

**Kentucky Energy and Environment Cabinet  
Department for Environmental Protection  
Division of Waste Management**



**HAZARDOUS WASTE MANAGEMENT FACILITY PERMIT  
Revision 1**

**Arkema Inc.**

4444 Industrial Parkway, Calvert City, Kentucky 42029  
Latitude: 37-03-015 Longitude: 88-21-054

The Division of Waste Management hereby grants the above-named facility a Permit to engage in activity specified below. This Permit has been issued under the provision of KRS Chapter 224 and regulations promulgated pursuant thereto and are subject to all Permit Conditions and operating limitations contained herein. Issuance of this Permit does not relieve the Permittee from the responsibility of obtaining any other Permits, licenses, or approvals required by this Cabinet and/or other federal, state, and local agencies.

No deviation from the plans and specifications submitted with your Application or the Permit Conditions specified herein is allowed, unless authorized in writing from the Division of Waste Management. Violation of the terms and Permit Conditions specified herein shall render this Permit null and void. All rights of inspection by representatives of the Division of Waste Management are reserved. Conformance with all applicable Waste Management Regulations is the responsibility of the Permittee. Receipt of the Permit fee and financial assurance specified below is hereby acknowledged.

<b>Permit Type:</b>	Operating	<b>EPA I.D. Number:</b>	KYD-006-370-159
<b>Hazardous Waste Management Units:</b>	Incinerator and Tank Storage	<b>Agency Interest:</b>	2918
<b>Closure Cost Estimate:</b>	\$1,751,966 (2020 dollars)	<b>County:</b>	Marshall
<b>Post-Closure Amount:</b>	\$400,000	<b>Permit Fee:</b>	\$48,700
<b>Sudden Liability Insurance:</b>	\$1 million per occurrence \$2 million annual aggregate	<b>Effective Date:</b>	Month Day Year
<b>Non-Sudden Liability Insurance:</b>	\$3 million per occurrence \$6 million annual aggregate	<b>Expiration Date:</b>	October 15, 2031

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**Tammi Hudson, P.E.**  
**Director**  
**Division of Waste Management**  
**Issued on September 15, 2021**

**Kentucky Energy and Environment Cabinet  
Department for Environmental Protection  
Division of Waste Management**

This Permit has been modified, altered, reviewed, and/or changed as indicated in the table below – Summary of Permitting Actions.

<b>SUMMARY OF PERMITTING ACTIONS</b>				
<b>Action Number<sup>1.</sup></b>	<b>Type of Actions<sup>2.</sup></b>	<b>Public Notice Date<sup>3.</sup></b>	<b>Issuance Date<sup>4.</sup></b>	<b>Effective Date<sup>5.</sup></b>
1	Class 3	October 5, 2022		
<p><b>Comments<sup>6.</sup>:</b></p> <ol style="list-style-type: none"> <li>1) The addition of a new hazardous waste storage tank, V-6103A. New information and permit conditions for tank V-6103A have been added into the permit.</li> <li>2) Updated process information for Forane 142b production and new process information for 1233zd production in updated Attachment B of this permit.</li> <li>3) Removed all references to Forane 134a production in updated Attachment B of this permit.</li> <li>4) Added three (3) new waste codes: D020, D034, and D043.</li> <li>5) For tank V-6103, the maximum design pressure is changed from 195 psi to 150 psi.</li> <li>6) Updated Permit Condition VII.B and VII.C.</li> <li>7) Updated Integrated Contingency and Response Plan (ICRP) portions of Incident Command Quick Reference Guide, Annex 1, Annex 9, Annex 14 to reflect addition of tank V-6103A.</li> </ol>				
<ol style="list-style-type: none"> <li>1. Action number is the same as Permit Modification number.</li> <li>2. Type of Permit Modification issued by the Cabinet. The different types of Permit Modifications are: Class 1, Class 2 and Class 3.</li> <li>3. Not all Permit Modification is required by <b>40 CFR Part 124 - Subpart A</b> to be public noticed.</li> <li>4. Date issued is not required to be the same as the effective date of the modification.</li> <li>5. The effective date of a modification depends on the type of the modification class.</li> <li>6. Brief description of the Permit Modification.</li> </ol>				

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# Table of Contents

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<b>PART I</b>	<b>LEGAL AUTHORITY .....</b>	<b>5</b>
<b>PART II</b>	<b>STANDARD PERMIT CONDITIONS .....</b>	<b>10</b>
II.A	EFFECT OF PERMIT .....	11
II.B	PERMIT ACTIONS .....	11
II.C	SEVERABILITY .....	14
II.D	DEFINITIONS .....	14
II.E	DUTIES AND REQUIREMENTS .....	15
II.F	SIGNATORY REQUIREMENTS .....	21
II.G	REPORTS, NOTIFICATIONS AND SUBMISSIONS TO THE DIVISION .....	21
II.H	CHANGES TO PERMIT .....	21
II.I	CONFIDENTIAL INFORMATION .....	22
II.J	DOCUMENTS TO BE MAINTAINED AT FACILITY .....	22
II.K	PERMIT CONDITIONS AND ATTACHMENTS .....	24
<b>PART III</b>	<b>SPECIFIC PERMIT CONDITIONS .....</b>	<b>25</b>
III.A	FACILITY DESCRIPTION .....	26
III.B	GENERAL FACILITY STANDARDS .....	28
III.C	PREPAREDNESS AND PREVENTION .....	31
III.D	CONTINGENCY PLAN AND EMERGENCY RESPONSE .....	32
III.E	MANIFEST SYSTEM .....	36
III.F	RECORDKEEPING AND REPORTING .....	36
III.G	CLOSURE REQUIREMENTS .....	37
III.H	POST CLOSURE REQUIREMENTS .....	39
III.I	FINANCIAL REQUIREMENTS .....	40
III.J	CONSTRUCTION COMPLIANCE SCHEDULE FOR PROPOSED UNITS .....	42
III.K	CONTAINER MANAGEMENT PRACTICES .....	42
III.L	TANK SYSTEM MANAGEMENT PRACTICES .....	43
III.M	MISCELLANEOUS UNIT MANAGEMENT PRACTICES .....	53
III.N	CONTAINMENT BUILDING MANAGEMENT PRACTICES .....	53
III.O	LANDFILL POST CLOSURE REQUIREMENTS .....	53
III.P	INCINERATOR MANAGEMENT PRACTICES .....	54
III.Q	SPECIAL PERMIT CONDITIONS .....	54
III.R	GROUNDWATER MONITORING REQUIREMENTS .....	55
<b>PART IV</b>	<b>CORRECTIVE ACTION .....</b>	<b>62</b>
IV.A	APPLICABILITY .....	63
IV.B	NOTIFICATION AND ASSESSMENT REQUIREMENTS FOR NEWLY IDENTIFIED SWMUs AND AOCs .....	64
IV.C	NOTIFICATION REQUIREMENTS FOR NEWLY DISCOVERED RELEASES AT PREVIOUSLY IDENTIFIED SWMUs OR AOCs .....	64
IV.D	CONFIRMATORY SAMPLING (CS) .....	65

IV.E	RCRA FACILITY INVESTIGATION (RFI)	65
IV.F	INTERIM MEASURES (IM)	67
IV.G	CORRECTIVE MEASURES STUDY	69
IV.H	REMEDY APPROVAL AND PERMIT MODIFICATION	70
IV.I	CORRECTIVE MEASURES IMPLEMENTATION (CMI)	71
IV.J	MODIFICATION OF THE CORRECTIVE ACTION SCHEDULE OF COMPLIANCE	74
IV.K	IMMINENT HAZARDS	74
IV.L	WORK PLAN AND REPORT REQUIREMENTS	74
IV.M	APPROVAL/DISAPPROVAL OF SUBMITTALS	75
<b>PART V</b>	<b>WASTE MINIMIZATION</b>	<b>76</b>
V.A	GENERAL RESTRICTIONS	77
V.B	RECORDKEEPING REQUIREMENTS	77
V.C	WASTE MINIMIZATION OBJECTIVES	77
<b>PART VI</b>	<b>LAND DISPOSAL RESTRICTIONS</b>	<b>80</b>
VI.A	GENERAL RESTRICTIONS	81
VI.B	LAND DISPOSAL PROHIBITIONS AND TREATMENT STANDARDS	81
<b>PART VII</b>	<b>ORGANIC AIR EMISSION REQUIREMENTS</b>	<b>82</b>
VII.A	AIR EMISSION STANDARDS FOR PROCESS VENTS	83
VII.B	AIR EMISSION STANDARDS FOR EQUIPMENT LEAKS	83
VII.C	AIR EMISSION STANDARDS FOR TANKS, SURFACE IMPOUNDMENTS, CONTAINERS AND MISCELLANEOUS UNITS	93
<b>PART VIII</b>	<b>REFERENCED ATTACHMENTS &amp; APPENDICES</b>	<b>100</b>

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**PART I LEGAL AUTHORITY**

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## PART I LEGAL AUTHORITY

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The terms and conditions of this Permit are applicable to Arkema Inc. under Title 401 KAR Chapters 39 and 40, of the Hazardous Waste Management Regulations of the Kentucky Administrative Regulations (KARs) as effective December 7, 2017.

The Code of Federal Regulations (CFRs) cited in this Permit shall be as established in 401 KAR Chapter 39.

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Pursuant to the Environmental Protection Law, as amended [KRS Chapter 224] and attendant regulations promulgated thereunder by the Kentucky Energy and Environment Cabinet, in the Kentucky Administrative Regulations (KARs) Title 401, this Permit is issued to Arkema Inc., hereinafter referred to as the "Permittee", located at 4444 Industrial Parkway, Calvert City, Kentucky 42029.

The Permittee must comply with all terms and conditions of this Permit. This Permit consists of the Permit Conditions set forth in:

- ❖ **Part I:** Legal Authority;
- ❖ **Part II:** Standard Permit Conditions;
- ❖ **Part III:** Specific Permit Conditions;
- ❖ **Part IV:** Corrective Action;
- ❖ **Part V:** Waste Minimization;
- ❖ **Part VI:** Land Disposal Restrictions;
- ❖ **Part VII:** Organic Air Emissions Standards;
- ❖ **Part VIII:** Referenced Attachments; and
- ❖ The applicable waste management regulations.

Hazardous Waste Management Regulations of the Kentucky Administrative Regulations (KAR) may have exceptions to the equivalent Code of Federal Regulations (CFR). In the instance of inconsistent language or discrepancies between **401 KAR Chapter 39** and its equivalent CFR, **401 KAR Chapter 39** shall take precedence. Applicable regulations are those which are in effect on the date of issuance and also upon modification, revocation or reissuance of this Permit [**40 CFR Part 270.32**].

The Permit Application (Part A and Part B Permit Application) was originally submitted to the Division of Waste Management on September 13, 2016. The latest Permit Application revision was submitted on January 15, 2020 Revision #1 and is hereby incorporated into this Permit as Attachments. (See *Table I.1*)

A Class 3 Permit Modification Application was originally submitted to the Division of Waste Management on December 15, 2021. The latest revision to the Permit Modification Application was submitted on July 8, 2022 and is hereby incorporated into this Permit as Attachments. (See *Table I.1*)

This Permit is based on the assumption that the information in the Permit Application is accurate and that the facility will be operated as specified in the Permit Application and this Permit. In the instance of inconsistent language or discrepancies between the above, the language of the more stringent provision shall govern. Any inaccuracies found in this information could lead to the termination or modification of this Permit and potential enforcement action (**40 CFR Part 270.43** and **401 KAR 40:040 Section 1: Modification, Suspension and Revocation of a Permit** (effective 12/2/83)). The Permittee shall inform the Cabinet of any deviation from, or changes in the information in the Application, which would affect the Permittee's ability to comply with the applicable regulations or Permit Conditions [**40 CFR Part 270.30**].

This Permit is effective October 15, 2021 and shall remain in effect until the specified expiration date October 15, 2031, unless revoked and reissued, or terminated (see **40 CFR Part 270.41**, **40 CFR Part 270.43**, **40 CFR Part 124.5(a)** and **401 KAR 40:040 Section 1**).

This Permit or a copy thereof shall be kept at the work site of the Permitted activity. In the event that there is no building or reasonable repository for such a copy at the work site, then the Permit or a copy thereof shall be kept at an alternate location agreed to by the Division.

<b>TABLE I.1 CROSS REFERENCE OF PERMIT ATTACHMENTS</b>	
<b>Permit Attachment<sup>1</sup></b>	<b>Permittee's Permit Application<sup>2</sup></b>
Attachment A Part A Permit Application	Part A
Attachment B Facility Description	Part B Facility Description
Attachment C Waste Analysis Plan	Part C Waste Analysis Plan
Attachment D Process Information	Part D Process Information
Attachment E Groundwater Monitoring & Corrective Action	Part E Groundwater Monitoring and Corrective Action for Solid Waste Management Units
Attachment F Procedures to Prevent Hazards	Part F Procedures to Prevent Hazards
Attachment G Contingency Plan	Part G Integrated Contingency and Response Plan
Attachment H Personnel Training	Part H Personnel Training
Attachment I Closure Plans, Post-Closure Plans & Financial Assurance	Part I Closure Plans, Post-Closure Plans and Financial Assurance
Attachment J Other Federal Laws	Part J Other Federal Laws

<b>TABLE I.1 CROSS REFERENCE OF PERMIT ATTACHMENTS</b>	
<b>Permit Attachment<sup>1</sup>.</b>	<b>Permittee's Permit Application<sup>2</sup>.</b>
Attachment K Waste Minimization Plan	Part K Waste Minimization
Attachment L Signature Certification	Part L Signatures
<sup>1</sup> Selected sections, parts, and/or attachments submitted as part of the Permittee's Permit Application have been incorporated into the Permit as Attachments. However, this does not indicate that the Permit Application may be used as a substitute for the Attachment prepared by the Division.	

<b>TABLE I.2 CROSS REFERENCE OF CFRs AS ESTABLISHED IN 401 KAR CHAPTER 39</b>		
<b>State Regulation</b>	<b>Federal Regulation</b>	<b>State Regulation Section Description</b>
39:060 Sec. 2	40 CFR Part 260	Hazardous Waste Management Systems
39:060 Sec. 3	40 CFR Part 261	Identification and Listing of Hazardous Wastes
39:060 Sec. 4	40 CFR Part 268	Land Disposal Restrictions
39:060 Sec. 5	40 CFR Part 124 and 270	Hazardous Waste Permit Program and Procedures
39:080 Sec. 1	40 CFR Part 262	Standards for Generators of Hazardous Waste
39:080 Sec. 2	40 CFR Part 263	Standards for Transporters of Hazardous Waste
39:080 Sec. 3	40 CFR Part 273	Standards for Universal Waste
39:080 Sec. 4	40 CFR Part 279	Standards for Used Oil
39:090 Sec. 1	40 CFR Part 264	Standards for Owners or Operators for Treatment, Storage, and Disposal Facilities
39:090 Sec. 2	40 CFR Part 265	Standards for Owners or Operators for Interim Status Treatment, Storage, and Disposal Facilities
39:090 Sec. 3	40 CFR Part 266	Standards for Specific Types of Hazardous Waste Facilities
39:090 Sec. 4	40 CFR Part 267	Standardized Permits
39:090 Sec. 5	40 CFR Part 264	Flood Plains



TABLE I.2 CROSS REFERENCE OF CFRs AS ESTABLISHED IN 401 KAR CHAPTER 39		
State Regulation	Federal Regulation	State Regulation Section Description
All KARs cited in this Permit are effective as 12/7/2017, and governed by CFRs unless specified otherwise.		

END OF PERMIT CONDITIONS

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**PART II STANDARD PERMIT CONDITIONS**

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**PART II  
STANDARD PERMIT CONDITIONS**

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The terms and conditions of this Permit are applicable to Arkema Inc. under Title 401 KAR Chapters 39 and 40, of the Hazardous Waste Management Regulations of the Kentucky Administrative Regulations (KARs) as effective December 7, 2017.

The Code of Federal Regulations (CFRs) cited in this Permit shall be as established in 401 KAR Chapter 39.

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**II.A Effect of Permit**

Compliance with the terms of this Permit constitutes compliance for purposes of enforcement with **KRS Chapter 224.46-520**.

This Permit is issued pursuant to **KRS 224.46**.

Issuance of this Permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of state or local law or regulations. Compliance with the terms of this Permit does not constitute a defense to any order issued or any action brought under Sections 3008(a), 3008(h), 3013, or 7003 of RCRA of 1976; Sections 106(a), 104, or 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601 et seq., commonly known as CERCLA); the equivalent state statutes, or any other law governing protection of public health or the environment for any imminent and substantial endangerment to human health, welfare or the environment [**40 CFR Part 270.4**].

**II.B Permit Actions**

**II.B.1 Permit Modification, Revocation and Reissuance, and Termination**

This Permit may be modified, revoked and reissued, or terminated for cause as specified in **40 CFR Part 270.40 through 270.43, 40 CFR Part 124.5(a), 401 KAR 40:040 Section 1: Modification, Suspension and Revocation of a Permit (effective 12/2/1983), 40 CFR Part 270.30, 40 CFR Part 270.10, and 401 KAR 39:060 Section 6**.

The filing of a request for a Permit modification, revocation and reissuance, or termination or the notification of planned changes or anticipated non-compliance on the part of the Permittee does not stay the applicability or enforceability of any Permit Conditions [**40 CFR Part 270.30**]. If at any time for any of the reasons specified in **40 CFR Part 270.41**, the Cabinet determines that modification of this Permit is necessary, the Cabinet may initiate a modification according to **40 CFR Part 124 - Subpart A** or require the Permittee to request a Permit Modification as outlined in **40 CFR Part 270.42**.

## II.B.2 Permit Renewal

**II.B.2.1** This Permit may be renewed as specified in *Permit Condition II.E.2*. Review of any Application for a Permit renewal shall consider improvements in the state of control and measurement technology, as well as changes in applicable regulations. [40 CFR Part 270.4, 40 CFR Part 270.30 and 401 KAR 39:060 Section 5]

**II.B.2.2** The Permittee shall submit three (3) hard copies and one (1) electronic copy plus a cover letter accompanying the Application and fee payable to the Kentucky State Treasurer to the Division by hand delivery or verifiable delivery at the following address:

ATTN: Hazardous Waste Branch, Manager  
Division of Waste Management  
300 Sower Blvd., 2nd Floor  
Frankfort, KY 40601

**II.B.2.3** The Permittee shall submit one (1) hard copy and one (1) electronic copy of the Application plus a cover letter accompanying the renewal to the U.S. Environmental Protection Agency Region 4 (EPA Region 4) by verifiable delivery at the following address:

ATTN: Chief, RCRA Programs and Cleanup Branch  
Land, Chemicals and Redevelopment Division  
U.S. E.P.A. - Region 4 Sam Nunn Atlanta Federal Center  
61 Forsyth St, SW  
Atlanta, GA 30303

**II.B.2.4** The Permittee shall notify the Division proof of delivery of the Application and/or revisions to EPA Region 4 within seven (7) days of the receipt date.

## II.B.3 Permit Expiration

Pursuant to **40 CFR Part 270.50**, this Permit shall be effective for a fixed term not to exceed ten (10) years. The Director shall not grant permission for the Application to be submitted later than the expiration date of the existing Permit. This Permit and all Permit Conditions herein will remain in effect beyond the Permit's expiration date, if:

**II.B.3.1** The Permittee has submitted a timely and complete Application in accordance with **40 CFR Part 270.10(h)**, **40 CFR Part 270.13** through **270.28**; and,

**II.B.3.2** Through no fault of the Permittee, the Division has not issued a new Permit, as set forth in **40 CFR Part 270.51**.

## II.B.4 Permit Modifications

This Permit may be modified as specified in the following: [**40 CFR Part 124.5**, **40 CFR Part 270.41** and **40 CFR Part 270.42**].

#### **II.B.4.1 Routine Changes**

A routine change or modification to the Permit is any change that qualifies as a Class 1 or Class 2 Permit Modification under **40 CFR Part 270.42**.

The Permittee shall not implement any Class 1 Permit Modification that requires approval or Class 2 Permit Modification without written approval from the Manager.

Class 1 Permit Modifications for which prior approval is not required under **40 CFR Part 270.42** may be implemented without prior notice or approval by the Division if notice of the modification is submitted to the Division within seven (7) calendar days after the change is put into effect.

#### **II.B.4.2 Significant Changes**

A significant change or modification to the Permit is:

**II.B.4.2.1** Any change that qualifies as a Class 3 Permit Modification under **40 CFR Part 270.42**; or

**II.B.4.2.2** Any change not explicitly identified in **40 CFR Part 270.42**; or

**II.B.4.2.3** Any amendments resulting in less stringent terms or conditions in the Permit.

#### **II.B.4.3 Modification and Corrective Action**

The Permittee shall modify the Permit to incorporate the corrective action plans, if necessary, developed as specified in *Permit Condition IV.1.3*, throughout this Permit, and financial assurance for corrective action as required under regulations **40 CFR Part 270.41** and **Part 270.42**, **40 CFR Part 264.101**, **40 CFR 270 Subpart H**, **401 KAR 39:090 Sections 1(2)** and **2(3)**.

#### **II.B.4.4 Modifications: General Submittals Requirements**

**II.B.4.4.1** Submit to the Director the exact change(s) and reason for the changes intended for this Permit and if the changes include modifications to the information provided or to terms and conditions in this Permit.

**II.B.4.4.2** Identify the Class modification type;

**II.B.4.4.3** Explain why the modification is needed;

**II.B.4.4.4** Provide the applicable information required by **40 CFR Part 264** and **270**.

**II.B.4.4.5** The Permittee must send a notice of the modification request to all persons on the facility mailing list maintained by the Director and to the appropriate units of State and local government as specified in **40 CFR Part 270.42**.

**II.B.4.4.6** Provide to the Manager evidence of the mailing and publication of the public notice

as applicable and required under **40 CFR Part 270.42** and **40 CFR Part 124 - Subpart A**.

**II.B.4.4.7** Submit and comply with any other information required under **40 CFR Part 260** through **270** and **KRS 224.46**.

#### **II.B.4.5 Modification Submittals**

The Permittee shall submit three (3) hard copies and one (1) electronic copy plus a cover letter of any Permit Modification request and fee payable to the Kentucky State Treasurer to the Division by hand delivery or verifiable delivery at the address provided in *Permit Condition II.B.2.2*.

**II.B.4.5.1** The Permittee shall submit one (1) hard copy and one electronic copy of any Permit Modification Application plus a cover letter accompanying the modification to the U.S. EPA Region 4 at the address provided in *Permit Condition II.B.2.3*.

**II.B.4.5.2** The Permittee shall submit to the Division proof of delivery of the submittal to EPA Region 4 within seven (7) days of receiving notification of the EPA receipt date.

**II.B.5** Modifications of this Permit do not constitute a reissuance of this Permit.

### **II.C Severability**

The provisions of this Permit are severable. If any provision of this Permit, or the application of any provision of this Permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this Permit shall not be affected or diminished. [**40 CFR Part 124 - Subpart A**].

### **II.D Definitions**

For the purposes of this Permit, terms used herein shall have the same meaning as those established in **401 KAR Chapter 39:005** and **40:001**, as well as **KRS 224** unless this Permit specifically provides otherwise; where terms are not otherwise defined, the meaning associated with such terms shall be as defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term. The terms "Cabinet", "Division", "Director" and "Manager" can be used interchangeably.

#### **II.D.1 "Area of Concern" (AOC)**

Any area having a probable or known release of a hazardous waste(s) or hazardous constituent(s) which is not from a Solid Waste Management Unit and is determined by the Manager to pose a current or potential threat to human health or the environment. Such Areas of Concern may require investigations and remedial actions in order to ensure adequate protection of human health and the environment.

#### **II.D.2 "Contamination"**

The presence of any hazardous waste constituent in soil or groundwater at a concentration which exceeds the background concentration of that constituent in the immediate vicinity of the facility.

### **II.D.3 "Corrective Action"**

May include all corrective measures necessary to protect human health and the environment from all releases of hazardous waste or hazardous waste constituents from any solid waste management unit at the facility, regardless of the time at which waste was placed in the unit.

### **II.D.4 "Extent of Contamination"**

Horizontal and vertical area in which the concentration of hazardous constituents in the environmental media being investigated are above the detection limit or background concentrations indicative of the region, whichever is appropriate as determined by the Manager.

### **II.D.5 "Leak Detection and Repair Program" (LDAR Program)**

The processes and procedures set forth in Facility Description: Equipment Leak Standards; Compliance Plan: Subpart BB Air Emissions Standards; and Compliance Plan: Subpart CC Air Emissions Standards, of the Approved Permit Application.

## **II.E Duties and Requirements**

### **II.E.1 Duty to Comply**

The Permittee must comply with all Permit Conditions of this Permit except to the extent and for the duration that such non-compliance is authorized by an Emergency Permit. Any Permit non-compliance, other than non-compliance authorized by an Emergency Permit, constitutes a violation of **KRS Chapter 224** and is grounds for enforcement action, Permit termination, revocation and reissuance, modification, or denial of a Permit Renewal Application [**40 CFR Part 270.30**].

### **II.E.2 Duty to Reapply**

If the Permittee intends to continue an activity allowed or required by this Permit after the expiration date of this Permit, the Permittee shall submit a complete Application for a new Permit at least one hundred eighty (180) days prior to Permit expiration [**40 CFR Part 270.30** and **270.10**]. The Permittee must comply with the public notice requirements of **40 CFR Part 124.10**.

The Permittee must apply for a new Permit in accordance with the regulations and *Permit Conditions II.B.2*.

### **II.E.3 Obligation for Corrective Action**

The Permittee is required to continue this Permit for any period necessary to comply with the corrective action requirements of this Permit. The Corrective Action obligations contained in this Permit will continue regardless of whether the facility continues to operate or ceases operation and closes. The Permittee is obligated to complete facility-wide Corrective Action under the terms and conditions of this Permit

regardless of the operational status of the facility. [40 CFR Part 264.100, 40 CFR Part 264.101, 40 CFR Part 270.1 and 40 CFR Part 270.51]

#### **II.E.4 Need to Halt or Reduce Activity Not a Defense**

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the Permitted activity to maintain compliance with the terms and conditions of this Permit [40 CFR Part 270.30].

#### **II.E.5 Duty to Mitigate**

In the event of noncompliance with this Permit, the Permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment. [40 CFR Part 270.30].

#### **II.E.6 Proper Operation and Maintenance**

The Permittee shall at all times properly operate and maintain all facilities and systems of and control (and related appurtenances) that are installed or used by the Permittee to achieve compliance with the conditions of this Permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the terms and conditions of the Permit [40 CFR Part 270.30].

#### **II.E.7 Duty to Provide Information**

The Permittee shall furnish the Manager, within a reasonable time, any information requested to determine whether cause exists for modifying, revoking and reissuing, or terminating this Permit, or to determine compliance with this Permit. The Permittee shall also furnish the Manager upon request copies of the records kept as a requirement of this Permit [40 CFR Part 270.30].

#### **II.E.8 Inspection and Entry**

The Permittee shall allow an authorized representative of the Division, upon the presentation of credentials and other documents, as may be required by law, [40 CFR Part 270.30]

**II.E.8.1** To enter at reasonable times the Permittee's premises where the regulated facility or activity is located or conducted; or where records must be kept under the Permit Conditions of this Permit;

**II.E.8.2** To have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit;

**II.E.8.3** To inspect and photograph at reasonable times, any facilities, equipment, (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and

**II.E.8.4** Sample or monitor, at reasonable times, for the purposes of assuring Permit compliance or as



otherwise authorized by RCRA, any substances or parameters at any location. Split samples and copies of analysis will be provided to the Permittee upon request.

## II.E.9 Monitoring and Records

**II.E.9.1** Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain representative samples of the wastes and/or contaminated media to be analyzed must be the appropriate method from **40 CFR Part 261 Appendix I**, or an equivalent method if specified in the application, or otherwise approved by the Manager. Laboratory methods must be those specified in the most recent edition of *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods* (SW-846, current edition) or a method approved by the Cabinet in accordance with **40 CFR Part 270.30** and **40 CFR Part 260 - Subpart C**.

**II.E.9.2** In accordance with **40 CFR Part 270.30**, the Permittee shall retain the following records at the facility, or at another location as approved by the Manager; records of all monitoring information required under the terms and conditions of this Permit, including:

**II.E.9.2.1** All calibration and maintenance records;

**II.E.9.2.2** Records of all original strip chart recordings for continuous monitoring instrumentation;

**II.E.9.2.3** Copies of all reports and records required by this Permit and all data used to prepare them;

**II.E.9.2.4** Records of all data used to complete the Application for this Permit; and

**II.E.9.2.5** Certification required by **40 CFR Part 264.73**.

The Permittee shall retain these items for a period of at least three (3) years from the date of the sample, measurement, report, record, certification, or Application, or until corrective measures on the regulated unit(s) are completed, whichever date is later.

This period may be extended if requested by the Director at any time and is automatically extended during the course of any unresolved enforcement action regarding this facility.

*Permit Condition II.E.9* also applies to all records which must be maintained for the solid waste management units at the facility.

The Permittee shall maintain records from all surface water sampling, seep sampling, soil sampling, sediment sampling, groundwater, monitoring wells and associated ground-water surface elevations, for the active life of the facility, and, for disposal facilities, for the Post-Closure Care period as well.

- II.E.9.3** Pursuant to **40 CFR Part 270.30**, records of monitoring information shall specify:
- II.E.9.3.1** The date, exact place, and time of sampling or measurements;
  - II.E.9.3.2** The individual(s) who performed the sampling or measurements;
  - II.E.9.3.3** The date(s) analyses were performed;
  - II.E.9.3.4** The individual(s) who performed the analyses;
  - II.E.9.3.5** The analytical techniques or methods used; Analytical technique(s) or method(s) is defined as encompassing both the sampling technique (method) and method of chemical analysis used. This information must be provided in the Waste Analysis Plan; and
  - II.E.9.3.6** The results of such analyses, including the detection limits and Quality Assurance/Quality Control (QA/QC) documentation.
- II.E.9.4** If paper copies are not retained, backup electronic copies of all data must be prepared on a weekly basis. The backup system shall be independent of (1) the systems used to collect the data and (2) the systems used to store the primary copy. Additionally, the backup system shall be located at a secure, off-site facility. All data stored in electronic format must be available for review at the facility at all times by regulatory personnel.
- II.E.9.5** Monitoring results shall be reported at intervals specified elsewhere in the Permit in accordance with **40 CFR Part 270.30**.

## **II.E.10 Reporting Planned Changes**

The Permittee shall give notice to the Manager as soon as possible of any planned physical alterations or additions which may impact any Hazardous Waste Management Units (HWMUs), Solid Waste Management Units (SWMUs), Areas of Concern (AOCs), or the areas contaminated by them. [**40 CFR Part 270.30**].

## **II.E.11 Reporting Anticipated Non-Compliance**

The Permittee shall provide to the Manager, advance written notice of any planned changes in the Permitted facility or activity that may result in non-compliance with Permit requirements [**40 CFR Part 270.30**].

## **II.E.12 Certification of Construction or Modification**

For a new facility, the permittee may not treat, store, or dispose of hazardous waste; and for a facility being modified, the permittee may not treat, store, or dispose of hazardous waste in the modified portion of the facility except as provided in **40 CFR Part 270.42**, until:

- II.E.12.1** The Permittee has submitted to the Manager by certified mail or hand delivery a letter signed by the Permittee and an independent Professional Engineer registered in the Commonwealth of

Kentucky stating that the facility has been constructed or modified in compliance with the Permit [40 CFR Part 270.30]; and

II.E.12.1.1 The Division has inspected the modified or newly constructed facility and finds it is in compliance with the conditions of the Permit [40 CFR Part 270.30]; or

II.E.12.1.2 The Cabinet either has waived the inspection or has not, within fifteen (15) days of receipt of the above, notified the Permittee of its intent to inspect [40 CFR Part 270.30].

II.E.12.2 The certification must include at a minimum:

II.E.12.2.1 As-built drawings;

II.E.12.2.2 Descriptions and delineation of any changes to proposed drawings;

II.E.12.2.3 All required professional certifications;

II.E.12.2.4 All Quality Assurance/Quality Control (QA/QC) documentation; and

II.E.12.2.5 All required physical testing results.

II.E.12.2.6 In case of deviations from design specifications which may occur during construction; these must be noted in the engineer's statement accompanied with an evaluation of the impact of the deviation on facility or specific unit performance. If the Division determines that the deviations are indeed minor and will not adversely impact the Permittee's ability to comply with the conditions of this Permit, Division may modify the Permit accordingly.

II.E.12.2.7 Information on updates to the inventory of components subject to the requirements of 40 CFR Part 264 Subparts AA, BB, and CC, under Part VII of this permit.

II.E.12.2.8 Any additional requirements the Division deems necessary.

### II.E.13 Transfer of Permit

This Permit may be transferred to a new owner or operator only if it is modified or revoked pursuant to 40 CFR Part 270.40 and 270.41 or a Class 1 Permit Modification is made pursuant to 40 CFR Part 270.42 that identifies the new Permittee and incorporates such other requirements as may be necessary under KRS Chapter 224 and 40 CFR Part 260 through 270. Until the new owner or operator has demonstrated compliance with 40 CFR Part 264 - Subpart H the old owner/operator shall continue to maintain financial assurance until released by the Manager in writing. Before transferring ownership or operation of the facility during its operating life, the Permittee shall notify the new owner/operator in writing of the requirements of 40 CFR Part 260 through 270 as well as 401 KAR Chapter 39 and 40, and this Permit [40 CFR Part 264.12] including all applicable Corrective Actions requirements. This Permit is not transferrable to any person except after prior written approval of the Director. [40 CFR Part 270.30]

## II.E.14 Compliance Schedule

- II.E.14.1 Reports of compliance or non-compliance with, or any progress reports on interim and final requirements contained in any type of compliance schedule of this Permit shall be submitted no later than fourteen (14) days following each scheduled date as required by **40 CFR Part 270.30**. Submissions shall be made in hard and electronic copies.
- II.E.14.2 The Permittee shall, at a minimum, provide one (1) week advance notification to the appropriate Permit Review and Corrective Action Section staff for any sampling event required by this Permit or its effects.

## II.E.15 Two-Hour Reporting

The Permittee shall report to the Manager any non-compliance including releases which may endanger human health or the environment. Any information shall be provided orally within two (2) hours from the time the Permittee becomes aware of the circumstances (the Kentucky 24-hour reporting number is **502-564-2380** or **1-(800) 928-2380**). The information in *Permit Conditions II.E.15.1* and *II.E.15.2* shall be reported orally within two (2) hours [**401 KAR 39:060 Section 6**]:

- II.E.15.1 Information concerning release of any hazardous waste or hazardous constituents that may cause an endangerment to public drinking water supplies, including both surface water and groundwater used for public drinking water supply; and
- II.E.15.2 Any information of a release or discharge of hazardous waste constituents, or of a fire or explosion at the facility that could threaten the environment or human health outside the facility.
- II.E.15.3 The Permittee shall also provide a written submission to the Director within five (5) days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the non-compliance and its cause; the periods of non-compliance (including exact dates and times); whether the non-compliance has been corrected; and if the non-compliance has not been corrected, the anticipated time it is expected to continue; and steps planned or taken to reduce, eliminate, and prevent reoccurrence of the non-compliance. [**40 CFR Part 270.30**]. This report shall also include the following:
  - II.E.15.3.1 The description of the occurrence and its cause;
  - II.E.15.3.2 Name, address, and telephone number of the owner or operator and the reporter;
  - II.E.15.3.3 Name, address, telephone number, and EPA identification number of the facility;
  - II.E.15.3.4 Date, time, and type of incident;
  - II.E.15.3.5 Name, and quantity of material(s) involved;
  - II.E.15.3.6 The extent of injuries, if any;
  - II.E.15.3.7 An assessment of actual or potential hazard to the environment and human health

outside the facility, where this is applicable; and

- II.E.15.3.8** Estimated quantity and disposition of recovered material that resulted from the incident.

## **II.E.16 Other Non-Compliance**

The Permittee shall report all instances of noncompliance not reported under *Permit Conditions II.E.11 and II.E.15* at the time monitoring reports are submitted. The reports shall contain the information listed in *Permit Condition II.E.15.3* of this Permit. [40 CFR Part 270.30]

## **II.E.17 Other Information**

Whenever the Permittee becomes aware that they failed to submit any relevant facts, or submitted incorrect information in the application or in any report to the Manager, the Permittee shall promptly submit such facts or information. In addition, upon request, the Permittee shall furnish to the Manager any information related to compliance with the Permit. [40 CFR Part 270.30]

Noncompliance with terms and conditions of the Permit that result in letters of warning, notice of violation letters from the Cabinet, an agreed order, change in permit conditions and/or permit duration, or criminal enforcement of environmental laws by the Commonwealth of Kentucky shall be used to document the reliability, expertise, integrity and competence of the Permittee, and would be considered by the Cabinet in making future changes to the Permit, pursuant to **40 CFR Part 270 - Subpart D** and **40 CFR Part 270.32**; and when issuing a new Permit as set forth in **40 CFR Part 270.50**.

## **II.F Signatory Requirements**

All Applications, reports and/or information required by this Permit, or otherwise submitted to the Manager, shall be signed and certified in accordance with **40 CFR Part 270.11** and **40 CFR Part 270.30**.

## **II.G Reports, Notifications and Submissions to the Division**

All reports, notifications, or other submittals that this Permit requires are to be mailed to the Manager. Two (2) hard copies and one (1) electronic copy in a standard text-searchable format (e.g., portable document format) acceptable to the Cabinet shall be provided to the address stated in *Permit Condition II.B.2.2*.

## **II.H Changes to Permit**

### **II.H.1 Additions or Alterations**

The Cabinet may modify the Permit when there is material and substantial alterations or additions to the Permitted facility, or activity; which occurred after Permit issuance, which justify the application of conditions that are different or absent in this Permit. [40 CFR Part 270.41]

## **II.H.2 New Information**

**II.H.2.1** The Cabinet may modify the Permit when the Cabinet receives new information.

**II.H.2.2** Permits may be modified during their terms for this cause, if the information was not available at the time of Permit issuance and justify the application of different conditions. [40 CFR Part 270.41]

## **II.H.3 New Statutes, Standards, or Administrative Regulations**

The Cabinet may modify this Permit when the standards or administrative regulations on which this Permit is based have been changed by "statute", amended standards, administrative regulations, or by judicial decision after the Permit was issued. [40 CFR Part 270.41].

This Permit is subject to any further statutory or regulatory changes whose purpose is to protect the health and welfare of the Commonwealth citizen and the environment (see 40 CFR Part 270.41, except as provided in 40 CFR Part 270.4).

## **II.H.4 Amendment of Part A Application**

The Permittee shall submit a revised Part A Application if the Part A information changes in conjunction with any request for modification of this Permit. In addition, a revised Part A shall be submitted to the Cabinet ninety (90) days prior to change in ownership or operational control to the facility pursuant to 40 CFR Part 270.40, and shall be signed and certified by the new owner or operator.

## **II.I Confidential Information**

Any person who submits information to the cabinet pursuant to 401 KAR Chapters 39 and 40, may assert a claim of business confidentiality or trade secret covering part or all of that information by following the procedures established in KRS 224.10-212 and 400 KAR 1:060. [401 KAR 39:060 Section 6(9)]

## **II.J Documents to be maintained at Facility**

The Permittee shall maintain at the facility, until closure is completed and certified by an independent Professional Engineer registered in the Commonwealth of Kentucky, and verified by the Cabinet, the following documents and amendments, revisions, and modifications to these documents:

### **II.J.1 Permit**

This Permit, and its approved permit application, as well as any correspondence related to this Permit.

### **II.J.2 Waste Analysis Plan**

As required by 40 CFR Part 264.13.

### **II.J.3 Inspection Schedules**

As required by **40 CFR Part 264.15**, for a period of three (3) years or longer if specified otherwise in the Permit.

### **II.J.4 Personnel Training Documents and Records**

As required by **40 CFR Part 264.16**.

### **II.J.5 Contingency Plan**

Current contingency plan as required by **40 CFR Part 264.53**.

### **II.J.6 Operating Record**

As required by **40 CFR Part 264.73**.

### **II.J.7 Closure Plan & Post Closure Plan**

As required by **40 CFR Part 264.112** and **40 CFR Part 264.118**.

### **II.J.8 Annually-Adjusted Cost Estimate for Facility Closure and Post Closure Plan**

As required by **40 CFR Part 264.142** and **264.144**.

### **II.J.9 Hazardous Waste Unit Management Practices**

Documents as required by **40 CFR Part 264 – Subpart J (Tanks Systems)** and **40 CFR Part 264 - Subpart O (Incinerators)**.

### **II.J.10 Annual Reports**

As required by **401 KAR 39:060 Section 5(18)**.

### **II.J.11 Manifests**

Copies of all manifests for shipments of hazardous waste received at and originating from this facility, kept as required by **40 CFR Part 264.71**.

### **II.J.12 Notifications from Generators**

Notifications from generators subject to **40 CFR Part 268** that specify treatment standards [**40 CFR Part 264.73, 40 CFR Part 262.40**].

### **II.J.13 Waste Minimization**

Waste minimization certifications must be part of the Operating Record [**40 CFR Part 264.73**].

#### **II.J.14 Closed Vent System and Control**

Records regarding closed-vent systems and control devices and/or equipment leaks as required by **40 CFR Part 264.1033** and **40 CFR Part 264.1087**.

#### **II.J.15 Groundwater Monitoring**

Results and reports as required by **40 CFR Part 264 - Subpart F**.

#### **II.J.16 All Other Documents**

Assessment, report, installation records, and repair certifications as required by this Permit.

#### **II.K Permit Conditions and Attachments**

All attachments and documents required by this Permit—including all plans and schedules—, upon approval by the Director, are incorporated into this Permit by reference and become an enforceable part of this Permit. Since required items are essential elements of this Permit, failure to submit any of the required items or submission of inadequate or insufficient information may subject the Permittee to enforcement action under **401 KAR 40:040**, **KRS 224.99-010** and/or **Section 3008** of RCRA which may include fines, suspension, or revocation of the Permit. Any noncompliance with approved plans and schedules shall be termed noncompliance with this Permit.

##### **II.K.1 Precedence of Permit over Attachments**

If any of the Attachments to this Permit are found to conflict with any of the conditions in Part I through VIII of this Permit, the Condition of this Permit shall take precedence.

##### **II.K.2 Precedence of Appendix over Application**

If any Section of the Application is found to be in conflict with any Appendix to this Permit, the Appendix to this Permit shall take precedence.

**END OF PERMIT CONDITIONS**



**PART III SPECIFIC PERMIT CONDITIONS**

DRAFT

**PART III  
SPECIFIC PERMIT CONDITIONS**

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The terms and conditions of this Permit are applicable to Arkema Inc. under Title 401 KAR Chapters 39 and 40, of the Hazardous Waste Management Regulations of the Kentucky Administrative Regulations (KARs) as effective December 7, 2017.

The Code of Federal Regulations (CFRs) cited in this Permit shall be as established in 401 KAR Chapter 39.

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**III.A Facility Description**

**III.A.1** This Permit is issued for storage and disposal of hazardous waste at Arkema Inc. (hereinafter referred to as the "Permittee"). [40 CFR Part 264.1]

The Permittee owns and operates a chemical manufacturing facility in Marshall County, Kentucky. The site began operations in 1949 as Pennsylvania Salt Manufacturing Company. Subsequent corporate names for the facility included Pennsalt, Pennwalt, Atochem North American, Inc., Elf Atochem North America, Inc., and ATOFINA Chemicals, Inc. The company became Arkema Inc. on October 4, 2004.

The Permittee currently produces Hydrochlorofluorocarbons (Forane® HCFCs), hydrofluorocarbons (Forane® HFC), hydrochloric acid (HCl), vinylidene fluoride (VF<sub>2</sub>), and polyvinylidene fluoride (Kynar® PVDF) at the Calvert City Plant.

The Permittee stores hazardous waste generated on-site from the production of the chemicals mentioned above in six (6) above ground storage tanks. The hazardous waste stored in these tanks is then disposed of in the on-site facility's incinerator.

The Permittee does not store hazardous waste in containers for more than 90 days at the facility and does not accept any hazardous waste generated off-site.

**III.A.2** The Permittee shall only conduct storage and disposal in the following hazardous waste management units:

**III.A.2.1** The Permittee shall only store hazardous waste, for more than 90 days, in six (6) above ground storage tanks. (See *Table III.1*)

**III.A.2.2** The permittee shall only dispose of waste in the incinerator which have been approved for storage in the permitted hazardous waste storage tanks. (See *Table III.1*)

TABLE III.1 STORAGE AND DISPOSAL PERMITTED UNITS			
Unit Type	Number of Units <sup>1</sup>	Capacity <sup>2</sup>	Unit Specific Conditions
Tank Storage	6	114,647 gallons	Permit Condition III.L
Incinerator	1	2000 lbs/hr	Permit Condition III.P
Total Permitted Units <sup>3</sup>	7		
<sup>1</sup> The number of individual units permitted as storage tanks. <sup>2</sup> The total capacity of waste permitted for that type of unit. <sup>3</sup> Total number of individual units permitted at the facility.			

**III.A.3** The Permittee must not accept any hazardous waste generated off-site.

**III.A.4** The hazardous wastes which may be stored and disposed of at this facility are listed below in *Table III.2*, and are all generated on-site. Each of these hazardous wastes shall be stored and treated of as specified within this Permit. If at any point in time, the Permittee discovered that the facility is not properly equipped to manage any of the permitted EPA waste code(s), the Division shall be notified immediately.

TABLE III.2 PERMITTED EPA WASTE CODES FOR STORAGE AND DISPOSAL	
EPA Code	Waste Description
Characteristic Waste	
D001	Ignitable Waste
D002	Corrosive Waste
D003	Reactive Waste
D004	Arsenic
D006	Cadmium
D007	Chromium
D008	Lead
D019	Carbon Tetrachloride
D020	Chlordane
D022	Chloroform

TABLE III.2 PERMITTED EPA WASTE CODES FOR STORAGE AND DISPOSAL	
EPA Code	Waste Description
Characteristic Waste	
D028	1,2-Dichloroethane
D029	1,1-Dichloroethylene
D034	Hexachloroethane
D035	Methyl Ethyl Ketone
D039	Tetrachloroethylene
D040	Trichloroethylene
D043	Vinyl Chloride

### **III.B General Facility Standards**

#### **III.B.1 Required Notices**

Reserved

#### **III.B.2 General Waste Analysis**

**III.B.2.1** The Permittee shall comply with all the requirements set forth under **40 CFR Part 264.13**. The Permittee shall verify the analysis of each waste stream frequently and also sample and analyze whenever a change occurs in the waste-generating process as part of its Quality Assurance/Quality Control (QA/QC) program, in accordance with *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, EPA Publication SW-846*, or equivalent methods approved by the Director and Attachment C of this Permit. At a minimum, the Permittee shall maintain proper functional instruments, use approved sampling and analytical methods, verify the validity of sampling and analytical procedures, and perform correct calculations.

**III.B.2.2** The Permittee shall ensure that all samples collected for the purposes of waste characterization and environmental monitoring are representative samples and collected, transported, analyzed, stored, and disposed of by trained and qualified individuals in accordance with Waste Analysis Plan, including its QA/QC Plan in Attachment C of this Permit. The Waste Analysis Plan and QA/QC Plan shall, at a minimum, include the written procedures outlined in *"Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, EPA Publication SW-846"*, or equivalent methods approved by the Director and Attachment C of this Permit and any facility or contractor's written standard operating procedures (SOPs) which are equivalent or more stringent than SW-846.

- III.B.2.3** If the Permittee uses a contract laboratory to perform analyses, then the Permittee shall inform the laboratory in writing that it must operate under *Permit Condition III.B.2* set forth in this Permit.
- III.B.2.4** The Permittee shall maintain in the Operating Record all records and results of all waste analyses performed as required by **40 CFR Part 264 – Subpart E** and *Permit Condition III.B.2*. Such records and results shall be entered into the Operating Record as they become available and shall be maintained until closure of the facility.
- III.B.2.5** The Permittee shall maintain in the Operating Record all records and results of all waste analyses performed as required by **40 CFR Part 264.73** and *Permit Condition III.B.2*. Such records and results shall be entered into the Operating Record as they become available and shall be maintained until closure of the facility.

### **III.B.3 Security**

The Permittee shall comply with all requirements set forth under **40 CFR Part 264.14** and shall follow the security measures outlined in Attachment F of the Permit.

- III.B.3.1** The Permittee shall maintain the 7-foot high locked chain-link fence around the facility and gates in good operating condition at all. The main gate and other access gates at the facility shall be closed, chained, and locked when the facility personnel are not on site.
- III.B.3.2** The Permittee shall maintain security that monitors and controls entry to the site twenty four (24) hours. Other forms of security include road barriers that restrict site entry on off shifts and weekends.
- III.B.3.3** The storage tanks and incinerator areas shall remain under the constant supervision of plant operations personnel.
- III.B.3.4** The automatic lighting system surrounding the perimeter of the facility shall be maintained in working order. The facility shall be lit from dusk until dawn.
- III.B.3.5** The Permittee shall maintain warning signs at each entrance to the permitted areas, on the perimeter fencing, and on each face of the hazardous waste structure. The warning signs are to be legible from a distance of at least twenty-five (25) feet and read "*DANGER OFF LIMITS TO UNAUTHORIZED PERSONNEL*" or its equivalent. Additional signs that prohibit smoking shall be posted. These signs shall be visible from each of the building entrances.

### **III.B.4 General Inspection Requirements**

The Permittee shall comply with all requirements set forth under **40 CFR Part 264.15**, except **40 CFR Part 264.15(b)(5)**.

#### **III.B.4.1 Inspection Remedies**

The Permittee shall remedy any structural deterioration, unauthorized discharges, safety violations, equipment malfunction, or security compromises discovered by an inspection in

accordance with **40 CFR Part 264.15**.

### **III.B.4.2 Inspection Records**

The Permittee shall keep records of inspections as part of the Operating Record in accordance with **40 CFR Part 264.15**.

### **III.B.5 Personnel Training**

The Permittee shall conduct personnel training as required by **40 CFR Part 264.16**. The Training Outline (Attachment H) shall be the guidance to the actual training. Completion of the training course outlined in Attachment H is required for all facility personnel involved in the management and handling of hazardous wastes.

**III.B.5.1** The Permittee shall maintain training documents and records as required by **40 CFR Part 264.16**.

**III.B.5.2** All new employees hired in positions that involve hazardous waste management shall successfully complete the training within six (6) months of their employment or assignment to a facility, or to new position at a facility and must not work in unsupervised positions until they have successfully completed the training described in *Permit Condition III.B.5*. [**40 CFR Part 264.16**]

**III.B.5.3** All employees involved in hazardous waste management must take part in an annual review of the initial training [**40 CFR Part 264.16**].

**III.B.5.4** The Permittee shall prepare and maintain detailed job descriptions with all information required by **40 CFR Part 264.16**, for the emergency coordinator(s) and all personnel involved in the management and handling of hazardous waste in the facility.

**III.B.5.5** Only the Permittee's employees who are fully trained in the Facility's operations and procedures are allowed to handle the hazardous waste operations at the Facility, unless directly under the supervision of a fully trained employee.

### **III.B.6 Personnel Protection**

**III.B.6.1** A summary of the toxicity/health hazard, fire and explosion hazard potential, radiation exposure potential, protective equipment recommendations and first-aid procedures to be followed for the various waste materials shall be prepared by the Permittee and kept on file at the facility.

**III.B.6.2** The information required by *Permit Condition III.B.6.1*, shall be made readily available to facility personnel (and contractors if applicable) to determine the appropriate personnel protective equipment to be worn when handling the hazardous waste.

### **III.B.7 Requirements for Ignitable, Reactive or Incompatible Wastes**

The Permittee shall comply with all requirements set forth under **40 CFR Part 264.17** and follow the procedures for handling ignitable, reactive, and incompatible wastes set forth in Attachment F of this Permit. The Permittee must prevent accidental ignition or reaction of ignitable and/or reactive wastes.

- III.B.7.1 The Permittee shall not place hazardous waste in an unwashed tanks which previously held incompatible wastes or material [**40 CFR Part 264.177** and **40 CFR Part 264.199**].
- III.B.7.2 The Permittee shall utilize the procedure under the Attachment C and Attachment D to ensure that ignitable, reactive or incompatible wastes are not stored improperly.
- III.B.7.3 The Permittee must provide electrical grounding for all tanks and transport during all operations involving the handling of ignitable or reactive wastes.
- III.B.7.4 The Permittee shall provide and require the use of spark proof tools during all operations involving the handling of all ignitable or reactive wastes.
- III.B.7.5 The Permittee shall prohibit smoking and open flames in each area where ignitable, reactive or incompatible hazardous wastes are managed and must post appropriate warning signs.
- III.B.7.6 The Permittee shall document compliance with *Permit Condition III.B.7* and place this documentation in the Operating Record.

### III.B.8 Location Standards

The Permittee shall comply with all the applicable locations standards set forth under **40 CFR Part 264.18**.

## III.C Preparedness and Prevention

### III.C.1 Design and Operation of Facility

The Permittee shall maintain, equip and operate the facility in a manner to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment, as required by **40 CFR Part 264.31**.

### III.C.2 Required Equipment

- III.C.2.1 The Permittee shall comply with all requirements and at a minimum, the Permittee shall keep all equipment at the facility as set forth under **40 CFR Part 264.32** and specified in the Contingency Plan, Attachment G.
- III.C.2.2 The Permittee shall maintain all emergency equipment at the locations, which are listed in Attachment G of this Permit.

### III.C.3 Testing and Maintenance of Equipment

The Permittee shall comply with all requirements set forth under **40 CFR Part 264.33**. Permittee shall test and maintain all equipment specified in *Permit Condition III.C.1* and *Permit Condition III.C.2* to ensure proper operation in time of emergency. In addition to the inspection schedule given in Attachment F, all emergency equipment described in the Contingency Plan shall be checked at least once a month for quality

and proper functional assurance, unless a higher frequency is necessary.

### **III.C.4 Access to Communication or Alarm System**

The Permittee shall comply with all requirements set forth under **40 CFR Part 264.34**.

#### **III.C.4.1 Waste Handling**

The Permittee shall ensure that all personnel shall have immediate access to an internal alarm system or emergency communications device, either directly or through visual or voice contact with another employee whenever hazardous waste is being poured, mixed, spread, or otherwise handled.

#### **III.C.4.2 Single Person**

The Permittee shall ensure that any employee, when working alone without the immediate presence of another employee, shall have immediate access to a device, such as a telephone at the area of operations, or a hand-held two-way radio, capable of summoning external emergency assistance.

### **III.C.5 Required Aisle Space**

The Permittee must maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency, unless it can be demonstrated to the Division that aisle space is not needed for any of these purposes. **[40 CFR Part 264.35]**

### **III.C.6 Reserved**

### **III.C.7 Arrangements with Local Authorities**

The Permittee shall comply with all requirements set forth under **40 CFR Part 264.37** and *Permit Condition III.D.3*

The Permittee shall document in the Operating Record any refusal by any of the state or local authorities to enter into such arrangements.

## **III.D Contingency Plan and Emergency Response**

### **III.D.1 Implementation of Contingency Plan**

The Permittee shall immediately carry out the provisions of the Contingency Plan, Attachment G, and follow the emergency procedures described in **40 CFR Part 264.56**, whenever there is a fire, explosion, or release of hazardous waste or constituents that could threaten human health or the environment. The Permittee shall comply with all requirements set forth under **40 CFR Part 264.51**.



At a minimum, the plan must be implemented in the following situations:

- III.D.1.1 Any fire involving hazardous waste; or
- III.D.1.2 Any explosion involving hazardous waste; or
- III.D.1.3 Any uncontrolled hazardous waste reaction or hazardous waste release that produces or has the potential to produce hazardous conditions, including noxious, poisonous, flammable and/or explosive gases, fumes, or vapors; harmful dust; or explosive conditions; or
- III.D.1.4 Any fire or explosion that has an increased potential to threaten human health or the environment due to its proximity to a hazardous waste management unit; or
- III.D.1.5 Any hazardous waste release, outside of a secondary containment system that causes or has the potential to cause off-site soil and/or surface water contamination.

### III.D.2 All Released Material from Emergency Response and Product of the Contingency Plan Implementation

- III.D.2.1 Immediately after an emergency, the Permittee must provide for storing, treating, or disposing of recovered waste, contaminated soil or surface water, and/or any other material that results from a release, fire, or explosion at the facility.
- III.D.2.2 The Permittee is required to evaluate all liquid or solid material resulting from fire, explosion, released material or emergency response material and by-products to determine whether such material is hazardous waste in accordance with **40 CFR Part 260** through **270**. If such material is determined to be hazardous waste, it must be handled accordingly.

### III.D.3 Copies of the Contingency Plan

As set forth in **40 CFR Part 264.53**, a copy of the contingency plan and all revisions to the plan must be maintained at the facility and submitted to all local police Divisions, fire Divisions, hospitals, as well as State and local emergency response teams that may be called upon to provide emergency services.

### III.D.4 Amendment of Contingency Plan

The Permittee shall review at least annually and amend the plan immediately, if necessary, as required by **40 CFR Part 264.54**, and whenever:

- III.D.4.1 This Permit is revised;
- III.D.4.2 The Contingency Plan fails during an emergency;
- III.D.4.3 The Permittee modifies the facility, in either its design, construction, operation, maintenance, or other circumstances, in a manner that increases the potential for fires, explosions, or releases of hazardous waste constituents, and/or changes the response necessary in an emergency;

**III.D.4.4** The Permittee modifies the list of emergency coordinators; and/or

**III.D.4.5** The Permittee modifies the list of emergency equipment.

The Permittee shall provide copies of any amended Contingency Plan to the Local Authorities specified in *Permit Condition III.D.3*. Any amendment shall be subject to the requirements of **40 CFR Part 270.41, 270.42 and 270.50**.

### **III.D.5 Emergency Coordinator**

A trained emergency coordinator shall be available at all times in case of an emergency, as required by **40 CFR Part 264.55**. The Permittee shall comply with all requirements set forth under **40 CFR Part 264.55**.

**III.D.5.1** Whenever there is an imminent or actual emergency situation, the emergency coordinator (or designee when the emergency coordinator is not available) must immediately:

**III.D.5.1.1** Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel; and

**III.D.5.1.2** Notify appropriate State or local agencies with designated response roles if their help is needed.

**III.D.5.2** Whenever there is a release, fire, or explosion, the emergency coordinator must immediately identify the character, exact source, amount, and area of extent of any released materials. Emergency Coordinator may do this by observation or review of facility records or manifests, and/or by chemical analysis.

**III.D.5.2.1** Concurrently, the Emergency Coordinator must assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment must consider both direct and indirect effects of the release, fire, or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-off from water or chemical agents used to control fire and heat-induced explosions).

**III.D.5.2.2** If the Emergency Coordinator determines that the facility has had a release, fire, or explosion which could threaten human health, or the environment, outside the facility, they must report his findings as follows [**KRS 224.01-400 (6)**]:

**III.D.5.2.2.1** If Emergency Coordinator's assessment indicates that evacuation of local areas may be advisable, they must immediately notify appropriate local authorities [**KRS 224.01-400(6)**]. Emergency Coordinator must be available to help appropriate officials decide whether local areas should be evacuated; and

**III.D.5.2.2.2** Emergency Coordinator must immediately notify the Kentucky Emergency Response Team at (502) 564-2380 or using their 24-

hour toll free number (800) 928-2380 and/or the National Response Center (using their 24-hour toll free number (800) 424-8802). The report must include details specified in *Permit Condition II.E.15*.

**III.D.5.2.2.3** During an emergency, the emergency coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous waste at the facility. These measures must include, where applicable, stopping processes and operations, collecting and containing released waste, and removing or isolating containers.

**III.D.5.2.2.4** If the facility stops operations in response to a fire, explosion, or release, the emergency coordinator must monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.

**III.D.5.3** Immediately after an emergency, the emergency coordinator must provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, spill, fire, or explosion at the facility.

The Emergency Coordinator must ensure that, in the affected area(s) of the facility:

**III.D.5.3.1** No waste that may be incompatible with the released material is treated, stored, or disposed of until decontamination and cleanup procedures are completed; and

**III.D.5.3.2** All emergency equipment listed in the contingency plan is cleaned and fit for its intended use before operations are resumed.

**III.D.5.4** The Permittee shall notify the Paducah Regional Office or Manager, and appropriate State and local authorities, that the facility is in compliance with conditions in Part II through Part VIII of this Permit and the HSWA Federal Permit before operations are resumed in the affected area(s) of the facility.

### **III.D.6 Emergency Procedure**

The procedure stated in *Permit Condition III.D.5* and Attachment G must be implemented whenever there is an imminent or actual emergency situation including any release of hazardous waste, fire, or explosion which occurs in the hazardous waste management area or units. The Permittee shall comply with all requirements set forth under **40 CFR Part 264.56**.

### **III.D.7 Notation in the Operating Record**

The Permittee must note in the Operating Record the time, date, and details of any incident and/or event that requires implementing the Contingency Plan. The Permittee shall also record on the Operating Record of the facility the amount, storage, treatment and disposal arrangements of all material resulting from fire,

explosion, released material or emergency response material and by-products. [40 CFR Part 264.73]

### III.D.8 Notification to the Cabinet

The Permittee must comply with notification procedures in *Permit Condition II.E.15* and *Permit Condition III.D.5* as set forth in **40 CFR Part 264.56**, and as outlined in the Attachment G.

### III.E Manifest System

Reserved

### III.F Recordkeeping and Reporting

In addition to the recordkeeping and reporting requirements specified elsewhere in this Permit, the Permittee shall comply with the following:

#### III.F.1 Operating Record

The Permittee shall comply with all requirements set forth under **40 CFR Part 264.73**. The Permittee shall maintain records of all hazardous wastes stored and disposed of at the facility in accordance with the recordkeeping procedures set forth in **40 CFR Part 264.73**.

III.F.1.1 Records and results of waste characterization and waste analysis performed.

III.F.1.2 Summary reports and details of all incidents.

III.F.1.3 Records and results of inspections.

III.F.1.4 Monitoring, testing or analytical data, and corrective action.

III.F.1.5 Copies of waste minimization documents required in *Permit Condition V.A*.

III.F.1.6 All closure and all Post-Closure cost estimates.

#### III.F.2 Availability, Retention, and Disposition of Records

The Permittee shall comply with all requirements set forth under **40 CFR Part 264.74**.

#### III.F.3 Annual Report

The Permittee shall comply with the annual reporting requirements set forth under **401 KAR 39:060 Section 5(18)**.

#### III.F.4 Additional Reports

The Permittee shall comply with all requirements set forth under **40 CFR Part 264.77**.

### **III.G Closure Requirements**

#### **III.G.1 Closure Performance Standards**

The Permittee shall close the facility and/or unit(s) in compliance with all requirements as set forth under **40 CFR Part 264 - Subpart G, 40 CFR Part 264.178, 40 CFR Part 264.197, and 40 CFR Part 264.351**, and in accordance with the Closure Plan included in Attachment I of this Permit.

At closure of the facility, the Permittee shall remove all hazardous waste and hazardous waste residues.

**III.G.1.1** Facility will be deemed “clean” when hazardous constituents or contaminants, unless specified otherwise in the approved Closure Plan in the application, do not exceed EPA-recommended exposure levels, or clean closure levels. Should the facility be demolished, such demolition activities will occur only following thorough decontamination of all structures and pavements to the extent described in the Closure Plan (Attachment I).

**III.G.1.2** Unless specified otherwise in the approved Closure Plan in the application, hazardous constituents may remain in media after clean closure provided they are present at concentrations below which they may pose a risk to human health and the environment, based on established, protective, risk-based levels (e.g., maximum contaminant levels (MCLs) or site-specific risk-based levels).

#### **III.G.2 Closure Plan and Amendment of Closure Plan**

The Permittee shall comply with all requirements and close the facility as set forth under **40 CFR Part 264.112**. The Permittee shall carry out closure as described in the Closure Plan (Attachment I). The Permittee shall amend the Closure Plan whenever necessary in accordance with **40 CFR Part 264.112**.

#### **III.G.3 Notification of Closure**

The Permittee shall notify the Manager in writing at least forty-five (45) days prior to the date on which the Permittee expects to begin closure [**40 CFR Part 264.112**].

#### **III.G.4 Time Allowed for Closure**

The Permittee shall comply with **40 CFR Part 264.113**. Within ninety (90) days after receiving the final volume of hazardous waste, the Permittee must remove from the facility all hazardous wastes in accordance with the approved Closure Plan (Attachment I). All closure activities shall be completed as described in the attached Closure Plan; and within 180 days after receiving the final volume of waste, all equipment and the facility will be decontaminated and washing residues removed.

#### **III.G.5 Decontamination or Disposal of Equipment, Structures, Soils and Others**

**III.G.5.1** The Permittee shall decontaminate and/or dispose of all contaminated facility equipment,

structures, and soils as required by **40 CFR Part 264.114**, the Closure Plan (Attachment I) as well as the terms and conditions of this Permit.

**III.G.5.2** The Permittee must notify the Manager and Paducah Regional Office within ten (10) working days prior to the beginning of rinsate and/or soil sampling activities.

### **III.G.6 Certification of Closure**

Within sixty (60) days of completion of closure of the unit(s), the Permittee shall submit a Closure Certification and Closure Report that includes, at a minimum, the following information: **[40 CFR Part 264.115]**

**III.G.6.1** An independent Professional Engineer registered in the Commonwealth of Kentucky certified that each hazardous waste management unit or the facility has been closed in accordance with the specifications in the approved Closure Plan as well as the terms and conditions of this Permit, as required by **40 CFR Part 264.115**.

**III.G.6.2** Facility processes and waste management.

**III.G.6.3** Analysis results, observations, and conclusions.

**III.G.6.4** A discussion of the closure process implementation followed for each unit. Include a description of:

**III.G.6.4.1** The procedures followed for decontamination of the hazardous waste management unit (including disposition of residues);

**III.G.6.4.2** The equipment used for decontamination of the hazardous waste management unit;

**III.G.6.4.3** The sampling procedures used (wipe sampling, wastewater, rinsate, concrete chip sampling etc.), equipment used for sampling, drawing of sample locations and cross reference results, analytical procedures and methods used per sampling type, analytical equipment used as well as Chain of Custody;

**III.G.6.4.4** The remedial procedures used (if applicable) and equipment used for remediation (if applicable);

**III.G.6.4.5** The quality assurance program used;

**III.G.6.4.6** Calculations and spreadsheets;

**III.G.6.4.7** The procedures and equipment used to prevent hazards and protect field personnel during closure as well as Site Work Zone Management Controls;

**III.G.6.4.8** Field notebook notes;

**III.G.6.4.9** Drawings and photographs;

- III.G.6.4.10 List and description of any deviations and or alterations from the approved Closure Plan;
- III.G.6.4.11 Copies of manifest and bill of landing; and
- III.G.6.4.12 Recycling and Disposal Certifications.

### III.G.7 Survey Plat

The Permittee shall submit a survey plat no later than the submission of certification of closure of each hazardous waste disposal unit, in accordance with **40 CFR Part 264.116**.

### III.H Post Closure Requirements

The Post-Closure Care period has been completed for the four Closed Regulated Units identified in Permit Condition III.O.2. The Post-Closure Certification was submitted on February 27, 2017 and received approval on January 22, 2019. As agreed upon, the Permittee will continue to monitor and maintain the units in accordance with Part I of the application (*Attachment I*) and the Permit Conditions in III.H, where applicable.

#### III.H.1 Post-Closure Care Period: Reserved

#### III.H.2 Post-Closure Security

The Permittee shall maintain security at the facility in accordance with Part I of the application included in the *Attachments I and F* and as required by **40 CFR Part 264.117**.

#### III.H.3 Inspections

##### III.H.3.1 Components, Structures and Equipment

The Permittee shall inspect the components, structures, and equipment at the site in accordance with **40 CFR Part 264.117** and the inspection schedule in the approved Post-Closure Plan and Part I of the application included in the *Attachments I and F*.

##### III.H.3.2 Cover System

The Permittee shall inspect the cover system(s) for uniformity, drainage, and imperfections. Soil based covers must be inspected for imperfections including lenses, cracks, channels, root holes, or other structural non-uniformities that may cause an increase in the permeability of the cover.

#### III.H.4 Notices and Certification

##### III.H.4.1 Use of units

The Permittee shall not allow any use of the units designated in *Permit Condition III.O.2* which

will disturb the integrity of the final cover, liners, any components of the containment system, or the function of the facility's monitoring systems. [40 CFR Part 264.117]

#### **III.H.4.2 Amendments to Post-Closure Plan**

The Permittee must request a Permit modification to authorize a change in the approved Post-Closure Plan. This request must be in accordance with applicable requirements of **40 CFR Part 270.42**, and must include a copy of the proposed amendments to the application for approval by the Division. The Permittee shall request a Permit modification whenever changes in operating plans or facility design affecting the Post-Closure Plan, or other events occur during the active life of the facility that also affect the Post-Closure Plan. The Permittee must submit a written request for a Permit modification at least sixty (60) days prior to the proposed change in facility design or operation, or no later than sixty (60) days after an unexpected event has occurred which has affected the Post-Closure Plan. [40 CFR Part 264.118]

#### **III.H.4.3 Post-Closure Notices: Reserved**

#### **III.H.4.4 Removal Request**

If the Permittee or any subsequent owner or operator of the land upon which the hazardous waste disposal unit is located wishes to remove hazardous wastes and hazardous waste residues, the liner, if any, or contaminated soils, then he shall request a modification to this Post-Closure Permit in accordance with the applicable requirements in **40 CFR Part 270 - Subpart D and E**. The Permittee or any subsequent owner or operator of the land shall demonstrate that the removal of hazardous wastes will satisfy the criteria of **40 CFR Part 264.117**.

#### **III.H.4.5 Certification of Completion of Post-Closure Care: Reserved**

### **III.I Financial Requirements**

The Permittee shall comply with all the applicable Financial Assurance requirements in **401 KAR 39:090 Section 7**.

#### **III.I.1 Cost Estimate for Facility Closure & Corrective Action**

The owner or operator must have a detailed written estimate, in current dollars, of the cost of closing the facility in accordance with the requirements in **40 CFR Part 264.142**, as well as the cost for selected remedies for corrective action in accordance with the requirements of **40 CFR Part 264.101**.

At the time of issuance of this Permit, the Closure Cost Estimate is \$1,751,966 (2020 dollars) for the hazardous waste tanks and incinerator and Corrective Action has not yet been finalized.

##### **III.I.1.1 Most Recent Cost Estimate**

The Permittee's most recent closure cost estimate, prepared in accordance with **40 CFR Part 264.142** is specified in *Attachment I* of this Permit.



### III.I.1.2 Cost Estimate Annual Adjustment

The Permittee must adjust the closure and/or corrective action cost estimate for inflation annually, as specified in **40 CFR Part 264.142**.

### III.I.1.3 Cost Estimate Modification

The Permittee must revise the closure cost estimates whenever there is a change in the facility's Closure Plan, as required by **40 CFR Part 264.142**.

### III.I.1.4 Closure Cost Estimate Recording

The Permittee must keep at the facility the latest closure and/or corrective action cost estimate as required by **40 CFR Part 264.142**.

## III.I.2 Financial Assurance and Liability Requirements

**III.I.2.1** The Permittee shall comply with all applicable requirements as set forth under **40 CFR Part 264 – Subpart H**.

**III.I.2.1.1** The Permittee shall demonstrate continuous compliance with the requirements under **40 CFR Part 264.143**, by providing documentation of financial assurance for at least the amount of the current cost estimate. In addition to **40 CFR Part 264.143(e)(1)**, each insurance policy providing primary coverage shall be issued by an insurer that is authorized to transact insurance in Kentucky, except if **KRS 304.11-030** establishes otherwise. [**401 KAR 39:090 Section 1(2)**]

**III.I.2.1.2** The Permittee shall demonstrate continuous compliance with the requirements of **40 CFR Part 264.147** and the documentation requirements of **40 CFR Part 264 – Subpart H** including the requirements to have and maintain liability coverage for sudden and accidental occurrences in the amount of at least one million dollars (\$1,000,000) per occurrence with an annual aggregate of at least two million dollars (\$2,000,000), exclusive of legal defense costs.

**III.I.2.1.3** The Permittee shall demonstrate continuous compliance with the requirements of **40 CFR Part 264.147** and the documentation requirements of **40 CFR Part 264 – Subpart H** including the requirements to have and maintain liability coverage for non-sudden accidental occurrences in the amount of at least three million dollars (\$3,000,000) per occurrence with an annual aggregate of at least six million dollars (\$6,000,000), exclusive of legal defense costs.

**III.I.2.1.4** The Permittee must demonstrate compliance with the financial assurance requirements in **40 CFR Part 264.147**, in effect during the life of this Permit. In addition to **40 CFR Part 264.147(a)(1)(ii)** and **40 CFR Part 264.147(b)(1)(ii)**, each insurance policy providing primary coverage shall be issued by an insurer that is authorized to transact insurance in Kentucky, except if **KRS 304.11-030** establishes otherwise. [**401 KAR 39:090 Section 1(2)**]

### **III.I.3 Cost Estimate for Facility Post-Closure**

#### **III.I.3.1 Most Recent Cost Estimate**

The Permittee's most recent Post-Closure cost estimate is \$40,000 per year, prepared in accordance with **40 CFR Part 264.144**, and is specified in *Attachment I* of this Permit.

#### **III.I.3.2 Cost Estimate Annual Adjustment**

The Permittee must adjust the Post-Closure cost estimate for inflation annually, as specified by **40 CFR Part 264.144**.

#### **III.I.3.3 Cost Estimate Modification**

The Permittee must revise the Post-Closure cost estimate whenever there is a change in the facility's Post-Closure Plan, as required by **40 CFR Part 264.144**.

#### **III.I.3.4 Cost Estimate Record**

The Permittee must keep at the facility the latest Post-Closure cost estimate as required by **40 CFR Part 264.144**.

### **III.I.4 Financial Assurance for Facility Post-Closure Care**

The Permittee shall demonstrate continuous compliance with **40 CFR Part 264.145** by providing documentation of financial assurance as required by **40 CFR Part 264.145(a)** through (i) in at least the amount of the cost estimates required by *Permit Condition III.I.3.1* and *III.R*. Changes in financial assurance mechanisms must be approved by the Manager, pursuant **40 CFR Part 264.145(a)** through (i). In addition to **40 CFR Part 264.145(e)(1)**, each insurance policy providing primary coverage shall be issued by an insurer that is authorized to transact insurance in Kentucky, except if **KRS 304.11-030** establishes otherwise. [**401 KAR 39:090 Section 1(2)**]

### **III.I.5 Incapacity of Owners or Operators, Guarantors, or Financial Institutions**

The Permittee shall comply with **40 CFR Part 264.148** whenever necessary.

### **III.J Construction Compliance Schedule for Proposed Units**

Reserved

### **III.K Container Management Practices**

The Permittee currently does not store or treat any hazardous waste in containers for a period of more than 90 days at this facility.

### **III.L Tank System Management Practices**

The Permittee utilizes six (6) horizontal above ground storage tanks to store hazardous waste generated from the chemical production.

**III.L.1** The Permittee may operate the units and processes described in *Permit Condition III.L.2*, which are subject to the terms and conditions of this Permit. Operation of any process or unit not mentioned in *Permit Condition III.L.2*, operation of any process in a unit or area other than that for which the process is listed, or exceedance of any capacity listed therein, for the storage, treatment or disposal of hazardous waste is prohibited.

#### **III.L.2 Specific Tank Units**

##### **III.L.2.1 Tank Unit #1: V-0119**

V-0119 was installed in 1982.

*Location:*

V-0119 is located at the southwest area of the Facility.

*Activity Description:*

V-0119 is a horizontal above ground storage only tank unit with a maximum storage capacity of 22,843 gallons. Hazardous waste produced at the Forane® 141b, 142b and/or 32 plants is stored in liquid form in V-0119, and the waste exhibit the characteristic of reactivity (D003). The majority of this waste comes from purges of the process reactors via phase separators and/or direct from the reactor bottom outlet.

*Physical Description:*

V-0119 was constructed of carbon steel with dimensions of 12 feet in diameter and 23 feet in length. The design shell thickness specifications are 1.4375 inches for the side, and 1.4375 inches for the head. V-0119 has a design corrosion allowance of 0.0625 inches and a recommended minimum shell thickness of 1.248 inches. The tank and its associated piping are designed to operate at pressures and temperature up to 300 psi and 260°F respectively. At 280 psi pressure, a control valve opens, allowing some of the pressure to be released to the incinerator gas feed line. If the pressure continues to rise, and reaches the 300 psi level, the safety relief valve on the tank will open and vent the tank contents into the atmosphere until the pressure is reduced to safe limits.

Safety cutoffs are present at both the reactor outlets and the storage tank inlet. These safety cutoffs take the form of manually operated valves as well as remotely controlled automatic valves. Additionally, V-0119 is equipped with a liquid level detector. If the tank becomes full, the inlet valve automatically closes. There are no bypass systems associated with feeding tank V-0119.

*Secondary Containment System:*

The secondary containment system is designed, constructed, and operated to prevent migration of hazardous waste or accumulated liquid out of the tank system at any time during the operational life of the tank system and it is capable of collecting releases and accumulated

liquids. The secondary containment system consists of reinforced concrete walls and floor surrounding the tank. The concrete surface inside the containment area is coated with a coal tar epoxy to prevent leaks and to provide material compatibility with the hazardous waste stored in the tank. The tank sits on reinforced concrete piers/saddles above the floor. The floor is sloped to a sump to collect any accumulated liquids from releases or storm water until they are removed. The tank and its containment system are inspected daily and, therefore, the presence of any release or accumulated liquid is detected within 24 hours. The containment system walls prevent storm water run-on. The containment area surrounds the tank completely and covers all surrounding soil to prevent contact with any wastes released from the tank.

The secondary containment system for tank V-0119 has dimensions of 24 feet by 44 feet with a top of wall elevation of 353 feet above mean seal level (msl). The finished floor has a high point elevation of 349.25 feet above msl and a low point elevation of 348.75 feet above msl at the sump.

### III.L.2.2 Tank Unit #2: V-0119A

V-0119A was installed in 1991.

*Location:*

V-0119A is located at the southwest area of the Facility.

*Activity Description:*

V-0119A is a horizontal above ground storage only tank unit with a maximum storage capacity of 22,850 gallons. Hazardous waste produced at the Forane® 141b, 142b and/or 32 plants is stored in liquid form in V-0119A, and the waste exhibit the characteristic of reactivity (D003). The majority of this waste comes from purges of the process reactors via phase separators and/or direct from the reactor bottom outlet.

*Physical Description:*

V-0119A was constructed of carbon steel with a dimension of 12 feet in diameter and 23 feet in length. The design shell thickness specifications are 1.5 inches for the side, and 1.22155 inches for the head. V-0119A has a design corrosion allowance of 0.25 inches and a recommended minimum shell thickness of 1.251 inches. The tank and its associated piping are designed to operate at pressures and temperature up to 300 psi and 260°F respectively. At 280 psi pressure, a control valve opens, allowing some of the pressure to be released to the incinerator gas feed line. If the pressure continues to rise, and reaches the 300 psi level, the safety relief valve on the tank will open and vent the tank contents into the atmosphere until the pressure is reduced to safe limits.

Safety cutoffs are present at both the reactor outlets and the storage tank inlet. These safety cutoffs take the form of manually operated valves as well as remotely controlled automatic valves. Additionally, V-0119A is equipped with a liquid level detector. If the tank becomes full, the inlet valve automatically closes. There are no bypass systems associated with feeding tank V-0119A.

*Secondary Containment System:*

The general description and dimensions for tank V-0119A secondary containment system is

similar to tank V-0119 secondary containment system.

### **III.L.2.3 Tank Unit #3: V-0121**

V-0121 was installed in 1982.

*Location:*

V-0121 is located at the southwest area of the Facility.

*Activity Description:*

V-0121 is a horizontal above ground storage only tank unit with a maximum storage capacity of 6,266 gallons. Hazardous waste produced at the Kynar® monomer plant is stored in liquid form in V-0121, and the waste exhibit the characteristic of ignitability (D001).

*Physical Description:*

V-0121 was constructed of carbon steel with a dimension of 8 feet in diameter and 14 feet in length. The design shell thickness specifications are 1.0625 inches for the side, and 1.0625 inches for the head. V-0121 has a design corrosion allowance of 0.0625 inches and a recommended minimum shell thickness of 0.345 inches. The tank and its associated piping are designed to operate at pressures and temperature up to 350 psi and 350°F respectively. If the pressure continues to rise, and reaches the 350 psi level, the safety relief valve on the tank will open and vent the tank contents into the atmosphere until the pressure is reduced to safe limits.

Safety cutoffs are present at both the recycle column outlet and the storage tank inlet. These safety cutoffs take the form of manually operated valves as well as remotely controlled automatic valves. Additionally, V-0121 is equipped with a liquid level detector. If the tank becomes full, the inlet valve automatically closes. There are no bypass systems associated with feeding tank V-0121.

*Secondary Containment System:*

The general description for tank V-0121 secondary containment system is similar to tank V-0119 secondary containment system.

The secondary containment system for tank V-0121 has dimensions of 27 feet by 31 feet with a two (2) foot six (6) inch dike wall.

### **III.L.2.4 Tank Unit #4: V-0229**

V-0229 was installed in 1989.

*Location:*

V-0229 is located at the southwest area of the Facility.

*Activity Description:*

V-0229 is a horizontal above ground storage only tank unit with a maximum storage capacity of 6,000 gallons. Hazardous waste produced at the Kynar® monomer plant is stored in liquid form in V-0229, and the waste exhibit the characteristic of ignitability (D001).

*Physical Description:*

V-0229 was constructed of carbon steel with a dimension of 7 feet in diameter and 18.5 feet in length. The design shell thickness specifications are 0.5 inches for the side, and 0.625 inches for the head. V-0229 has a design corrosion allowance of 0.125 inches and a recommended minimum shell thickness of 0.284 inches. The tank and its associated piping are designed to operate at pressures and temperature up to 100 psi and 300°F respectively. If the pressure continues to rise, and reaches the 100 psi level, the safety relief valve on the tank will open and vent the tank contents into the atmosphere until the pressure is reduced to safe limits.

Safety cutoffs are present at both the recycle column outlet and the storage tank inlet. These safety cutoffs take the form of manually operated valves as well as remotely controlled automatic valves. Additionally, V-0229 is equipped with a liquid level detector. If the tank becomes full, the inlet valve automatically closes. There are no bypass systems associated with feeding tank V-0229.

*Secondary Containment System:*

The general description and dimensions for tank V-0229 secondary containment system is similar to tank V-0121 secondary containment system.

### **III.L.2.5 Tank Unit #5: V-6103**

V-6103 was installed in 1996.

*Location:*

V-6103 is located at the southwest area of the Facility.

*Activity Description:*

V-6103 is a horizontal above ground storage only tank unit with a maximum storage capacity of 23,688 gallons. Hazardous waste produced at the 1233zd plant is stored in liquid form in V-6103, and the waste exhibit the characteristic of reactivity (D003).

*Physical Description:*

V-6103 was constructed of carbon steel with a dimension of 12 feet in diameter and 24 feet in length. The design shell thickness specifications are 1 inch for the side, and 1.25 inches for the head. V-6103 has a design corrosion allowance of 0.125 inches and a recommended minimum shell thickness of 0.797 inches. The tank and its associated piping are designed to operate at pressures and temperature up to 150 psi and 250°F. A control valve may be manually opened, allowing some of the pressure to be released to the thermal oxidizer feed line, if needed. If the pressure continues to rise, and reaches the 150 psi level, the safety relief valve on the tank will open and vent the tank contents into the atmosphere until the pressure is reduced to safe limits.

Safety cutoffs are present at both the point of generation and the storage tank inlet. These safety cutoffs take the form of manually operated valves as well as remotely controlled automatic valves. Additionally, V-6103 is equipped with a liquid level detector. If the tank becomes full, the inlet valve automatically closes. There are no bypass systems associated with feeding tank V-6103.

*Secondary Containment System:*

The general description for tank V-6103 secondary containment system is similar to tank V-0119 secondary containment system. Tank V-6103 and tank V-6103A share the same secondary containment system.

The shared secondary containment system for tank V-6103 and tank V-6103A has dimensions of 57 feet 6 inches by 59 feet 8 inches with a four (4) foot concrete wall.

### III.L.2.6 Tank Unit #6: V-6103A

V-6103 is proposed to be installed in 2022.

*Location:*

V-6103A is located at the southwest area of the Facility.

*Activity Description:*

The general description for tank V-6103A is similar to tank V-6103. The maximum storage capacity is 33,000 gallons.

*Physical Description:*

The general description for tank V-6103A is similar to tank V-6103, with the exception of the length of the tank is 33 feet and 8 inches.

*Secondary Containment System:*

The description for tank V-6103A secondary containment system is similar to tank V-6103 secondary containment system.

*Conditional Permit Requirements:*

1. Permittee shall comply with *Permit Condition III.L.6* prior to usage.
2. Permittee shall submit to the Division **40 CFR Part 264 Subpart BB** equipment identification list after tank V-6103A installation/construction.

### III.L.3 Storage in Tanks

**III.L.3.1** The Permittee may store a total maximum volume of 114,647 gallons of hazardous waste at any time in a total of six (6) tanks in accordance with the terms and conditions of this Permit, and the information provided in Attachment D. [**40 CFR Part 264 - Subpart J**]

**III.L.3.2** The Permittee shall only store those hazardous wastes specified in *Permit Condition III.A.4* in the tanks identified in *Permit Condition III.L.2*.

**III.L.3.3** The Permittee shall store only those hazardous waste which are compatible with the construction material of the tank(s), in accordance with the terms and conditions of this Permit, the information provided in Attachment D, pursuant to **40 CFR Part 264 - Subpart J**, and specifications in *Permit Condition III.L.2*.

**III.L.3.4** The Permittee shall only store hazardous waste in a tank or tank farm, whichever is applicable,

with a secondary containment system that is designed or operated to contain 100 percent of the capacity of the largest tank within its boundary and the precipitation from a 25 year/24 hour storm event.

**III.L.3.5** The Permittee shall construct, operate, maintain, and inspect the tanks specified in *Permit Condition III.L.2* and as specified in Attachment D of this Permit.

**III.L.3.6** Hazardous waste loading onto and unloading from the tanks in the tank farm shall only be conducted within the area of the secondary containment system identified in *Permit Condition III.L.2*.

#### **III.L.4 Treatment in Tanks**

The Permittee shall not conduct any treatment activities in the tanks identified in *Permit Condition III.L.2*.

#### **III.L.5 Design of Tanks**

The Permittee shall design, construct, and maintain all tanks as required by **40 CFR Part 264.191** through **264.194**, and as specified in the engineering design drawings in Attachment D. The shell thickness shall not be allowed to be less than the minimum specified in *Permit Condition III.L.2*. A tank shell must be replaced, repaired or decommissioned if the minimum shell thickness is found to be less than that stated in *Permit Condition III.L.2*.

#### **III.L.6 Design and Installation of New Tank Systems or Components**

The Permittee shall comply with all the applicable requirements in **40 CFR Part 264.192**.

**III.L.6.1** The Permittee must obtain and submit to the Division a written assessment, reviewed and certified by an independent Professional Engineer registered in the Commonwealth of Kentucky attesting that the tank system has sufficient structural integrity and is acceptable for the storing and treating of hazardous waste. The assessment must show that the foundation, structural support, seams, connections, and pressure controls (if applicable) are adequately designed and that the tank system has sufficient structural strength, compatibility with the waste(s) to be stored or treated, and corrosion protection to ensure that it will not collapse, rupture, or fail. This assessment must include, at a minimum, the applicable information in **40 CFR Part 264.192(a)(1)** through **(a)(5)**.

**III.L.6.2** Prior to placing a new tank system or component (i.e., tank, secondary containment, etc.) in use, the Permittee shall have an independent Professional Engineer registered in the Commonwealth of Kentucky inspect the tank system to assess any inadequate construction, or damage which may occurred during installation of the tank system or components, as required by **40 CFR Part 264.192**.

**III.L.6.3** The Permittee shall remedy all discrepancies (e.g. structural damage or inadequate construction/installation) prior to placing the tank system in use as specified in **40 CFR Part 264.192**.



- III.L.6.4 The Permittee shall test all new tanks and ancillary equipment for tightness prior to placing these systems in use as required by **40 CFR Part 264.192**. If a tank system is found not to be tight, all repairs necessary to remedy the leak(s) in the system must be performed prior to the tank being placed in use.
- III.L.6.5 Ancillary equipment must be supported and protected against physical damage and excessive stress due to settlement, vibration, expansion, or contraction. [**40 CFR Part 264.192**]

### III.L.7 Operating Requirements

- III.L.7.1 The Permittee shall comply with all the requirements set forth under **40 CFR Part 264.194**, and according to Attachment D of this Permit. The Permittee shall not place hazardous wastes or treatment reagents in the tank system if they could cause the tank, its ancillary equipment, or the containment system to rupture, leak, corrode, or otherwise fail.
- III.L.7.2 The Permittee shall prevent spills, releases and/or overfilling of tanks as required by **40 CFR Part 264.194**, by the methods specified in Attachment D and the terms and conditions of this Permit.
- III.L.7.3 The Permittee shall manage the tanks according to the conditions and the design standards specified in Attachment D of this Permit, as specified in **40 CFR Part 264.194** and **264.196**.
- III.L.7.4 The Permittee shall manage the secondary containment systems for the tank systems in accordance with Attachment D of this Permit, and **40 CFR Part 264.193**. The Permittee shall maintain an impervious coating which is free of cracks, gaps, or other deterioration on all containment system surfaces which may be exposed to hazardous wastes or hazardous constituents (or releases of hazardous constituents).
- III.L.7.5 The Permittee shall maintain firefighting capabilities in accordance with **40 CFR Part 264.32**.

### III.L.8 Response to Leaks or Spills

In the event of a leak or a spill from the tank system or from a secondary containment system, or if a system becomes unfit for continued use, the Permittee must remove the system from service immediately and must satisfy the requirements in **40 CFR Part 264.196**.

For all major repairs to eliminate leaks or restore the integrity of the tank system, the Permittee must obtain a certification from an independent qualified Professional Engineer registered in the Commonwealth of Kentucky that the repaired system is capable of handling hazardous wastes without release for the intended life of the system before returning the system to service. Examples of major repairs are: installation of an internal liner, repair of a ruptured tank, or repair or replacement of a secondary containment vault.

### III.L.9 Inspections

- III.L.9.1 The Permittee shall inspect each tank system, including but not limited to ancillary equipment and secondary containment as well as the area surrounding each tank as specified in Attachment D and Attachment F and in accordance with the requirements of **40 CFR Part 264.195**.

- III.L.9.2** The Permittee shall follow an Inspection Schedule in accordance with **40 CFR Part 264.195** and as specified in Attachment F of this Permit.
- III.L.9.3** In addition to the above referenced Inspection Schedule, the Permittee shall record all inspections in the inspection log format included in Attachment F of this Permit. The format of this log may be altered to provide for more frequent monitoring, sampling, or maintenance activities by the Permittee provided the Division is notified of the alteration.
- III.L.9.4** At a minimum the Permittee shall inspect the following components of the tank system at least once each day:
- III.L.9.4.1** Above ground portions of the tank system to detect corrosion or releases of waste [**40 CFR Part 264.195**];
  - III.L.9.4.2** Data gathered from monitoring and leak detection equipment to ensure that the tank system is operating according to its design specifications [**40 CFR Part 264.195**]; and
  - III.L.9.4.3** Construction materials and the area immediately surrounding the externally accessible portion of the tank system, including the secondary containment system, to detect erosion or signs of release of hazardous waste (e.g., wet spots, dead vegetation, etc.) [**40 CFR Part 264.195**].
- III.L.9.5** The Permittee shall remedy any deterioration or malfunction of equipment or structures which the inspection reveals on a schedule which ensures that the problem does not lead to an environmental or human health hazard. Where a hazard is imminent or has already occurred, remedial action shall be taken immediately. [**40 CFR Part 264.15**]
- III.L.9.6** On a five-year interval (with the initial date being the most current tank assessment date), or a shorter interval if recommended by the Professional Engineer following each assessment event, the Permittee shall test the tank. The test shall include an assessment of tank shell and bottom thickness, and the tank interior shall be inspected for scaling, pitting and corrosion of wall surfaces, welded joints and connections between tank walls and fittings. Within sixty (60) days of testing, a test report certified by a qualified independent Professional Engineer registered in Commonwealth of Kentucky shall be submitted to the Manager.
- III.L.9.7** If any testing indicates that the tank shell or bottom thickness is less than the minimum allowed under the test method, the Permittee shall initiate procedures to replace, repair or close the tank.

### **III.L.10 Recordkeeping and Reporting**

- III.L.10.1** The Permittee shall report to the Manager, within 24 hours of detection, when a leak or spill occurs from the tank system or secondary containment system to the environment [**40 CFR Part 264.196**]. A leak or spill of one pound or less of hazardous waste that is immediately contained and cleaned-up need not be reported [**40 CFR Part 264.196**]. Releases that are contained within a secondary containment system need not be reported.

- III.L.10.2** Within thirty (30) days of detecting a release to the environment from the tank system or secondary containment system, the Permittee shall report the following information to the Manager: **[40 CFR Part 264.196]**
- III.L.10.2.1** Likely route of migration of the release;
  - III.L.10.2.2** Characteristics of the surrounding soil (including soil composition, geology, hydrogeology, and climate);
  - III.L.10.2.3** Results of any monitoring or sampling conducted in connection with the release.
  - III.L.10.2.4** If the Permittee finds it will be impossible to meet this time period, the Permittee should provide the Manager with a schedule of when the results will be available.
  - III.L.10.2.5** This schedule must be provided before the required thirty (30) day submittal period expires;
  - III.L.10.2.6** Proximity of downgradient drinking water, surface water, and populated areas; and
  - III.L.10.2.7** Description of response actions taken or planned.
- III.L.10.3** The Permittee shall submit to the Manager all certifications of major repairs to correct leaks within seven (7) days after returning the tank system to use. **[40 CFR Part 264.196]**
- III.L.10.4** The Permittee shall obtain, and keep on file at the facility, the written statements by those persons required to certify the design and installation of the tank system. **[40 CFR Part 264.196]**
- III.L.10.5** The Permittee shall keep on file at the facility the written assessment of the tank system's integrity and major repairs. **[40 CFR Part 264.191 and 40 CFR Part 264.192]**
- III.L.10.6** The Permittee must document compliance with *Permit Condition III.L.5* in the Operating Record of the facility.
- III.L.10.7** For each permitted tank, the Permittee must document in the Facility Log the following information on a daily basis:
- III.L.10.7.1** The quantity of each waste that was added or removed;
  - III.L.10.7.2** The EPA hazardous waste number of the waste material transferred;
  - III.L.10.7.3** Any additional information or comments concerning waste compatibility and/or the processing of the waste necessary for safe operation of the tank;
  - III.L.10.7.4** The tank volume after the waste transfer, how it was gauged, and a verification that overfilling control equipment is properly working; and,
  - III.L.10.7.5** Proper operation of the level control devices/equipment.

**III.L.10.8** For each permitted tank treatment activities, the Permittee shall enter records of all hazardous waste numbers and descriptions, quantities, method(s) of treatment, and date(s) of treatment, into the Operating Record for each batch of waste treated.

### **III.L.11 Special Requirements for Ignitable or Reactive Wastes**

**III.L.11.1** The Permittee shall not place ignitable or reactive waste in a tank unless the procedures described in **40 CFR Part 264.198** are followed. Compliance with these requirements shall be documented through Attachment C, and Attachment D of this Permit.

**III.L.11.2** The Permittee shall maintain buffer zones between the tanks and any public ways, streets, alleys, or an adjoining property line, as required by **40 CFR Part 264.198**.

### **III.L.12 Special Requirements for Incompatible Wastes**

**III.L.12.1** The Permittee shall not place incompatible wastes, or incompatible wastes and materials, in the same tank system, unless **40 CFR 264.17(b)** is complied with. [**40 CFR Part 264.199**]

**III.L.12.2** The Permittee shall not place hazardous waste in a tank system that has not been decontaminated and that previously held an incompatible waste or material, unless **40 CFR 264.17(b)** is complied with. [**40 CFR Part 264.199**]

### **III.L.13 Special Requirements for Restricted Wastes**

The storage or treatment of hazardous waste in any of the tanks identified in *Permit Conditions III.L.2* is restricted from land disposal under **40 CFR Part 268** unless the requirements of **40 CFR Part 268** are met.

### **III.L.14 Closure and Post-Closure Care**

**III.L.14.1** At closure of the tank system(s), the Permittee shall follow requirements in *Permit Condition III.G*, the procedures in the Closure Plan, Attachment I and as specified in **40 CFR Part 264.197**.

**III.L.14.2** If the Permittee demonstrates that not all contaminated soils can be practically removed or decontaminated, in accordance with the Closure Plan, then the Permittee shall close the tank system(s) and perform Post-Closure Care in accordance with the closure and post-closure care requirements that apply to landfills (**40 CFR Part 264.310**). In addition, for the purposes of closure, post-closure, and financial responsibility, such a tank system is then considered to be a landfill, and the Permittee must meet all of the requirements for landfills specified in **40 CFR Part 264, Subpart G** and H. [**40 CFR Part 264.197(b)**]

### **III.L.15 Air Emission Standards**

The Permittee shall manage all hazardous waste placed in a tank(s) system in accordance with all the applicable requirements set forth in **40 CFR Part 264.200** and Part VII of this Permit.

### **III.M Miscellaneous Unit Management Practices**

The Permittee currently does not operate miscellaneous unit at this facility.

### **III.N Containment Building Management Practices**

The Permittee currently does not operate Containment Building at this facility.

### **III.O Landfill Post Closure Requirements**

#### **III.O.1 Post Closure Care**

*Permit Condition III.O* applies to the general Post-Closure Care requirements for the hazardous waste management unit[s] as described below in *Permit Condition III.O.2*.

The Permittee may operate the units and processes described in *Table III.3*, which are subject to the terms and conditions of this Permit. Operation and/or maintenance of any process or unit not listed in *Table III.3* of this Permit, operation of any process in a unit or area other than that for which the process is listed, or exceedance of any capacity listed therein, for the treatment, storage, or disposal of hazardous waste is prohibited.

The Permittee shall conduct closure and Post-Closure activities in accordance with the following conditions:

The Permittee shall monitor and maintain each of the closed regulated units in accordance with the Post-Closure plan in Part I of the Permit Application as *Attachment I* of this Permit and **40 CFR Part 264.310**.

#### **III.O.2 Unit Identification**

The Permittee shall provide Post-Closure Care for the hazardous waste management unit[s] described below, subject to the terms and conditions of this Permit.

<b>Regulated Unit</b>	<b>Date Operated<sup>1</sup></b>	<b>Date Closed<sup>2</sup></b>	<b>Maximum Capacity<sup>3</sup></b>	<b>Description of Wastes Contained<sup>4</sup></b>	<b>Waste Codes</b>
Chlor-Caustic Closure Cell	1953-1982	1985	246,000Y	See descriptions in Permit Application, Part C	D071, K106, D009
Forane Lagoon (Surface Impoundment)	1970-1984	1985	116,000Y	"	D002
Gypsum Fill Area (Surface Impoundment)	1960-1982	1985	1.0B	"	K071, K106, D009

TABLE III.3 PERMITTED LANDFILL UNITS					
Regulated Unit	Date Operated <sup>1</sup>	Date Closed <sup>2</sup>	Maximum Capacity <sup>3</sup>	Description of Wastes Contained <sup>4</sup>	Waste Codes
Final Fluoride Lagoon (Surface Impoundment)	1970-1987	1985	40,000Y	"	D002
<sup>1.</sup> Date the unit started operating. <sup>2.</sup> Date the Division certifies the unit was closed. <sup>3.</sup> Total maximum capacity for the unit. <sup>4.</sup> Section on the Attachment in which the description of the unit can be found.					

### III.O.3 Landfill Requirements

As required by **40 CFR Part 264.310**, the Permittee shall comply with the requirements for landfills as follows:

- III.O.3.1 Maintain the integrity and effectiveness of the final cover; including making repairs to the liner system, as necessary, to correct the effects of settling, subsidence, erosion, or other events;
- III.O.3.2 Prevent run-on and run-off from eroding or otherwise damaging the final cover;
- III.O.3.3 Protect and maintain surveyed benchmarks used in complying with the surveying and record keeping requirements of **40 CFR Part 264.309**.

### III.P Incinerator Management Practices

#### III.P.1 Compliance with 40 CFR Part 63, Subpart EEE or New Incineration Unit

For an existing incinerator unit that demonstrates compliance with the maximum achievable control technology (MACT) requirements of **40 CFR Part 63, Subpart EEE**, the Permittee shall comply with the following requirements:

- III.P.3.1 The closure requirements of **40 CFR Part 264.351** or the applicable requirements of **40 CFR Part 264 Subpart A** through H, BB and CC. [**40 CFR Part 264.340(b)(2)**]

#### III.P.2 Closure

At closure the Permittee must remove all hazardous waste and hazardous waste residues (including, but not limited to, ash, scrubber waters, and scrubber sludges) from the incinerator site. [**40 CFR Part 264.351**]

### III.Q Special Permit Conditions

Reserved

**III.R Groundwater Monitoring Requirements**

**III.R.1** The Permittee shall comply with the following requirements for any groundwater monitoring program developed to satisfy **40 CFR 264.98**, **40 CFR 264.99**, or **40 CFR 264.100**, where applicable and unless otherwise directed. [**40 CFR Part 264.97**]

**III.R.2 General Groundwater Monitoring Requirements**

**III.R.2.1** The Permittee shall design, install and/or maintain a groundwater monitoring system and program to comply with applicable requirements of **40 CFR Part 264 - Subpart F** and as specified below, unless otherwise directed.

**III.R.2.1.1** Point of Compliance Well System: The appropriately designated monitoring wells listed in *Table III.R.1* will be used to monitor groundwater quality at the Point of Compliance (POC). These monitoring wells constitute the POC monitoring well system. [**40 CFR part 264.95**]

<b>TABLE III.R.1 MONITORING WELLS</b>		
<b>Background Wells</b>	<b>Point of Compliance Wells</b>	<b>Intermediate Wells</b>
<b>4103A</b>	<b>0109A</b>	<b>3502B</b>
<b>4107D</b>	<b>0205A</b>	<b>3505D</b>
	<b>0206F</b>	
	<b>0212A</b>	
	<b>0903A</b>	
	<b>0906E</b>	
	<b>0910A</b>	

**III.R.2.1.2** Background Monitoring Wells: The appropriately designated monitoring wells listed in *Table III.R.1* will be used to monitor background groundwater quality. These monitoring wells constitute the background monitoring well system. [**40 CFR Part 264.97**]

**III.R.2.1.3** Additional Wells: The Permittee shall install additional wells as necessary to maintain compliance with **40 CFR Part 264 - Subpart F** requirements. A proposal for the design, location and installation of any additional well(s) shall be submitted to the Department for approval at least 45 days prior to planned installation. Written approval must be obtained prior to installation of any monitoring well.

- III.R.2.1.4** Well Design, Installation and Maintenance: The Permittee shall ensure that all groundwater monitoring wells are designed, installed, and maintained in accordance with **401 KAR 6:350**, and in such a manner that groundwater samples are representative of the true water quality. Additionally, the wells shall be designed, installed and monitored in such a manner to prevent interconnection between different hydrologic units. Failure of any well(s) to meet the standards described herein shall not interfere with the groundwater monitoring or corrective action programs.
- III.R.2.1.5** Well Construction Details: The Permittee shall ensure that all groundwater monitoring wells are constructed in accordance with **401 KAR 6:350** requirements. The Permittee shall report the surveyed elevation of monitoring well(s) to the nearest 0.01 foot within forty-five (45) days of installation along with as-built drawings and lithologic logs. The Permittee shall also report the total well depth, screened interval, elevation of the top of casing, ground surface and protective casing.
- III.R.2.1.6** Total Well Depth: The Permittee shall measure total well depth annually and redevelop any monitoring well listed in *Table III.R.1* when sediment has entered the well and accumulated to a depth of one foot above the bottom of the screened interval; or, the accumulated sediment blocks twenty percent of the screen length, whichever is less. The Permittee shall redevelop any well exhibiting a significant decrease in yield, or a significant increase in recovery time.
- III.R.2.1.7** Well Abandonment: The Permittee shall properly abandon any well(s) not meeting the standard of *Permit Condition III.R.2.1.4*. A proposal for specific well abandonment procedures shall be submitted to the Division for approval at least thirty (30) days from the last sampling date or thirty (30) days from the date it is determined that the well no longer suitable for its intended use. Monitoring well abandonment shall occur in such a manner so as to prevent the migration of surface water or contaminant to the subsurface and to prevent migration of contaminant among water bearing zones.
- III.R.2.2** Sampling and Analysis Procedures: The Permittee shall use the following techniques and procedures when obtaining samples from monitoring wells to provide a reliable indication of the quality of the groundwater as required by **40 CFR Part 264.97**.
- III.R.2.2.1** Sampling shall follow the procedures described in Part E of the application, and the *Permit Condition III.R.2*.
- III.R.2.2.2** Protective disposable gloves shall be utilized during all groundwater-sampling activities. A clean pair of gloves shall be worn at each sample site.
- III.R.2.2.3** Water level measurements shall be taken in the monitoring wells, specified in *Table III.R.1*, prior to any bailing or collection of samples.
- III.R.2.2.4** Water level measurements shall be made from the designated reference point at each well. The reference point shall be maintained in accordance with Part E of



the application.

- III.R.2.2.5** Wells shall be purged at rates specified in Part E of the application until all field parameters stabilize indicating that fresh formation water is being evacuated. Results for the field tests shall be recorded on the groundwater sampling record and the sample properly disposed.
- III.R.2.2.6** The Permittee shall take samples in accordance with the procedures detailed in Part E of the application. Samples shall be taken at an interval that assures, to the greatest extent technically feasible, that an independent sample is obtained.
- III.R.2.2.7** Sample containers shall be constructed of a material compatible and non-reactive with the material it is to contain and meet the appropriate general performance standards as detailed in Part E of the application.
- III.R.2.2.8** If a preservative is added to a sample, it shall be noted on the sample label and the sampling record.
- III.R.2.2.9** The Permittee shall develop a field blank by filling the appropriate sample containers from the field supply of ASTM Type I organic free water (or equivalent). This field supply water shall be the same water used for cleaning and decontamination of all equipment used for purging and sampling. Field blanks shall be taken and analyzed for each sampling event at a minimum of one (1) in every twenty (20) samples per monitoring event. The Permittee may use a trip blank in lieu of a field blank following the same procedures except for filling the appropriate sample containers in the laboratory instead of in the field upon approval of the Division.
- III.R.2.2.10** The Permittee shall develop an equipment (rinsate) blank in the field immediately following cleaning and decontamination procedures on any non-dedicated equipment used for purging, sampling, or sample filtrations by passing field supply ASTM Type I organic free water (or equivalent) through the non-dedicated equipment in the same procedure as a groundwater sample. Equipment blanks shall be taken and analyzed any time non-dedicated sampling equipment is used or when new equipment is being dedicated to a well at a minimum of one (1) in every twenty (20) samples per monitoring event.
- III.R.2.2.11** A sampling record shall be completed for each sample site during all groundwater monitoring events.
- III.R.2.2.12** Samples shall be tracked and controlled using the chain of custody procedures specified in Part E of the application.
- III.R.2.2.13** Samples shall be preserved and shipped in accordance with the procedures specified in Part E of the application.
- III.R.2.2.14** Samples shall be analyzed according to the procedures specified in *Table E-2*

within Part E of the application.

**III.R.2.3** Statistical Analysis of Data: The data from the compliance wells shall be compared to the data from the background wells (Both sets of wells are identified in *Permit Condition III.R.2.1.1*) to determine whether there is statistically significant evidence of contamination. The comparisons shall be performed in accordance with the requirements in **40 CFR Part 264.97**, EPA's "*Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities - Interim Final Guidance*," April 1989 and the "*Addendum to Interim Final Guidance*," July 1992 or to any such revisions to these documents.

**III.R.2.4** Recordkeeping and Reporting

**III.R.2.4.1** The Permittee shall enter all groundwater monitoring, testing, and analytical data obtained pursuant to *Permit Condition III.R.2.3* in the operating record, as required by **40 CFR Part 264.73**.

**III.R.2.4.2** The Permittee shall submit all groundwater monitoring, testing, and analytical data obtained pursuant to *Permit Condition III.R.2.3* and *Permit Condition III.R.2.2.6* to the Manager within sixty (60) days after completion of each sampling event.

**III.R.2.5** Permit Modification:

**III.R.2.5.1** If the Permittee determines that the monitoring program required by this permit no longer satisfies the requirements of the regulations, the Permittee must, in accordance with **40 CFR Part 264.98** and within ninety (90) days, submit an application for a permit modification to make any appropriate changes to the program which will satisfy the regulations.

**III.R.2.5.2** The Permittee shall be subject to applicable modification fees pursuant to **KRS 224.46-018**

**III.R.2.6** Duty of Permittee: The Permittee must assure that monitoring and interim corrective action measures necessary to achieve compliance with the groundwater protection standard under **40 CFR Part 264.92** are taken during the term of this permit.

**III.R.3** Detection Monitoring Program

RESERVED

**III.R.4** Compliance Monitoring Program

**III.R.4.1** Unless otherwise directed, the Permittee shall maintain and monitor the groundwater monitoring system and determine compliance with the groundwater protection standard under **40 CFR 264.92** identified in *Permit Condition III.R.4.1.1*, as required under **40 CFR 264.99**, and **40 CFR 264.100** where applicable.

- III.R.4.1.1** Groundwater Protection Standard: The Permittee shall ensure that the Groundwater Protection Standard (GWPS), as required under **40 CFR Part 264.92**, is being met or that remedial actions are being taken to reduce contaminant levels to meet standards. The GWPS shall consist of the hazardous constituents and their corresponding concentration limits listed in *Table E-2* within Part E of the application, as established under **40 CFR Part 264.93** and **401 KAR 39:090 Section 1(1)**. [**40 CFR Part 264.94**]
- III.R.4.2** The Permittee shall follow the requirements of the Sampling and Analysis Procedures as specified in *Permit Condition III.R.2.2* in accordance with **40 CFR 264.99** and as defined in **40 CFR 264.97**.
- III.R.4.3** Statistical Analysis of Data: The data from the compliance wells, identified in *Table III.R.1*, shall be compared to concentration limits developed to determine whether there is statistically significant evidence of increased contamination. The comparisons shall be performed in accordance with the requirements in **401 KAR 39:090 Section 1(1)** and **40 CFR 264.94**.
- III.R.4.4** Data Evaluation
- III.R.4.4.1** The Permittee shall determine groundwater quality throughout the compliance period. As the 30 year Post-Closure Period was completed in 2016 and certification submitted in 2017, compliance monitoring shall continue until corrective measures have been finalized. These determinations shall be made semi-annually for wells described in *Permit Condition III.R.2.1.1* and *Table III.R.1* in accordance with **40 CFR Part 264.99**, **40 CFR 264.100** where applicable, and Part E of the application.
- III.R.4.4.2** The determination of groundwater quality required in *Permit Condition III.R.4.5.1* shall consist of calculating whether there is a statistically significant increase in concentration of any constituents identified in *Table III.R.2* at any of the compliance wells over the concentration limits for that constituent. [**40 CFR Part 264.99**]
- III.R.4.4.3** The Permittee shall in accordance with **40 CFR Part 264.99**, determine the groundwater flow rate and direction in the uppermost aquifer annually at the time that groundwater quality is determined under *Permit Condition III.R.4.5.2* and Part E of the application.
- III.R.4.5** Compliance Monitoring Program Reporting  
If the Permittee determines that any concentration limits under **40 CFR 264.94** have been exceeded at any monitoring well at the point of compliance, the Permittee must comply with the following:
- III.R.4.5.1** Notify the Manager of the findings within seven (7) days, indicating what concentration limits were exceeded. [**40 CFR Part 264.99**]

**III.R.4.5.2** Submit to the Manager an application for permit modification to establish a corrective action program meeting the requirements of **40 CFR 264.100** within 180 days pursuant to **40 CFR 264.99(h)(2)**. The application at a minimum must include a description of corrective actions to achieve compliance with the GWPS and a plan that will demonstrate the effectiveness.

**III.R.4.6** Source Demonstration or Error in Data: The Permittee may demonstrate that a source other than a regulated unit caused the contamination or that the detection is an artifact caused by an error in sampling, analysis, or evaluation as required by **40 CFR Part 264.99**. In such case, the Permittee shall:

**III.R.4.6.1** Notify the Manager in writing within seven (7) days that he intends to make a demonstration, as required in **40 CFR Part 264.99**.

**III.R.4.6.2** Within ninety (90) days, submit a report to the Manager which demonstrates that a source other than the regulated unit caused the increase or that the increase resulted from error in sampling, analysis, or evaluation, as required in **40 CFR Part 264.99**.

**III.R.4.6.3** Within 90 days, submit to the Manager an application for a permit modification in accordance with *Permit Condition III.R.2.5*, to make any appropriate changes to the compliance monitoring program.

### **III.R.5 Groundwater Corrective Action Program**

Unless otherwise directed by the Manager, the Permittee shall design, implement, and maintain a groundwater corrective action program as required under **40 CFR Part 264.100**. The proposed Groundwater Corrective Action Program, at a minimum, shall include and/or abide by the following conditions where applicable/designated:

**III.R.5.1** Corrective Action at the Point of Compliance:

The Permittee shall design, implement, and maintain a corrective action program that prevents hazardous constituents from exceeding the GWPS as specified in *Permit Condition III.R.4.1.1* at the point of compliance.

**III.R.5.2** Plume Assessment Wells: The appropriately designated monitoring wells listed in *Table III.R.1* shall be used to monitor the contaminant plume movement and to assess the effectiveness of the corrective action program.

**III.R.5.3** Effectiveness of Corrective Action Program

The Permittee shall establish and implement a groundwater monitoring program in conjunction with the corrective action program in order to demonstrate efficiency. The monitoring program may be based on a compliance monitoring program under **40 CFR 264.99**, **where applicable**.

**III.R.5.4** Corrective Action beyond the Point of Compliance:

The Permittee shall propose a corrective action program to remove and treat any hazardous

constituents that exceed the concentration limits under **401 KAR 39:090 Section 1(1)**, pursuant to **40 CFR Part 264.94**, and/or the site-specific GWPS listed in *Table E-2* within Part E of the application, as specified in *Permit Condition III.R.4.1.1*, in groundwater between the compliance point and the downgradient property boundary, and beyond the property boundary where necessary to protect human health and the environment in accordance with **40 CFR Part 264.100**.

**III.R.5.5** Maintenance of the Corrective Action System:

The Permittee shall ensure that the proposed groundwater corrective action system (i.e. groundwater recovery components and ancillary treatment equipment) will be adequately maintained to operate as specified according to any approved corrective measures.

**III.R.5.6** Corrective Action System:  
RESERVED

**III.R.5.7** Statistical Analysis of Data: An appropriate statistical procedure must be proposed prior to the termination of groundwater corrective action. The proposed statistical method must compare compliance point data to the concentration limits in the GWPS and identified in **401 KAR 39:090 Section(1)**. Until such time that an appropriate statistical method has been approved by the Department, the effectiveness of the corrective action program shall be evaluated semi-annually using graphical analysis for time verses concentration trends in strategic monitoring wells. These trend analyses shall be submitted in the corrective action groundwater monitoring reports required by *Permit Condition III.R.2.4*.

**III.R.5.8** Continuation of Corrective Action:  
RESERVED

**III.R.5.9** Modification of the Corrective Action System:  
RESERVED

END OF PERMIT CONDITIONS

**PART IV CORRECTIVE ACTION**

DRAFT

**PART IV  
CORRECTIVE ACTION  
FOR SOLID WASTE MANAGEMENT UNITS & AREAS OF CONCERN**

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The terms and conditions of this Permit are applicable to Arkema Inc. under Title 401 KAR Chapters 39 and 40, of the Hazardous Waste Management Regulations of the Kentucky Administrative Regulations (KARs) as effective December 7, 2017.

The Code of Federal Regulations (CFRs) cited in this Permit shall be as established in 401 KAR Chapter 39.

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**IV.A Applicability**

The Conditions of this Part apply to:

- IV.A.1** The SWMUs and areas of concern (AOCs) identified in Appendix 1.1.
- IV.A.2** The SWMUs and AOCs identified in Appendix 1.1, which require no further investigation under this permit at this time.
- IV.A.3** RESERVED
- IV.A.4** The SWMUs and AOCs identified in Appendix 1.1, which require a RCRA Facility Investigation.
- IV.A.5** The SWMUs and AOCs identified in Appendix 1.1, which require Interim Measures.
- IV.A.6** RESERVED
- IV.A.7** Any additional SWMUs or AOCs discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means; as used in this part of the permit, the terms "discover", "discovery", or "discovered" refer to the date on which the Permittee either (1) visually observes evidence of a new SWMU or AOC, (2) visually observes evidence of a previously unidentified release of hazardous constituents to the environment, or (3) receives information which suggests the presence of a new release of hazardous waste or hazardous constituents to the environment.
- IV.A.8** Contamination beyond the facility boundary, if applicable. The Permittee shall implement corrective actions beyond the facility boundary, where necessary to protect human health and the environment, unless the Permittee demonstrates to the satisfaction of the Manager, that despite the Permittee's best effort, as determined by the Manager, the Permittee was unable to obtain the necessary permission to undertake such actions. The Permittee is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied. On-site measures to address such releases will be determined on a case-by-case basis. Assurances of financial responsibility for completion of such off-site corrective action will be required

#### **IV.B NOTIFICATION AND ASSESSMENT REQUIREMENTS FOR NEWLY IDENTIFIED SWMUS AND AOCs**

- IV.B.1** The Permittee shall notify the Manager, in writing, within fifteen (15) calendar days of discovery, of any additional AOCs and/or SWMUs as discovered under *Permit Condition IV.A.7*. The notification shall include, at a minimum, the location of the SWMU or AOC and all available information pertaining to the nature of the release (e.g., media affected, hazardous constituents released, magnitude of release, etc.). If the Manager determines that further investigation of an AOC is required, the permittee shall be required to prepare a plan for such investigations as outlined in *Permit Condition IV.D* or *Permit Condition IV.E*.
- IV.B.2** The Permittee shall prepare and submit to the Manager, within ninety (90) calendar days of notification, an Assessment Report (AR) for each SWMU or AOC identified under *Permit Condition IV.B.1*. At a minimum, the AR shall provide the following information:
- IV.B.2.1** Location of unit(s) on a topographic map of appropriate scale such as required under **40 CFR Part 270.14(b)**.
  - IV.B.2.2** Designation of type and function of unit(s).
  - IV.B.2.3** General dimensions, capacities and structural description of unit(s) (supply any available plans/drawings).
  - IV.B.2.7** Dates that the unit(s) was operated.
  - IV.B.2.5** Specification of all wastes that have been managed at/in the unit(s) to the extent available. Include any available data on **40 CFR Part 261 Appendix VIII**.
  - IV.B.2.6** All available information pertaining to any release of hazardous waste or hazardous constituents from such unit(s) (to include groundwater data, soil analyses, air, and/or surface water data).
  - IV.B.2.7** The unique sequential identification for the SWMU or AOC.
- IV.B.3** Based on the results of the AR, the Manager, shall determine the need for further investigations at the SWMUs covered in the AR. If the Manager determines that such investigations are needed, the Permittee shall be required to prepare a plan for such investigations as outlined in *Permit Condition IV.D* or *IV.E*.

#### **IV.C Notification Requirements for Newly Discovered Releases at Previously Identified SWMUs or AOCs**

- IV.C.1** The Permittee shall notify the Manager in writing of any newly discovered release(s) of hazardous waste or hazardous constituents discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means, within fifteen (15) calendar days of discovery. Such newly discovered releases may be from SWMUs or AOCs identified in *Permit Condition IV.A.2* or for which further investigation under *Permit Condition IV.B* was not required.
- IV.C.2** If the Manager determines that further investigation of the SWMUs or AOCs is needed, the Permittee shall



be required to prepare a plan for such investigations as outlined in *Permit Condition IV.D* or *IV.E*.

#### **IV.D Confirmatory Sampling (CS)**

For Confirmatory Sampling initiated subsequent to the effective date of this permit the Permittee shall comply with the following conditions:

- IV.D.1** The Permittee shall prepare and submit a Confirmatory Sampling Work Plan to the Manager, within forty-five (45) calendar days of notification by the Manager that a Confirmatory Sampling Work Plan is required for any newly discovered release at an existing SWMU or AOC or for a newly-identified SWMU or AOC. The CS Work Plan shall include schedules of implementation and completion of specific actions necessary to determine whether or not a release has occurred. It shall also address applicable requirements and affected media.
- IV.D.2** The Permittee shall prepare and submit a Confirmatory Sampling Work Plan for each SWMU or AOC identified in Appendix 1.1. The CS Work Plan shall be submitted within forty-five (45) calendar days of the effective date of the permit. The CS Work Plan shall include schedules of implementation and completion of specific actions necessary to determine whether or not a release has occurred. It shall also address applicable requirements and affected media.
- IV.D.3** The CS Work Plan must be approved by the Manager, in writing, prior to implementation. The Manager shall specify the start date of the CS Work Plan schedule in the letter approving the CS Work Plan. If a start date is not specified, work shall begin within 60 days of approval. If the Manager disapproves the CS Work Plan, the Manager shall either (1) notify the Permittee in writing of the CS Work Plan's deficiencies and specify a due date for submission of a revised CS Work Plan, (2) revise the CS Work Plan and notify the Permittee of the revisions, or (3) conditionally approve the CS Work Plan and notify the Permittee of the conditions.
- IV.D.4** The Permittee shall implement the confirmatory sampling in accordance with the approved CS Work Plan.
- IV.D.5** The Permittee shall prepare and submit to the Manager in accordance with the schedule in the approved CS Work Plan, a Confirmatory Sampling (CS) Report. The CS Report shall include all data, including raw data, and a summary and analysis of the data, that supports the above determination.
- IV.D.6** Based on the results of the CS Report, the Manager shall determine the need for further investigations at the SWMUs or AOCs covered in the CS Report. If the Manager determines that such investigations are needed, the Permittee shall be required to prepare a plan for such investigations as outlined in *Permit Condition IV.E*. The Manager will notify the permittee of any no further action decision.

#### **IV.E RCRA Facility Investigation (RFI)**

For RCRA Facility Investigation initiated subsequent to the effective date of this permit, the Permittee shall comply with the following conditions:

##### **IV.E.1 RFI Work Plan(s)**

- IV.E.1.1** The Permittee shall prepare and submit to the Manager, within ninety (90) calendar days upon notification from the Division that a RCRA Facility Investigation (RFI) Work Plan(s) is required for those units identified in *Permit Condition IV.B.3, IV.C.2 and IV.D.5*. This Work Plan shall be developed to meet the requirements of *Permit Condition IV.E.1.3*.
- IV.E.1.2** The Permittee shall prepare and submit to the Manager, within 90 days of the effective date of this permit, a RFI Work Plan for those units identified in *Permit Condition IV.A.4*. This Work Plan shall be developed to meet the requirements of *Permit Condition IV.E.1.3*.
- IV.E.1.3** The RFI Work Plan(s) shall meet the requirements of Appendix 2. The RFI Work Plan(s) shall include schedules of implementation and completion of specific actions necessary to determine the nature and extent of releases and the potential pathways of contaminant releases to the air, land, surface water, and groundwater. The Permittee must provide sufficient justification and/or documentation that a release is not probable if a unit or a media/pathway associated with a unit (groundwater, surface water, soil, subsurface gas, or air) is not included in the RFI Work Plan(s). Such deletions of a unit, media or pathway from the RFI(s) are subject to the approval of the Manager. The Permittee shall provide sufficient written justification for any omissions or deviations from the minimum requirements of Appendix 2. Such omissions or deviations are subject to the approval of the Manager. In addition, the scope of the RFI Work Plan(s) shall include all investigations necessary to ensure compliance with **40 CFR Part 264.101**.
- IV.E.1.4** The RFI Work Plan(s) must be approved by the Manager, in writing, prior to implementation. The Manager shall specify the start date of the RFI Work Plan schedule in the letter approving the RFI Work Plan(s). If the Manager disapproves the RFI Work Plan(s), the Manager shall either (1) notify the Permittee in writing of the RFI Work Plan's deficiencies and specify a due date for submission of a revised RFI Work Plan, or (2) revise the RFI Work Plan and notify the Permittee of the revisions and the start date of the schedule within the approved RFI Work Plan, or (3) conditionally approve the RFI Work Plan and notify the Permittee of the conditions.

## **IV.E.2 RFI Implementation**

The Permittee shall implement the RFI(s) in accordance with the approved RFI Work Plan(s). The Permittee shall notify the Manager, at least two weeks prior to any sampling activity.

## **IV.E.3 RFI Reports**

- IV.E.3.1** If the time required to conduct the RFI(s) is greater than one hundred eighty (180) calendar days, the Permittee shall provide the Manager, with quarterly RFI Progress Reports (90 day intervals) beginning ninety (90) calendar days from the start date specified by the Manager in the RFI Work Plan approval letter. The Progress Reports shall contain the following information at a minimum:
- i. A description of the portion of the RFI completed;
  - ii. Summaries of findings;
  - iii. Summaries of any deviations from the approved RFI Work Plan during the reporting period;
  - iv. Summaries of any significant contacts with local community public interest groups or State government;
  - v. Summaries of any problems or potential problems encountered during the reporting period;

- vi. Actions taken to rectify problems;
- vii. Changes in relevant personnel;
- viii. Projected work for the next reporting period; and
- ix. Summaries of daily reports, inspection reports, laboratory/monitoring data, etc.

**IV.E.3.2** The Permittee shall prepare and submit to the Manager, a RCRA Facility Investigation Report(s) for the investigations conducted pursuant to the RFI Work Plan(s) submitted under *Permit Condition IV.E.1*. The RFI Report(s) shall be submitted to Manager for review in accordance with the schedule in the approved RFI Work Plan(s). The RFI Report(s) shall include an analysis and summary of all required investigations of SWMUs and AOCs and their results. The summary shall describe the type and extent of contamination at the facility, including sources and migration pathways, identify all hazardous constituents present in all media, and describe actual or potential receptors. The RFI Report(s) shall also describe the extent of contamination (qualitative/quantitative) in relation to background levels indicative of the area. The objective of this task shall be to ensure that the investigation data are sufficient in quality (e.g., quality assurance procedures have been followed) and quantity to describe the nature and extent of contamination, potential threat to human health and/or the environment, and to support a Corrective Measures Study, if necessary.

**IV.E.3.3** The RFI Report(s) shall include a proposal for a groundwater monitoring and reporting schedule for those SWMUs and/or AOCs at which groundwater contamination has been detected. Monitoring will be continued until a remedy selection is made by the Division.

**IV.E.3.4** The Manager will review the Final RFI Report(s) and notify the Permittee of the need for further investigative action and/or the need for a Corrective Measures Study to meet the requirements of *Permit Condition IV.G* and **40 CFR Part 264.101**. The Manager will notify the Permittee of any no further action decision. Any further investigative action required by the Manager shall be prepared and submitted in accordance with a schedule specified by the Manager and approved in accordance with *Permit Condition IV.E.1.3*.

#### **IV.F Interim Measures (IM)**

For Interim Measures initiated subsequent to the effective date of this permit, the Permittee shall comply with the following conditions:

##### **IV.F.1 IM Work Plan**

**IV.F.1.1** Upon notification by the Manager, the Permittee shall prepare and submit an Interim Measures (IM) Work Plan for any SWMU or AOC which the Manager determines is necessary. Interim Measures shall be designed to minimize or prevent the further migration of contaminants and limit human and environmental exposure to contaminants while long-term corrective action remedies are evaluated and, if necessary, implemented. The IM Work Plan shall be submitted within the specified time identified by the Manager in such notification.

**IV.F.1.2** The IM Work Plan shall ensure that the interim measures are designed to mitigate any current or potential threat(s) to human health or the environment and is consistent with and integrated into

any long-term solution at the facility. The IM Work Plan shall include: the interim measures objectives, procedures for implementation (including any designs, plans, or specifications), and schedules for implementation.

**IV.F.1.3** The IM Work Plan must be approved by the Manager, in writing, prior to implementation. The Manager shall specify the start date of the IM Work Plan schedule in the letter approving the IM Work Plan. If the Manager disapproves the IM Work Plan, the Manager shall either (1) notify the Permittee in writing of the IM Work Plan's deficiencies and specify a due date for submission of a revised IM Work Plan, or (2) revise the IM Work Plan and notify the Permittee of the revisions and the start date of the schedule within the approved IM Work Plan, or (3) conditionally approve the IM Work Plan and notify the Permittee of the conditions.

#### **IV.F.2 IM Implementation**

**IV.F.2.1** The Permittee shall implement the interim measures in accordance with the approved IM Work Plan.

**IV.F.2.2** The Permittee shall give notice to the Manager as soon as possible of any planned changes, reductions or additions to the IM Work Plan.

**IV.F.2.3** Final approval of corrective action required under **40 CFR Part 264.101**, which is achieved through interim measures shall be in accordance with **40 CFR Part 270.41** and *Permit Condition IV.H* as a permit modification.

#### **IV.F.3 IM Reports**

**IV.F.3.1** If the time required for completion of interim measures is greater than one year, the Permittee shall provide the Manager with progress reports at intervals specified in the approved Work Plan. The Progress Reports shall contain the following information at a minimum:

**IV.F.3.1.1** A description of the portion of the interim measures completed;

**IV.F.3.1.2** Summaries of findings;

**IV.F.3.1.3** Summaries of all deviations from the IM Work Plan during the reporting period;

**IV.F.3.1.4** Summaries of all problems encountered during the reporting period; and

**IV.F.3.1.5** Projected work for the next reporting period.

**IV.F.3.2** The Permittee shall prepare and submit to the Manager, within ninety (90) calendar days of completion of interim measures conducted under *Permit Condition IV.F.1*, an Interim Measures (IM) Report. The IM Report shall contain the following information at a minimum:

**IV.F.3.2.1** A description of interim measures implemented;

**IV.F.3.2.2** Summaries of results;

- IV.F.3.2.3 Summaries of all problems encountered;
- IV.F.3.2.4 Summaries of accomplishments and/or effectiveness of interim measures; and
- IV.F.3.2.5 Copies of all relevant laboratory/monitoring data, etc. in accordance with *Permit Condition II.E.9*.

#### **IV.G Corrective Measures Study**

For Corrective Measures Study initiated subsequent to the effective date of this permit, the Permittee shall comply with the following conditions:

##### **IV.G.1 Corrective Measures Study (CMS) Work Plan**

- IV.G.1.1 The Permittee shall prepare and submit a CMS Work Plan for those units requiring a CMS within ninety (90) calendar days of notification by the Manager that a CMS is required. This CMS Work Plan shall be developed to meet the requirements of *Permit Condition IV.G.1.2*. The CMS may be performed concurrent with the RFI if the Division determines that sufficient investigative details are available to allow concurrent action.
- IV.G.1.2 The CMS Work Plan shall meet the requirements of Appendix 3. The CMS Work Plan shall include schedules of implementation and completion of specific actions necessary to complete a CMS. The Permittee must provide sufficient justification and/or documentation for any unit deleted from the CMS Work Plan. Such deletion of a unit is subject to the approval of the Manager. The CMS shall be conducted in accordance with the approved CMS Work Plan. The Permittee shall provide sufficient written justification for any omissions or deviations from the minimum requirements of Appendix 3. Such omissions or deviations are subject to the approval of the Manager. The scope of the CMS Work Plan shall include all investigations necessary to ensure compliance with **40 CFR Part 264.100**, **40 CFR Part 264.101** and **40 CFR Part 270.32**. The Permittee shall implement corrective actions beyond the facility boundary, if necessary, as set forth in *Permit Condition IV.A.3*.
- IV.G.1.3 The Manager shall either approve or disapprove, in writing, the CMS Work Plan. If the Manager disapproves the CMS Work Plan, the Manager shall either (1) notify the Permittee in writing of the CMS Work Plan's deficiencies and specify a due date for submittal of a revised CMS Work Plan, or (2) revise the CMS Work Plan and notify the Permittee of the revisions, or (3) conditionally approve the CMS Work Plan and notify the Permittee of the conditions.
- IV.G.1.4 The CMS Work Plan and CMS Report may be combined, upon approval of the Manager.

## **IV.G.2 Corrective Measures Study Implementation**

The Permittee shall begin to implement the Corrective Measures Study according to the schedules specified in the approved CMS Work Plan.

## **IV.G.3 CMS Report**

**IV.G.3.1** The Permittee shall prepare and submit to the Manager a CMS Report for the study conducted pursuant to the approved CMS Work Plan. The CMS Report shall be submitted to the Manager per the schedule approved in the CMS Work Plan. Any revised CMS Reports shall be submitted to the Division within thirty (30) days of receipt of the Divisions comments. The CMS Report shall summarize any bench-scale or pilot tests conducted. The CMS Report must include an evaluation of each remedial alternative. The CMS Report shall present all information gathered under the approved CMS Work Plan. The CMS Report must contain adequate information to support the Manager's decision on the recommended remedy, described under *Permit Condition IV.G.*

**IV.G.3.2** If the Manager determines that the CMS Report does not fully satisfy the information requirements specified under *Permit Condition IV.G.3.1*, the Manager may disapprove the CMS Report. If the Manager disapproves the CMS Report, the Manager shall notify the Permittee in writing of deficiencies in the CMS Report and specify a due date for submittal of a revised CMS Report. The Manager will notify the Permittee of any no further action decision.

**IV.G.3.3** As specified under *Permit Condition IV.G.3.2*, based on preliminary results and the CMS Report, the Manager may require the Permittee to evaluate additional remedies or particular elements of one or more proposed remedies.

## **IV.H Remedy Approval and Permit Modification**

For Remedy Approval and Permit Modification initiated subsequent to the effective date of this permit, the Permittee shall comply with the following conditions:

**IV.H.1** The Manager shall select a remedy from the remedial alternatives evaluated in the CMS. The selection will be based at a minimum on protection of human health and the environment, as per specific site conditions, existing regulations, and guidance. The selected remedy may include any interim measures implemented to date.

## **IV.H.2 Statement of Basis**

Upon approval of the CMS Report or other Manager decision [*i.e. NFA*], the Permittee shall prepare a draft Statement of Basis that provides a summary and justification of the selected remedy. The Statement of Basis should be written following EPA guidance "*Guidance on RCRA Corrective Action Decision Documents: The Statement of Basis, Final Decision and Response to Comments*," February 1991, EPA/540/G-91/011, (or most recent version) or other Manager approved guidance, and should include information on the proposed remedy, facility background, exposure pathways, cleanup goals, the scope of the corrective action, the remedial alternatives considered, an evaluation of those alternatives, and public

participation. The Statement of Basis shall be submitted to the Manager in draft form within the time frame specified in the letter from the Manager that notifies the Permittee that the CMS Report is approved or within thirty (30) days if a time frame is not provided. The Manager shall notify the Permittee of deficiencies and specify a due date for submittal of a revised Statement of Basis or revise and finalize the Statement of Basis.

**IV.H.3** Pursuant to **40 CFR Part 270.41**, a permit modification will be initiated by the Manager, after recommendation of a remedy under *Permit Condition IV.H.1*. This modification will serve to incorporate a final remedy into this permit.

**IV.H.4** Within one hundred and twenty (120) calendar days after this permit has been modified, the Permittee shall demonstrate financial assurance for completing the approved remedy.

#### **IV.I Corrective Measures Implementation (CMI)**

For Corrective Measures Implementation initiated subsequent to the effective date of this permit, the Permittee shall comply with the following conditions:

##### **IV.I.1 CMI Work Plan**

Within thirty (30) days of the effective date of the Permit modification for the remedy selection, unless otherwise agreed by the Manager, the Permittee shall prepare and submit a Corrective Measures Implementation (CMI) Work Plan for the SWMUs or AOCs requiring corrective measures implementation. At a minimum, this work plan shall include the following:

**IV.I.1.1** A description of the conceptual design, technical features (e.g. Plans and Specifications) and a Construction Plan for the selected remedy(ies) to achieve media cleanup standards protective of human health and the environment, controlling the source(s) of release, and complying with standards for the management of wastes and any remedial residues.

**IV.I.1.2** A proposed schedule that takes into account all phases of the CMI. The schedule should also include the submittal of documents to support the CMI (e.g. Operation and Maintenance Plan, Construction Completion Report, etc.) as described in *Permit Conditions IV.I.2, IV.I.4 and IV.I.6*.

**IV.I.1.3** Requirements for removal and decontamination of units, equipment, devices or structures that will be used to implement the remedy(ies).

##### **IV.I.2. Operation and Maintenance Plan**

If required under the CMI WP, an Operation and Maintenance Plan (O&MP) shall be submitted to the Manager in accordance with the schedule required by *Permit Condition IV.I.1*. The O&MP, at a minimum, shall include the following:

**IV.I.2.1** A system description, startup procedures, operation and maintenance procedures and schedule of inspection and maintenance;

- IV.I.2.2 Waste management practices, sampling and analysis required for operation and contingency procedures;
- IV.I.2.3 A description of the Corrective Measure(s) completion criteria and the method to be used to show when the criteria are met; and
- IV.I.2.4 For remedies with Land Use Controls, the Operation and Maintenance Plan should include the requirements of Permit Condition IV.I.5.

#### IV.I.3. Manager Approval

All Plans required for the CMI phase, required by *Permit Condition IV.I* must be approved, in writing, by the Manager prior to implementation, in accordance with *Permit Condition IV.L.1*

#### IV.I.4. Construction Completion Report

If required under the CMI WP, a Construction Completion Report (CCR) shall be submitted to the Manager, in accordance with the schedule required by *Permit Condition IV.I.1*, that demonstrates the completion of the remedy construction in accordance with approved plans and specifications. The CCR shall be submitted when all operational tests have been completed. Any necessary documentation required by the Division shall be included in this report.

#### IV.I.5. Remedy with Land Use Controls

Any final remedy that incorporates land use controls shall be in accordance with **KRS 224 Subchapter 80**. The SWMUs and AOCs for which land use controls are selected as an integral part of the final remedy are listed in Appendix 1.7 - SWMUs and AOCs Requiring Land Use Controls. When corrective measures incorporate land use controls as part of the selected remedy, the following information should be provided:

- IV.I.5.1 The name, address and phone number of the person to contact about the SWMU or AOC;
- IV.I.5.2 Any necessary security provisions consistent with **40 CFR Part 264.117** to prevent unauthorized entry and/or use of the waste unit;
- IV.I.5.3 A description of measures to protect the integrity of any installed engineering control(s) and associated features considered as part of the selected remedy, for the period that has to be maintained;
- IV.I.5.4 Planned maintenance and monitoring activities, and frequencies to ensure the security provisions are maintained;

An inspection checklist describing the land use control elements to be inspected, the frequency of inspection, and the potential problems that could be encountered. The checklist shall contain an area where the inspector may enter his/her name, the date of inspection, and the date upon which any problems encountered are remediated;



- IV.I.5.5** Procedure(s) to follow when a determination is made that the land use control(s) are not effective and require modification;
- IV.I.5.6** The mechanism by which a notification will be recorded on the deed for the facility property, or some other instrument which is normally examined during title search, that will in perpetuity notify any potential future purchaser of the property, that the property had been used for waste management and disposal activities and that restrictions exist precluding a residential use of the land. The need for a deed restriction may be reevaluated upon the transfer of ownership or control; and
- IV.I.5.7** The mechanism by which other pertinent agencies (State or Federal) will be given notice of restrictions placed on the use of the property, that is affecting or may affect in the future, areas under the control of other State or Federal agencies.

#### **IV.I.6 CMI Progress Reports**

If the time frame required to complete corrective measures implementation is greater than one hundred and eighty (180) days, the Permittee shall provide the Division with semi-annual Corrective Measures Implementation Progress Reports (180 day intervals) beginning from the date the CMI Work Plan is approved by the Division, until the Remedy Completion Report is approved by the Division. The time frame stated is effective unless otherwise agreed to by the Division. The CMI Progress Reports shall contain at least the following information:

- IV.I.6.1** A description of the portion of the CMI Work Plan completed (e.g. sampling events, operations, volumes removed/treated, wastes generated, etc);
- IV.I.6.2** A summary of system performance/compliance and progress toward achieving cleanup goals;
- IV.I.6.3** A summary of any deviations from the approved CMI Work Plan during the reporting period;
- IV.I.6.4** Summaries of all contacts with local community and public interest groups or State and Federal Government;
- IV.I.6.5** A summary of any problems or potential problems encountered during the reporting period;
- IV.I.6.6** A summary of actions taken to rectify the problems;
- IV.I.6.7** Any changes in relevant personnel; and
- IV.I.6.8** Projected work for the next reporting period.

#### **IV.I.7 CMI Report**

- IV.I.7.1** Within ninety (90) days of completion of the CMI, unless otherwise agreed by the Division, the Permittee shall submit a CMI Report, including certification of completion of the corrective measures activities. The CMI Report shall summarize the activities and results from the entire period of Corrective Measures Implementation. The CMI Report shall also demonstrate

compliance with all media cleanup goals and meet the corrective measures completion criteria in accordance with *Permit Condition IV.I.*. Approval by the Division of the final CMI Report constitutes remedy completion.

- IV.I.7.2** For corrective measures involving the cleanup of groundwater, the Permittee must demonstrate that the concentrations of the constituents of concern remain at or below cleanup levels for three (3) consecutive years after the corrective measures have been terminated. The time frame stated is effective unless otherwise agreed to by the Manager.

**IV.J Modification of the Corrective Action Schedule of Compliance**

- IV.J.1** Modifications to the corrective action schedule of compliance will not constitute a reissuance of the Permit. The Manager may grant extensions at his/her sole discretion, subject to adequate justification by the Permittee.
- IV.J.2** The Schedule of Compliance is attached to and incorporated in this permit as Appendix 4. If at any time, the Manager determines that modification of the corrective action schedule is necessary, the Manager may initiate a modification to the schedule.

**IV.K Imminent Hazards**

- IV.K.1** The Permittee shall report to the Manager, any imminent or existing hazard to public health or the environment from any release of hazardous waste or hazardous constituents from SWMUs and or Areas of Concern consistent with requirements specified in *Permit Condition II.E.15*.

**IV.L Work Plan and Report Requirements**

- IV.L.1** All work plans and schedules shall be subject to approval by the Manager, prior to implementation to assure that such work plans and schedules are consistent with the requirements of this Permit and with applicable regulations and guidance. The Permittee shall revise all submittals and schedules as specified by the Manager. The Permittee shall implement all work plans and schedules as approved by the Manager.
- IV.L.2** All work plans and reports shall be submitted in accordance with the approved schedule. Extensions of the due date for submittals may be granted by the Division based on the Permittee's demonstration that sufficient justification for the extension exists.
- IV.L.3** If the Permittee at any time determines that the AR information required under *Permit Condition IV.B*, or the CS Work Plan under *Permit Condition IV.D*, or RFI Work Plan(s) required under *Permit Condition IV.E* no longer satisfy the requirements of **40 CFR Part 264.101** or this permit for prior or continuing releases of hazardous waste or hazardous constituents from solid waste management units and/or areas of concern, the Permittee shall submit an amended RFI Work Plan(s) and/or AR to the Director within ninety (90) calendar days of such determination.
- IV.L.4** All reports shall be signed and certified in accordance with **40 CFR Part 270.11**.

**IV.L.5** At least one (1) copy of all reports and work plans shall be provided by the Permittee to the Division of Waste Management at the address specified in *Permit Condition II.B.2.2*.

**IV.M** **Approval/Disapproval of Submittals**

**IV.M.1** The Manager will review the work plans, reports, schedules, and other documents ("submittals") which require the Manager's approval in accordance with the conditions of this permit. The Manager will notify the Permittee in writing of any submittal that is disapproved, and the basis therefore. In the event the Permittee disagrees, in whole or in part, with the Manager's decision of a submittal or disapproval of any revised submittal required by the permit, the Permittee has the right to seek a hearing under **KRS 224.10-420(2)**.

END OF PERMIT CONDITIONS

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**PART V WASTE MINIMIZATION**

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**PART V  
WASTE MINIMIZATION**

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The terms and conditions of this Permit are applicable to Arkema Inc. under Title 401 KAR Chapters 39 and 40, of the Hazardous Waste Management Regulations of the Kentucky Administrative Regulations (KARs) as effective December 7, 2017.

The Code of Federal Regulations (CFRs) cited in this Permit shall be as established in 401 KAR Chapter 39.

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**V.A General Restrictions**

**V.A.1** In the event that the Permittee treats, stores, or disposes of hazardous wastes onsite where such wastes were generated, then the Permittee must comply with **40 CFR Part 264.73** and the Permittee must certify, no less often than annually, that:

**V.A.1.1** The Permittee has a program in place to reduce the volume and toxicity of hazardous waste generated to the degree determined by the Permittee to be economically practicable; and

**V.A.1.2** The proposed method of treatment, storage, or disposal is the most practicable method available to the Permittee which minimizes the present and future threat to human health and the environment.

**V.B Recordkeeping Requirements**

If *Permit Condition V.A* is applicable, then the Permittee shall maintain copies of this certification in the facility Operating Record as required by **40 CFR Part 264.73**.

**V.C Waste Minimization Objectives**

The Waste Minimization program required under *Permit Condition V.A* above should address the following objectives and elements:

**V.C.1 Top Management Support**

The Permittee shall maintain and update the following documents:

**V.C.1.1** A policy dated and signed, by management, describing management support for waste minimization and for implementation of a waste minimization plan.

**V.C.1.2** A description of employee awareness and training programs designed to involve employees in waste minimization planning and implementation to the maximum extent feasible.

**V.C.1.3** A description specifying how a waste minimization plan has been incorporated into management practices so as to ensure ongoing efforts with respect to product design, capital planning, production operations, and maintenance.

## **V.C.2 Characterization of Waste Generation**

The Permittee shall identify and document types, amounts, and hazardous constituents of waste streams, with the source and date of generation.

## **V.C.3 Periodic Waste Minimization Assessments**

**V.C.3.1** The Permittee shall identify and document all points in a process where materials can be prevented from becoming a waste, or can be recycled.

**V.C.3.2** The Permittee shall identify the potential for waste reduction and recycling techniques applicable to each waste generated at the facility, with a cost estimate for capital investment and implementation.

**V.C.3.3** The Permittee shall update and maintain a description of technically and economically practical waste reduction, recycling options to be implemented at the facility, and a planned schedule for implementation.

**V.C.3.4** The Permittee shall prepare and maintain an adequate assessment for specific performance goals, preferably quantitative, for the source reduction of waste by stream. Whenever possible, goals should be stated as weight of waste generated per standard unit of production, as defined by the generator.

## **V.C.4 Cost Allocation System**

The Permittee, on an annual basis, shall update a Cost Allocation System specific to the operation of the facility with respect to waste reduction.

The following shall be addressed in preparation of the document:

**V.C.4.1** Identification of waste management costs for each waste, factoring in liability, transportation, recordkeeping, personnel, pollution control, treatment, disposal, and compliance and oversight costs to the extent feasible.

**V.C.4.2** Description of how each area(s) at the facility is held accountable for the wastes they generate.

**V.C.4.3** The comparison of waste management costs with costs of potential reduction and recycling techniques applicable to each waste at the facility.

### **V.C.5 Technology Transfer**

The Permittee shall update and maintain at the facility a description of efforts to seek and exchange technical information on waste minimization from other parts of the company, other firms, trade associations, technical assistance programs, and professional consultants.

### **V.C.6 Program Evaluation**

The Permittee, on an annual basis, shall evaluate the waste minimization program. The evaluation, at a minimum shall contain the following:

- V.C.6.1** Description of types and amounts of hazardous waste reduced or recycled.
- V.C.6.2** Analysis and quantification of progress made relative to each performance goal established and each reduction technique to be implemented.
- V.C.6.3** Amendments to waste minimization plan and explanation.
- V.C.6.4** Explanation and documentation of reduction efforts completed or in progress before development of the waste minimization plan.
- V.C.6.5** Explanation and documentation regarding impediments to hazardous waste reduction specific to the individual facility.

END OF PERMIT CONDITIONS

**PART VI LAND DISPOSAL RESTRICTIONS**

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**PART VI  
LAND DISPOSAL RESTRICTIONS**

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The terms and conditions of this Permit are applicable to Arkema Inc. under Title 401 KAR Chapters 39 and 40, of the Hazardous Waste Management Regulations of the Kentucky Administrative Regulations (KARs) as effective December 7, 2017.

The Code of Federal Regulations (CFRs) cited in this Permit shall be as established in 401 KAR Chapter 39.

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**VI.A General Restrictions**

**VI.A.1 40 CFR Part 268** identifies hazardous wastes that are restricted from land disposal and defines those limited circumstances under which an otherwise prohibited waste may continue to be placed on or in a land treatment, storage or disposal unit. The Permittee shall maintain compliance with the requirements of **40 CFR Part 268**. Where the Permittee has applied for an extension, waiver, or variance under **40 CFR Part 268**, the Permittee shall comply with all restrictions on land disposal under this Part once the effective date for the waste has been reached pending final approval of such Application.

**VI.B Land Disposal Prohibitions and Treatment Standards**

**VI.B.1** A restricted waste identified in **40 CFR Part 268** may not be placed in a land disposal unit without further treatment unless the requirements of **40 CFR Part 268.50** are met.

**VI.B.2** The storage of hazardous wastes restricted from land disposal under **40 CFR Part 268** is prohibited unless the requirements of **40 CFR Part 268** are met.

END OF PERMIT CONDITIONS

**PART VII ORGANIC AIR EMISSION REQUIREMENTS**

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**PART VII  
ORGANIC AIR EMISSION REQUIREMENTS**

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The terms and conditions of this Permit are applicable to Arkema Inc. under Title 401 KAR Chapters 39 and 40, of the Hazardous Waste Management Regulations of the Kentucky Administrative Regulations (KARs) as effective December 7, 2017.

The Code of Federal Regulations (CFRs) cited in this Permit shall be as established in 401 KAR Chapter 39.

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The purpose of Organic Air Emission Standards (**40 CFR Part 264 - Subpart AA, BB and CC**) is to control air emissions from hazardous waste treatment, storage, and disposal facilities or units, as well as associated ancillary equipment and systems.

**VII.A Air Emission Standards for Process Vents**

**VII.A.1 40 CFR Part 264 – Subpart AA** contains emission standards for process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, and air or steam stripping operations that manage hazardous waste with an annual average total organic concentration of at least ten (10) parts per million (ppm) by weight (ppmw). It also contains standards for closed-vent systems and control devices.

The Permittee does not currently operate and is not currently authorized under this Permit to operate any process vents, closed-vent systems, or control devices at the Facility that are subject to 40 CFR Part 264 – Subpart AA.

**VII.A.2 Notification of Modifications, Additions, or New Units**

Prior to installing or operating any process vents, closed-vent systems, or control devices subject to **40 CFR Part 264 – Subpart AA**, or modifying any existing equipment, procedure, or process such that the process vents, closed-vent systems, or control devices will become subject to **40 CFR Part 264 – Subpart AA**, the Permittee shall apply for a permit modification in accordance with *Permit Condition II.B.1* and *Permit Condition II.B.4*.

**VII.B Air Emission Standards for Equipment Leaks**

**VII.B.1 40 CFR Part 264 - Subpart BB** contains air emission standards for equipment leaks and applies to all equipment that contains or contacts hazardous wastes with organic concentrations of at least ten (10) percent by weight.

**VII.B.1.1** The Permittee operates six hazardous waste storage tanks (tanks identified as: V-0119, V-0119A, V-0121, V-0229, V-6103, and V-6103A), the hazardous waste incinerator, and all

associated ancillary equipment, including pumps, pressure relief devices, sampling connection systems, valves, open-ended valves or lines, flanges, and connectors. This ancillary equipment contains or contacts hazardous waste with organic concentrations greater than ten (10) percent by weight for greater than 300 hours per year. Therefore, this equipment is subject to **40 CFR Part 264 – Subpart BB** and the conditions of this Permit. A master list of all permitted equipment subject to **40 CFR Part 264 – Subpart BB** (“Subpart BB Equipment”) is contained in Appendix 8.

**VII.B.1.2** The Permittee may only use Subpart BB Equipment to manage the hazardous wastes with EPA Hazardous Waste Numbers listed in *Table III.2*.

**VII.B.1.3** The Subpart BB Equipment includes equipment operating in light liquid service and gas/vapor service, as those terms are defined in **40 CFR Part 264.1051**, which incorporates **40 CFR Part 264.1031**.

**VII.B.1.4** The Subpart BB Equipment are subject to the following standards: pumps in light liquid service (**40 CFR Part 264.1052**), pressure relief devices in gas/vapor service (**40 CFR Part 264.1054**), sampling connection systems (**40 CFR Part 264.1055**), open-ended valves or lines (**40 CFR Part 264.1056**), valves in gas/vapor service or in light liquid service (**40 CFR Part 264.1057**), and pressure relief devices in light liquid service, and flanges and other connectors (**40 CFR Part 264.1058**).

## **VII.B.2 Notification of Modifications, Additions, or New Units**

Prior to installing or operating any new unit or equipment subject to **40 CFR Part 264 – Subpart BB**, or modifying any existing unit, equipment, procedure, or process such that the unit(s) or equipment will become subject to **40 CFR Part 264 – Subpart BB**, the Permittee shall apply for a permit modification in accordance with *Permit Condition II.B.1* and *Permit Condition II.B.4*.

**VII.B.2.1** The Permittee does not operate and is not currently authorized under this Permit to operate compressors (**40 CFR Part 264.1053**), pumps, valves, or pressure relief devices in heavy liquid service (**40 CFR Part 264.1058**) or closed-vent systems and control devices (**40 CFR Part 264.1060**) that are subject to **40 CFR Part 264 – Subpart BB**.

## **VII.B.3 Marking and Tagging**

**VII.B.3.1** The Permittee shall maintain the most current equipment identification list and up-to-date Piping and Instrumentation Diagram (P&ID) in the Facility’s operating record in accordance with **40 CFR Part 264.1064(b)**.

**VII.B.3.2** The Permittee shall mark and tag all Subpart BB Equipment in a unique manner for the specific purpose of tracking, monitoring, inspecting, and repairing each piece of equipment in accordance with **40 CFR Part 264 – Subpart BB (40 CFR Part 264.1050(d))**. The marking must be of a permanent nature, weatherproof, and regularly maintained to ensure it is clearly visible at all times during operation.

**VII.B.3.3** The unique marking of the Subpart BB Equipment shall be identified on the current equipment

identification list and correspond to an up-to-date P&ID maintained at the Facility and used to conduct all inspections and monitoring.

**VII.B.3.4** Tags used to identify leaks and potential leaks must comply with all the applicable requirements of **40 CFR Part 264.1064(c)**, including, but not limited to the following requirements:

**VII.B.3.4.1** The tags must be made of, or coated in, a material that is not degraded by the hazardous waste stream, or weather, including UV light;

**VII.B.3.4.2** The tags must be readily visible;

**VII.B.3.4.3** The tags must include the equipment identification number; and

**VII.B.3.4.4** The tags must include the date evidence of a potential leak was found in accordance with **40 CFR Part 264.1058(a)** and the date the leak was detected.

#### **VII.B.4 Excluded Equipment [40 CFR Part 264.1050(e) and (f)]**

**VII.B.4.1** The Permittee does not operate any equipment that is in vacuum service and that would be excluded by **40 CFR 264.1050(e)**.

**VII.B.4.2** The Permittee has not applied for the exclusion found in **40 CFR Part 264.1050(f)** for equipment that contains or contacts hazardous waste with an organic concentration of at least 10 percent by weight for less than 300 hours per calendar year. If the Permittee desires to apply this exclusion to any ancillary equipment, it shall apply for a permit modification in accordance with *Permit Condition VII.B.2*.

#### **VII.B.5 Equipment Standards**

All equipment subject to **40 CFR Part 264 – Subpart BB** shall comply with the appropriate equipment standard of **40 CFR Part 264 – Subpart BB**, the conditions of this Permit, and the requirements of the Leak Detection and Repair (LDAR) Program.

##### **VII.B.5.1 Pumps in Light Liquid Service [40 CFR Part 264.1052]**

**VII.B.5.1.1** The Permittee shall comply with **40 CFR Part 264.1052** for all pumps identified in the list of Subpart BB Equipment in Appendix 8 as operating in light liquid service. All such equipment shall be inspected each operating day in accordance with the approved LDAR Program.

**VII.B.5.1.2** The Permittee shall not operate any pumps that are designed with a dual mechanical seal subject to **40 CFR Part 264.1052(d)**.

**VII.B.5.1.3** The Permittee operates pumps in light liquid service that have no externally actuated shafts penetrating the pump housing (**40 CFR Part 264.1052(e)(1)**), including air diaphragm pumps, magnetic drive pumps, and canned pumps. These pumps are exempt from monthly monitoring and weekly visual inspections

as required by **40 CFR Part 264.1052(a)** provided the following conditions are met:

- VII.B.5.1.3.1** The Permittee designates the pumps for no detectable emissions in its Facility operating record, as required by **40 CFR Part 264.1064(g)(2)**;
  - VII.B.5.1.3.2** The pumps operate with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as measured by the methods specified in **40 CFR Part 264.1063(c)**; and
  - VII.B.5.1.3.3** The Permittee tests the pumps for compliance with *Permit Condition VII.B.5.1.3.2* initially upon designation, annually, and at other times as requested as requested by the Division, in accordance with the LDAR Program and **40 CFR Part 264.1052(e)**.
- VII.B.5.1.4** If a leak is detected, it shall be repaired and the pump shall be returned to a condition of no detectable emissions as soon as practicable, but not later than 15 calendar days after it is detected, except as provided by **40 CFR Part 264.1059** and *Permit Condition VII.B.5.8*. A first attempt at repair (e.g., tightening the packing gland) shall be made no later than 5 calendar days after each leak is detected. If the Permittee fails to return the equipment to a condition of no detectable emissions within 15 calendar days, and the exception found in **40 CFR Part 264.1059** and *Permit Condition VII.B.5.8* does not apply, the pump shall no longer be exempt from **40 CFR Part 264.1052(a)** and must abide by the monthly and weekly monitoring schedules provided therein, until a condition of no detectable emissions has been reestablished.
- VII.B.5.1.5** If during any monitoring event performed in compliance with this permit, or at the discretion of the Permittee, detectable emission greater than 500 ppm above background are detected as measured by the methods specified in **40 CFR Part 264.1063(c)**, and the Permittee fails to return the equipment to a condition of no detectable emissions within 15 calendar days, the pump is no longer exempt from **40 CFR Part 264.1052(a)** and must abide by the monthly and weekly monitoring schedules provided therein, until a condition of no detectable emissions has been reestablished.
- VII.B.5.1.6** The Permittee shall record each testing and monitoring event in compliance with *Permit Condition III.F* of this Permit.

### VII.B.5.2 Compressors [40 CFR Part 264.1053]

Not Applicable

### VII.B.5.3 Pressure Relief Devices in Gas/Vapor Service [40 CFR Part 264.1054]

**VII.B.5.3.1** The Permittee shall comply with **40 CFR Part 264.1054** for pressure relief devices in gas/vapor service. The pressure relief devices identified in the list of Subpart BB Equipment in Appendix 8 are rupture discs. All such equipment shall be inspected each operating day in accordance with the approved LDAR Program.

**VII.B.5.3.2** Monitoring of the pressure relief devices, or rupture discs, shall occur at normal operating conditions, which shall mean when hazardous waste is actively flowing through the associated equipment line to the incinerator for destruction.

**VII.B.5.3.3** Except during pressure releases, the pressure relief devices in gas/vapor service shall always operate at no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the method specified in **40 CFR Part 264.1063(c)**. Pressure releases are only allowed from these devices to avoid catastrophic failure or as a result of catastrophic failure. These pressure relief devices function as safety devices.

**VII.B.5.3.4** After each pressure release, the Permittee shall ensure the pressure relief device has returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in **40 CFR Part 264.1059** and *Permit Condition VII.B.5.8*.

**VII.B.5.3.5** No later than 5 calendar days after the pressure release, the Permittee shall monitor the pressure relief device to confirm the condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the method specified in **40 CFR Part 264.1063(c)**.

**VII.B.5.3.6** The Permittee shall keep records of these compliance tests and monitoring events in compliance with **40 CFR Part 264.1064(g)(4)** and *Permit Condition III.F* of this Permit.

### VII.B.5.4 Sampling Connection Systems [40 CFR Part 264.1055]

**VII.B.5.4.1** The Permittee shall comply with **40 CFR Part 264.1055** for sampling connection systems identified in the list of Subpart BB Equipment in Appendix 8. All subject equipment shall be inspected each operating day in accordance with the approved LDAR Program.

**VII.B.5.4.2** The sampling connection systems shall be equipped with a closed-purge system to return the purged hazardous waste stream to a line feeding the control device

as required by **40 CFR Part 264.1055(b)(1)** and in accordance with the LDAR Program.

- VII.B.5.4.3** Equipment associated with the sampling connection system shall comply with the standards of their respective class. For example, valves shall comply with conditions set forth in *Permit Condition VII.B.5.6*, all connectors and flanges shall comply with the conditions set forth in *Permit Condition VII.B.5.7*, etc.

#### **VII.B.5.5 Open-ended Valves or Lines [40 CFR Part 264.1056]**

- VII.B.5.5.1** The Permittee shall comply with **40 CFR Part 264.1056** for open-ended valves or lines identified in the list of Subpart BB Equipment in Appendix 8. All such equipment shall be inspected each operating day in accordance with the approved LDAR Program.
- VII.B.5.5.2** In accordance with **40 CFR Part 264.1056(a)**, each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, which shall always seal the open end except during operations requiring hazardous waste flow through the open-ended valve or line
- VII.B.5.5.3** When hazardous waste is permitted to flow through the open-ended valve or line (e.g., while using temporary equipment or while collecting samples), the Permittee shall comply with **40 CFR Part 264.1056(b)** and **(c)** for opening and closing the open-ended valves or lines.
- VII.B.5.5.4** Equipment associated with open-ended valves or lines shall comply with the standards of their respective class. For example, valves shall comply with conditions set forth in *Permit Condition VII.B.5.6*, all connectors and flanges shall comply with the conditions set forth in *Permit Condition VII.B.5.7*, etc.

#### **VII.B.5.6 Valves in Gas/Vapor service or in Light Liquid Service [40 CFR Part 264.1057]**

- VII.B.5.6.1** The Permittee shall comply with **40 CFR Part 264.1057** for valves in gas/vapor service or in light liquid service identified in the list of Subpart BB Equipment in Appendix 8. All such equipment shall be inspected each operating day in accordance with the approved LDAR Program.
- VII.B.5.6.2** The Permittee shall comply with the following inspection and monitoring requirements for valves in gas/vapor service or in light liquid service:
  - VII.B.5.6.2.1** All valves in gas/vapor service or in light liquid service shall be monitored monthly to detect leaks by the methods specified in **40 CFR PRT 264.1063(b)**, except as provided in this Condition and in *Permit Condition VII.B.5.6.4* of this Permit.
  - VII.B.5.6.2.2** If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.



**VII.B.5.6.2.3** Any valve for which a leak is not detected for two successive months may be monitored the first month of every succeeding quarter, beginning with the next quarter, until a leak is detected.

**VII.B.5.6.2.4** If a leak is detected, the valve shall be monitored monthly until a leak is not detected for two successive months.

**VII.B.5.6.2.5** If during an inspection conducted in accordance with any other condition of this Permit any evidence of a potential leak is found by visual, audible, olfactory, or any other detection method the valve shall be monitored within 5 days by the method specified in **40 CFR Part 264.1063(b)**. An example of evidence of a potential leak would include the observance of staining or pooling on the secondary containment below the equipment.

**VII.B.5.6.3** Valve Leak Detection and Repair

**VII.B.5.6.3.1** When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in **40 CFR Part 264.1059** and *Permit Condition VII.B.5.8*.

**VII.B.5.6.3.2** A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

**VII.B.5.6.3.3** First attempts at repair include, but are not limited to, the following best practices where practicable:

- Tightening of bonnet bolts.
- Replacement of bonnet bolts.
- Tightening of packing gland nuts.
- Injection of lubricant into lubricated packing.

**VII.B.5.6.4** The Permittee operates valves it has designated as difficult-to-monitor. These valves shall meet the following Conditions to be exempt from *Permit Condition VII.B.5.6.2* and **40 CFR Part 264.1057(a)**:

**VII.B.5.6.4.1** The Permittee shall identify the valves as “difficult-to-monitor” in the list of Subpart BB Equipment contained in Appendix 8. Additional justification shall be included in the Subpart BB Equipment list for any valve designated as “difficult-to-monitor” for any reason other than that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface, as stated in **40 CFR 264.1057(h)(1)**.

**VII.B.5.6.4.2** All difficult-to-monitor valves shall be monitored at least annually, as described in the LDAR Program.

**VII.B.5.6.5** Only valves in light liquid service can be designated difficult or unsafe to monitor pursuant to **40 CFR Part 264.1057(g)** or **(h)**. The Permittee shall not designate any other components subject to the **40 CFR Part 264 – Subpart BB** regulations as difficult or unsafe-to-monitor.

**VII.B.5.7 Pumps and Valve in Heavy Liquid Service, Pressure Relief Devices in Light Liquid or Heavy Liquid service, and Flanges and Other Connectors [40 CFR Part 264.1058]**

**VII.B.5.7.1** The Permittee shall comply with **40 CFR Part 264.1058** for pressure relief devices in light liquid service, and flanges and other connectors identified in the list of Subpart BB Equipment in Appendix 8. All such equipment shall be inspected each operating day in accordance with the approved LDAR Program.

**VII.B.5.7.2** The Pressure Relief Devices in Light Liquid Services are rupture discs. They function as safety devices and shall operate with no detectable emissions. A release from these devices is only allowed in the event of catastrophic failure or to avoid catastrophic failure. These devices are associated with the incinerator. Thus, all monitoring shall be performed while hazardous waste is flowing through the associated hazardous waste line to the incinerator for destruction.

**VII.B.5.7.3** Pressure relief devices in light liquid service, and flanges and other connectors shall comply with the following inspection and monitoring requirements:

**VII.B.5.7.3.1** If during an inspection, any evidence of a potential leak is found by visual, audible, olfactory, or any other detection method, the component shall be monitored within 5 days of that inspection by the method specified in **40 CFR Part 264.1063(b)**. An example of the detection of a potential leak would include the observance of staining or pooling on the secondary containment below the equipment.

**VII.B.5.7.3.2** If a leak or potential leak is found during an inspection, that component shall be tagged in accordance with *Permit Condition VII.B.3.4*.

**VII.B.5.7.4** Pressure Relief Devices in Light Liquid Service, and Flanges and Other Connectors Leak Detection and Repair

**VII.B.5.7.4.1** If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

**VII.B.5.7.4.2** When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in **40 CFR Part 264.1059** and *Permit Condition VII.B.5.8*.

**VII.B.5.7.4.3** The first attempt at repair shall be made no later than 5 calendar

days after a leak is detected.

**VII.B.5.7.4.4** First attempts at repair include, but are not limited to, the best practices described under **40 CFR Part 264.1057(e)**.

#### **VII.B.5.8 Delay of Repair**

Delays of repair shall be in accordance with the requirements of **40 CFR Part 264.1059**. A written description of the circumstances associated with the delay of repair addressing the requirements of **40 CFR Part 264.1059**, and *Permit Condition VII.B.7* of this Permit shall be maintained in the Facility's operating record.

#### **VII.B.5.9 Closed-vent Systems and Control Devices [40 CFR Part 264.1060]**

Not Applicable

#### **VII.B.5.10 Alternative Standards for Valves in Gas/Vapor service or in Light Liquid Service: Percentage of Valves Allowed to Leak [40 CFR Part 264.1061]**

Not Applicable

#### **VII.B.5.11 Alternative Standards for Valves in Gas/Vapor Service or in Light Liquid Service: Skip Period Lead Detection and Repair [40 CFR Part 264.1062]**

Not Applicable

#### **VII.B.6 Test Methods and Procedures [40 CFR Part 264.1063]**

**VII.B.6.1** The Permittee shall comply with the test methods and procedures of **40 CFR Part 264.1063**, the LDAR Program, for all equipment subject to **40 CFR Part 264 – Subpart BB**.

**VII.B.6.2** All testing, monitoring and confirmatory sampling must be conducted during times of operation by persons trained in the proper implementation of the test methods and procedures required by **40 CFR Part 264.1063**, including, but not limited to, Method 21.

#### **VII.B.7 Recordkeeping Requirements [40 CFR Part 264.1064]**

**VII.B.7.1** Records demonstrating compliance with **40 CFR Part 264 – Subpart BB**, including any third party's records, shall be maintained, accessible at the Facility or other appropriate location approved by the Division, for a period of not less than three (3) years. All records necessary for demonstrating compliance shall include, at a minimum, the required recordkeeping information in **40 CFR Part 264.1064** and this Permit.

**VII.B.7.2** These records shall include, but are not limited to:

**VII.B.7.2.1** The current list of regulated equipment and its physical location at the Facility, as illustrated on a Facility map and P&ID;

**VII.B.7.2.2** All associated and applicable operating information, specifications, and standards for each unique piece of equipment;

**VII.B.7.2.3** All maintenance events, inspections, monitoring, leak detection, repairs and attempts at repair, delays of repair, and confirmatory testing records associated with each unique piece of equipment; and

**VII.B.7.2.4** Training documentation for persons conducting inspections and monitoring.

**VII.B.7.3** Records justifying valves in light liquid service designated as difficult or unsafe to monitor shall comply with **40 CFR Part 264.1057(g)** and **(h)**, be kept at the Facility or other appropriate location approved by the Division, be available for inspection at reasonable times, and demonstrate compliance with the requirements of **40 CFR Part 264.1064(h)**.

#### **VII.B.8 Reporting Requirements [40 CFR Part 264.1065]**

**VII.B.8.1** In accordance with **40 CFR Part 264.1065**, the Permittee shall prepare and submit a report semiannually to the Division at the address provided in *Permit Condition II.B.2.2*, documenting all information required by **40 CFR Part 264.1065** for each month during that semiannual reporting period.

**VII.B.8.2** All information required by **40 CFR Part 264.1065** shall be submitted in the semiannual report. The semiannual report shall be submitted by January 31<sup>st</sup> and July 31<sup>st</sup> of each calendar year. A copy of the semiannual report shall be maintained in the Facility's operating record.

#### **VII.B.9 Equipment Maintenance and Installation of Temporary Equipment**

For the purposes of **40 CFR Part 264 – Subpart BB**, the term “Temporary Equipment” shall be defined as any equipment that has not been specifically designed and engineered as part of the original system, or equipment which was not included in the information submitted as part of the Approved Permit Application, which the Permittee has placed in service on a non-permanent basis while performing repair and/or maintenance activities on permanent equipment.

**VII.B.9.1** Temporary equipment installed during maintenance or repair activities, including preventative maintenance activities, shall be noted in the daily inspection log in the Facility's operating record. The notation shall include the date the maintenance or repair began, the date the maintenance or repair is expected to be completed, the equipment identification numbers replaced during the maintenance or repair activity, and a brief statement describing the installation and use of the temporary equipment.

**VII.B.9.2** All temporary equipment shall be designed and equipped to: ensure it will fulfill its intended functions without failure or release; perform equivalently to the equipment it is temporarily replacing to prevent performance upsets, releases of hazardous waste, fire or explosion; not jeopardize the safety of personnel, surrounding equipment or the environment; be compatible with the waste; and withstand environmental conditions at the Facility.

**VII.B.9.3** Temporary equipment shall be utilized on a temporary basis and shall not be used as a permanent part of the hazardous waste management unit or system, and shall not be considered a completed repair. Temporary equipment shall not remain in use longer than the timeframe allowed in the leak repair standard for the original equipment type, unless the standards of **40 CFR Part 264.1059**, have been met.

**VII.B.9.4** Preventative maintenance activities shall be treated as a potential leak for purposes of the standards, monitoring and recordkeeping requirements of **40 CFR Part 264 – Subpart BB**.

**VII.C Air Emission Standards for Tanks, Surface Impoundments, Containers and Miscellaneous Units**

**VII.C.1 40 CFR Part 264 – Subpart CC** contains air emissions standards for hazardous waste surface impoundments, tanks, miscellaneous units, and containers that contact hazardous waste containing an average volatile organic concentration greater than 500 parts per million (ppm) by weight at the point of waste origination, as determined by the procedures outlined in **40 CFR Part 264.1083**, except as excluded by **40 CFR Part 264.1080(b)** or specifically exempted by **40 CFR Part 264.1082(c)**. In addition to the hazardous waste management units mentioned above, the requirements of **40 CFR Part 264 – Subpart CC** also apply to their covers, closure devices, and control devices.

The Permittee operates six hazardous waste storage tanks, which contact hazardous waste containing an average volatile organic concentration greater than 500 ppmw and are therefore subject to **40 CFR Part 264 – Subpart CC** (“Subpart CC Tanks”). The requirements of **40 CFR Part 264 – Subpart CC** apply to the Subpart CC Tanks, as well as their covers, closure devices, safety devices, closed-vent systems and control devices specifically listed in *Table VII.1* below.

Table VII.1					
Tanks	Safety Devices	Closed-Vent System Control Device	Closure Devices	Inert Gas in Headspace	Method of Compliance (40 CFR Part 264.1084(h))
V-0119	Dual rupture disks & dual safety relief valves	Emissions routed via safety relief valve through continuous piping to the incinerator. Safety relief valve set at 280 psig	One (1) Manway	Yes	Tank Level 2 Controls for pressure tanks, closed-vent system with HW incinerator
V-0119A	Dual rupture disks & dual safety relief valves	Emissions routed via safety relief valve through continuous piping to the incinerator. Safety relief valve set at 280 psig	One (1) Manway	Yes	Tank Level 2 Controls for pressure tanks, closed-vent system with HW incinerator
V-0121	Dual rupture disks & dual safety relief valves	No	One (1) Manway	No	Tank Level 2 Controls for pressure tanks
V-0229	Dual rupture disks & dual safety relief valves	No	One (1) Manway	No	Tank Level 2 Controls for pressure tanks
V-6103	Dual rupture disks & dual safety relief valves	Emissions routed via safety relief valve through continuous piping to the thermal oxidizer. Safety relief valve operated manually.	Two (2) Manways	Yes	Tank Level 2 Controls for pressure tanks, with thermal oxidizer
V-6103A	Dual rupture disks	Emissions routed via safety relief	Two (2)	Yes	Tank Level 2 Controls for

	& dual safety relief valves	valve through continuous piping to the thermal oxidizer. Safety relief valve operated manually.	Manways		pressure tanks, with thermal oxidizer
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## VII.C.2 Notification of Modifications, Additions, or New Units

**VII.C.2.1** The Permittee does not currently operate and is not currently authorized under this Permit to operate any containers, surface impoundments, or miscellaneous units that are subject to **40 CFR Part 264 – Subpart CC**.

**VII.C.2.2** Prior to installing or operating a tank, container, surface impoundment, miscellaneous unit, closed vent system, or control device subject to **40 CFR Part 264 – Subpart CC**, or modifying any existing unit, equipment, procedure, or process such that the unit(s) or equipment will become subject to **40 CFR Part 264 – Subpart CC**, the Permittee shall apply for a permit modification in accordance with *Permit Condition II.B.1* and *Permit Condition II.B.4*.

## VII.C.3 Excluded Units [40 CFR Part 264.1080(b)]

The Permittee currently does not have any hazardous waste management units which are excluded from the **40 CFR. Part 264 – Subpart CC** standards.

## VII.C.4 Exempted Units [40 CFR Part 264.1082(c)]

The Permittee currently does not have any tanks, surface impoundments, or containers that are exempted from the **40 CFR Part 264.1084** through **1087** standards by **40 CFR Part 264.1082(c)**.

## VII.C.5 Waste Determination Procedures [40 CFR Part 264.1083]

**VII.C.5.1** The Permittee must follow the waste determination procedures of **40 CFR Part 264.1083** and *Attachment C* of the Approved Permit Application.

**VII.C.5.2** The Permittee must conduct an annual re-characterization of the hazardous waste managed at the Facility at least once every twelve (12) months pursuant to *Attachment C* of the Approved Permit Application.

## VII.C.6 Standards: General [40 CFR Part 264.1082]

Each unit subject to **40 CFR Part 264 – Subpart CC** shall comply with the appropriate standard applicable to the hazardous waste management unit.

## VII.C.7 Standards: Tanks [40 CFR Part 264.1084]

The Permittee shall have Tank Level 2 Controls for Pressure Vessels.

**VII.C.7.1** The Permittee must comply with the standards set forth in **40 CFR Part 264.1084** for tanks and their closure, and safety devices identified in *Table VII.1*, which shall operate with no detectable emissions and shall be designed not to vent to the atmosphere, except as described in *Table*

VII.1 and allowed for by Permit Condition VII.C.7.4.

**VII.C.7.2** The Subpart CC Tanks do not meet the conditions specified in **40 CFR Part 264.1084(b)(1)(i)** through **(b)(1)(iii)**. Therefore, the Permittee shall control air pollution emissions from these tanks in accordance with Tank Level 2 controls, in compliance with **40 CFR Part 264.1084(d)** and **(h)** and the conditions of this Permit.

**VII.C.7.3** Pursuant to **40 CFR Part 264.1084(h)(2)**, all Subpart CC Tank openings shall be equipped with closure devices that operate with no-detectable organic emissions, as determined using the procedure specified in **40 CFR Part 264.1083(d)**.

**VII.C.7.4** The Permittee shall operate the Subpart CC Tanks as a closed system that does not vent to the atmosphere, except under the following conditions and as described by *Table VII.1*:

**VII.C.7.4.1** At times when opening of a safety device, as defined in **40 CFR Part 264.1081**, is required to avoid an unsafe condition; and

**VII.C.7.4.2** At times when purging of inerts from a Subpart CC Tank is required and the purge stream is routed to a closed-vent system and control device designed and operated in accordance with the requirements of **40 CFR Part 264.1087**.

**VII.C.7.5** The Permittee shall transfer hazardous waste to a tank subject to **40 CFR Part 264.1084** in accordance with the requirements in **40 CFR 264.1084(j)(1)** and **(j)(2)**.

**VII.C.7.6** The Permittee shall repair each defect detected during an inspection in accordance with the requirements in **40 CFR Part 264.1084(k)(1)** and **(k)(2)**.

**VII.C.7.7** Following the initial inspection and monitoring of the cover as required by the applicable requirements in **40 CFR 264 – Subpart CC**, subsequent inspection and monitoring may be performed at intervals longer than 1 year under the following special conditions specified in **40 CFR Part 264.1084(l)(1)** and **(l)(2)**.

**VII.C.8 Standards: Surface Impoundments [40 CFR Part 264.1085]**

Reserved

**VII.C.9 Standards: Containers [40 CFR Part 264.1086]**

Reserved

**VII.C.10 Standards: Closed-vent systems and control devices [40 CFR Part 264.1087]**

**VII.C.10.1** The closed-vent system shall follow the design and operating requirements in **40 CFR Part 264.1087(b)**.

**VII.C.10.2** The Permittee operates two control devices, the thermal oxidizer and the hazardous waste incinerator. These control devices shall be designed and operated to reduce the total organic

content of the waste gas by at least 95%, as required by **40 CFR Part 264.1087(c)(1)(i)**. Tanks V-0119, V-0119A, V-6103 and V-6103A shall be equipped with closed-vent systems that route waste gases, vapors, and fumes to a control device, as required by **40 CFR Part 264.1087(b)(1)**. These closed-vent systems are composed of a safety relief valve and continuous hard-piping which shall only vent when the tank internal pressure exceeds its design parameters (as described in *Table VII.1*). The safety valves on tanks V-0119 and V-0119A are automated but also may be manually opened to vent waste gas from the tanks to hazardous waste incinerator. However, the safety valve on tank V-6103 and V-6103A is only operated manually, and it vents to the thermal oxidizer.

- VII.C.10.3** The Permittee shall design and operate the closed-vent system with no detectable emissions, as indicated by an instrument reading of less than 500 ppmv above background as determined by the procedure in **40 CFR Part 264.1034(b)**, and by visual inspections, as required by **40 CFR Part 264.1087(b)(2)**, which incorporates **40 CFR Part 264.1033(k)(1)**.
- VII.C.10.4** The Permittee is not permitted to use or install any by-pass system for purposes of releasing emissions to the atmosphere prior to reaching the control-device(s), as described in **40 CFR 264.1087(b)(3)**.
- VII.C.10.5** The Permittee shall inspect and monitor the closed-vent system pursuant to **40 CFR Part 264.1087(b)(4)**, which incorporates **40 CFR 264.1033(l)**, as follows:
- VII.C.10.5.1** Closed-vent system joints, seams, or other connections that are permanently or semi-permanently sealed (e.g., a welded joint between two sections of hard piping or a bolted and gasketed ducting flange) shall be visually inspected at least once per year to check for defects that could result in air pollutant emissions. The Permittee shall monitor a component or connection using the procedures specified in **40 CFR Part 264.1034(b)** to demonstrate that it operates with no detectable emissions following any time the component is repaired or replaced (e.g., a section of damaged hard piping is replaced with new hard piping) or the connection is unsealed (e.g., a flange is unbolted).
  - VII.C.10.5.2** Closed-vent system components or connections other than those specified in *Permit Condition VII.C.10.5.1* shall be monitored annually and at other times as requested by the Division, using the procedures specified in **40 CFR Part 264.1034(b)** to demonstrate that the components or connections operate with no detectable emissions.
  - VII.C.10.5.3** In the event that a defect or leak is detected, the Permittee shall repair the defect or leak in accordance with **40 CFR Part 264.1033(l)(3)** and the following requirements:
    - VII.C.10.5.3.1** Detectable emissions, as indicated by visual inspection, or by an instrument reading greater than 500 ppmv above background, shall be controlled as soon as practicable, but not later than 15 calendar days after the emission is detected, except as provided for in **40 CFR Part 264.1033(l)(3)(iii)**.



- VII.C.10.5.3.2** A first attempt at repair shall be made no later than 5 calendar days after the emission is detected.
- VII.C.10.5.3.3** Delay of repair of a closed-vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown, or if the Permittee determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be completed by the end of the next process unit shutdown.
- VII.C.10.5.3.4** The Permittee shall maintain a record of the defect repair in accordance with the requirements specified in **40 CFR Part 264.1035** and the conditions of this Permit.
- VII.C.10.5.3.5** The Permittee shall maintain a record of the inspection and monitoring in accordance with the requirements specified in **40 CFR Part 264.1035** and the conditions of this Permit.
- VII.C.10.6** The Permittee shall operate the closed-vent system such that gases, vapors, or fumes are not actively vented to the control device during periods of planned maintenance or control device system malfunction (i.e., periods when the control device is not operating or not operating normally) except in cases when it is necessary to vent the gases, vapors, and/or fumes to avoid an unsafe condition or to implement malfunction corrective actions or planned maintenance actions. In such situations, failure of the control device to reduce total organic content of vent gas streams from hazardous waste tanks by 95% is permitted by **40 CFR Part 264.1087(c)(2)**, provided the following conditions are met:
- VII.C.10.6.1** During planned routine maintenance, the period for which the organic content is not reduced by at least 95% shall not exceed 240 hours per year. The time that the control device did not meet performance standards shall be recorded in the operating record, as required by *Permit Condition VII.C.12.3.2*.
- VII.C.10.6.2** The Permittee corrects the control device system malfunction as soon as practicable after the occurrence in order to minimize excess emissions of air pollutants.
- VII.C.10.7** The Permittee shall ensure that the incinerator and thermal oxidizer each have a temperature monitoring device in the combustion chamber, downstream of the combustion zone, as required by **40 CFR Part 264.1087(c)(7)**, which incorporates **40 CFR Part 264.1033(f)(2)**. These temperature monitoring devices, connected to the plant's digital control system, shall be monitored continuously, inspected daily, and calibrated within  $\pm 1\%$  accuracy according to manufacturer's specifications.

## **VII.C.11 Inspection and Monitoring Requirements [40 CFR Part 264.1088]**

**VII.C.11.1** The Permittee shall comply with the inspection and monitoring requirements of **40 CFR Part 264.1088**, this Permit, and the LDAR Program.

**VII.C.11.2** All inspections and monitoring must be conducted at times when the hazardous waste management unit or equipment is in operation, and by qualified persons with the appropriate training.

**VII.C.11.3** The Subpart CC Tanks and their covers, closure devices, closed-vent systems, and safety devices shall be inspected and monitored at least annually and following any exceedance of the maximum design pressure to ensure no detectable emissions.

#### **VII.C.12 Recordkeeping Requirements [40 CFR Part 264.1089]**

**VII.C.12.1** Records demonstrating compliance with **40 CFR Part 264 – Subpart CC**, including any third party's records, shall be maintained, accessible at the Facility or other appropriate location approved by the Division, for a period of not less than three (3) years. All records necessary for demonstrating compliance shall include, at a minimum, the required recordkeeping information in **40 CFR Part 264.1089** and this Permit.

**VII.C.12.2** These records shall include but are not limited to the:

**VII.C.12.2.1** Current list of regulated hazardous waste management units and their unique identification number, covers, closures, safety relief devices, closed-vent systems and control devices and their physical location at the Facility as illustrated on a P&ID and/or Facility Map;

**VII.C.12.2.2** All associated operating information, specifications, and standards for each hazardous waste management unit;

**VII.C.12.2.3** Annual waste determinations;

**VII.C.12.2.4** All maintenance, inspection, leak detection and repair records associated with each hazardous waste management unit; and

**VII.C.12.2.5** Training documentation for persons conducting inspections or monitoring.

**VII.C.12.3** As provided in **40 CFR Part 264.1089(h)**, the Permittee may elect to demonstrate compliance with the applicable sections of **40 CFR Part 264 Subpart CC** and the conditions of this Permit pursuant to the provisions of **40 CFR Part 60 Subpart VV** or **40 CFR Part 61 Subpart V**, to the extent that the documentation required by **40 CFR Part 60** or **61** duplicates the documentation required **40 CFR Part 264 Subpart CC** and the conditions of this Permit. Such documentation must include the following:

**VII.C.12.3.1** Certification that the hazardous waste incinerator and the thermal oxidizer are each designed to operate with a 95% total organic reduction efficiency by either a performance test or a design analysis, as required by **40 CFR Part 264.1089(e)(1)** which incorporates **40 CFR Part 264.1035(b)(3)** and **(b)(4)**;

**VII.C.12.3.2** Semiannual records of planned maintenance on the control devices which shall include records documenting any anticipated maintenance for the next six months and describing the maintenance that was performed during the previous six-months. This description shall include the type of maintenance that was performed and the total number of hours during those six months that the control device did not meet the requirements of **40 CFR Part 264.1087(c)(1)(i), (ii), and (iii)**, due to planned routine maintenance, as required by **40 CFR Part 264.1089(e)(1)(v)**;

**VII.C.12.3.3** Records of unexpected control device malfunction, as required by **40 CFR Part 264.1089(e)(vi)**.

**VII.C.12.4** Records justifying covers designated as unsafe to inspect or monitor shall comply with **40 CFR Part 264.1084(l)** or **264.1085(g)**, be kept at the Facility or other appropriate location approved by the Division, be available for inspection at reasonable times, and demonstrate compliance with the requirements of **40 CFR Part 264.1089(g)**.

#### **VII.C.13 Reporting Requirements [40 CFR Part 264.1090]**

**VII.C.13.1** In accordance with **40 CFR Part 264.1090(a)** and **(b)**, the Permittee shall prepare and submit a report within fifteen (15) calendar days to the Division documenting each occurrence of noncompliance.

**VII.C.13.2** In accordance with **40 CFR Part 264.1090(c)**, the Permittee shall submit a report semiannually to the Division documenting, for control devices operating in accordance with **40 CFR Part 264.1087**, each instance where the control device could not be returned to compliance within twenty-four (24) hours and the actions taken to correct the noncompliance.

**VII.C.13.3** A report to the Division in accordance with *Permit Condition VII.C.13.2* is not required for a 6-month period during which all control devices subject to **40 CFR Part 264 - Subpart CC** are operated by the Permittee such that: **[40 CFR Part 264.1090(d)]**

**VII.C.13.3.1** During no period of 24 hours or longer did a control device operate continuously in noncompliance with the applicable operating values defined in **40 CFR Part 264.1035(c)(4)**; and

**VII.C.13.3.2** No flare was operated with visible emissions for 5 minutes or longer in a two-hour period, as defined in **40 CFR Part 264.1033(d)**.

**VII.C.13.4** The semiannual report shall be submitted by January 31<sup>st</sup> and July 31<sup>st</sup> of each calendar year to the Division at the address specified in *Permit Condition II.B.2.2*.

**END OF PERMIT CONDITIONS**

**PART VIII REFERENCED ATTACHMENTS & APPENDICES**

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**PART VIII**  
**REFERENCED ATTACHMENTS AND APPENDICES**  
(Available In Volume 2 & 3 of the Hazardous Waste Management Permit)

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The terms and conditions of this Permit are applicable to Arkema Inc. under Title 401 KAR Chapters 39 and 40, of the Hazardous Waste Management Regulations of the Kentucky Administrative Regulations (KARs) as effective December 7, 2017.

The Code of Federal Regulations (CFRs) cited in this Permit shall be as established in 401 KAR Chapter 39.

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Attachments A through L are located in the approved RCRA Part B Permit application received on the date stated in the parenthesis.

<b>VIII.A Attachment A:</b>	<b>Part A Permit Application</b> ( <i>Application received on 7-8-2022</i> )
<b>VIII.B Attachment B:</b>	<b>Facility Description</b> ( <i>Application received on 7-8-2022</i> )
<b>VIII.C Attachment C:</b>	<b>Waste Characteristics</b> ( <i>Application received on 7-8-2022</i> )
<b>VIII.D Attachment D:</b>	<b>Process Information</b> ( <i>Application received on 7-8-2022</i> )
<b>VIII.E Attachment E:</b>	<b>Groundwater Monitoring and Corrective Action</b> ( <i>Application received on 1-15-2020</i> )
<b>VIII.F Attachment F:</b>	<b>Procedures to Prevent Hazards</b> ( <i>Application received on 1-15-2020</i> )
<b>VIII.G Attachment G:</b>	<b>Contingency Plan</b> ( <i>Application received on 1-15-2020</i> )
<b>VIII.H Attachment H:</b>	<b>Personnel Training</b> ( <i>Application received on 1-15-2020</i> )
<b>VIII.I Attachment I:</b>	<b>Closure Plans, Post-Closure Plans, and Financial Requirements</b> ( <i>Application received on 12-15-2021</i> )
<b>VIII.J Attachment J:</b>	<b>Other Federal Laws</b> ( <i>Application received on 7-8-2022</i> )
<b>VIII.K Attachment K:</b>	<b>Waste Minimization Plan</b> ( <i>Application received on 1-15-2020</i> )
<b>VIII.L Attachment L:</b>	<b>Signature Certification</b> ( <i>Application received on 7-8-2022</i> )
<b>VIII.AA Appendix 1.1:</b>	<b>Part E Application, Attachment E2: SWMUs and AOCs Summary</b>
<b>VIII.GG Appendix 1.2:</b>	<b>SWMUs and AOCs Requiring Land Controls</b>

VIII.HH Appendix 2:	RCRA Facility Investigation (RFI) – Work Plan Outline
VIII.II Appendix 3:	Corrective Measure Study (CMS) Outline
VIII.JJ Appendix 4:	Corrective Action Schedule of Compliance
VIII.KK Appendix 5:	Integrated Contingency and Response Plan
VIII.LL Appendix 6:	Post-Closure Certification and Approval Letter
VIII.MM Appendix 7:	Long Term Monitoring Plan: RESERVED
VIII.NN Appendix 8:	Subpart BB Equipment List

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**Appendix 1.1**

**SOLID WASTE MANAGEMENT UNIT SUMMARY**

***Table 1. List of SWMUs and AOCs Identified at the Facility***

***SWMUs and AOCs Identified for No Further Action***

<b>SWMU ID</b>	<b>SWMU Name</b>
7	Superspar Pit 1
16	East Lagoon
18	New HF Lagoon East
19	New HF Lagoon West
20	Recycle Station Tank 1
21	Recycle Station Tank 2
31	Separator Tank V-127
34	Sump at Waste Acid Pump P-120
35	Sump at Waste Acid Pump P-121
37	Incinerator Feed Pump P-148
38	Incinerator Feed Pump P-149
40	Monomer Column Bottoms Pump P-154
41	Monomer Column Bottoms Pump P-155
43	Equalization Feed Tank V-103
44	Equalization Feed Tank V-104
45	Neutralization Tank 1

46	Neutralization Tank 2
47	Neutralization Tank 3
54	Final pH Adjustment Sump
59	Spent Antimony Catalyst Tank 3119
60	Portable Spent Antimony Catalyst Tank 1
61	Portable Spent Antimony Catalyst Tank 2
62	Antimony Scrubber Water Tank
63	Isotron Cooling Tower Basin
64	Kynar Cooling Tower Basin
65	Tetran Cooling Tower Basin
66	H2SO4 Spill Containment Pond
67	HCl Spill Containment Pond
68	Plant Laboratory Sump
69	Tetran Incinerator
70	Earthen Containment Dike Isotron 142b Incinerator
76	F-134a Waste NaOH Tanks
77	F-134a Waste Acid Tanks
78	F-134a Storm Water Storage Tank
79	F-134a Thermal Oxidizer
80	HF Tank Farm Sump
81	Wastewater Diversion pH Sump



82	Sewer Lift Station – East End
83	Permanent Decon Pad
84	Dumpster Collection Area
85	Gasholder
86	P&L Shot Blaster Dust Collector Dumpster
87	Alumina Regeneration System @K-71
88	Primary HF Lagoon – West
91	<i>AWD System</i>
92	Chlor-Caustic Salt Pad
93	Former Chlorate Saturation Pit
94	Forane Neutralization
<b>AOC ID</b>	<b>AOC Name</b>
B	Antimony Catalyst Spill Area
C	Carbon Tetrachloride Spill Area
D	Former Chlor-Caustic Process Area

***SWMUs and AOCs Identified for Investigation***

<b>SWMU ID</b>	<b>SWMU Name</b>
1	Lower Lagoon
2	Landfill Disposal Area 1
3	Landfill Disposal Area 2

5	Old HF Lagoon 1
6	Old HF Lagoon 2
8	Superstar Pit 2
10	Isotron Lagoon Discharge Ditch
15	Chlorate Lagoon
17	North Canal
25	Burning Pit 1
26	Burning Pit 2
27	Burning Pit 3
51	HF Wastewater Trench
52	HF Neutralization Sump 1
53	HF Neutralization Sump 2
55	Final pH Adjustment Ditch
56	Drum Storage Area
57	Gypsum Pit
58	Clarifier Sump
71	Antimony Pentachloride Spill Areas
90	Bean Wash Area
95	Underground Chemical Sewer System
96	Historical Sedimentation Basin
97	Former Wastewater Conveyance

AOC	AOC Name
E	Tetran Process Area
F	Forane Area Stations
G	K-97 Truck Unloading
H	Truck Unloading @2201 Tank
I	Loading/Unloading Stations 38, 39, 40, 41 and 42
J	Mercury Release Area 1
K	Mercury Release Area 2

***SWMUs and AOCs Identified for Interim Measures***

<b>SWMU ID</b>	<b>SWMU Name</b>
42	Acid Sump V-1
48	Neutralization Pump Tank
49	Old Isotron Neutralization Tank 1
50	Old Isotron Neutralization Tank 2
74	Lindane Process Area
<b>AOC</b>	<b>AOC Name</b>
A	Groundwater Contamination

***SWMUs Identified as Regulated Units (Closed and Operating)***

9	Isotron Lagoon (Closed)
11	Final Fluoride Lagoon (Closed)
12	Chlor-Caustic Lagoon 2 (Closed)
13	Chlor-Caustic Lagoon 1 (Closed)
14	Chlor-Caustic Lagoon 3 (Closed)
22	West Pond (Closed)
23	Gypsum Fill (Closed)
24	East Pond (Closed)
28	Isotron 142b Incinerator
29	Waste Hold Tank V-119
30	143a Hold Tank V-121
32	Quench Tank TK-114
33	Incinerator Sump VT-401
36	Packed Tower Scrubber T-104
39	Recycle Column Bottoms Tank V-229
75	F-134 Waste Hold Tank V-6103
89	Waste Hold Tank V-119

*Footnote* – The SWMUs and AOCs listed are consistent with the listing in the 2007 Permit. The site investigations have been completed, including the Sitewide RFI, and the CMS has been prepared and submitted. However, to date no additional approvals for SWMUs or AOCs proposed for No Further Action and no approval on areas identified for Corrective Action have been received, so the lists have not been modified.

**Table 2a. SWMUs with Detected Concentrations Above Residential RSL, but Below Industrial RSLs**

<b>SWMU ID</b>	<b>SWMU Name</b>
9	Isotron Lagoon
19	New HF Lagoon West
52	HF Neutralization Sump 1
53	HF Neutralization Sump 2
96	Historical Sedimentation Basin
AOC E	Tetran Process Area

**Table 2b. SWMUs with Detected Concentrations Above Industrial RSLs**

<b>SWMU ID</b>	<b>SWMU Name</b>
1	Lower Lagoon
2	Landfill Disposal Area 1
3	Land fill Disposal Area 2
5	Old HF Lagoon 1
6	Old HF Lagoon 2
10	Isotron Lagoon Discharge Ditch
15	Chlorate Lagoon
17	North Canal
25	Burn Pit 1
26	Burn Pit 2

27	Burn Pit 3
42	Acid Sump V-1
48	Neutralization Pump Tank
49	Old Isotron Neutralization Tank 1
50	Old Isotron Neutralization Tank 2
51	HF Wastewater Trench
55	Final pH Adjustment Ditch
56	Drum Storage Area
71	Antimony Pentachloride Spill Areas
74	Lindane Process Area
90	Bean Wash Area
95	Underground Chemical Sewer System
97	Former Wastewater Conveyance
AOC F	Truck and Railcar Loading/Unloading Stations (Forane)
AOC G	K-97 Truck Unloading (station 18)
AOC I	Benzene/Methanol Unloading Station at SWMU 74
AOC J	Mercury Release Area 1
AOC K	Mercury Release Area 2

**Appendix 1.2**

**SWMUs Identified as Requiring Land Use Controls**

9	Forane Lagoon (formerly named Isotron Lagoon)
11	Final Fluoride Lagoon
12, 13, and 14	Chlor-Caustic Closure Cell
22, 23, and 24	Gypsum Fill Area

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## Appendix 2

### RCRA FACILITY INVESTIGATION (RFI) PLANS

#### I. RFI WORKPLAN REQUIREMENTS

The Permittee shall prepare a RCRA Facility Investigation (RFI) workplan that meets the requirements of Part IV of this document. This attachment is provided as guidance for the development of the RFI workplan.

#### A. Project Management Plan

The Permittee shall prepare a Project Management Plan which will include a discussion of the technical approach, schedules, and personnel. The Project Management Plan will also include a description of qualifications of personnel performing or directing the RFI, including contractor personnel. This plan shall also document the overall management approach to the RCRA Facility Investigation.

#### B. Sampling and Analysis Plan(s)

The Permittee shall prepare a plan to document all monitoring procedures and sample analysis performed during the investigation to characterize the environmental setting, source, and releases of hazardous constituents, so as to ensure that all information and data are valid and properly documented. The Sampling Strategy and Procedures shall be in accordance with Characterization of Hazardous Waste Sites A Methods Manual: Volume II. Available Sampling Methods, EPA-600/4-84-076, or EPA Region IV Engineering Support Branch's Standard Operating Procedure and Quality Assurance Manual (SOP). Any deviations from these references must be requested by the applicant and approved by the Division. The Sampling and Analysis Plan must specifically discuss the following unless the EPA-600/4-84-076 or SOP procedures are specifically referenced.

##### 1. Sampling Strategy

The sampling section of the Sampling and Analysis Plan shall be at a minimum discuss:

- a. Selecting appropriate sampling locations, depths, etc.;
- b. Obtaining all necessary Ancillary data;
- c. Determining conditions under which sampling should be conducted;
- d. Determining which media are to be sampled (e.g., groundwater, air, soil, sediment, etc.) and the parameters to be sampled for;
- e. Selecting the frequency of sampling and length of sampling period;
- f. Selecting the types of samples (e.g., composites vs. grabs) and number of samples to be collected.

##### 2. Sampling Procedures



- a. Documenting field sampling operations and procedures, including
  - i) Documentation of procedures for preparation of reagents or supplies which become an integral part of the sample (e.g., filters, preservatives, and absorbing reagents);
  - ii) Procedures and forms for recording the exact location and specific considerations associated with sample acquisition;
  - iii) Documentation of specific sample preservation method;
  - iv) Calibration of field instruments;
  - v) Submission of field-biased blanks, where appropriate;
  - vi) Potential interferences present at the facility;
  - vii) Field equipment listing and sampling containers;
  - viii) Sampling order; and
- b. Selecting appropriate sample containers;
- c. Sampling preservation; and
- d. Chain-of-Custody, including:
  - i) Standardized field tracking reporting forms to establish sample custody in the field prior to shipment; and
  - ii) Pre-prepared sample labels containing all information necessary for effective sample tracking.

### 3. Sampling Procedures

Sample Analysis shall be conducted in accordance with SW-846: "Test Methods for Evaluating Solid Waste – Physical/Chemical Methods." The sample analysis section of the Sampling and Analysis Plan Shall specify the following:

- a. Chain-of Custody procedures, including:
  - i) Identification of a responsible party to act as sampling custodian at the laboratory facility authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;
  - ii) Provision for a laboratory sample custody log consisting of serially numbered standard lab-tracking report sheets; and

- iii) Specification of laboratory sample custody procedures for sample handling, storage, and disbursement for analysis.
- b. Sample storage;
- c. Sample preparation methods;
- d. Analytical procedures, including:
  - i) Scope and application of the procedure;
  - ii) Sample matrix
  - iii) Potential interferences;
  - iv) Precision and accuracy of the methodology; and
  - v) Method detection limits.
- e. Calibration procedures and frequency;
- f. data reduction, validation and reporting;
- g. Internal quality control checks, laboratory performance and systems audits and frequency, including:
  - i) Method blank(s);
  - ii) Laboratory control sample(s);
  - iii) Calibration check sample(s);
  - iv) Replicate Sample(s);
  - v) Matrix-spiked sample(s);
  - vi) Control charts;
  - vii) Surrogate sample(s);
  - viii) Zero and span gases; and
  - ix) Reagent quality control checks.
- h. Preventive maintenance procedures and schedules;
- i. Corrective action (for laboratory problems);
- j. Turnaround time.

## C. Data Management Plan

The Permittee shall develop and initiate a Data Management Plan to document and track investigation data and results. This plan shall identify and set up data documentation materials and procedures, project file requirements, and project-related progress reporting procedures and documents. The plan shall also provide the format to be used to present the raw data and conclusions of the investigation.

### 1. Data Record

The data record shall include the following:

- a. Unique sample or field measurements code;
- b. Sampling or field measurement location and sample or measurement type;
- c. Sampling or field measurement raw data;
- d. Laboratory analysis ID number;
- e. Property or component measured; and
- f. Result of analysis (e.g., concentration).

### 2. Tabular Displays

The following data shall be presented in tabular displays:

- a. Unsorted (raw) data;
- b. Results for each medium, or for each constituent monitored;
- c. Data reduction for statistical analysis, as appropriate;
- d. Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and
- e. Summary data

### 3. Graphical Displays

The following data shall be presented in graphical formats (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transects, three dimensional graphs, etc.):

- a. Display sampling location and sampling grid;
- b. Indicate boundaries of sampling area, and area where more data are required;
- c. Display geographical extent of contamination;

- d. Illustrate changes in concentration in relation to distances from the source, time, depth or other parameter; and
- e. Indicate features affecting intramedia transport and show potential receptors.

## II. RCRA FACILITY INVESTIGATION (RFI) REQUIREMENTS

### RCRA Facility Investigation:

The Permittee shall conduct those investigations necessary to: characterize the facility (Environmental Setting); define the source (Source Characterization); define the degree and extent of release of hazardous constituents (Contamination Characterization); and identify actual or potential receptors.

The investigations should result in data of adequate technical content and quality to support the development and evaluation of the corrective action plan if necessary. The information contained in RCRA Part B permit Application and/or RCRA 3019 Exposure Information Report may be referenced as appropriate.

All sampling and analyses shall be conducted in accordance with the Sampling and Analysis Plan. All sampling locations shall be documented in a log and identified on a detailed site map.

### A. Environmental Setting

The Permittee shall collect information to supplement and/or verify Part B information on the environmental setting at the facility. The Permittee shall characterize the following as they relate to identified sources, pathways and areas of releases of hazardous constituents from Solid Waste Management Units.

#### 1. Hydrogeology

The Permittee shall conduct a program to evaluate hydrogeologic conditions at the facility. This program shall provide the following information:

- a. A description of the regional and facility specific geologic and hydrogeologic characteristics affecting ground-water flow beneath the facility, including:
  - i) Regional and facility specific stratigraphy: description of strata including strike and dip, identification of stratigraphic contacts:
  - ii) Structural geology: description of local and regional structural features (e.g., folding, faulting, tilting, jointing, etc.);
  - iii) Depositional history;
  - iv) Regional and facility specific ground-water flow patterns; and

- v) Identification and characterization of areas and amounts of recharge and discharge.
- b. An analysis of any topographic features that might influence the groundwater flow system.
- c. Based on field data, tests, and cores, a representative and accurate classification and description of the hydrogeologic units which may be part of the migration pathways at the facility (i.e., the aquifers and any intervening saturated and unsaturated units), including:
  - i) Hydraulic conductivity and porosity (total and effective);
  - ii) Lithology, grain size, sorting, degree of cementation;
  - iii) An interpretation of hydraulic interconnections between saturated zones; and
  - iv) The attenuation capacity and mechanisms of the natural earth materials (e.g., ion exchange capacity, organic carbon content, mineral content etc.).
- d. Based on data obtained from groundwater monitoring wells and piezometers installed upgradient and downgradient of the potential contaminant source, a representative description of water level or fluid pressure monitoring including:
  - i) Water-level contour and/or potentiometric maps;
  - ii) Hydrologic cross sections showing vertical gradients;
  - iii) The flow system, including the vertical and horizontal components of flow; and
  - iv) Any temporal changes in hydraulic gradients, for example, due to tidal or seasonal influences.
- e. A description of manmade influences that may affect the hydrology of the site, indentifying:
  - i) Local water-supply and production wells with an approximate schedule of pumping; and
  - ii) Manmade hydraulic structures (pipelines, french drains, ditches, etc.).

## 2. Soils

The Permittee shall conduct a program to characterize the soil and rock units above the water table in the vicinity of contaminant release(s). Such characterization may include, but not be limited to, the following types of information as appropriate:

- a. Surface soil distribution;
- b. Soil profile, including ASTM classification of soils;
- c. Transects of soil stratigraphy;

- d. Hydraulic conductivity (saturated and unsaturated);
- e. Relative permeability;
- f. Bulk density;
- g. Porosity;
- h. Soil sorptive capacity;
- i. Cation exchange capacity (CEC);
- j. Soil organic content;
- k. Soil pH;
- l. Particle size distribution
- m. Depth of water table;
- n. Moisture content;
- o. Effect of stratification on unsaturated flow;
- p. Infiltration;
- q. Evapotranspiration;
- r. Storage capacity;
- s. Vertical flow rate; and
- t. Mineral content.

### 3. Surface Water and Sediment

The Permittee shall conduct a program to characterize the surface water bodies in the vicinity of the facility. Such characterization may include, but not be limited to, the following activities and information:

- a. Description of the temporal and permanent surface water bodies including:
  - i) For lakes and estuaries: location, elevation, surface area, inflow, outflow, depth, temperature stratification, and volume;
  - ii) For impoundment: location, elevation, surface area, depth, volume, freeboard, and construction and purpose;
  - iii) For streams, ditches, and channels: location, elevation, flow, velocity, depth, width, seasonal fluctuations, flooding tendencies (i.e., 100 year event), discharge points(s), and general contents
  - iv) Drainage patterns; and
  - v) Evapotranspiration.
- b. Description of the chemistry of the natural surface water and sediments: This includes determining the pH, total dissolved solids, total suspended solids, biological oxygen demand, alkalinity, conductivity, dissolved oxygen profiles, nutrients (NH<sub>3</sub>, NO<sub>3</sub>-/NO<sub>2</sub>-, PO<sub>3</sub>-3); chemical oxygen demand, total organic carbon, specific contaminant concentrations, etc.
- c. Description of sediment characteristics including:

- i) Deposition area;
- ii) Thickness profile; and
- iii) Physical and chemical parameters (e.g., grain size, density, organic carbon content, ion exchange capacity, pH, etc.)

#### 4. Air

The Permittee shall provide information characterizing the climate in the vicinity of the facility. Such information may include, but not be limited to:

- a. A description of the following parameters:
  - i) Annual and monthly rainfall averages;
  - ii) Monthly temperature averages and extremes;
  - iii) Wind speed and direction;
  - iv) Relative humidity/dew point;
  - v) Atmospheric pressure;
  - vi) Evaporation data;
  - vii) Development of inversions; and
  - viii) Climate extremes that have been known to occur in the vicinity of the facility, including frequency of occurrence. (i.e. Hurricanes)
- b. A description of topographic and manmade features which affect air flow and emission patterns, including:
  - i) Ridges, hills or mountain areas;
  - ii) Canyons or valleys;
  - iii) Surface water bodies (e.g., rivers, lakes, bays, etc.);
  - iv) Buildings.

## B. Source Characterization

For those sources from which releases of hazardous constituents have been detected the Permittee shall collect analytical data to completely characterize the wastes and the areas where wastes have been placed, to the degree that is possible without undue safety risks, including: type, quantity; physical form; disposition (containment or nature of deposits); and facility characteristics affecting release (e.g., facility security, and engineering barriers). This shall include quantification of the following specific characteristics, at each source area:

### 1. Unit/Disposal Area Characteristics:

- a. Location of unit/disposal area;
- b. Type of unit/disposal area;
- c. Design features;
- d. Operating practices (past and present);
- e. Period of operation;
- f. Age of unit/disposal area;
- g. General physical conditions; and
- h. Method used to close the unit/disposal area.

### 2. Waste Characteristics:

- a. Type of wastes placed in the unit;
  - i) Hazardous classification (e.g., flammable, reactive, corrosive, oxidizing or reducing agent);
  - ii) Quantity; and
  - iii) Chemical composition
- b. Physical and chemical characteristics such as;
  - i) Physical form (solid, liquid, gas);
  - ii) Physical description (e.g., powder, oily sludge);
  - iii) Temperature;
  - iv) PH;
  - v) General chemical class (e.g., acid, base, solvent);
  - vi) Molecular Weight;
  - vii) Density;



- viii) Boiling point;
  - ix) Viscosity;
  - x) Solubility in water;
  - xi) Cohesiveness of the Waste; and
  - xii) Vapor pressure.
- c. Migration and dispersal characteristics of the waste such as;
- i) Sorption capability;
  - ii) Biodegradability, bioconcentration, biotransformation;
  - iii) Photodegradation rates;
  - iv) Hydrolysis rates; and
  - v) Chemical transformations.

The Permittee shall document the procedures used in making the above determinations.

#### C. Characterization of Releases of Hazardous Constituents

The Permittee shall collect analytical data on groundwater, soils, surface water, sediment, and subsurface gas contamination in the vicinity of the facility in accordance with the sampling and analysis plan as required above. These data shall be sufficient to define the extent, origin, direction, and rate of movement of contamination. Data shall include time and location of sampling, media sampled, concentrations found, conditions during sampling, and the identity of the individuals performing the sampling and analysis. The Permittee shall address the following types of contamination at the facility:

##### 1. Groundwater Contamination

The Permittee shall conduct a groundwater investigation to characterize any plumes of contamination detected at the facility. This investigation shall at a minimum provide the following information:

- a. A description of the horizontal and vertical extent of any plume(s) of hazardous constituents originating from the facility;
- b. The horizontal and vertical direction of contamination movement;
- c. The velocity of contaminant movement;

- d. The horizontal and vertical concentration profiles of hazardous constituents in the plume(s);
- e. An evaluation of factors influencing the plume movement; and
- f. An extrapolation of future contaminant movement.

The Permittee shall document the procedures used in making the above determinations (e.g., well design, well construction, geophysics, modeling, etc.).

## 2. Soil Contamination

The Permittee shall conduct an investigation to characterize the contamination of the soil and rock units above the saturated zone in the vicinity of any contaminant release. The investigation may include the following information:

- a. A description of the vertical and horizontal extent of contamination;
- b. A description of appropriate contaminant and soil chemical properties within the contaminant source area and plume. This may include contaminant solubility, speciation, adsorption, leachability, exchange capacity, biodegradability, hydrolysis, photolysis, oxidation and other factors that might affect contaminant migration and transformation;
- c. Specific contaminant concentration;
- d. The velocity and direction of contamination movement; and
- e. An extrapolation of future contaminant movement.

The Permittee shall document the procedures used in making the above determinations.

## 3. Surface Water and Sediment Contamination

The Permittee shall conduct a surface water investigation to characterize contamination in surface water bodies resulting from releases of hazardous constituents at the facility.

The investigation may include, but not be limited to, the following information:

- a. A description of the horizontal and vertical extent of any plume(s) originating from the facility, and the extent of contamination in underlying sediments;
- b. The horizontal and vertical direction of contaminant movement;
- c. The contaminant velocity;
- d. An evaluation of the physical, biological and chemical factors influencing contaminant movement;

- e. An extrapolation of future contaminant movement; and
- f. A description of the chemistry of the contaminated surface waters and sediments. This includes determining the pH, total dissolved solids, specific contaminant concentrations, etc.

#### 4. Air Contamination

The Permittee shall conduct an investigation to characterize gaseous releases of hazardous constituents into the atmosphere or any structures or buildings. This investigation may provide the following information:

- a. A description of the horizontal and vertical direction and velocity of contaminant movement;
- b. The rate and amount of the release; and
- c. The chemical and physical composition of the contaminant(s) released, including horizontal and vertical concentration profiles.

The Permittee shall document the procedures used in making the above determinations.

#### D. Potential Receptors

The Permittee shall collect data describing the human populations and environmental systems that are susceptible to contaminant exposure from the facility. Chemical analysis of biological samples and/or data on observable effects in ecosystems may also be obtained as appropriate. The following characteristics shall be identified:

1. Current local uses and planned future uses of groundwater:
  - a. Type of use (e.g., drinking water source: municipal or residential, agricultural, domestic/non-potable, and industrial); and
  - b. Location of groundwater users, to include withdrawal and discharge wells, within one mile of the impacted area.

The above information should also indicate the aquifer or hydrogeologic unit used and/or impacted from each item.

2. Current local uses and planned future uses of surface waters directly impacted by the facility:
  - a. Domestic and municipal (e.g., potable and lawn/gardening watering);
  - b. Recreational (e.g., swimming, fishing);
  - c. Agricultural;

- d. Industrial; and
  - e. Environmental (e.g., fish and wildlife propagation).
3. Human use of or access to the facility and adjacent lands, including but not limited to:
- a. Recreation;
  - b. Hunting;
  - c. Residential
  - d. Commercial; and
  - e. Relationship between population locations and prevailing wind direction.
4. A general description of the biota in surface water bodies on, adjacent to, or affected by the facility.
5. A general description of the ecology within and adjacent to the facility.
6. A general demographic profile of the people who use or have access to the facility and adjacent land, including, but not limited to: age; sex; and sensitive subgroups.
7. A description of any known or documented endangered or threatened species near the facility.

## Appendix 3

### CORRECTIVE MEASURE STUDY (CMS) PLAN OUTLINE

- I. Identification and Development of the Corrective Measure Alternatives
  - A. Description of Current Situation
  - B. Establishment of Corrective Action Objectives
  - C. Screening of Corrective Measures Technologies
  - D. Identification of the Corrective Measure Alternatives
- II. Evaluation of the Corrective Measure Alternatives
  - A. Technical/Environmental/Human Health/Institutional
  - B. Cost Estimate
- III. Justification and Recommendation of the Corrective Measure or Measures
  - A. Technical
  - B. Human Health
  - C. Environmental
- IV. Reports
  - A. Draft
  - B. Final
  - C. Public Review and Final Selection of Corrective Measure

#### I. IDENTIFICATION AND DEVELOPMENT OF THE CORRECTIVE MEASURES ALTERNATIVES

Based on the results of the RCRA Facility Investigation and consideration of the identified potential corrective measure technologies, the Permittee shall identify, screen and develop the alternatives for removal, containment, treatment and/or other remediation of the contamination based on the objectives established for the corrective action.

##### A. Description of Current Situation

The Permittee shall submit an update to the information describing the current situation at the facility and the known nature and extent of the contamination as documented by the RCRA Facility Investigation (RFI) Report. The Permittee shall provide an update to information presented in the RFI regarding previous response activities and interim measures which have or are being implemented at the facility. The Permittee shall also make a facility specific statement of the purpose for the response, based on the results of the RFI. The statement of purpose should identify the actual or potential exposure pathways that should be addressed by corrective measures.

## B. Establishment of Corrective Action Objectives

The Permittee shall propose facility-specific objectives for the corrective action. These objectives shall be based on public health and environmental criteria, information gathered during the RFI, EPA guidance, and the requirements of any applicable Federal statutes. At a minimum, all corrective actions concerning ground water releases from regulated units must be consistent with, and as stringent as, those required under 401 KAR 34:060, Section 11 (eff. 3-12-97).

## C. Screening of Corrective Measure Technologies

The Permittee shall review the results of the RFI and assess the technologies which are applicable at the facility. The Permittee shall screen the corrective measure technologies to eliminate those that may prove not to be feasible to implement, that rely on technologies unlikely to perform satisfactorily or reliably, or that do not achieve the corrective measure objective within a reasonable time period. This screening process focuses on eliminating those technologies which have severe limitations for a given set of waste and site-specific conditions. The screening step may also eliminate technologies based on inherent technology limitations.

Site, waste, and technology characteristics which are used to screen inapplicable technologies are described in more detail below:

### 1. Site Characteristics

Site data should be reviewed to identify conditions that may limit or promote the use of certain technologies. Technologies whose use is clearly precluded by site characteristics should be eliminated from further consideration.

### 2. Waste Characteristics

Identification of waste characteristics that limit the effectiveness or feasibility of technologies is an important part of the screening process. Technologies clearly limited by these waste characteristics should be eliminated from consideration. Waste characteristics particularly affect the feasibility of in-situ methods, direct treatment methods, and land disposal (on/off-site).

### 3. Technology Limitations

During the screening process, the level of technology development, performance record, and inherent construction, operation, and maintenance problems should be identified for each technology considered. Technologies that are unreliable, perform poorly, or are not fully demonstrated may be eliminated in the screening process. For example, certain treatment methods have been developed to a point where they can be implemented in the field without extensive technology transfer or development.

## D. Identification of the Corrective Measure Alternatives

The Permittee shall develop the Corrective measure alternatives based on the corrective action objectives and analysis of potential corrective measure technologies. The Permittee shall rely on engineering practice to determine which of the previously identified technologies appear most suitable for the site. Technologies

can be combined to form the overall corrective action alternatives. The alternatives developed should represent a workable number of option(s) that each appear to adequately address all site problems and corrective action objectives. Each alternative may consist of an individual technology or a combination of technologies. The Permittee shall document the reasons for excluding technologies. The CMS should focus on realistic remedies that are site specific and tailored in scope and substance based on the extent, nature and complexity of releases and contamination.

## II. EVALUATION OF THE CORRECTIVE MEASURE ALTERNATIVES

The Permittee shall describe each corrective measure alternative that passes through the initial screening and evaluate each corrective measure alternative and its components. The evaluation shall be based on technical, environmental, human health and institutional concerns. The Permittee shall also develop cost estimates of each corrective measure.

### A. Technical/Environmental/Human Health/Institutional

The Permittee shall provide a description of each corrective measure alternative which includes but is not limited to the following: preliminary process flow sheets; preliminary sizing and type of construction for buildings and structures; and rough quantities of utilities required. The Permittee shall evaluate each alternative in the four following areas:

#### 1. Technical

The Permittee shall evaluate each corrective measure alternative based on performance, reliability, implementability and safety.

- a. The Permittee shall evaluate performance based on the effectiveness and useful life of the corrective measure:
  - i. Effectiveness shall be evaluated in terms of the ability to perform intended functions, such as containment, diversion, removal, destruction, or treatment. The effectiveness of each corrective measure shall be determined either through design specifications or by performance evaluation. Any specific waste or site characteristics which could potentially impede effectiveness shall be considered. The evaluation should also consider the effectiveness of combinations of technologies;
  - ii. Useful life is defined as the length of time the level of desired effectiveness can be maintained. Most corrective measure technologies, with the exception of destruction, deteriorate with time. Often, deterioration can be slowed through proper system operation and maintenance, but the technology eventually may require replacement. Each corrective measure shall be evaluated in terms of the projected service lives of its component technologies. Resource availability in the future life of the technology, as well as appropriateness of the technologies, must be considered in estimating the useful life of the project.
- b. The Permittee shall provide information on the reliability of each corrective measure including their operation and maintenance requirements and their demonstrated reliability:

- i. Operation and maintenance requirements include the frequency and complexity of necessary operation and maintenance. Technologies requiring frequent or complex operation and maintenance activities should be regarded as less reliable than technologies requiring little or straightforward operation and maintenance. The availability of labor and materials to meet these requirements shall also be considered;
    - ii. Demonstrated and expected reliability is a way of measuring the risk and effect of failure. The Respondent should evaluate whether the technologies have been used effectively under analogous conditions; whether the combination of technologies have been used together effectively; whether failure of any one technology has an immediate impact on receptors; and whether the corrective measure has the flexibility to deal with uncontrollable changes at the site.
  - c. The Permittee shall describe the implementability of each corrective measure including the relative ease of installation (constructability) and the time required to achieve a given level of response:
    - i. Constructability is determined by conditions both internal and external to the facility conditions and include such items as location of underground utilities, depth to water table, heterogeneity of subsurface materials, and location of the facility (i.e., remote location vs. a congested urban area). The Permittee shall evaluate what measures can be taken to facilitate construction under these conditions. External factors which affect implementation include the need for special permits or agreements, equipment availability, and the location of suitable off-site treatment or disposal facilities; and
    - ii. Time has two components that shall be addressed: the time it takes to implement a corrective measure and the time it takes to actually see beneficial results. Beneficial results are defined as the reduction of contaminants to some acceptable, pre-established level.
  - d. The Permittee shall evaluate each corrective measure alternative with regard to safety. This evaluation shall include threats to the safety of nearby communities and environments as well as those to workers during implementation. Factors to consider are fire, explosion, and exposure to hazardous substances.

## 2. Environmental

The Permittee shall perform an Environmental Assessment for each alternative. The Environmental Assessment shall focus on the facility conditions and pathways of contamination actually addressed by each alternative. The Environmental Assessment for each alternative will include, at a minimum, an evaluation of: the short-term and long-term beneficial and adverse effects of the response alternative; any adverse effects on environmentally sensitive areas; and an analysis of measures to mitigate adverse effects.

## 3. Human Health

The Permittee shall assess each alternative in terms of the extent to which it mitigates short term and long term potential exposure to any residual contamination and protects human health both during and after implementation of the corrective measure. The assessment will describe the concentrations and characteristics of the contaminants onsite, potential exposure routes, and potentially affected population.



Each alternative will be evaluated to determine the level of exposure to contaminants and the reduction over time. For management of mitigation measures, the relative reduction of impact will be determined by comparing residual levels of each alternative with existing criteria, standards, or guidelines acceptable to the Kentucky Division of Waste Management.

#### 4. Institutional

The Permittee shall assess relevant institutional needs for each alternative. Specifically, the effects of Federal, state and local environmental and public health standards, regulations, guidance, advisories, ordinances, or community relations on the design, operation, and timing of each alternative. If the selected remedy is capping and closure in place, a notation must be made in the land deed.

#### B. Cost Estimate

The Permittee shall develop an estimate of the cost of each corrective measure alternative (and for each phase or segment of the alternative). The cost estimate shall include both capital and operation and maintenance costs.

##### 1. Capital costs consist of direct (construction) and indirect (nonconstruction and overhead) costs.

###### a. Direct capital costs include:

- i Construction costs: Costs of materials, labor (including fringe benefits and worker's compensation), and equipment required to install the corrective measure.
- ii Equipment costs: Costs of treatment, containment, disposal and/or service equipment necessary to implement the action; these materials remain until the corrective action is complete;
- iii Land and site development costs: Expenses associated with purchase of land and development of existing property; and
- iv Buildings and services costs: Costs of process and nonprocess buildings, utility connections, purchased services, and disposal costs.

###### b. Indirect capital costs include:

- i Engineering expenses: Costs of administration, design, construction supervision, drafting, testing of corrective measure alternatives;
- ii Legal fees and license or permit costs: Administrative and technical costs necessary to obtain licenses and permits for installation and operation;
- iii Startup and shakedown costs: Costs incurred during corrective measure startup; and
- iv Contingency allowances: Funds to cover costs resulting from unforeseen circumstances, such as adverse weather conditions, strikes, and inadequate facility characterization.

2. Operation and maintenance costs are post-construction costs necessary to ensure continued effectiveness of a corrective measure. The Permittee shall consider the following operation and maintenance cost components:
  - a. Operating labor costs: Wages, salaries, training, overhead, and fringe benefits associated with the labor needed for post construction operations;
  - b. Maintenance materials and labor costs: Costs for labor, parts, and other resources required for routine maintenance of facilities and equipment;
  - c. Auxiliary materials and energy: Costs of such items as chemicals and electricity for treatment plant operations, water and sewer service, and fuel;
  - d. Purchased services: Sampling costs, laboratory fees, and professional fees for which the need can be predicted;
  - e. Disposal and treatment costs: Cost of transporting, treating, and disposing of waste materials, like treatment plant residues, generated during operations;
  - f. Administrative costs: Costs associated with administration of corrective measure operation and maintenance not included under other categories;
  - g. Insurance, taxes, and licensing costs: Costs of such items as liability and sudden accident insurance; real estate taxes on purchased land or right-of-way; licensing fees for certain technologies; and permit renewal and reporting costs;
  - h. Maintenance reserve and contingency funds: Annual payments into escrow funds to cover:
    - 1) costs of anticipated replacement or rebuilding of equipment;
    - 2) any large unanticipated operation and maintenance costs; and
  - i. Other costs: Items that do not fit any of the above categories.

### III. JUSTIFICATION AND RECOMMENDATION OF THE CORRECTIVE MEASURE OR MEASURES

The Permittee shall justify and recommend a corrective measure alternative using technical, human health, and environmental criteria. This recommendation shall include summary tables which allow the alternative or alternatives to be understood easily. Trade-offs among health risks, environmental effects, and other pertinent factors shall be highlighted. The Director will select the corrective measure alternative or alternatives to be implemented based on the results obtained from work completed under Section II and III. At a minimum, the following criteria will be used to justify the final corrective measure or measures.

#### A. Technical

1. Performance-corrective measure or measures which are most effective at performing their intended functions and maintaining the performance over extended periods of time will be given preference;

2. Reliability-corrective measure or measures which do not require frequent or complex operation and maintenance activities and that have proved effective under waste and facility conditions similar to those anticipated will be given preference;
3. Implementability-corrective measure or measures which can be constructed and operating to reduce levels of contamination to attain or exceed applicable standards in the shortest period of time will be preferred; and
4. Safety-corrective measure or measures which pose the least threat to the safety of nearby residents and environments as well as workers during implementation will be preferred.

B. Human Health

The corrective measure(s) must comply with existing U.S. EPA criteria, standards, or guidelines for the protection of human health. Corrective measures which provide the minimum level of exposure to contaminants and the maximum reduction in exposure with time are preferred.

C. Environmental

The corrective measure(s) posing the least adverse impact (or greatest improvement) over the shortest period of time on the environment will be favored.

IV. REPORTS

The Permittee shall prepare a Corrective Measure Study Report presenting the results obtained from Sections I through III and recommending a corrective measure alternative. Copies of the preliminary report shall be provided by the Permittee to the Director for review and approval.

A. Draft

The Report shall at a minimum include:

1. A description of the facility;
  - a. Site topographic map & preliminary layouts.
2. A summary of the corrective measure(s) and rationale for selection;
  - a. Description of the corrective measure(s) and rationale for selection;
  - b. Performance expectations;
  - c. Preliminary design criteria and rationale;
  - d. General operation and maintenance requirements; and
  - e. Long-term monitoring requirements.

3. A summary of the RCRA Facility Investigation and impact on the selected corrective measure or measures;
  - a. Field studies (groundwater, surface water, soil, air); and
  - b. Laboratory studies (bench scale, pick scale).
4. Design and Implementation Precautions;
  - a. Special technical problems;
  - b. Additional engineering data required;
  - c. Permits and regulatory requirements;
  - d. Access, easements, right-of-way;
  - e. Health and safety requirements; and
  - f. Community relations activities.
5. Cost Estimates and Schedules;
  - a. Capital cost estimate;
  - b. Operation and maintenance cost estimate; and
  - c. Project schedule (design, construction, operation).

Copies of the draft shall be provided by the Permittee to the Kentucky Division of Waste Management.

B. Final

The Permittee shall finalize the Corrective Measure Study Report incorporating comments received from the Kentucky Division of Waste Management on the Draft Corrective Measure Study Report. The report shall become final upon approval by the Director.

C. Public Review and Final Selection of Corrective Measures

Upon receipt of the Final Corrective Measure Study Report, the Kentucky Division of Waste Management shall announce its availability to the public for review and comment. At the end of the comment period, the Director shall review the comments and then inform the Permittee of the final decision as to the approved Corrective Measures to be implemented.

**Appendix 4**

**Corrective Action Schedule of Compliance**

Permit Condition	Event	Due Date
IV.B.1	Notification of Newly Identified SWMUs and AOCs.	Within fifteen (15) days of discovery.
IV.B.2	Assessment Report.	Within ninety (90) days of notification
IV.C.1	Notification for Newly Discovered Releases at Previously Identified SWMUs and AOCs.	Within fifteen (15) days of discovery.
IV.D.1	Confirmatory Sampling Work Plan for SWMUs or AOCs Identified under Permit Condition IV.B.3 and/or IV.C.2	Within forty-five (45) days of notification by the Manager.
IV.D.2	Confirmatory Sampling Work Plan for SWMU(s) of AOC(s) Identified in IV.A.3	Within forty-five (45) days of the effective date of the permit.
IV.D.4	Implementation of Confirmatory Sampling Work Plan	In accordance with the approved CS Work Plan.
IV.B.3, IV.C.2, or IV.D.5	Confirmatory Sampling Report for SWMU(s) and AOC(s)	Within ninety (90) days after receipt of notification by the Division of which SWMUs or AOCs require an RFI.
IV.E	Revised RFI Report	Within thirty (30) days of receipt of the Division's comments on the RFI Report.
IV.E.1.1	RFI Work Plan for SWMU(s) and AOC(s) Identified under Permit Conditions IV.B.3, IV.C.2, and IV.D.5.	Within ninety (90) days after receipt of notification by the Division of which SWMU(s) or AOC(s) require an RFI.
IV.E.1.2	RFI Work Plan for SWMU(s) and AOC(s) Identified under Permit Condition IV.A.4.	Within ninety (90) days of the effective date of this Permit.
IV.E.2	Implementation of RFI Work Plan and Notification of Sampling Activities.	In accordance with the Division's approval letter for the RFI Work Plan. At least two (2) weeks prior to any sampling activity.
IV.E.3	RFI Report.	In accordance with the approved RFI Work Plan.
IV.E.3.1	RFI Progress Reports.	Quarterly, beginning ninety (90) days from the start date specified by the Division <sup>1</sup>
IV.F.1.1	Interim Measures Work Plan.	Within the specified time identified by the Manager.
IV.F.2	Implementation of IM Work Plan.	In accordance with the Division's approval letter for the IM Work Plan.

IV.F.3.1	Interim Measures Progress Reports.	In accordance with the approved Interim Measures Work Plan. <sup>2</sup>
IV.F.3.2	Interim Measures Report.	Within ninety (90) days of completion.
IV.G.1	CMS Work Plan.	Within ninety (90) days of notification by the Division that a CMS is required.
IV.G.2	Implementation of the CMS Work Plan.	According to schedules specified in the approved CMS Work Plan.
IV.G.3	CMS Report.	In accordance with the schedule in the approved CMS Work Plan.
IV.G.3.1	Revised CMS Report.	Within thirty (30) days of receipt of the Division's comments on the CMS Report.
IV.H.2	Statement of Basis.	Within the time frame specified in the letter from the Manager that notifies the Permittee that the CMS Report is approved or within thirty (30) days if a time frame is not provided.
IV.H.4	Demonstration of Financial Assurance.	Within one hundred twenty (120) days after Permit modification for remedy.
IV.I.2	Operations and Maintenance Plan.	[If required] In accordance with the schedule in the approved CMI Work Plan.
IV.I.4	Construction Completion Report.	In accordance with the schedule in the approved CMI Work Plan.
IV.I.6	CMI Progress Reports.	Semi-annually, beginning one hundred eighty (180) days after approval of the CMI Work Plan.
IV.I.7	CMI Report.	Within ninety (90) days of completion of the selected remedy.
IV.L.3	Amendment of Assessment Report, CS Work Plan, or RFI Work Plan that no longer satisfies requirements of 40 CFR Part 264.101 or this Permit.	Within ninety (90) days of determination.
<p>The above reports must be signed and certified in accordance with 401 KAR 39:060 Section 5. <sup>1</sup> Applies to work plan execution that requires more than one hundred eighty (180) days. <sup>2</sup> Applies to work plan execution that requires more than one (1) year.</p>		

**Appendix 5**

*NOTE:* Intergrated Contingency and Response Plan is included as a separate document, and is not included in this package for size considerations.

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**Appendix 6**



MATTHEW G. BEVIN  
GOVERNOR

CHARLES G. SNAVELY  
SECRETARY

**ENERGY AND ENVIRONMENT CABINET**  
Department for Environmental Protection

ANTHONY R. HATTON  
COMMISSIONER

300 SOWER BOULEVARD  
FRANKFORT, KENTUCKY 40601

January 22, 2019

Mr. Greg Watson  
Arkema Inc.  
P O Box 187  
Calvert City, KY 42029

RE: Post-closure Certification  
Arkema Inc., Calvert City, KY  
EPA I.D. #KYD 006 370 159  
Agency Interest #2918

Dear Mr. Watson:

Personnel of the Kentucky Division of Waste Management (KDWM) have completed a review of the Postclosure Certification submitted by Arkema Inc. (Arkema) on February 27, 2017. Condition T 210 of the facility permit stipulated that when Arkema was done using the Forane Lagoon (on top of the existing cap) that grading and cover work would be performed. At the time of submittal, grading and cover work was not complete on top of the closed Forane Lagoon (SWMU 9). Final construction work related to grading and cover was completed in December, 2017. This work was visually inspected and verified by KDWM personnel on May 15, 2018 and Condition T 210 of the permit has been fulfilled. Thus, all work related to the closure of the four land based regulated units is complete.

The Postclosure Certification includes information substantiating that Arkema has conducted 30 years of post-closure activities at the following units:

- 1) Forane Lagoon (SWMU 9)
- 2) Final Fluoride Lagoon (SWMU 11)
- 3) Chlor-Caustic Closure Cell (SWMUs 12, 13 and 14)
- 4) Gypsum Fill (SWMUs 22, 23 and 24)

The post-closure care period being certified began in 1986 and ended on December 31, 2016. The certification is signed, as required, by a registered Professional Engineer. While monitoring and maintenance of the units will continue, KDWM acknowledges that Arkema has performed their post-closure activities in accordance with the Permit and has completed the certification requirement.

KentuckyUnbridledSpirit.com



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If you have any questions regarding this acknowledgement of post-closure certification, feel free to contact Bart Schaffer, P.G., at (502) 782-6443 or at [bart.schaffer@ky.gov](mailto:bart.schaffer@ky.gov).

Sincerely,



April J. Webb, P.E., Manager  
Hazardous Waste Branch

cc: Bob Wright, Arkema  
Keriema Newman, U.S. EPA Region 4

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## **Appendix 8**

### **Subpart BB Master Equipment List**

#### **Methods of Compliance**

- 1 - Daily visual inspection for leaks, spills, fugitive emissions, and signs of tampering as required by 40 CFR 264.347(b) shall be performed. If a potential leak is identified, it shall be repaired on the 5/15 schedule and monitored to confirm it is no longer leaking (< 10,000 ppm).
- 2 - Pressure relief devices in gas/vapor service shall operate with no detectable emissions (< 500 ppm). After each pressure release, they shall be re-monitored within 5 days to confirm no detectable emissions. Liquid pressure relief devices shall be re-monitored within 5 days of a pressure release for <10,000 ppm.
- 4 - These pumps, with no externally actuated shaft penetrating the pump housing shall be monitored annually. If a leak is detected (> or = 500 ppm), it shall be repaired on the 5/15 schedule and monitored to confirm it is no longer leaking.
- 5 - These valves shall be monitored monthly to detect leaks (< or = 10,000 ppm). Any valve that does not leak for two successive months may be monitored quarterly. If a leak is detected (> or = 10,000 ppm), it shall revert to monthly monitoring. After two months without leaking the monitoring may again be quarterly. If a leak is detected, it shall be repaired on the 5/15 schedule and monitored to confirm it is no longer leaking.

#### **Physical State**

LL – Light Liquid

GV – Gas/Vapor

#### **Category**

N – Normal to Monitor

D – Difficult to Monitor

U – Unsafe to Monitor

#### **Class**

Flange – Flange

Valve – Valve

Pump – Pump

Scrcon – Screw Connection

Relief – Pressure Relief Device

**NOTE:** RCRA BB Master Equipment List is included as a separate document, and is not included in this package for size considerations.