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

HAZARDOUS WASTE MANAGEMENT FACILITY PERMIT

University of Louisville Environmental Protection Services Center

1810 Arthur Street, Louisville, Kentucky 40292
38º 13' 14", 85º 45' 8"

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.

Permit Type:	Operating	**EPA I.D. Number:**	KY0-001-012-012
Hazardous Waste Management Units:	Container Storage	**Agency Interest:**	48952
Facility Owner, Operator and Landowner:	University of Louisville	**County:**	Jefferson
Closure Cost Estimate:	$ 524,823	**Permit Fee:**	$ N/A
Post-Closure Amount:	$ N/A		
Sudden Liability Insurance:	$ N/A	**Effective Date:**	Month Day Year
Non-Sudden Liability Insurance:	$ N/A	**Expiration Date:**	Month Day Year

Tammi Hudson
Director
Division of Waste Management
Issued on Month Day Year

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.

SUMMARY OF PERMITTING ACTIONS					
Action Number[1.]	**Type of Actions[2.]**	**Public Notice Date[3.]**	**Issuance Date[4.]**	**Effective Date[5.]**	**Comments[6]**
					None at the time of this permit issuance

[1.] Action number is the same as Permit Modification number.
[2.] Type of Permit Modification issued by the Cabinet.
The different types of Permit Modifications are: Class 1, Class 2 and Class 3.
[3.] Not all Permit Modification is required by **40 CFR Part 124 - Subpart A** to be public noticed.
[4.] Date issued is not required to be the same as the effective date of the modification.
[5.] The effective date of a modification depends on the type of the modification class.
[6.] Brief description of the Permit Modification.

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PART I LEGAL AUTHORITY

PART I
LEGAL AUTHORITY

The terms and conditions of this Permit are applicable to University of Louisville Environmental Protection Services Center under Title 401 KAR Chapters 39 and 40, of the Hazardous Waste Management Regulations of the Kentucky Administrative Regulations (KARs).

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

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 University of Louisville Environmental Protection Services Center**,** hereinafter referred to as the "Permittee", located at 1810 Arthur Street, Louisville, Kentucky.

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 original Permit Application (Part A and Part B Permit Application) for this Permit was submitted to the Division of Waste Management on April 1, 2019. Revisions to the Permit Application were as follows: Revision 1 on December 9, 2020, Revision 2 on December 17, 2021, and Revision 3 on June 1, 2022. The content within Revision 3 is the basis for this Permit 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 incorporated Permit Application is accurate and that the facility will be constructed, maintained, equipped and 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 Permit 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 DATE and shall remain in effect until the specified expiration date DATE, 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.

TABLE I.1
CROSS REFERENCE OF PERMIT ATTACHMENTS

Permit Attachment[1].	Permittee's Permit Application
Attachment A Part A Permit Application	Part A Part A Application
Attachment B Facility Description	Section B Facility Description
Attachment C Waste Analysis Plan	Section C Waste Characteristics
Attachment D Process Information	Section D Process Information
Attachment E Groundwater Monitoring & Corrective Action	Section E Groundwater Monitoring and Corrective Action for Waste Management Units
Attachment F Procedures to Prevent Hazards	Section F Procedures to Prevent Hazards
Attachment G Contingency Plan	Section G Contingency Plan
Attachment H Personnel Training	Section H Personnel Training
Attachment I Closure Plans, Post-Closure Plans & Financial Requirements	Section I Closure Plan, Post-Closure Plan and Financial Requirements
Attachment J Other Federal Laws	Section J Other Federal and State Laws
Attachment K Waste Minimization Plan	Section K Waste Minimization
Attachment L Signature Certification	Section L Permit Application Signatures and Certification

TABLE I.1 CROSS REFERENCE OF PERMIT ATTACHMENTS	
Permit Attachment[1].	**Permittee's Permit Application**

[1] 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 attachments prepared by the Division.

TABLE I.2 CROSS REFERENCE OF CFRs AS ESTABLISHED IN 401 KAR CHAPTER 39		
State Regulation	**Federal Regulation**	**State Regulation Section Description**
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
All KARs cited in this Permit are governed by CFRs unless specified otherwise.		

E N D O F P E R M I T C O N D I T I O N S

PART II STANDARD PERMIT CONDITIONS

PART II
STANDARD PERMIT CONDITIONS

The terms and conditions of this Permit are applicable to University of Louisville Environmental Protection Services Center under Title 401 KAR Chapters 39 and 40, of the Hazardous Waste Management Regulations of the Kentucky Administrative Regulations (KARs).

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

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 303033

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.I.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)**.

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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 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 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, ground-water, 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. 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; or [**40 CFR Part 270.30**]

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 Cabinet's field personnel, corrective action section staff or permit review 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;

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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, Notification 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 cited 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, 40 CFR Part 264.118,** and **40 CFR Part 264.119.**

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 Requirements

Documents as required by **40 CFR Part 264 - Subpart I** (Containers) and **40 CFR Part 264 – Subpart AA**, **BB** and **CC** (Organic Air Emission Standards).

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**]

I.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.

E N D O F P E R M I T C O N D I T I O N S

PART III SPECIFIC PERMIT CONDITIONS

PART III
SPECIFIC PERMIT CONDITIONS

The terms and conditions of this Permit are applicable to University of Louisville Environmental Protection Services Center under Title 401 KAR Chapters 39 and 40, of the Hazardous Waste Management Regulations of the Kentucky Administrative Regulations (KARs).

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

III.A ***Facility Description***

III.A.1 This Permit is issued for storage and/or treatment of hazardous waste at University of Louisville Environmental Protection Services Center (hereinafter referred to as the "Permittee"). [**40 CFR Part 264.1**]

The University of Louisville is the owner, operator, and landowner for the University of Louisville Environmental Protection Services Center (EPSC). Staff from the Department of Environmental Health and Safety operate the facility. The facility is a composite steel and brick building with concrete floors of about 4,000 sq. ft. with subdivision for separation of incompatibles. A small loading dock is also present. Aside from secondary containment and a 250-gallon used oil (i.e. non-hazardous waste) tank, no tanks are present (i.e. only container management of hazardous waste is present).

The EPSC is a repository for a wide variety of both hazardous and non-hazardous wastes from university operations (only). Hazardous waste storage and treatment may occur as a precursor to eventual shipment to an off-site treatment, storage, or disposal facility. The EPSC accepts waste from only the ShelbyHurst Campus, the Belknap Campus, and the Health Science Center (HSC) Campus.

The area surrounding the facility is urban with the university campus and interstate nearby. No other environmental permits are held by the Permittee.

III.A.2 The Permittee shall only conduct treatment and/or storage in the following hazardous waste management units:

III.A.2.1 The Permittee shall only manage hazardous waste in the 11 container storage areas described within *Permit Condition III.K.2*. (See also *Table III.1*)

III.A.2.2 The Permittee shall not manage hazardous waste in miscellaneous unit(s).

III.A.2.3 The Permittee shall not dispose of hazardous waste on-site.

TABLE III.1 TREATMENT AND/OR STORAGE PERMITTED AREAS/UNITS			
Unit Type	**Number of Units**	**Maximum Capacity**	**Unit Specific Requirement**
Liquid or Solid Waste Container Storage Areas[1]	10	6,910 gallons	Permit Condition III.K
Confined Gas Container Storage Area	1	2,000 pounds	Permit Condition III.K
Container Treatment	1	15 gallons per day	Permit Condition III.K
Total Permitted Units[2]	11	See Above	

[1.] This does not include areas for non-hazardous materials and/or wastes at the facility.
[2.] Total number of individual units permitted at the facility.

III.A.3 The Permittee shall not store or treat in amounts that exceed the maximum allowable storage and treatment capacity listed in *Table III.1*.

III.A.4 The hazardous wastes which may be stored and/or treated at this facility are listed in *Attachment A* of this Permit and are only from university operations described in *Permit Condition III.A.1***.** Each of these hazardous wastes shall be stored and/or treated as specified within this Permit. If, at any point in time, the Permittee discovers that the facility is not properly equipped to manage any of the permitted EPA waste code(s), the Division shall be notified immediately.

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

III.B.1 Required Notices

III.B.1.1 Foreign Source

The notification requirement normally included here is not applicable since the Permittee has opted to only receive wastes from university operations.

III.B.1.2 Off-Site Sources

The Permittee must inform any off-site generator in writing that the facility has the appropriate Permit for, and will accept, the waste that the generator is shipping. The Permittee must keep a copy of this written notice as part of the Operating Record. [**40 CFR Part 264.12**]

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 Each waste stream accepted at this facility shall be fully identified and classified in accordance with *Permit Condition III.B.2*. At a minimum, the Permittee shall develop all of the information which must be known to treat and/or store the waste on-site in accordance with the terms and conditions of this Permit, as well as to treat and/or dispose of the waste at authorized off-site facilities. The Permittee shall review the analytical data to confirm that the Permittee is authorized to accept the waste stream. The Permittee must also confirm that (1) the data is sufficient for the intended ultimate destination facility, (2) the waste stream is acceptable to the intended ultimate destination facility, and (3) the generator does not disapprove of the ultimate destination facility or treatment/disposal method.

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.2.6 For each hazardous waste stream, the Permittee must obtain from the generator a completed Chemical and Hazardous Waste Pickup Request Form as found in *Attachment C* of this Permit before accepting waste for storage and/or treatment.

III.B.2.7 The Permittee must grant advanced authorization for shipments of each waste stream from an off-site source. If necessary to grant advanced authorization, a representative pre-shipment sample of the waste shall be obtained from the generator.

III.B.2.8 The Permittee must perform a waste characterization (fingerprint) analysis on representative waste samples as specified in *Attachment C* of this Permit.

III.B.2.9 The Permittee must compare the results of the waste characterization (fingerprint) sampling program to the pre-acceptance analysis for the waste stream. The Permittee must notify the generator upon discovering significant differences as required by **40 CFR Part 264.72** and *Permit*

Condition III.E.2.

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 this Permit.

III.B.3.1 Since security is provided by the above-described composite steel and brick building, the Permittee shall maintain such, including locks and doors, in good operating condition at all times.

III.B.3.2 The Permittee shall maintain security that controls entry to the site twenty-four (24) hours per day.

III.B.3.3 The main gate/door and other access points at the facility shall be closed and locked when facility personnel are not on-site.

III.B.3.4 Reserved

III.B.3.5 The Permittee shall maintain warning signs at each entrance to the permitted areas and on the perimeter fencing. The warning signs are to be legible from a distance of at least twenty-five (25) feet and read *"DANGER UNAUTHORIZED PERSONNEL KEEP OUT"* or "RESTRICTED AREA *UNAUTHORIZED PERSONS KEEP OUT*".

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 (including contractors) 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 applicable 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 container 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 *Attachment C* and *Attachment D* to ensure that ignitable, reactive or incompatible wastes are not stored improperly. Testing for reactivity and Waste Compatibility Matrix are described in *Attachment C*.

III.B.7.3 The Permittee must provide electrical grounding for all containers and transport vehicles 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 construct, 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, 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 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;

III.D.1.2 Any explosion involving hazardous waste;

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;

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 their 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 Louisville 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 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 *Attachment G*.

III.E ***Manifest System***

III.E.1 Use of the Manifest

The Permittee shall comply with the manifest requirements of **40 CFR Part 264.71** and **264.72**.

III.E.2 Manifest Discrepancy Report

III.E.2.1 Within fifteen (15) days of discovery of a discrepancy, the Permittee shall report the discrepancy to the Cabinet, if the discrepancy cannot be reconciled within the described fifteen (15) days, per **40 CFR Part 270.30**.

III.E.2.2 If a discrepancy report is deemed necessary as required by *Permit Condition III.E.2.1*, the Permittee shall submit such report and reject the waste on the sixteenth (16th) day of the receipt of the waste.

III.E.3 Waste Shipment

The Permittee shall only use properly registered transporters of hazardous waste to remove hazardous waste from the facility, in accordance with **40 CFR Part 262 - Subpart A**.

III.E.4 Un-Manifested Waste

For shipments of hazardous waste that arrive at the facility not accompanied by a manifest, a manifested waste report will be prepared in accordance with **40 CFR Part 264.76** and submitted to the Division within fifteen (15) days after receiving the waste.

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/or treated at the facility in accordance with the recordkeeping procedures set forth in **40 CFR Part 264.73**.

III.F.1.1 A description and the quantity of each hazardous waste received and the method(s) and date(s) of its treatment, storage, and/or disposal at the facility.

III.F.1.2 The location of each hazardous waste within the facility and the quantity. This information must include cross-references to specific manifest document numbers, etc.

III.F.1.3 Records and results of waste characterization and waste analysis performed**.**

III.F.1.4 Summary reports and details of all incidents.

III.F.1.5 Records and results of inspections.

III.F.1.6 Monitoring, testing or analytical data, and corrective action.

III.F.1.7 Notices to generators (off-site facilities).

III.F.1.8 Copies of waste minimization documents required in *Permit Condition V.A.*

III.F.1.9 All closure and all Post-Closure cost estimates.

III.F.1.10 Copy of the notice, and the certification and demonstration, if applicable, required by the generator or the owner or operator under **40 CFR Part 268**.

III.F.1.11 Manifest system related documents.

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** and **40 CFR Part 264.178** 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*) and the terms and conditions of this Permit.

III.G.5.2 The Permittee must notify the Manager and the Louisville 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***

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**.

At the time of issuance of this Permit, the Closure Cost Estimate is $ 524,823 (2021).

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 cost estimate for inflation by January 1 of each year unless the Closure Plan is modified in such a way that cost is potentially affected. If modified, the adjustment must be made within 60 days prior to the anniversary date of the modification, 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 cost estimate as required by **40 CFR Part 264.142**.

III.I.2 Financial Assurance and Liability Requirements

In accordance with 40 CFR 264.140(c), the Permittee is exempt from requirements of **40 CFR Part 264 – Subpart H**.

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

Reserved

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

Reserved

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 Requirements***

Within the 4,000 sq.ft. steel, brick and concrete building described in *Permit Condition III.A.1* are 4 rooms where containers are managed. Steel, glass or plastic contains of varying sizes up to 121 gallons may be utilized to store solid or liquid hazardous wastes (up to 6,910 gallons total). Additionally, high pressure gas cylinders, each holding up to 3.000 standard cubic feet of confined gasses, or other confined gas containers may be utilized for up to 2,000 lbs. of such hazardous wastes. Most containers are small (i.e. 5 gallons or less) but a substantial (up to 89) number of 55-gallon drums may be utilized.

In addition to undisturbed storage within the building, stabilization, bulking and lab packing activities may be performed as described in *Attachment C*. Overpacking of containers (for example, due to damage or a leak) may also occur.

III.K.1 Generally Applicable Requirements

III.K.1.1 Subject to the terms and conditions of this Permit, the Permittee may operate the units described in *Permit Condition III.K.2*.

III.K.1.1.1 Utilization of absorbent pads, lab packing and/or overpacking activities are allowed in each and every hazardous waste management area mentioned in *Permit Condition III.K.2*.

III.K.1.2 Unless otherwise specifically authorized in this Permit or by the Cabinet:

III.K.1.2.1 Operation of any container management unit or area not mentioned in *Permit Condition III.K.2* is prohibited.

III.K.1.2.2 Operation of any container management unit or area other than such listed in *Permit Condition III.K.2* is prohibited.

III.K.1.2.3 Exceedance of any container storage or treatment capacity listed in *Permit Condition III.K.2* is prohibited.

III.K.1.3 Any modifications to a unit or activity authorized by this Permit require the written approval of the Division in accordance with the permit modification procedures set forth in *Permit Condition II.B.1* and *Permit Condition II.B.4*.

III.K.2 Specific Container Storage Area(s)

III.K.2.1 Flammables Container Storage Area:

The Flammables Container Storage Area was part of the entire facility construction proposed to the Cabinet in 1994 and permitted in 1996.

Location:
The Flammables Container Storage Area is located along the west wall in the northern portion of the facility (See Attachment A-1 Facility Drawing within *Attachment A*).

Activity Description:
The Flammables Container Storage Area is a receipt and storage only unit. Wastes may be from on-site or off-site generators. As implied by the designation, flammable liquids may be stored in this area. Additionally, non-water reactive flammable solids (including waste spray cans) may be stored in this area. Only compatible wastes are stored in this area.

Capacity:
55-gallon drum capacity = 40 drums
Smaller container capacity = containers totaling up to 360 gallons
Total capacity (including containers not listed above) = 2,560 gallons

Physical Description:
This area is a room of approximately 28' by 19' with safety and mitigation features described within *Attachment D*. In addition to on floor storage, the area has a few metal racks with trays for storage of small containers. Walls are full-length (i.e. they go from floor to ceiling) and the floor is constructed of concrete with a chemical resistant coating. Doors into the area are not sufficient for forklifts, etc. Smaller containers may be moved via a laboratory-type wheeled cart. Large/heavy containers are moved via hand carts and drum dollies. No 55-gallon drum stacking is possible (or permitted). The area slopes to a containment sump that is covered by metal grating.

Secondary Containment System:
Containment sump dimensions are as follows: 28' by 1.5' by 1' = 314 gallons
Containment capacity outside of sump (due to floor sloping): 100 cu.ft. = 750 gallons
Approximate total containment = 1,064 gallons*
Minimum required containment = 256 gallons

* Note that containment capacity of rack trays is present but has not been counted toward minimum requirements.

III.K.2.1.1 The Permittee shall not exceed any individual capacity listed in *Permit Condition III.K.2.1* at any time.

III.K.2.2 Bulking Area:

The Bulking Area was part of the entire facility construction proposed to the Cabinet in 1994 and permitted in 1996.

Location:
The Bulking Area is located approximately in the middle of and along the west wall of the facility (See Attachment A-1 Facility Drawing within *Attachment A*).

Activity Description:
Aside from storage of empty containers, the Bulking Area is primarily utilized for combining of like wastes under a walk-in height ventilation hood (see Photo #6 within Exhibit A-2 of *Attachment A*). However, some waste storage may also occur in this area. Wastes may be from on-site or off-site generators. Any class of waste may be managed in this room but, at any given time, only compatible wastes are in this area.

Capacity:
55-gallon drum capacity = 2 drums
Smaller container capacity = containers totaling up to 40 gallons
Total capacity (including containers not listed above) = 150 gallons

Physical Description:
This area is a room of approximately 18' by 19' with safety and mitigation features described within *Attachment D*. In addition to on floor storage, the area has a few metal racks (potentially with trays) for storage of small containers. Walls are full-length (i.e. they go from floor to ceiling) and the floor is constructed of concrete with a chemical resistant coating. Doors into the area are not sufficient for forklifts, etc. Smaller containers may be moved via a laboratory-type wheeled cart. Large/heavy containers are moved via hand carts and drum dollies. No 55-gallon drum stacking is possible (or permitted). The area slopes to a containment sump that is covered by metal grating.

Secondary Containment System:
Containment sump dimensions are as follows: 18' by 1.5' by 1' = 202 gallons
Containment capacity outside of sump (due to floor sloping): 64.5 cu.ft. = 483 gallons
Approximate total containment = 685 gallons*
Minimum required containment = 55 gallons

* Note that containment capacity of rack trays may be present but has not been counted toward minimum requirements.

III.K.2.2.1 The Permittee shall not exceed any individual capacity listed in *Permit Condition III.K.2.2* at any time.

III.K.2.3 Reactives Container Storage Area:

The Reactives Container Storage Area was part of the entire facility construction proposed to the Cabinet in 1994 and permitted in 1996.

Location:
The Reactives Container Storage Area is located along the west wall in the southern portion of the facility (See Attachment A-1 Facility Drawing within *Attachment A*).

Activity Description:
The Reactives Container Storage Area is a receipt and storage only unit. Wastes may be from on-site or off-site generators. Air or water reactive wastes may be stored in this area.

Capacity:
55-gallon drum capacity = 2 drums
Smaller container capacity = containers totaling up to 120 gallons
Total capacity (including containers not listed above) = 230 gallons

Physical Description:
This area is a room of approximately 8' by 19' with safety and mitigation features described within *Attachment D*. In addition to on floor storage, the area has a few metal racks (potentially with trays) for storage of small containers. A ventilation hood and an explosion-proof refrigerator/freezer are also present in this room. The refrigerator/freezer may be utilized to manage wastes requiring cold storage. Walls are full-length (i.e. they go from floor to ceiling) and the floor is constructed of concrete with a chemical resistant coating. The door into the area is not sufficient for forklifts, etc. Smaller containers may be moved via a laboratory-type wheeled cart. Large/heavy containers are moved via hand carts and drum dollies. No 55-gallon drum stacking is possible (or permitted). The area slopes to a containment sump that is covered by metal grating. Small (< 4.5 cu.ft.) explosion resistant boxes may be utilized in this area.

Secondary Containment System:
Containment sump dimensions are as follows: 7' by 1.5' by 1' = 79 gallons
Containment capacity outside of sump (due to floor sloping): 28.7 cu.ft. = 140 gallons
Approximate total containment = 219 gallons*
Minimum required containment = 55 gallons

* Note that containment capacity of rack trays is present but has not been counted toward minimum requirements.

III.K.2.3.1 The Permittee shall not exceed any individual capacity listed in *Permit Condition III.K.2.3* at any time.

III.K.2.4 Confined Gases Container Storage Area:

Commented [NAM(1]: Each subdivision should be named with what it stores – each is a separate unit in RCRA Info each needs to be distinguished with specific name.

Example, instead of "Subdivision 1" it should probably be "Contained Gases" or "Gas Cylinder Storage".

This area was part of the entire facility construction proposed to the Cabinet in 1994 and permitted in 1996.

Location:
The Confined Gases Container Storage Area is in the northwest portion of the facility (close to the loading dock) within the largest room of the facility (See Attachment A-1 Facility Drawing within *Attachment A*).

Activity Description:
The Confined Gases Container Storage Area is for receipt and storage only. Confined Gases within small containers may be placed inside a cage. Larger Cylinders are strapped to the wall or the cage. Wastes may be from on-site or off-site generators. Only compatible wastes are stored in this area.

Capacity:
Total capacity = 2,000 pounds of confined gases

Physical Description:
Dimensions for this area were not provided but it is bound on 3 sides by full-length walls (i.e. they go from floor to ceiling). The floor is constructed of concrete with a chemical resistant coating. No floor sloping is provided in this area. See *Attachment D* for safety and mitigation features of the area. Entry is via the loading dock rollup door or one of the personnel entry doors. Consequently, container movement is only limited by the size of machinery capable of passing through the loading dock rollup door.

Secondary Containment System:
N/A to Confined Gases

III.K.2.4.1 The Permittee shall not exceed any individual capacity listed in *Permit Condition III.K.2.4* at any time.

III.K.2.5 Organic Acids Container Storage Area:

Commented [NAM(2]: Each subdivision should be named with what it stores – each is a separate unit in RCRA Info each needs to be distinguished with specific name.

Example, instead of "Subdivision 1" it should probably be "Contained Gases" or "Gas Cylinder Storage".

This area was part of the entire facility construction proposed to the Cabinet in 1994 and permitted in 1996.

Location:
The Organic Acids Container Storage Area is in the north central portion of the facility along the east side of the east wall for the Flammable Storage Area (at the north end of the wall) within the largest room of the facility (See Attachment A-1 Facility Drawing within *Attachment A*).

Activity Description:
The Organic Acids Container Storage Area is for receipt and storage only. Wastes may be from on-site or off-site generators. As implied by the designation, only Organic Acids may be stored in this area.

Capacity:
55-gallon drum capacity = 2 drums
Smaller container capacity = containers totaling up to 240 gallons
Total capacity (including containers not listed above) = 350 gallons

Physical Description:
This area is 7' by 9.67' with safety and mitigation features described within *Attachment D*. In addition to on floor storage, the area has a few metal racks (potentially with trays) for storage of small containers. It is bound on the west (short) side by a full-length wall (i.e. the wall goes from floor to ceiling), north and south (long) sides are bound by curbing that is at least 4 inches tall, and the east side is open for unobstructed cart or dolly movement. The floor is constructed of concrete with a chemical resistant coating. No drum stacking was proposed and, therefore, it is not permissible. The area slopes to a containment sump that is covered by metal grating. Entry is via the loading dock rollup door or one of the personnel entry doors. Consequently, container movement is only limited by the size of machinery capable of passing through the loading dock rollup door.

Secondary Containment System:
Containment sump dimensions are as follows: 7' by 1.5' by 1' = 79 gallons
Containment capacity outside of sump
(considering potential tray placement on the floor): 5.8 cu.ft. = 43 gallons
Approximate total containment = 122 gallons*
Minimum required containment = 55 gallons

* Note that containment capacity of rack trays is present but has not been counted toward minimum requirements.

III.K.2.5.1 The Permittee shall not exceed any individual capacity listed in *Permit Condition III.K.2.5* at any time.

III.K.2.6 Acute Toxics Container Storage Area:

Commented [NAM(3]: Each subdivision should be named with what it stores – each is a separate unit in RCRA Info each needs to be distinguished with specific name.

Example, instead of "Subdivision 1" it should probably be "Contained Gases" or "Gas Cylinder Storage".

This area was part of the entire facility construction proposed to the Cabinet in 1994 and permitted in 1996.

Location:
The Acute Toxics Container Storage Area is in the central portion of the facility along the east side of the east wall for the Flammable Storage Area (adjacent to and south of a non-hazardous waste management area and just north of the Bases and Cyanides Container Storage Area) within the largest room of the facility (See Attachment A-1 Facility Drawing within *Attachment A*).

Activity Description:
The Acute Toxics Container Storage Area is for receipt and storage only. Wastes may be from on-site or off-site generators. This area is for storage of herbicides, pesticides, and compatible hazardous and non-hazardous wastes.

Capacity:
55-gallon drum capacity = 3 drums
Smaller container capacity = containers totaling up to 240 gallons
Total capacity (including containers not listed above) = 405 gallons

Physical Description:
This area is 9' by 9.67' with safety and mitigation features described within *Attachment D*. In addition to on floor storage, the area has a few metal racks (potentially with trays) for storage of small containers. It is bound on the west (short) side by a full-length wall (i.e. the wall goes from floor to ceiling), north and south (long) sides are bound by curbing that is at least 4 inches tall, and the east side is open for unobstructed cart or dolly movement. The floor is constructed of concrete with a chemical resistant coating. No drum stacking was proposed and, therefore, it is not permissible. The area slopes to a containment sump that is covered by metal grating. Entry is via the loading dock rollup door or one of the personnel entry doors. Consequently, container movement is only limited by the size of machinery capable of passing through the loading dock rollup door.

Secondary Containment System:
Containment sump dimensions are as follows: 9' by 1.5' by 1' = 101 gallons
Containment capacity outside of sump
(considering potential tray placement on the floor): 7.5 cu.ft. = 56 gallons
Approximate total containment = 157 gallons*
Minimum required containment = 55 gallons

* Note that containment capacity of rack trays is present but has not been counted toward minimum requirements.

III.K.2.6.1 The Permittee shall not exceed any individual capacity listed in *Permit Condition III.K.2.6* at any time.

III.K.2.7 Bases and Cyanides Container Storage Area:

Commented [NAM(4]: Each subdivision should be named with what it stores – each is a separate unit in RCRA Info each needs to be distinguished with specific name.

Example, instead of "Subdivision 1" it should probably be "Contained Gases" or "Gas Cylinder Storage".

This area was part of the entire facility construction proposed to the Cabinet in 1994 and permitted in 1996.

Location:
The Bases and Cyanides Container Storage Area is in the central portion of the facility along the east side of the east wall for the Bulking Area (adjacent to and south of the Acute Toxics Container Storage Area) within the largest room of the facility (See Attachment A-1 Facility Drawing within *Attachment A*).

Activity Description:
The Bases and Cyanides Container Storage Area is for receipt and storage only. Wastes may be from on-site or off-site generators. As implied by the designation, this area is for storage of bases and wastes with a cyanide chemical component or degradation potential.

Capacity:
55-gallon drum capacity = 5 drums
Smaller container capacity = containers totaling up to 360 gallons
Total capacity (including containers not listed above) = 635 gallons

Physical Description:
This area is 12' by 9.67' with safety and mitigation features described within *Attachment D*. In addition to on floor storage, the area has a few metal racks (potentially with trays) for storage of small containers. It is bound on the west (long) side by a full-length wall (i.e. the wall goes from floor to ceiling), north and south (short) sides are bound by curbing that is at least 4 inches tall, and the east side is open for unobstructed cart or dolly movement. The floor is constructed of concrete with a chemical resistant coating. No drum stacking was proposed and, therefore, it is not permissible. The area slopes to a containment sump that is covered by metal grating. Entry is via the loading dock rollup door or one of the personnel entry doors. Consequently, container movement is only limited by the size of machinery capable of passing through the loading dock rollup door.

Secondary Containment System:
Containment sump dimensions are as follows: 12' by 1.5' by 1' = 135 gallons
Containment capacity outside of sump
(considering potential tray placement on the floor): 10 cu.ft. = 75 gallons
Approximate total containment = 210 gallons*
Minimum required containment = 64 gallons

* Note that containment capacity of rack trays is present but has not been counted toward minimum requirements.

III.K.2.7.1 The Permittee shall not exceed any individual capacity listed in *Permit Condition III.K.2.7* at any time.

III.K.2.8 Metals Container Storage Area:

Commented [NAM(5]: Each subdivision should be named with what it stores – each is a separate unit in RCRA Info each needs to be distinguished with specific name.

Example, instead of "Subdivision 1" it should probably be "Contained Gases" or "Gas Cylinder Storage".

This area was part of the entire facility construction proposed to the Cabinet in 1994 and permitted in 1996.

Location:
The Metals Container Storage Area is along the south wall of the building within the largest room of the facility (See Attachment A-1 Facility Drawing within *Attachment A*).

Activity Description:
The Metals Container Storage Area is for receipt and storage only. Wastes may be from on-site or off-site generators. As implied by the designation, this area is for storage of wastes that are primarily metallic. However, wastes with a metallic characteristic will not be located here if another characteristic is the primary concern (for example, the waste with metallic characteristic is part of a strong acid or strong base).

Capacity:
55-gallon drum capacity = 3 drums
Smaller container capacity = containers totaling up to 240 gallons
Total capacity (including containers not listed above) = 405 gallons

Physical Description:
This area is 7.5' by 9.67' with safety and mitigation features described within *Attachment D*. In addition to on floor storage, the area has a few metal racks (potentially with trays) for storage of small containers. It is bound on the south and east sides by a full-length walls (i.e. the walls go from floor to ceiling), the north (long) side is bound by curbing that is at least 4 inches tall, and the west side is open for unobstructed cart or dolly movement. The floor is constructed of concrete with a chemical resistant coating. No drum stacking was proposed and, therefore, it is not permissible. The area slopes to a containment sump that is covered by metal grating. Entry is via the loading dock rollup door or one of the personnel entry doors. Consequently, container movement is only limited by the size of machinery capable of passing through the loading dock rollup door.

Secondary Containment System:
Containment sump dimensions are as follows: 7.5' by 1.5' by 1' = 84 gallons
Containment capacity outside of sump
(considering potential tray placement on the floor): 6.25 cu.ft. = 47 gallons
Approximate total containment = 131 gallons*
Minimum required containment = 55 gallons

* Note that containment capacity of rack trays is present but has not been counted toward minimum requirements.

III.K.2.8.1 The Permittee shall not exceed any individual capacity listed in *Permit Condition III.K.2.8* at any time.

III.K.2.9 Non-Flammable Organics Container Storage Area:

Commented [NAM(6]: Each subdivision should be named with what it stores – each is a separate unit in RCRA Info each needs to be distinguished with specific name.

Example, instead of "Subdivision 1" it should probably be "Contained Gases" or "Gas Cylinder Storage".

This area was part of the entire facility construction proposed to the Cabinet in 1994 and permitted in 1996.

Location:
The Non-Flammable Organics Container Storage Area is along the west side of the east wall for the building within the largest room of the facility (See Attachment A-1 Facility Drawing within *Attachment A*).

Activity Description:
The Non-Flammable Organics Container Storage Area is for receipt and storage only. Wastes may be from on-site or off-site generators. Mixed (i.e. radioactive) and non-flammable organic wastes may be stored in this area.

Capacity:
55-gallon drum capacity = 14 drums
Smaller container capacity = containers totaling up to 360 gallons
Total capacity (including containers not listed above) = 1,130 gallons

Physical Description:
This area is 16.83' by 10.33' with safety and mitigation features described within *Attachment D*. In addition to on floor storage, the area has a few metal racks (potentially with trays) for storage of small containers. It is bound on the south and east sides by a full-length walls (i.e. the walls go from floor to ceiling), the north (short) side is bound by curbing that is at least 4 inches tall, and the west side is open for unobstructed cart or dolly movement. The floor is constructed of concrete with a chemical resistant coating. No drum stacking was proposed and, therefore, it is not permissible. The area slopes to a containment sump that is covered by metal grating. Entry is via the loading dock rollup door or one of the personnel entry doors. Consequently, container movement is only limited by the size of machinery capable of passing through the loading dock rollup door.

Secondary Containment System:
Containment sump dimensions are as follows: 16.83' by 1.5' by 1' = 189 gallons

Containment capacity outside of sump
(considering potential tray placement on the floor): 14 cu.ft. = 104 gallons
Approximate total containment = 293 gallons*
Minimum required containment = 113 gallons

* Note that containment capacity of rack trays is present but has not been counted toward minimum requirements.

III.K.2.9.1 The Permittee shall not exceed any individual capacity listed in *Permit Condition III.K.2.9* at any time.

III.K.2.10 Inorganic Acids Container Storage Area:

Commented [NAM(7]: Each subdivision should be named with what it stores – each is a separate unit in RCRA Info each needs to be distinguished with specific name.

Example, instead of "Subdivision 1" it should probably be "Contained Gases" or "Gas Cylinder Storage".

This area was part of the entire facility construction proposed to the Cabinet in 1994 and permitted in 1996.

Location:
The Inorganic Acids Container Storage Area is along the west side of the east wall for the building (adjacent to and north of the Non-Flammable Organics Container Storage Area) within the largest room of the facility (See Attachment A-1 Facility Drawing within *Attachment A*).

Activity Description:
The Inorganic Acids Container Storage Area is for receipt and storage only. Wastes may be from on-site or off-site generators. As implied by the designation, this area is for storage of inorganic acid wastes.

Capacity:
55-gallon drum capacity = 6 drums
Smaller container capacity = containers totaling up to 360 gallons
Total capacity (including containers not listed above) = 690 gallons

Physical Description:
This area is 10.5' by 10.33' with safety and mitigation features described within *Attachment D*. In addition to on floor storage, the area has a few metal racks (potentially with trays) for storage of small containers. It is bound on the east (long) side by a full-length wall (i.e. the wall goes from floor to ceiling), the north and south (short) sides are bound by curbing that is at least 4 inches tall, and the west side is open for unobstructed cart or dolly movement. The floor is constructed of concrete with a chemical resistant coating. No drum stacking was proposed and, therefore, it is not permissible. The area slopes to a containment sump that is covered by metal grating. Entry is via the loading dock rollup door or one of the personnel entry doors. Consequently, container movement is only limited by the size of machinery capable of passing through the loading dock rollup door.

Secondary Containment System:
Containment sump dimensions are as follows: 10.5' by 1.5' by 1' = 118 gallons
Containment capacity outside of sump
(considering potential tray placement on the floor): 8.8 cu.ft. = 65 gallons

Approximate total containment = 183 gallons*
Minimum required containment = 113 gallons

* Note that containment capacity of rack trays is present but has not been counted toward minimum requirements.

III.K.2.10.1 The Permittee shall not exceed any individual capacity listed in *Permit Condition III.K.2.10* at any time.

III.K.2.11 Oxidizers and Organic Peroxides Container Storage Area:

Commented [NAM(8)]: Each subdivision should be named with what it stores – each is a separate unit in RCRA Info each needs to be distinguished with specific name.

Example, instead of "Subdivision 1" it should probably be "Contained Gases" or "Gas Cylinder Storage".

This area was part of the entire facility construction proposed to the Cabinet in 1994 and permitted in 1996.

Location:
The Oxidizers and Organic Peroxides Container Storage Area is along the west side of the east wall for the building (adjacent to and north of the Inorganic Acids Container Storage Area) within the largest room of the facility (See Attachment A-1 Facility Drawing within *Attachment A*).

Activity Description:
The Oxidizers and Organic Peroxides Container Storage Area is for receipt and storage only. Wastes may be from on-site or off-site generators. As implied by the designation, this area is for storage of oxidizers and organic peroxides.

Capacity:
55-gallon drum capacity = 2 drums
Smaller container capacity = containers totaling up to 240 gallons
Total capacity (including containers not listed above) = 350 gallons

Physical Description:
This area is 7' by 10.33' with safety and mitigation features described within *Attachment D*. In addition to on floor storage, the area has a few metal racks (potentially with trays) for storage of small containers. It is bound on the east (short) side by a full-length wall (i.e. the wall goes from floor to ceiling), the north and south (long) sides are bound by curbing that is at least 4 inches tall, and the west side is open for unobstructed cart or dolly movement. The floor is constructed of concrete with a chemical resistant coating. No drum stacking was proposed and, therefore, it is not permissible. The area slopes to a containment sump that is covered by metal grating. Entry is via the loading dock rollup door or one of the personnel entry doors. Consequently, container movement is only limited by the size of machinery capable of passing through the loading dock rollup door.

Secondary Containment System:
Containment sump dimensions are as follows: 7' by 1.5' by 1' = 79 gallons
Containment capacity outside of sump
(considering potential tray placement on the floor): 5.8 cu.ft. = 44 gallons
Approximate total containment = 123 gallons*
Minimum required containment = 55 gallons

* Note that containment capacity of rack trays is present but has not been counted toward minimum requirements.

III.K.2.11.1 The Permittee shall not exceed any individual capacity listed in *Permit Condition III.K.2.11* at any time.

III.K.2.12 Non-RCRA Wastes Storage Areas:

Commented [NAM(9]: Each subdivision should be named with what it stores – each is a separate unit in RCRA Info each needs to be distinguished with specific name.

Example, instead of "Subdivision 1" it should probably be "Contained Gases" or "Gas Cylinder Storage".

These areas were part of the entire facility construction proposed to the Cabinet in 1994 and permitted in 1996.

Location:
Along the north wall of the facility and in the central portion of the facility along the east side of the east wall for the Flammable Storage Area (adjacent to and south of the Organic Acids Storage Area) are the storage areas for Non-RCRA Wastes. See Photos #8 and #12 within Exhibit A-2 of *Attachment A* for views of the areas when mostly empty. Non-Hazardous wastes (such as PCBs, E-scrap, Waste Batteries, asbestos, oils, pharmaceuticals, and chemicals not listed in 40 CFR 261) may be stored in these areas. Since these areas are not for management of RCRA wastes, additional details are not germane to this Permit.

III.K.3 Storage in Containers

III.K.3.1 The Permittee may store a total volume of 6,910 gallons (equivalent to approximately 126 fifty-five gallon drums) of hazardous waste at any time in a total of 11 container storage areas in accordance with the terms and conditions of this Permit, and the information provided in *Attachment D*. [**40 CFR Part 264 - Subpart I**]

III.K.3.2 The Permittee shall only store those hazardous wastes specified in *Permit Condition III.A.4* in the container storage areas identified in *Permit Condition III.K.2.*

III.K.3.3 The maximum combined quantity of hazardous and non-hazardous waste stored in a given area shall not exceed ten (10) times the capacity of the containment system for that area. An individual container shall not be stored in an area with a volume that exceeds the capacity of the containment system for that area.

III.K.3.4 The Permittee shall operate, maintain, and inspect the container storage areas specified in *Permit Condition III.K.2* and as specified in *Attachment D* of this Permit.

III.K.3.5 For compliance with the capacity restriction of this Permit, each container will be considered to be storing an amount of hazardous waste equal to its capacity, regardless of the actual quantity stored in the container. Any non-hazardous waste, (i.e. lead-acid battery waste, universal waste, etc.) that is stored in a designated hazardous waste storage area, as provided by this Permit, shall be subject to the conditions of this Permit, including, but not limited to, volume calculations, compatibility and inspections.

III.K.3.6 The Permittee is prohibited from storage of hazardous waste in containers that do not meet performance packaging standards as specified in **49 CFR Part 178 - Subpart L** or other

applicable DOT requirements.

III.K.3.7 Transfer of drum or container contents must occur only within areas with secondary containment system.

III.K.3.8 Any non-hazardous wastes and other containerized materials that are stored in the hazardous waste container storage units/areas are also subject to the terms of this Permit.

III.K.3.8.1 The Permittee may store containers of products or non-hazardous materials or waste in container storage areas identified in *Permit Condition II.K.2* that meet the following requirements:

III.K.3.8.1.1 The containers of products or non-hazardous materials/waste shall meet performance packaging standards as specified in **49 CFR Part 178 - Subpart L** and other applicable DOT requirements.

III.K.3.8.1.2 The Permittee shall conduct necessary testing and analysis in accordance with the Waste Analysis Plan, *Attachment C* of this Permit, in order to ensure that materials stored in permitted container storage areas are compatible.

III.K.3.8.1.3 The Permittee shall ensure that any products or non-hazardous wastes stored in a permitted container storage area must be counted toward the total permitted container storage volume. The Permittee shall maintain daily inventories to ensure that permitted storage capacities are not exceeded (*Permit Condition III.K.2*).

III.K.3.8.1.4 The Permittee shall comply with conditions set under *Permit Condition III.K* and all applicable requirements of this Permit while storing containers of products or non-hazardous materials/waste in permitted container storage areas.

III.K.3.9 Waste lead-acid batteries and paints (not in spray cans) may be stored in the cage located in the Confined Gases Container Storage Area if such items are all below the confined gases in the cage.

III.K.3.10 Used or waste oils may be stored in the Flammables Container Storage Area.

III.K.3.11 Pesticides and herbicides not listed in 40 CFR 261 may be stored in the Acute Toxics Container Storage Area if compatible with the wastes that may be in the area.

III.K.4 Treatment in Containers and Bulking

The Permittee may treat a total volume of 15 gallons per day of hazardous waste (specified as lines B7, B8, B9, C1, C2, C3, and/or C4 within *Attachment A*) in only the Bulking Area of the facility in accordance

with the terms and conditions of this Permit. The Permittee may also bulk any compatible wastes described under *Permit Condition III.A.4* into 55-gallon drums or smaller containers in only the Bulking Area of the facility in accordance with the terms and conditions of this Permit. Such activities shall also be in accordance with the information provided in *Attachment D* and pursuant to **40 CFR Part 264 - Subpart I**, as well as the following specifications:

III.K.4.1 The Permittee may conduct pouring and/or mixing as part of stabilization in containers utilizing ancillary equipment and materials as described in *Attachments C and D* and *Permit Condition III.K.2* of this Permit. The Permittee may conduct bulking of solids, liquids, semi-solids, and sludges in containers utilizing ancillary equipment and materials as described in *Attachments C and D* and *Permit Condition III.K.2* of this Permit. Pouring and/or pumping may be utilized to accomplish bulking. However, only incidental blending and/or mixing is allowed in association with bulking (i.e. utilization of a mechanical blender is not allowed in association with bulked wastes). Intentional mixing of a bulked waste is a sign that treatment (in violation of this Permit) is intended.

Commented [NAM(10]: Not sure what is meant here. Bulking would by definition entail blending and mixing?

III.K.4.2 The Permittee shall comply with the container treatment process, container types and capacity restrictions listed in *Permit Condition III.K.2* of this Permit.

III.K.4.3 The Permittee shall ensure that the structural integrity of containers and processes of treatment or bulking are in accordance with *Attachment D* of the Permit and **40 CFR Part 264 - Subpart I**.

III.K.4.4 The Permittee shall not substitute dilution of chemicals for treatment, except as allowed by **40 CFR Part 268**.

III.K.4.5 The Permittee shall ensure that all chemical reactions have sufficiently occurred to prevent subsequent uncontrolled reactions before the process is stopped.

III.K.4.6 The Permittee shall manage all treatment residues and bulking residues in accordance with all applicable provisions of **40 CFR Part 260** through **270**.

III.K.4.7 Hazardous waste undergoing transfer into or out of the containers shall be managed within secondary containment system to minimize the potential for a release.

III.K.5 Condition of Containers

The Permittee shall comply with all requirements set forth under **40 CFR Part 264.171**, to ensure that all hazardous waste containers are in good condition. If a container holding hazardous waste is not in good condition (e.g. severe rusting, apparent structural defects) or if it begins to leak, the Permittee shall transfer the hazardous waste from such container to a container that is in good condition or otherwise manage the waste in compliance with the conditions of this Permit. [**40 CFR Part 264 - Subpart I**]

III.K.6 Compatibility of Waste with Containers

The Permittee shall comply with all requirements set forth under **40 CFR Part 264.172**, to ensure that all containers used to store hazardous waste in the storage area will not react or be incompatible with the material being placed in the drum.

III.K.7 Management of Containers

The Permittee shall manage and inspect the containers in accordance with **40 CFR Part 264.173** and **264.174** as well as according to the container management system, and container layout and configuration delineated in *Attachment D*. Containers shall not be stacked unless on different rack levels. The Permittee shall keep all containers closed during storage, except when it is necessary to add or remove waste, and shall not open, handle, or store containers in a manner which may rupture the container or cause it to leak.

III.K.8 Inspection Schedules and Procedures

The Permittee shall inspect the container storage area(s), in accordance with **40 CFR Part 264.174** and the Inspection Schedule, *Attachment F*. The Permittee shall also document these inspections and shall maintain the inspection forms in accordance with the requirement of **40 CFR Part 264.174** and inspection procedures in *Attachment F* of this Permit. The Permittee shall stage/store the containers so that their labels are fully visible and easy to inspect. The Permittee shall also inspect all containers at the time of arrival at the facility to verify that the containers are in good condition.

III.K.9 Secondary Containment System

The Permittee shall maintain the secondary containment system in accordance with the requirements of **40 CFR Part 264.175**, and as specified in the *Attachment D* and *F* of this Permit. The Permittee shall ensure that the containment system for each container storage and/or treatment area identified in *Permit Condition III.K.2* is free of cracks and gaps. 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).

Any accumulated liquids of unknown sources shall be containerized and sampled, and the analytical data will be used to determine appropriate management options.

III.K.10 Recordkeeping

III.K.10.1 The Permittee shall place the results of all waste analyses and trial tests as well as other documentation showing compliance with the requirements of *Permit Conditions III.B.2*, *Permit Condition III.K*, **40 CFR Part 264 – Subpart B** and **40 CFR Part 264 - Subpart I** in the facility's Operating Record. [**40 CFR Part 264.73**].

III.K.10.2 The Permittee shall enter records of all treatment activities, including EPA waste codes and descriptions, quantities, method(s) of treatment, and date(s) of treatment, into the Operating Record for each batch of waste treated. For each container of waste bulked, details, including EPA waste codes, descriptions, quantities, and date(s) of bulking, shall be entered into the Operating Record (by the Permittee).

III.K.10.3 After each shipment of hazardous waste is received and has been placed into storage, the Permittee must log into a container storage area daily report the following information:

III.K.10.3.1 Number of containers in the storage area;

III.K.10.3.2 Waste type and description;

III.K.10.3.3 Date waste is placed into the storage area;

III.K.10.3.4 Waste location (by storage area);

III.K.10.3.5 Date waste is removed from the storage area;

III.K.10.3.6 Permittee load number and/or container sequence number;

III.K.10.3.7 Generator's name; and

III.K.10.3.8 Waste Stream Identification Number (WSID).

III.K.11 Special Requirements for Ignitable or Reactive Wastes

III.K.11.1 When storing ignitable or reactive wastes, the Permittee shall comply with the requirements of **40 CFR Part 264.17**, **40 CFR Part 264.176**, and according to *Attachment D*. Any activity that will require compliance with **40 CFR Part 264.17**, shall not be allowed without specific investigations and appropriate measures being taken to prevent fires and explosions. These investigations and preventive measures shall be documented and maintained in the Operating Record as required in *Permit Condition III.F.1*.

III.K.11.2 The Permittee shall not place containers holding ignitable or reactive waste within 15 meters (50 feet) of the facility's property line. [**40 CFR Part 264.176**]

III.K.11.3 The Permittee shall take precautions to prevent accidental ignition or reaction of ignitable or reactive waste and follow the procedures specified in *Attachment D*. [**40 CFR Part 264.17** and **40 CFR Part 264.176**]

III.K.11.4 The Permittee must provide electrical grounding for all containers and transport vehicles during all operations involving the handling of ignitable or reactive wastes.

III.K.11.5 The Permittee must provide, and require the use of, spark proof tools during all operations involving the handling of all ignitable or reactive wastes.

III.K.11.6 The Permittee must prohibit smoking and open flames in each area where ignitable, reactive, or incompatible hazardous wastes are managed and must post appropriate warning signs.

III.K.12 Special Requirements for Incompatible Wastes

III.K.12.1 The Permittee shall not place incompatible wastes, or incompatible wastes and materials, in the same container, unless **40 CFR 264.17(b)** is complied with. [**40 CFR Part 264.177**]

III.K.12.2 The Permittee shall not place hazardous waste in an unwashed container that previously held an incompatible waste or material. [**40 CFR Part 264.177**]

III.K.13 Special Requirements for Restricted Wastes

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.

III.K.14 Closure

The Permittee shall close each hazardous waste container storage unit identified in *Permit Condition III.K* in accordance with *Permit Condition III.G*, **40 CFR Part 264.178** and the Closure Plan in *Attachment I* of this Permit.

III.K.15 Air Emission Standards

The Permittee shall manage all hazardous waste placed in containers storage and/or treatment areas in accordance with the requirements of **40 CFR Part 264.179** and Part VII of this Permit.

III.L Tank System Requirements

Reserved

III.M Miscellaneous Unit Requirements

Reserved

III.N Containment Building Requirements

Reserved

III.O Landfill Post Closure Requirements

Reserved

III.P Incinerator Requirements

Reserved

III.Q Special Permit Conditions

Reserved

III.R ***Groundwater Monitoring Requirements***

Reserved

E N D O F P E R M I T C O N D I T I O N S

PART IV CORRECTIVE ACTION

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

The terms and conditions of this Permit are applicable to University of Louisville Environmental Protection Services Center under Title 401 KAR Chapters 39 and 40, of the Hazardous Waste Management Regulations of the Kentucky Administrative Regulations (KARs).

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

IV.A ***Applicability***

The Conditions of this Part apply to:

IV.A.1 Reserved

IV.A.2 Reserved

IV.A.3 Reserved

IV.A.4 Reserved .

IV.A.5 Reserved

IV.A.6 Reserved

IV.A.7 Reserved

IV.A.8 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.9 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.8*. 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.2.4 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 or AOCs 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 and 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)

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 *Permit Condition IV.A.3*. 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)

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)

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

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.9*.

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***

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

IV.H.2.1 Submittal of a Statement of Basis maybe required upon approval of the CMS Report or other Manager decision *[i.e. NFA]*. If required, 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.

IV.H.2.2 A draft Statement of Basis shall be submitted to the Manager within thirty (30) days unless otherwise specified by the Manager. 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)***

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.**

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)**.

E N D O F P E R M I T C O N D I T I O N S

PART V WASTE MINIMIZATION

PART V
WASTE MINIMIZATION

The terms and conditions of this Permit are applicable to University of Louisville Environmental Protection Services Center under Title 401 KAR Chapters 39 and 40, of the Hazardous Waste Management Regulations of the Kentucky Administrative Regulations (KARs).

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

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.

E N D O F P E R M I T C O N D I T I O N S

PART VI LAND DISPOSAL RESTRICTIONS

PART VI
LAND DISPOSAL RESTRICTIONS

The terms and conditions of this Permit are applicable to University of Louisville Environmental Protection Services Center under Title 401 KAR Chapters 39 and 40, of the Hazardous Waste Management Regulations of the Kentucky Administrative Regulations (KARs).

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

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.

E N D O F P E R M I T C O N D I T I O N S

PART VII ORGANIC AIR EMISSION REQUIREMENTS

PART VII
ORGANIC AIR EMISSION REQUIREMENTS

The terms and conditions of this Permit are applicable to University of Louisville Environmental Protection Services Center under Title 401 KAR Chapters 39 and 40, of the Hazardous Waste Management Regulations of the Kentucky Administrative Regulations (KARs).

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

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.

However, 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 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.A.3 Reserved

VII.A.4 Reserved

VII.A.5 Reserved

VII.A.6 Reserved

VII.A.7 Reserved

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.

The Permittee has 2 pieces of equipment that are subject to **Subpart BB** requirements and are listed in *Table VII.1* below.

Table VII.1

Equipment I.D (Type)	Hazardous Waste Management Unit and Location	Hazardous Waste Stream (EPA Waste Code)	Physical State	Percent by Weight Total Organics	Method of Compliance (Permit Condition)
Electric Pump (Pump)	Utilized in Association with Container Storage and/or Treatment	Potentially Any Stream Listed in *Attachment A*	Liquid	100%	VII.B.4
Hand Pump (Pump)	Utilized in Association with Container Storage and/or Treatment	Potentially Any Stream Listed in *Attachment A*	Liquid	100%	VII.B.4

* Both of these pumps are primarily utilized in the Bulk/Blend Room but, in the event of a spill, may be utilized anywhere at the facility. See Attachment A-1 Facility Drawing within *Attachment A* for location of the Bulk/Blend Room. See D.1.a (5) within *Attachment D* for further descriptions.

VII.B.2 **Notification of Modifications, Additions, or New Units [Keep this condition even if the facility is not subject to BB]**

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.3 **Marking and Tagging**

VII.B.3.1 The Permittee shall maintain the most current equipment identification list in the Facility's operating record. Table III.VII.1, above, of this Permit includes the equipment identification list as provided in the Approved Permit Application.

VII.B.3.2 Since the electric and hand pumps are unique and easily identifiable, the Permittee does not have to uniquely mark and tag each piece of equipment in accordance with **40 CFR Part 264.1050(d)**. However, if the equipment list changes and easy identification is no longer so obvious, unique marking and tagging will be required.

VII.B.3.3 Reserved

VII.B.3.4 Reserved

VII.B.4 Excluded Equipment

VII.B.4.1 Excluded Equipment: **[40 CFR Part 264.1050(e) and (f)]**

VII.B.4.1.1 Equipment that is in vacuum service is excluded from the requirements of **40 CFR Part 264.1052** through **1060** and corresponding conditions of this Permit if it is identified as required by **40 CFR Part 264.1064(g)(5)** and in *Table VII.2* below.

VII.B.4.1.2 Equipment that contains or contacts hazardous waste with an organic concentration of at least ten (10) percent by weight for less than 300 hours per calendar year is excluded from the requirements of **40 CFR Part 264.1052** through **1060** and the corresponding conditions of this Permit if it is identified as required by **40 CFR Part 264.1064(g)(6)** and in *Table VII.2* below.

VII.B.4.1.3 The equipment identified in *Table VII.2* below is excluded from the requirements of **40 CFR Part 264.1052** through **1060**, as indicated.

TABLE VII.2
RCRA SUBPART BB EXCLUDED HAZARDOUS WASTE MANAGEMENT UNITS

Unit and Description	Exclusion Claimed
Electric Pump	40 CFR Part 264.1050(f)
Hand Pump	40 CFR Part 264.1050(f)

* Both of these pumps are primarily utilized in the Bulk/Blend Room but, in the event of a spill, may be utilized anywhere at the facility. See Attachment A-1 Facility Drawing within *Attachment A* for location of the Bulk/Blend Room. See D.1.a (5) within *Attachment D* for further descriptions.

VII.B.4.1.4 Should conditions change such that the Permittee is no longer able to claim the exclusion identified in *Table VII.2,* the Permittee shall immediately notify the Division, per *Permit Conditions II.E.7, II.E.10* and *II.E.11* of this Permit, and should comply with the requirements of **40 CFR Part 264 – Subpart BB**.

VII.B.4.1.5 Reserved

VII.B.4.2 Reserved

VII.B.5 Equipment Standards

Reserved

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

Reserved

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

Reserved

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

Reserved

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

Reserved

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(a)**, 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 has containers that are subject to **Subpart CC** requirements and are listed in *Table VII.3* below.

Table VII.3

Hazardous Waste Management Unit	Brief Unit Description	Brief Waste Description (EPA Waste Code)	Unit Type	Location	Control Device and/or Control Level
Container Storage	Excluding Confined Gases, Container Storage Above 25 Gallons	Potentially Any Waste Listed in *Attachment A*	40 C.F.R. Part 264 – Subpart I Use and Management of Containers	Within Facility	Level 1

VII.C.2 Notification of Modifications, Additions, or New Units

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)]

VII.C.3.1 Pursuant to **40 CFR Part 264.1080(b)(2)**, containers with a design capacity of less than or equal to 0.1 m^3 are excluded from the requirements of **40 CFR Part 264 – Subpart CC**.

VII.C.3.2 Pursuant to **40 CFR Part 264.1080(b)(6)**, waste management units that are used solely for the management of radioactive mixed waste in accordance with the applicable regulations under the **Atomic Energy Act** and the **Nuclear Waste Policy Act** are excluded from the requirements of **40 CFR Part 264 – Subpart CC**.

VII.C.3.3 Should conditions change such that the Permittee is no longer able to claim the exclusions identified above, the Permittee shall immediately notify the Division per *Permit Conditions II.E.7, II.E.10* and *II.E.11* of this Permit and shall comply with the requirements of **40 CFR Part 264 – Subpart CC**.

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]

Reserved

VII.C.8 Standards: Surface Impoundments [40 CFR Part 264.1085]

Reserved

VII.C.9 Standards: Containers [40 CFR Part 264.1086]

VII.C.9.1 For each container having a design capacity greater than 0.1 m^3 and less than or equal to 0.46

m^3, the Permittee shall control air pollutant emissions from the container in accordance with the Container Level 1 standards specified in **40 CFR Part 264.1086(c)**.

VII.C.9.1.1 To comply with **40 CFR Part 264.1086(c)(1)(i)**, containers shall be used that meet the applicable U.S. Department of Transportation (DOT) regulations on packaging hazardous materials for transportation in accordance with **40 CFR Part 264.1086(f)(1)** through **(f)(4)**.

VII.C.9.2 No container having a design capacity greater than 0.1 m^3 shall be used for treatment of a hazardous waste by a waste stabilization process.

VII.C.9.3 The Permittee shall follow the procedure specified in **40 CFR Part 264.1086(h)** to determine if containers are vapor-tight.

VII.C.10 Standards: Closed-vent systems and control devices [40 CFR Part 264.1087]

Reserved

VII.C.11 Inspection and Monitoring Requirements [40 CFR Part 264.1088]

Reserved

VII.C.12 Recordkeeping Requirements [40 CFR Part 264.1089]

Reserved

VII.C.13 Reporting Requirements [40 CFR Part 264.1090]

Reserved

E N D O F P E R M I T C O N D I T I O N S

PART VIII REFERENCED ATTACHMENTS & APPENDICES

PART VIII
REFERENCED ATTACHMENTS AND APPENDICES
(Available In Volume 2 & 3 of the Hazardous Waste Management Permit)

The terms and conditions of this Permit are applicable to University of Louisville Environmental Protection Services Center under Title 401 KAR Chapters 39 and 40, of the Hazardous Waste Management Regulations of the Kentucky Administrative Regulations (KARs).

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

Attachments A through L are located in the approved RCRA Part B Permit Application received by the Division on June 1, 2022.

VIII.A	**Attachment A:**	**Part A Permit Application**	
VIII.B	**Attachment B:**	**Facility Description**	
VIII.C	**Attachment C:**	**Waste Characteristics**	
VIII.D	**Attachment D:**	**Process Information**	
VIII.E	**Attachment E:**	**Groundwater Monitoring and Corrective Action**	
VIII.F	**Attachment F:**	**Procedures to Prevent Hazards**	
VIII.G	**Attachment G:**	**Contingency Plan**	
VIII.H	**Attachment H:**	**Personnel Training**	
VIII.I	**Attachment I:**	**Closure Plans, Post-Closure Plans, and Financial Requirements**	
VIII.J	**Attachment J:**	**Other Federal Laws**	
VIII.K	**Attachment K:**	**Waste Minimization Plan**	
VIII.L	**Attachment L:**	**Signature Certification**	
VIII.AA	**Appendix 1.1:**	**SWMUs and AOCs**	[Reserved]
VIII.BB	**Appendix 1.2:**	**SWMUs and AOCs Requiring No Further Investigation**	[Reserved]
VIII.CC	**Appendix 1.3:**	**SWMUs and AOCs Requiring Confirmatory Sampling**	[Reserved]

VIII.DD	**Appendix 1.4:**	**SWMUs and AOCs Requiring Facility Investigation**	[Reserved]
VIII.EE	**Appendix 1.5:**	**SWMUs and AOCs Requiring Interim Measures**	[Reserved]
VIII.FF	**Appendix 1.6:**	**SWMUs and AOCs Requiring Corrective Measures**	[Reserved]
VIII.GG	**Appendix 1.7:**	**SWMUs and AOCs Requiring Land Use Controls**	[Reserved]
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**	

APPENDIX 1.1

LIST OF SOLID WASTE MANAGEMENT UNITS (SWMUS) AND AREAS OF CONCERN (AOCS)

RESERVED

APPENDIX 1.2

LIST OF SOLID WASTE MANAGEMENT UNITS (SWMUS) AND AREAS OF CONCERN (AOCS) REQUIRING NO FURTHER INVESTIGATION

RESERVED

APPENDIX 1.3

LIST OF SOLID WASTE MANAGEMENT UNITS (SWMUS) AND AREAS OF CONCERN (AOCS) REQUIRING CONFIRMATORY SAMPLING

RESERVED

APPENDIX 1.4

LIST OF SOLID WASTE MANAGEMENT UNITS (SWMUS) AND AREAS OF CONCERN (AOCS) REQUIRING FACILITY INVESTIGATION

RESERVED

APPENDIX 1.5

LIST OF SOLID WASTE MANAGEMENT UNITS (SWMUS) AND AREAS OF CONCERN (AOCS) REQUIRING INTERIM MEASURES

RESERVED

APPENDIX 1.6

LIST OF SOLID WASTE MANAGEMENT UNITS (SWMUS) AND AREAS OF CONCERN (AOCS) REQUIRING CORRECTIVE MEASURES

RESERVED

APPENDIX 1.7

LIST OF SOLID WASTE MANAGEMENT UNITS (SWMUS) AND AREAS OF CONCERN (AOCS) REQUIRING LAND USE CONTROLS

RESERVED

APPENDIX 2

RCRA FACILITY INVESTIGATION (RFI) – WORK PLAN OUTLINE

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 the 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, identifying:

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_3^-, NO_3^{2-}, PO_4^{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) 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 (non-construction 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 non-process 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. Capitol 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.

Permit Condition	Event	Due Date
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[1]
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.[2]
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.

Permit Condition	Event	Due Date
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.
The above reports must be signed and certified in accordance with 401 KAR 39:060 Section 5. [1] Applies to work plan execution that requires more than one hundred eighty (180) days. [2] Applies to work plan execution that requires more than one (1) year.		