

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)
Current Human Exposures Under Control

Facility Name: Keystone Color Works, Inc.
Facility Address: 109-151 West Gay Street, York, Pennsylvania 17403
Facility EPA ID #: PAD003018256

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 #8 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”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)?

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale / Key Contaminants</u>
Groundwater		X		See rationale below.
Air (indoors) ²		X		See rationale below.
Surface Soil (e.g., <2 ft)		X		See rationale below.
Surface Water		X		See rationale below.
Sediment		X		See rationale below.
Subsurf. Soil (e.g., >2 ft)	X			See rationale below.
Air (outdoors)		X		See rationale below.

- 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):

Facility Background:

The Former Keystone Color Works (KCW) facility was located at 109 and 151 West Gay Avenue, and consisted of two adjoining parcels (Tract #1 at approximately 0.33 acres, and Tract #2 at approximately 0.4 acres) that together encompassed approximately 0.73 acres of land (“Site” or “Facility”). The portion of the building that was previously located at 151 West Gay Avenue (Tract #2) was demolished and removed, while the portion of the building located at 109 West Gay Avenue (Tract #1) is still present. The property is bordered by the 208-236 North Beaver Street property to the north, row homes of 200-206 North Beaver Street to the east, West Gay Avenue to the south, and railroad tracks to the west.

The earliest known use of the subject Site was for the manufacture of farm machinery from 1887 to 1908. From 1919 until the 1990s, KCW chemically produced organic and inorganic pulp pigments for the wallpaper and surface coating trades using hazardous materials. In particular, KCW produced pigments containing chromium and lead, elements considered to be hazardous, from 1961 to 1980. Large quantities of wastewater and small quantities of waste sludge were generated at the Facility. Wastewater was treated on site and discharged to the sewer system. Waste sludge was drummed and disposed at off-site landfills.

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.

Summary of Environmental Investigations and Remediation:

Investigation and remediation of the Site is primarily being conducted in accordance with Pennsylvania's Land Recycling and Environmental Remediation Standards Act (Act 2) through oversight by Pennsylvania's Department of Environmental Protection (PADEP). KCW is part of a larger cleanup initiative referred to as the Northwest Triangle (NWT) which covers a multi-block area of separate properties that cover 14.5 acres in the northwestern corner of the City of York. A combined Remedial Investigation Report and Final Report for the NWT properties were submitted to PADEP for final review and approval on October 14, 2013. The City of York Redevelopment Authority (RDA), a non-profit organization, is remediating, rehabilitating, and/or redeveloping these impacted and underutilized properties as part of the city's revitalization activities. For the full characterization and attainment demonstration activities completed for the former KCW Facility, please refer to the "Remedial Investigation Report and Final Report for the Northwest Triangle Properties," prepared by ARM Group Inc. on behalf of the Redevelopment Authority of the City of York.

Investigations conducted at the Site in 2004 and 2005 are summarized as follows:

- June 1, 2004 preliminary Phase I Environmental Assessment Report prepared by Edge Environmental, Inc. State and federal records were reviewed, a Site reconnaissance was performed, and interviews were conducted with local officials, owners, and occupants. This report identified historical Site uses and potential environmental issues.
- June 2, 2005 Revised Phase I Environmental Assessment Report prepared by Pennoni Associates, Inc. This report expanded on the Edge Environmental June 2004 Phase I report, and included Sanborn maps, historical aerial photographs, and an Environmental Data Resources (EDR) Report.
- December 21, 2005 Interim Site Characterization Report prepared by GTS Technologies, Inc. Six surface soil samples were collected along the western side of the KCW building. Lead concentrations exceeding the PADEP Statewide Health Medium-Specific Concentration (MSC) for lead were identified in four of the samples.
- Between 2007 and 2012, ARM Group Inc. (ARM) was contracted by the RDA to perform additional site sampling and characterization to further support the identification and delineation of potential contamination, and to support the development and implementation of environmental remediation plans as part of the Site redevelopment activities. As part of the investigation and remediation of the multi-block area referred to as the Act 2 Northwest Triangle site, the RDA conducted the sampling of soils and groundwater at the former KCW parcels.

As a result of the soil investigations, lead contamination was discovered in the surface and subsurface soils outside of the building footprint, in addition to lead and arsenic contamination in the subsurface soils beneath the existing building concrete slab. For the soils outside of the building footprint, five (5) of the surface soil samples and one (1) of the subsurface soil samples had concentrations of lead exceeding the PADEP Residential Direct Contact MSC and Soil-to-Groundwater MSC. Lead was also detected at a concentration at or above the Non-Residential Direct Contact MSC at two locations. The PADEP MSC exceedances for lead were generally limited to the upper two feet of soil and fill along the western side of the Keystone Color Works building.

Contaminated soil was excavated from along the western side of the KCW building to a depth of up to approximately two feet in the areas where PADEP MSC exceedances were detected. Following soil excavation, post-excavation confirmatory soil sampling for lead was conducted and all post excavation sample results were below the applicable PADEP Residential MSCs. Approximately 156 tons (104 cy) of contaminated soils were removed from the Site.

With respect to the subsurface soils beneath the existing building concrete slab, excavation and removal of these soils is not considered to be practical without the demolition of the building and removal of the concrete floor slab. Because the concrete floor slab has been a stable and competent barrier to prevent any direct contact exposures to soils below the floor slab, remediation of these soils has been accomplished through in-place containment and pathway elimination.

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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	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)	No	No	No	No	No	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).
- 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):

As discussed in response to Question 2 above, exposure pathways to contaminated soils have been eliminated through the excavation of contaminated soils from along the western side of the KCW building and through in-place containment under the existing building concrete slab.

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

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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.

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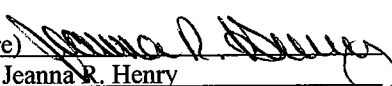
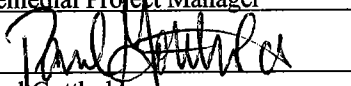
5. Can the “significant” exposures (identified in #4) be shown to be within acceptable limits?
- If yes (all “significant” exposures have been shown to be within acceptable limits) - continue and enter “YE” after summarizing and referencing documentation justifying why all “significant” exposures to “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):

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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 (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 former Keystone Color Works Facility, EPA ID No. PAD003018256, located at 109-151 West Gay Street, York, Pennsylvania 17403 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	<u>(signature) </u> <u>(print) Jeanna R. Henry</u> <u>(title) Remedial Project Manager</u>	Date <u>3/5/14</u>
Supervisor	<u>(signature) </u> <u>(print) Paul Gotthold</u> <u>(title) Associate Director</u> <u>EPA Region III</u>	Date <u>3/6/14</u>

Locations where References may be found:

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