DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

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

Current Human Exposures Under Control

Facility Name:	PPG Industries Works No 4
Facility Address:	7400 Central Highway North, Wichita Falls, Texas
Facility EPA ID #:	TXD078552932

- 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?
 - \underline{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 RCRAInfo national database ONLY as long as they remain true (i.e., RCRAInfo 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	<u>No</u>	<u>?</u>	Rationale / Key Contaminants
Groundwater	Y			Contamination documented/Metals
Air (indoors) ²		Ν		None reported;
Surface Soil (e.g., <2 ft)		Ν		Certificate of Completion/VCP
Surface Water		Ν		None reported; storm water permit
Sediment		Ν		None reported
Subsurf. Soil (e.g., >2 ft)	Y			Contamination documented/Metals, PAHs, & BTEX
Air (outdoors)		Ν		None reported; operating permit

- 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.
- 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):

Rational

<u>Groundwater</u>: Concentrations above drinking water Maximum Contaminant Levels (MCLs) were detected in groundwater for cadmium, chromium, copper, lead, nickel, selenium and zinc in the area of the Equalization Basin.

Air (indoors): No reported groundwater contamination with volatile constituents.

Surface soils: Remedial activity under VCP at four sites removed contaminated surface soils.

Surface Water and Sediment: No evidence of contamination of surface water or sediments in available files.

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.

Facility operates under storm water permits.

<u>Subsurface soils</u>: Elevated levels of some constituents remain in place after remedial action. Primary constituents of concern include metals (including cobalt and chromium), PAHs, and BTEX.

<u>Air</u>: The facility's air emissions are regulated under Air Account No. WH004OR. The facility has air operating permits and air new source permits.

Facility Description and Regulatory History

PPG operates a continuous line glass manufacturing plant in Wichita Falls, Texas. Raw materials, including sand, silica, and crushed glass are blended, heated, cooled, and cut through a continuous manufacturing line to form panes of clear and colored glass. The facility has been in operation since 1974. As of 1995, the PPG site was 490 acres of land, of which PPG used approximately 100 acres. The remaining 390 acres was either leased for agricultural use or maintained as native rangeland (Reference 3). According to Ms. Fields, TCEQ Inspector, PPG has recently begun construction of a new glass coating operation (Reference 12), which is outside of the main plant area; however, it is not clear how this new line impacts the land use acreage. The facility has a perimeter fence with a 24 hour security gate.

PPG operated an equalization basin until it closed the unit in 1985/1986 under interim status. PPG is registered as an Industrial Hazardous Waste, Large Quantity Generator (LQG). According to a June 10, 2004 Compliance Inspection, the facility manages one container storage area (less than 90 day), one non-hazardous waste pile, two non-hazardous storage tanks and two non-hazardous miscellaneous storage containers. In addition to several air operating permits and air new source permits, the facility operates under the following permits and registrations:

Petroleum Storage Tank Registration No.	51098
Stormwater Permit	TXR05L762
Stormwater Permit	TXR05A316
Voluntary Clean up Program (VCP)	069
Registration	

Based on a compliance history prepared on December 22, 2004, the facility has no history of unresolved violations within the last five years (Reference 9). According to the TCEQ Field Inspector, there are no on-going corrective actions or release concerns of which she is aware (Reference 12).

Four units have been successfully completed under Texas Natural Resource Conservation Commission's Voluntary Clean-up Program (VCP). TNRCC VCP Certificates of Completion were issued for the 500,000 gallon AST, the 10,000 gallon UST, Equalization Basin, and Solar Cool Release Area on March 22, 1996, with each site attaining the cleanup standards for Risk Reduction Standard No. 2 for non-residential sites (References 3, 4, 5, 6, and 7).

As a part of the closure of the Equalization Basin, PPG was required to determine groundwater quality in the area of the basin, and conducted bi-monthly monitoring in 1984 and 1985. Closure certification was submitted to the TWC in November 1985; however, the unit was not backfilled. In August 1992 and January 1993, 7 additional wells were installed near the equalization basin and intermittent monitoring occurred up to April 1995 as a part of the VCP closure of the unit (Reference 3).

A TNRCC Notice of Registration print out indicates that there is an inactive waste pile at the facility (Reference 8). Ms. Fields indicated in a telephone conversation that she has no knowledge or recollection of a waste pile. She stated there are three active raw material (glass feedstock) piles on-site, where they store glass for use in the manufacturing process (Reference 12). Further information on this waste pile may be warranted.

References

- 1. Letter Report to Scott Lesikar, Brown and Caldwell; from Eloy Del Bosque, Geosource Incorporated; Water Well Search; dated March 14, 1995.
- 2. Texas Natural Resource Conservation Commission; Voluntary Clean-up Agreement; PPG Industries, Inc. Works 4, Wichita County; VCP No. 069; dated December 6, 1995.
- 3. Equalization Basin Closure Report; Prepared by Brown and Caldwell; dated February 2, 1996.
- 4. Voluntary Cleanup Program; Certificate of Completion; 500,000 Gallon AST; dated March 22, 1996.
- 5. Voluntary Cleanup Program; Certificate of Completion; Solar Cool Stack; dated March 22, 1996.
- 6. Voluntary Cleanup Program; Certificate of Completion; 10,000 Gallon UST; dated March 22, 1996.
- 7. Voluntary Cleanup Program; Certificate of Completion; Equalization Basin; dated March 22, 1996.
- 8. TNRCC Notice of Registration Printout April 01, 2003.
- 9. Compliance Evaluation Investigation (CEI) Report, conducted 03/02/2005 to 03/11/2005; prepared by Linda Fields, TCEQ; dated May 11, 2005.
- 10. Comprehensive Permitting Report, dated December 22, 2005.
- 11. Comprehensive Corrective Action Report, dated December 28, 2005.
- 12. Communication Log; Telephone conversation; Ann Anderson, TechLaw, Inc. and Linda Fields, TCEQ Regional Office; RE: PPG Waste Pile and Land Use; dated May 24, 2006.
- 13. Facility map

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 <u>Human Receptors</u> (Under Current Conditions)

" <u>Contaminated" Media</u>	Residents	Workers D	Day-Care	Construction	Trespassers	Recreation	Food ³
Groundwater	Ν	Ν	Ν	Ν	N	Ν	Ν
Air (indoors)							
Soil (surface, e.g., <2 ft)							
Surface Water							
Sediment							
Soil (subsurface e.g., >2 ft)	Ν	Ν	Ν	Ν	Ν	Ν	Ν
Air (outdoors)							

Instructions for <u>Summary Exposure Pathway Evaluation Table</u>:

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 <u>Pathway Evaluation Work Sheet</u> 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.

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

Rationale:

Subsurface Soils:

Files from the VCP indicate remedial activity was successfully completed under Risk Reduction Standard 2 for nonresidential use for four units by PPG. Voluntary Cleanup Program Certificates of Completion were issued for all four units by the Texas Natural Resource Conservation Commission (TNRCC) on March 22, 1996. The units and a brief summary of the clean-up activity are provided below:

- 10,000 gallon UST A tank, used for the storage of No. 2 diesel fuel, and associated piping were removed in June 1994. Soil samples from five locations indicated concentrations of PAH and BTEX constituents from the area are below the pre-calculated Groundwater Protection Standards (Risk Reduction Standard No. 2, TAC 335.568) for Industrial Use (Reference 6).
- Equalization Basin The unit was lined with a synthetic liner and originally operated under interim status. Closure certification was submitted to the Texas Water Commission (TWC) in November 1985; however, the basin was not backfilled and the unit collected rainwater and was used periodically for the batch treatment of cooling water to remove chromium. Remedial activity consisted of stabilizing, removing and disposing of sediment from the impoundment. Groundwater and soil samples were collected. Elevated levels of zinc and chromium were found in soils and concentrations above drinking water Maximum Contaminant Levels (MCLs) were detected in groundwater for cadmium, chromium, copper, lead, nickel, selenium and zinc. Further remediation was conducted and the unit was closed and backfilled (References 3 and 7). A deed certification was approved by TNRCC, which included an attachment listing the upper confidence limit (UCL) of chemical concentrations left in soils at the equalization basin as follows:

Chromium (total)	37.2 mg/kg
Chromium, mg/l (SPLP)	0.042 mg/l
Copper	10.1 mg/kg
Zinc	46.3 mg/kg

• Solar Cool Release – Upset conditions of a solar cooler stack resulted in releases to soils in the area of the stack. Analysis of initial soil samples indicated concentrations of chromium and cobalt above background concentrations in the upper 12 inches of the soil profile. Additional soil sampling activities included background samples for comparison. The UCLs of concentrations of cobalt in the soil samples, taken in the solar cool area, were below health based levels. The UCL of concentrations of chromium by SPLP in the soil samples taken in the solar cool area were below the MCL for chromium (Reference 5). A deed certification was approved by TNRCC. This certification included an attachment listing the range of chemical concentrations left in soils at the Solar Cool Release Area as follows:

Cobalt	<5.0 – 4,440 mg/kg
Chromium (total)	<7.0 – 406 mg/kg
Chromium (SPLP)	<0.02 - 0.061 mg/kg

500,000 gallon AST closure - The AST was used to store emergency fuel for furnaces. There was a history
of overfills and releases of No. 2 diesel fuel. Soil samples within the bermed area and north of the bermed
area showed that concentrations of PAH and BTEX constituents are below the pre-calculated Groundwater
Protection Standards (Risk Reduction Standard No. 2, TAC 335.568) for Industrial Use (Reference 4). A
deed certification was approved by TNRCC, which included an attachment listing the range of chemical
concentrations left in soils at the 500,000 gallon AST as follows:

	-
Benzene	<0.002 - 0.081 mg/kg
Toluene	<0.002 – 0.356 mg/kg
Ethylbenzene	<0.002 - 1.290 mg/kg
Xylene	<0.002 – 3.450 mg/kg
Benzo(a)anthracene	<0.0087 - 0.308 mg/kg
Benzo(b)fluroanthene	<0.0121-0.0564 mg/kg
Benzo(k)fluroanthene	<0.0114 – 0.0522 mg/kg
Benzo(g,h,i)perylene	<0.0509 – 0.0630 mg/kg
Dibenzo(a,h)anthracene	<0.0201 – 0.0637 mg/kg
Fluoranthene	<0.141 - 23.100 mg/kg
Fluorene	<0.141 – 5.010 mg/kg
Ideno(1,2,3cd)pyrene	<0.0288 - 0.0515 mg/kg
Phenanthrene	<0.201 – 0.592. mg/kg

Exposure pathways are not likely to exist, based on the removal of contaminant source material, backfilling with clean soils and deed certification in place identifying areas of contamination. The site is still owned and operated by PPG, which should reduce the potential for worker or construction worker pathways. The site has perimeter fencing and 24 hour security gate access (Reference 12), to minimize trespasser exposure pathway.

Groundwater

Groundwater contamination was observed at the Equalization Basin during closure under the VCP Program. According to the Equalization Basin Closure Report, page 6-2, concentrations of cobalt, mercury, selenium, silver, and zinc in the groundwater were below their respective Media Specific Concentrations (MSCs) for all wells. The UCLs for cadmium, chromium, copper, nickel, selenium, and arsenic were below their respective MSCs during the April 1995 sampling event. Therefore, Risk Reduction Standard was demonstrated for these chemicals. The UCL for total concentration of lead exceeded the MSC; however, the UCL for dissolved lead concentrations was below the groundwater MSC for lead. (Reference 3). Further, there are no identified groundwater receptors in the vicinity and no groundwater wells were identified within a one mile radius of the facility (Reference 1). The contaminant source was removed from the basin, which was then backfilled with clean soils and lead levels in soils achieved the Risk Reduction Standard No. 2. Therefore, an increase in concentrations of lead in the groundwater is not anticipated.

- 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)?
 - 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 "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 RCRAInfo 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):

Х	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 PPG
	Industries, Inc. facility, EPA ID # TXD078552932, located at 7400 Central
	Highway North Wichita Falls, Texas 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)		_	
	(title)		_	
Researched by	(signature)	any. anderson	Date	April 25, 2006
	(print)	Ann Anderson	_	
	(title)	TechLaw, Inc.(U.S. EPA Contractor)	_	
Supervisor	(signature)		Date	
	(print)			
	(title)			
	(EPA Region of	r State)		
Locations where	References may	be found:		

Texas Commission of Environmental Quality File Room, Building E 12118 N IH 35 Austin, TX 78753

Filed Under: VCP Registration No. 069 SWR 30765

Contact telephone and e-mail numbers

(name)		
(phone #)		
(e-mail)		

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.

Recommended Further Action

1. Based on the lack of additional supporting information and the field inspector's lack of knowledge of the inactive waste pile listed on an historical Notice of Registration printout, it is assumed that this waste pile is not a unit of concern. However, EPA may wish to verify whether the facility ever managed a waste pile, whether it is still in existence, and if so, whether a release occurred from this unit.