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: **Electro Therm**
Facility Address: Route 404 West Denton, MD 21629
Facility EPA ID #: MDD043375757

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

The former Electro-Therm facility is a 13.7 acre industrial property situated between Route 404 and Meetinghouse Road in Denton, Maryland. Historical land use in the period prior to 1988 included the manufacture of electronic devices by Electro-Therm Inc. A pump and treat system was installed in 1988 for remediation of Volatile Organic Compounds (VOCs), primarily 1,1,1-trichloroethane, tetrachloroethylene (PCE) and trichloroethene, present in shallow groundwater and is still operating.

References Include:
Membrane Interface Probe Investigation Former electro Therm Facility Denton, MD May 2010
March 2011 Monitoring Well Sampling Former Electro-Therm Facility Denton, Maryland
Final Report - Results of Indoor Air Sampling November 2012

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 that 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)?

	Yes	No	?	Rationale / Key Contaminants
Groundwater	X			Groundwater monitoring at the site show concentrations of PCE, 1,1,1-trichloroethene, and 1,1-dichloroethene above MCLs.
Air (indoors)[2]	X			Indoor air sampling showed no contamination above EPA Risk Based Concentrations but did show PCE in concentrations that need institutional controls.
Surface Soil (e.g., <2 ft)		X		Soil sampling showed no contamination above EPA Risk Based Concentrations.
Surface Water		X		Releases that occurred were not known to reach or affect surface water.
Sediment		X		Releases that occurred, respectively, were not known to reach or affect sediment.
Subsurf. Soil (e.g., >2 ft)		X		Soil sampling showed no contamination above EPA Risk Based Concentrations.
Air (outdoors)		X		No known releases or issues outdoor.

☐ 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):
In 2011 target analytes whose concentrations in groundwater from monitoring wells exceeded MCLs include PCE, 1,1,1-trichloroethene, and 1,1-dichloroethene. PCE groundwater values in three wells were 28, 38 and 66 ug/l. 1,1,1-trichloroethene was detected in one well at 220 ug/l. 1,1-dichloroethene was detected in two wells at 25 and 28 ug/l. The three wells with contaminants in groundwater were adjacent to the building. PCE was detected in each of the four indoor air samples at concentrations ranging from 6.0 to 8.3 ug/m3 taken during November 2012.

References Include:
Membrane Interface Probe Investigation, Former Electro Therm Facility Denton, MD May 2010
March 2011 Monitoring Well Sampling, Former Electro-Therm Facility Denton, Maryland
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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)

"Contaminated" Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food[3]
Groundwater							
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.

☒ 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 building is not occupied and construction is not planned. The groundwater treatment system has been running since 1988. Ground water monitoring has shown the contaminant plume has been receding. The downgradient wells from the contaminant plume on the property line are not detecting any contaminants. No off-site groundwater supplies are threatened. Groundwater is not used at the facility. Air monitoring results showed contaminants below EPA risk based limits. Soil sampling showed no contamination above EPA Risk Based Concentrations.

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[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)?

☐ 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):

[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 (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 Electro Therm Facility EPA ID. #MDD043375757 located at Route 404, Denton Md. Specifically, this determination indicates that the migration of "contaminated" groundwater is 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.

The building is not occupied and construction is not planned. The groundwater treatment system has been running since 1988. Ground water monitoring has shown the contaminant plume has been receding. The downgradient wells from the contaminant plume on the property line are not detecting any contaminants. No off-site groundwater supplies are threatened. Groundwater is not used at the facility. Air monitoring results showed contaminants below EPA risk based limits. Soil sampling showed no contamination above EPA Risk Based Concentrations.

Completed by (signature) -s- Date 5/13/13
(print) Leonard E. Hotham
(title) Project Manager

Supervisor (signature) -s- Date 5/13/13
(print) Luis Pizarro
(title) Associate Director
(EPA Region or State) Region 3

Locations where References may be found:

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