

RCRA Inspection Report

1) Inspector and Author of Report

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U.S. Environmental Protection Agency, Region 4
Enforcement and Compliance Assurance Division
Chemical Safety and Land Enforcement Branch
61 Forsyth Street, S.W.
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2) Facility Information

PMC Organometallix, Inc. (PMC)
13755-B Highway 43 North
Axis, Alabama 36505

EPA ID# ALR000053371

3) Responsible Officials

Christopher McNeil
Environmental Engineer

christopher.mcneil@arkema.com

4) Inspection Participants

Chris McNeil, Arkema
Jay Tschudy, Arkema

Lanny Sasser, ADEM
Laurie Benton DiGaetano, USEPA

5) Date of Inspection

March 28, 2023

6) Applicable Regulations¹

Alabama Hazardous Waste Management and Minimization Act of 1978 (AHWMMA), Ala. Code § 22-30-1 *et seq.*, [Resource Conservation and Recovery Act (RCRA) Sections 3002 - 3005, (42 U.S. Code - Annotated U.S.C.A. 6925 and 6927)] and rules 335-14-1 to 335-14-17 (2016 and 2018) of the Alabama Department of Environmental Management (ADEM) Administrative Code (ADEM Admin. Code) [40 Code of Federal Regulation (C.F.R.) Parts 260-270, 273 and 279].

Pursuant to ADEM Admin. Code r. 335 14-1-.02-(1)(a)111. [40 C.F.R. § 260.10], a large quantity generator of hazardous waste (LQG) is a generator who generates greater than or equal to 1,000 kilograms (2,200 pounds) of non-acute hazardous waste in a calendar month.

¹ As the State's authorized hazardous waste program operates in lieu of the federal RCRA program, the citations of those authorized provisions will be to the authorized State program. However, for ease of reference, the federal citations will follow in brackets.

Pursuant to ADEM Admin. Code r. 335-14-11-.02(a)(a)244. [40 C.F.R. § 273.9], a small quantity handler of universal waste (SQHUW) is a universal waste handler who does not accumulate 5,000 kilograms or more of universal waste (batteries, pesticides, mercury-containing equipment, lamps, or aerosol cans, calculated collectively) at any time.

Pursuant to ADEM Admin. Code r. 335-14-3-.01(5)(a) [40 C.F.R. § 262.15(a)], a generator may accumulate as much as 55 gallons of non-acute hazardous waste in containers at or near the point of generation where wastes initially accumulate, which is under the control of the operator of the process generating the waste, without a permit or without having interim status, as required by Section 22-30-12(b) of the Alabama Hazardous Wastes Management and Minimization Act (AHWMMA), Ala. Code § 22-30-12(b) [Section 3005 of RCRA, 42 U.S.C. § 6925], and without complying with ADEM Admin. Code r. 335-14-3-.01(6)(b) or 335-14-3-.01(7)(a) [40 C.F.R. § 262.16(b) or § 262.17(a)], except as required in ADEM Admin. Code r. 335-14-3-.01(5)(a)7. and 8. [40 C.F.R. § 262.15(a)(7) and (8)], provided that the generator complies with the satellite accumulation area conditions listed in ADEM Admin. Code r. 335-14-3-.01(5)(a) [40 C.F.R. § 262.15(a)] (hereinafter referred to as the “SAA Permit Exemption”).

Pursuant to ADEM Admin. Code r. 335-14-3-.01(7) [40 C.F.R. § 262.17], a large quantity generator (LQG) may accumulate hazardous waste on-site for 90 days or less without a permit or without having interim status, as required by Section 22-30-12(b) of the AHWMMA, Ala. Code § 22-30-12(b) [Section 3005 of RCRA, 42 U.S.C. § 6925], provided that the generator complies with the conditions listed in ADEM Admin. Code r. 335-14-3-.01(7) [40 C.F.R. § 262.17] (hereinafter referred to as the “LQG Permit Exemption”).

7) Purpose of Inspection

The purpose of this inspection was to conduct an unannounced compliance evaluation inspection to determine PMC’s compliance with the applicable requirements of RCRA and the corresponding Alabama regulations. This was an EPA lead inspection.

8) Facility Description

PMC Group and PMC Organometallix:

PMC Group, a global chemical company that began in 1994, services a broad range of end markets including plastics, consumer products, electronics, paints, packaging, personal care, food, automotive and pharmaceuticals. The company has facilities and personnel in the Americas, Europe and Asia, and its headquarters is in Mount Laurel, New Jersey. The PMC Group consists of eight business units: PMC Polymer Products, PMC Ouvrie, PMC Crystal, PMC Rubber Chemicals, PMC YM-Pharma, PMC Isochem, PMC Biogenix, and PMC Organometallix.

The PMC Organometallix business unit (PMC) develops and manufactures highly specialized stabilizers, tin compounds, catalysts and reagents for food and construction applications. Most activities for this business unit occur at the company’s 400-acre complex near Carrollton, Kentucky. However, PMC purchased manufacturing process units in the 100 and 200 Areas within the Arkema chemical manufacturing facility in Axis, Alabama about ten years ago. Arkema manufactures acrylic polymers, PEKK, and tin-based organometallics at this location.

PMC produces tin tetrachloride (TTC) in the 100 Area and various butyl crude, octyl crude, and aluminum chloride compounds in the 200 Area.

Facility Operations:

PMC employs two chemical engineers, who are responsible for the design and specification parameters for the manufacturing process units at this location. However, the operators in the control room for PMC manufacturing process units are employed by Arkema, and Arkema also provides hazardous waste management and utilities services for PMC's on-site operations. PMC's operations run 24 hours per day, seven days per week, and they are performed under the NAICS Code 325199 for All Other Basic Organic Chemical Manufacturing.

According to the public version of PMC Organometallix, Inc.'s August 2021 Synthetic Minor Operating Permit Minor Modification Application, the 100 Area of PMC Axis plant is a batch processing unit which utilizes a reactor, batch still, and condensers, among other process equipment, to produce tin tetrachloride (TTC) for sale as well as for use as a raw material in the 200 area and in the Arkema owned 300 area. Chlorine is unloaded from railcars directly to the process in the 100 Area, and the final product TTC is stored in a dedicated storage tank until it is shipped off-site or used in other units at the plant.

The August 2021 Synthetic Minor Operating Permit Minor Modification Application describes the 200 Area of PMC Axis plant as a continuous processing unit which utilizes reactors, distillation columns, condensers, heat exchangers, carbon absorbers and filters among other process equipment to produce various butyl crude, octyl crude and aluminum chloride compounds used in the chemical industry. The process begins by reacting aluminum alkyls and tin tetrachloride to product butyl or octyl tin. Next a distillation process separates product butyl/octyl crudes from solvent. Both raw materials and final products are stored in dedicated tanks and vessels in the 200 Area, and the spent solvents are removed from the process and stored as hazardous waste in Tank T-403, a 7,880-gallon carbon steel, plastic lined, closed roof tank equipped with an overfill and leak detection system.

PMC personnel explained that the company recently built a new unloading station at the facility for unloading a recycle stream of dibutyl tin chloride (DBTC) from the PMC Carrollton Plant. This material will be fed directly into an on-site reactor for use as-is in the butyl production process.

Waste Management:

PMC Organometallix, Inc. has operated as a large quantity generator (LQG) of hazardous waste at the Arkema facility since September 2012. The company most recently notified as an LQG on December 14, 2022. The company's most recent biennial report, which was submitted on February 28, 2022, indicated that PMC generated the following hazardous wastes and shipped them off-site during calendar year 2021:

Waste Description	EPA Waste Code	Volume
Waste organic solvent from production activities	D001	361,500 pounds
Spent carbon from manufacturing process	D004	4,540 pounds
Waste oil from column bottom solvent	F001	9,612 pounds

According to the contingency plan, PMC and Arkema each generate hazardous waste in sufficient quantities to classify as an LQG of hazardous waste at this facility. The plan states that PMC generates hazardous waste octyl solvent in the production of octyl tin crudes, and hazardous waste spent carbon from changing out carbon columns in liquid phase service. The facility does not manage a SAA for either of these hazardous waste streams. Instead, octyl solvent waste is pumped directly from the continuous production process into Tank T-403; and when spent carbon is generated, it is accumulated in a 55-gallon drum and then immediately stored in the hazardous waste central accumulation area (CAA).

9) **Previous Inspection History**

ADEM conducted two RCRA CEIs at PMC Organometallix, Inc. since the company first notified as a large quantity generator (LQG) of hazardous waste at this location in 2012. The most recent inspection was conducted on April 30, 2019, and no violations have ever been noted for this EPA Identification Number. This is the first EPA RCRA CEI.

10) **Opening Conference**

On March 28, 2023, EPA inspector Laurie Benton DiGaetano, accompanied by ADEM inspector Lanny Sasser, arrived at PMC Organometallix at approximately 9:50 a.m. Chris McNeil, Environmental Engineer for Arkema, received the inspectors immediately after they watched a site safety video. The inspectors introduced themselves, showed their credentials to Chris McNeil, and explained the purpose of the visit.

The inspectors described the anticipated use of equipment (digital camera) during the inspection and provided a request for records. The EPA inspector explained that the Small Business Regulatory Enforcement Fairness Act's classification of a "small business" is generally set by the Small Business Administration using the business' SIC/NAICS code and annual receipts or number of employees. A copy of the EPA's information sheet for small businesses can be found at <https://www.epa.gov/sites/production/files/2017-06/documents/smallbusinessinfo.pdf>. The EPA inspector also discussed the company's ability, pursuant to 40 C.F.R. §2.203, to assert a business confidentiality claim for information submitted to EPA. The company did not assert a business confidentiality claim.

Chris McNeil provided an overview of the facility's history and current operations during the opening conference. The inspection participants also discussed health and safety protocols and required personal protective equipment before Chris McNeil and Jay Tschudy, Utility Operator, led the inspectors on a tour of the Facility operations.

11) **Inspection Observations**

Waste Profiles:

According to the contingency plan, PMC generates:

- D001 (ignitable) and D002 (corrosive) hazardous waste octyl solvent, a liquid waste containing octene, dibutyl ether, heptane, and hydrogen chloride, and

- D004 (arsenic) hazardous waste spent carbon.

The company's most recent biennial report, however, indicates that PMC generates:

- D001 (ignitable) hazardous waste organic solvent from production activities,
- D004 (arsenic) hazardous waste spent carbon from manufacturing process, and
- F001 hazardous waste oil from column bottom solvent.

The waste profile records indicate that spent carbon sent to Chemical Waste Management (ALD000622464) is D004 (arsenic) hazardous waste from manufacturing of industrial organic chemicals from liquid phase separation columns stripping non-regulated organics.

The waste manifest records indicate that waste octyl solvent is shipped to PMC (KYD006373922) as D001 (ignitable) hazardous waste flammable liquids (octene, dibutyl ether) and to Safety-Kleen Systems (KYD053348108) as D001 (ignitable) and F003 waste flammable liquid (butanol, hydrochloric acid).

Pursuant to ADEM Admin. Code r. 335-14-3-.01(2)(g) [40 C.F.R. § 262.11(g)], a person who generates a solid waste, as defined in [40 C.F.R. § 261.2], must make an accurate determination as to whether the waste is a hazardous waste in order to ensure wastes are properly managed according to applicable RCRA regulations articulated in [40 C.F.R. § 262.11]. If the waste is determined to be hazardous, generators must identify all applicable EPA hazardous waste numbers in 335-14-2-.03 and .04.

In an email to the inspectors on April 13, 2023, Christopher McNeil submitted a letter stating that the butyl waste solvent hazardous waste stream is a byproduct of the manufacturing process and should only carry the D001 hazardous waste code. Christopher McNeil explained that the use of hazardous waste code F003 on manifest records for waste shipped to Clean Harbors' Smithfield, Kentucky facility is attributed to erroneous profiling by Clean Harbors.

Hazardous Waste Storage Tank T-403:

According to the contingency plan, PMC stores hazardous waste octyl solvent in a 7,880-gallon carbon steel, plastic lined, closed roof tank that is equipped with an overfill and leak detection system (Photo 1). The inspectors observed this tank within a secondary containment area shared with Arkema tank(s). Tank T-403 was labeled with the EPA Waste Code D001 and with words hazardous waste. The inspectors observed "flammable" and "no smoking" warning signs in this area and an NFPA diamond on the tank, which indicated the hazards of its contents. The tank appeared to be in good condition, and the inspectors observed metal tags identifying equipment subject to RCRA Subpart BB air monitoring (Photo 2).

Hazardous Waste Central Accumulation Area (CAA):

PMC's contingency plan describes the CAA as a concrete pad surrounded by a four-inch-high curbing and covered with a chemical resistant coating that is compatible with the waste stored in this area (Photo 3). The pad is equipped with a metal roof and surrounded by a locked, chain link fence. The floor is sloped to a sump, and material that collects in the sump is pumped to the on-site wastewater treatment plant. The area was identified with signs which read "danger -

hazardous waste storage area” and “no smoking.” The inspectors observed six 55-gallon drums of Arkema hazardous waste in this area, but no containers of PMC hazardous waste.

The CAA is equipped with portable fire extinguishers, spill control equipment, and an emergency shower and eyewash station. According to Chris McNeil, personnel working in this area carry two-way radios to signal an emergency alarm or summon emergency assistance.

Contingency Plan:

The tactical response section of the emergency action plan provides information on actions facility personnel must take to control fires and any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the facility. A copy of the contingency plan (and its quick reference guide) was most recently submitted to the Springhill Medical Center, the Mobile County Sheriff, ADEM, University of South Alabama Medical Center, Mobile County EMA, Mobile Central Fire Department, and the Alabama Department of Public Safety on December 28, 2017.

The contingency plan identifies a 24-hour emergency telephone number as well as the telephone numbers for the emergency coordinator and two alternates, and it describes Mutual Aid Agreements with the Mobile County Emergency Management Agency and the Mobile County Local Emergency Planning Committee (LEPC), and it identifies arrangements with the plant nurse, plant EMTs, Springhill Memorial Hospital, the University of South Alabama Medical Center, and the Mobile County Sheriff.

The contingency plan also includes a list of emergency equipment at the facility, including fire control equipment, spill control equipment, decontamination equipment, first aid equipment, security controls, eyewash and safety showers, emergency respirators, emergency PPE, and monitoring equipment. The plan does not include the specific location and a physical description of each item on the list, or a brief outline of its capabilities. The plan states that the fire control equipment is located strategically around the operating units and tank farm and eyewash and safety showers are located throughout the plant.

Pursuant to ADEM Admin. Code r. 335-14-3-.01(7)(a)6. [40 C.F.R. § 262.17(a)(6)], which incorporates 335-14-3-.14(9)(e) [40 C.F.R. § 262.261(e)] and is a condition of the LQG Permit Exemption, the contingency plan must include a list of all emergency equipment at the facility and include the location and a physical description of each item on the list, and a brief outline of its capabilities.

The quick reference guide includes the types/names of hazardous waste in layman’s terms and the associated hazard associated with each hazardous waste present at any one time; the estimated maximum amount of each hazardous waste that may be present at any one time; the identification of any hazardous wastes where exposure would require unique or special treatment by medical or hospital staff; a map of the facility showing where hazardous wastes are generated, accumulated and treated and routes for accessing these wastes; a street map of the facility in relation to surrounding businesses, schools and residential areas; the locations of water supply; the identification of on-site notification systems; and the 24-hour emergency telephone number.

Training Records:

In an email to the inspectors on April 13, 2023, Christopher McNeil submitted hazardous waste training records, which indicated that the three named employees completed annual RCRA training during July of 2021 and 2022. In an email to the inspectors on April 25, 2023, Christopher McNeil submitted the job description for the PMC Chemical Operator with the requisite skill, education, or other qualifications, and duties of facility personnel assigned to that position; and a copy of the training matrix with the type and amount of both introductory and continuing training to be given to facility personnel.

Waste Manifest Records:

The inspectors reviewed available hazardous waste manifest records and land disposal restriction forms for shipments of hazardous waste sent since 2020. Hazardous waste manifest records show that between one-to-three shipments of hazardous waste octyl solvent were shipped offsite every calendar month for a total of twenty shipments during calendar year 2022. Each shipment contained approximately 33,021 pounds of hazardous waste.

Weekly Inspection Records:

The inspectors reviewed PMC's available records of inspections of the hazardous waste central accumulation area (CAA) since January 1, 2023. The inspection log includes a checklist to record observations about leaking containers and for deterioration of containers caused by corrosion or other factors. The checklist is also used to record observations about the condition of container labels, waste identification numbers, dates, closure, and cleanliness, the condition of the pad dike, pad surface, drains, and sump pump, the presence of aisle spacing, the stacking of containers, and the operation of the eyewash station, fire extinguisher, and security gate. The checklist includes an area for recording an inventory of the hazardous waste containers, and the date of the oldest container.

Daily Inspection Records:

PMC maintains electronic records of daily tank inspections, and the inspectors selected several dates at random for inspection record review. The daily tank inspection records include the inspector's initials and title, and the date and time of each inspection. The records include areas to record the date hazardous waste began accumulating in the tank following the most recent shipment of waste offsite; the current level of waste inside the tank; any signs of damage or release from the pump, from the tank, or from valves, flange connections, pipe connections or ancillary equipment; and observations concerning the condition of the containment area.

The RCRA Subpart BB records for Tank T-403 indicate that the system includes thirty-six valves and one pump which are subject to RCRA Subpart BB; that the line between P-262 and Tank T-403 is in light liquid service; and that the line from Tank T-403 and the tanker truck is in gas vapor service. In an email to the inspectors on April 13, 2023, Christopher McNeil submitted records of Leak Detection and Repair (LDAR) monitoring of each piece of equipment, which indicated that no leaks were detected on February 15, 2022.

12) **Closing Conference**

The inspectors conducted the exit meeting at 2:00 p.m. with Chris McNeil. During this meeting, the inspectors stated their preliminary conclusions of the inspection. Chris McNeil agreed to provide records associated with hazardous waste training for PMC operators and with LDAR monitoring related to the hazardous waste tank.

On April 13, 2023, Christopher McNeil emailed a letter to the inspectors. The letter addressed the butyl waste solvent hazardous waste profile discrepancy and included attachments of LDAR monitoring and hazardous waste training records.

In an email on April 25, 2023, Christopher McNeil provided the inspectors with job descriptions related to hazardous waste management for PMC Organometallix and a copy of the training matrix for employees filling those jobs.

13) **List of Attachments**

Attachment 1 – Photo Log:

3 Photos taken on: March 28, 2023

Photos taken by: Laurie Benton DiGaetano

Photos taken with: Panasonic DMC TS-5 Digital Camera

EPA Property Tag: S09533

14) **Signed**

LAURIE
DIGAETANO

Digitally signed by LAURIE
DIGAETANO
Date: 2023.05.03 08:21:21 -04'00'

Laurie Benton DiGaetano
Environmental Engineer

Concurrence

ARACELI
CHAVEZ

Digitally signed by ARACELI
CHAVEZ
Date: 2023.05.03 13:51:20 -04'00'

Araceli B. Chavez
RCRA Enforcement Section

Attachment 1
RCRA CEI Photographs

Laurie Benton DiGaetano, USEPA

Panasonic DMC TS-5 #S09533



Photo 1: 7,880-gallon carbon steel, plastic lined, closed roof hazardous waste storage tank (T-403) that is equipped with an overfill and leak detection system. The tank is labeled with the EPA Waste Code D001 and with the words hazardous waste. The hazards associated with the contents of the tank were indicated with a “no smoking” sign and an NFPA diamond.



Photo 2: Metal tags identifying equipment associated with Tank T-403 that is subject to RCRA Subpart BB monitoring.



Photo 3: CAA located on concrete pad surrounded by a four-inch-high curbing and covered with a chemical resistant coating. The pad is equipped with a metal roof and surrounded by a locked, chain link fence. The floor is sloped to a sump, and the area is identified with a “no smoking” sign.