

Region 6 - Enforcement & Compliance Assurance Division

INSPECTION REPORT

Inspection Date(s):	February 25-28, 2020	
Media Program:	RCRA	
Regulatory Program(s)	LQG/TSDF	
Company Name:	Axiall Corporation	
Facility Name:	Axiall, Plaquemine	
Facility Physical Location:	26100 Highway 405	
(city, state, zip code)	Plaquemine, LA. 70764	
Mailing address:	26100 Highway 405	
(city, state, zip code)	Plaquemine, LA. 70764	
County/Parish:	Plaquemine	
Facility Phone Number	630-305-2059	
Facility Contact:	Hillary Garner	Regional EHS Manager
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FRS Number:	110002040461	
Identification/Permit Number:	LAD057117434	
Media Identifier Number:	LAD057117434	
NAICS:	325211	
SIC:		
Personnel participating in inspection:		
John Penland	EPA	Lead Inspector
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Jenifer Kidd	LDEQ	Inspector
Hillary Garner	Westlake / Axiall	Regional EHS Manager
Doug Kinittig	Westlake / Axiall	Site Manager
Joseph Daigneault	Westlake / Axiall	Principal HSE (CWA)
Katy Roberson	Westlake / Axiall	Environmental Engineer (CAA)
EPA Lead Inspector Signature/Date		4/30/2020
	John Penland (ECDSR)	Date
Supervisor Signature/Date		4/30/2020
	Jeff Yurk (ECDSR)	Date

Section I – INTRODUCTION

PURPOSE OF THE INSPECTION

During the week of February 25-28, 2020, I, John Penland, conducted an unannounced inspection of the Axiall Corporation, vinyl chloride manufacturing facility located in Plaquemine, Louisiana, for compliance with the Resource Conservation and Recovery Act (RCRA). I was assisted on this inspection by Environmental Protection Agency (EPA) inspectors Bill Mansfield and Angela Hays and by Louisiana Department of Environmental Quality (LDEQ) inspectors Phyllis Luke, Terry Dedon, and Jenifer Kidd. Beginning February 25, 2020, we conducted an opening briefing for Ms. Hillary Graner, Regional EHS Manager for the Axiall Plaquemine facility (Plaquemine) and her staff. During this briefing we presented our credentials to Ms. Graner and explained that this inspection was being conducted under the authority of Section 3007 of RCRA. The inspection included walkthroughs of the facility's hazardous waste generation, management, and thermal treatment units; a review of the facility records related to hazardous waste management; and a specific evaluation of the facility's compliance with the RCRA air pollution control requirements. We concluded the inspection of the Plaquemine facility on February 28, 2020, with a closing conference attended by representatives of Axiall where we presented our provisional areas of concern.

This report serves as documentation of all onsite activities and observations during the inspection of the Plaquemine facility. Photographs taken during the inspection documenting onsite observations are included as Appendix 1. A summary of areas of concern identified during the inspection is provided in Section III.

FACILITY DESCRIPTION

The Axiall Corporation has historically been a major manufacturer and marketer of chlorovinyls (caustic soda, chlorine, VCM, EDC, PVC resins, PVC rigid and flexible compounds) and aromatics (acetone, cumene, phenol). The company operates 47 locations in numerous states such as Mississippi, Louisiana, Oklahoma, Michigan, Tennessee, and Texas, and is headquartered in Atlanta, Georgia.

The Plaquemine facility operates 24-hours per day, seven days a week in Iberville Parish, Louisiana. This facility is located on over 800 acres next to the Mississippi River. The surrounding area is primarily utilized for industrial and agricultural purposes. The facility employs approximately 420 Westlake employees and 300 contractors.

The Plaquemine facility is a polyvinyl chloride (PVC) production facility which includes the manufacturing of chlorine, sodium hydroxide (caustic), ethylenedichloride (EDC), vinyl chloride, PVC, and hydrochloric acid. The facility is also a permitted hazardous waste facility for the combustion of liquid

hazardous waste, including EDC Heavy Ends in the industrial furnace and for the storage of hazardous waste in permitted tanks. The different plants at the facility include: Chlorine / Caustic, EDC/VCP, and PVC. The facility shutdown the Phenol/Acetone Plant in the later part of 2015, but it has not been dismantled.

The Chlorine/Caustic Plant uses diaphragm cells to produce chlorine and caustic soda concurrently by electrolysis of a saturated sodium chloride brine solution. The EDC/VCM Plant produces VCM and EDC using ethylene, chlorine, and oxygen as raw materials. The PVC Plant produces PVC resins by polymerizing vinyl chloride monomer (VCM) in batch a reactor which converts a portion of the VCM charged in each batch to PVC.

Axiall operates a permitted hazardous waste industrial furnace that combusts hazardous waste generated in the EDC/VCM Plant. The permitted industrial furnace is a halogen acid production furnace (HAPF) that combusts EDC Heavy Ends liquids (K019), EDC/VCM process waste liquids (D001, D019, D022, D028, D039, 0040), process vent gases, and storage tank vent gases. The process for producing hydrochloric acid (HCL) at the facility begins with the combustion of these chlorinated hazardous wastes in the furnace then resulting gases are routed to the HCL recovery system consisting of four absorber units. The incinerator vents gases from the combusted wastes through a waste heat boiler, an acid recovery system, and a wet scrubber prior to discharge through an exhaust stack.

The facility operates under the requirements of a RCRA hazardous waste permit issued by the LDEQ. According to the 2019 hazardous waste permit revision, the facility is considered a major source of stationary hazardous air pollutants (HAPs) as defined in Part A, Section 112 of the Clean Air Act (CAA). Axiall's CAA Title V permit establishes operating requirements for the hazardous waste units which are used in lieu of the RCRA hazardous waste air emission standards.

LDEQ last inspected the facility for RCRA compliance in August 2018. In its report LDEQ identified the following areas of concern: cracks in secondary containment for tank V-441A; lack of a tank closure notification for TK-623A; storage of ignitable (D001) hazardous waste in unpermitted tank no.47626; lack of a waste determination for VPP Cartridges; open hazardous waste containers; missing inspections for hazardous waste tanks and containers, and a leak from a roll off container.

The Plaquemine facility generates multiple hazardous waste streams as found in its Hazardous Waste Annual Reports and identified during the inspection including, but not limited to:

Hazardous Waste Stream	Hazardous Waste Code(s)
EDC Heavy Ends from EDC Manufacturing	D001, D019, D022, D028, D029, D032, D033, D034, D039, D040, D043, K019
Carbon and Coke Contaminated with EDC	D001, D028, D043, F024, K019
Carbon and Coke with EDC From Filter Changes	D001, D028, D043, F024, K019
EDC Tank Bottom	D028, D033, D034, D039
EDC Tank Washwater	D028, D033, D034, D039
Hazardous Lab Packs	D001, 0002, D003, D004, D007, D009, D024, D025, D036, P098, U003, U019, U031, U123, U134, U154, U159, U169
Industrial Furnace Refractory Brick and Ash	K019
Boiler Washwater	K019
Paint Waste	D001, F003, F005
Soil and Debris Contaminated with EDC	D022, D028, D039, D040, D043
Soils Contaminated with Caustic	D002
VCM Filters	D043, F025
Wastewater Treatment Solids **	K174**
Phenol Mixed Oil *	D001, D007, D018, D023, D024
Phenol Mixed Oils and Washwater *	D001, F003, K022
Flammable Aerosol Cans	D001
Contaminated Piping	D018, D028, D043, K022
Refractory Brick and Residue	D005, D007, D008
Heavy Oil Contaminated with Soil and Debris *	K022

*Not routinely generated following the shutdown of Phenol Plant

**The exclusion in the K174 listing is used to not generate K174 unless there is a spill of wastewater to the ground.

Section II – OBSERVATIONS

We conducted the onsite inspection during normal business hours from February 25-28, 2020. During the inspection, the Plaquemine facility was conducting normal operations and all areas of the facility were in use. Throughout the week we visited each of the facility's hazardous waste generation, accumulation, and management areas. We also reviewed the facility's operating records pertaining to the facility's RCRA applicability and compliance requirements. On February 27, 2020, I conducted emissions monitoring in accordance with EPA Method 21 using a Thermo TVA-2020 (S/N 202016081525) calibrated using Zero Air, Methane at 500ppm, and Methane at 9,500ppm as specified in 40 CFR §264.1063 and §265.1085 (d).

This section provides a detailed description of our observations of each unit assessed throughout the inspection. Unless otherwise specified, the statements cited in this section reflect those claims made by facility personnel or documents reviewed during the inspection.

Central Container Accumulation Areas

On February 25, 2020, we began our walkthrough of the facility at the hazardous waste container accumulation area. This area is located near the Obligate Stores area located in the SE corner of the facility. The central accumulation area for smaller containers is a concrete lined pad located beneath an open-sided roofed structure. Approximately 25 containers were located on the concrete pad. During our inspection of these containers we found that one 55-gallon drum had been marked as containing waste aerosol cans and given a waste code of D001 for ignitability. However, according to Ms. Garner, these cans are not punctured and drained onsite which means they could still contain their propellant and carry the addition waste code of D003 for reactivity.

Larger roll-off containers are accumulated in an unlined area located on the north side of this pad. One roll-off container in this area contained refractory brick from the hazardous waste furnace (K019) and was not marked with the accumulation start date (Appendix 1, photo 1 through 5).

VCM Unit

The VCM unit has the highest concentration of the facility's hazardous waste generation and management units with EDC being the primary hazardous constituent. EDC heavy ends are generated in the EDC reactors and piped directly to the permitted hazardous waste tanks where the waste is stored prior to being piped to the permitted industrial furnace where it is thermally destroyed. VCM filters and EDC contaminated coke and carbon is generated throughout the unit where product and waste transfer pumps are equipped with filters.

On February 25, 2020, we walked through the entire unit to visually assess the points of hazardous waste generation and permitted hazardous waste units. During our walkthrough we found one used oil tote located on the northwest side of the unit that was not marked with the words "used oil" (Appendix 1, photo 11-12). Further south down the same alley we found one container of EDC contaminated coke / carbon waste without a ring seal on the drum lid (Appendix 1, photo 13). We also found one container of EDC contaminated coke / carbon waste with extensive staining on the outside of the drum. This waste was generated during the changing of a filter on a nearby pump. The pump was also covered with the EDC contaminated carbon with a visible spill and drainage path leading to a collection sump (Appendix 1, photo 15-16). This spill was cleaned up prior to our departure from the site on February 28, 2020.

Three permitted hazardous waste storage tanks are located in the VCM unit. Of the three, only tank TK-629 was in use storing EDC heavies (Appendix 1, photos 30 through 32). Tanks V-441A and TK 623A were both out of service. During our initial evaluation of tank TK-629 we inspected the secondary containment integrity and the closure devices for the tank. TK-629 is a fixed-roof, cone-bottom tank equipped with a closed vent system routed to the three furnaces, a nitrogen blanket system, and a pressure relief vent. The secondary containment liner appeared to be intact without any visible breaches. When we inspected the closure devices on the roof of the tank, I could smell a strong odor near the pressure relief vent.

We returned to the VCM unit on February 27, 2020, to check the EDC heavies piping system for leaks and fugitive emissions. As part of its Leak Detection and Repair (LDAR) program Axiall has opted to apply the standards of the Hazardous Organic NESHAP (HON) in lieu of the requirements of RCRA Subpart BB. These HON requirements are incorporated in the facility's CAA operating permit. We conducted the emissions monitoring in accordance with EPA Method 21 using a TVA2020. Axiall personnel were present during the monitoring. One complicating factor we encountered during the evaluation was the lack of LDAR tags on all the hazardous waste components. Instead of tags a marker was used to write the last two digits of the tag number making it difficult for us to identify each component.

We began monitoring with the EDC reactors where the EDC heavies are generated at the outlet of the reactor. We did not identify any leaks, but we did note the pumps in the area were stained from apparent releases. We followed the transfer piping from the reactors to tank TK-629. The transfer pumps near the tank farm had a spill of EDC waste within the containment pad and the equipment was still covered with spill material (Appendix 1, photo 25-26). The PRV on the roof of tank TK-629 had already been marked as leaking by the facility's LDAR monitoring technicians. We did not identify any other active leaks at the tank or its immediate ancillary equipment. We then followed the transfer line from the tank farm to the permitted industrial furnace. We found one visible leak at the control valve near the furnace (Appendix 1, photo 27).

During our LDAR inspection of the VCM unit, we found a grouping of nine, 55-gallon drums staged to be moved to the central accumulation area (Appendix 1, photos 22 through 24): two of the drums were labeled nonhazardous oil; four of the drums were marked hazardous waste carbon/coke; one drum was marked as hazardous waste neutralizer insulation; and one was marked hazardous waste EDC heavies in dirt. Three of the hazardous waste carbon/coke drums and the hazardous waste EDC heavies in dirt drum were not marked with their accumulation start date. The hazardous waste neutralizer insulation drum was open.

Wastewater Treatment Unit (WWTU)

On February 26, 2020, we visited the wastewater treatment unit to review the tank system integrity and identify any potential points of hazardous waste generation. All wastewater enters from the PVC and VCM units through a common header which feeds into a single wastewater surge tank. The surge tank is equipped with a thermal oxidizer for pollution control with a carbon canister back up. The wastewater stream from the VCM unit includes sludge from the wet scrubber which is the air pollution control device for the permitted hazardous waste incinerator. According to Hillary Garner, Axiall does not consider its wastewater to be derived from the treatment of listed hazardous waste (K019).

At the utilities building next to the WWTU surge tank we found one container of cumene containing hazardous waste. The container had been used as a satellite accumulation container for the waste since 2017 but had recently been moved from its point of generation in the wastewater treatment unit and staged for transfer to the less than 90-day container storage area. The drum did not have an accumulation start date and was in poor condition from corrosion (Appendix 1, photo 17).

Chlorine/Caustic Unit

When we inspected the Chlorine/Caustic Unit on February 26, 2020, we found that the operators of the Unit directed a process stream into an impoundment which serves as the secondary containment area for the chlorine cell line (Appendix 1, photo 18-21). According to the unit supervisor, Phil Beckman, this stream is referred to as weak liquor and comprised of a concentrated sodium hydroxide and sodium chloride solution with a pH greater than 12.5. Mr Beckman said the release was caused by a blockage in the process line which directs the weak liquor from the chlorine cells to an evaporator. According to Mr. Beckman the blockage was found approximately one-and-a-half days prior to our inspection of this area and the weak liquor had been routed to the secondary containment impoundment at that time because the secondary containment impoundment is equipped with a drainage sump which is directed to the evaporator. The secondary containment area used to impound the weak liquor was concrete lined but in poor condition with visible cracks and gaps that appeared to penetrate the impoundment and could potentially allow the weak liquor to migrate out of the impoundment to soils beneath. We also observed visible leaks from the chlorine cell line which indicated that the impoundment routinely receives discharges from the chlorine cells.

PVC Unit

The PVC unit manufacturing areas do not have points of hazardous waste generation. However, the QA/QC lab in the unit generates a hazardous spent solvent waste which is accumulated in a 55-

gallon drum located adjacent to the laboratory building. We inspected this container on February 26, 2020 and did not identify any areas of concern.

Operating Records Review

Throughout the course of the inspection we collected and reviewed the facility's operating records pertaining to compliance with the RCRA regulatory requirements. However, given the time constraints of the inspection, most of the records review was planned to be conducted offsite following the inspection.

Facility Inspection Records

Axiall is required to complete routine inspections of its permitted hazardous waste management units and its <90-day hazardous waste accumulation areas. Over the four days of this inspection we were able to review all the required inspection records for the permitted hazardous waste tanks, <90-day container accumulation areas, and the hazardous waste furnace covering the period since the 2018 LDEQ inspection. While we found some of the forms used to document these inspections differed from those presented in the facility's hazardous waste operating permit and inspection plan, all the required information appeared to be present. No areas of concern were immediately noted for these records.

Hazardous Waste Manifests

Over the four days of the inspection we reviewed all hazardous waste manifests for shipments that originated between the 2018 LDEQ inspection and the first date of this inspection. All manifests were complete, and Ms. Garner was able to answer any questions we had regarding manifest discrepancies. As a result, we did not have any immediate concerns with Axiall's hazardous waste manifests.

Section III – AREAS OF CONCERN

We concluded the inspection of the Plaquemine facility on February 28, 2020, with a closing conference attended by representatives of Axiall where we presented our provisional areas of concern.

- 1) Failure to mark hazardous waste accumulation containers with the accumulation start date - <90-day hazardous waste accumulation without a permit requires that, the date upon which each period of accumulation begins is clearly marked and visible for inspection on each container. Five hazardous waste containers were found during the inspection which were not

labeled with the accumulation start date: one roll-off container located next to the central waste container accumulation area containing K019 refractory waste from the hazardous waste incinerator; three hazardous waste coke/carbon drums located in the VCM unit; and one drum of EDC contaminated dirt in the VCM unit.

- 2) Failure to mark containers of used oil with the words "Used Oil" – Containers used to store used oil at generator facilities must be labeled or marked clearly with the words "Used Oil." One container of used oil located in the NW corner of the VCM unit was not labeled with the words "Used Oil".
- 3) Failure to close hazardous waste containers - The <90-day hazardous waste container management standard requires that containers storing hazardous waste must be closed when hazardous waste is not actively being added or removed from the container. Two hazardous waste containers were open during the inspection: one carbon/coke waste drum in the VCM unit; one drum of hazardous waste neutralizer insulation in the VCM unit.
- 4) Failure to address spills or releases of hazardous waste in a timely fashion - An unplanned release or spill of hazardous waste must be addressed by a facility in a timely fashion and in accordance with its contingency plan. Evidence of spills and releases of EDC heavies was found in two separate locations in the VCM Unit: the first identified on February 25, 2020 during the inspection of the manufacturing areas and the second on February 27, 2020 at the VCM unit tank farm. These spills were being addressed by the facility prior to our departure on February 28, 2020.
- 5) Failure to operate a in a manner designed to prevent release of hazardous waste or hazardous constituents to the environment – The discharge of the weak liquor in the chlorine/caustic unit to the surface impoundment that serves as the secondary containment to the chlorine cell line poses a significant risk of release to the environment. RCRA regulations considers such impoundments to be land-based units and due to the degradation of the concrete observed during this inspection, the impoundment could provide a pathway for the weak liquor to migrate into the soils beneath the unit. Since the weak liquor shows a pH of greater than 12.5 the liquor would demonstrate the hazardous waste characteristic of corrosivity if discarded. Therefore, any unmitigated release of the weak liquor could constitute an act of disposal under RCRA.
- 6) Failure to make a complete waste determination – The waste determination requirements under RCRA specify that a generator must identify all waste characteristics or listings that apply to a hazardous waste upon generation. Aerosol cans that have not been punctured may

explode upon heating and therefore demonstrate the hazardous waste characteristic of reactivity. Axiall's waste determination for its aerosol can wastes identifies only the characteristic of ignitability.

- 7) Failure to identify and manage a hazardous waste – RCRA requires that a facility must properly identify and manage all hazardous waste which it generates. Waste derived from the treatment of a listed hazardous waste, including sludges from air pollution control devices used to control emissions from the waste treatment process, acquire the listings associated with the treated waste. Axiall's permitted hazardous waste furnace thermally treats the EDC heavies (K019) generated in the VCM unit. This means that all downstream units which are used to control emissions from the furnace would potentially generate a hazardous waste also listed as K019. The HCl generated from the absorbers enjoys an exemption from the definition of solid waste since it is sold as a product (not applied to the land) or used by the facility in lieu of another commercial chemical product. If the HCl was instead discarded or otherwise used in a manner constituting disposal then the K019 listing would attach to the HCl due to the "derived from" rule. The wet scrubber used for air pollution control for the hazardous waste furnace, however, generates a sludge which does not enjoy any definitional exemptions and therefore the K019 listing attaches at the point of generation for that sludge. Axiall would need to properly manage this sludge as a listed hazardous waste or petition for a waste specific de-listing.
- 8) Storage of a hazardous waste in a container in poor condition – Containers used for the accumulation of hazardous waste must be in good condition and free of significant corrosion which could result in a release. We identified one container used for the accumulation of cumene waste, located in the wastewater treatment unit, visibly corroded and in poor condition.

Section IV – FOLLOW UP

EPA requested additional records from Axiall to facilitate additional offsite compliance determinations in lieu of a protracted onsite records review. The requested records include:

- 1) The Hazardous Waste Contingency Plan including safety equipment inspection records and records of contingency plan activation.
- 2) The Waste Analysis Plan.
- 3) Training records for personnel tasked with specific duties pertaining to RCRA compliance and emergency response.

- 4) Waste profile documents for specific hazardous wastes of interest (e.g., aerosol can waste, cumene waste, EDC coke/carbon waste).
- 5) Records related to the root cause and potential environmental impact of the weak liquor process diversion in the Chlorine/Caustic Unit.
- 6) Documentation related to the spills and clean-up of EDC coke/carbon waste in the VCM unit.
- 7) The Facility Closure Plan and documentation of adequate financial assurance.

Section V – LIST OF APPENDICES

Appendix 1 – Inspection Photo Log