

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: General Electric Railcar Repair Services Facility
Facility Address: Triumph Industrial Park, 505 Blue Ball Rd (Rte. 545), Elkton, MD 21922
Facility EPA ID #: MDD 07 828 8354

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 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)?

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale / Key Contaminants</u>
Groundwater	X			In samples collected from 48 wells, and compared to EPA & MDE GW Standards, 11 VOCs + 1 SVOC exceeded Standards: 1,1,2,2-TCA (16 exceedences), benzene (6), PCE (5), TCE (4), chlorobenzene (4), vinyl chloride (3), 1,1,2-TCA (2), c+t1,2-DCE (1 each), cis-1,3-dichloropropene (1), 4-methyl-2-pentanone (1), SVOC: bis(2-ethylhexyl)phthalate (3 exceedences). See discussion below regarding metals.
Air (indoors) ²		X		The facility is not currently used. The single (one-story) building on-site is vacant.
Surface Soil (e.g., <2 ft)	X			The 35 samples were compared to MDE’s Non-residential Clean-up Standards, 4 exceeded the benzo(a)pyrene level, and 2 exceeded the mercury level. Of 2 samples collected for PCB, 1 exceeded MDE’s standard. 25 samples exceeded the arsenic standard, however, the mean site arsenic level for surface and subsurface soils is 4.84 ppm, and is considered within the range of (natural) background.
Surface Water		X		There is some seasonal ponding of water on-site, but no permanent surface water bodies are located on-site
Sediment	X			One of five samples collected in the central drainage ditch contained benzo(a)pyrene at a level just above MDE’s Non-residential Clean-up Standard for soil.
Subsurf. Soil (e.g., >2 ft)	X			Of 24 samples compared to MDE’s Non-residential Clean-up Standards, one sample exceeded the benzo(a)pyrene Standard, and three samples exceeded the selenium Standard. 12 samples exceeded the arsenic Standard, however, the mean site arsenic level for surface and subsurface soils is 4.84 ppm, and is considered within the range of background levels.
Air (outdoors)		X		Contaminants in ground water, soil and sediment are not at levels that create an outdoor air pathway.

— 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.

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Rationale and Reference(s):

References: Data used in this EI is from the *Site Investigation Report*, August 16, 2002 (RSA). Soil and ground water samples were analyzed for TCL VOC, SVOC, IOC, and two surface soil samples were analyzed for PCBs. Other background documents are referenced on the last page of this EI.

Rationale: The following metals were found in ground water in the order of the number of exceedences of either MDE standards, EPA - III Risk Based Tap Water Concentrations, or EPA Drinking Water MCLs (of the following, only mercury has an MCL, and lead has an ‘action level’ which applies to public water systems rather than raw water): manganese, iron, aluminum, cobalt, mercury, nickel and lead. These exceedences do not necessarily indicate contamination from site practices, but likely reflect the naturally occurring levels from the sediment in the shallow ground water samples. Of the 48 wells sampled, 42 are screened in the water table aquifer. Ground water samples taken from the 6 wells installed in the saprolite (top of weathered bedrock) only exceeded MDE’s iron and manganese standards, because samples from bedrock settings generally contain little to no sediment, and may only reflect minerals dissolved from the bedrock.

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)

<u>“Contaminated” Media</u>	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food ³
Groundwater	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>
<u>Air (indoors)</u>							
Soil (surface, e.g., <2 ft)	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>No</u>
<u>Surface Water</u>							
Sediment	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>Yes</u>	<u>No</u>	<u>No</u>
Soil (subsurface e.g., >2 ft)	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>
<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 #6 and enter “IN” status code.

Rationale and Reference(s): **Rationale:** Please refer to the Rationale discussion under Question #4 regarding a complete soil and sediment exposure pathway for trespassers.

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)?

 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 “IN” status code

Rationale and Reference(s): **Rationale:** Ground water exposures are none as Triumph Industrial Park is supplied by public water. No drinking water wells are located on-site or within one-half mile down-gradient of the site. Worker exposure to contaminated soils and sediments is not a concern, as Facility operations ceased in 1987, therefore, no workers are employed at the site. However, environmental workers are on-site sporadically, and these workers handle ground water, soil and sediment according to the approved health and safety plan, which protects workers from dermal exposures. Exposure to contaminated subsurface soils could occur to construction workers if subsurface soil needed to be excavated, however, no construction is currently planned, therefore this exposure pathway is not a concern. Trespassers on the site could be exposed to contaminated surface soils and sediments, however, cyclone fencing (eight feet high, with 3-strands of barbed wire on top) with locked gates and signage surrounds the site to discourage trespassing. Also, a security guard checks the site regularly. However, for any trespassers that do enter the site, exposure to contaminated soil and sediment is not considered a significant exposure pathway, as an individual trespasser’s exposure is generally sporadic to non-existent, and soil contaminant levels at the surface are not high enough to pose an acute health risk through sporadic dermal contact.

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 (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 former **General Electric Railcar Repair Services** facility, EPA ID # **MDD 07 828 8354**, located in **Triumph Industrial Park, 505 Blue Ball Road (Rte. 545), Elkton, MD 21922** 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) _____ /s/ _____ Date 04/03/03
(print) Barbara Smith
(title) Remedial Project Manager

Supervisor (signature) _____ /s/ _____ Date 04/03/03
(print) Robert E. Greaves
(title) Chief, General Operations Branch
(EPA Region or State) EPA - Region 3

Locations where References may be found:

1. *Site Investigation Report of the GE Railcar Repair Services Facility, Elkton, MD*, August 16, 2002 (RSA). Copies are located at the EPA-Region III Philadelphia, PA office.
2. *Surface Water and Ground Water at Triumph Industrial Park, Vol.1*, August 1998 (MDE). Copies are located at EPA-Region III Phila., PA. and MDE offices in Baltimore, MD.
3. *Environmental Indicator Inspection Report for GE Railcar Repair Services*, May 31, 2000 (EPA). Copies are located at EPA-Region III Phila., PA.
4. Various documents regarding closure of waste units at the site, conducted under MDE authority. Copies are located at EPA-Region III Phila., PA. and MDE Baltimore, MD.

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.