

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action

Environmental Indicator (EI) RCRIS code (CA750)

Migration of Contaminated Groundwater Under Control

Facility Name: World Kitchen, LLC.
Facility Address: 100 Eighth Street Charleroi, Pennsylvania 15022
Facility EPA ID #: PAD004326542

1. Has all available relevant/significant information on known and reasonably suspected releases to the groundwater media, 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 #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 "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "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 "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

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).

**Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)**

Page 2

2. Is groundwater known or reasonably suspected to be "contaminated"¹ above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

 X If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

 If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."

 If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

World Kitchen, LLC (facility) manufactures tableware and kitchenware by utilizing continuous operating processes involving glass batch mixing, controlled melting in melt furnaces, and final finishing and decorating of the products. Current manufacturing products include glassware including Pyrex[®], Corelle[®], Corning Ware[®], Visions[®], and commercial tableware.

This rectangular, 22-acre property is located on the west bank of the Monongahela River in Charleroi Borough, Washington County. The topography is relatively flat with a gentle slope towards the Monongahela River. Buildings occupy 13.8 acres and include 61 structures that were constructed between 1892 and 1988, with the main portions including the upper, middle, and Suprema manufacturing areas. The property is zoned light industrial (M2).

The facility at one time operated a small foundry that was closed and demolished in 1972. Building 63 occupies the former foundry location. The grounds are entirely protected by a security fence and guarded entrances. Currently, the facility is surrounded by the Authority of the Borough of Charleroi Waste Water Treatment Plant (WWTP) and beyond by a cement plant to the northwest, by railroad tracks and beyond by automobile repair shop, a Ford Dealership, Ingersoll-Rand Mining Machine Manufacturer, and retail merchandise stores to the southwest, by Charleroi Recreational Park and an electric power substation and beyond by retail stores to the southeast, and by the Monongahela River to the northeast.

The facility currently operates as a small quantity generator (SQG); under a Title V air permit; and discharges water through a National Pollutant Discharge Elimination System (NPDES) permit.

The facility has a long history of oil and grease permit exceedances and releases from permitted outfalls into the Monongahela River. A number of site investigations were completed between 1997 and 2001. Tank removals and subsequent contaminated-soil excavations were also completed. On October 19, 2001, the Pennsylvania Department of Environmental Protection (PADEP) sent World Kitchen the receipt and approval of the Act 2 Final Report (dated September 4, 2001) for the areas investigated and remediated. It noted that the soil and groundwater were contaminated with polychlorinated biphenyls (PCBs), lead, heavy metals, pesticides, solvents, benzene, ethylbenzene, toluene, and xylenes (BTEX), and polyaromatic hydrocarbons (PAHs). Attainment was demonstrated that soils meet the statewide health standard non-residential, direct contact Medium Specific Concentrations (MSCs) and groundwater meets non-residential, non-use aquifers MSCs at the point of compliance.

A total of 16 solid waste management units (SWMUs) have been associated with the facility, as identified during the 1989 Preliminary Assessment (PA). No organic vapors were detected above background using a photoionization detector at the SWMUs at the time of the 1989 PA. No SWMU showed signs of releases and all were in operation without plans for closure at the time of 1989 PA.

A matrix of aboveground storage tanks (ASTs) and underground storage tanks (USTs), their size, contents, and active

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 appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

**Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)
Page 3**

status is presented below as documented in the Act 2 Final Report:

Aboveground Storage Tanks				
Tank No.	Installation	Size (gal)	Contents	Status
001A	1982	4,500	Hydraulic Oil	Active
002A	1977	4,000	Arsenic Acid	Inactive
003A	1981	4,000	Arsenic Acid	Inactive
004A	1983	11,000	Liquid Oxygen	Active
005A	1983	11,000	Liquid Oxygen	Active
006A	1992	4,000	Diesel Fuel	Active
007A	1992	1,000	Used Oil	Active
008A	1992	120	Used Oil	Active
009A	2000	500	Gasoline	Active
010A	1999	1,000	Wastewater	Active

Underground storage Tanks					
Tank No.	Installation	Size (gal)	Contents	Removed	Excavation Notes
001	1981	1,000	Used Hydraulic Oil (O/W Separator)	1992	55 tons of contaminated soil were removed; no total petroleum hydrocarbons (TPH) detected in confirmation soil samples
002	1981	1,000	Used Lube Oil (O/W Separator)	1992	30 tons of contaminated material were removed; detected TPH at 10 and 13 mg/kg in confirmation soil samples
003	1981	30,000	Heating Oil No. 2	1992	UST located in concrete pit; no TPH or BTEX detected in water sample from pit
004	1981	30,000	Heating Oil No. 2	1992	UST located in concrete pit; no TPH or BTEX detected in water sample from pit
005	1981	30,000	Heating Oil No. 2	1992	UST located in concrete pit; no TPH or BTEX detected in water sample from pit
006	1981	2,500	Used Hydraulic Oil (O/W Separator)	1992	Removed 60 tons of contaminated material; no TPH detected in confirmation soil samples
007	1970	20,000	Fuel Oil	1989-in place	
008	1970	20,000	Fuel Oil	1989-in place	
009	1965	2,000	Gasoline	1988	
010	1981	1,500	Used Lube Oil	1992	Removed 10 tons contaminated material; no TPH detected in confirmation samples

**Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)**

Page 4

Note: Documented excavation contamination is presented in the table above.

The property was originally purchased in 1893 by George A. Macbeth & Co., the world's largest producer of lamp chimneys. Between 1895 and 1899, Macbeth Glass merged with Thomas Evans & Co., another large producer of lamp chimneys, to become Macbeth-Evans Glass Company. In 1916, Macbeth-Evans purchased Hamilton Bottle Works. Corning Glass Works merged with Macbeth-Evans Glass Company in 1936.

Prior to 1940, Corning Glass Works produced television tube glass in addition to houseware products. In 1966, Corning transferred a portion of the facility grounds along the northern portion of the site to the Authority of the Borough of Charleroi.

On July 27, 1989, the facility sent notification of the name change from "Corning Glass Works" to "Corning Incorporated." On January 2, 1992, the facility submitted a revised Notification of Waste Activity identifying change of ownership to Corning Vitro Corporation doing business as Corning Consumer Products Company. As the Corning Consumer Products Company was purchase by Borden Incorporated, the company was required to shed the Corning name.

The company name was changed to World Kitchen, Inc. on April 1, 1998. In 2002, the company filed for bankruptcy under Chapter 11 and underwent financial reorganization. As of 2004, the company has been privately held. On May 10, 2006 the facility notified the PADEP of a name change from World Kitchen, Inc. to World Kitchen, Limited Liability Company (LLC). World Kitchen, LLC, headquartered in Rosemont, IL, manufactures, markets, and distributes bakeware, dinnerware, kitchen and household products, under many well-known brands. The Charleroi facility has been making Pyrex[®] for almost 100 years.

The Phase II ESA was prepared by Weston in 1997. It expounded upon Phase I ESA report that identified 15 AOCs related to the historical usage of the facility. The Phase II ESA identified potential soil and groundwater environmental issues at the facility related to storage tanks and blended fuel management. Additional impacts were associated with historical materials management and the presence of the elevated metals concentrations in surficial and near surface soil at various locations. In general, subsurface soil and groundwater across the facility are impacted by elevated metal concentrations. In August 13, 1997, an addendum to the Phase II ESA was provided by Weston which presented additional sample analysis results from a few AOCs for metals and asbestos. The Phase II ESA addendum made several recommendations including removal and evaluation of sludge materials in sumps, analysis of stormwater, and removal of surficial and near surface soils exhibiting elevated metal concentrations, and establish groundwater flow direction and apply for non-use aquifer determination.

On December 18, 1997, PADEP granted NUA status for the site following request. Since the groundwater beneath the site is not used or currently planned to be used in accordance with Act 2, the Statewide Health Standards for non-use aquifers applied to the site.

A Site Characterization Report was prepared by Weston in 1998 which included the results of the Preliminary Site Evaluation and Site Characterization Study, which included the investigation of soil, groundwater, surface water, and an asbestos-containing material survey. Also included were results of the limited remedial activities. The report recommended that a groundwater monitoring program be conducted for one year and a concrete cap be placed over the Tank 11 Production Area (AOC 4 process wastewater and oil skimmer system in lower level of Building 48) to limit infiltration of surface/stormwater runoff into subsurface soil. Completion of these recommendations would facilitate a release from future environmental liability under Act 2. The Site Characterization Study focused on historical releases associated with former underground tanks and management of raw materials for glass manufacturing. These releases were limited to specific areas of concern, which exhibited visual indicators of the potential for impact to subsurface soil and groundwater. Analytical results indicated the presence of metals and petroleum-related constituents at concentrations which generally did not exceed Act 2 standards for Non-Residential Soil and Non-Residential, Non-Use Aquifer settings, with the exception of arsenic and lead concentrations in near surface soil at four specific locations and for manganese and iron in groundwater generally across the facility.

A groundwater investigation was conducted at specific source areas and points of compliance from July 1997 through January 1999. World Kitchen subsequently petitioned for and received determination for NUA status under the Act 2. Five groundwater monitoring wells were sampled on a quarterly basis for six consecutive quarters (commencing with August 1997). PADEP stated World Kitchen had attained Act 2 groundwater MSCs and thus, the sixth monitoring event

**Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)**

Page 5

was the final event.

On October 19, 2001, PADEP sent World Kitchen the receipt and approval of the Act 2 Final Report (dated September 4, 2001) for the areas investigated and remediated. It noted that the soil and groundwater were contaminated with PCBs, lead, heavy metals, pesticides, solvents, BTEX, and PAHs. Chapter 5, Section 501 of the Act 2, provides liability protection to sites where attainment of cleanup standards is demonstrated. The facility continues to maintain compliance with Act 2 and no investigations have since been completed.

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"² as defined by the monitoring locations designated at the time of this determination)?

 X If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"².

 If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"²) - skip to #8 and enter "NO" status code, after providing an explanation.

 If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

The facility has a long history of oil and grease and occasional metals permit exceedances and releases into the Monongahela River from permitted NPDES outfalls. Various outfall assessments have been conducted to determine the nature and extent of solids present in the outfall system. As part of the 1999 Act 2 Final Report, modeling (SOLUTE model) of groundwater and surface water conditions indicate attainment of the used aquifer, residential MSCs within 1,000 feet downgradient of the site for a period of 30 years through natural degradation processes. The mass balance model evaluation indicates that groundwater discharge would not exceed surface water quality criteria.

According to facility personnel at the May 6, 2010 site visit, the facility has not had any recent exceedances. Additionally, the facility continues to make upgrades to the "L-pit" oil-skimming/separation area to ensure oil and grease exceedances no longer occur. While the facility remains in operation, the potential to have oil and grease and metals exceedances still exist. However, there is no evidence to suggest that surface water contamination currently exists.

²"existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

**Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)**

Page 6

4. Does "contaminated" groundwater discharge into surface water bodies?

 X If yes - continue after identifying potentially affected surface water bodies.

 If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.

 If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

The facility has a long history of oil and grease and occasional metals permit exceedances and releases into the Monongahela River from permitted NPDES outfalls.

**Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)**

Page 7

5. Is the discharge of "contaminated" groundwater into surface water likely to be "insignificant" (i.e., the maximum concentration³ of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

 X If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration³ of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

 If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration³ of each contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations³ greater than 100 times their appropriate groundwater "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

 If unknown - enter "IN" status code in #8.

Rationale and Reference(s):

The facility has a long history of oil and grease and occasional metals permit exceedances and releases into the Monongahela River from permitted NPDES outfalls. Various outfall assessments have been conducted to determine the nature and extent of solids present in the outfall system. As part of the 1999 Act 2 Final Report, modeling (SOLUTE model) of groundwater and surface water conditions indicate attainment of the used aquifer, residential MSCs within 1,000 feet downgradient of the site for a period of 30 years through natural degradation processes. The mass balance model evaluation indicates that groundwater discharge would not exceed surface water quality criteria.

³ As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

**Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)**

Page 8

6. Can the discharge of "contaminated" groundwater into surface water be shown to be "currently acceptable" (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented⁴)?

_____ If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR
2) providing or referencing an interim-assessment,⁵ appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialist, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

_____ If no - (the discharge of "contaminated" groundwater can not be shown to be "currently acceptable") - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

_____ If unknown - skip to 8 and enter "IN" status code.

Rationale and Reference(s):

⁴ Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

⁵ The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)

Page 9

7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

 X If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

 If no - enter "NO" status code in #8.

 If unknown - enter "IN" status code in #8.

Rationale and Reference(s):

As part of the 1999 Act 2 Final Report, modeling (SOLUTE model) of groundwater and surface water conditions indicate attainment of the used aquifer, residential MSCs within 1,000 feet downgradient of the site for a period of 30 years through natural degradation processes. The mass balance model evaluation indicates that groundwater discharge would not exceed surface water quality criteria.

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)
Page 10

8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), 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).

X YE Yes, "Migration of Contaminated Groundwater Under Control" has been verified.
Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the World Kitchen, LLC facility,
EPA ID # PAD004326542, located at 100 Eighth Street Charleroi, Pennsylvania 15022.
Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater". This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

 NO - Unacceptable migration of contaminated groundwater is observed or expected.

 IN - More information is needed to make a determination.

Completed by (signature) [Signature] for Date 12/20/12
(print) Elizabeth Butts
(title) Environmental Protection Specialist

[Handwritten notes]
4/9/13

Supervisor (signature) [Signature] Date 12/20/12
(print) Diane D. McDaniel P.E.
(title) Engineering Manager
(EPA Region or State) PA DEP

[Signature] 4/9/2013
EPA R3

Locations where References may be found:

USEPA Region III
Waste and Chemical Mgmt. Division
1650 Arch Street
Philadelphia, PA 19103

PADEP
South West Regional Office
400 Waterfront Drive
Pittsburgh, PA 15212

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Facility Name:
EPA ID#
City/State

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MIGRATION OF CONTAMINATED GROUNDWATER UNDER CONTROL (CA 750)

