

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: Uniroyal Chemical Co. Inc
Facility Address: 280 Elm Street, Naugatuck, CT. 06770
Facility EPA #: CTD 001449826

I 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 (SWNM), 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 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" 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	<u>X</u>	___	___	<u>see below; concentrations of compounds in site groundwater exceed voluntarily proposed MPSs (the CT. State Remediation Standards)</u>
Air (indoors) 2	___	<u>X</u>	___	<u>contaminated groundwater under buildings is >15' deep. Soils not contaminated with volatile organic compounds.</u>
Surface Soil (e.g., <2 ft)	<u>X</u>	___	___	<u>see below; concentrations of compounds in soil exceed voluntarily proposed MPSs (the CT. State Remediation Standards)</u>
Surface Water	___	<u>X</u>	___	<u>surface water AWQC exceedances due to lead not linked to Site.</u>
Sediment	___	<u>X</u>	___	<u>no sediment MPS proposed; river highly impacted by semivolatile organic compounds from upgradient sources.</u>
Subsurf. Soil (e.g. >2 ft)	<u>X</u>	___	___	<u>see below; concentration of compounds in soil exceed voluntarily proposed MPSs (the CT.State Remediation Standards)</u>
Air (outdoors)	___	<u>X</u>	___	<u>shallow soil not contaminated with volatile organic compounds.</u>

___ 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.

Rationale and Reference(s):

Groundwater: maximum concentrations of aniline, diphenylamine (DPA), acetone, benzene, and xylene are above proposed MPS. The MPS are 510, 580, 55,000, 710, and 470 ug/l, respectively. MPS are based on the Surface Water Protection Criteria (SWPC), in the CT. State Remediation Standard Regulations (RSRs).

Surface and Subsurface Soil: maximum concentrations of aniline, n-nitroso-DPA, DPA, benzo(a)pyrene, benzo(b)fluoranthene, arsenic, and lead in soil at least 4' deep exceed proposed MPS of 1,000, 1,200, 51,000, 1.0, 7.8, 10, and 1,000 mg/kg, respectively (see Soils CMS Report of April, 1999). MPS are derived from the Industrial/Commercial Direct Exposure Criteria (DECs) specified in the CT RSRs.

Footnotes:

"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).

'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. 'Mis 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)

<u>"Contaminated" Media</u>	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food ³
Groundwater	no	no	no	no	no	no	no
<u>Air (indoors)</u> _____	-----	-----	-----	-----	-----	-----	-----
Soil (surface, e.g., <2 ft)	no	yes	no	yes	no	no	no
<u>Surface Water</u>	-----	-----	-----	-----	-----	-----	-----
<u>Sediment</u>	-----	-----	-----	-----	-----	-----	-----
Soil (subsurface e.g., >2 ft)	no	no	no	yes	no	no	no
<u>Air (outdoors)</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).

X 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 96 and enter "IN" status code

Rationale and Reference(s):

The State of CT. has rated the groundwater at the Site as GC/GB/GB. The groundwater is not used for drinking water or for industrial use, therefore an exposure pathway to site groundwater does not exist. While not frequently accessed, contaminated soils in the Tire Lot and South Yard, the two SWMUs at the Site, are accessible to site workers (Soil CMS, April 1999), however, neither SWMU is realistically accessible to trespassers. The Tire Lot is fully fenced; the existing fence was extended to completely enclose the Tire Lot on all sides in December 1999, and is an effective barrier to trespassers. Likewise the South Yard is inaccessible to trespassers, since three sides of this area are within the boundary of the facility, and the fourth is confined by a steep, 20' drop to the Naugatuck River (100 ft. wide), which is bordered by Rt. 8 on the opposite side).

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- 4 Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be "**significant**" (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)?

 X 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 "N" status code

Rationale and Reference(s):

Contaminated soil exists in three SWMUS at the Site: the Tire Lot, Building 79 Tank Farm, and the South Yard. The Tire Lot is unused in areas of contamination, so potential worker exposure in this area is negligible. At the Building 79 Tank Farm, the storage tank containment structure described in the April 1999 Soils CMS was constructed in the summer of 1999, covering most of the contaminated soils identified in this area. This SWMU no longer presents any realistic completed exposure pathway to contaminated soils. In the South Yard, worker exposure to contaminated soils is minimal, since the southern half of this area is unused, and the northern portion is largely paved in active areas (see April 1999 Soils CMS). No construction is planned for any of these areas, so construction worker exposures are unlikely.

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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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 Uniroyal Chemical Co. Inc. facility, EPA ID #CTD001449826, located at Naugatuck, Connecticut 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. Exposures" are expected to be "Under Control" at the

Completed by (signature) David Lim Date 10/5/99
(print) David Lim
(title) Environmental Engineer

Supervisor (signature) Matthew R. Hogland Date 11/12/99
(print) Matthew R. Hogland
(title) Section Chief
(EPA Region or State) Region I

Locations where References may be found:

All referenced documents except the Groundwater CMS, which is in preparation, have been submitted to Mr. David Lim, USEPA Region I.

Contact telephone and e-mail numbers

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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.