

**DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION**

Interim Final Guidance: 2/5/99

**RCRA Corrective Action**

**Environmental Indicator (EI) RCRIS code (CA725)**

**Current Human Exposures Under Control**

Today's Date: 2/29/00

Facility Name: Acme Rivet & Machine  
Facility Address: 400 Middle Street, Bristol, CT  
Facility EPA ID #: CTD001701168

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	___	<u>X</u>	___	_____
Air (indoors) <sup>2</sup>	___	<u>X</u>	___	_____
Surface Soil (e.g., <2 ft)	___	<u>X</u>	___	_____
Surface Water	___	<u>X</u>	___	_____
Sediment	___	<u>X</u>	___	_____
Subsurf. Soil (e.g., >2 ft)	___	<u>X</u>	___	_____
Air (outdoors)	___	<u>X</u>	___	_____

  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):

**ADMINISTRATIVE INTRODUCTION.** Acme Rivet & Machine was a subsidiary of Elco Industries which sold the Acme Rivet & Machine facility to D’Amato Construction Corp. Apparently, Textron subsequently purchased Acme Rivet/Elco and must have assumed the liability of closure and remediation work in the sale agreement because as the information below elucidates, Textron completed very comprehensive closure actions at the facility’s RCRA units. These closure actions resulted in clean closure approval from the State following a relatively brief period of post closure groundwater monitoring. In addition, apparently, D’Amato conducted certain UST excavations which appear to have been comprehensively executed. These actions, including facility decommissioning activities conducted by Elco/Textron, appear to have addressed the majority of outstanding RCRA Corrective Action issues associated with the site.

However, two issues required resolution: (a) the Environmental Indicator Evaluation completed and submitted by Textron (dated Oct. 27, 1999) and historical information suggested that a 10,000 gallon Process Oil UST (AOC 6) may still exist at the site; and (b) the available information in a September 28, 1993 RCRA Facility Assessment (RFA) indicated the presence of an AOC 10 which essentially described D’Amato’s construction equipment area. Because the UST tank implicated the UST program, to appropriately address this issue, EPA’s RCRA Facility Manager deferred this issue to EPA’s UST program which subsequently coordinated with the State resulting in a site inspection at the facility in January of 2000. Based on conversation with Jonathan Walker of EPA’s UST program, this site inspection indicated the facility was in good condition although certain questions remain associated with notification of the existence of this AOC 6 tank. With respect to AOC 10, EPA’s RCRA Facility Manager conducted a site visit on February 24, 2000. The results of this site visit indicated that there were no 55-gallon drums stored at the construction yard and the yard was in apparently good and clean shape.

The AOC 10 issue suggests the potential difficulties associated with the transfer of property - in this case, the transfer of a former RCRA Subchapter III hazardous waste TSD to a commercial interest for conversion to commercial leasehold space - and the prudence in developing a final remedy for a site where the responsible

party has long ago vacated the premises leaving the site, including monitoring wells, in an unresolved administrative state. In this case, and as will be substantiated below, the former Acme Rivet facility should be considered Stabilized and a RCRA Corrective Action final remedy decision process should be initiated with deferral of pending UST matters to appropriate state and federal programs.

Much of the information in this evaluation was retained from Textron's October 27, 1999 EI Evaluation. Textron's approach for completing the EI was based, in part, on EPA's August 17, 1999 letter to Textron which attempted to summarize resolved and pending matters associated with the site.

**BACKGROUND.** Ten (10) areas of concern (AOCs) were identified at the site by the U.S. Environmental Protection Agency contractor, TRC Environmental Corporation. TRC reported their findings in their report entitled, Final RCRA Facility Assessment, Former Acme Rivet & Machine Corporation, dated 28 September 1993. In a letter dated 17 August 1999, EPA reported that the work performed to date at AOCs 3, 4, 5, and 8 was comprehensive and met their clean closure requirements. Further qualification of AOCs 1, 2, 6, 7, 9 and 10 was requested. Therefore, only AOCs 1, 2, 6, 7, 9 and 10 are addressed below.

The groundwater beneath the site and the surrounding industrial area is classified as GB by the Connecticut Department of Environmental Protection (CTDEP). The GB designation indicates that the site's groundwater is within a highly urbanized area of intense industrial activity where a public water supply is available. The GB designation indicates that the CTDEP recognizes that the groundwater in the area of the site may not be suitable for direct human consumption due to waste discharges, spills or leaks of chemicals from industries in the surrounding area.

Groundwater monitoring has been extensive at the site. Six rounds of groundwater samples collected from eight wells at the site, from November 1989 until March 1993, do not show final testing results in excess of EPA's Maximum Contaminant Levels (MCLs). Below is a summary of the rationale used in determining that the site soil and groundwater have not been contaminated above appropriately protective risk based levels.

### **AOC BY AOC ANALYSIS.**

#### **AOC No. 1 - Former Plating and Degreasing Area**

The former plating and degreasing area is where zinc plating, tumbling, cleaning, and stripping were historically performed. The floors of the area are concrete and equipped with floor drains. When the facility was operated by Acme Rivet & Machine the floor drains were designed to direct any liquids that may have spilled to the floor, to a wastewater treatment system. Since that time, the waste water treatment plant has been properly closed. An abandoned sump covered with gravel is located in the former degreasing area. Reportedly the sump was also connected to the former wastewater treatment system.

Chemical testing results from a soil sample collected by HRP from the soils under the abandoned sump located in the former degreasing area, analyzed for chlorinated solvents, did not show the presence of any contaminants above the Connecticut Remediation Standard Regulation (RSR) criteria. TRC also reported in 1993 that there were no records or readily observable evidence that a release had occurred at AOC No. 1. Furthermore, TRC reported that screening results from using a Thermo Electron Instruments, Inc. organic volatile monitor (OVM) did not show sustained readings above background at AOC No. 1.

Additionally, chemical testing results from a groundwater monitoring well located approximately 40 ft. downgradient from AOC No. 1 did not show the presence of volatile organic compounds (VOCs) using EPA Method 8010 and 8020, at levels above the applicable industrial RSR criteria.

The available data consisted of a historical records review, visual observations of the AOC, soil and groundwater sampling and chemical testing results. None of this data indicate that the groundwater, soil, surface water, sediments, or air have been contaminated above appropriately protective risk-based levels (i.e., the Connecticut RSRs).

### AOC No. 2 - Former Wastewater Treatment System Area

The former wastewater treatment system was used to pretreat wastewaters generated from the manufacturing and plating processes. Reportedly, the wastewater treatment system consisted of the following: a cyanide destruction unit, a chrome reduction unit, a neutralization unit, a flocculation unit, a former settling tank, a batch treatment tank, and chemical mix/feed tanks. The wastewater treatment system was dismantled some time prior to the 1993 TRC assessment.

TRC reported that based upon their 1993 assessment that there were no records or readily observable evidence that a release had occurred at AOC No. 2. TRC reported that screening results from using a [OVM] did not show sustained readings above background at AOC No. 2. Furthermore, chemical testing results from four wells located 90 to 120 ft. downgradient from AOC No. 2, did not show the presence of any contaminants above the [RSRs].

The available data consisted of a historical records review, visual observations of the AOC, and groundwater sampling and chemical testing results. None of the available data indicate that the groundwater, soil, surface water, sediments, or air have been contaminated above appropriately protective risk-based levels (i.e., the Connecticut RSRs).

### AOC No. 6 - Existing 10,000 gal. Process Oil Underground Storage Tank (UST)

AOC No. 6 consists of a 10,000 gal. underground storage tank (UST), reportedly used to store process oil.

In 1986 HRP Associates, Inc. monitored the excavation of a test pit along the western side of the 10,000 gal. UST, exposing the entire side of the tank. The test pit was extended to a depth of 11 ft. HRP reported that the test pit was clean and without odor, and that the tank was in good condition. Two soil samples were collected, one from the northern and southern ends of the tank, and submitted to a chemical testing laboratory for analysis for halogenated volatile organics by EPA Method 8010 and aromatic volatile organics by EPA Method 8020. HRP reported that the VOCs tested for were not detected by the laboratory.

TRC reported that based upon their 1993 assessment that there were no records or readily observable evidence that a release had occurred at the AOC No 6. Furthermore, TRC reported that screening results using [an OVM] did not show sustained readings above background at AOC No. 6.

The available data consisted of a historical records review, visual observations of the AOC, and soil sampling and chemical testing results. None of this data indicated that the groundwater, soil, surface water, sediments, or air have been contaminated above appropriately protective risk-based levels (i.e., the Connecticut RSRs).

**Status Update.** As indicated above, because the UST tank implicated the UST program, to appropriately address this issue, EPA deferred this issue to EPA's UST program which subsequently coordinated with the State resulting in a site inspection at the facility in January of 2000. Based on conversation with Jonathan Walker of EPA's UST program, this site inspection indicated the facility was in good condition although certain questions may remain associated with notification of the existence of this AOC 6 tank.

### AOC No. 7 - Three Existing Above Ground Storage Tanks (ASTs)

AOC No. 7 was identified as three 275 gal. ASTs used to store diesel fuel, fuel oil, and kerosene.

TRC reported that based upon their 1993 assessment that there were no records or readily observable evidence that a release had occurred at the AOC No. 7. Furthermore, TRC reported that screening results using [an OVM] did not show sustained readings above background at AOC No. 7.

The available data consisting of a historical records review and visual observations of the AOC does not indicate that the groundwater, soil, surface water, sediments, or air have been contaminated above appropriately protective risk-based levels (i.e., the Connecticut RSRs).

### AOC No. 9 - Stained Surface Area

AOC No. 9 consists of a stained surface area reportedly caused by oil leaked from a dumpster and scrap storage.

In December 1986, HRP collected one soil sample from the stained area and submitted it to a chemical testing laboratory for analysis for halogenated volatile organics by EPA Method 8010 and aromatic volatile organics by EPA Method 8020. None of the volatile organics tested for were detected at levels above the Connecticut RSRs.

The available data consisted of a historical records review, visual observations of the AOC, soil sampling and chemical testing results. None of this data indicates that the groundwater, soil, surface water, sediments, or air have been contaminated above appropriately protective risk-based levels (i.e., the Connecticut RSRs).

### AOC No. 10 - Construction Equipment Area

The activities described by TRC at AOC No. 10 did not occur until after ownership of the property had been transferred from Acme Rivet & Machine Corporation to D'Amato Construction in December of 1986. Therefore, this AOC need not be addressed by Acme Rivet & Machine Corporation. **Status Update. A visual review of this AOC performed during a February 24, 2000 site visit revealed no detectable traces of storage drums or oil staining.**

#### 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)

<u>“Contaminated” Media</u>	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food <sup>9</sup>
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:

“n” or blank =no; y=yes

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):

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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 **former Acme Rivet & Machine** facility, EPA ID #CTD001701168, located at **400 Middle St., Bristol, CT** 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) <u>Raphael Cody</u>	Original Date: 10/27/99 Revised: 2/29/00
	(print) <u>Raphael Cody</u>	
	(title) <u>RCRA Facility Manager</u>	
Supervisor	(signature) <u>Matt Hoagland</u>	Date <u>3/17/00</u>
	(print) <u>Matt Hoagland</u>	
	(title) <u>Chief, RCRA Corrective Action</u> (EPA Region or State) <u>Region I</u>	

Locations where References may be found:

See facility files \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

STATE Contact telephone and e-mail numbers

(name) Craig Park \_\_\_\_\_  
(phone #) \_\_\_\_\_  
(e-mail) \_\_\_\_\_

**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.**