligible agribusiness facilities for investigation and remediation costs incurred after July 1, 1997. The remediation fund was created by assessing an annual fee on pesticide products, pesticide dealers, grain storage, fertilizer products and custom blenders. The Kansas Agricultural Remediation Board (KARB) administers the fund. Questions regarding reimbursement and eligibility may be directed to KARB at 785-440-0356 or <http://www.karb.org>.

What if I can not afford to cleanup my site? KDHE will evaluate a PRP's ability to pay for environmental cleanup efforts on a case-by-case basis, provided that the PRP has made available the necessary financial records. If KDHE determines a PRP is unable to pay for investigation and/or cleanup, KDHE may refer the site to the EPA. In some cases where the PRP has limited financial resources, KDHE may adjust

the cleanup schedule to accommodate the PRP to the extent possible; however, if an imminent threat to human health or the environment is present, those situations should be given priority.

How does an environmental use control (EUC) fit into the remedial strategy for my site? The purpose of an EUC is to control the use of contaminated property. EUCs can be used to help manage risks posed by contamination prior to achievement of RAOs or at sites where restoration is impracticable. With appropriate land use restrictions in place under an environmental use control agreement (EUCA), the cleanup standards for a site may be based on non-residential use. In some cases, use of an EUC combined with the non-residential cleanup standards, can reduce the cost of a cleanup. This approach to site cleanup may provide some relief for PRPs with limited financial resources. More Information on EUCs is available on page 34 of this document.

When is the site cleaned up? Typically, KDHE determines that site cleanup is complete when contaminant concentrations are below the thresholds specified in the decision document. In many cases, it may take many years after implementation of the remedy to achieve site closure. Information on reclassification of sites is available on page 27 of this document.

What is vapor intrusion? Vapor intrusion refers to vapors which can migrate from VOC-contaminated groundwater or soil into overlying structures, such as homes. KDHE's Vapor Intrusion Guidance (available online at http://www.kdheks.gov/ber/download/Ks_VI_Guidance.pdf) provides detail regarding the Agency's practice for evaluating vapor intrusion for residential scenarios. The potential for vapor intrusion must be evaluated during the investigation phase of all SCP sites where VOCs are contaminants of potential concern.

Useful Resources

Risk Based Standards for Kansas – RSK Manual

http://www.kdheks.gov/remedial/rsk_manual_page.htm

Superfund Memorandum of Agreement (MOA) between EPA Region VII and KDHE

http://www.kdheks.gov/remedial/vcp/download/vcp_moa.pdf

Kansas Surface Water Register

http://www.kdheks.gov/befs/download/Current_Kansas_Surface_Register.pdf

Kansas Surface Water Quality Standards

http://www.kdheks.gov/water/download/kwqs_plus_supporting.pdf

Kansas Open Records Act Request (KORA) for KDHE-BER

http://www.kdheks.gov/ber/record_request.html

BER Quality Management Plan and Standard Operating Procedures

<http://www.kdheks.gov/environment/qmp/qmp.htm#BER>

BER Policies, Guidance and Scopes of Work

<http://www.kdheks.gov/ber/policies.htm>

Environmental Use Control Program

<http://www.kdheks.gov/remedial/euc/euc.html>

Bureau of Water Underground Injection Control Program

<http://www.kdheks.gov/uic/index.html>

EPA Region 7

<http://www.epa.gov/aboutepa/region7.html>

BER Vapor Intrusion Guidance

http://www.kdheks.gov/ber/download/Ks_VI_Guidance.pdf

ATSDR Agency for Toxic Substances and Disease Registry

<http://www.atsdr.cdc.gov/>

BER Identified Sites List (ISL)

http://www.kdheks.gov/remedial/isl_disclaimer.htm

KDHE Spill Reporting

<http://www.kdheks.gov/spill/index.html>

Bureau of Waste Management Hazardous Waste Generator Handbook

<http://www.kdheks.gov/waste/forms/hazwaste/gen700-HWGenHandbookApr2006.pdf>

Kansas Department of Agriculture – Division of Water Resources (DWR)

<http://www.ksda.gov/dwr/>

EPA Superfund

<http://www.epa.gov/superfund/>

National Oil and Hazardous Substances Pollution Contingency Plan (NCP) – Regulations for CERCLA and Oil Pollution Act

http://www.access.gpo.gov/nara/cfr/waisidx_03/40cfr300_03.html

Resource Conservation and Recovery Act (RCRA)

<http://www.epa.gov/epawaste/laws-regs/index.htm>

EPA Risk Assessment Resources

http://www.epa.gov/risk_assessment/

EPA Quality Systems Documents

http://www.epa.gov/quality/qa_docs.html

Kansas State Board of Technical Professions

<http://www.accesskansas.org/ksbtp/>

KDHE Laboratory Accreditation (Certified Labs)

<http://www.kdheks.gov/envlab/disclaimer.html>

Field Activities Notification for KDHE BER Remedial Section

http://www.kdheks.gov/remedial/fieldactivities_notification.html

Kansas Geological Survey

<http://www.kgs.ku.edu/>

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Memorandum of Agreement
Between
KDHE and EPA

SUPERFUND MEMORANDUM OF AGREEMENT
BETWEEN THE
KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT
AND THE
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION VII
VOLUNTARY CLEANUP AND PROPERTY REDEVELOPMENT PROGRAM
AND
STATE COOPERATIVE PROGRAM

I. PURPOSE

The Kansas Department of Health and Environment (KDHE) and Region VII of the United States Environmental Protection Agency (Region VII), enter into this Superfund Memorandum of Agreement (MOA) for the purposes of acknowledging the adequacy of the Kansas Voluntary Cleanup and Property Redevelopment Program (VCPRP) and the Kansas State Cooperative Program (SCP), defining the roles and responsibilities of Region VII and KDHE, and clarifying the division of responsibilities with respect to sites addressed under the authority of the VCPRP and SCP.

II. BACKGROUND

Region VII and KDHE agree that the revitalization of contaminated properties, or properties perceived to be contaminated, (often called "Brownfields") will provide a significant benefit to the environment and economies of the local communities of the state of Kansas. To the extent possible, Region VII and KDHE seek to simplify the revitalization of industrial and commercial properties by addressing the existing regulatory impediments to the cleanup, financing, transfer, and appropriate use of these properties.

Both agencies will work in a cooperative and coordinated effort to ensure that successful implementation of this effort is accomplished and pledge to employ their authorities and resources in a complimentary and non-duplicative manner.

III. SELECTION OF SITES

A. VCPRP sites included under this MOA must meet the eligibility requirements under K.S.A. §§ 65-34, 161 through 174 of the Kansas Voluntary Cleanup and Property Redevelopment Act. Region VII and KDHE agree to exclude from this MOA the following categories of VCPRP sites:

1. Sites that are listed on, or are proposed for listing, on the National Priorities List (NPL);

KDHE/EPA Memorandum of Agreement (Page 2)

2. Sites where a site investigation has been completed by Region VII or KDHE pursuant to the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. §§ 9601, et seq., (CERCLA) and it has been determined by Region VII that the site should be scored using the Hazard Ranking System Package for potential listing on the National Priorities List (NPL).
3. Sites with facilities that are RCRA-permitted facilities or facilities which have had, have, or should have interim status under the Resource Conservation and Recovery Act, 42 U.S.C. § 6901, et seq. (RCRA); and
4. Sites which are subject to existing state or federal orders or agreements for cleanup, or sites that warrant enforcement action by Region VII or KDHE pursuant to RCRA or CERCLA or pursuant to Kansas laws.

B. SCP sites included under this MOA must meet the eligibility requirements of the Kansas State Cooperative Program as implemented by KDHE pursuant to K.S.A. §§ 65-3452 through 3455. Region VII and KDHE agree to exclude from this MOA the following categories of SCP sites:

1. All SCP sites not listed in Attachment A to this MOA;
2. Sites that are listed on, or are proposed for listing, on the NPL, and sites where Region VII has submitted a HRS ranking package to HQ; unless such sites are listed on Attachment A to this MOA;
3. Sites with facilities that are permitted facilities or facilities which have had, have, or should have interim status under the Resource Conservation and Recovery Act, 42 U.S.C. § 6901, et seq. (RCRA); and
4. Sites which are subject to existing federal orders or agreements for cleanup, or sites that warrant enforcement action by Region VII or KDHE pursuant to RCRA or CERCLA or pursuant to Kansas laws.

Region VII and KDHE may annually, or at such other times as needed, update the Attachment A list by mutual, written agreement. Updates may add or delete SCP sites. Added sites may include, but are not limited to, VCPRP sites that after enrollment have become ineligible for the VCPRP in accordance with K.S.A. §§ 65-34, 161 through 174 or pursuant to Section III,A,2 of this MOA. Deleted Attachment A sites shall include any site that Region VII notifies KDHE has failed to meet any one or more of the conditions set forth below in Section V.B. of this MOA, or meets any one or more of the conditions set forth below in Section VIII.A. of this MOA.

IV. PROGRAM GOALS

A. Region VII and KDHE seek to protect human health and the environment by encouraging the voluntary and/or cooperative investigation and cleanup of properties in Kansas by implementing the following strategic goals:

1. Promoting appropriate investigations and cleanups by groups or individuals participating in the VCPRP or the SCP;
2. Developing partnerships between Region VII, KDHE, other state and local government agencies, interest groups, citizen and community groups, and the private sector;
3. Providing available environmental and regulatory information to property owners, prospective purchasers, lenders, public and private developers, citizens, municipalities, counties, and elected officials to allow for informed decision-making;
4. Providing meaningful public involvement activities to ensure that the public is informed of and involved in planning for response actions related to the VCPRP and the SCP. For the VCPRP, these public involvement activities are described in K.S.A. § 65-34,168 (e), and regulations in K.A.R. 28-72-12; and for SCP sites under KDHE's agency policy #BER RS-002, Public Information Program;
5. Promoting cost-effective investigation and cleanup activities of contaminated media which protect human health and the environment and are consistent with projected future uses at the sites and applicable Federal and State law and local land use regulations; and
6. Promoting long-term reliability of cleanup measures for the sites.

B. To accomplish these goals, Region VII will support KDHE in further developing and expanding the use of the VCPRP and SCP. Region VII recognizes the VCPRP and SCP as instrumental in developing and implementing successful strategies to help promote voluntary investigation, cleanup and revitalization of properties. KDHE will continue to support efforts to promote and implement the Region VII Brownfields initiatives. KDHE and Region VII recognize each other as key partners in the ongoing success of the VCPRP and SCP.

V. IMPLEMENTATION

A. KDHE and Region VII will work in a coordinated effort to avoid duplication of effort at sites, and to ensure that site cleanups progress in a timely fashion. KDHE will report to Region VII the status of the VCPRP and SCP as described in Section VII of this MOA.

B. KDHE intends under this MOA that investigations and cleanups of properties are performed under either the VCPRP or the SCP. The SCP is an enforcement based cleanup program for sites that do not meet the eligibility criteria of the VCPRP. KDHE and Region VII agree that for SCP sites the following conditions apply:

1. The KDHE has responsibility, with minimal Region VII involvement, to provide for a timely and CERCLA-protective cleanup and to support the public's right of participation in the decision-making process. Region VII will work with KDHE to determine the appropriate level of oversight that Region VII should exercise at each site covered by this MOA;
2. The quality of the response actions conducted for sites in the SCP will be substantially similar to a responses required under CERCLA. The KDHE should generally select a remedy which provides a level of protectiveness comparable to relevant and appropriate federal requirements for the site; and
3. Any cleanups conducted by private parties under the SCP shall be conducted under enforceable agreements between those parties and KDHE pursuant to K.S.A. §§ 65-3452 through 3455.

C. Region VII personnel have visited KDHE's office to review and evaluate the adequacy of KDHE's VCPRP and SCP programs based on EPA HQ's Six Baseline Criteria for Voluntary Cleanup Programs as described in the November 14, 1996 Memorandum, Interim Approach to Regional Relations with State Voluntary Cleanup Programs. Based on such review and further discussions between Region VII and KDHE, Region VII has determined that both the VCPRP and SCP are adequate. Specifically, the VCPRP and SCP:

1. Provide opportunities for meaningful community involvement;
2. Ensure that voluntary response actions are protective of human health and the environment;
3. Have adequate resources to ensure that voluntary response actions are conducted in an appropriate and timely manner, and that both technical assistance and streamlined procedures, where appropriate, are available from KDHE;

4. Provide mechanisms for the written approval of the response action plans and a certification or similar documentation indicating that the response actions are complete;
5. Provide adequate oversight to ensure that voluntary response actions are conducted in a manner to assure protection of human health and the environment, as described above; and
6. Show capability, through enforcement or other authorities, of ensuring completion of response actions if the party(ies) conducting the response action fail(s) or refuse(s) to complete the necessary response actions, including operation and maintenance or long-term monitoring activities.

D. Region VII and KDHE will provide technical assistance to local and state government agencies in order to facilitate the revitalization of contaminated or potentially contaminated properties in Kansas.

E. When a site has been cleaned up according to the practices and procedures of the VCPRP, KDHE may issue a written No Further Action determination pursuant to K.S.A. 65-34,169. When a site has been cleaned up according to the practices and procedures of the SCP, KDHE may reclassify the site as resolved on KDHE's Identified Sites List.

VI. PROTECTIVENESS

KDHE, through the VCPRP or the SCP shall ensure that voluntary response actions are protective of public health, welfare, and the environment. KDHE, through the VCPRP or SCP, shall determine whether mitigation of exposure of human and ecological receptors to contaminated media is warranted, consistent with applicable Federal and State law. Cleanup standards that are protective of human health and the environment will be determined by KDHE, for sites in the VCPRP or SCP, consistent with the current and projected future uses of the site.

Mitigation of exposure to contaminated media shall be conducted cost-effectively, consistent with the current and projected future uses at the site, and consistent with applicable Federal and State law. Long-term reliability shall also be a goal when selecting response actions.

VII. REPORTING

On a quarterly basis, KDHE will report to Region VII the following:

1. Number and names of sites participating in the VCPRP and SCP and the status of those sites;
2. Number and names of sites entering the VCPRP and SCP;
3. Sites having received a KDHE written no further action determination or reclassified as resolved on KDHE's Identified Sites List; and
4. Notifications of VCPRP and SCP non-completions, defaults, or terminations from the VCPRP and SCP programs, including any voluntary or responsible party who has demonstrated a pattern of uncorrected noncompliance.
5. Any substantive changes in either the VCPRP or SCP law, regulations, or policies, including but not limited to changes in cleanup standards, eligibility criteria, or public involvement.

VIII. ROLES

A. Region VII does not anticipate taking federal removal or remedial action at sites being addressed under the VCPRP or SCP which are covered by this MOA unless:

1. Region VII determines that the site may present an imminent and substantial endangerment to public health, welfare, or the environment; or
2. An emergency situation arises requiring federal action; or
3. The VCPRP or SCP applicant fails or refuses to comply with the approved cleanup plan in a timely manner, unless KDHE takes the lead and resolves the issue in a timely manner to ensure protectiveness at the site; or
4. After cleanup has been implemented or completed, the site or facility fails to maintain engineering controls, land use designation and institutional controls as identified in KDHE's Voluntary Cleanup Plan, or no further action determination in the VCPRP, or in the KDHE State Cooperative Program Corrective Action Decision document, unless KDHE takes the lead and resolves the issue in a timely manner to ensure protectiveness at the site.

B. When a site has been cleaned up according to the practices and procedures of the VCP and/or SCP and KDHE has issued a No Further Action Letter under the VCPRP or

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reclassified the site as resolved under the SCP, Region VII does not anticipate taking federal removal or remedial action at the site except as stated in Section VIII. A.

C. Notwithstanding any other provision of this MOA, nothing herein affects or limits Region VII's or KDHE's authority or ability to undertake any enforcement action authorized by law. Region VII and KDHE retain any and all rights or authorities that they respectively have, including, but not limited to legal, equitable, or administrative rights. This specifically includes Region VII's and KDHE's authority to conduct, direct, oversee, and/or require environmental response actions in connection with any facility or site which participates in the VCPRP or SCP.

D. If, following the issuance of the No Further Action determination by KDHE, or reclassification to resolve a site from KDHE's Identified Sites List, conditions at a site including those previously unknown to KDHE or Region VII indicate that the response action undertaken pursuant to the VCPRP or SCP does not protect human health and the environment, Region VII and KDHE retain the right to take the response action necessary to protect public health, welfare, and the environment.

E. This MOA does not expand or limit the rights of any party.

IX. TERM

Region VII enters into this agreement based upon a review of Kansas' currently existing policies, guides, laws and regulations. Region VII or KDHE upon notice and consultation with the other party may amend this MOA or may terminate its participation in this MOA in the event that either party determines this to be appropriate based upon changes to the Kansas program or its implementation.

This MOA is effective upon signature by the parties below, and will remain effective until KDHE or Region VII terminates the MOA by providing written notice of such termination to the other party. Termination shall be effective 30 days after receipt of such notice by the other party. The MOA may be modified by mutual consent of the parties.

WHEREFORE, Region VII and KDHE agree and consent to this MOA:

For the Kansas Department of Health and the Environment:



Date: 2-13-01

For the Environmental Protection Agency, Region VII:



Date: 3/2/01