

US EPA ARCHIVE DOCUMENT

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: Laufen International, Inc. (formerly US Ceramic Tile)
Facility Address: 10233 Sandyville Road SE, East Sparta, Ohio 44626-9333
Facility EPA ID #: OHD 077 752 566

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?

 X 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 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).

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)
Page 2

Site Background: The Laufen International facility is located in a rural area at the south end of East Sparta, Ohio. Nimishillen Creek parallels the facility at its eastern boundary. EPA issued a Final Decision and Response to Comments on September 30, 2009, that required Laufen to cap seven waste tile disposal areas or Areas of Interest (AOI) and cleanup a former surface impoundment that had been inadequately remediated in 1994 (closure certification was not accepted by Ohio EPA). During the 1994 remediation process, a three acre hazardous waste landfill was constructed at the north end of the former surface impoundment to dispose of sediments and soil contaminated with metals barium, cadmium, and lead.

Manufacturing operations at Laufen ceased in 2007. The former manufacturing building is leased for kitchen cabinet storage and the current renter is considering purchasing the entire facility and taking over all long term O&M requirements at the facility. There are no plans to change the current industrial land use of the approximate 516 acre facility. An environmental covenant will be placed on the property deed in a few months that limits land use to industrial/commercial and further restricts activities at the seven AOIs, hazardous waste landfill, and surface impoundment area (known as the IM Area in site reports) to protect future workers.

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)?

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale / Key Contaminants</u>
Groundwater	X			lead in perched groundwater at AOIs 5-5 and 5-7, and barium at AOI 5-7 exceed Direct Contact Industrial Screening Criteria.
Air (indoors) ²		X		site contaminants are metals, no VOCs. active tile operations ceased in 2007.
Surface Soil (e.g., <2 ft)		X		remediation was completed in 2011. all AOIs and IM Area are consolidated, graded, and capped with geotextile and 12 to 30 inches of clean fill.
Subsrf. Soil (e.g., >2 ft)	X			lead exceeds Direct Contact Industrial Screening Criteria at AOIs 5-1, 5-5, and IM Area.
Sediment		X		remediation was completed in 2011. all sediment has been removed, disposed offsite, or consolidated under geotextile and clean fill. will be monitored for 5 years.

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.

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)
Page 3

Surface Water	X	remediation was completed in 2011 and has eliminated all releases to surface water. will be monitored for 5 years.
Air (outdoors)	X	remediation completed in 2011 has capped all contaminated areas which prevents dust dispersion of metals.

_____ 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.

X 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.

References:

Phase II and Summary RCRA Facility Investigation Report. February 8, 2008. Civil & Environmental Consultants, Inc..

Corrective Measures Study. July 14, 2008. Civil & Environmental Consultants, Inc.

Documentation of CA750, Migration of Contaminated Groundwater Under Control. October 8, 2008. EPA.

Final Decision and Response to Comments. September 30, 2009. EPA

Construction Completion Report CMI Remedial Activities. November 2011. Civil & Environmental Consultants, Inc.

Supplement to the November 2011 Construction Completion Report. April 6, 2012. Civil & Environmental Consultants, Inc

Rationale:

Perched Groundwater - Perched groundwater was only found in the upland area where the AOIs are located. No groundwater was encountered at any depth below the AOIs. At AOIs 5-5 and 5-7, lead and barium was present in concentrations exceeding direct contact industrial screening criteria.

There have been no exceedances of lead in groundwater since 2003 in the lowland area where the hazardous waste landfill and IM Area is located. Monitoring has been conducted quarterly for over 20 years. The hazardous waste landfill will be monitored for a minimum of 30 years.

Subsurface Soil - Lead levels in soil were compared to the direct contact industrial screening criteria of 800 mg/kg. In areas of AOI 5-1, lead in surface soil, subsurface soil, and sediment exceeded the screening criteria prior to remediation. The average lead level in surface soil was 790 mg/kg and for subsurface was 286 mg/kg. All of the contaminated media was consolidated within the AOI, graded, and capped with geotextile and 18 to 24 inches of clean fill. The average lead concentration in surface soil at AOI 5-5 was 1,360 mg/kg prior to remediation. AOI 5-5 was cut and filled, graded, and capped with 18 to 30 inches of clean fill. Exposure to lead in the AOIs is prevented by the geotextile and clean soil cap. The cap is vegetated, maintained, and monitored for erosion.

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)
Page 4

The IM Area was partially excavated from 3 to 7 feet (or to rock) to remove lead levels in soil greater than 1,075 mg/kg. Over 12,000 tons of contaminated soil and tile glaze material was stabilized with TSP and disposed offsite. The IM Area was capped with a minimum of 18 inches of clean soil. The average lead concentration in the remediated IM Area is less than 1.075 mg/kg and exposure is prevented by the clean soil cap. The cap is vegetated, maintained, and monitored for erosion.

Sediment - Contaminated sediment in surface water at the base of certain AOIs was excavated, placed in the AOI, and capped with geotextile and at least 12 inches of clean fill, then seeded. An unnamed tributary to Nimishillen Creek (UTNC) in the IM Area was completely remediated. All sediment was removed down to underlying native soil/rock and disposed off-site or placed in the IM Area and capped with 18 inches of clean fill and seeded. The UTNC was reshaped and engineered with sediment basins, geotextile, and riprap to minimize erosion. After remediation, no sediment remains that is contaminated above risk-based levels. Surface water and sediment in the UTNC will be monitored for lead and zinc for at least five years to document the effectiveness of the remedy and ensure no further contamination impacts the UTNC.

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

<u>"Contaminated" Media</u>	<u>Potential Human Receptors (Under Current Conditions)</u>						
	Residents	Workers	Day-Care	Construction	Trespassers/ Visitors	Recreation	Food ³
Groundwater	No	No	No	No	No	No	No
Air (indoors)							
Soil (surface, e.g., <2 ft)							
Soil (subsurface e.g., >2 ft)	No	No	No	No	No	No	No
Surface Water							
Sediment							
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.

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

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)
Page 5

- X 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.

References:

Phase II and Summary RCRA Facility Investigation Report. February 8, 2008. Civil & Environmental Consultants, Inc..

Corrective Measures Study. July 14, 2008. Civil & Environmental Consultants, Inc.

Documentation of CA750, Migration of Contaminated Groundwater Under Control. October 8, 2008. EPA.

Final Decision and Response to Comments. September 30, 2009. EPA

Construction Completion Report CMI Remedial Activities. November 2011. Civil & Environmental Consultants, Inc.

Supplement to the November 2011 Construction Completion Report. April 6, 2012. Civil & Environmental Consultants, Inc

Rationale:

The Laufen facility has been remediated pursuant to the EPA Final Decision and the cleanup is documented in the Construction Completion Report and Supplement. Current site operations are limited to kitchen cabinet storage in the former manufacturing building where no exposures to site contaminants are present.

Potential exposures to workers and construction workers exist at the AOIs, IM Area, and hazardous waste landfill. However, remedies have been implemented so that exposures are not reasonably expected. AOIs have been consolidated, graded, and capped with geotextile and 12 to 18 inches of clean fill. Grass vegetation has been established on the AOIs over the last two years and is mowed and maintained to monitor erosion and burrowing. The IM Area had over 12,000 tons of contaminated soil removed and all contaminated sediment was removed. The IM Area is capped with 18 inches of clean fill and fenced, or inaccessible due to a steep levee, railroad tracks, and Nimishillen Creek along the east boundary. The hazardous waste landfill has a RCRA cap, leachate collection system, and is gated and fenced. There are currently no reasonably complete pathways between residual contamination and human receptors anywhere at the facility. All remaining contaminated subsurface soil and perched groundwater at the site is under a clean soil cap that is vegetated, monitored, and maintained.

Any intrusive activities performed onsite require workers to adhere to the site Health and Safety Plan prepared under the corrective action Consent Decree. Implementation of the plan further minimizes exposure to site-related contaminants. Further, an environmental covenant is also being finalized and will be placed on the facility deeds (two counties) documenting the environmental conditions and restricting land use.

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)

Page 6

A long term operations, maintenance, and monitoring plan has been submitted as part of the Construction Completion Report and Supplement and will be implemented. Caps on all AOIs, hazardous waste landfill, and IM Area will be maintained and monitored. Groundwater, surface water, and sediment will be monitored.

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

References and Rationale:

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.

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.

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)
Page 7

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

Reference(s) and Rationale:

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 (and attach appropriate supporting documentation as well as a map of the facility):

 X 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 Laufen International, Inc. facility, EPA ID No. OHD 077 752 566, located at East Sparta, Ohio 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)

Kenneth S. Bardo

Date April 17, 2012

(print)

Kenneth S. Bardo

(title)

Environmental Scientist

Asundar

Supervisor

(signature)

D. F. Chachakis

Date April 17, 2012

(print)

Daniel Chachakis

(title)

Acting Section Chief

(EPA Region or State) EPA Region 5

Locations where References may be found:

RCRA 7th Floor File Room, EPA Region 5 Office, 77 W. Jackson Blvd., Chicago, IL

Contact telephone and e-mail numbers

(name)

Kenneth S. Bardo

(phone #)

(312) 886-7566

(e-mail)

bardo.kenneth@epa.gov

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.