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:	Andritz, Inc.
Facility Address:	35 Sherman Street, Muncy, PA 17756
Facility EPA ID #:	PAD 003 031-903

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 Controls" 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).

2. Are groundwater, soil, surface water, sediments, or air media known or reasonably suspected to be "contaminated"[1] 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	?	Rationale/Key Contaminants
Groundwater		X		See below
Air (indoors)[2]		X		See below
Surface Soil (e.g., <2 ft)		X		See below
Surface Water		X		See below
Sediment		X		See below
Subsurface Soil (e.g., >2 ft)		X		See below
Air (outdoors)		X		See below

X If no (for all media) – skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient support 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):

See following two pages for response to Question #2 (Rationale and Reference(s)).

[1] "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).

[2] 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.

QUESTION #2 - HUMAN EXPOSURES - RATIONALE & REFERENCE(S)

RESPONSE:

Groundwater

During the Act 2 closure process, groundwater was investigated for the facility as a whole. A risk evaluation was performed to establish site-specific groundwater cleanup standards that would meet the goals established by Act 2 (e.g., incremental lifetime cancer risk $< 10^{-4} - 10^{-6}$ and hazard quotient <1). The maximum detection in groundwater of each contaminant of concern was found to be below the corresponding site-specific standard, as shown in Table 2-1 from the *Act 2 Final Report* (EnSafe, 3/99), which was approved by PADEP. Since the maximum detections of contaminants of concern do not exceed the approved site-specific standards, it can be concluded that groundwater is not contaminated above applicable standards.

Air (Indoors)

This facility is permitted as a Title V facility and is considered a major volatile organic compound (VOC) source. The air emissions sources emit particulates, sulfur oxides (SOx), and VOCs. The Title V permit imposes protective emissions restrictions and requirements for monitoring, testing, recordkeeping, reporting, and work practices.

Contaminants in soil remaining on site are prevented from being volatilized and inhaled because contaminated soil areas are largely found in locations underneath existing manufacturing buildings and/or overlain by up to 12 feet of uncontaminated soil. (*Act 2 Remedial Investigation Report*, EnSafe, 9/98) Foster Wheeler found no evidence indicating that impacted indoor air existed during the EI site inspection.

Surface Soil (<2 ft.)

During the Act 2 closure process, a risk evaluation was performed to establish site-specific soil cleanup standards that would meet the goals established by Act 2 (e.g., incremental lifetime cancer risk $< 10^{-4} - 10^{-6}$ and hazard quotient <1). The maximum detection in soil of each contaminant of concern was found to be below the corresponding site-specific standard, as shown in Table 2-1 from the *Act 2 Final Report* (EnSafe, 3/99), which was approved by PADEP. Since the maximum detections of contaminants of concern do not exceed the approved site-specific standards, it can be concluded that surface soil is not contaminated above applicable standards.

Surface Water

The facility ground surface slopes west and north toward the West Branch Susquehanna River. Surface water flows to storm sewers that feed into a 24-inch diameter storm sewer line that flows to Outfall #001, located west of Plant 1, which is the discharge point into the West Branch Susquehanna River (Pennsylvania Notice of Intent for Coverage under National Pollution Discharge Elimination System (NPDES) General Permit for Discharges of Storm Water, 11/16/01). The discharge is permitted under NPDES Permit #PAR 114801, which is valid through January 31, 2007. No monitoring data for the discharge is available as the facility elected to conduct an annual facility inspection in lieu of monitoring.

No reportable spills at the facility have occurred within the past three years, and no NPDES inspection violations were noted during the file review. Therefore, there is no indication that there is contamination of site surface water.

Contamination of off-site surface water could occur if contaminants dissolved in facility groundwater migrated to the West Branch Susquehanna River. However, analyses of groundwater samples from monitoring wells MWE-14 and MWE-15, which are located approximately halfway between Andritz and the river, did not indicate the presence of any contaminants of concern (*Act 2 Final Report*, EnSafe, 3/99), so it appears that contamination has not migrated to off-site surface water.

Sediment

No records were located of site-related sediment sampling data. The nearest downgradient body of water is the West Branch Susquehanna River. Contamination of off-site sediments could occur if contaminants dissolved in facility groundwater migrated to the West Branch Susquehanna River. However, analyses of groundwater samples from monitoring wells MWE-14 and MWE-15, which are located approximately halfway between Andritz and the river, did not indicate the presence of any contaminants of concern (*Act 2 Final Report*, EnSafe, 3/99), so it appears that contamination has not migrated to the river and its sediments.

QUESTION #2 - HUMAN EXPOSURES - RATIONALE & REFERENCE(S)

RESPONSE: (CONTINUED)

Subsurface Soil (>2 ft.)

During the Act 2 closure process, a risk evaluation was performed to establish site-specific soil cleanup standards that would meet the goals established by Act 2 (e.g., incremental lifetime cancer risk < 10^{-4} – 10^{-6} and hazard quotient <1). Surface and subsurface soil data were both subjected to the same evaluation against the site-specific soil standards. The maximum detection in subsurface soil of each contaminant of concern was found to be below the corresponding site-specific standard, as shown in Table 2-1 from the *Act 2 Final Report* (EnSafe, 3/99), which was approved by PADEP. Since the maximum detections of contaminants of concern do not exceed the approved site-specific standards, it can be concluded that subsurface soil is not contaminated above applicable standards.

Air (Outdoors)

This facility is permitted as a Title V facility and is considered a major VOC source. The air emissions sources emit particulates, SOx, and VOCs. The Title V permit imposes protective emissions restrictions and requirements for monitoring, testing, recordkeeping, reporting, and work practices. The site is located within a mixed industrial, commercial, residential, and agricultural area.

Foster Wheeler found no evidence indicating that impacted outdoor air existed during the EI site inspection. No records were located of air emissions violations that occurred after 1989.

A scenario in which outdoor air contamination could potentially occur would be if contaminants that remain in facility soil were volatilized. However, this is unlikely given that contaminants of concern remaining at the facility are mainly found in locations underneath existing manufacturing buildings and/or overlain by up to 12 feet of uncontaminated soil. (*Act 2 Remedial Investigation Report*, EnSafe, 9/98)

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)						
"Contaminated Media"	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food[3]
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

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): _____

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

4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"** (i.e., potentially[4] " unacceptable" levels) 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):

[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.

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 a "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 a "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):

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 atach 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 Andritz, Inc. facility, EPA ID PAD 003 031 903 located at 35 Sherman Street, Muncy, PA 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) _____ Date _____

(print) Joe Figured (PADEP)

(title) Facilities Section

Supervisor: (signature) [signature] Date 6-1-11

(print) PAUL GOTTHOLD

(title) ASSOCIATE DIRECTOR, LCD

(EPA Region or State) R3

(note: original signed 5/30/2003) PJG

Locations where References may be found

References have also been appended to the Environmental Indicator Report and can also be found at PADEP's Williamsport Office and USEPA's Region III Office.

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.

Facility Name: Andritz, Inc.
EPA ID #: PAD 003 031 903
Location: 35 Sherman Street, Muncy, PA 17756

CURRENT HUMAN EXPOSURES UNDER CONTROL (CA 725)