

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

Facility Name: GG Connector Corporation
Facility Address: 9 Queen Anne Court Langhorne, PA 19048
Facility EPA ID #: PAD980555015

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 Controls" 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	_____	<u>X</u>	_____	See rationale below.
Air (indoors) ²	_____	<u>X</u>	_____	See rationale below.
Surface Soil (e.g., <2 ft)	_____	<u>X</u>	_____	See rationale below.
Surface Water	_____	<u>X</u>	_____	See rationale below.
Sediment	_____	<u>X</u>	_____	See rationale below.
Subsurface Soil (e.g., >2 ft)	_____	<u>X</u>	_____	See rationale below.
Air (outdoors)	_____	<u>X</u>	_____	See rationale below.

- X If no (for all media) – skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient support 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):

The GG Connector Corporation Facility (Facility) operated a TCA and Waste Oil Drum Storage Area (SWMU#1), a Cooling Water Drain (SWMU #2), a sump located in the inactive Drum Storage Area (SWMU #3), and a sump located in the former degreaser area (SWMU #4). Electroplating wastes that were pretreated via the on-site wastewater pretreatment area were discharged to the POTW via the cooling water drain and an oily sheen was observed on water in the drain at the time of NUS' 1989 site inspection. Two unregulated 10,000 gallon heating oil Underground Storage Tanks (USTs) were also removed from the Facility in 1995.

The two-foot deep sump located in the degreaser area (SWMU #4) was present to receive spills from the degreasing units. According to NUS, there was no visible drain in the sump pit leading to the environment.

The sump located in the southeastern corner of SWMU #3 drained to a 27 cubic foot gravel bed located immediately outside the Drum Storage Area, south of the sump. Drums of hazardous waste generated during the Facility's operations (particularly electroplating wastes) were stored at this Drum Storage Area. NUS observed heavily stained areas and an oily sheen on the pad in the area of the sump during the 1989 site visit. During URS' 2008 site visit, the sump area was inundated with water. Based on this information, it is possible that any releases that may have occurred from drums stored in this area may have entered the sump and gravel bed.

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.

In April 2014, Michael Baker Jr., Inc. (Baker), under contract to the Pennsylvania Department of Environmental Protection (PADEP) through grant funding from the U.S. Environmental Protection Agency (USEPA) performed intrusive investigation sampling activities at the Facility to assess the quality of the soil, soil gas, and groundwater to determine if any releases to the environment occurred from RCRA Corrective Action units (SWMUs or AOCs).

Groundwater

The Work Plan for the April 2014 field investigation proposed collection of shallow groundwater samples. Shallow groundwater was not encountered during the investigation and no groundwater samples were collected. However, very few former facility related hazardous waste compounds were identified in soil samples from the USTs and SWMU areas. All soil sample results were below EPA's most stringent Regional Screening Levels for Residential use which indicates that there were no or only minor releases in the shallow subsurface and soil to groundwater impacts would not be able to occur. Therefore, USEPA has determined that groundwater is not known or reasonably suspected to be contaminated above appropriately protective risk-based levels from releases subject to RCRA Corrective Action anywhere at, or from, the Facility.

Air

Indoor

Indoor sub-slab and outdoor soil gas samples were taken as part of the April 2014 field investigation to determine if there was a potential for indoor air impacts. Former facility related hazardous waste compounds were identified in soil gas samples. EPA modeled the potential for the soil gas samples to migrate into buildings using EPA's Vapor Intrusion Screening Level (VISL) Calculator. Results showed that there is a calculated potential for the identified constituents in the soil gas to cause elevated indoor air concentrations under industrial and residential uses. However, these calculated elevated levels are within the EPA Corrective Action Program's acceptable risk range. Therefore, air media are not contaminated above appropriately protective risk-based levels from releases subject to RCRA Corrective Action.

Outdoor

The Facility did not hold any air quality permits. No air quality violations of significance have been recorded. No activities are being conducted at the Facility at this time that would impact outdoor air quality; thus, there are currently no known exposure pathways relative to outdoor air to be evaluated and no reason to suspect that outdoor air quality would be impacted above appropriately protected risk-based levels.

Surface and Subsurface Soil

On 3/25/10, GG forwarded 1995 test results from two soil samples extracted from behind the shed attached to SWMU#3 that indicated low levels of RCRA metals and trace diesel and gasoline range organics. The samples were taken at a depth of 6 feet.

Indoor sub-slab and outdoor soil samples were taken as part of the April 2014 field investigation to determine if releases may have occurred from the USTs or SWMUs. Former facility related hazardous waste compounds were identified in soil samples. However, all soil sample results were below EPA's most stringent Regional Screening Levels for Residential use.

Surface Water and Sediment

The majority of the current Site is paved. Surface water runoff flows to a drainage ditch, which is located south of the Site. URS did not observe any sensitive habitats including ponds or wetlands near this drainage ditch at the time of the July 2008 site visit. No signs of stained soil, oily sheens, or stressed vegetation were observed on the Property or in the vicinity of the drainage ditch at the time of URS' Site visit.

The drainage ditch is located approximately 200 feet from the south wall of the former production building. The drainage ditch discharges to Queen Anne Creek located approximately 1,000 feet to the east of the property. Queen Anne Creek is listed as an approved non-attaining segment on the PADEP Stream Integrated List according to the

standards set by the Pennsylvania Clean Streams Law. These standards are based upon aquatic life, fish consumption, recreational use, and potable water supply criteria. Queen Anne Creek is listed as impaired for aquatic life resulting from urban runoff. According to the Federal Emergency Management Association (FEMA) Floodplain map, the site is not located within the 100- or 500-year floodplain of Queen Anne Creek. Queen Anne Creek flows south into Lake Caroline, located approximately 1.2 miles from the Site. No surface water intakes or recreational uses have been identified for Queen Anne Creek or Lake Caroline downstream of the Site during the NUS and URS site visits. URS did not observe the off-site surface water features during the July 2008 site visit.

The potential for indirect discharge of Site contaminants to surface water is only possible via the groundwater flow pathway; however, USEPA has determined that groundwater is not known or reasonably suspected to be contaminated at the Facility. Therefore, surface water and sediments are not known or reasonably suspected to be contaminated.

Reference: *GG Connector Corp EI Report - June 2009*

Field Investigation Letter Report RCRA GG Connector Corporation Site - May 2014

VISL_GG SG-1.xlsm - EPA May 2014

VISL_GG SG-2.xlsm - EPA May 2014

VISL_GG SG-3.xlsm - EPA May 2014

VISL_GG SG-5.xlsm - EPA May 2014

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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)

<u>"Contaminated Media"</u>	<u>Residents</u>	<u>Workers</u>	<u>Daycare</u>	<u>Construction</u>	<u>Trespassers</u>	<u>Recreation</u>	<u>Food³</u>
Groundwater							
Air (indoors)							
Soil (surface, e.g., <2 ft)							
Surface Water							
Sediment							
Soil (subsurface e.g., >2 ft)							
Air (outdoors)							

Instructions for Summary Exposure Pathway Evaluation Table

1. Strikeout 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):

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**" (i.e., potentially⁴ "unacceptable" levels) 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):

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 a "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 a "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):

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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