DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

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

	Name: Address EPA ID	
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 Unit (RU), and Areas of Concern (AOC)), been considered in this EI determination?	
	\boxtimes	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 "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).

2.	(i.e., ap	is groundwater known or reasonably suspected to be "contaminated" 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?		
	\boxtimes	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.		
Rations	ale and Re	aference(s):		

Rationale and Reference(s):

Facility Background Information:

Homer City Automation, Inc. (HCA or Facility) is located at 57 Cooper Avenue in Homer City, Indiana County, Pennsylvania within a residential area. The approximately 21.11-acre property is developed with one large industrial/manufacturing building, two Quonset huts, three natural gas wells, and asphalt paved parking areas. Multiple tenants currently utilize the property, including HCA, Miller Welding & Machine Co. (MWM), MGK Technologies, Inc. (MGK) (an affiliate of MWM). EME Homer City Generation LP, FMC Surface Wellhead, and Rosebud Mining Company (formerly Parkwood Resources, Inc.). The property is bounded to the west by Two Lick Creek, to the east by Hoodlebug Trail (a former railroad track) and residential properties, to the north by residential and commercial properties, and to the south by Rosebud Mining and undeveloped land.

HCA exclusively manufactures Syntron® parts handling and automation products for use in assembly operations and production lines. HCA offers products such as electromagnetic drive units, custom tooled rotary and vibratory orienting bowl feeders, bulk supply hoppers, linear drives, bowls, elevators, conveyors, linear feeders, tracks as well as customized systems for specialized parts handling requirements. HCA serves industries including pharmaceuticals, plastics, packaging/counting, ammunition, electronics, cosmetics, hardware, and food production. Operations include laser cutting, shearing, forming, welding, machining, and assembly of metal stock.

The property has been used for industrial purposes since at least 1912. The Facility was occupied by Prairie State Incubator Company (PSI) from 1912 to the early 1920s and was used for the manufacture of fuel-oil heated wood incubators. In the early 1920s, PSI became Homer City Manufacturing (HCM), a manufacturer of various wood products such as caskets and wood truck bodies. HCM's operations ceased in the mid-1920s and the Facility was vacant until the late 1920s when Iler Electric and Manufacturing Company (Iler Electric) occupied the Facility. From 1937 to 1955, the Syntron Company (Syntron) operated the Facility and manufactured electric hammers and bin vibrators. Syntron was purchased by Link Belt in 1955, which was in turn purchased by FMC Corporation (FMC) in 1965.

From 1965 up to 2008, FMC used the Facility to manufacture the Syntron® product line of vibratory conveyor system parts for the food and mining industries. In 2000, FMC restructured the company into two separate, publically traded companies; FMC Technologies, Inc. (machinery business) and FMC Corporation (chemical business). On December 29, 2005, FMC sold a 3.96-acre portion of the property to Parkwood Resources, Inc. which was in turn purchased by Rosebud Mining on April 1, 2010. On April 2, 2008, HCA purchased the former FMC Technologies, Inc. and operates under EPA ID No. PAD060689130 previously held by FMC Technologies, Inc.

Footnotes:

"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).

RCRA Regulatory Status:

Due to FMC's prior operations, the Facility is subject to EPA's Corrective Action Program under the Solid Waste Disposal Act (SWDA), as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, and the Hazardous and Solid Waste Amendments (HSWA) of 1984, 42 U.S.C. §§ 6901 et seq. (Corrective Action Program). The Corrective Action Program is designed to ensure that certain facilities subject to RCRA have investigated and cleaned up any releases of hazardous waste and hazardous constituents that have occurred at their property. The Commonwealth of Pennsylvania (Commonwealth) is not authorized for the Corrective Action Program under Section 3006 of RCRA. Therefore, EPA retains primary authority in the Commonwealth for the Corrective Action Program.

On September 7, 2011, Michael Jr. Baker, Inc. (Baker) conducted an Environmental Indicator (EI) Inspection of HCA, on behalf of EPA. An EPA representative was present during the EI Inspection. The findings of the EI Inspection are documented in a December 2011 EI Inspection Report for HCA, prepared by Baker. Information gathered during the EI Inspection identified the Facility as a Conditionally Exempt Small Quantity Generator (CESQG; less than 100 kg/month) of hazardous waste.

For additional information regarding historical and current generation and management of hazardous waste at the Facility, please refer to Section A of the December 2011 EI Inspection Report.

Groundwater:

Prior to the change in ownership from FMC to HCA, a Phase I Environmental Site Assessment (ESA) was conducted by Bureau Veritas North America, Inc. (BV), on behalf of FMC, in April 2007. The Phase I ESA revealed evidence of several recognized environmental conditions (RECs) including past industrial land use, the presence of historic underground storage tanks (USTs) (fuel oil and gasoline), the historic presence of a vapor degreaser that used trichloroethene (TCE), a former hazardous waste storage area, an area of disturbed land, and possible soil contamination in the area of the existing loading dock. Based on the results of the Phase I ESA, an initial subsurface investigation was performed in April 2007 by BV. Among other things, the subsurface investigation included the installation of 15 temporary monitoring wells (TMWs).

Numerous volatile organic compounds (VOCs) were detected in 10 of the groundwater samples. The detected VOCs included trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), trans-1,2-dichloroethene (trans-1,2-DCE), 1,1-dichloroethene (1,1-DCA), and vinyl chloride. The groundwater analytical results were compared to the Pennsylvania Land Recycling and Environmental Remediation Standards Act ("Act 2") non-residential (NR) medium specific concentrations (MSCs) for used aquifers and non-use aquifers. The TCE, cis-1,2-DCE, and vinyl chloride exceeded their respective used and non-use aquifer MSCs in seven of the groundwater samples. The locations of groundwater samples exceeding the used and non-aquifer MSCs are as follows:

- Location of former vapor degreaser (TMW-20)
- Former hazardous waste storage room in the southeast portion of building (TMW-11 and TMW-12)
- Area of historically disturbed land (TMW-7, TMW-9 and TMW-21)
- Western property boundary which is topographically down gradient of Site (TMW-2, TMW-3 and TMW-5)

Based on the results of the initial subsurface investigation, an additional subsurface investigation was performed by BV in June 2007. The investigation included the installation of an additional 10 TMWs. In addition, 14 permanent monitoring wells (MWs) were installed at the Site. The purpose of the additional subsurface investigation was to further delineate the extent of the identified soil and groundwater contamination and determine groundwater flow direction and velocity. Concentrations of TCE and cis-1,2-DCE in groundwater exceeded NR MSCs for used and non-use aquifers. Vinyl chloride and lead were detected in multiple groundwater samples exceeding their respective groundwater MSCs.

On August 28, 2007, a Notice of Intent to Remediate (NIR) was submitted by FMC to PADEP in accordance with Act 2. As a part of the requirements of Act 2, site characterization activities were conducted from April through July 2008 with respect to the RECs identified during the April 2007 Phase I ESA. Site characterization activities included the collection of surface and subsurface soil samples, sediment samples, groundwater samples to delineate the horizontal extent of the soil and groundwater contamination and an evaluation of potential exposure pathways, including indoor air modeling with the collection of sub-slab soil gas samples and fate and transport analysis. The site characterization concluded that four areas of the Facility have contributed to subsurface contamination:

- Source Area 1 (AOC 1) Former Vapor Degreaser
 Maximum concentrations of TCE in groundwater in the area of the former vapor degreaser ranged from 0.044 mg/L (MW-13) to 0.25 mg/L (MW-19), which exceeded the used aquifer NR groundwater MSC (0.005 mg/L).
- Source Area 2 (AOC 2) Former Hazardous Materials/Waste Storage Area
 Maximum concentrations of TCE in groundwater in the hazardous waste storage area ranged from 0.0018 mg/L
 (MW-12) to 0.48 mg/L (MW-17). Cis-1,2-DCE was also detected in the groundwater in the vicinity of the
 hazardous waste storage area at a concentration of 0.17 mg/L (MW-12), which exceed the applicable used aquifer
 NR groundwater MSCs of 0.07 mg/L. Downgradient of AOC 2, vinyl chloride was detected at a concentration of
 0.0081 mg/L (MW-17), exceeding its used aquifer NR MSC of 0.002 mg/L.
- Source Area 3 (AOC 3) Area of Disturbed Land

 Maximum concentrations of TCE in groundwater at the southwest portion of the property ranged from 0.15 mg/L

 (MW-9) to 0.56 mg/L (MW-8). Cis-1,2-DCE and vinyl chloride were also detected above their respective used aquifer NR MSCs. Cis-1,2-DCE was detected at maximum concentrations ranging from 2.3 mg/L (MW-7) to 2.9 mg/L (MW-8) and vinyl chloride was detected from 0.19 mg/L (MW-8) to 0.21 mg/L (MW-7). In addition, concentrations of lead were detected above the used aquifer MSC (0.005 mg/L) in the groundwater samples collected from MW-8 (0.017 mg/L and 0.22 mg/L) and MW-9 (0.0083 mg/L).
- Source Area 4 (AOC 4) West Central Portion of Site (near shipping/receiving and loading dock)

 TCE was detected in several groundwater samples collected from the west-central portion of the Site. The maximum concentrations ranged from 0.2 mg/L (MW-14) to 2.9 mg/L (MW-6). Cis-1,2-DCE and vinyl chloride were also detected in this area above their respective used aquifer NR MSCs. Cis-1,2-DCE was detected at maximum concentrations ranging from 0.11 mg/L (MW-14) to 2.0 mg/L (MW-5) and vinyl chloride at maximum concentrations ranging from 0.029 mg/L (MW-6) to 0.0925 mg/L (MW-5). Lead was also detected in MW-6 at 0.017 mg/L and 0.22 mg/L above its used aquifer NR MSC (0.005 mg/L).

On July 24, 2009, an Act 2 Final Report (Final Report) was submitted to PADEP. The Final Report concluded that the Site attained the Statewide Health Standard (SHS) and Site-Specific Standard (SSS). The attainment of the standards was demonstrated through an evaluation of human and ecological exposure pathways, an evaluation of vapor intrusion, an evaluation of the groundwater to surface water pathway, fate and transport modeling, and land use restrictions via the implementation of institutional controls (i.e, March 16, 2010 Environmental Covenant). On March 17, 2010, a letter from PADEP to MWM stated that the Final Report was approved and cleanup liability protection was granted to current and previous owners where attainment of Act 2 cleanup standards were demonstrated.

3.	Has the migration of contaminated groundwater stabilized (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater" as defined by the monitoring locations designated a the time of this determination)?		
	\boxtimes	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 Site is underlain by the Glenshaw Formation of the Conemaugh Group which is a main source of groundwater in Indiana County. According to the October 2008 Site Characterization Report (SCR) prepared by BV, the groundwater flow direction of the shallow water bearing zone (silty, sandy gravel) was determined to be to the southwest, towards Two Lick Creek. This groundwater flow direction was verified during several gauging events in July 2008. Groundwater elevations ranged from 1.43 feet below ground surface (bgs) (MW-23) to 9.12 feet bgs (MW-14). Based on the July 2008 groundwater elevations, an approximate groundwater gradient of 0.008 ft/ft was calculated. With a hydraulic conductivity of 48 ft/day, and an effective porosity of 0.4, the approximately groundwater seepage velocity of the aquifer was determined to be 0.95 ft/day. It was also determined that Two Lick Creek acts as a groundwater divide preventing the migration of contaminated groundwater to the west beyond the creek.

Characterization of the Site has concluded that the extent of groundwater exceeding the used aquifer NR groundwater MSCs for TCE, cis-1,2-DCE, and vinyl chloride is limited to beneath the central portion of the manufacturing building, west-central portion of the property, and the southwest corner of the western parking lot. The plume is migrating in a down gradient directions toward Two Lick Creek. Based on sampling results from MW-15 (TCE @ 1.9 mg/L; cis-1,2-DCE @ 0.78 mg/L; vinyl chloride @ 0.054 mg/L), it was also determined that groundwater contamination beneath the southeastern portion of the property has migrated across the extreme northwest corner of the southern adjoining property (now owned and occupied by Rosebud Mining). However, MW-22 and MW-23, installed on the southern adjacent property, indicate that groundwater contamination exceeding the NR MSCs has not migrated laterally beyond MW-22 and MW-23. It was determined that the off-site migration of the contaminated groundwater had only impacted the extreme northwest corner of the southern adjacent property.

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.

4.	Does "contaminated" groundwater discharge into surface water bodies?	
	\boxtimes	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):

Groundwater flow direction at the Facility is to the southwest, towards Two Lick Creek. Two Lick Creek is the principal surface water feature near the Facility (approximately 0.2 miles north), which flows towards the south. The creek is part of the Allegheny River basin and is officially classified as protected for warm water fish and trout stocking; however, it is heavily polluted in the vicinity of Homer City due to acid mine waste and direct discharges of untreated sanitary waste from facilities such as the Homer City municipal system. The creek segment flowing south past the Facility is listed on the streams integrated list (reported for the Clean Water Act) as a non-attaining segment, impaired for aquatic life.

5.	concentr groundy or envir	scharge of "contaminated" groundwater into surface water likely to be "insignificant" (i.e., the maximum ration ³ of each contaminant discharging into surface water is less than 10 times their appropriate vater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, onmental setting), which significantly increase the potential for unacceptable impacts to surface water, its, or eco-systems at these concentrations)?
		If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentrations 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 concentrations 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.
D (1		6()

Rationale and Reference(s):

In accordance with Act 2, the PENTOXSD model along with site-specific data and groundwater data of the plume adjacent to Two Lick Creek was used to perform groundwater to surface water modeling. The constituents of concern detected in the plume adjacent to the creek at concentrations above the surface water standards and required to be evaluated per the PENTOXSD model were lead, TCE, cis-1,2-DCE, 1,1-DCE, and vinyl chloride. The PENTOXSD modeling demonstrated that the creek is not being adversely impacted by residual chlorinated solvents present in the groundwater beneath the Site.

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

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 implemented ₄)?		
		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 ecosystems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR 2) providing or referencing an interim-assessment, appropriate to the potential for impact that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, 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.	
Ration	ale and F	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.

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?"		
		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.	
Ratio	nale and R	eference(s):	

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).		
		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 Homer City Automation, Inc. facility (formerly FMC Corporation), EPA ID No. PAD060689130, located at 57 Cooper Avenue, Homer City, Pennsylvania 15748. 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) Date 323/12 (print) Jeanna R. Henry (title) Remedial Project Manager	
	Supervisor	(signature) Date 8-31-12 (print) Paul Gotthold (title) Associate Director EPA Region III	

Locations where References may be found:

US EPA Region III Land & Chemicals Division 1650 Arch Street Philadelphia, PA 19103

Contact telephone number and e-mail address:

(name)	Jeanna R. Henry
(phone #)	(215) 814-2820
(e-mail)	henry.jeannar@epa.gov