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:	**ICI Americas, Inc. (Woodlawn)**
Facility Address:	**1 River Road, Tamaqua, PA 18252**
Facility EPA ID #:	**PAD 00 079 7928**

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-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**			**TCE, TCA**.
Air (indoors) [2]		X		**No buildings on site**.
Surface Soil (e.g., <2 ft)		X		**Post-excavation soil sampling**.
Surface Water		X		**Report on groundwater conditions.**
Sediment		X		**Report on groundwater conditions.**
Subsurf. Soil (e.g., >2 ft)	**X**			**lead, antimony, mercury.**
Air (outdoors)		X		**No surface soil or surface water sources**.

___ 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): The ICI Americas site has several Solid Waste Management Areas (SWMUs) and regulated units, generally found in one area, called the Woodlawn Environmental Management Area. During post-excavation soil sampling in the Woodlawn Environmental Management Area, several heavy metal hotspots were found, the primary contaminants being lead, antimony, and mercury. Additional excavation, down to bedrock in most units, was performed.

Post-excavation testing indicated subsurface contamination at several points is above the lead direct-contact screening value for non-residential land-use, in the Former Open Burn Pit. The areas above the screening numbers have been excavated to bedrock, to remove the soil sources. In addition, several units have tested above the soil-to-groundwater screening values for antimony and mercury; the Former Open Burn Pit, (excavated to bedrock) Former Pit 1, and Former Pit 2. The Cap Reject Pit, a regulated unit not in the Environmental Management Area, also shows levels of mercury above the soil-to-groundwater screening number. All of the SWMUs and regulated units showing elevated levels for contaminants will be undergoing closure or corrective action activities under PADEP and EPA oversight. The closure plans are currently undergoing review by both agencies.

The groundwater has been tested for heavy metals, and none, above MCLs has been found. The heavy metal contamination found in the bedrock is not leaching into groundwater at levels above health-based limits.

Groundwater has been shown to be contaminated with TCE, TCA and daughter products above the appropriate MCLs at wells in the source areas, downgradient, and off-site. The source area wells have shown decreasing levels since the soil sources were removed. The groundwater also shows on-going biodegradation of TCE and TCA. Monitoring of the source area and downgradient wells will continue.

There are 2 off-site wells that are used for potable purposes. One of these shows levels of TCE above MCLs. Both off-site drinking water wells have whole-house carbon filtration units. Frequent monitoring shows that the carbon units are effective; post-filtration TCE levels are below detection limits. Monitoring of the off-site wells will continue.

References: **Post-Excavation Confirmatory Soil Sample Analytical Data Evaluation (9/28/99)**
Report on Groundwater Conditions, Project Woodlawn (1/12/01)
ICI-Resampling Report (5/8/01)

Footnotes:

[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.

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	**Yes**	No	No	No			No
Air (indoors)							
Soil (surface, e.g., <2 ft)							
Surface Water							
Sediment							
Soil (subsurface e.g., >2 ft)				No			No
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): The Woodlawn property is an inactive. There are no workers, and no construction is anticipated. There is no access to the remaining subsurface soil contamination which tests above screening levels. Groundwater is used by 2 wells on a neighboring property. The well water samples have shown contamination to be above the TCE MCL of 5 in only 1 well. Both potable water wells are on carbon filtration systems and test results have shown the post-filtration water to be below detection limits. Monitoring of the off-site wells will continue. Field personnel performing sampling are expected to take appropriate precautions to prevent exposure to contaminated groundwater. Therefore, there is no current exposure to contaminated groundwater.

References: **Post-Excavation Confirmatory Soil Sample Analytical Data Evaluation (9/28/99)**
Project Woodlawn, Groundwater Sampling Results (Reports 1999-2001)
Report on Groundwater Conditions, Project Woodlawn (1/12/01)

[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"**[4] (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 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): Groundwater is used by 2 wells on a neighboring property. The well water samples have shown contamination to be above the TCE MCL of 5 in only 1 well. Both potable water wells have carbon filtration systems and test results have shown the post-filtration water to be below detection limits. Monitoring of the off-site wells will continue.

References: **Post-Excavation Confirmatory Soil Sample Analytical Data Evaluation (9/28/99)**
Project Woodlawn, Groundwater Sampling Results (Reports 1999-2001)
Report on Groundwater Conditions, Project Woodlawn (1/12/01)

[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 "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):_____

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 **ICI Americas, Inc.** facility, EPA ID # **PAD 00 0797928**, located at **1 River Road, Tamaqua, 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 09/26/01
	(print)	Linda A. Matyskiela	
	(title)	Remedial Project Manager (Senior)	
Supervisor	(signature)		Date 10/05/01
	(print)	Paul Gotthold	
	(title)	PA Operations Branch Chief	
	(EPA Region or State)	EPA, Region 3	

Locations where References may be found:
All documents on this Site may be found in the EPA Administrative Record at the EPA Offices

Remedial Investigation Report Walker Twp Property (10/98)
and three supplemental reports (12/98, 2/5/99, 7/30/99)
Post-Excavation Confirmatory Soil Sample Analytical Data Evaluation (9/28/99)
Report on Groundwater Conditions, Project Woodlawn (1/12/01)
Project Woodlawn, Groundwater Sampling Results (Reports 1999-2001)

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.