

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: Seekonk Manufacturing Co., Inc.
Facility Address: 87 Perrin Avenue, Seekonk, MA 02771-4195
Facility EPA ID #: MAD001202258

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 nearterm 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)?

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale / Key Contaminants</u>
Groundwater	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Cadmium, Zinc</u>
Air (indoors) ²	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Surface Soil (e.g., <2 ft)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Surface Water	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Sediment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Subsurf. Soil (e.g., >2 ft)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____
Air (outdoors)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	_____

- 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):

Subsurface investigations completed in July 2000 and groundwater monitoring completed in April 2001 are described in the report, *Results of First Phase of Assessment Activities* (Resource Controls, October 2001). The investigations showed that metals are present in groundwater, at levels exceeding risk-based levels set forth by the Massachusetts DEP. The investigations also showed that metals, chlorinated VOCs and petroleum hydrocarbons are present in subsurface soil, and chlorinated VOCs and petroleum hydrocarbons are present in groundwater, at levels not exceeding risk-based levels set forth by the Massachusetts DEP. Metals and chlorinated VOCs are present in surface water and sediments within an adjacent stream, at levels not exceeding federal AWQCs.

Subsurface investigations completed in 1997, which included the completion of shallow test pits, are described in the report, *Limited Subsurface Investigation* (ECG, June 1997). The investigations showed that metals and petroleum hydrocarbons are present in surface soil, at levels not exceeding risk-based levels set forth by the Massachusetts DEP. Investigations completed demonstrated that no VOCs are present in shallow soils at the Site. VOCs are also not present at levels exceeding Massachusetts DEP GW-2 standards in groundwater within 30 feet of any occupied building, indicating no risk relative to indoor air.

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

Contaminated Media	Potential Human Receptors (Under Current Conditions)						
	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food ¹
Groundwater	No	No	No	<u>Yes</u>	No	No	No
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:

- Strike-out specific Media including Human Receptors’ spaces for Media which are not “contaminated”) as identified in #2 above.
- 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):

The report, *Results of First Phase of Assessment Activities* shows that contamination, as defined herein, is located in groundwater. Contamination is not known to extend to off-site locations. Based on the location of the contamination, residents, day-care, recreation, and food do not represent potential human receptors under current conditions. Owing to the non-surficial depth of the contamination, workers and trespassers also do not represent potential human receptors under current conditions; however, construction does represent potential human receptors under current conditions. *However it can be controlled by Health & Safety Plans, NO CURRENT PLANS FOR CONSTRUCTION*

¹Indirect 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)?

RF

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.”

LF

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):

As described in the report, *Results of First Phase of Assessment Activities*, groundwater contains cadmium and zinc at levels exceeding Massachusetts DEP GW-3 standards, which are protective of all groundwater. Although the groundwater standards do not strictly apply for construction workers, the presence of metals in groundwater would need to be considered with respect to health and safety prior to initiating construction activities that have the potential to expose construction workers to the contamination.

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?

RR

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).

VR

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):

As described in the report, *Results of First Phase of Assessment Activities*, groundwater contains cadmium and zinc at levels exceeding Massachusetts DEP GW-3 standards, which are protective of all groundwater. Although the groundwater standards do not strictly apply for construction workers, the presence of metals in groundwater would need to be considered with respect to health and safety prior to initiating construction activities that have the potential to expose construction workers to the contamination.

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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 (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 SEEKONIC MANUFACTURING CO., INC. facility, EPA ID # MAD001202258, located at SEEKONK, MA 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) Ralph Fina Date 1/09/02
 (print) Ralph Fina
 (title) RA 6010 FINE

Supervisor (signature) Jeffrey Caormann Date 1/9/02
 (print) JEFFREY CAORMANN
 (title) Environmental Analyst II
 (EPA Region or State) Massachusetts

OK!
 REVIEWED BY
 FRANK BATTAGLIONE
 1-16-02
 Frank Battaglione
 ENV. ENG. EPA

Locations where References may be found:

Attached

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Matthew R. Hoagland 2/16/0
Matthew R. Hoagland
 Section Chief
 RCRA Corrective Action Section
 Region I.

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.