

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)
Current Human Exposures Under Control

Facility Name: Tyco Electronics Corporation
Facility Address: 1590 Kauffman Road, Landisville, Pennsylvania 17538
Facility EPA ID #: PAD980554778

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	_____	Constituent concentrations do not exceed EPA MCLs
Air (indoors) ²	_____	X	_____	VOCs concs. in subsurface and groundwater are negligible
Surface Soil (e.g., <2 ft)	_____	X	_____	Constituent levels do not exceed residential standards.
Surface Water	_____	X	_____	No discharge to nearby surface water body
Sediment	_____	X	_____	No discharge to nearby sediment areas
Subsurf. Soil (e.g., >2 ft)	_____	X	_____	Constituent levels do not exceed residential standards
Air (outdoors)	_____	X	_____	Facility is operating under an approved state permit

 X 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):

The Tyco Electronic Corporation (Tyco) facility encompasses approximately 7.5 acres and is located within an area that is primarily rural/residential and farmland with some light commercial/industrial uses intermixed. The Facility mainly consists of a 64,000 square foot manufacturing building and a 17,000 cubic foot retention pond that receives surface water runoff via underground piping from storm sewers located throughout the property.

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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Tyco manufactures electronic and electrical connection devices for consumers and the automotive industry. Processes conducted at the Facility include stamping of copper and copper alloys into terminals and connectors, brazing a portion of the connectors, heat treating parts and electroplating the surface of the connectors and terminals with nickel, tin, tin-lead, copper, or gold. Processes also include machining, baking, parts assembly, and packaging.

The Facility is classified as a large quantity generator (LQG) of hazardous wastes. Wastes currently generated from the Facility's operations consist of primarily spent non-halogenated solvents and wastes produced from the electroplating process. Spent non-halogenated solvents, electroplating sludges and other manufacturing wastes are sent offsite for disposal. Wastewaters from the electroplating and any miscellaneous spills are directed to the onsite wastewater treatment system (WWTS) for treatment. Treated water is discharged to the Lancaster Area Sewer Authority (LASA) Publicly Owned Treatment Works (POTW). The remaining filtered sludges from the wastewater treatment are disposed offsite at permitted facilities.

Groundwater:

Initially, low levels of tetrachloroethene (PCE) and 1,2-dichloroethane (1,2-DCA) were detected above the EPA Maximum Contaminant Levels (MCLs), a level EPA determined to be protective for human health, in one of the monitoring wells. The initial levels detected for PCE and 1,2-DCA were 16 ug/L and 6 ug/L, respectively. Subsequent groundwater sample results for PCE and 1,2-DCA were non-detects or below MCLs and confirmed that these constituents do not pose a concern in groundwater.

No other VOCs were detected in groundwater. Similarly, no SVOCs, heavy metals, cyanide, and total phenols were detected in groundwater. There have been no releases from the facility that would warrant a site-wide environmental investigation (Environmental Indicator Inspection Report March 2012, Baseline Environmental Site Assessment Report August 1995, Water Sampling Results August 2011)

Surface and Subsurface Soil:

The soil underlying the site is the Hagerstown series soil (Hc), a deep, well-drained and nearly level to sloping silty clay loam. Geotechnical sampling conducted at the facility indicates that the soil underlying the facility consists of approximately one foot of topsoil, eight to 21 feet of stiff silty clay, two to five feet of highly weathered dolomite, followed by competent dolomite bedrock. The majority of the property is grass-covered with the exception of the 64,000 square foot building and the asphalt paved parking areas and access driveways.

Six subslab corings and several soil boring samples were visually inspected and screened for volatile organic compounds (VOCs) and hydrogen cyanide. Soil borings were installed throughout the site. Several soil samples were procured at various depths for each boring location. Soil samples were analyzed for VOCs, semi-volatile organic compounds (SVOCs), total phenols, cyanide and heavy metals.

The presence of low concentrations of VOCs, SVOCs and heavy metals were detected in the subslab corings and soils on the property. Heavy metal results for the soil and the subslab corings were below EPA risk based residential standards or natural background levels. None of the VOCs, SVOCs, total phenols and cyanide constituents detected in soil or the corings exceeded the Pennsylvania Department of Environmental Protection (PADEP) Residential Direct Contact Medium-Specific Concentrations (MSCs) or EPA allowable risk range for direct contact for residential land use. (Environmental Indicator Inspection Report March 2012, Baseline Environmental Site Assessment Report August 1995)

Surface Water and Sediment: Storm water runoff is collected in storm sewer drains located throughout the property and is directed via underground piping to the storm water retention pond located on the southeastern corner of the property. The water remains in the pond until it is evaporated or percolated. There have been no known or reported releases from the onsite storm water collection system. The nearest surface water body, the unnamed tributary to Swarr Run, is located approximately 0.5 miles southeast of the site. Direct discharges from storm water runoffs to the unnamed tributary are not expected. (Environmental Indicator Inspection Report March 2012)

Outdoor Air:

The facility operates under SOOP 36-03039 for its air emissions sources. There have been no reported releases and no visual evidence of releases. PADEP inspection records confirm that no air quality violations have occurred at the facility. (Environmental Indicator Inspection Report March 2012)

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Indoor Air:

The detected levels of VOCs and SVOCs in the surface and subsurface soil samples do not exceed the PADEP Residential Direct Contact MSCs or the PADEP Residential Soil to Groundwater MSCs for used aquifers. Furthermore, VOCs and SVOCs detected in groundwater are either below the EPA Maximum Contamination Levels (MCLs) or are non-detects. Based on the low levels of constituents detected in subsurface soil and groundwater, the potential of indoor vapor intrusion that may be attributable to VOCs and SVOCs in soil and groundwater is not a potential concern. (Environmental Indicator Inspection Report March 2012)

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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)						
	<u>Residents</u>	<u>Workers</u>	<u>Day-Care</u>	<u>Construction</u>	<u>Trespassers</u>	<u>Recreation</u>	<u>Food³</u>
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):

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 EIEvent 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 Tyco Electronics Corporation facility, EPA ID # PAD980554778, located at 1590 Kaufmann Rd., Landisville, PA 17538 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) *Khai M. Dao* Date 8/26/14

(print) KHAI M. DAO

(title) RCRA PROJECT MANAGER

Supervisor (signature) *Paul Gotthold* Date 8/26/14

(print) PAUL GOTTHOLD

(title) ASSOCIATE DIRECTOR, OFFICE OF PA REMEDIATION

(EPA Region or State) EPA

Locations where References may be found:

USEPA Region III
Land and Chemicals Division
1650 Arch Street
Philadelphia, PA 19103

PADEP
Southcentral Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

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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.