

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99



RDMS DocID 00100119

RCRA Corrective Action  
Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

RCRA RECORDS CENTER Paul  
FACILITY Coltsville Heritage  
I.D. NO. CTD001157106  
FILE LOC. R-13  
OTHER \_\_\_\_\_

Facility Name: Colt Gateway (Formerly Colt Manufacturing)  
Facility Address: 140 Huyshope Avenue  
Facility EPA ID #: CTD001157106

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>	___	___	<u>TCE, VC, CN, and Zn above CT RSRs</u>
Air (indoors) <sup>2</sup>	<u>X</u>	___	___	<u>Contaminants (vinyl chloride) in GW and soil gas exceed CT RSR residential criteria</u>
Surface Soil (e.g., <2 ft)	<u>X</u>	___	___	<u>Petroleum derived contaminants, selected heavy metals (As, Cd, Pb, Cu) and PCBs are present in soils above CT RSRs</u>
Surface Water	___	<u>X</u>	___	<u>No surface water bodies are expected to be impacted</u>
Sediment	___	<u>X</u>	___	<u>No impact on sediments is expected</u>
Subsurf. Soil (e.g., >2 ft)	<u>X</u>	___	___	<u>Metals, PCBs, and Petroleum products present in soils above CT RSRs</u>
Air (outdoors)	___	<u>X</u>	___	<u>Medium does not seem to be impacted</u>

\_\_\_ 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): Recent (2003) groundwater data indicates that levels of heavy metals, cyanide, and some chlorinated solvents remain above CT RSRs levels. With regards to air (indoors), an exceedance of groundwater and soil gas residential volatilization criteria has been documented for one interior location in the southern portion of the East Armory (Building 1), near interior well MW-8 (see HRP's April 15, 2003 approved RAP). Currently, the first floor of Building 1 is vacant and unoccupied. During recent (2003) remedial activities, which are on-going, a significant VOC source area was identified in an up-gradient position with respect to MW-8, to the southwest of Building 1. This vadose-zone source of VOC contaminated soil was fully remediated to the water table. If post-remediation groundwater monitoring and soil gas sampling continue to show elevated levels of VOCs beneath Building 1, then additional remedial steps will be implemented which may include the installation of a soil vapor extraction (SVE) system, pursuant to the approved RAP. Note that outdoor air monitoring is on-going during remedial activities pursuant to the site specific HASP that is being implemented at the Colt Gateway site. Although contaminants are still present in surface and subsurface soils, proposed remedial work should render those media at or below acceptable levels pursuant to the CT RSRs.

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)

<b>*Contaminated* Media</b>	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food <sup>3</sup>
Groundwater	N	N	N	Y			N
Air (indoors)	Y	Y	N				
Soil (surface, e.g., <2 ft)	N	N	N	Y	Y	N	N
Surface Water							
Sediment							
Soil (subsurface e.g., >2 ft)				Y			N
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).
- 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): All <2’ soil exceedances are fenced off from residents, limited access construction areas, paved over, and/or remediated. Although minimal, the possibility exists that construction workers and/or trespassers may be exposed to contaminated soil and groundwater, especially during remedial work. This likelihood may increase if upper levels of the aquifer are reached. However, the implementation of a site-specific health and safety plan during remedial activities will ensure that workers are protected against exposures. Also, the presence of both site perimeter and temporary construction fencing, the use of yellow caution tape, and the presence of warning signs at the Colt Gateway site should collectively act as a deterrent to trespassers. There are no known active water supply wells within a 1-mile radius of the site and the area is served by a municipal water supply. A ground water and soil gas volatilization exceedance is documented for one location in Building 1, the first floor of which is currently unoccupied. The apparent source for this VOC contamination has been identified and remediated. If necessary, further remediation will be implemented for this portion of the building to protect future building occupants, pursuant to the approved Remedial Action Plan (RAP). Soils are expected to be remediated once the remedial work is completed at the site. The use of institutional controls and/or a protective, engineered cap will render both surface and subsurface soils with contaminant levels in compliance with CT RSRs.

<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)?

\_\_\_\_\_ 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."

  X   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): Heavy metals, PCBs, and petroleum derived products exceeding CT RSRs might pose an unacceptable risk if they are not remediated. A combination of contaminants above protective levels and increased exposure frequency could increase the likelihood of such a scenario. However, such a condition is not expected to occur due to clean-up work that has been performed since last EI evaluation was done (9/21/99) and which is on-going at the site pursuant to an approved Remedial Action Plan (RAP). Levels of VOCs above volatilization criteria may intensify this scenario, but again, remedial work has abated most of this threat and continues to do so. See notes under 3. Complete Pathways above.

<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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5 Can the "significant" exposures (identified in #4) be shown to be within **acceptable** limits?

  X   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): The site is currently being remediated with an anticipated completion date in the Spring of 2004. Site workers are being protected through the implementation of a site-specific health and safety plan (HASP), which includes provisions for the monitoring of total VOCs and total dust. After the approved RAP is implemented, the only short-term exposures would be anticipated due to unforeseen circumstances, or routine environmental monitoring. Because an Environmental Land Use Restriction (ELUR) will be implemented for the site pursuant to the RAP, notification to CT DEP will be necessary prior to contacting contaminated soil on the site, and only trained workers who are using appropriate protective clothing will be allowed to contact such soils. For on-going ground water monitoring, only trained environmental workers will be allowed to perform this work. Documents which have information relative to this issue are the January 2003 environmental condition assessment (ECAAF) for the site, which was prepared by HRP on behalf of Colt Gateway and submitted to CT DEP in support of a property transfer; and HRP's April 15, 2003 Remedial Action Plan Addendum that was approved by CT DEP on July 29, 2003. A Remedial Action Report (RAR) that documents all remedial activities at the site will be prepared by HRP and submitted to CT DEP at the completion of the project.

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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 Colt Mfg facility, EPA ID #CTD001157106, located at 140 Huyshope Avenue, Hartford, 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) *J.A. Perez* Date 10/14/2003  
(print) JUAN A. PEREZ  
(title) Environmental Scientist

Supervisor (signature) *Matthew R. Highland* Date 10/22/03  
(print) Matthew R. Highland  
(title) Section Chief  
(EPA Region or State) Reg I

Locations where References may be found:

HRP Offices, Plainville, CT  
EPA New England Office, Boston, MA  
CT DEP Offices, Hartford, CT

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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.**