

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:** Genicom Corporation  
**Facility Address:** One Solutions Way, Waynesboro, VA 22980  
**Facility EPA ID #:** VAD003132438

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?

**Y** 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”**<sup>1</sup> 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>
<b>Groundwater</b>	<b>—</b>	<b>Y</b>	<b>—</b>	<b>TCE level above MCLs in groundwater</b>
Air (indoors) <sup>2</sup>	—	N	—	_____
Surface Soil (e.g., <2 ft)	—	N	—	_____
Surface Water	—	N	—	_____
Sediment	—	N	—	_____
Subsurf. Soil (e.g., >2 ft)	—	N	—	_____
Air (outdoors)	—	N	—	_____

\_\_\_\_\_ 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:

**The primary waste streams generated by the facility were waste solvents from painting and etching operations, and inorganic wastes generated from plating operations in past operations. Although the site soils were contaminated by a range of organic and inorganic wastes, only TCE and its degraded products have leached into groundwater in significant levels. A TCE plume has extended about 2,000 feet beyond the boundary of the facility in both upgradient and downgradient directions. The upgradient extension is believed to be caused by an abandoned municipal well which was in operation in the 1960s. The deeper zone (Zone 2) groundwater is more contaminated than the shallow zone (Zone1). In Zone 1, TCE concentration ranges from 500 ppb at the center of the plume to non-detectable beyond the facility boundary. In Zone 2, TCE exceeds 5,000 ppb at the center of the plume to 50 ppb beyond the facility boundary (RCRA Investigation Report, 1997).**

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 appropriately protective risk-based “levels” (for the media, that identify risks within the acceptable risk range).

<sup>2</sup> 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)

<b>“Contaminated” Media</b>	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food <sup>3</sup>
<b>Groundwater</b>	<b>N</b>	<b>N</b>	<b>N</b>	<b>N</b>	<b>N</b>	<b>N</b>	<b>N</b>
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.

**\_\_\_NO\_ 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 plume impact area, including a small residential area on the upgradient side of the facility, is serviced by public water. Despite the extension of the Zone 2 plume (deep groundwater) beyond the facility, the Zone 1 plume (shallow groundwater) is limited to within the facility boundary. Since none of the homes in the residential area have basement and the Zone 1 groundwater there is clean, it is highly improbable that the indoor air could be impacted by the Zone 2 plume. Thus, EPA concludes that there is no human exposure to the contaminated groundwater via direct consumption or indoor air . EPA also concludes that there is no human exposure to the contaminated soil because the site is largely paved, fenced and secured from trespassers .**

<sup>3</sup> 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”**<sup>4</sup> (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): \_\_\_\_\_  
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<sup>4</sup> 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 **Genicom corporation, Waynesboro facility , EPA ID # VAD003132438 , located at One solutions Way, Waynesboro, VA 22980** 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	<u>(signature)</u> <u>(print) Andrew Fan</u> <u>(title) Remedial Project Manager</u>	Date <u>11-10-99</u>
Supervisor	<u>(signature)</u> <u>(print) Robert E. Greaves</u> <u>(title) Chief, General Operations Branch</u> <u>(EPA Region or State) EPA Region 3</u>	Date <u>11-12-99</u>

Locations where References may be found:

RCRA Facility Investigation Final Report, Genicom Corporation, December 1997.

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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.**