DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
Interim Final 2/5/99
RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)
Current Human Exposures Under Control

Facility Name: **Former Rehrig International Facility**
Facility Address: **901 North Lombardy Street, Richmond, Virginia**
Facility EPA ID #: **VAD 089 028 377**

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

The former Rehrig facility is located at 901 North Lombardy Street, Richmond, Virginia. The site is located in an urban commercial, industrial, and residential area. According to the City of Richmond property report, the site address is also known as 630 Bowe Street and 800 Bowe Street. The current owner is Kroger Real Estate Department of Roanoke, Virginia.

The first known facility structure was a single building constructed in 1904 by the Export Leaf Tobacco Company and was used for tobacco leaf storage until 1977. Bowe Street Associates purchased the property in 1977. The property remained vacant until 1979 when Rehrig leased a portion of the onsite building. According to the 1993 Environmental Site Assessment Update Report, the State Penitentiary, a book binding business, and an air filter products manufacturer also historically occupied the site. Previous owners were listed as the Broad Street Associates, who purchased the property in May 2002 and New River Real Estate who purchased the property in June 2003.

The Rehrig facility was approximately 250,000 square feet in size. Rehrig manufactured grocery shopping carts and shopping baskets at the site from 1979 to 2000. According to the 1993 Environmental Site Assessment Update Report, the manufacturing process consisted of metal fabrication, injection molding that produced high-density polyethylene (HDPE) parts, and metal plating of nickel and chromium onto the metal parts of the shopping carts (a new plating system was installed in 1993). Ancillary equipment used by Rehrig included a wastewater treatment system, diesel fuel Underground Storage Tank (UST), a waste oil Aboveground Storage Tank (AST), and a hydraulic oil AST. Rehrig plated and assembled approximately ¼ million shopping carts and baskets per year.

The Rehrig facility maintained an onsite wastewater treatment system to treat process water that contained nickel and chromium electroplating operations in an on-site wastewater treatment system. This system discharged treated water to the City of Richmond under a Pretreatment Permit issued and administered by the City of Richmond.

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 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).

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2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"**[1] 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)?

	Yes	No	?	Rationale / Key Contaminants
Groundwater		X		
Air (indoors)[2]		X		
Surface Soil (e.g., <2 ft)		X		
Surface Water		X		
Sediment		X		
Subsurf. Soil (e.g., >2 ft)		X		
Air (outdoors)		X		

☒ 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):

Two releases to the environment occurred at the site and were remediated to regulatory agency satisfaction, as follows.

- Hydraulic oil-contaminated soil was discovered during facility expansion activities and removed. This incident was closed to the satisfaction of the State Water Control Board and the Richmond Fire Department.
- Soil contamination below Virginia State Water Control Board reportable levels was detected during a 1989 diesel fuel UST removal activity

No evidence of other spills other releases were found during the November 2, 2006 RCRA Corrective Action site visit.

No groundwater monitoring wells are known to have been installed at the site nor was groundwater encountered in 15-foot deep soil borings advanced in 1993. While groundwater quality is unknown as described below, it is not used for potable purposes. No groundwater wells were located within a three-mile radius of the site at the time of the 1989 Preliminary Assessment Report. The 1989 Preliminary Assessment Report indicated that groundwater contamination was not expected due to the plating tanks having concrete containment systems and the fact that all processes took place indoors.

Potable water is supplied to the former Rehrig site and surrounding area by the City of Richmond. The source of the water is the James River; the intake is approximately three miles upstream and southwest of the site.

City of Richmond Ordinance Division 4 – Water Service Connections, Pipes, and Meters – Section 106-336 – Duties of Owners and Tenants indicates that all newly constructed or existing buildings be connected to the public water service system. The Ordinance also notes that owners who have used another water supply system (for example, a well) that was installed and used prior to January 1, 1970 are not required to have a public water connection if it can be proven that the alternative water supply is not detrimental to public health and safety, as approved by the Richmond City Health District. The ordinance also states that a property owner is able to drill a new potable well provided the Richmond City Health District approves the well and water quality.

TtEC contacted the Richmond City Health District for clarification of this ordinance. An environmental inspector indicated that 98 percent of the City of Richmond is served by municipal water (the vicinity of the site is included in this 98 percent) and that the District does not approve wells for potable use. The inspector reported that if there are any wells in the vicinity of the site, they are for irrigation purposes only.

The former Rehrig site is now the location of a Kroeger's Grocery Store and small retail stores. No documentation was found in VDEQ or USEPA Region III files regarding indoor or outdoor air issues.

Footnotes:

[1] "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).

[2] 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.

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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)

"Contaminated" Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food[3]
Groundwater							
Air (indoors)							
Soil (surface, e.g., <2 ft)							
Surface Water							
Sediment							
Soil (subsurface e.g., >2 ft)							
Air (outdoors)							

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.

☐ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code.

Rationale and Reference(s):

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

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4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"**[4] (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 not expected to be "significant."

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

Rationale and Reference(s):

4 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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5. Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

☐ If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

☐ If no - (there are current exposures that can be reasonably expected to be "unacceptable")- continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

☐ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code.

Rationale and Reference(s):

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6. Check the appropriate RCRIS 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 (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 Former Rehrig International facility, EPA ID # VAD 089 028 377, located at 901 North Lombardy Street in Richmond, 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 (signature) Denis Zielinski Date 1/22/09
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Supervisor (signature) Date 1/22/09
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