DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
Interim Final 2/5/99
RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name:	Former DaimlerChrysler Corp Indianapolis Foundry
Facility Address:	1100 South Tibbs Avenue, Indianapolis, Indiana 46241
Facility EPA ID #:	IND 087 032 611

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

   ☐ If data are not available skip to #6 and enter AIN@ (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).

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)?

Table 1-Reasonable Suspected Contaminated Media of Concern

Media	Yes	No	?	Rationale / Key Contaminants
Groundwater	x			Vinyl Chloride was present at concentration (0.00657 mg/L) in excess of the drinking water standard (MCL) of 0.002 mg/L in one sample location.
Air (indoors)[2]		x		Per U.S. EPA's Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils, 2000, a Tier I evaluation was completed and the pathway is determined not to be complete. There are no currently inhabitable structures within 100 feet (laterally or vertically) of known volatile soil or groundwater contamination zones.
Surface Soil (e.g., <2 ft)	x			Throughout Chrysler's ownership of the foundry five soil-quality assessments were conducted. Generally, these assessments were conducted prior to utility installation or replacement, or construction of new buildings. Concentrations of VOCs, SVOCs, RCRA metals and PCBs were detected. The detected concentrations, however, did not exceed the respective screening level criteria (IDEM-RISC). Furthermore, soil containing the detected parameters was subsequently disposed off-site in a permitted landfill as part of the utility and/or building construction activities where applicable.
Surface Water		x		There is no surface water discharge other than stormwater runoff from the facility. Approximately 95-percent of the facility property is improved surface (concrete from prior building pads and asphalt). The remaining 5-percent has been covered with a layer of crushed stone providing a barrier over and preventing erosion of the underlying surface soil during storm events. No industrial activities have taken place at the property since 2005 requiring the need for a NPDES permit.
Sediment		x		See above surface water response. The facility is no longer active and no industrial activity at the property is currently taking place.
Subsurface Soil (e.g., >2 ft)	x			See above explanation for surface soil.
Air (outdoors)		x		There has been no industrial activity at the property since 2005. Ambient air monitoring with a photoionization detector during site investigation activities did not indicate concentrations of VOC present in excess of background levels.

☐ If no (for all media) - skip to #6, and enter a 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)

[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 Background and History

The former DaimlerChrysler Indianapolis Foundry operated as a gray iron foundry for manufacturing automobile motor blocks from the early 1950s until the plant was deactivated activated in 2005 and subsequently razed in 2006. In November 1980, Chrysler submitted a RCRA Part A permit application to U.S. EPA for storage of paint waste, benzene, carbamate (urethane), formaldehyde, 1,1,1-trichlorothene and K089 wastewater treatment plant sludge. At the request of Chrysler in May 1983, U.S. EPA withdrew the RCRA Part A permit application. No record of a RCRA permit being issued to the facility is known. Starting in 1985 through 2006, nineteen RCRA facility inspections were conducted by the Indiana Department of Environmental Management ("IDEM") and U.S. EPA. Records of those inspections identified only minor administrative-type violations at the foundry property. From March 1986 through February 2007, five soil-quality assessments were completed by Chrysler on the foundry property. Generally, these assessments were conducted prior to utility installation or replacement, or construction of new buildings. In October 2009, the owner of the property, Parts Carnival, LLC., conducted a Phase I Environmental Assessment and a groundwater quality assessment as part of pre-acquisition due diligence. The groundwater quality assessment work consisted of advancing five temporary monitoring wells along the downgradient (east and southeast) portion of the property to evaluate the identified Hazardous constituents of concern discovered during the Phase I assessment. Downgradient groundwater samples collected from the temporary monitoring wells were sampled for VOCs, SVOCs, dissolved RCRA metals and PCBs. Laboratory analytical results of groundwater samples indicated that the analyzed parameters achieved IDEM's Default Residential Closure Values, with the exception of vinyl chloride in one sample collected from a temporary monitoring well located on the northeastern portion of the property. In May 2011, U.S. EPA issued a Section 3007 request for information to Parts Carnival. Parts Carnival timely provided U.S. EPA with the requested information in August 2011. Plans are in place to redevelop the former foundry property as an automobile salvage and self-service retail automobile parts facility. Currently, the 25-acre property is approximately 80 to 90 percent covered by improved (asphalt or concrete) surfaces. A layer of crushed stone is covering unimproved portions of the property. The redevelopment plans include paving of the remaining 10 to 20 percent of the unimproved portions of the former foundry property.

Table 2-Maximum Groundwater Concentrations (Groundwater Quality Assessment Report, Continental Placer Inc, June 2011)

CONTAMINANT	DEPTH (ft.)	MAXIMUM CONCENTRATION (µg/L)	MCL (µg/L)
Vinyl Chloride	28	6.57	2

Table 3-Maximum Surface Soil Concentrations (GZA GeoEnvironmental, Inc., March 1986)

CONTAMINANT	DEPTH (ft.)	MAXIMUM CONCENTRATION (mg/kg)	IDEM RISC DEFAULT[(1)] (mg/kg)
Arsenic	1.0 to 2.5	7.0	5.8
Lead	1.0 to 2.5	709	230

[(1)] Based on Migration to Groundwater. RISC value for direct contact with soil is 20 mg/kg for arsenic and 970 mg/kg for lead at Industrial properties.

Table 4-Maximum Subsurface Soil Concentrations (Roy F. Weston, Inc., February 2000)

CONTAMINANT	DEPTH (ft.)	MAXIMUM CONCENTRATION (mg/kg)	IDEM RISC DEFAULT[(1)] (mg/kg)
Arsenic	6.0 to 8.0	13.4	5.8

[(1)] Based on Migration to Groundwater. RISC value for direct contact with soil is 20 mg/kg for arsenic at Industrial properties.

Explanation for "No" in Table 1

Indoor Air
A Tier I – Primary Screening in accordance with OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance), November 2002, to evaluate whether any potential exist for vapor intrusion to pose an unacceptable risk. Although vinyl chloride is present in groundwater, as identified above, there are no existing inhabitable structures on the property or located within 100 feet of the known groundwater quality impact. Furthermore, the maximum concentration of vinyl chloride detected in groundwater of 6.57 µg/L is significantly less than the OSWER Generic Screening Level of 25 µg/L, which U.S. EPA has established as the target groundwater concentration that corresponds to the established target indoor air concentration. Therefore, the indoor air pathway is determined not to be complete.

Surface Water
There is no surface water discharge other than stormwater runoff from the facility. Approximately 95-percent of the facility property is improved surface (concrete from prior building pads and asphalt). The remaining 5-percent has been covered with a layer of crushed stone providing a barrier over and preventing erosion of the underlying surface soil during storm events. No industrial activities are currently taking place at the property requiring the need for a NPDES permit.

Sediment
The facility is no longer active and there is currently no industrial activities requiring the need for a stormwater permit. The nearest surface water body to the facility is Eagle Creek, which is located approximately 1,100 northeast of the property. See response above for Surface Water.

Outdoor Air
There is no current industrial activity at the property and no regulated air emissions. Ambient air monitoring with a photoionization detector during site investigation activities completed by Continental Placer Inc. in October 2009 did not indicate concentrations of VOC present in excess of background levels.

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?

Table 3-Summary Exposure Pathway Evaluation Table for Potential Human Receptors (Under Current Conditions)

"Contaminated Media"	Resident	Worker	Day Care	Construction	Trespasser	Recreation	Food3[3]
Groundwater	No	No	No	No			No
~~Air (indoors)~~							
Soil (surface <2 ft.)	No	No	No	No	No	No	No
~~Surface Water~~							
~~Sediment~~							
Soil (subsurface >2 ft.				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 -

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

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 on Incomplete Pathways:

Residential Exposure Scenario

Groundwater: Area residents do not use the groundwater for drinking water. According to the Continental Placer Inc. ("CPI") 2011 Groundwater Quality Assessment Report, there are two area water supply wells located in a downgradient direction in the immediate area of the former foundry. Logs for those wells indicate the owners to be commercial entities and that both wells are obtaining water from the shale bedrock aquifer at the depth of 130 feet below ground surface.

Surface Soil: The property is zoned commercial/industrial and plans for redeveloped include commercial/industrial use. Furthermore, surface soil is covered with asphalt, concrete or crushed stone preventing direct contact.

Industrial Worker Exposure Scenario

Groundwater: There is no industrial activity, and therefore, no industrial worker at the property. Also, there is no potable water supply well. As a result, and groundwater being located 18 feet below ground surface, this pathway is deemed not to be complete.

Surface Soil: There is no industrial activity (worker) at the property. In addition, surface soil is covered with asphalt, concrete or crushed stone preventing direct contact from industrial workers. Therefore, the exposure pathway is deemed to be incomplete.

Construction Worker Exposure Scenario

Surface &
Subsurface Soil: This pathway is not complete because detected concentrations of contaminants in surface and subsurface soil do not exceed established IDEM's RISC Industrial Closure Values. Furthermore, surface soil is covered with asphalt, concrete or crushed stone preventing direct contact with identified contaminants. Due to construction of utilities and buildings and confirmed by records, much of the low detections for various contaminants may have been disposed off-site at a Subtitle D landfill (GZA, 1996 & Weston, 2000).

Groundwater: The groundwater table is encountered at a depth of approximately 18 feet below ground surface. It is not likely that future construction work at the property will be performed below the groundwater surface without dewatering occurring. Therefore, it is unlikely that construction workers would potentially be exposed to groundwater at the property. Furthermore, the detected concentration of vinyl chloride (6.57µg/L) does not pose an unacceptable risk to potential construction worker population in the event that excavation dewatering activities are performed in

the future. The exposure of construction workers to groundwater was evaluated using conservative exposure factors for dermal contact in combination with USEPA-derived toxicity values. The evaluation determined that the potential cancer risk and non-cancer HQ for this exposure scenario are 3.59E-07 and 1.59E-04, respectively as shown in Attachment A. These conservative estimates of risks are considered insignificant, since they are much lower than the USEPA-established acceptable cancer risk range of 1.0E-6 through 1.0E-4 and non-cancer HQ limit of one.

Recreation/Trespasser Exposure Scenario

Surface Soil: The recreational user and the trespasser exposure scenario are not deemed complete for the following reasons:

1. Access to the property is restricted by a chain link fence and in places a concrete block wall;
2. The property is not used for recreational purposes;
3. Contaminants identified in the surface soil do not exceed established IDEM RISC Industrial Closure Values; and
4. Surface soil is covered with asphalt, concrete or crushed stone preventing direct contact with identified contaminants.

Food Scenario Exposure Scenario

Groundwater: Groundwater is not used for irrigation purposes or other means of entering the food chain. Therefore, this pathway is deemed incomplete.

Surface & Subsurface Soil: The property is not used for agricultural purposes. Therefore, this pathway is deemed incomplete.

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)?

X If no (exposures cannot 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 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):

X 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 DaimlerChrysler Corp. Indianapolis Foundry, EPA ID # IND 087 032 6111, located at 1100 South Tibbs Avenue in Indianapolis, Indiana 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) Jonathan Adenuga Date 6/4/13
(print) Jonathan Adenuga
(title) Project Manager

Supervisor (signature) Tammy Moore Date 6/4/13
(print) Tammy Moore
(title) Chief, Corrective Action Section 2

Locations where References may be found:
U. S. EPA Region 5
Records Center, 7th Floor

Locations where References may be found:
U.S. EPA Region 5
Record Center, 7th Floor
77 W. Jackson Blvd.
Chicago, IL 60604

Contact telephone and e-mail numbers

(name)	Jonathan Adenuga
(phone #)	(312) 886-7954
(e-mail)	adenuga.jonathan@epa.gov

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.