

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99



RDMS DocID 00100120

RCRA Corrective Action  
Environmental Indicator (EI) RCRIS code (CA750)  
Migration of Contaminated Groundwater Under Control

RCRA RECORDS CENTER  
FACILITY *Safety Kleen Systems*  
I.D. NO. *CTD980667927*  
FILE LOC. *R-13*  
OTHER \_\_\_\_\_

Facility Name: Safety-Kleen Systems, Inc.  
Facility Address: 11 Tipping Drive, West Hartford, CT  
Facility EPA ID #: CTD980667927 *BRANFORD,*

1. Has all available relevant/significant information on known and reasonably suspected releases to the groundwater media, 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 #8 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 "Migration of Contaminated Groundwater Under Control" EI**

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "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 "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

**Duration / Applicability of EI Determinations**

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

**Migration of Contaminated Groundwater Under Control  
Environmental Indicator (EI) RCRIS code (CA750)**

Page 2

2. Is groundwater known or reasonably suspected to be “contaminated”<sup>1</sup> above appropriately protective “levels” (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

✓ If yes - continue after identifying key contaminants, citing appropriate “levels,” and referencing supporting documentation.

— If no - skip to #8 and enter “YE” status code, after citing appropriate “levels,” and referencing supporting documentation to demonstrate that groundwater is not “contaminated.”

— If unknown - skip to #8 and enter “IN” status code.

Rationale and Reference(s): Appropriately protective risk-based levels used in this evaluation include the Connecticut Department of Environmental Protection (CTDEP) Remediation Standard Regulations (RSRs) Surface Water Protection Criteria (SWPC), Groundwater Protection Criteria (GWPC), Residential Volatilization Criteria (Res-VC), and Industrial/Commercial Volatilization Criteria (I/C-VC) for on-site groundwater.

Analytical results for groundwater sampling are provided in Tables 1a through 1f (see Attachment 1). The locations of the groundwater monitoring wells are shown on Figure 1 (see Attachment 2). As indicated on Figure 1, groundwater flows to the south/southwest across the site.

During quarterly groundwater sampling rounds, zinc has been detected in on-site wells at concentrations above the SWPC. However, zinc has been detected in upgradient wells and may be naturally occurring. In addition, based on the distance to the nearest downgradient surface water (Branford River 700 feet to the south/southeast) and the calculated groundwater travel time to the river based on slug tests (165 to 6,422 years) the potential for impact to the Branford River is minimal.

Over the same monitoring period, volatile organic compounds (VOCs), primarily tetrachloroethene (PCE), trichloroethene (TCE) and 1,1-dichloroethene (1,1-DCE), have been detected in some wells. The concentrations of PCE, TCE, and 1,1-DCE have exceeded the GWPC. PCE in concentrations in MW-4 are above the SWPC, however PCE concentrations downgradient are in compliance with the SWPC. VOC concentrations decrease downgradient towards the property boundary and minimal downward vertical migration has been identified. No acid/base/neutral extractable organic compounds, PCBs, alcohols, and glycols were detected above applicable risk-based levels in the monitoring wells during the sampling events.

Even though the groundwater in on-site wells contains metals and VOCs at concentrations above appropriately protective risk-based levels, there are no complete pathways between the contamination and potential human receptors. Based on the findings of a sensitive receptor survey, the nearest private well is located 650 feet northwest (upgradient) of the site. As a result, exposures cannot be reasonably expected under current conditions.

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 appropriate “levels” (appropriate for the protection of the groundwater resource and its beneficial uses).







**Migration of Contaminated Groundwater Under Control  
Environmental Indicator (EI) RCRIS code (CA750)**

Page 6

6. Can the **discharge** of “contaminated” groundwater into surface water be shown to be “**currently acceptable**” (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented<sup>4</sup>)?

\_\_\_\_\_ If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site’s surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR 2) providing or referencing an interim-assessment,<sup>5</sup> appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment “levels,” as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

\_\_\_\_\_ If no - (the discharge of “contaminated” groundwater can not be shown to be “**currently acceptable**”) - skip to #8 and enter “NO” status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

\_\_\_\_\_ If unknown - skip to 8 and enter “IN” status code.

Rationale and Reference(s): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

<sup>4</sup> Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

<sup>5</sup> The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.



**Migration of Contaminated Groundwater Under Control  
Environmental Indicator (EI) RCRIS code (CA750)**

Page 8

8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

- YE** - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the Safety-Kleen Systems, Inc. facility, EPA ID #CTD980667927, located at 11 Tipping Drive, Branford, CT. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater" This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.
- NO** - Unacceptable migration of contaminated groundwater is observed or expected.
- IN** - More information is needed to make a determination.

Completed by (signature) Raphael C. Cody Date 10-22-03  
(print) Raphael Cody  
(title) US EPA Region 1

Supervisor (signature) Matthew R. Hoagland Date 10/22/03  
(print) Matthew R. Hoagland  
(title) Section Chief  
(EPA Region or State) Reg I

Locations where References may be found:

See Tables 1a through 1f in Attachment 1 and Figure 1 in Attachment 2.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Contact telephone and e-mail numbers

(name) Stephen Fleming  
(phone #) (513) 956-2172  
(e-mail) sfleming@safety-kleen.com