

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99



RDMS DocID 00100117

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA33725)
Current Human Exposures Under Control

Facility Name: Southington Business Park / SOUTHWINGTON MANUFACTURING
Facility Address: 87 Aircraft Road, Southington, CT 06489
Facility EPA ID #: CTD001149277

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?

- X 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-

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FACILITY Southington Manufacturing fac
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FILE LOC. R-13
OTHER

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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).

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>Rationale / Key Contaminants</u>
Groundwater	Y		<b>Please See Description Below</b>
Air (indoors) <sup>2</sup>		X	
Surface Soil (<2 ft)		X	
Surface Water		X	
Sediment		X	
Subsurface. Soil (>2 ft)		X	
Air (outdoors)		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.

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.

<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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\_\_\_\_\_ If unknown (for any media) - skip to #6 and enter "IN" status code.

**Rationale and Reference(s):**

Background

Pratt & Whitney manufactured aircraft engines at the site until 1995. In September 2001, the facility was purchased and transferred to Cherokee Southington, LLC (Cherokee) in accordance with the Connecticut Department of Environmental Protection (CT DEP) Property Transfer Act. At the time of the property transfer, the environmental condition of the subject property was documented by completing the CT DEP Environmental Conditions Assessment Form (ECAAF).

**2. Rationale and References (continued from Page 2)**

Portions of the 52-acre facility are currently being leased for warehouse storage and distribution lease space.

**Groundwater.** The primary area of concern related to the groundwater remains beneath the former manufacturing building. The primary groundwater contaminants exceeding CT DEP groundwater protection criteria (GPC) regulatory standards are cis 1,2-dichloroethylene (cis 1,2-DCE) and trichloroethylene (TCE). The most recent analytical data (November 2002) indicated concentrations of these constituents ranged from non-detect (ND) to 34,791 micrograms per liter ( $\mu\text{g/l}$ ) and 1.0  $\mu\text{g/l}$  to 46,676  $\mu\text{g/l}$ , respectively. The highest concentrations of these constituents are present in the intermediate water zone. These contaminants are believed to have originated from metal finishing operations within the building. In November 2002 SESTECH installed four clusters of 12 additional monitoring wells in the shallow, intermediate, and, deep water bearing zones within the 814,000 sq. ft. main building. The well clusters were installed at locations radiating approximately 150-200 feet from the MW-105 series well cluster. MW-105 has been shown to be the approximate center of the impacted ground water. The contaminant plume within the site building has been delineated both horizontally and vertically. Groundwater monitoring data show that groundwater contamination is concentrated, stable, and confined primarily within the intermediate water-bearing zone within the footprint of the main building.

The most up to date depiction of the current groundwater site conditions may be found in Appendix C "Groundwater Monitoring Well Installation Report " of the Draft Site Closure Report for the Former Pratt and Whitney Manufacturing Facility dated March 25, 2003.

**Soil (surface/subsurface).** Extensive work has been completed at the site. The work includes soil and groundwater sampling and analysis at areas of concern where the potential for impact due to the manufacturing operations and storage of hazardous and non-hazardous wastes were identified. Historical investigations have identified 133 of these environmental units (EUs). Each unit has been investigated for the presence or absence of impacts to the exposed media by

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VOCs, SVOCs, metals and inorganics, TPH, and PCBs. The primary VOCs detected at the facility were TCE, and cis 1,2-DCE. A total of 1,300 soil and 1,200 groundwater samples have been collected and analyzed at this site. Of the 133 EUs, only 4 remain open: the Former Oil House; Suspended Waste Storage Tanks, Underground Waste Oil Storage Tank and the Chemical / Hazardous Waste Storage Tank.

Additional field data were collected in November 2002. The revised RCRA Part 2 and 3 Closure Report was submitted in March 2003 to the CT DEP. The CT DEP issued a letter on July 2, 2003, regarding a few minor outstanding items of the RCRA Closure Report that needed to be addressed prior to going to public notice for RCRA Closure.

*See Insert  
for question  
2*  
**Air (indoors and/or outdoors).** Indoor air quality issues were evaluated as part of the RCRA Part 2 and 3 closure for the facility. Indoor air pollutant criteria were not exceeded. Outdoor air pollutant issues are not a concern at the facility as the facility does not produce any air emissions from the warehousing of dry bulk materials.

*cjc 9/17/03*  
**References:**

- *Site Closure Plan For Former Pratt & Whitney Southington Manufacturing Facility, SESTECH Environmental, July 2002*
  - *Revised RCRA Closure Plan, Former Pratt & Whitney Southington Manufacturing Facility, SESTECH Environmental March 2003.*
  - *Work Plan, Implementation of Part 1 Site Closure Plan Deficiencies, SESTECH Environmental, November 4, 2002*
  - *Limited Phase I/Phase II Investigation Report, Southing Manufacturing Facility, Loureiro Engineering Associates, January 1998.*
  - *Soil and Groundwater Overview, Loureiro Engineering Associates, March 2000.*
  - *Draft Site Closure Report for the Former Pratt & Whitney Facility, March 2003.*
  - *RCRA Closure Plan for the Former Pratt & Whitney Facility, March 2003.*
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?

Insert for Question 2:

**Indoor Air:** Groundwater sampling data have been compared to the CTDEP Remediation Standard Regulations Industrial/Commercial Volatilization Criteria (I/C VC). Appendix C of the Groundwater Monitoring Well Installation Report shows concentrations in excess of the CTDEP I/C VC Proposed revisions for trichloroethylene (TCE) and cis-1,2,-dichloroethylene (cis-1,2-DCE) at SES-MW-105, and TCE at SES-MW-107 and SES-MW-109. In comparison to the existing standards there is an exceedance of the same criteria for TCE in SES-MW-105 and SES-MW-109. In addition, similar exceedances are also noted in Table 2 of the March 2002 Groundwater and Site Investigation report. The area where the exceedances are noted are beneath the facility building.

Although no indoor air sampling has taken place, indoor air concentrations of TCE and cis-1,2,-DCE are not reasonably expected to be present at levels above the OSHA Permissible Exposure Limits (PELs). Based on the EPA Vapor Intrusion and RCRA Corrective Action Environmental Indicator Fact Sheet (Draft 6/17/03), OSHA PELs are appropriate standards for evaluating the industrial/commercial worker exposure for the Environmental Indicators Determinations.

CJC  
9/17/03

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**Summary Exposure Pathway Evaluation Table**

Potential **Human Receptors** (Under Current Conditions)

<b><u>"Contaminated Media"</u></b>	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food <sup>3</sup>
Groundwater	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>
Air (indoors)	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>
Soil (surface, 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>
Surface Water	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	No	<u>No</u>
Sediment	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</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>	No	No
Air (outdoors)	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>	<u>No</u>

Instructions for Summary Exposure Pathway Evaluation Table:

*See Insert  
for question 3  
CP 9/17/03*

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.

**X** 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.

<sup>3</sup> Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

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\_\_\_\_\_ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code Rationale and Reference(s):

**Rationale:**

Groundwater is the only "contaminated media" above CT DEP RSR standards. However, groundwater is not used at the site for drinking water or industrial purposes. Furthermore, in the RCRA Part 2 and 3-closure report issued in March 2003, the plan prohibits the use of groundwater for the entire facility. This will be reflected in an Environmental Land Use Restriction (ELUR) to be filed for the property and recorded with the Town of Southington Land Records. As a result, a deed restriction will be placed upon the property. See question #2 Rational Reference discussion for each environmental media.

- 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 cannot 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

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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.

Insert for question 3:

There is no current or anticipated excavation activities planned at the site; therefore, the potential for construction worker exposure to contaminated groundwater and/or vapors does not exist. If in the future trenching/excavating activities are needed within the extent of the volatile organic plume, EPA expects that the appropriate precautions would be taken to ensure that construction workers are not exposed to contaminated groundwater and/or vapors that may volatilize from contaminated groundwater (i.e., use appropriately training environmental contractors to complete the work and/or to evaluate the potential for exposure prior to implementing the work). If the appropriate precautions are not taken, this EI determination will need to be revisited to evaluate if a change to an "IN" or a "NO" determination would be appropriate.

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**Rationale and Reference(s):**

See Rationale to Question 2 for discussion of each environmental media. In short groundwater is the only "contaminated media" and the exposure pathways are incomplete.

5. Can the "significant" exposures (identified in #4) be shown to be within acceptable limits? N/A\*

\_\_\_\_\_ 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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\*Not Applicable - There does not exist any "significant exposures" that are not acceptable.

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 **Southington Business Park** facility, EPA ID # **CTD001149277**, located at **87 Aircraft Rd., Southington, CT, 06489** under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

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\_\_\_ NO - "Current Human Exposures" are NOT "Under Control."

\_\_\_ IN - More information is needed to make a determination.

Completed by (signature) Carolyn J. Casey Date 9/17/03  
(print) Carolyn J. Casey  
(title) RCRA Facility Manager

Supervisor (signature) Matthew R. Hoagland Date 9/22/03  
(print) Matthew R. Hoagland  
(title) Section Chief  
(EPA Region or State) Region 1

Locations where References may be found:

**Records may be found in the EPA RCRA Records Center and the Connecticut Department of Environmental Protection file room.**

Contact telephone and e-mail numbers

(name) Kim Burns, Remediation Program Manager-SESTECH Environmental  
(phone #) 832-295-0010  
(e-mail) kburns@sestech-env.com

**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.**