

**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:** SD Warren Co/SAPPI  
**Facility Address:** 89 Cumberland St. Westbrook, ME  
**Facility EPA ID #:** MED042141408

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)?

|                               | Yes          | No           |
|-------------------------------|--------------|--------------|
| Groundwater                   | <u>  x  </u> | <u>    </u>  |
| Air (indoors) <sup>2</sup>    | <u>    </u>  | <u>  x  </u> |
| Surface Soil (e.g., <2 ft)    | <u>    </u>  | <u>  x  </u> |
| Surface Water                 | <u>    </u>  | <u>  x  </u> |
| Sediment                      | <u>    </u>  | <u>  x  </u> |
| Subsurface Soil (e.g., >2 ft) | <u>    </u>  | <u>  x  </u> |
| Air (outdoors)                | <u>  x  </u> | <u>    </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):

Groundwater has been contaminated with volatile organic compounds at SWMU-5, former hazardous waste storage area, and with arsenic at the SWMU-1 Ponderosa Landfill. Groundwater is not currently used at the site for potable purposes, nor is it expected to be used in the future. Groundwater occurs in shallow silty soils, and is not abundant enough for a reliable supply. Contaminants include 1,1 dichloroethene, toluene, 1,2 dichloroethane, Acetone, Benzene, cis-1,2-dichloroethene, ethyl benzene, xylene, trichloroethene, and Vinyl Chloride in SWMU-5 groundwater. Arsenic is the contaminant in SWMU-1 groundwater. References include:

ABB-ES, 1996. Final RCRA Facility Investigation Report, Prepared for Kimberly Clark Corporation, S.D. Warren mill, Westbrook, Maine September.

ABB-ES, 1998 Supplemental RCRA Facility Investigation Report, SWMU-4 and SWMU-5 Phase III Investigation, Prepared for Kimberly Clark Corporation, S. D. Warren mill, Westbrook, Maine, February.

Air (outdoors) has been demonstrated to be contaminated with Chloroform above risk based concentrations. This exceedance is a moot risk, however, as the mill has closed its pulp mill and no longer bleaches pulp on site. Therefore the source of the chloroform has ceased to exist. References include:

ABB-ES, 1996. Final RCRA Facility Investigation Report, Prepared for Kimberly Clark Corporation, S.D. Warren mill, Westbrook, Maine September.

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.

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>3</sup> |
|-----------------------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------------|
| Groundwater                 | <u>  N  </u>      |
| Air (outdoors)              | <u>  N  </u>      |

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.

  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.

       If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code

Rationale and Reference(s):

Groundwater: Groundwater at the site is not currently used for potable purposes, and is not expected to be used for potable purposes due to the nature of the overburden aquifer. The aquifer is excessively silty, and will not support high yeild withdrawals reasonably expected for potable purposes. A municipal water supply

system is available which serves the mill and surrounding properties. A deed notice is proposed to be executed to delineate the area of contamination such that future land users will be aware of the contamination. Groundwater monitoring is being conducted to ensure that concentrations continue to attenuate over time.

Air Outdoors: Detections of Chloroform were detected in 1996 in excess of Ambient air criteria. The source of the chloroform was from wastewater aeration lagoons from the waste water treatment plant. Chlorine and chlorine dioxide were routinely discharged to the lagoons as a byproduct of the pulp bleaching process. In 1999 the S.D. Warren mill discontinued its bleaching process and shut down that portion of the mill thereby eliminating the source of the chloroform. There will be no additional bleaching operations being conducted on site, therefore the exposure risk from this source has been eliminated.

ABB-ES, 1996. Final RCRA Facility Investigation Report, Prepared for Kimberly Clark Corporation, S.D. Warren mill, Westbrook, Maine September.

ABB-ES, 1998 Supplemental RCRA Facility Investigation Report, SWMU-4 and SWMU-5 Phase III Investigation, Prepared for Kimberly Clark Corporation, S. D. Warren mill, Westbrook, Maine, February.

Meeting notes, Peter J. Blanchard, Maine Dept. Environmental Protection, May 7, 1999. Meeting summary with S.D. Warren and Maine DEP officials discussing closure procedures for the bleach pulping operations at S.D. Warren Westbrook mill.

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





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1. 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 **S.D. Warren** facility, EPA ID # **MED042141408**, located at **89 Cumberland St. Westbrook, Maine** 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) *PJB* for Date 9-20-1999  
(print) Peter J. Blanchard  
(title) Environmental Specialist

Supervisor (signature) *M. Hoagland* Date 9/20/99  
(print) Matthew R. Hoagland  
(title) section chief  
(EPA Region or State) Region I

Locations where References may be found:

Maine Dept. Environmental Protection  
Bureau of Remediation & Waste Management  
Attn. File Room, Reference S.D. Warren/Kimberly Clark/SAPPI Westbrook, Maine  
Augusta, Maine 04333 (207) 287-7843

US EPA Region 1 New England  
1 Congress St. Suite 1100 HBT  
Boston, Massachusetts (617) 918-2000

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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.**