Documentation of Environmental Indicator Determination
RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)
Current Human Exposures Under Control

Facility Name: **Conewago Contractors, Inc. (former Ross Bicycle Facility)**
Facility Address: **200 Cascade Drive, Allentown, PA**
Facility EPA ID #: **PAD 05 306 1909**

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?

YE 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.

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"[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	**YE**			**TCE, PCE, Cr, Arsenic**
Air (indoors)[2]	___	_NO__		_____
Surface Soil (e.g., <2 ft)	**YE**			**Arsenic**
Surface Water	___	_NO__	___	_____
Sediment	___	_NO__	_	_____
Subsurf. Soil (e.g., >2 ft)	___	_NO__	_	_____
Air (outdoors)	___	_NO__	___	_____

_____ 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.

YE 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): This site is currently being investigated and remediated with the goal of putting the site back into use as a warehouse facility. EPA, Region III and PADEP suspect a small area of contaminated groundwater exists beneath the site, but available evidence suggests that the plume is stable and has not migrated off-site. The most recent sampling occurred on October 16,2001 is presented below:

	trichloroethylene µg/l MCL is 5 µg/l		**1,1-dichloroethene µg/l MCL is 7 µg/l**		**cis-1,2-dichloroethene µg/l MCL is 70 µg/l**		**chromium µg/l MCL is 100 µg/l**		**thallium µg/l MCL is 2 µg/l**	
	F	**S**	**F**	**S**	**F**	**S**	**F**	**S**	**F**	**S**
PW-1	**2001-132/27.6***	**2001-NA/27***	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**
MW-1	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**2001-11.6/11.1**	**ND**
MW-2	**2001 ND/6.67***	**NA/ 9.4 ***	**2001 1.01/ 8.86***	**2001NA/ 8.6***	**ND**	**ND**	**ND**	**ND**	**ND**	ND

MW-3	**2001-ND**	**ND**	**2001-ND**	**ND**	**ND**	**ND**	**2001-ND**	**ND**	**ND**	**ND**
MW4	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**May, 1988-817/ NA***	**ND**
MW-6	**2001-18.3/ 18.9 ***	**2001-19.7/ 2.6 ***	**2001-10.6/9.86 ***	**2001-11.4/11.4***	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**
MW-7	**2001-ND/ 2.27 ***	**2001-ND/2.6 ***	**ND**	**2001-NA/ 0.8***	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**

	aluminum MCL -50-100 µg/l **	**lead MCL - 15 µg/l**	**manganese MCL - 50 µg/l ****	**beryllium MCL - 4 µg/l**
MW-1	**469 / ND**	**ND**	**ND**	**ND**
MW-5	**4410 / ND**	**5.4 / ND**	**21 / ND**	**268 / 287**
MW-8	**220 / ND**	**ND**	**ND**	**ND**
MW-9	**3.570 / ND**	**ND**	**ND**	**ND**
PW	**2.740 / ND**	**ND**	**ND**	**ND**

F-Facility,
S-State of PA, PADEP,
***top of the water column concentration / bottom of the water column concentration**
****** **secondary contaminant standard**
NA- not analyzed
ND-not detected, above laboratory MDL

Results of the groundwater monitoring dated May, 1988, September, 1998 and October, 1998 are presented below:

	trichloroethylene MCL - 5 µg/l	**1,1-dichloroethene MCL - 7 µg/l**	**cis-1,2-dichloroethene MCL - 70 µg/l**	**chromium MCL - 100 µg/l**	**thallium MCL - 2 µg/l**
PW-1	**May, 1988 - 25**	**ND**	**ND**	**ND**	**ND**
M W-4	**May, 1988 - 135**	**ND**	**ND**	**ND**	**ND**
MW-2	**May 1988 - 93 µg/l Sept. 1998 - 7.24 Oct. 1998 - 3.1 µg/l**	**May 1988 - 9 µg/l Sep. 1998 - 10.8 µg/l**	**ND**	**ND**	**MW-3**
MW-3	**Sept.1998 - 45µg/l Oct. 1998 - 28.6 May 1988 - 33 µg/l**	**ND**	**ND**	**Sept.1999 - 420 µg/l Oct.1998 -389 µg/l**	**ND**

b) December 13, 1988 report "Soils and Hydrogeologic Assessment and Selection of a Remedial Alternative with Cost Estimates" for potential buyers indicated contamination with barium - 15000 mg/kg, chromium - 2600 mg/kg, lead - 400 mg/kg, nickel - 3800 mg/kg, zinc - 1000 mg/kg.

c) On October 23,1991 the PADEP received an oil spill complaint. During site investigation 500 drums were discovered, some of them were leaking. Also, approximately 50 drums were stacked on the top of each other in a small storage building. Hazardous substances presented at that time were a) soil - lead - 9800 ppm, chromium - 5,467 ppm.; b) groundwater - trichloroethylene - 135 ppb, 1,1,1,-trichloroethane - 349 ppb, total chromium - 0.917 ppm. The site was referred to EPA, Region III, Superfund Removal Branch on January 22,1992. A CERCLA Action Memorandum was signed by the EPA on March 16, 1992. According to the CERCLA files removal actions at the site were in the main process building and the drum storage building. Estimated cost of CERCLA removal operation was $ 1.5 mil. CERCLA did not remove soils from the one acre metallic Sludge Field. The cleanup was focused on elimination any immediate threat to human health and the environment. Approximately 350 people were living within one-half mile to the east of the site at that time.

d) "Sampling Assessments and Descriptions" dated March 1, 1993 was prepared by Weston, EPA contractor. As a result of the investigation removal actions have taken place. Lead concentrations in soil was from 9800 ppm to 28 ppm on depth 6 to 0 inches. US EPA Action Level for industrial Soils was 1000 ppm. Soils contaminated with heavy metals above acceptable levels were excavated from several areas at the facility and transported off-site for disposal. There were three historical areas soil contamination concern: the Main Process Building, including the Loading Dock Area, the former onsite Sludge Field and the former Treatment Plant Area. No further soil investigation be required for these areas.

e) Soil Sample Analytical Results, dated October 26, 2000 indicated contamination with arsenic 16.6 ppm [PADEP, Act 2 - 53 ppm, proposed by EPA standard for the site is 13 ppm], barium 58,7000 ppm [PADEP, Act 2 - 8,200 ppm], and nickel 4,150 ppm [PADEP, Act 2 - 650 ppm].

f) "Summary of Soil Sample Analytical Results", dated September 16, 2001. Sampling was performed by the facility contractor American Resource Consultants, Inc. Twenty soil samples were collected. The test pits were excavated to the maximum depth of 8 feet below surface. Three of twenty samples contained arsenic levels 13.6 ppm, 13.3 ppm, and 31.9 ppm. It was proposed by EPA that arsenic standard for the site is 13 ppm be used as a background screening soil standard. PADEP's non-residential State wide Health Standard for arsenic levels in the soil is 53 ppm.

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.

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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)					
"Contaminated" Media	Res.	Worker	Const.	Tresp.	Recreat.	Food [3]
Groundwater	_NO__	NO___	___			___
Air (indoors)	_NO__	NO___				
Soil (surface, e.g., <2 ft)	_NO__	NO___	___	___	___	___
Surface Water	_NO__	NO___		___	___	___
Sediment	_NO__	NO___		___	___	___
Soil (subsurface e.g., >2 ft)	_NO__	NO		___		
Air (outdoors)	_NO__	NO___	___	___		

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.

NO 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): This site is currently being investigated and remediated with the goal of putting the site back into use as a warehouse facility. EPA, Region III and PADEP suspect a small area of contaminated groundwater exists beneath the site, but available evidence suggests that the plume is stable and has not migrated off-site.

First soil cleanup on the facility was performed by the EPA, Region III Superfund program in July, 1992. The removal actions at the site were in the main process building and the drum storage building. The cleanup was focused on elimination any immediate threat to human health and the environment.

Second soil removal was performed after the "Sampling Assessments and Descriptions" dated March 1, 1993 was prepared by Weston, EPA contractor. Soils contaminated with heavy metals above acceptable levels were excavated and transported off-site for disposal. No further soil investigation be required .

According to the "Summary of Soil Sample Analytical Results", dated September 16, 2001 three of twenty soil samples contained arsenic levels 13.6 ppm, 13.3 ppm, and 31.9 ppm. The arsenic standard of 13 ppm was proposed by EPA to be used for the site as a background screening soil standard. PADEP's non-residential State wide Health Standard for arsenic levels in the soil is 53 ppm.

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

4. Can the exposures from 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)?

NO 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): This site is currently being investigated and remediated with the goal of putting the site back into use as a warehouse facility. EPA, Region III and PADEP suspect a small area of contaminated groundwater exists beneath the site, but available evidence suggests that the plume is stable and has <u>not</u> migrated off-site. The groundwater will be monitored on the facility for the next two years under PADEP supervision. PADEP groundwater monitoring split sampling results collected on October 16, 2001 reported contamination with volatile compounds 1,1-dicloroethene - 8.6µg and 11.4µg/l [MCL standard is 7µg/l] and trichloroethene (TCE) - 27.6µg/l, 9.4µg/l, and 19,7µg/l [MCL standard is 5 µg/l].

First soil cleanup on the facility was performed by the EPA, Region III Superfund program in July, 1992. The removal actions at the site were in the main process building and the drum storage building. The cleanup was focused on elimination any immediate threat to human health and the environment.

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[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?

YE 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 each potentially "unacceptable" exposure.

_____ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

Rationale and Reference(s): This site is currently being investigated and remediated with the goal of putting the site back into use as a warehouse facility. EPA, Region III and PADEP suspect a small area of contaminated groundwater exists beneath the site, but available evidence suggests that the plume is stable and has <u>not</u> migrated off-site. The groundwater will be monitored on the facility for the next two years under PADEP supervision. PADEP groundwater monitoring split sampling results collected on October 16, 2001 reported contamination with volatile compounds 1,1-dicloroethene - 8.6µg and 11.4µg/l [MCL standard is 7µg/l] and trichloroethene (TCE) - 27.6µg/l, 9.4µg/l, and 19,7µg/l [MCL standard is 5 µg/l].

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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 **Conewago Contractors, Inc. (former Rose Bicycle Facility)** located at **200 Cascade Drive, Allentown, PA, EPA ID # PAD 05 306 1909** 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: 12-12-02
(print) Ioff, Victoria
(title) Remedial Project Manager

Supervisor: (signature) Date: 12-16-02
(print) Gotthold, Paul
(title) PA Operations Branch Chief
(EPA Region or State) EPA, Region 3

Originally Signed: 01-29-02

Locations where References may be found:

1650 Arch Street, 3WC22
EPA files.

Telephone and e-mail numbers:

(name) Ioff, Victoria
(phone #) 215-814-3415
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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.