

**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: Trinity Industries, Inc.  
Facility Address: 100 York Street Greenville, PA 16125  
Facility EPA ID #: PAD004342556

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”**<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>
Groundwater	<b>X</b>			Metals exceed MCLs/Tapwater RSLs
Air (indoors) <sup>2</sup>		<b>X</b>		No exceedances of risk-based levels, assuming a non-residential exposure scenario
Surface Soil (e.g., <2 ft)	<b>X</b>			Metals, PCB, PAH exceed Industrial RSLs
Surface Water	<b>X</b>			Lead exceeds CCC AWQC
Sediment	<b>X</b>			Metals, PCBs, PAHs, pesticide exceed R3 BTAG Freshwater Sediment Benchmarks
Subsurf. Soil (e.g., >2 ft)	<b>X</b>			Metals, VOCs, PCB, PAHs, exceed Industrial RSLs
Air (outdoors)		<b>X</b>		

\_\_\_\_\_ 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:**

Groundwater at the former Trinity Industries, Inc. South Plant is contaminated with metals above respective MCLs (or Tapwater RSLs for constituents without an MCL).

<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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Maximum Concentrations of Dissolved Metals Exceedances from July 2018 Quarterly Sampling (ug/L)

Constituent	Maximum Concentration	MCL (or RSL, denoted by *)
Arsenic	13.8	10
Iron	25,800	14,000*
Manganese	2540	430*

**Indoor Air:**

No volatile organic compound (VOC) exceedances were detected in groundwater during quarterly monitoring events from 2017 to 2018, and soil vapor samples collected in 2018 near areas of subsurface soil VOC exceedances showed no exceedances of EPA's Vapor Intrusion Screening Levels; therefore, indoor air is not reasonably expected to be contaminated.

**Surface Soil:**

After soil cleanup activities performed in 2014 and 2015, surface soil in localized areas of the facility remains contaminated with metals, poly-chlorinated biphenyls (PCBs), and polycyclic aromatic hydrocarbons (PAHs) above respective Industrial RSLs.

Post-Cleanup Maximum Concentrations of Surface Soil Exceedances (mg/kg)

Constituent	Maximum Concentration	Industrial Soil RSL
Arsenic	55.4	3
Lead	4840	800
Aroclor 1254	14	0.97
Benzo(a)pyrene	4.26	2.1

**Subsurface Soil:**

After soil cleanup activities performed in 2014 and 2015, subsurface soil in localized areas of the facility remains contaminated with metals, VOCs, PCBs, and PAHs above respective Industrial RSLs.

Post-Cleanup Maximum Concentrations of Subsurface Soil Exceedances (mg/kg)

Constituent	Maximum Concentration	Industrial Soil RSL
Arsenic	75	3
Lead	22,800	800
Mercury	59	46
Aroclor 1254	15	0.97
1,2,4-trimethylbenzene	3210	1800
Ethylbenzene	68	25
Benzo(a)pyrene	12	2.1
Dibenz(a,h)anthracene	2.9	2.1
Naphthalene	329	8.6

**Surface Water and Sediment:**

Surface water sampling results from 2012 showed exceedances of Pennsylvania's Ambient Water Quality Criteria for lead (only Criteria Continuous Concentration was exceeded; maximum concentration of lead in surface water was 15 ug/L). Sediment sampling results from 2007 showed exceedances of Region 3 BTAG's Freshwater Sediment Benchmarks for metals, PAHs, PCBs, and one pesticide; however, most of these exceedances were at estimated concentrations due to the low levels of contaminant detected.

References: Revised Remedial Investigation Report South Plant, prepared by Golder Associates, March 2010.  
Revised Cleanup Plan South Plant Site, prepared by Golder Associates, February 2013.  
Groundwater Status Report, Trinity Industries South Plant, prepared by Golder Associates, June 2019.  
Revised Residual Risk Assessment, Trinity South Plant Site, prepared by Golder Associates, February 2020.

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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 <b>Human Receptors</b> (Under Current Conditions)						
	<u>Residents</u>	<u>Workers</u>	<u>Day-Care</u>	<u>Construction</u>	<u>Trespassers</u>	<u>Recreation</u>	<u>Food<sup>3</sup></u>
Groundwater <del>Air (indoors)</del>	No	No	No	Yes	No	No	No
Soil (surface, e.g., <2 ft.)	No	Yes	No	Yes	Yes	No	No
Surface Water	No	No	No	No	Yes	Yes	Yes
Sediment	No	No	No	No	Yes	Yes	Yes
Soil (subsurface e.g., >2 ft.) <del>Air (outdoors)</del>	No	No	No	Yes	No	No	No

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):**

There are no groundwater users at the facility and modeling/monitoring from 2012 to 2017 demonstrated that Mathay Run acts as a hydraulic barrier to migration of contaminated groundwater further south/downgradient; however, construction workers could potentially be exposed to contaminated groundwater (and contaminated surface/subsurface soil) during intrusive operations. Workers and trespassers (if facility fencing were compromised) could potentially be exposed to surface soil contamination during outside activities. Trespassers, recreators, and aquatic organisms could potentially be exposed to contaminated surface water and sediment in Mathay Run.

Reference: Revised Residual Risk Assessment, Trinity South Plant Site, prepared by Golder Associates, February 2020.

<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)?

  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):**

Any worker exposures to potentially contaminated soil are expected to be infrequent and short in duration since most worker activities are indoors. Construction worker exposures are expected to be controlled through proper protective equipment and work/safety procedures. Trespasser and recreator exposures are not expected to be of sufficient intensity, frequency, and duration to constitute significance, and the low levels of contamination bioavailable to aquatic organisms are not expected to produce adverse impacts. Additionally, quantitative risk estimates for all potential receptors were under EPA’s acceptable risk levels (Target Cancer Risk <10<sup>-6</sup> and Target Hazard Quotient <1).

Reference: Revised Residual Risk Assessment, Trinity South Plant Site, prepared by Golder Associates, February 2020.

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):**

\_\_\_\_\_ 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):

  X   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   Trinity Industries, Inc.   facility, EPA ID #   PAD004342556  , located at   100 York Street Greenville, PA 16125   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)   /Griff E. Miller/   Date   8/14/20    
(print)   Griff Miller    
(title)   Remedial Project Manager  

Supervisor

(signature)   /Paul Gotthold/   Date   8-14-20    
(print)   Paul Gotthold    
(title)   Chief, RCRA Corrective Action Branch 2    
(EPA Region or State)   EPA Region 3  

Locations where References may be found:

USEPA Region III	PADEP
Waste and Chemical Mgmt. Division	Northwest Regional Office
1650 Arch Street	230 Chestnut Street
Philadelphia, PA 19103	Meadville, PA 16335

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.**