

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

Facility Name: Homer City Automation, Inc. (Former FMC Corporation)
Facility Address: 57 Copper Avenue, Homer City, Pennsylvania 15748
Facility EPA ID #: PAD060689130

1. Has all available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

- If yes - check here and continue with #2 below.
- If no - re-evaluate existing data, or
- If data are not available, skip to #8 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

**Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)**

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be “contaminated”¹ above appropriately protective risk-based “levels” (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

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

- If no (for all media) - skip to #6, and enter “YE,” status code after providing or citing appropriate “levels,” and referencing sufficient supporting documentation demonstrating that these “levels” are not exceeded.
- If yes (for any media) - continue after identifying key contaminants in each “contaminated” medium, citing appropriate “levels” (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.
- If unknown (for any media) - skip to #6 and enter “IN” status code.

Rationale and Reference(s):

2.1 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.

Footnotes:

¹ “Contamination” and “contaminated” describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based “levels” (for the media, that identify risks within the acceptable risk range).

² Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

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.

2.2 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.

2.3 Solid Waste Management Units:

Summaries of historic and/or current Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) present at the Site as a result of past or present operations are provided in the following paragraphs. Further details regarding these SWMUs and AOCs may be found in Section B of the December 2011 EI Inspection Report.

SWMU No. 1 – Hazardous Waste Storage Room: According to a 1990 Preliminary Assessment (PA) conducted by NUS on behalf of EPA, the Facility stored hazardous waste in a large storage room (60 feet x 70 feet) at the southeastern corner of the main building. The floor is constructed of raised concrete and curbed with four-inch angle iron and sealed with a caulk compound. This area has been active since 1980. Paint wastes containing non-halogenated solvents (EPA Hazardous Waste Code F003) and waste oils containing lead (D008) and mercury (D009) were stored in this room prior to shipment. The wastes were contained in metal and fiber drums. At the time of the 2011 EI Inspection, SWMU 1 was active and the components of the unit were generally the same as previously described. Facility representatives indicated that wastes generated by all tenants in the building are stored in the hazardous waste storage room prior to off-site shipment.

SWMU No. 2 – Former Parts Degreasing Sinks: According to the 1990 PA, SWMU 2 was used as part of maintenance operations. The sinks were used to circulate degreasing solvents for the cleaning of tools and machine parts. The sinks and the solvents (ignitable; D001), were maintained by Safety-Kleen, Inc. The wastes were contained in metal drums located beneath the sinks. This unit began operation in 1980. At the time of the 2011 EI Inspection, the sinks had been removed and no visible evidence of the sinks was observed. Facility representatives stated that the former parts degreasing sinks were portable and used throughout the Facility. The exact former locations of the sinks could not be determined.

SWMU 3 – Former Acid Neutralization Area: Located on the concrete floor inside the main building along the eastern wall was a 7 foot by 31 foot area that housed an acid neutralization tank. The tank was used to neutralize acidic wastewaters

prior to discharge to the sewer system. At the time of the 1990 PA this unit was no longer in operation and the tank had been removed. During the 2011 EI Inspection it was noted that this area is now used for equipment storage.

AOC 1 – Former Vapor Degreaser: The Facility formerly operated a vapor degreaser that utilized TCE, which was reportedly within the northeast portion of the building. The use of the vapor degreaser was discontinued in the 1970s and the equipment was removed. The area where the vapor degreaser was located was filled with gravel and covered with concrete. Visual observations made during the 2011 EI Inspection confirmed that the concrete floor at the location of the former vapor degreaser had been patched with concrete. Soil and groundwater in this area were found to be contaminated with TCE as a result of subsurface investigations conducted in 2007 and 2008.

AOC 2 – Former Hazardous Materials/Waste Storage Area: The Facility formerly stored hazardous materials and wastes in the southeast portion of the building. Information regarding this area is limited; however, TCE soil and groundwater contamination in the vicinity of this area was discovered during 2007 and 2008 subsurface investigations. SWMU 1 occupies a 60 feet x 70 feet room that is located within the footprint of AOC 2.

AOC 3 – Area of Disturbed Land (Based on Review of Historic Aerial Photographs):

As part of an April 2007 Phase I Environmental Site Assessment (ESA), a review of historical aerial photographs show an area of disturbed soil located on the southwest side of the Site. Information later obtained during a Phase II ESA revealed that this area was historically used a burn pit. At the time of the 2011 EI Inspection, this area was covered with asphalt and was being utilized as a finished product and equipment storage area.

AOC 4 – West Central Portion of Site

This area is located near the loading dock on the west side of the building. TCE contaminated soil and groundwater were discovered in this area during past investigations. As observed during the 2011 EI Inspection, the exposed soil in this area has since been paved with asphalt.

2.4 Summary of Environmental Investigations and Remediation:

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 findings of the Phase I ESA, an initial subsurface investigation of both soil and groundwater was performed in April 2007 by BV. A total of 32 soil samples were collected from 22 soil borings (to a depth of 10 to 19 feet below ground surface (bgs)) and temporary groundwater monitoring wells were installed in 15 of the 22 soil borings.

The soil and groundwater samples were analyzed for select metals (arsenic, barium, cadmium, total chromium, lead, mercury, nickel, selenium, silver, tin and zinc), corrosivity (pH), volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and total cyanide. The future anticipated use for the Site will be classified as industrial and/or commercial. Therefore, the analytical results for soils were compared to the Pennsylvania Land Recycling and Environmental Remediation Standards Act (“Act 2”) non-residential direct-contact and non-residential land use soil-to-groundwater medium specific concentrations (MSCs). The groundwater analytical results were compared to the non-residential MSCs for used aquifers and non-use aquifers.

Soil analytical results indicated that the PAHs, PCBs, and metals detected in soils did not exceed their respective non-residential MSCs, and cyanide was non-detect in all of the soil samples. Numerous VOCs were detected in several of the soil samples. Cis-1,2-dichloroethene (DCE) and TCE were detected at concentrations above used aquifer soil-to-groundwater MSCs in soil sample SB-8 (4-6 feet bgs). In addition, TCE was detected at a concentration above used aquifer soil-to-groundwater MSCs in soil samples SB-19 (4 to 6 feet bgs) and SB-20 (0.5 to 2 feet bgs and 4 to 6 feet bgs). Soil boring SB-8 was collected from a portion of the Site where the review of historic aerial photographs indicated an area of disturbed land. Soil borings SB-19 and SB-20 were located adjacent to the former TCE vapor degreaser inside the northeast portion of the building.

Groundwater analytical results showed the detection of cyanide in groundwater; however, it did not exceed the used or non-used aquifer non-residential MSCs. Groundwater samples from temporary monitoring well TMW-9 showed detections for arsenic, cadmium, chromium, lead, and nickel exceeding their respective used aquifer MSCs. However, these detected metals were below their respective MSCs for non-use aquifers. PCB constituents, Aroclor 1254 and Aroclor 1260, were

detected in the groundwater sample collected from TMW-7 above the used and non-used aquifer non-residential MSCs. TMW-9 and TMW-7 were located in the area of historically disturbed land. PAHs were non-detect in all groundwater samples.

Numerous VOCs were detected in ten of the groundwater samples including TCE, cis-1,2-DCE, trans-1,2-DCE, 1,1-DCE, 1,1-dichloroethane (DCA), 1,1-trichloroethane (TCA), and vinyl chloride. 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 24 soil borings and TMWs were installed in 10 of the soil borings. 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 exceeded non-residential MSCs in soil and groundwater samples. Vinyl chloride and lead were detected in multiple groundwater samples exceeding their respective groundwater MSCs. PCBs were determined not to be a constituent of concern based on non-detect analytical results from groundwater samples collected from MW-6, MW-7 (installed adjacent to TMW-7), MW-8, and MW-9.

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 (soil and groundwater) contamination:

- *Source Area 1 (AOC 1) – Former Vapor Degreaser*

TCE concentrations in soil beneath the building in the area of the former vapor degreaser ranged from 0.015 mg/kg (SB-38, 10-12 feet bgs) to 79 mg/kg (SB-51, 0.5 -2 feet bgs). Several of the concentrations of TCE in soil exceeded the used aquifer NR soil-to-groundwater MSC. The area of soil exceeding the NR soil-to-groundwater MSC was determined to be approximately 180-feet (north to south) by 80-feet (east to west) beneath the east-central portion of the Facility building. The vertical extent extended from immediately beneath the concrete floor to a depth of approximately 8 to 10 below the concrete floor.

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*

Concentrations of TCE in the soil samples collected from areas outside the building, adjacent to the former storage areas, ranged from non-detect (SB-10, SB-11, SB-33 and SB-34) to 84 mg/kg (SB-32, 0.5-2 feet bgs). Several of the concentrations of TCE in soil exceeded the used aquifer NR soil-to-groundwater MSC. The extent of soil exceeding the NR soil-to-groundwater MSC was determined to be a small area outside the southeast corner of the building (SB-32). An additional soil sample located down gradient of this area (SB-61), also revealed a TCE concentration above the used aquifer NR soil-to-groundwater MSC. The vertical extent of impacted soil extends immediately beneath the concrete floor to an approximate depth of 10 to 12 feet bgs.

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*

TCE concentrations in soil in the former area of disturbed land ranged from 0.006 mg/kg (SB-27, 0.5-2 feet bgs) to 110 mg/kg (SB-8, 4-6 feet bgs). In addition, an elevated concentration of cis-1,2-DCE (9.7 mg/kg) was detected in one soil sample (SB-8, 4-6 feet bgs) from this area. Several of the concentrations of TCE in soil and the one cis-1,2-DCE concentrations in soil exceeded the applicable used aquifer NR soil-to-groundwater MSCs.

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 the only VOC detected in one sample (SB-49, 12-14 feet bgs) collected from the loading dock area at a concentration (18 mg/kg) above its used aquifer NR soil-to-groundwater MSC.

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).

Because VOCs, primarily TCE and cis-1,2-DCE, were detected in soil and groundwater beneath the Facility building, the vapor intrusion (VI) pathway was also evaluated using PADEP's *Land Recycling Program Technical Guidance Manual – Section IV.A.4, Vapor Intrusion into Buildings from Groundwater and Soil under the Act 2 Statewide Health Standard*, which may be applied to both residential and non-residential receptors. This guidance provides decision matrices for soil and groundwater for determining if indoor air quality is a concern. As part of the VI pathway evaluation, 60 sub-slab soil gas samples were collected and analyzed for select VOCs including TCE, trans-1,2-DCE, cis-1,2-DCE, 1,1-DCE, 1,1-DCA, and vinyl chloride, in addition to indoor air modeling via the Johnson and Ettinger (J&E) model. The soil gas NR MSCs utilized to compare the soil gas analytical data were 4.8 milligrams per cubic meter (mg/m^3) for TCE, 10 mg/m^3 for cis-1,2-DCE, 20 mg/m^3 for trans-1,2-DCE, 58 mg/m^3 for 1,1 DCE, 5 mg/m^3 for 1,1-DCA, and 0.95 mg/m^3 for vinyl chloride.

TCE concentrations in three sub-slab soil gas samples (SG-22 [71.96 mg/m^3], SG-22A [76.149 mg/m^3], and SG-25 [10.172 mg/m^3]) collected in the vicinity of the former vapor degreaser, exceeded the NR soil gas MSC of 4.8 mg/m^3 . TCE was also detected at a concentration of 6.166 mg/m^3 in one sub-slab soil gas sample (SG-8) collected in the vicinity of the former hazardous waste storage area. The risk of exposure in the Facility buildings to VOCs release from impacted soils and groundwater was evaluated by the J&E model, assuming an industrial land-use scenario, along with site-specific data and a 95% Upper Confidence Limit (UCL) of sub-slab soil gas data. Results of the J&E model indicated that the incremental risk from VI to indoor air associated with TCE was 6.2E-06, which is below PADEP's approved target risk of 1.0E-05. The cumulative hazard quotient from VI to indoor air utilizing the 95% ULC soil gas data associated with TCE, cis-1,2-DCE, and trans-1,2-DCE was 3.34E-03, which is also below PADEP's approved target hazard quotient of 1. The J&E air modeling demonstrated that there is no unacceptable risk of exposure via indoor air.

For additional information regarding the Site characterization and investigation findings, please refer to Section B of the December 2011 EI Inspection Report.

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.

**Current Human Exposures Under Control
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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>	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food ³
Groundwater	No	No	No	No	No	No	No
Air (indoors)							
Soil (surface, e.g., <2 ft)	No	No	No	No	No	No	No
Surface Water							
Sediment							
Soil (subsurface e.g., >2 ft)	No	No	No	No	No	No	No
Air (outdoors)							

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors’ spaces for Media which are not “contaminated” as identified in #2 above.
2. Enter “yes” or “no” for potential “completeness” under each “Contaminated” Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential “Contaminated” Media - Human Receptor combinations (Pathways) do not have check spaces (“___”): While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

- If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter “YE” status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).
- If yes (pathways are complete for any “Contaminated” Media - Human Receptor combination) - continue after providing supporting explanation.
- If unknown (for any “Contaminated” Media - Human Receptor combination) - skip to #6 and enter “IN” status code.

Rationale and Reference(s):

EPA has determined 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 (i.e., industrial). For additional information regarding the evaluation of exposure pathways, please refer to Section B of the December 2011 EI Inspection Report.

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

1. *Groundwater:* 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. 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). A groundwater exposure evaluation was conducted during the Act 2 attainment process and was documented in the Final Report. The exposure evaluation concluded that no water wells were located at the Site or on the southern adjoining property and that Two Lick Creek acts as a groundwater divide preventing the migration of contaminated groundwater to the west beyond the creek. The Facility receives its drinking water from the Central Indiana County Water Authority, which serves the Homer City area from a surface water intake located approximately 5 miles upstream of the Site on Yellow Creek. Furthermore, to ensure that a potential exposure pathway to contaminated groundwater at the Site does not exist, an Environmental Covenant was recorded on March 16, 2012 with the deed to the property prohibiting the usage of groundwater at the Site in accordance with Act 2 and PADEP regulations.
2. *Indoor Air:* Evaluation of the potential inhalation pathway for Facility buildings was completed by utilizing the J&E model, assuming an industrial land-use scenario, along with site-specific data and a 95% UCL of sub-slab soil gas data. Air modeling via the J&E model concluded that there was no unacceptable risk of exposure in the existing buildings from VOCs released from the impacted soil and groundwater at the Site. Furthermore, to ensure that a potential inhalation exposure pathway via VI at the Site does not exist, an Environmental Covenant was recorded on March 16, 2012 with the deed to the property requiring any new buildings, additions to the existing buildings, or construction of subsurface pits and/or basements on the property undergo a VI evaluation, submitted to PADEP prior to construction, for the potential inclusion of a vapor barrier system.
3. *Surface and Subsurface Soils:* None of the 113 soil samples collected as part of the site characterization revealed constituents of concern above PADEP's non-residential direct-contact MSCs for surface and subsurface soils. In addition, the areas of soil contamination at the Site are covered by asphalt or concrete and have restricted access. Thus, potential exposure pathways between "contamination" at the Site and human receptors has been determined to be incomplete under the current land-use conditions (i.e., industrial). To ensure the property is not used for residential purposes, an Environmental Covenant was recorded on March 16, 2012 with the deed to the property restricting the use of the property for solely non-residential purposes in accordance with Act 2 and PADEP regulations.
4. *Surface Water:* 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. Because concentrations of VOCs and lead were detected in permanent monitoring wells along the western property boundary and the groundwater flow direction at the Facility is to the southwest, towards Two Lick Creek, the ingestion and direct contact human exposure pathways to surface water were further evaluated through the performance of groundwater to surface water modeling. According to the Final Report, 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 COCs 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. Therefore, it was concluded that the human exposure pathways to surface water (i.e., ingestion of contaminated surface water and direct-contact with contaminated surface water) are incomplete.

5. Sediment: Sediment sampling was performed along the eastern bank of Two Lick Creek (western property boundary) during site characterization activities in 2008. Results of the sampling identified low levels of VOCs (acetone, MEK, cis-1,2-DCE, TCE, and total xylenes) and lead in one or more the eight sediment samples that were collected. However, none of the COCs were detected at concentrations exceeding the residential direct-contact MSCs for surface soils. Therefore, the human exposure pathways to sediment (i.e., ingestion of contaminated sediment and direct-contact with contaminated sediment) are incomplete.
6. Outdoor Air: MGK currently operates under General Operating Permit No. GP4-32-00408 for air emissions associated with the operation of natural gas burn-off ovens. HCA does not have any documented operational processes that involve air emissions and currently do not operate under any air permits. Air emissions in excess of permit limits are not anticipated under normal operating scenarios.

**Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)**

4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **“significant”**⁴ (i.e., potentially “unacceptable” because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable “levels” (used to identify the “contamination”); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable “levels”) could result in greater than acceptable risks)?
- If no (exposures can not be reasonably expected to be significant (i.e., potentially “unacceptable”) for any complete exposure pathway) - skip to #6 and enter “YE” status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”
 - If yes (exposures could be reasonably expected to be “significant” (i.e., potentially “unacceptable”) for any complete exposure pathway) - continue after providing a description (of each potentially “unacceptable” exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”
 - If unknown (for any complete pathway) - skip to #6 and enter “IN” status code

Rationale and Reference(s):

⁴ If there is any question on whether the identified exposures are “significant” (i.e., potentially “unacceptable”) consult a human health Risk Assessment specialist with appropriate education, training and experience.

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)

5. Can the “significant” exposures (identified in #4) be shown to be within acceptable limits?

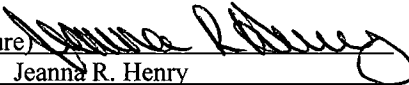
- If yes (all “significant” exposures have been shown to be within acceptable limits) - continue and enter “YE” after summarizing and referencing documentation justifying why all “significant” exposures to “contamination” are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).
- 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):

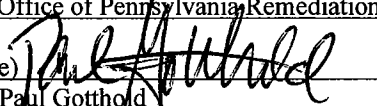
**Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)**

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI (event code CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

- YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the former FMC Corporation facility, EPA ID No. PAD060689130, located at 57 Copper Avenue, Homer City, Pennsylvania 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) 
(print) Jeanna R. Henry
(title) Remedial Project Manager
Office of Pennsylvania Remediation

Date 8/23/12

Supervisor (signature) 
(print) Paul Gotthold
(title) Associate Director
Office of Pennsylvania Remediation
EPA Region 3

Date 8-31-12

Locations where References may be found:

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

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