

**Documentation of Environmental Indicator Determination**  
Interim Final 2/5/99  
**RCRA Corrective Action**  
**Environmental Indicator (EI) RCRA Info code (CA725)**  
**Current Human Exposures Under Control**

Facility Name: Safety-Kleen Systems, Inc. – Vinton Service Center  
Facility Address: 16090 Stewartsville Road, Vinton, VA 24179  
Facility EPA ID #: VAD000737361

1. Has all available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been considered in this EI determination?

- If yes - check here and continue with #2 below.  
 If no - re-evaluate existing data, or  
 If data are not available skip to #6 and enter "IN" (more information needed) status code.

**BACKGROUND**

**Definition of Environmental Indicators (for the RCRA Corrective Action)**

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

**Definition of "Current Human Exposures Under Control" EI**

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

**Relationship of EI to Final Remedies**

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

**Duration / Applicability of EI Determinations**

EI Determinations status codes should remain in RCRA Info as long as they remain true (i.e., in RCRA Info status codes must be changed when the regulatory authorities become aware of contrary information).

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2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be "**contaminated**"<sup>1</sup> above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale / Key Contaminants</u>
Groundwater	—	—	✓	Possible VOCs and SVOCs
Air (indoors) <sup>2</sup>	—	—	✓	Possible VOCs
Surface Soil (<2 ft)	—	✓	—	
Surface Water	—	✓	—	
Sediment	—	✓	—	
Subsurf. Soil (>2 ft)	—	—	✓	Possible VOCs and SVOCs
Air (outdoors)	—	✓	—	

\_\_\_\_\_ If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

\_\_\_\_\_ If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

✓ \_\_\_\_\_ If unknown (for any media) - skip to #6 and enter "IN" status code.

**Rationale and Reference(s):**

See attached page

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(“Unknowns” are carried through with “Yes” determinations to ascertain what information is needed or if risks are negligible.)

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**Footnotes:**

<sup>1</sup> "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

<sup>2</sup> Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

**Section 2 attachment – Rationale and References**

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**Site Description:**

The Safety-Kleen, Vinton Service Center, is located in Bedford County, Virginia, approximately three miles east of the City of Vinton, on Route 24. The Vinton Service Center has been in operation since October 1979 and consists of approximately 3 acres. The facility is bordered by light industrial, residential and agricultural areas. Access to the facility is controlled by a 6-foot high chain link fence, topped with three strands of barbed wire. Access into the site is through a gate at the southeast corner of the site.

Since 1979, the Safety-Kleen facility has been providing solvent distribution, collection and reclamation services to companies primarily engaged in automobile repair, industrial maintenance, photo processing, manufacturing, and dry cleaning. The business activities conducted at the facility relate to the leasing and servicing of Safety-Kleen parts cleaning equipment, the collection and distribution of solvents, the collection of paint wastes, and the collection and management of industrial wastes. The solvents are distributed from and returned to the service center, where separate aboveground storage tanks are utilized for the storage of clean and used parts washer solvent, and waste oil. Additional space is designated for the storage of drums containing various waste streams including both clean and used immersion cleaner, dry cleaner wastes, photographic processing wastes, and paint wastes. The stored materials are periodically removed from the facility and transported to other facilities for reclamation or other method of disposal. No reclamation or disposal activities are performed at the Vinton facility.

All land and buildings currently associated with the facility are owned by Safety-Kleen. The existing facility consists of one building which contains offices and warehouses used primarily for container storage. Additionally, there is a flammable container storage shelter used for the storage of flammable waste, a 15,000-gallon aboveground hazardous waste storage tank for the storage of spent parts washer solvents and aqueous parts washer solvents, and the return and fill station which contains two settling/treatment tanks to transfer spent solvents to the storage tank. The facility also stores clean parts washer solvent in a 15,000-gallon aboveground vertical tank and a 12,000-gallon aboveground horizontal double wall tank. The facility stores used oil and oily water in two 20,000 gallon aboveground tanks. The facility also manages other hazardous wastes and non-regulated waste on a 10-day transfer basis. A portion of the facility scheduled for construction is the proposed container storage Area 2. A site plan of the Safety-Kleen Vinton Service Center is attached.

**1. Groundwater – UNKNOWN**

REFERENCE: 1) *Revised Abbreviated RCRA Facility Investigation Work Plan*, May 29, 1998; 2) *Final Hazardous Waste Management Permit for the Storage of Hazardous Waste and Corrective Action*, August 2008; 3) VDEQ project files; 4) Site visit conducted by VDEQ on May 14, 2008

RATIONALE: A Verification Investigation (VI) was performed by Safety-Kleen in 1993 which included the investigation of soils in the vicinity of two former Underground Storage Tanks (USTs). The USTs were utilized to store spent and virgin solvent. The USTs were removed in 1985 and had no history of releases. The results of the VI were submitted to EPA Region III in a Report dated November 24, 1993. Although the analytical results for the soil samples did not indicate any significant contamination, the EPA disapproved the laboratory methods used to analyze the samples. Since the VI was performed in 1993 Safety-Kleen has been working with the EPA and VDEQ on various work plans to confirm whether any contamination exists at the site from the former USTs. No other groundwater data is available at this time.

The Safety-Kleen Vinton facility and surrounding properties are serviced by public utilities, including a public water supply. The groundwater at the site is not utilized for any purposes at the facility, therefore workers are not exposed to the groundwater. There are no known users of groundwater near the facility that use the groundwater for drinking water purposes.

The subsoils and groundwater of the area of the two former USTs will be further evaluated in a forthcoming RFI Work Plan under the facility's Permit for the Storage of Hazardous Waste and Corrective Action. At that time the HHEI will be updated as appropriate, to reflect the RFI findings and assessment of risk at the site.

**2. Air (indoors) – UNKNOWN**

REFERENCE: 1) *Revised Abbreviated RCRA Facility Investigation Work Plan*, May 29, 1998; 2) *Final Hazardous Waste Management Permit for the Storage of Hazardous Waste and Corrective Action*, August 2008; 3) VDEQ project files; 4) Site visit conducted by VDEQ on May 14, 2008

RATIONALE: The results of the 1993 Verification Investigation did not indicate any significant contamination in the soil, but the analytical methodology is somewhat questionable (per EPA comments), and the data is limited and out-dated; therefore, the presence of VOCs in the subsoil and groundwater is currently unknown. Potential VOCs in the subsoil and groundwater under and in the vicinity of the facility buildings could potentially migrate into site structures and accumulate causing contamination of indoor air. It should be noted that workers in the work environment are protected under the OSHA standards, so it can be reasonable assumed that indoor air is neither impacted nor does it pose a risk above acceptable criteria and standards.

**3. Surface Soil – NO**

REFERENCE: 1) *Revised Abbreviated RCRA Facility Investigation Work Plan*, May 29, 1998; 2) *Final Hazardous Waste Management Permit for the Storage of Hazardous Waste and Corrective Action*, August 2008; 3) VDEQ project files; 4) Site visit conducted by VDEQ on May 14, 2008

RATIONALE: There are no known significant releases of waste and/or hazardous constituents to surface soil and/or surface water. All the hazardous waste storage units have adequate secondary containment to prevent spills and releases from reaching surface soil and surface water. The secondary containment structures have been evaluated by an independent Professional Engineer, as documented in a report titled *Assessment of Permitted Secondary Containment Areas*, prepared by Eryou Engineering, dated January 17, 2007, and have been found to be satisfactory in accordance with the requirements of the RCRA, and acceptable engineering criteria and standards.

**4. Surface Water – NO**

REFERENCE: 1) *Revised Abbreviated RCRA Facility Investigation Work Plan*, May 29, 1998; 2) *Final Hazardous Waste Management Permit for the Storage of Hazardous Waste and Corrective Action*, August 2008; 3) VDEQ project files; 4) Site visit conducted by VDEQ on May 14, 2008

RATIONALE: There are no known significant releases of waste and/or hazardous constituents to surface soil and/or surface water. All the hazardous waste storage units have adequate secondary containment to prevent spills and releases from reaching surface soil and surface water. The secondary containment structures have been evaluated by an independent Professional Engineer, as documented in a report titled *Assessment of Permitted Secondary Containment Areas*, prepared by Eryou Engineering, dated January 17, 2007 and have been found to be satisfactory in accordance with the requirements of the RCRA, and acceptable engineering criteria and standards.

**5. Sediment – NO**

REFERENCE: 1) *Revised Abbreviated RCRA Facility Investigation Work Plan*, May 29, 1998; 2) *Final Hazardous Waste Management Permit for the Storage of Hazardous Waste and Corrective Action*, August 2008; 3) VDEQ project files; 4) Site visit conducted by VDEQ on May 14, 2008

RATIONALE: There are no known significant releases of waste and/or hazardous constituents to surface soil and/or surface water. All the hazardous waste storage units have adequate secondary containment to prevent spills and releases from reaching surface soil and surface water. The secondary containment structures have been evaluated by an independent Professional Engineer, as documented in a report titled *Assessment of Permitted Secondary Containment Areas*, prepared by Eryou Engineering, dated January 17, 2007 and have been found to be satisfactory in accordance with the requirements of the RCRA, and acceptable engineering criteria and standards.

**6. Subsurface Soil – UNKNOWN**

REFERENCE: 1) *Revised Abbreviated RCRA Facility Investigation Work Plan*, May 29, 1998; 2) *Final Hazardous Waste Management Permit for the Storage of Hazardous Waste and Corrective Action*, August 2008; 3) VDEQ project files; 4) Site visit conducted by VDEQ on May 14, 2008

RATIONALE: The results of the 1993 Verification Investigation did not indicate any significant contamination in the soil, but the analytical methodology is somewhat questionable (per EPA comments), and the data is limited and out-dated;

therefore, the presence of contaminants in the subsoil is currently unknown. Since the VI was performed in 1993 Safety-Kleen has been working with the EPA and VDEQ on various work plans to confirm whether any contamination exists at the site from the former USTs. No other subsurface soil data is available at this time.

The subsoils and groundwater of the area of the two former USTs will be further evaluated in a forthcoming RFI Work Plan under the facility's Permit for the Storage of Hazardous Waste and Corrective Action. At that time the HHEI will be updated as appropriate, to reflect the RFI findings and assessment of risk at the site.

**7. Air (outdoors) – NO**

REFERENCE: 1) *Revised Abbreviated RCRA Facility Investigation Work Plan*, May 29, 1998; 2) *Final Hazardous Waste Management Permit for the Storage of Hazardous Waste and Corrective Action*, August 2008; 3) VDEQ project files; 4) Site visit conducted by VDEQ on May 14, 2008

RATIONALE: There are no known significant releases of waste and/or hazardous constituents to the surface soil and/or surface water. All the hazardous waste storage units have adequate secondary containment to prevent spills and releases from reaching surface soil and surface water. In addition, the workers in the work environments are protected under the OSHA standards, so it can reasonably be assumed that the outdoor air is neither impacted nor does it pose a risk above acceptable criteria and standards.

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3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

**Summary Exposure Pathway Evaluation Table**

Potential **Human Receptors** (Under Current Conditions)

<b><u>Contaminated Media</u></b>	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food <sup>3</sup>
Groundwater	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>
Air (indoors)	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>
Soil (surface, e.g., <2 ft)	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>
<del>Surface Water</del>	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>
<del>Sediment</del>	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>
Soil (subsurface e.g., >2 ft)	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>YES</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>
Air (outdoors)	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>	<u>NO</u>

Instructions for **Summary Exposure Pathway Evaluation Table**:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated" as identified in #2 above.
2. enter "yes" or "no" for potential "completeness" under each "Contaminated" Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces ("\_\_\_"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

- \_\_\_ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).
- ✓ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation. (potential contamination of subsurface soil and potential exposure pathway evaluation)
- \_\_\_ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code.

**Rationale and Reference(s):**

Groundwater – see attached page, Item #1  
Air (Indoors) – see attached page, Item #2  
Soil (subsurface) – see attached page, Item #3

<sup>3</sup> Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

**Section 3 attachment – Rationale and References**

**1. Groundwater**

REFERENCE: 1) *Revised Abbreviated RCRA Facility Investigation Work Plan*, May 29, 1998; 2) *Final Hazardous Waste Management Permit for the Storage of Hazardous Waste and Corrective Action*, August 2008; 3) VDEQ project files; 4) Site visit conducted by VDEQ on May 14, 2008

RATIONALE:

Residents

NO – There is no information indicating the presence of residents nearby or on the facility. The facility is located in an industrial area with a fence surrounding the property thereby restricting access to the property. The Safety-Kleen facility and surrounding properties are serviced by public utilities, including a public water supply.

Workers

NO – The Safety-Kleen Vinton facility and surrounding properties are serviced by public utilities, including a public water supply. The groundwater at the site is not utilized for any purposes at the facility, therefore workers are not exposed to the groundwater. There are no known users of groundwater near the facility that use the groundwater for drinking water purposes.

Day-Care

NO – There is no information indicating the presence of a day-care on the facility.

Construction

NO – There are no planned or perceived construction activities at the site that would expose construction workers to the groundwater. Safety-Kleen no longer utilizes UST's for storage of products or wastes at their facility sites.

Trespassers

NO – The facility is located in an industrial area with a fence surrounding the property thereby restricting access to trespassers.

Recreation

NO – There is no information indicating that any portion of the facility is for recreational use.

Food

NO – There is no information indicating that food is grown within the facility's boundary.

**2. Air (Indoors)**

REFERENCE: 1) *Revised Abbreviated RCRA Facility Investigation Work Plan*, May 29, 1998; 2) *Final Hazardous Waste Management Permit for the Storage of Hazardous Waste and Corrective Action*, August 2008; 3) VDEQ project files; 4) Site visit conducted by VDEQ on May 14, 2008

RATIONALE:

Residents

NO – There is no information indicating the presence of residents on the facility. The facility is located in an industrial area with a fence surrounding the property thereby restricting access to the property.

Workers

NO – All indoor waste storage are adequately ventilated to prevent the accumulation of harmful vapors. Since the workers in the work environments are protected under the OSHA standards it can reasonably be assumed that the indoor air is neither impacted nor does it pose a risk. In addition, no information currently exists which indicates that groundwater and/or subsurface soil is contaminated with VOCs



**Section 3 attachment – Rationale and References**

which could ultimately migrate into site structures.

Day-Care

NO – There is no information indicating the presence of a day-care on the facility.

Construction

NO – All indoor waste storage areas are adequately ventilated to prevent the accumulation of harmful vapors. Since the construction workers in the work environments are protected under the OSHA standards it can reasonably be assumed that the indoor air is neither impacted nor does it pose a risk. In addition, no information currently exists which indicates that groundwater and/or subsurface soil is contaminated with VOCs which could ultimately migrate into site structures.

Trespassers

NO – The facility is located in an industrial area with a fence surrounding the property thereby restricting access to trespassers.

Recreation

NO – There is no information indicating that any portion of the facility is for recreational use.

Food

NO – There is no information indicating that food is grown within the facility's boundary.

**3. Soil (subsurface)**

REFERENCE: 1) *Revised Abbreviated RCRA Facility Investigation Work Plan, May 29, 1998*; 2) *Final Hazardous Waste Management Permit for the Storage of Hazardous Waste and Corrective Action, August 2008*; 3) VDEQ project files; 4) Site visit conducted by VDEQ on May 14, 2008

RATIONALE:

Residents

NO – There is no information indicating the presence of residents on the facility. The facility is located in an industrial area with a fence surrounding the property thereby restricting access to the property.

Workers

NO – The Safety-Kleen Vinton facility workers do not participate in any activities that would expose them to the subsurface soil.

Day-Care

NO – There is no information indicating the presence of a day-care on the facility.

Construction

YES – There is potential for exposure to subsoil contamination if it exists at the site. However, there are no planned or perceived construction activities at the site that would expose construction workers to the subsurface soil. Safety-Kleen no longer utilizes UST's for storage or products or wastes at their facility sites. Construction at the site would require a Health and Safety Plan to protect workers.

Trespassers

NO – The facility is located in an industrial area with a fence surrounding the property thereby restricting access to trespassers.



Recreation

NO – There is no information indicating that any portion of the facility is for recreational use.

Food

NO – There is no information indicating that food is grown within the facility's boundary.

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4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be "**significant**"<sup>4</sup> (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are expected not to be "significant."

If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale and Reference(s):

Note: See discussion under rational under Item No. 3.

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<sup>4</sup> If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.



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6. Check the appropriate RCRA Info status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

**YE** - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the Safety-Kleen Systems, Inc. - Vinton Service Center facility, EPA ID # VAD000737361, located in Vinton, Virginia, under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

**NO** - "Current Human Exposures" are NOT "Under Control."

**IN** - More information is needed to make a determination.

Completed by

Ryan A. Kelly  
(print) Ryan J. Kelly  
(title) Environmental Engineer

Date 9/9/08

Supervisor

Leslie A. Romanchik  
(print) Leslie A. Romanchik  
(title) Director, Office of Hazardous Waste  
(EPA Region or State) VA DEQ

Date 9/15/08

Locations where References may be found:

VA Department of Environmental Quality, Office of Hazardous Waste  
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\_\_\_\_\_  
\_\_\_\_\_

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**FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.**