

STATE OF MISSOURI  
**DEPARTMENT OF NATURAL RESOURCES**



**MISSOURI HAZARDOUS WASTE MANAGEMENT FACILITY  
PART I PERMIT**

**PERMIT NUMBER: MOD095038329**

**PERMITTEE**

Owner and Operator: Euticals/AMRI  
2460 West Bennett Street  
Springfield, MO 65807

**FACILITY LOCATION**

Euticals/AMRI  
2460 West Bennett Street  
Springfield, MO 65807  
Greene County  
North Latitude – 37°11'22"  
West Longitude – 93°19'40"

**FACILITY DESCRIPTION**

The Euticals/AMRI (Euticals, Inc., a subsidiary of Albany Molecular Research Inc.), plant is located at 2460 West Bennett Street approximately one mile west of the intersection of Bennett Street and Kansas Expressway (U.S. Highway 13), in southwest Springfield, Missouri. The plant mailing address is P.O. Box 1246, Springfield, MO 65801. The primary portion of the facility is situated within the floodplain formed by Jordan, Fassnight, and Wilson Creeks. The permitted facility property is approximately 72 acres. The active portion of the facility occupies about seven acres and contains a number of buildings that house manufacturing, product and raw material storage facilities, quality control and process development laboratories, maintenance,

and administrative buildings. The remaining acreage is undeveloped. The Union Pacific Railroad and the associated easement form the western boundary for the northern half of the property, and two small portions of the Union Pacific property containing Resource Conservation and Recovery Act Facility Investigation (RFI) monitoring wells are leased by Euticals/AMRI. A public park (Ewing Park) with sports fields is located immediately west of the Union Pacific Railroad. Prestressed Casting Company and small property owners form the southwest boundary of the property. The southern-most boundary of the facility extends to Sunshine Street. Bennett Street forms the northern property line, with undeveloped land and small commercial businesses north of Bennett Street. A municipal waste transfer station owned by WCA Waste Corporation of Missouri, bounds the northern one-third of the property on the east, and undeveloped land and multi-family housing bounds the remaining two-thirds of the property to the east. Land use in the vicinity of the facility is primarily industrial. The general facility location is shown in Figure 1.

Euticals/AMRI is a manufacturer of pharmaceutical chemicals. Hazardous wastes generated from various process units, areas, and maintenance activities are stored in containers prior to being properly disposed of off-property. The containers are managed under generator storage requirements under 10 CSR 25-5. Euticals/AMRI has one closed hazardous waste management (land disposal) unit, the Former Surface Impoundment (FSI). Prior to the establishment of formal regulatory requirements for closure, the southern end of the FSI was filled with native soil, rock and concrete and capped with clay fill in 1975. The northern portion of the FSI was closed in accordance with applicable regulatory requirements in 1985 by removing approximately 250,000 gallons of contaminated water, sediment, backfilling with uncontaminated soil, and covering with clay fill and a concrete cap. There are several other solid waste management units (SWMUs) on the facility property (see Figure 2, Location of SWMUs).

Groundwater contamination resulting from releases from the FSI and other SWMUs/Area of Concern (AOCs) on the facility property is subject to corrective action under this Permit.

On May 16, 1989, Euticals/AMRI and the U.S. Environmental Protection Agency (EPA) entered into a Corrective Action Administrative Order on Consent (Consent Order), U.S. EPA Docket Number VII-89-H-0017 pursuant to the authority of Section 3008(h) of the federal Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976 (RCRA). The Consent Order initially identified one SWMU as a possible release site. Subsequent to execution of the Consent Order, additional SWMUs/AOCs were identified as potential release sites.

The Permittee has completed a RFI and a Corrective Measures Study (CMS) for SWMUs and AOCs at the Facility. All former interim status regulated hazardous waste management units have been closed. All closure certifications were submitted by Euticals/AMRI and have been accepted by the Department.

**PERMITTED ACTIVITIES**

This Permit requires Euticals/AMRI to implement a facility-wide corrective action program to address known releases to the environment from SWMUs and AOCs. This Permit also contains contingent corrective action conditions to address any newly identified release(s) to the environment from previously- or newly-identified SWMUs and AOCs, as necessary and appropriate.

EFFECTIVE DATES OF PERMIT: October 1, 2020 to September 30, 2030

September 18, 2020  
Date

  
Chris Nagel, Director  
WASTE MANAGEMENT PROGRAM

**TABLE OF CONTENTS**

|   | <u>Page</u> |
|---|-------------|
| INTRODUCTION .....  | 6           |
| DEFINITIONS.....  | 9           |
| SCHEDULE OF COMPLIANCE .....  | 11          |
| SUBMITTAL OF REQUIRED INFORMATION .....   | 13          |
| STANDARD PERMIT CONDITIONS.....   | 14          |
| GENERAL PERMIT CONDITIONS.....  | 14          |
| CORRECTIVE ACTION CONDITIONS.....   | 16          |
| I. Identification of SWMUs and AOCs.....  | 17          |
| II. Notification Requirements for, and Assessment of, Newly Identified SWMU(s)<br>and AOC(s).....                                   | 18          |
| III. Notification Requirements for, and Assessment of, Newly Identified Releases<br>from Previously Identified SWMUs and AOCs ..... | 21          |
| IV. Interim/Stabilization Measures (ISMs).....  | 24          |
| V. RCRA Facility Investigation (RFI) Work Plan .....  | 25          |
| VI. RCRA Facility Investigation (RFI) Report.....   | 27          |
| VII. Corrective Measures Study (CMS) Work Plan.....   | 29          |
| VIII. Corrective Measures Study (CMS) Report.....   | 31          |
| IX. Final Remedy Selection and Approval .....   | 33          |
| X. Corrective Measures Implementation (CMI) Work Plan.....  | 34          |
| XI. Certification of Completion of Constructed Final Remedy .....   | 36          |
| XII. Corrective Measures Implementation (CMI) Report.....   | 37          |
| XIII. Site Operation, Maintenance, and Monitoring (OM&M) Plan.....  | 37          |
| XIV. Certification of Completion of Corrective Measures.....  | 41          |
| XV. Activity and Use Limitations (AULs).....  | 42          |
| XVI. Groundwater Monitoring and Corrective Action Program [40 C.F.R. Part 264.101<br>and 270.32] .....                              | 50          |
| XVII. Surface Water Monitoring [40 C.F.R. § 270.32(b)] .....  | 70          |
| XVIII. Groundwater Containment/Control .....  | 71          |
| XIX. Quarterly Progress Reports.....  | 75          |
| XX. Annual Groundwater Corrective Action Reports .....  | 76          |

|   |    |
|---|----|
| XXI. Planned and Contingent Activities..... | 79 |
| XXII. Data.....                             | 79 |
| FINANCIAL ASSURANCE CONDITIONS.....         | 80 |
| I. Cost Estimates.....                      | 80 |
| II. Financial Assurance.....                | 83 |
| FACILITY SUBMISSION SUMMARY .....           | 95 |

**FIGURES**

|  |     |
|--|-----|
| Figure 1 - Facility Location .....                 | 100 |
| Figure 2 - Location of SWMUs at the Facility ..... | 101 |

**TABLES**

|   |    |
|---|----|
| Table 1 - Groundwater Protection Standards.....   | 52 |
| Table 2 - Groundwater Monitoring, Sampling, Analysis, and Parameter<br>Measurement Schedule .....                                 | 69 |
| Table 3 - Planned Submittal Requirements Pursuant to this Permit and<br>Schedule of Compliance .....                              | 95 |
| Table 4 - Contingent Corrective Action Submittal Requirements Pursuant to<br>the Corrective Action Conditions of this Permit..... | 97 |

## INTRODUCTION

After public notice, according to Code of State Regulations 10 CSR 25-8.124, and review of Euticals/AMRI's *RCRA Hazardous Waste Permit Application* (hereafter referred to as the permit application), the Missouri Department of Natural Resources (hereafter referred to as the Department) determined the permit application conforms to the provisions of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 (RCRA), the Missouri Hazardous Waste Management Law [Missouri Revised Statutes Sections 260.350 through 260.433, RSMo, et seq.], and all standards, rules, and regulations adopted under these acts. The federal regulations, promulgated by the U.S. Environmental Protection Agency (hereafter referred to as EPA), are codified and to be codified in Title 40 of the Code of Federal Regulations (40 C.F.R.). The state rules and regulations, promulgated under the Missouri Hazardous Waste Management Law, are published in Title 10, Division 25, of the Code of State Regulations (10 CSR 25).

Pursuant to Section 260.375.13, RSMo and the Solid Waste Disposal Act, the Department hereby approves the permit application and issues this Missouri Hazardous Waste Management Facility Part I Permit (hereafter referred to as the Permit), Permit Number MOD095038329, to Euticals/AMRI, as the facility owner and operator (hereafter referred to as the Permittee), for "active" corrective action activities, including continued implementation of a final remedy. This Permit also includes "contingent" corrective action requirements that may be triggered, if necessary, for Solid Waste Management Units and Areas of Concern, pursuant to the state-equivalent requirements of the federal Hazardous and Solid Waste Amendments of 1984 (HSWA) to RCRA, as administered and enforced by the Department. The Department is issuing this Permit under state authority.

On July 6, 1999, Missouri received final authorization for revisions to its hazardous waste management program, including the corrective action portion of the HSWA Codification Rule (July 15, 1985, 50 FR 28702), which the state previously adopted. Thus, the corrective action requirements Missouri implements, in lieu of EPA, are incorporated into this Permit and are under state authority.

All citations to federal regulations throughout this Permit are for the sake of convenience. The federal regulations are incorporated by reference in 10 CSR 25. Applicable regulations are found in 10 CSR 25-3, 25-4, 25-5, 25-6, 25-7, 25-8, and 25-12; and 40 C.F.R. Parts 260 through 264, 266, 268, and 270, as specified in this Permit. The appropriate state reference is given and shall apply in instances where state regulations are more stringent.

Any appeals of this Permit, or specific permit conditions based on state authority, shall be filed according to 10 CSR 25-8.124(2). Any parties adversely affected or aggrieved by this decision may be entitled to pursue an appeal before the Administrative Hearing Commission (AHC). To

appeal, the party shall file a petition with the AHC within 30 calendar days after the date this Permit was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, then it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. Contact information for the AHC can be found online at [ahc.mo.gov](http://ahc.mo.gov), or by calling 573-751-2422. The Department also requests the party provide a copy of the appeal request to the Missouri Department of Natural Resources, Waste Management Program Director, P.O. Box 176, Jefferson City, MO 65102-0176.

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 thereby.

This Permit is for corrective action activities and issued only to the Permittee named above. This Permit is issued for a period of 10 years and expires at midnight on September 30, 2030. This Permit is subject to review and modification by the Department, according to Section 260.395.12, RSMo and 40 C.F.R. § 270.41. According to 40 C.F.R. § 270.51, if the Permittee submits a timely and complete application for a new permit and the Department, through no fault of the Permittee, is unable to issue a new permit on or before the expiration of this Permit, the conditions of this Permit will continue in force until the effective date or denial of a new permit.

All permit application information shall be made available to the public, unless the Permittee requests nondisclosure, in writing, as described in Section 260.430, RSMo and 10 CSR 25-7.270(2)(B)2. This Permit and accompanying materials shall be available for public review at the Department's office in Jefferson City, Missouri.

The following shall collectively be referred to as the "approved permit application":

- RCRA Hazardous Waste Permit Application, dated December 20, 2019, with additions dated December 30, 2019 and December 31, 2019, and revisions dated January 2, 2020, January 30, 2020, and May 22, 2020.

The "consolidated permit application" is defined as the approved permit application, any changes resulting from the public comment period, and all additional documents required to be submitted under the Schedule of Compliance contained in this Permit. The Permittee shall maintain a copy of all documents outlined above with the consolidated permit application at the facility.

Section 260.395.12, RSMo and 40 C.F.R. § 270.32(b)(2), require each permit issued under that section to contain terms and conditions as the Department determines necessary to protect human health and the environment. Current corrective action activities, and any future required

corrective action activities at this hazardous waste management facility shall be according to the provisions of this Permit; the Missouri Hazardous Waste Management Law and the rules and regulations promulgated thereunder as effective on the date of this Permit; all final engineering plans, petitions, specifications, and operating procedures submitted to the Department during the permit application review process, which are included in the approved permit application; and any other conditions, changes, or additions to the engineering plans, specifications, and operating procedures as specified in this Permit. The consolidated permit application, which includes the approved permit application, is therefore incorporated by this reference into the conditions of this Permit. All conditions specified in this Permit supersede any conflicting information in the consolidated permit application. Where conflicts arise between documents, the latest revision shall be effective.

According to 40 C.F.R. Part 270 Subpart D, any inaccuracies found in information submitted by the Permittee may be grounds for terminating, revoking and reissuing, or modifying this Permit, and for potential enforcement action. The Permittee shall inform the Department of any deviation from, or changes in, the information in the application, which would affect the Permittee's ability to comply with the applicable regulations or permit conditions. When the Department receives any information, such as inspection results, information from the Permittee, or requests from the Permittee, it may decide whether cause exists to modify, revoke and reissue, or terminate this Permit. All such changes to this Permit shall be handled according to the requirements of 10 CSR 25-8.124 and 40 C.F.R. Part 270 Subpart D.

40 C.F.R. § 264.101(a), requires all owners or operators of facilities seeking a permit for treating, storing, or disposing hazardous waste, to institute corrective action as necessary to protect human health and the environment from all releases of hazardous wastes or hazardous constituents from any SWMU, regardless of the time at which waste was placed in such unit. 40 C.F.R. § 264.101(b), requires that permits issued under the Missouri Hazardous Waste Management Law contain a schedule of compliance for corrective action (where corrective action cannot be completed before permit issuance) and assurances of financial responsibility for completing such corrective action. 40 C.F.R. § 264.101(c), requires corrective action to be taken by the facility owner or operator beyond the facility property boundary, where necessary to protect human health and the environment, unless the owner or operator demonstrates that, despite the owner or operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake such actions. 40 C.F.R. § 264.101(c), further stipulates that the owner or operator is not relieved of any 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 shall be determined on a case-by-case basis. In addition, assurances of financial responsibility for completing such corrective action shall be provided.

The Permittee is required to comply with all applicable environmental laws and regulations enforced by the Department. These environmental laws and regulations are administered by the Air Pollution Control Program, Environmental Remediation Program, Land Reclamation Program, Missouri Geological Survey, Waste Management Program, and Water Protection Program. Failure to comply with these environmental laws and regulations may, in certain circumstances, result in suspending or revoking this Permit and may subject the permit holder to civil and criminal liability.

## **DEFINITIONS**

For purposes of this Permit, terms used herein shall have the same meaning as those in RCRA and 40 C.F.R. Parts 260, 261, 264, 266, 268, and 270, and 10 CSR 25, unless this Permit specifically provides otherwise. Where terms are not defined in RCRA, the regulations, this Permit, or EPA guidance or publications, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

“Approved Permit Application” means the original permit application and all subsequent revisions or addenda to the permit application, and any completeness and technical information submitted as referenced in the Introduction of this Permit.

“Area of Concern (AOC)” means any area where an actual or potential release of hazardous wastes or hazardous constituents that is not from a SWMU, has occurred or is occurring and is determined by the Department to pose a current or potential threat to human health or the environment. Investigating and/or remediating AOCs may be required pursuant to Section 260.395, RSMo and 40 C.F.R. § 270.32(b)(2).

“Consolidated Permit Application” means the approved permit application, any changes resulting from the public comment period, and all additional documents required to be submitted under the Schedule of Compliance contained in this Permit.

“Corrective Action” means the investigation and remediation of hazardous wastes and hazardous constituents from any past and present release(s), including contamination that may have migrated beyond the boundaries of the permitted property.

“Director” means the Director of the Missouri Department of Natural Resources or authorized delegate.

“Extraction Well” means a well, designated by the Permittee and approved by the Department, that is used for removing groundwater, soil vapor, or combination thereof, from the subsurface

for above-ground treatment. For the purposes of this Permit, “extraction well” is synonymous with the term “recovery well”. The two terms are used interchangeably, but “extraction well” is the preferred term for this Permit.

“Facility” means:

- (1) All contiguous land and structures, other appurtenances, and improvements on the land used for treating, storing, or disposing hazardous waste; and
- (2) All contiguous property under the control of the owner or operator, for the purpose of implementing corrective action under 40 C.F.R. § 264.101, and as specified in this Permit.

“Hazardous Constituent” means any chemical compound listed in 40 C.F.R. Part 261, Appendix VIII.

“Hazardous Waste” means any waste, or combination of wastes, as defined by or listed in 40 C.F.R. Part 261, that may cause or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness or that may pose a threat to the health of humans or other living organisms because of its quantity, concentration, physical, chemical, or infectious characteristics.

“Perimeter Wells” means the wells installed at various depths at or just beyond the known extent of groundwater contamination, which serve as an early warning system to detect changes in groundwater quality and potential contaminant migration.

“Point of Compliance” means the location(s) at which groundwater concentrations are measured to demonstrate the concentrations at and beyond the Point of Exposure (POE) will not exceed the Groundwater Protection Standard (GPS) contained in Table 1 or Alternate Concentration Limits (ACLs) as may be approved by the Department.

“Point of Exposure (POE)” means the point at which a potential receptor could come in contact with contamination, either now or in the future. The contaminant concentrations identified in Table 1 must meet the GPS at and beyond the POE.

“Release” means any spilling, leaking, pouring, emitting, emptying, discharging, injecting, pumping, escaping, leaching, dumping, or disposing hazardous wastes or hazardous constituents into the environment, outside of permitted primary or secondary containment. This includes abandoning or discarding barrels, containers, and other closed receptacles containing hazardous wastes or hazardous constituents.

“Solid Waste Management Unit (SWMU)” means any discernible unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for managing solid or hazardous waste. Such units include any area at a facility at which solid wastes have been routinely and systematically released.

“Stabilization” means actions to control or abate threats to human health and/or the environment from releases at RCRA facilities and/or to prevent or minimize the further spread of contamination while long-term remedies are pursued.

### **SCHEDULE OF COMPLIANCE**

- I. Within 60 calendar days after the effective date of this Permit, the Permittee shall:
  - A. Submit to the Department one paper copy and one searchable electronic copy of the consolidated permit application, incorporating any changes resulting from comments on the draft Permit, as required by 10 CSR 25-7.270(2)(B)7., and defined in the Introduction of this Permit.
  - B. Submit to the Department a certification signed by the Permittee that the Permittee has read this Permit in its entirety and understands all permit conditions contained in this Permit.
  - C. Submit to the Department, to the attention of the Waste Management Program, a check or money order payable to “State of Missouri” for any outstanding engineering review costs.
  - D. Submit to the Department, to the attention of the Waste Management Program, a check or money order payable to “State of Missouri” for \$1,000 for each year this Permit is to be in effect beyond the first year. This Permit is effective for 10 years. Since the Permittee submitted a \$1,000 deposit with the permit application and paid a \$1,000 permit continuation fee for the current year, the remaining balance is \$9,000. An invoice is included with this Permit.
  - E. If the conditions in the most currently approved Monitoring, Sampling and Analysis Plan do not adequately reflect the requirements of this Permit, Submit to the Department for review and approval, a revised Monitoring, Sampling and Analysis Plan, to incorporate all groundwater monitoring conditions outlined in this Permit and any new conditions at the facility, as required in Corrective Action Condition XIII.

- II. Within 90 calendar days after the effective date of this Permit, the Permittee shall:
  - A. Submit to the Department for review and approval, a revised Operation, Maintenance and Monitoring Plan (OM&M Plan). The OM&M Plan shall comply with the requirements of this Permit, as specified in Corrective Action Condition XIII.
  
- III. The Permittee, has prepared and submitted to the Department for review and approval, a draft Environmental Covenant, to be filed in the property chain-of-title. The Environmental Covenant identifies portions of the permitted property where residual concentrations of hazardous wastes or hazardous constituents are present in soil and groundwater that exceed background concentrations, and any land disturbance, groundwater use, or other restrictions needed to prevent unacceptable future exposures to residual contamination at the facility.
  - A. Within 30 calendar days after receiving Departmental approval, the Permittee shall execute the Environmental Covenant and submit the Environmental Covenant for signature by all other relevant parties needed to file the covenant in the property chain-of-title, consistent with the approved CMS. Such covenant is needed to mitigate potentially unacceptable future exposures to residual contamination at the facility.
  - B. Within 15 calendar days after all relevant parties have executed the Environmental Covenant, record the executed Environmental Covenant with the Greene County Office of the Recorder of Deeds. The executed Environmental Covenant shall be recorded in the chain-of-title for the facility property or on some other instrument that is normally examined during a title search that will, in perpetuity, notify any potential purchaser of the environmental conditions of the property(ies).
  - C. Within 30 calendar days after recording the executed Environmental Covenant in the chain-of-title for the facility property or other instrument normally examined during a title search, submit to the Department a notarized statement certifying the Environmental Covenant has been recorded. Copies of the recorded pages that show the Environmental Covenant has been recorded and become part of the property record shall be included with the notarized statement.
  
- IV. Within 30 calendar days after the Department's approval of the updated corrective action cost estimate, the Permittee shall submit all documentation necessary to

- demonstrate that the Permittee satisfies the financial assurance criteria for the chosen financial assurance instrument(s), in accordance with 40 C.F.R. 264.145, based on the updated corrective action cost estimate approved by the Department.
- V. Within 20 calendar days after receiving the Department's final written response regarding the draft financial assurance instrument(s), the Permittee shall execute or otherwise finalize all instruments or other documents required in order to make the selected financial assurance legally binding, as specified in Financial Assurance Condition II.B.2.
  - VI. Within 30 calendar days after receiving the Department's final written response regarding the draft financial assurance instrument(s), the Permittee shall ensure the issuing institution submits all original executed and/or otherwise finalized instruments or other documents required in order to make the selected financial assurance legally binding, as specified in Financial Assurance Condition II.B.3.
  - VII. The Permittee shall comply, as necessary, with all planned and contingent corrective action requirements of this Permit, as specified in the Corrective Action Conditions of this Permit and as summarized in Tables 4 and 5.

## **SUBMITTAL OF REQUIRED INFORMATION**

- I. Unless otherwise requested by the Department, the Permittee shall submit one paper copy and one searchable electronic copy of all reports, documents, and plans/specifications, and consolidated permit application required under the terms of this Permit to:

Chief, Engineering Section  
Missouri Department of Natural Resources  
Waste Management Program  
P.O. Box 176  
Jefferson City, MO 65102-0176

- II. If the Permittee requires additional time to submit a scheduled document or perform other activities required by this Permit, the Permittee shall submit a written extension request to the Department according to General Permit Condition VI.

## **STANDARD PERMIT CONDITIONS**

### **I. Application for Permit Reissuance [40 C.F.R. § 270.32(b)(2)]**

According to 40 C.F.R. § 270.10(h)(1), the Permittee may submit a permit renewal application to the Department at least 180 calendar days before the expiration date of this Permit, unless the Department allows a later date. However, in order not to jeopardize timely reissuance, according to 40 C.F.R. § 270.32(b)(2), the Permittee shall submit a permit renewal application to the Department at least 24 months before the expiration date of this Permit, unless the Department allows a later date pursuant to General Permit Condition VI.

## **GENERAL PERMIT CONDITIONS**

### **I. General Facility Standards**

The Permittee shall comply with Appendix F, GW-SOP-1.03: Floodwall and Fence Operation, Maintenance, and Inspection of the approved permit application and the provisions of this Permit to fulfill the requirements of 40 C.F.R. Part 264, Subpart B - General Facility Standards, as incorporated in 10 CSR 25-7.264(1). The Euticals/AMRI facility lies within a 100-year floodplain. A flood control wall bordering different portions of the property, as described in GW-SOP-1.03 of the approved permit application, provides protection against flood impacts of the magnitude of a 100-year flood event. The Permittee shall maintain the floodwall until such time as the corrective action activities specified in this Permit are complete.

### **II. Preparedness and Prevention and Emergency Procedures**

The Permittee shall comply with Appendix F, EHS-SOP- 1.79: Excavation Permit of the approved permit application and the provisions of this Permit to fulfill the requirements of 40 C.F.R. Part 264, Subpart C - Preparedness and Prevention, and Subpart D - Contingency Plan and Emergency Procedures, each as incorporated in 10 CSR 25-7.264(1). The Health and Safety Plan (HASP) required by Corrective Action Condition XIII., OM&M Plan shall be regarded as compliance with 40 C.F.R. Part 264 Subpart C - Preparedness and Prevention and Subpart D - Contingency Plan and Emergency Procedures, as these provisions are incorporated in 10 CSR 25-7.264.

III. Notification of an Emergency Situation [Section 260.505.4, RSMo]

The Permittee shall, at the earliest practical moment upon discovery of an emergency involving the hazardous waste or hazardous constituents under the Permittee's control, implement the facility contingency plan, including notifying the Department's emergency response hotline at 573-634-2436 and the National Response Center at 800-424-8802.

Within 15 calendar days after the incident occurrence, the Permittee shall submit a written report to the Department providing details. The content of the written report shall conform to 40 C.F.R. § 264.56(i) and be provided to the addressees listed in the "Submittal of Required Information" provision of this Permit.

IV. Reporting Requirements [40 C.F.R. § 270.30(l)(9)]

A biennial report shall be submitted to the Department by March 1 during even numbered calendar year, covering facility activities as required by 40 C.F.R. § 264.75.

V. Review and Approval Procedures

- A. Financial assurance cost estimates and draft financial assurance mechanisms submitted for corrective action activities shall be reviewed and responded to by the Department, according to the procedures described in the Financial Assurance Conditions of this Permit.
- B. Following submission of any plan or report pertaining to corrective action activities (excluding the Quarterly Progress Reports and Annual Groundwater Corrective Action Report, unless proposed actions to address corrective action program inadequacies are contained therein), the Department shall review and either approve or provide written comments on the plan or report. If the Department does not approve the plan or report, the Department shall notify the Permittee, in writing, of the plan's or report's deficiencies and specify a due date for submitting a revised plan, report, or associated activity schedule.
- C. If the Department does not approve the revised plan, report, or associated activity schedule, the Department may modify the plan, report, or schedule and notify the Permittee, in writing, of the modifications. The plan, report, or schedule, as modified by the Department, shall be the approved plan, report, or schedule.

- D. If the Permittee disagrees with any Department-initiated plan, report, or schedule modifications, and a mutually acceptable resolution of such modifications cannot be reached informally, the Permittee may file an appeal of the Department-initiated modifications according to Sections 260.395.11 and 621.250, RSMo.

VI. Document and Activity Extension Requests

- A. If the Permittee requires additional time to submit a scheduled document or perform other activities required by this Permit, the Permittee shall submit a written extension request to the Department. Hard copy letter or e-mail are acceptable. The Department shall receive the extension request at least 15 calendar days before the scheduled document due date or activity completion date. The Permittee's extension request shall specify the amount of additional time needed and include the Permittee's justification for the requested extension.
- B. The Department shall review and approve the extension request according to the procedures described in General Permit Condition V.
- C. If the Department does not approve the extension request, the Department may modify the request and notify the Permittee, in writing, of the modification. The extension request, as modified by the Department, shall be the approved schedule.

**CORRECTIVE ACTION CONDITIONS**

The Permittee shall comply with all applicable groundwater monitoring, surface water monitoring, and corrective action requirements contained in 40 C.F.R. Part 264 Subparts F and 40 C.F.R. 270 Subpart C, and all provisions of this Permit, for all previously-and any newly-identified SWMUs, AOCs, and releases identified pursuant to the provisions of this Permit.

The FSI is a closed unit that requires ongoing inspection and maintenance under 40 C.F.R. § 270.1(c). The FSI is not considered a 'regulated unit' under the description of 40 C.F.R. § 264.90(a)(2) since it stopped receiving hazardous waste prior to July 26, 1982. The closure requirements for the FSI were completed and the Department received a closure certification letter October 25, 1990. The FSI is a SWMU subject to 40 C.F.R. § 264.101 including ongoing inspection and maintenance requirements. The ongoing inspection and maintenance elements that apply to the FSI are addressed in the corrective action conditions of this Permit.

I. Identification of SWMUs and AOCs

A. On June 14, 1996, Archimica, Incorporated, then operating as Syntex Agribusiness, Incorporated, completed and delivered a RFI to comply with a Corrective Action Order on Consent that was entered into with EPA, Docket No. 89-H-0017, pursuant to the authority of Section 3008(h) of RCRA. Section 2 of the RFI report, dated June 17, 1996 identified 11 SWMUs. Figure 2 shows the approximate locations of the SWMUs at the facility. The SWMUs identified in the RFI report are as follows:

1. Former Chemical Sewer Lines (FCSL) (including the Pilot Plant and Laboratory Sewers);
2. Former Surface Impoundment (FSI);
3. Wastewater Treatment System (WWTS);
4. Site Sewer Lines;
5. West Ditch Area/Lactone Pit;
6. Solvent Recovery Areas (SRA);
7. Waste Solvent Tanks;
8. Drum Storage Areas;
9. Hazardous Waste Storage Building, also known as the Interim Storage Pad (ISP);
10. Former Sludge Storage Facility; and
11. Groundwater Treatment System.

Each SWMU was evaluated in the final approved CMS Report, dated January 9, 2002, to determine if any hazardous constituents associated with the SWMU posed any threat to human health and the environment. The CMS Report concluded the following SWMUs required further investigation or remediation:

1. FCSL (including the Pilot Plant and Laboratory Sewers);
  2. Former Surface Impoundment (FSI);
  3. WWTS (brick-lined settling pit); and
  4. Contaminated sewer pipes of Building S-14 in the SRA.
- B. The status of the known SWMUs is based on available information at the time of issuance of this Permit. In the event new information becomes available indicating human health or the environment may be adversely impacted, the Permittee may be required to conduct additional investigations and evaluations, as necessary, to determine the need for additional corrective action for the previously identified SWMUs, or any newly identified SWMUs and AOCs, including off-property release(s), as specified in Corrective Action Conditions II. and III.
- C. As deemed appropriate by the Department, the Permittee shall conduct additional investigation(s) and/or take corrective action for any previously- or newly-identified SWMUs and AOCs, including off-property release(s), demonstrating the releases of hazardous waste or hazardous constituents to soil, surface water, sediment, groundwater, and/or air has been thoroughly delineated and reported, as specified in Corrective Action Conditions II. through VIII. Any off-property impacts to surface water, sediment, soil, or groundwater shall be addressed if the impacts to these media originated from SWMUs, AOCs, or other releases on the facility property.
- II. Notification Requirements for, and Assessment of, Newly Identified SWMU(s) and AOC(s)
- A. The Permittee shall notify the Department, in writing, no later than 15 calendar days after discovery, or after discovery should have been made (e.g., visual observations, laboratory test results, or information not previously available), of any new SWMU(s) or AOC(s) identified after the issuance of this Permit. The Department may examine the facility's inspection records to determine if the Permittee should have known that a release occurred.
- B. The Department may require the Permittee to conduct an investigation of any newly identified SWMU(s) or AOC(s). The Department shall notify the Permittee, in writing, of this decision. Within 30 calendar days after receiving

the Department's request to conduct an investigation, the Permittee shall prepare and submit a SWMU/AOC Assessment Work Plan to the Department for review and approval. The SWMU/AOC Assessment Work Plan shall include, but not be limited to, the following:

1. A discussion of past hazardous wastes management practices related to the unit(s);
  2. A detailed investigation approach for surface and subsurface soils, surface water, groundwater, and air as necessary to:
    - a. Determine if a release of hazardous wastes or hazardous constituents has occurred or is occurring at the unit(s);
    - b. Yield reliable, representative samples, and results;
    - c. Determine impacts or potential impacts to human health and the environment; and
    - d. Sufficiently assess all hazardous wastes and hazardous constituents related to the unit(s).
  3. A proposed schedule for implementing the SWMU/AOC Assessment Work Plan, which is predicated on the date the Department approves the plan; and
  4. Identification of all data to be collected that is necessary to provide for a complete SWMU/AOC Assessment Report, as specified below.
- C. The Department shall review and approve the SWMU/AOC Assessment Work Plan according to the procedures described in General Permit Condition VI. The Permittee shall complete all activities described in the SWMU/AOC Assessment Work Plan, according to the schedule contained in the approved plan.
- D. The Permittee shall submit a SWMU/AOC Assessment Report to the Department, according to the schedule specified in the approved SWMU/AOC Assessment Work Plan. The SWMU/AOC Assessment Report shall present and discuss the information obtained under the approved SWMU/AOC Assessment Work Plan. At a minimum, the SWMU/AOC Assessment Report

shall provide the following information for each newly identified SWMU or AOC:

1. The location of the newly identified SWMU or AOC in relation to other SWMU(s) and AOC(s);
  2. The type and function of the SWMU or AOC;
  3. The general dimensions, capacities, and structural description of the SWMU or AOC;
  4. The period during which the SWMU or AOC was operated;
  5. The physical and chemical properties of all wastes that have been or are being managed at the SWMU or AOC, to the extent possible;
  6. The results of any sampling and analysis conducted;
  7. Past and present operating practices;
  8. Previous uses of the area occupied by the SWMU or AOC;
  9. Amounts of waste handled;
  10. Drainage areas and/or drainage patterns near the SWMU or AOC; and
  11. A recommendation as to whether further action is necessary for the newly identified SWMU or AOC and justification for the recommendation. If further action is recommended, such as updating the site conceptual model and/or assessing SWMU/AOC-specific risk, the SWMU/AOC Assessment Report shall include a proposal for additional investigation or corrective action, as appropriate.
- E. The Department shall review and approve the SWMU/AOC Assessment Report according to the procedures described in General Permit Condition V. Based on the findings of this report and any other available information, the Department shall determine the need for additional investigation, including interim/stabilization measures or a RFI, at specific unit(s) identified in the SWMU/AOC Assessment Report.

- F. If the Department determines additional investigations are needed, the Department may require the Permittee to prepare and submit to the Department for review and approval, a work plan for such investigations according to the applicable Corrective Action Conditions of this Permit. The Department shall review and approve any such work plan according to the procedures described in General Permit Condition V. The Permittee shall complete all activities described in the work plan, according to the schedule contained in the approved plan.
- III. Notification Requirements for, and Assessment of, Newly Identified Releases from Previously Identified SWMUs and AOCs
- A. The Permittee shall notify the Department, in writing, no later than 15 calendar days after discovery, or after discovery should have been made (e.g., visual observations, laboratory test results, or information not previously available), of any newly identified release(s) of hazardous wastes or hazardous constituents from any previously identified SWMU(s) or AOC(s) at the facility. This includes SWMUs or AOCs being investigated and reported as part of the corrective action process, where newly identified release(s) are discovered during the course of groundwater monitoring, field investigation, environmental auditing, or other activities undertaken after issuance of this Permit. The reporting requirement under the NPDES permit MO-0001970 issued to the Permittee must be also considered. The Department may examine the facility's inspection records to determine if the Permittee should have known that a release occurred.
- B. The Department may require the Permittee to conduct an investigation of the newly identified release(s). The Department shall notify the Permittee, in writing, of this decision. Within 30 calendar days after receiving the Department's request to conduct an investigation, the Permittee shall prepare and submit a Newly Identified Release Work Plan to the Department for review and approval. The Newly Identified Release Work Plan shall include, but not be limited to, the following:
1. A discussion of the hazardous waste/chemical management practices related to the release(s);
  2. A detailed investigation approach for groundwater, land surface and subsurface soils, surface water, and air as necessary to:

- a. Define the extent of the release area(s);
  - b. Yield reliable, representative samples, and results;
  - c. Determine impacts or potential impacts to human health and the environment; and
  - d. Sufficiently assess all hazardous wastes and hazardous constituents related to the release(s).
3. A proposed schedule for implementing the Newly Identified Release Work Plan, which is predicated on the date the Department approves the plan; and
  4. Identification of all data to be collected that is necessary to provide for a complete Newly Identified Release Report, as specified below.
- C. The Department shall review and approve the Newly Identified Release Work Plan according to the procedures described in General Permit Condition V. The Permittee shall complete all activities described in the Newly Identified Release Work Plan, according to the schedule contained in the approved plan.
- D. The Permittee shall submit a Newly Identified Release Report to the Department according to the schedule specified in the approved Newly Identified Release Work Plan. The Newly Identified Release Report shall present and discuss the information obtained under the approved Newly Identified Release Work Plan. At a minimum, the report shall provide the following information for each newly identified release:
1. The location of the newly identified release in relation to the SWMU(s) or AOC(s) under investigation and to any other SWMU(s) and AOC(s);
  2. The general dimensions of the release;
  3. The period during which the release is suspected to have occurred;
  4. The physical and chemical properties of all wastes that have been determined to compose the release;

5. The results of any sampling and analysis conducted;
  6. Past and present operating practices near and at the location of the release;
  7. Previous uses of the area(s) occupied near and at the location of the release;
  8. Amounts of waste handled near and at the location of the release;
  9. Drainage areas and/or drainage patterns near and at the location of the release; and
  10. A recommendation as to whether further action is necessary for the newly identified release from a previously identified SWMU(s) or AOC(s) and justification for the recommendation. If further action is recommended, such as updating the site conceptual model and/or assessing SWMU/AOC-specific risk, the Newly Identified Release Report shall include a proposal for additional investigation or corrective action, as appropriate.
- E. The Department shall review and approve the Newly Identified Release Report according to the procedures described in General Permit Condition V. Based on the findings of the report and any other available information, the Department shall determine the need for additional investigation, including interim/stabilization measures or an RFI, at specific releases(s) identified in the Newly Identified Release Report.
- F. If the Department determines additional investigation is needed, the Department may require the Permittee prepare and submit to the Department for review and approval, a work plan for such investigations according to the applicable Corrective Action Conditions of this Permit. The Department shall review and approve any such work plan according to the procedures described in General Permit Condition V. The Permittee shall complete all activities described in the work plan, according to the schedule contained in the approved plan.

IV. Interim/Stabilization Measures (ISMs)

- A. Should the Permittee become aware of a situation that may require any additional ISMs that may be necessary to protect human health or the environment, the following conditions shall apply:
1. The Permittee shall notify the Department by e-mail or telephone within 24 hours and by letter within seven days after becoming aware, or should have become aware, of the situation. The Department may examine the facility's inspection records to determine if the Permittee should have known ISMs might be required and notification should have occurred.
  2. If, during the course of any activities initiated under this Permit, the Permittee or Department determines a release or potential release of hazardous wastes or hazardous constituents poses a threat to human health or the environment, the Department may require ISMs in coordination with the Permittee, to slow or stop the further spread of contamination until final corrective action measures are implemented. The Department shall determine the specific action(s) that shall be taken to implement the ISMs, including potential permit modifications, and the schedule for implementing the ISMs. The Department shall notify the Permittee, in writing, of decisions regarding the action(s). This requirement shall not preclude the Permittee from responding to an emergency situation without direction from the Department.
  3. The Permittee shall notify the Department and in writing or by e-mail, no later than 10 calendar days after determining, or after a determination should have been made, that the ISMs are not effectively limiting or stopping the further spread of contamination. The Department may require the ISMs be revised to make them effective in limiting or stopping the spread of contamination, or that additional corrective action measures are required to address the contaminated media.
  4. In cases where releases or potential releases present minimal exposure concerns, or the remedial solution is relatively uncomplicated, the Permittee may propose ISMs to the Department for review and approval. These ISMs shall be consistent with, and may supplement or satisfy the requirements for, a final remedy(s) in specific areas.

Proposed ISMs the Department determines to be significant (e.g., those which are anticipated to make up a substantial part of the final remedy) may be subject to public review and comment before final Department approval. Proposed ISMs the Department determines not to be significant shall be reviewed and approved according to the procedures described in General Permit Condition V.

V. RCRA Facility Investigation (RFI) Work Plan

The RFI Work Plan was approved by EPA November 1, 1991. As part of the work plan, an Early Well Completion Report was submitted to the Department and EPA on February 8, 1993, to document certain initial RFI work. The RFI Work Plan was subsequently modified based on the early Well Completion Report and a revised RFI Work Plan was approved by EPA on July 12, 1993.

- A. If the Department determines additional investigations are needed, the Department may require the Permittee to conduct a supplemental RFI. The Department shall notify the Permittee, in writing, of this decision. Within 60 calendar days after receiving the Department's request to conduct a supplemental RFI, and after meeting with the Department to discuss the content of the Work Plan, the Permittee shall prepare and submit a supplemental RFI Work Plan to the Department for review and approval.
- B. The supplemental RFI Work Plan shall be designed to investigate releases of hazardous wastes and hazardous constituents to all appropriate media of concern, including surface and subsurface soils, surface water, groundwater, and air, as necessary. In order to substantiate future corrective action decisions, the supplemental RFI Work Plan shall contain provisions sufficient to meet the following objectives and a proposed schedule for implementing the supplemental RFI Work Plan, which is predicated on the date the Department approves the plan:
  - 1. Full characterization of the nature, vertical and horizontal extent, and rate of migration of releases of hazardous wastes and hazardous constituents from SWMUs and AOCs, or groups of SWMUs and AOCs, or newly identified release(s) at the facility and the actual or potential receptors of such releases; and
  - 2. Collection of any other pertinent data that may be used to substantiate future corrective action decisions.

- C. The supplemental RFI Work Plan shall be appropriate for facility-specific conditions and shall be consistent with and address all applicable investigation elements described in the EPA document entitled, RCRA Facility Investigation (RFI) Guidance, EPA 530/SW-89-031, May 1989, or the most recent version. Any required RFI activities shall also be conducted using the approaches contained in the EPA document entitled, Resource Conservation and Recovery Act Facilities Investigation Remedy Selection Track (RCRA FIRST): A Toolbox for Corrective Action, May 20, 2016. At a minimum, the supplemental RFI Work Plan shall detail all proposed activities and procedures to be conducted at the facility, including, but not limited to, the following:
1. A description of current conditions;
  2. The schedule for implementing and completing such investigations and for submitting reports (including the supplemental RFI Report);
  3. The qualifications of personnel performing or directing the investigations, including contractor personnel; and
  4. The overall management of the RFI activities.
- D. The supplemental RFI Work Plan shall include a Quality Assurance Project Plan (QAPP), that shall present the policies, organization, objectives, functional activities, and specific quality assurance and quality control (QA/QC) activities designed to achieve the data quality goals of the supplemental RFI. It shall include, at a minimum, the supplemental RFI objectives; sampling procedures; analytical methods; field and laboratory quality control samples; chain-of-custody procedures; and data review, validation, and reporting procedures. The Permittee shall follow the EPA document entitled, EPA Requirements for Quality Assurance Project Plans, EPA QA/R-5, March 2001, (reissued May 2006) or the most recent version.
- E. The Permittee shall prepare and maintain a HASP during the project that assures the supplemental RFI activities are conducted in a manner that is protective of human health and the environment.
- F. Due to the complexity of defining the extent of contamination, the Permittee may be required to use a phased approach that requires submitting additional supplemental RFI Work Plans.

- G. The Department shall review and approve the supplemental RFI Work Plan(s) according to the procedures described in General Permit Condition V. The Permittee shall complete all activities described in the supplemental RFI Work Plan(s), according to the schedules contained in the approved plan(s).

VI. RCRA Facility Investigation (RFI) Report

- A. The Permittee, submitted a final RFI Report to the Department and EPA on June 14, 1996. The Department and EPA approved the documents on July 23, 1996.
- B. Should additional investigations become necessary, the Permittee shall submit a supplemental RFI Report to the Department according to the schedule specified in the approved supplemental RFI Work Plan described in Corrective Action Condition V. The supplemental RFI Report shall present all information gathered under the approved supplemental RFI Work Plan, along with a brief facility description and map showing the property boundary and all SWMUs and AOCs. The supplemental RFI Report shall contain adequate information to support additional corrective action decisions at the facility. Information contained in the supplemental RFI Report shall be presented in a format consistent with Section 5 of the EPA document entitled, RCRA Facility Investigation (RFI) Guidance, EPA 530/SW-89-031, May 1989, or the most recent version.
- C. The supplemental RFI Report shall provide an interpretation of the RFI information gathered, supported with adequate documentation, to enable the Department to determine whether additional ISMs or a CMS may be necessary. The supplemental RFI Report shall describe the procedures, methods, and results of all investigations of SWMUs and AOCs and associated releases, including, but not limited to, the following, as appropriate:
  - 1. Characterization of the nature, concentration(s), horizontal and vertical extent, and direction/rate of migration of releases from SWMUs and AOCs at the facility;
  - 2. Characterization of the environmental setting of the facility, including:
    - a. Hydrogeological conditions;
    - b. Climatological conditions;

- c. Soil and bedrock characteristics;
  - d. Surface water and sediment quality; and
  - e. Air quality and meteorological conditions.
3. Characterization of SWMUs and AOCs from which releases have been or may be occurring, including unit and waste characteristics;
4. Descriptions of human and environmental receptors and associated risks to the receptors which are, may have been, or, based on facility-specific circumstances, could be exposed to release(s) from SWMUs and AOCs;
5. Assessment of potential risks to the human and environmental receptors exposed to release(s) from SWMUs and AOCs;
6. Extrapolations of future contaminant migration, including description of contaminant fate and transport mechanisms, and pathways for human and environmental exposure;
7. Laboratory, bench-scale, pilot-scale, and/or appropriate tests or studies to determine the feasibility or effectiveness of treatment technologies or other technologies that may be appropriate in implementing remedies at the facility;
8. Statistical analyses to aid in interpreting data;
9. Results of any ISMs previously implemented;
10. A plan for additional groundwater monitoring, as necessary, from the time of RFI approval until such time as this Permit is modified to implement a supplemental final remedy. This plan shall specify the wells to be monitored, the frequency of monitoring, and the analytical parameters. Groundwater monitoring shall be conducted in accordance with Corrective Action Condition XVI.; and
11. Evaluation of data quality that may affect the nature and scope of a CMS, as well as the evaluation of corrective measures alternatives thereunder (e.g., identifying any potential bias in the supplemental RFI

data and documenting its precision, accuracy, representativeness, completeness, comparability, validation, etc.).

- D. The Department shall review and approve the supplemental RFI Report according to the procedures described in General Permit Condition V. If the Department determines the objectives of the supplemental RFI have not been met, the Department may require additional investigation. Upon approval of the supplemental RFI Report, the Department shall notify the Permittee, in writing, of the next step in the corrective action process, which may include submitting a CMS Work Plan.

VII. Corrective Measures Study (CMS) Work Plan

- A. If the Department determines there has been a release of hazardous waste or hazardous constituents from newly or previously identified SWMUs or AOCs that may pose a threat to human health or the environment, the Department may require the Permittee to conduct a supplemental CMS or remedy evaluation. The Department shall notify the Permittee, in writing, of this decision. The notice shall identify the hazardous constituent(s) of concern and may specify remedial alternatives for the Permittee to evaluate.
- B. As part of the supplemental CMS or remedy evaluation, the Department may require the Permittee to evaluate one or more specific remedial alternatives for removing, containing, or treating hazardous wastes and hazardous constituents in contaminated media, based on the objectives established for the corrective action. These remedial alternatives may include a specific technology or combination of technologies that, in the Department's judgment, may be capable of achieving standards for protecting human health and the environment.
- C. Within 45 calendar days after receiving the Department's request to conduct a supplemental CMS or remedy evaluation, and after meeting with the Department to discuss the nature and scope of the supplemental CMS or remedy evaluation, the Permittee shall prepare and submit a supplemental CMS Work Plan or Remedy Evaluation Plan to the Department for review and approval. The supplemental CMS Work Plan or Remedy Evaluation Plan shall be generally consistent with the EPA document entitled, RCRA Corrective Action Plan (Final), OSWER Directive 9902.3-2A, May 1994, or the most recent version. Any required CMS activities shall be conducted using the approaches contained in the EPA document entitled, Resource Conservation

and Recovery Act Facilities Investigation Remedy Selection Track (RCRA FIRST): A Toolbox for Corrective Action, May 20, 2016. At a minimum, the supplemental CMS Work Plan or Remedy Evaluation Plan shall provide the following information, as appropriate, and a proposed schedule for implementing the elements of the supplemental CMS Work Plan or Remedy Evaluation Plan:

1. A description of the general approach to investigating and evaluating potential remedial alternatives or combinations of alternatives;
  2. A definition of the specific objectives of the study/evaluation;
  3. A description of the remedial alternative or combination of alternatives that will be studied;
  4. A description of those potentially viable remedial alternatives initially considered, but were dropped from further consideration, including the rationale for elimination;
  5. The specific plans for evaluating remedial alternatives or combination of alternatives to ensure compliance with applicable remedy selection threshold/balancing criteria and cleanup standards;
  6. A schedule for conducting the study/evaluation and submitting a CMS Report or equivalent and/or preferred remedy proposal, which is predicated on the date the Department approves the supplemental CMS Work Plan or Remedy Evaluation Plan;
  7. The proposed format for ranking remedial alternatives or a combination of alternatives in support of a preferred remedial alternative or combination of alternatives; and
  8. Identification of laboratory, bench-scale, pilot-scale, and/or other appropriate tests or studies that will be used to determine the feasibility or effectiveness of treatment technologies, or other technologies that may be appropriate in implementing remedial alternatives at the facility.
- D. The Department shall review and approve the supplemental CMS Work Plan or Remedy Evaluation Plan according to the procedures described in General

Permit Condition V. The Permittee shall complete all activities described in the supplemental CMS Work Plan or Remedy Evaluation Plan, according to the schedule contained in the approved plan.

VIII. Corrective Measures Study (CMS) Report

- A. The Permittee, submitted a final CMS Report to the Department and EPA on January 9, 2002, which the Department and EPA jointly approved on March 28, 2005.
- B. Should submitting a supplemental CMS Work Plan become necessary, The Permittee shall submit a supplemental CMS Report to the Department according to the schedule specified in the approved supplemental CMS Work Plan. The supplemental CMS Report shall present all information gathered under the approved supplemental CMS Work Plan and shall be generally consistent with the EPA document entitled, RCRA Corrective Action Plan (Final), OSWER Directive 9902.3-2A, May 1994, or the most recent version.
- C. The supplemental CMS Report shall describe and discuss each remedial alternative or combination of alternatives evaluated, including any bench-scale or pilot tests conducted. The supplemental CMS Report shall include, but not be limited to, the following information:
  - 1. Evaluation of the performance, reliability, ease of implementation, and potential impacts of each remedial alternative or combination of alternatives, including safety impacts, cross media impacts, overall carbon footprint, and control of exposure to any residual contamination;
  - 2. Assessment of the effectiveness of each remedial alternative or combination of alternatives in terms of achieving adequate control of contaminant sources and cleanup of hazardous waste or hazardous constituents released from the SWMU(s) and AOC(s);
  - 3. Estimation of the time required to begin and complete implementation of each remedial alternative or combination of alternatives, and an estimate of the time required to meet the proposed remediation objectives contained in the supplemental CMS Report;

4. Estimation of the costs to implement, operate, monitor, and maintain each remedial alternative or combination of alternatives;
  5. Recommendation of a preferred remedial alternative or combination of alternatives, and rationale for the proposed selection; and
  6. Assessment of institutional requirements that may be needed (e.g., state or local permits), discussion of other environmental or public health requirements or institutional controls that may substantially affect implementing the preferred remedial alternative or combination of alternatives (e.g., local ordinances), and a draft of any facility-specific institutional controls proposed as part of the preferred remedial alternative or combination of alternatives (e.g., a draft environmental covenant containing specific activity and use limitations prepared pursuant to the Missouri Environmental Covenants Act, Sections 260.1000 through 260.1039, RSMo.).
- D. The supplemental CMS Report shall contain information sufficient to facilitate the Department's development of a Statement of Basis in support of the final remedy decision-making process.
- E. The Department shall review and approve the supplemental CMS Report according to the procedures described in General Permit Condition V. Upon approval of the supplemental CMS Report, the Department will approve a final remedy, as specified in Corrective Action Condition VIII.

IX. Final Remedy Selection and Approval

- A. The selected final remedy was approved by the Department on September 30, 2010. The final remedy includes enhanced institutional controls, enhanced cap maintenance, containment/control and remediation of contaminated groundwater via pumping and treatment, and enhanced groundwater and stream monitoring.
- B. This Corrective Action Condition may apply to additional activities undertaken in response to newly identified SWMUs and AOCs, additional activities undertaken in response to newly identified release(s) from previously identified SWMUs and AOCs, and additional activities undertaken in response to any increasing trends in levels of contamination or additional data needs for more completely evaluating the efficacy of the 2010 Final Remedy identified through long-term monitoring under Corrective Action Condition(s) XVI.
  1. If a supplement or update to the final remedy is determined to be necessary, following the approval of the supplemental CMS Report or equivalent, as described in Corrective Action Condition VIII., the Department shall prepare a Statement of Basis summarizing the remedial alternatives evaluated by the Permittee and the Department's basis of support for the proposed supplement or update to the final remedy.
  2. Following the Department's preparation of the Statement of Basis, a permit modification shall be initiated according to 40 C.F.R. §§ 270.41 or 270.42(c), as applicable, to facilitate public review and comment on the Statement of Basis, proposed supplemental final remedy, and supporting documents. When, and if, required, the Permittee shall provide assurances of financial responsibility for any approved revised or supplemental corrective action final remedy pursuant to 40 C.F.R. § 264.101(b), and as specified in Financial Assurance Condition II.
  3. Upon completion of the public participation activities associated with the permit modification to implement the proposed supplemental final remedy, the Department shall approve a final remedy that shall:
    - a. Be protective of human health and the environment;

- b. Control and/or eliminate the source(s) of contaminants so as to reduce or eliminate, to the maximum extent practicable, further contaminant releases, exposures or migration that may pose a threat to human health and the environment; and
- c. Meet all applicable federal, state, and local laws and regulations.

X. Corrective Measures Implementation (CMI) Work Plan

The approved final remedy at the facility includes enhanced institutional controls, enhanced cap maintenance, containment/control and remediation of contaminated groundwater via pumping and treatment, and enhanced groundwater and stream monitoring. According to the requirements of Corrective Action Condition XII. of the previous MHWMF Part I Permit issued on September 30, 2010, the Permittee prepared and submitted a CMI Work Plan to the Department and EPA on July 25, 2011. The Department subsequently approved the CMI Work Plan with revisions. The CMI Work Plan provided detailed plans for implementing corrective measures at the SWMUs requiring corrective action, identified in Corrective Action Condition I.A., that were consistent with the objectives specified in the approved CMS Report. The following significant corrective measures have been completed at the facility.

A. Institutional Controls:

- A draft Environmental Covenant was submitted to the Department which outlined the activity and use limitations as part of the Final Remedy. The existing access controls will continue to be followed at the Facility.
- A Standard Operating Procedure has been written and implemented to formalize inspection and maintenance activities for the existing cap over the FSI.
- A Standard Operating Procedure has been written and implemented to formalize operations, inspections and maintenance activities for the Floodwall and Fences.
- A Standard Operating Procedure has been written and implemented to formalize controls on construction and/or maintenance activities, which

are likely to involve excavation of soils, or placement of fill in all areas of the Site.

- A Site Integrated Contingency Plan has been prepared.
  - A Spill Prevention Countermeasures and Control Plan was implemented to comply with the requirements of the Clean Water Act, Oil Pollution Prevention, and in coordination with the Integrated Contingency Plan.
  - A Standard Operating Procedure has been written and implemented to comply with RCRA and Department of Homeland Security regulations, and
  - Monthly inspections are performed of all safety and emergency equipment.
- B. Dense non-aqueous phase liquid (DNAPL) Recovery and Enhanced Monitoring: Corrective Measures for DNAPL recovery are implemented through the continuous pump and treat system and through quarterly DNAPL monitoring checks in wells that have previously had DNAPL. These actions occur within and near the source SWMUs.
- C. Enhanced Groundwater Recovery: Operation of the groundwater recovery and treatment system began in 1989 as an interim measure, and has been enhanced by adding more pumping wells and improving pump technology and effluent transport for treatment. Three existing pumping wells continue to be used (SXD1, ITD4, and 11AB1). Two existing monitoring wells (ITO2R, RFI-7B1) were converted into semi-continuous pumped wells. In addition well 9-Core on the western side of the Facility is pumped quarterly using portable equipment. Hydraulic capture of groundwater is demonstrated by comparing groundwater levels with Jordan Creek surface water levels, measuring depth of the cones of depression in key pumping wells, and by measuring hydraulic gradient direction with respect to Jordan Creek.
- D. Enhanced Monitoring- Groundwater and Creeks: The enhanced monitoring program involves chemical monitoring of groundwater quality, visual and recovery monitoring for DNAPL stability, and water level and chemical monitoring of Jordan Creek to verify no contaminated groundwater aqueous phase liquid (APL) discharge. The monitoring activities use chemical

monitoring via groundwater sampling to determine subsurface water quality and to detect changes in the APL concentrations.

XI. Certification of Completion of Constructed Final Remedy

- A. This Permit and the Corrective Action Conditions contained herein are based on the approved CMS Report and the final remedy specified in this Permit. If the Department or Permittee determines a new remedy or revised final remedy is necessary, all current Corrective Action Conditions shall continue in force, unless and until appropriate permit modifications are reviewed and approved.
- B. Within 60 calendar days after completing all construction activities associated with implementing any approved final remedy, the Permittee shall submit a written certification to the Department by certified mail, stating the final remedy has been constructed according to this Permit, the approved CMS Report, approved final remedy decision, and CMI Corrective Measures Implementation Work Plan. The certification shall be signed by the Permittee and a professional engineer registered in Missouri.

This certification shall be part of the CMI Report specified in Corrective Action Condition XII. The CMI Report shall contain a summary of all final remedy construction activities implemented at the facility (including any previously implemented ISMs), the exact location(s) and design of any new wells, and discussion of any deviations from the approved CMI Work Plan. The CMI Report shall also address the information described in Chapter V, Section VI, of the EPA document entitled, RCRA Corrective Action Plan (Final), OSWER Directive 9902.3-2A, May 1994, or the most recent version.

- C. For SWMUs or AOCs requiring extended time periods for operating the final remedy, the Permittee shall summarize the final remedy progress and continue providing data obtained during final remedy operation, maintenance, and monitoring in the Annual Groundwater Corrective Action Report, required in Corrective Action Condition XVI. Any short-term completion of additional corrective action activities at individual SWMUs shall be included in the Annual Groundwater Corrective Action Report.

XII. Corrective Measures Implementation (CMI) Report

Within 60 calendar days of completing all construction activities associated with implementing any approved final remedy, the Permittee shall submit a CMI Report to the Department. This CMI Report shall contain a summary of remedial activities conducted at the facility and provide detailed descriptions of the long-term operation, maintenance, and monitoring program associated with the final remedy. For SWMUs and/or AOCs requiring extended time periods for operating the final remedy, the Permittee shall summarize the final remedy progress and continue to provide data obtained during final remedy operation, maintenance, and monitoring in the Annual Groundwater Monitoring Report, required by Corrective Action Condition XX.

XIII. Site Operation, Maintenance, and Monitoring (OM&M) Plan

- A. The Permittee shall submit a revised OM&M Plan within 90 calendar days after the effective date of this Permit. The revised OM&M Plan shall specify operation, maintenance, and monitoring procedures for the approved final remedy including, at a minimum, the information described in Chapter V, Section II, of the EPA document entitled, RCRA Corrective Action Plan (Final), OSWER Directive 9902.3-2A, May 1994. The OM&M Plan shall include the following:
1. A Site Security Program specifying access controls, including fencing, controlled access to wells, posting warning signs, and designated operating areas for workers and visitors;
  2. Area specific HASPs;
  3. Institutional Controls;
  4. A Personnel Training Program;
  5. SOPs for FSI Inspection and Maintenance, Floodwall Inspection and Maintenance, and a Subsurface Work/Excavated Soil Management Plan;
  6. A revised Monitoring, Sampling and Analysis Plan (MSAP) to incorporate all groundwater monitoring, groundwater containment, and surface water monitoring conditions, and any additional requirements contained in this Permit.;

7. A commitment to periodically review the state of practice for groundwater treatment and evaluate the potential for use of new groundwater treatment technologies at the Permittee's facility; and
  8. Other information, as necessary, pertaining to the operation, maintenance, and monitoring procedures for the approved final remedy.
- B. The Permittee shall prepare project-specific HASPs as part of the OM&M. The HASPs shall specify health and safety procedures at the facility and provisions for all activities performed at the facility during final remedy operation and maintenance and long-term groundwater, surface water, and groundwater containment performance monitoring. The HASPs shall include, at a minimum, the applicable information described in Chapter V, Section VIII, of the EPA document entitled, RCRA Corrective Action Plan (Final), OSWER Directive 9902.3-2A, May 1994.
- C. The Permittee shall include as part of the OM&M plan, a training program for facility workers as described in the final approved CMS Report, the approved permit application, and this Permit. The training program shall include training requirements and written procedures for all workers at the facility, whether from the Permittee's staff or other personnel temporarily on site.
- D. The Permittee shall include as part of the OM&M plan, a site security program as described in the final approved CMS Report, the approved permit application, and this Permit. The site security program shall describe access controls for preventing unplanned and accidental exposures to soil and groundwater contamination using measures including fencing, controlled access to wells, posting warning signs, and designated operating areas for workers and visitors. The site security program shall also identify access controls that are intended to provide long-term protection against unplanned and accidental exposures and integrate these with access controls that are available at the facility as of the effective date of this Permit.
- E. The Permittee shall include a revised MSAP as a part of the OM&M Plan. The revised MSAP shall consist of the current MSAP, dated March, 2012, with all revision and additions in accordance with this Permit, including protocols for groundwater, surface water, and groundwater containment performance monitoring. Corrective Action Conditions XVI.D., XVI.E.,

XVI.F., XVII., and XVIII. describe specific revisions/additions that shall be included in the revised MSAP. The revised MSAP shall include:

1. An updated QAPP according to the applicable portions of the EPA document entitled, EPA Requirements for Quality Assurance Project Plans, EPA QA/R-5, March 2001, (reissued May 2006) or the most recent version.
  2. Procedures for monitoring the containment of the plume of contaminated groundwater as described in Corrective Action Condition XVIII.
  3. A protocol for periodic groundwater sampling for hazardous constituents contained in 40 C.F.R. Part 264, Appendix IX and described under Corrective Action Condition XVI.F. This protocol shall also include criteria and a process to use in evaluating newly detected Appendix IX hazardous constituents for inclusion in the GPS.
- F. The Permittee shall include as part of the OM&M Plan, SOPs that comply with the provisions of the approved final remedy presented in the Statement of Basis.
1. **Cap Maintenance:** The Permittee shall submit a SOP that formalizes maintenance and active upkeep activities of all asphalt and concrete caps over contaminated soil areas, and includes drawings that locate each cap and formal guidance for routine inspection and maintenance procedures for all caps over contaminated soil. Inspection, maintenance, and operation of the capped FSI shall comply with Corrective Action Condition XVI.E. The SOP shall address the maintenance, inspection, and use of buildings that are located over contaminated areas and shall require an assessment of indoor air exposures for any building so located if the building is modified in any way that may impact its air exchange rate or if the building is constructed after the effective date of this Permit. An indoor air assessment for any building shall be reviewed and approved by the Department.
  2. **Floodwall Maintenance:** The Permittee shall submit a SOP specifies provisions for the operation and maintenance of the floodwall. The Permittee has submitted information, as required in 40 C.F.R.

270.14(b)(iii), that identifies the facility as being located in the 100-year floodplain. As such, the Permittee shall design, construct, operate, and maintain the facility in such a manner so as to prevent the washout of any hazardous waste by a 100-year flood, as required by 40 C.F.R. § 264.18(b). A flood control wall that borders different portions of the property provides protection against flood impacts of the magnitude of a 100-year flood event. A facility located in the 100-year floodplain shall design, operate, and maintain the facility in accordance with 40 C.F.R. § 270.14(b)(11)(iv) to prevent the possible releases of hazardous waste due to a 100-year flood. The Permittee has demonstrated that the engineering design of the facility is adequate to prevent possible release of hazardous waste due to the forces of a 100-year flood. The Permittee shall operate and maintain the facility as described in the approved permit application to comply with this requirement.

3. **Subsurface Work/Excavated Soil Management Plan:** The Permittee shall submit a SOP that formalizes current practices while addressing human health and environment considerations for all subsurface activities, including construction, subsurface maintenance, or excavation activities. The SOP shall provide for project planning and formal approval before intrusive construction, excavation, or maintenance activities can be performed. The SOP shall also specify health and safety requirements for certain types of work, securing written authorization for planned work prior to commencing activities, providing employee and management training concerning the nature of chemicals in soil and groundwater for areas, and procedures for determining the need for health and safety monitoring during the subsurface activities appropriate for protection of human health and the environment. This SOP shall also provide for characterization and management of excavated soil from contaminated areas.
- G. The Department shall review the revised OM&M Plan according to the procedures described in General Permit Condition V. The Permittee shall complete all activities described in the OM&M Plan according to the schedule(s) contained in the approved plan.

XIV. Certification of Completion of Corrective Measures

- A. When the Permittee decides to verify completion of corrective measures at a SWMU, group of SWMUs, or facility-wide, the Permittee shall submit to the Department, documentation to demonstrate groundwater contaminant levels are protective of human health and the environment. Factors to address in the demonstration include:
1. The continued presence (or lack thereof) of legally enforceable groundwater use restrictions,
  2. The groundwater contaminant plume(s) has been stable or decreasing for at least three consecutive years,
  3. The GPS limits included in Table 1 are not likely to be exceeded in the future beyond the permitted facility property boundaries, and
  4. Future expansion of the groundwater contaminant plume(s) is unlikely beyond the three consecutive year period due to “contaminant rebound” related to back diffusion of contaminants from matrix or secondary porosity features.

The Permittee’s groundwater corrective action program shall continue until the Permittee demonstrates, individually or collectively, that GPS maximum concentration limits have not been exceeded for a period of three consecutive years at each SWMU, group of SWMUs, or facility-wide. Groundwater corrective action may stop at any individual SWMU or group of SWMUs, once the Department reviews and approves the Permittee’s demonstration and this Permit is successfully modified according to 40 C.F.R. §§ 270.41 or 270.42(c), as appropriate, to recognize this demonstration has been completed. The permit modification shall address changes in the groundwater corrective action status of individual SWMUs, groups of SWMUs, or facility-wide. This will include, as appropriate, modification and resubmission of the OM&M Plan to the Department for review and approval in accordance with General Permit Condition V. Documentation related to the certification of completion of corrective measures can be included in the Annual Groundwater Corrective Action Report submitted according to Corrective Action Condition XVI., or submitted as a stand-alone document under separate cover.

- B. The Department shall review and approve the documentation verifying completion of all corrective action at each SWMU, group of SWMUs, or facility-wide, according to the procedures described in General Permit Condition V.
- C. Within 60 calendar days after receiving the Department's approval of the documentation verifying completion of all corrective action under Corrective Action Condition XIII.B., the Permittee shall submit a written certification to the Department by certified mail, stating the final remedy has been completed according to the approved CMS Report, approved final remedy decision, and CMI Work Plan. The certification shall be signed by the Permittee and a professional engineer registered in Missouri.
- D. Facility-wide cessation of the groundwater corrective action program will require submitting a Groundwater Remediation Completion Report that addresses all factors identified in Corrective Action Condition XIV.A. above, in support of a Class 3 Permit Modification or permit termination, following the requirements in 40 C.F.R. § 270.42(c), and the public notice and opportunity for comment requirements in 10 CSR 25-8.124.

XV. Activity and Use Limitations (AULs)

AULs are legal or physical restrictions or obligations with respect to the permitted facility property. AULs place a legal responsibility and physical restrictions or limitations on the use of, or access to, the permitted facility property. The following AULs, consistent with the approved CMS, apply to the Permittee and the facility property subject to the jurisdiction of this Permit:

- A. Soil or Other Environmental Media Disturbance at the Facility
  - 1. The Permittee, has prepared and submitted to the Department for review and approval, an Excavated Soil Management Plan as part of the revised OM&M. The Department shall review and approve the Excavated Soil Management Plan according to the procedures described in General Permit Condition V. Any planned construction, excavation, or maintenance and repair activities must be performed according to the approved Excavated Soil Management Plan, or most recent version.

2. The Permittee shall notify the Department at least 30 calendar days before any planned construction, excavation, or maintenance and repair activities that may disturb existing contamination at any SWMU, or other areas subject to AULs. The reporting requirement under the NPDES permit MO-0001970 issued to the Permittee must be also considered. The Permittee shall, in coordination with the owner(s) of any off-property areas impacted by soil and/or groundwater contamination originating from SWMUs and AOCs at the facility, assess the potential hazards associated with activities that potentially disturb or expose any contaminated environmental media and ensure that necessary precautions are taken, including protective and/or remedial measures, before performing the activity. In situations where advance notice is not feasible (i.e., emergency utility service or repair), notice shall occur as soon as practical. Future construction, excavation activities, or land use changes may necessitate further evaluation of conditions at SWMUs having residual levels of contamination that exceed applicable regulatory thresholds.
  3. The Permittee may, at its discretion, request to develop a revised Subsurface Work/Excavated Soil Management Plan as part of the revised OM&M. Any such plan would be designed to expedite future subsurface utility and construction activities in known and potentially contaminated areas at the facility. The Department shall review and approve the Subsurface Work/Excavated Soil Management Plan according to the procedures described in General Permit Condition V.
- B. Transfer of Interest in Permitted Property
1. The Permittee shall notify the Department at least 90 calendar days before transferring any interest in any portion of the permitted facility property. The Permittee shall comply with all requirements of 40 C.F.R. § 270.40, as related to any transfer of ownership or operational control of any portion of the permitted facility.
  2. Any proposal by the Permittee to remove any parcel of the permitted facility property from the jurisdiction of this Permit shall require submitting a demonstration that all residual contamination on the portion of the property proposed for removal is protective of human health and the environment. Such demonstrations can be made by demonstrating the residual concentrations are below applicable

regulatory standards consistent with any enforceable institutional and/or engineering controls contained in an environmental covenant for that portion of the property.

3. Any parcel of the permitted facility property proposed to be removed from the jurisdiction of this Permit shall require a legal survey for that portion of the property, execution of an environmental covenant, if needed and such a covenant is not already in place at the time of the proposal, and successful completion of a Class 3 Permit Modification to remove the proposed portion of the property from the jurisdiction of this Permit, following the requirements in 40 C.F.R. § 270.42, and the public notice and opportunity for comment requirements in 10 CSR 25-8.124.

C. Change in Use of Property

The Permittee shall notify the Department, according to 40 C.F.R. § 270.30(h), at least 30 calendar days before any proposed change in the use of the facility property, including any applications for building permits for work on the facility property or proposals for work that could potentially affect the contamination on the facility property, be affected by contamination from a SWMU or AOC, or affect compliance with the requirements of this Permit.

Certain areas at the facility are currently included on the Registry of Confirmed Abandoned or Uncontrolled Hazardous Waste Disposal Sites in Missouri. These areas were previously surveyed by a registered land surveyor and included a legal description of the contaminated areas and a 100-foot buffer zone. The areas included on the Registry encompass approximately 72 acres. In addition to the change of use and ownership requirements imposed by this Permit and applicable regulations, areas of the facility on the Registry are subject to additional restrictions per Section 260.465, RSMo. Among others, one requirement is that use of portions of the facility property on the Registry may not change substantially without the Department's written approval. A change of use is considered substantial if it may result in the spread of contamination, increases human exposure to hazardous materials, increases adverse environmental impacts, or makes potential remedial actions to correct problems more difficult.

D. Deed Notice/Restrictions

The Permittee previously filed a deed notice in the chain-of-title for the former FSI at the facility, as described below. Notice details, including specific areas of coverage at the facility, can be found with the Office of Recorder of Deeds of Greene County, Missouri.

1. The deed notice for the FSI was filed October 24, 1990, in the Office of Recorder of Deeds of Greene County, Missouri. The deed notice restricts the owner or operator of the property from disturbing the hazardous waste disposal unit described in a survey plat attached to the notice.

E. Missouri Environmental Covenants Act

The Permittee prepared a draft Environmental Covenant in conformance with the Missouri Environmental Covenants Act, Sections 260.1000 through 260.1039, RSMo. The Department is currently reviewing and commenting on the draft Environmental Covenant.

1. Within 30 calendar days after the Department's approval of the draft Environmental Covenant, the Permittee shall execute the Environmental Covenant and shall submit the Environmental Covenant to all other relevant parties for signature. The Permittee shall assure that use, occupancy, and activities on the permitted property are restricted as follows:
  - a. Residual levels of contamination in the soils at the facility may pose a threat to human health and the environment if conditions change. The Permittee shall prohibit excavation or other disturbance activities at SWMUs including but not limited to those as noted below, that are known or suspected to be contaminated above risk-based levels unless such excavation or other disturbance occurs with the Department's prior written approval.
    - (1) FCSL (including the Pilot Plant and Laboratory Sewers);
    - (2) FSI;

- (3) Wastewater Treatment System (the brick-lined settling pit); and
      - (4) Contaminated sewer pipes of building S-14 in the SRA.
    - b. Residual levels of contamination in the groundwater at the facility may pose a threat to human health and the environment. The Permittee shall prohibit the use of and exposure to contaminated groundwater and prohibit any artificial penetration of the groundwater-bearing unit(s) containing contaminants, which could result in cross-contamination of clean groundwater bearing units. Such penetrations are allowable if necessary for corrective action purposes and are approved, in writing, by the Department in advance. The Permittee shall also prohibit the installation of any groundwater wells on the facility property, except those used for investigation, monitoring, or remediation purposes. Groundwater beneath the permitted site in zones that are known to be contaminated shall not be used as a water supply for any purpose. Drilling groundwater wells on the facility property is also restricted as the property is located within drilling area 9 according to the Missouri Well Construction Code, 10 CSR 23-3.090(9).
    - c. The engineered controls implemented as part of the final remedy at the facility shall not be disturbed and shall be properly maintained to prevent human exposure to soils and groundwater contaminated with hazardous wastes or hazardous constituents in concentrations exceeding the levels established in the approved CMS Report. The physical or engineering controls shall remain in place and be effective until such time as the controls are altered, modified or eliminated by a permit modification, in accordance with 40 C.F.R. § 270.42.
  2. Within 15 calendar days after all relevant parties have executed the Environmental Covenant for the permitted facility property, or for any off-property areas impacted by soil and/or groundwater contamination originating from SWMUs on the facility property, the Permittee shall record the executed Environmental Covenant in the property

chain-of-title with the Office of Recorder of Deeds of Greene County, Missouri.

3. Within 30 calendar days after recording the executed Environmental Covenant, the Permittee shall submit to the Department, a notarized statement certifying the executed Environmental Covenant has been recorded, including a copy of the Environmental Covenant showing the book/page/instrument number of recordation.
4. In the event that one or more parties (other than the Permittee) fails to timely execute the final Environmental Covenant for their portions of the permitted property after submittal to that party, the Department, with assistance from the Permittee, shall pursue all reasonable and necessary measures to obtain that party's signature. If any party does not timely execute the final Environmental Covenant for their portion of the permitted property following further discussion with the Department, the Department reserves the right, pursuant to 40 C.F.R. § 270.41, to modify this Permit to name that party as an owner/operator (Permittee) and establish additional permit conditions for that portion of the permitted facility owned or operated by that party that are equivalent to the enforceable AULs provided for in the final Environmental Covenant.
5. The Environmental Covenant shall run with the land (permitted facility property) and shall be binding upon any future owners, operators, heirs, successors, lessees, or assigns and their authorized agents, employees, or persons acting under their direction or control. In the event of permit termination, the Permittee and/or facility owner shall cause any lease, grant, or other transfer of any interest in the facility property to include a provision expressly requiring the lessee or transferee to comply with the Environmental Covenant conditions filed in the chain-of-title for the facility property.
6. In the event that future additional remediation on the permitted facility property, before or after permit termination, reduces contaminants to levels below applicable risk-based threshold/standards based on use of the property, the AULs, or portions thereof, contained in the Environmental Covenant may be rescinded and/or modified according to the provisions specified in the Environmental Covenant. This may include placing an additional document in the property chain-of-title

indicating the Environmental Covenant, or portions thereof, have been rescinded and/or modified.

F. Environmental Covenant Provision Requirements Before Permit Termination

1. If the Permittee desires to rescind or modify all or part of a previously executed Environmental Covenant, the Permittee shall submit a proposal to the Department at least 180 calendar days before the effective date of any proposed permit transfer or termination. This proposal shall contain a demonstration, signed by the Permittee that evaluates the residual levels of contamination in comparison with then-current risk-based thresholds/standards. The Permittee shall demonstrate that residual contaminant levels have decreased to less than the applicable risk-based thresholds/standards in support of rescinding or modifying established AULs. The demonstration shall include, at a minimum, a summary of analytical data collected during any monitoring and/or confirmation sampling of contaminated media, a summary of all relevant historical data, accompanying narrative discussion, and any other relevant information that will ensure residual contaminant levels will be protective of human health and the environment if specific AULs are rescinded or modified.
2. If the Department determines, based on the demonstration required in Corrective Action Condition XV.F.1., that the residual levels of contamination present may still pose a threat to human health or the environment based on use of the property, the Department shall notify the Permittee, in writing, that the terms of the existing Environmental Covenant are still appropriate or that the Permittee shall prepare and submit for review and approval, a revised draft Environmental Covenant to address the changed conditions at the facility. Within 60 calendar days after receiving the Department's notification, the Permittee shall prepared and submit a revised draft Environmental Covenant to the Department for review and approval. The revised Environmental Covenant shall include the following:
  - a. A record of the type, location, and concentrations of hazardous wastes and hazardous constituents expected to remain in the subsurface soils and/or groundwater that will exceed the currently applicable regulatory risk-based thresholds/standards

at the time of proposed revision of the Environmental Covenant and/or termination of this Permit;

- b. Two figures illustrating the boundary of each SWMU for which the levels of contamination in the subsurface soils and/or groundwater exceed the applicable regulatory risk-based thresholds/standards at that time. One figure shall illustrate soil contamination in relation to individual SWMUs or groups of SWMUs at the time of proposed revision of the Environmental Covenant and/or termination of this Permit. The second figure shall illustrate groundwater contamination in relation to individual SWMUs or groups of SWMUs at the time of proposed revision of the Environmental Covenant and/or termination of this Permit. The figures shall be to scale and indicate the location and dimensions of each SWMU with respect to key landmarks, such as major buildings, the permitted facility property boundaries, etc. These figures shall also illustrate the location of any engineered controls implemented as part of the approved final remedy, which are to be restricted from disturbance;
  - c. Groundwater use restrictions applicable at the time of proposed revision of the Environmental Covenant and/or termination of this Permit; and
  - d. A provision to provide for continued proper operation and maintenance of any engineering controls implemented as part of the approved final remedy to prevent human and/or environmental exposures to disposed wastes or soils and/or groundwater contaminated with hazardous wastes or hazardous constituents in concentrations exceeding applicable regulatory risk-based thresholds/standards at the time of proposed revision of the Environmental Covenant and/or termination of this Permit. Any engineering controls shall not be disturbed and shall remain in place and be effective until the Department provides written approval to alter, modify, eliminate, or otherwise cease operation and maintenance of such controls.
3. If the Department determines the demonstration required in Corrective Action Condition XV.F.1. is sufficient to support eliminating and/or

modifying established AULs, the Department shall direct the Permittee to prepare and submit to the Department for review and approval, a revised draft Environmental Covenant to address the changed conditions at the facility.

4. The Department shall review and approve the revised draft Environmental Covenant according to the procedures described in General Permit Condition V.
5. The Permittee shall record the approved revised Environmental Covenant as outlined in Corrective Action Condition XV.E.5. and submit any related documentation to the Department according to the schedule outlined in Corrective Action Conditions XV.E.6. and E.7. The Permittee shall also comply with any additional Environmental Covenant conditions as outlined in Corrective Action Conditions XV.E., as appropriate.

XVI. Groundwater Monitoring and Corrective Action Program [40 C.F.R. Part 264.101 and 270.32]

- A. GPS, Hazardous Constituents, and Concentration Limits [40 C.F.R. §§ 264.90(f), 264.101, and 270.32]

The GPS establishes the maximum contaminant levels (MCLs) for hazardous constituents (40 C.F.R. Part 261, Appendix VIII) in groundwater at and beyond the point of compliance. These levels must not be exceeded where groundwater use is possible (i.e., beyond the permitted facility property boundaries). The hazardous constituents, currently published health- and/or environmental-based concentration limits, and maximum analytical detection limits specified in Table 1 constitute the GPS for the Permittee's closed FSI and other SWMUs. The listed GPS hazardous constituents either have been detected in the groundwater beneath the permitted facility or are reasonably expected to be in or derived from hazardous wastes or hazardous constituents managed at the SWMUs at the facility.

1. The GPS for the hazardous constituents in Table 1 are based on protecting human health and the environment. These limits were derived from several different sources, as explained by the footnotes to Table 1.

2. The GPS for some hazardous constituents is below the lowest, reasonably achievable analytical method detection limit due to limitations in current analytical technology. In these cases, the GPS shall be equal to the corresponding GPS maximum detection limit.
3. The allowable maximum detection limit shall never be greater than the GPS. If the GPS for specific hazardous constituents cannot be achieved due to matrix interferences or other reasonable analytical limitations, as long as appropriate supporting documentation is provided, the affected sample(s) and associated chemical analysis shall be exempted from this requirement. However, such an exemption does not in any way relieve the Permittee from complying with the GPS.
4. The Department reserves the right, based on future advances in analytical technology, to modify this Permit to require the Permittee to achieve analytical detection limits for the hazardous constituents covered by Corrective Action Condition XVI.A.2., which allows for adequate comparison with appropriate health- or environmental protection-based GPS concentration limit(s) indicated in the footnotes to Table 1.
5. The Permittee shall demonstrate, by the ongoing collection of groundwater samples and evaluating groundwater monitoring data, that the on- and off-property concentrations of contaminants in groundwater related to releases originating on the permitted facility property are protective of human health and the environment throughout the facility consistent with the approved CMS and risk assessment.

The Permittee may make a demonstration to the Department, at any time during the term of this Permit, to establish ACLs in lieu of the GPS contained in this Permit. Any such demonstration shall ensure any and all ACLs proposed in lieu of the GPS are protective of human health and the environment, according to the requirements of 40 C.F.R. §§ 264.94(b)(1) and (b)(2), and are consistent with the approved CMS and risk assessment. In proposing an ACL(s), the Permittee shall consider and formally address the factors listed in 40 C.F.R. §§ 264.94(b)(1) and (b)(2), and the EPA document entitled, Interim Final Alternate Concentration Limit Guidance, Part I, OSWER Directive 9481.00-6C, EPA 530/SW-87-017, July 1987. Any ACL(s)

proposed by the Permittee shall be processed as a Class 3 Permit Modification, following the requirements in 40 C.F.R. § 270.42(c), and the public notice and opportunity for comment requirements in 10 CSR 25-8.124.

6. The Permittee shall propose modifications to the GPS to include any additional hazardous constituent(s) (40 C.F.R. Part 261, Appendix VIII.) identified in the groundwater and its presence confirmed during future sampling and analysis, if such constituents may be attributed to past operation of the regulated unit(s) and/or the degradation of hazardous constituents known to be present in the groundwater. The 40 C.F.R. Part 264, Appendix IX. groundwater sampling and analysis requirements contained in Corrective Action Condition XVI.F.6. shall be used as the basis for determining if adding hazardous constituents to the GPS is necessary. The Permittee can demonstrate that a source other than facility operations caused the presence of such hazardous constituent(s) or the apparent presence was a result of an error in sampling, analysis, or evaluation. For the demonstration under this paragraph to be considered, the Permittee shall:
  - a. Within seven calendar days of determining an additional hazardous constituent has been discovered, notify the Department, in writing, that the Permittee intends to make a demonstration under this paragraph.
  - b. Within 90 calendar days, submit a report to the Department that demonstrates a source other than the facility operations caused the hazardous constituent presence or the presence resulted from an error in sampling, analysis, or evaluation.

Any addition of hazardous constituents to the GPS as a result of the above determination shall require a Class 1 Permit Modification with Prior Director's Approval. Any other changes to the GPS list of hazardous constituents shall require a permit modification, according to 40 C.F.R. § 270.42.

**Table 1 - Groundwater Protection Standards**

| <b>Hazardous Constituent</b>                | <b>Maximum Concentration Limit (µg/l)</b> | <b>Maximum Detection Limit (µg/l)<sup>(d)</sup></b> |
|---|---|---|
| Acetone                                     | 14,000(c)                                 | 5   |
| Benzene                                     | 5(a)                                      | 1   |
| Bromochloromethane                          | 90(b)                                     | 1   |
| Chloroform                                  | 5.7(b)                                    | 1   |
| Chloromethane (methyl chloride)             | 5(b)                                      | 1   |
| 1,1-Dichloroethane                          | 2.8(c)                                    | 1   |
| 1,1-Dichloroethene                          | 7(a)                                      | 1   |
| cis 1,2-Dichloroethene                      | 70(a)                                     | 1   |
| trans 1,2-Dichloroethene                    | 100(a)                                    | 1   |
| 1,2-Dichloroethane                          | 5(a)                                      | 1   |
| 1,2-Dichloropropane                         | 5(a)                                      | 1   |
| Ethylbenzene                                | 700(a)                                    | 1   |
| Methylene Chloride                          | 4.7(b)                                    | 2   |
| 2-Methylnaphthalene                         | 36(c)                                     | 2.4   |
| Methyl tert-butyl ether                     | 14(c)                                     | 1   |
| Phenol                                      | 300(b)                                    | 5   |
| 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)* | 0.000000013(b)                            | 0.001**   |
| Toluene                                     | 1,000(a)                                  | 1   |
| Trichloroethene                             | 5(a)                                      | 1   |
| Vinyl Chloride                              | 2(a)                                      | 1   |
| Xylenes (total)                             | 10,000(a)                                 | 3   |
| Arsenic                                     | 10(a)                                     | 10  |
| Barium                                      | 2000(a)                                   | 10  |

\* For the purpose of estimating equivalent concentrations of 2,3,7,8-TCDD to allow risk comparisons, toxicity equivalence factors (TEFs) of complex mixtures of chlorinated dibenzo-p-dioxins and dibenzofurans will be multiplied by the respective congener concentrations. The TEF values to be utilized in this risk comparison should be obtained from the EPA recommended document: [The 2005 World Health Organization Reevaluation of Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-Like Compounds](#) (Van den Berg, et al., 2005), or the latest revision of this document.

\*\* The quantitation limit for dioxin compounds analysis per EPA SW-846 Method 8280 exceeds the MCL for 2,3,7,8-TCDD. The maximum detection limit in Table 1 shall be revised as lower quantitation limits become achievable.

- (a) Denotes limits derived from Missouri Public Drinking Water Standards (10 CSR 60-4, dated January 29, 2019) and National Primary Drinking Water Regulations (EPA 816-f-09-0004, May 2009).
- (b) Denotes limits derived from Missouri Water Quality Standards (10 CSR 20-7.031, dated January 29, 2019) for protecting groundwater.
- (c) Denotes limits derived from risk-based concentration values for tap water as contained in EPA Regional Screening Level Tables, dated May 2020 (IELCR =  $1 \times 10^{-6}$ , HI=1).
- (d) Detection limit based on the lowest achievable practical quantitation limit available from the Permittee's contract laboratory.

B. Point of Compliance [40 C.F.R. § 264.101]

The Point of Compliance is where the Permittee monitors groundwater quality to demonstrate progress towards and achievement of the GPS maximum concentration limits (or approved ACLs) specified in Table 1. Due to the commingling of facility groundwater contamination related to the four SWMUs serving as the original source of groundwater contamination (i.e., the main trunks of the FCSL, the FSI, the brick lined settling pit of the historical WWTS, and contaminated sewer pipes and plumbing of building S-14 in the SRA), and the presence of residual dense, non-aqueous phase liquid, the Point of Compliance for the facility is defined as “throughout the plume.” The original Point of Compliance was described in the Statement of Basis and the final approved CMS Report as limited to the immediate area of the source SWMUs. Using the “throughout the plume” Point of Compliance approach for the final clean up goals specified in Table 1 is consistent with the Department's overarching goal of protecting human health and the environment by attempting to return “usable” groundwater to its maximum beneficial use and helps to ensure that operation and maintenance, including monitoring, continue for as long as necessary to ensure protection of human health and the environment.

Groundwater contamination throughout the plume that exceeds the GPS maximum concentration limits in Table 1, or approved ACLs, shall be subject to corrective action pursuant to 40 C.F.R. §§ 264.100 and 264.101.

The wells to be monitored for evaluating progress toward compliance with the GPS constituents in Table 1 are specified in the Monitoring, Sampling, and Analysis Plan.

Should the Permittee's ongoing groundwater monitoring program indicate the sampling points do not adequately monitor groundwater at and beyond the point of compliance, the Permittee shall propose a permit modification according to 40 C.F.R. § 270.42, to install or establish new compliance monitoring points and/or exclude existing compliance monitoring points. The Permittee's groundwater corrective action program shall continue until the Permittee demonstrates the GPS limits contained in Table 1 have not been exceeded, and are not likely to be exceeded, at the point of compliance and the on-property groundwater plume(s) are stable or declining for a period of three consecutive years. This demonstration shall include an assessment of the potential for significant "contaminant rebound" beyond the three consecutive year time period, due to matrix or secondary porosity feature back diffusion or other relevant subsurface contaminant release mechanisms that could result in future plume expansion or exceedance of the GPS at the point of compliance.

C. Compliance Period [40 C.F.R. § 264.101]

The original compliance period is 30 years. The compliance period began September 30, 2010, and is scheduled to expire September 30, 2040. If the GPS limits are being exceeded at the end of the compliance period at and beyond the point of compliance, the Permittee's groundwater corrective action program and compliance period shall continue until the Permittee demonstrates these limits have not been exceeded at and beyond the point of compliance for a period of three consecutive years.

D. General Groundwater Monitoring Requirements [40 C.F.R. § 264.101]

The Permittee previously submitted to the Department, a facility-related plan for groundwater monitoring. The MSAP contains all sampling and analysis protocols and procedures to ensure accurate data is being obtained to determine the effectiveness of the groundwater monitoring and corrective action activities at the facility. The MSAP also outlines the specific monitoring wells, constituents, and frequency for data collection for the corrective action, monitoring programs at the facility.

1. Within 60 calendar days after the effective date of this Permit, the Permittee shall revise and resubmit to the Department for review and approval, a revised MSAP as part of the OM&M Plan, to reflect any revised and additional requirements contained in this Permit and any new conditions at the facility. All MSAP procedures and techniques

used in groundwater sampling, sampling frequency, analysis, and measurement of groundwater-related parameters shall be designed to meet the requirements of 40 C.F.R. Part 264 Subpart F and this Permit. The Permittee's sampling, analysis, and measurement protocols shall ensure the representative nature of all analysis and measurement results. The Department shall review and approve the revised MSAP as part of the OM&M Plan, according to the procedures described in General Permit Condition V.

2. The Permittee shall retain a copy of the approved groundwater MSAP with the local facility representative and/or at the facility and comply with the approved sampling and analysis procedures. The groundwater MSAP shall describe sample collection, preservation, and shipment methodology; chain-of-custody procedures; and analytical methodology for field samples, trip blanks, and other quality control samples.
3. The Permittee's groundwater monitoring systems shall be designed, installed, operated, and maintained during the compliance period in a manner that ensures:
  - a. Detection and/or delineation of the horizontal and vertical extent of groundwater contamination at and beyond the point of compliance, including beyond the facility property boundary;
  - b. Determination of representative concentrations of hazardous constituents and contaminant plume indicator parameters in the groundwater, and
  - c. Determination of the effectiveness of any groundwater corrective action activities in terms of contaminant removal, destruction, and/or containment (plume stability).
4. The number, location, and depth of the Permittee's monitoring wells shall be sufficient to define the horizontal and vertical extent of groundwater contamination beneath the Permittee's property and beyond the facility property boundaries. If, at any time during the compliance period, including any necessary extensions, the Permittee or the Department determines the existing monitoring system fails to

define the horizontal and vertical extent of groundwater contamination, the Permittee shall submit, within 30 calendar days after such determination by the Permittee or written notification by the Department, a proposed plan for installing additional monitoring wells to define such extent.

When the Department determines the Permittee has adequately redefined the horizontal and/or vertical extent of groundwater contamination, the wells defining such extent shall be incorporated into, and be designated for continued monitoring in, the Permittee's MSAP. The Department shall notify the Permittee, in writing, when it makes this determination. Within 60 calendar days of receiving this notification, the Permittee shall consult the Department regarding the need for MSAP modification to incorporate the new wells. If MSAP modification is required, the timeframe for such modification will be established via discussion with the Department. If agreeable to the Department, the Permittee may elect to submit an annual MSAP modification to incorporate any needed changes in lieu of a modification for each individual change.

5. Any new groundwater monitoring well(s) installed by the Permittee to meet the requirements of this Permit shall be designed and constructed according to the requirements of 40 C.F.R. § 264.97, applicable portions of the Monitoring Well Construction Code of the Missouri Well Construction Rules (10 CSR 23-1 through 10 CSR 23-4), and/or Department-approved well-specific plans and specifications.

The Permittee shall submit to the Department's Missouri Geological Survey (MGS) and Waste Management Program (WMP), a copy of the well certification report form and resulting certification acceptance required by 10 CSR 23-4.020, for any new monitoring well(s) installed pursuant to this Permit. This information shall be reported as part of the Annual Groundwater Corrective Action Reports, described in Corrective Action Condition XX.

6. Plugging and abandoning any groundwater monitoring well(s) operated by the Permittee pursuant to the requirements of this Permit shall meet the requirements of 10 CSR 23-4.080.

- a. The Permittee shall submit to MGS and WMP, a copy of the well registration report form and resulting registration acceptance required by 10 CSR 23-4.080, for any monitoring wells abandoned and plugged pursuant to this Permit. This information shall be reported as part of the Annual Groundwater Corrective Action Reports, described in Corrective Action Condition XX.
  - b. Within 60 calendar days of MGS's registration acceptance, the Permittee shall consult the Department regarding the need for SAP modification to remove the plugged wells. If SAP modification is required, the timeframe for such modification will be established via discussion with the Department. If agreeable to the Department, the Permittee may elect to submit an annual SAP modification to incorporate any needed changes in lieu of a modification for each individual change.
7. According to 40 C.F.R. § 270.42, a Class 2 Permit Modification is required for any change in the number, location, depth, or design of upgradient or downgradient wells of the facility groundwater monitoring system. Replacing any well without changing the location, depth, or design of that well shall require a Class 1 Permit Modification without Prior Director's Approval, according to 40 C.F.R. § 270.42. The Permittee may elect to submit an annual permit modification request to address these changes collectively in lieu of a modification for each individual change. Installing additional investigation wells does not require a Class 2 Permit Modification. These wells may be installed upon the Department's approval of associated work plans. The Department shall review and approve the work plans, according to the procedures described in General Permit Condition V.
8. The Permittee shall contact the Department at least seven calendar days before conducting any field work associated with constructing or modifying the groundwater monitoring system required by this Permit. The Department shall then have the option to observe any part of this field work. This notification requirement applies to major work, such as new wells, retrofitting existing wells, or abandoning wells. It does not apply to minor repairs, minor maintenance, or other minor changes.

9. A monitoring well inspection and maintenance program shall be implemented for the duration of the compliance period, including any necessary extensions. This program shall be designed to ensure the ongoing structural integrity of all monitoring well installations during the compliance period. The Permittee's revised groundwater MSAP shall specify the details of this program relative to the following requirements.
  - a. Surface well integrity inspections shall be performed at the time of each sampling event and shall be documented on a well inspection log sheet. Surface integrity evaluations for each monitoring well shall include a visual inspection of the outer protective casing, inner casing riser, surface well seal, well cap, and locking mechanism, to document any damage or deterioration. The ground surface in the immediate vicinity of each monitoring well and the annular space between the outer protective casing and casing riser shall be inspected for visible anomalies (e.g., water collection or ponding, ground subsidence, etc.).
  - b. Subsurface well integrity inspections shall be performed annually on 1/3 of all wells designated within, according to the provisions contained in the Permittee's approved MSAP, and shall be documented on a well inspection log sheet, with all wells being evaluated once every three years. Subsurface well integrity inspections may consist of a combination of one or more elements, including total well depth measurements, groundwater turbidity measurements, in-situ hydraulic conductivity tests, casing caliper logs, down-hole television camera surveys, and/or other methods capable of verifying the subsurface integrity of the well casing and screen.
  - c. Wellbore siltation evaluations shall be conducted annually on all monitoring wells. The Permittee's approved MSAP shall specify performance standards for this evaluation to assess down-well siltation and well screen occlusion in 1/3 of all monitoring wells, with all wells being evaluated once every three years. This evaluation shall be designed to ensure the representative nature of the Permittee's groundwater sample analysis and field measurement results through minimizing

sampling and measurement interferences (e.g., turbidity, excessive well screen occlusion, etc.).

The Permittee's approved MSAP shall specify a well redevelopment trigger criterion based on a percentage of well screen occlusion and the potential of such occlusion to compromise the representative nature of the Permittee's groundwater sample analysis and field measurement results. Wells demonstrating well screen occlusion equal to or in excess of the selected criterion (e.g., 20 percent occlusion) shall be redeveloped before the next regularly scheduled sampling event.

- d. The Permittee shall perform well-specific surface and subsurface integrity inspections within seven calendar days following any naturally-occurring event (contact of wells by flood waters, tornado, etc.) or man-made event (vehicular contact, vandalism, etc.) that has the potential to compromise the structural integrity of the well.
  - e. Monitoring well repairs shall be completed within 30 calendar days after identifying any surface or subsurface well integrity problem(s). If adverse weather or site conditions prevent the Permittee from gaining access to and/or repairing flood-impacted monitoring wells within 30 calendar days, the Permittee shall take appropriate action as soon as possible. A written justification for any delay, completed well inspection log sheets, a narrative description of any well repairs, and before and after repair photographic documentation (in the case of visible surface well repairs) shall be provided to the Department as part of the Annual Groundwater Corrective Action Reports, required by Corrective Action Condition XVI.
- E. Corrective Action Program - FSI [40 C.F.R. Part 264 Subpart F and 40 C.F.R. 270 Subpart C]

The completion of closure for the FSI was on or about October 25, 1990. Corrective action (post-closure) activities for releases from the FSI began October 25, 1990, and shall continue 30 years until October 24, 2020. Corrective action shall be extended, at a minimum, until such time as the GPS maximum

concentration limits or ACLs, as applicable, are met for a period of three consecutive years, unless otherwise approved by the Department.

1. During the corrective action activity period for the FSI, the Permittee shall comply with the requirements of this Permit and the MSAP element of the OM&M Plan, Corrective Action Condition XIII., which shall specify the following, including, but not limited to:
  - a. Regular inspections and repair, as needed, in accordance with the items, frequencies and guidelines in the inspection schedule of the approved permit application;
  - b. Maintenance of the integrity and effectiveness of the concrete cap;
  - c. Operation of the French Drain as outlined in the approved permit application; and
  - d. Maintenance of and monitoring of the groundwater and surface water monitoring and groundwater containment systems and complying with all applicable requirements of 40 C.F.R. Part 264 Subpart F.
2. The Permittee shall continue to provide for the proper operation and maintenance of engineering controls as described in Appendix F, Standard Operation Procedures of the approved permit application and in this Permit. These actions are necessary to prevent human exposure to soils and/or groundwater contaminated with hazardous wastes or hazardous constituents in concentrations exceeding applicable regulatory risk-based thresholds/standards. The engineering controls shall not be disturbed and shall remain in place and be effective unless or until the Department provides written approval to alter, modify, eliminate, or otherwise cease operation/maintenance of such controls via modification of this Permit and/or the Environmental Covenant required pursuant to Corrective Action Condition XV.
3. Use of the property shall be restricted by the Permittee to prevent disturbance of the integrity of the final cover on the FSI and to prevent damage to the monitoring systems. The Department may approve a use of the property that disturbs the integrity of the final cover if it is necessary for the proposed use of the property and will not increase the potential

hazard to human health or the environment, or if it is necessary to reduce a threat to human health or the environment.

4. The Permittee may submit a request to the Department to shorten the corrective action activity period. Justification for shortening the corrective action activity period shall accompany any such request. If the Department finds that a shortened corrective action activity period is sufficient to protect human health and the environment, shortening of the corrective action activity period shall require a Class 3 Permit Modification, in accordance with 40 C.F.R. 270.42(d).
5. Corrective Action Final Remedy and Amendments
  - a. Corrective action activities shall be conducted according to the corrective action requirements of this Permit. If the conditions of this Permit are found to be in conflict with the approved permit application, the conditions of this Permit shall govern.

The approved corrective action final remedy may be amended at any time during the term of this Permit. The Permittee shall submit a written request to the Department for a permit modification to authorize a change in the approved corrective action final remedy. The written notification or request shall include a copy of the amended corrective action final remedy for review. Amendments are subject to the applicable permit modification requirements of 40 C.F.R. Part 270 Subpart D, 10 CSR 25-7.270(2)(D), and 10 CSR 25-8. Written requests for amendments shall be submitted at least 60 calendar days prior to the proposed change in operation of the final remedy, or not later than 60 calendar days after an unexpected event that has affected the previously-approved final remedy. The Department may request modifications to the final remedy if changes in operations affect the approved plan. The Permittee shall submit a modified/updated final remedy proposal no later than 60 calendar days after a Department request for modification of the final remedy. Any modifications requested by the Department shall be approved, disapproved, or modified in accordance with the procedures in 40 C.F.R. 270 and 10 CSR 25-8.124.

- b. Inspection and maintenance of the cap for the FSI shall be in accordance with the requirements of this Permit. The inspection and maintenance procedures provided in the approved permit application may be modified during development and approval of the OM&M Plan required by this Permit, including standard operating procedures (SOPs) covering maintenance and inspection activities for the existing cap and other areas as part of the final remedy described in the Corrective Action Condition IX. of this Permit. The OM&M Plan shall address the maintenance activities, including routine inspections, for the existing cap at the FSI and all asphalt- and concrete-covered areas. The OM&M Plan is required under Corrective Action Condition XIII. of this Permit. Inspection and maintenance of the cap for the FSI shall continue to be part of the final remedy upon approval of the OM&M Plan.

6. Future Removal of Hazardous Wastes

If the Permittee wishes to remove hazardous wastes, hazardous waste residues, contaminated soils, or contaminated sludges within the boundaries of the FSI, the Permittee shall request a modification of this Permit, according to the applicable requirements of 40 C.F.R. Part 270 Subpart D, 10 CSR 25-7.270(2)(D), and 10 CSR 25-8. The request for a modification shall include a demonstration that the action will not increase the potential hazard to human health or the environment, or the action is necessary to reduce the threat to human health or the environment. In addition, a demonstration shall be made that the action will satisfy 40 C.F.R. § 264.117(c). By removing contaminants, the Permittee may become a generator of hazardous waste and shall manage any removed material according to all applicable laws, regulations, and ordinances.

F. Corrective Action Program [40 C.F.R. § 264.101]

All SWMUs, including the FSI, are subject to the corrective action program requirements of 40 C.F.R. § 264.101, and this Permit, until such time as all applicable regulatory and permit requirements have been satisfied.

1. The Permittee's corrective action program for SWMUs currently consists of operation of extraction wells for recovery of DNAPL contamination, implementation of institutional controls, operation of a groundwater recovery and treatment system, and groundwater, surface

water and DNAPL monitoring. Monitoring consists of a combination of subsurface hydraulic control measurements and chemical monitoring to verify groundwater plume containment and to track associated long-term trends in groundwater quality and the effectiveness of the final remedy. Any additional investigation, evaluation, or implementation of remedial alternatives necessary to address facility groundwater contamination shall be according to Corrective Action Conditions V. through VIII. The corrective action program shall also address any groundwater contamination that has migrated beyond the facility property boundaries. The corrective action program is based on:

- a. The inability to differentiate groundwater contamination related to releases from the various SWMUs which are subject to corrective action according to 40 C.F.R. § 264.101.
  - b. The need for additional site characterization to adequately support decisions regarding evaluating or implementing groundwater remedial alternatives.
  - c. The exceedance, or potential exceedance, of the GPS contained in Table 1 at the property boundary or evidence of groundwater plume expansion that may act as a “trigger” for additional investigation, evaluation, or implementation of additional groundwater remediation or ISMs.
  - d. The desirability of implementing a holistic, facility-wide approach to groundwater investigation, monitoring, and remediation given the foregoing circumstances.
2. The Permittee shall perform groundwater sampling and analysis and field measurement of groundwater-related parameters according to the schedule presented in Table 3 to monitor hydraulic control of specified wells in each contaminated hydrogeologic zone (Alluvial, Weathered Burlington (WB1), Upper Burlington (UB1), and Burlington (B2). These sampling and analysis requirements shall be included in the MSAP element of the OM&M Plan, required by Corrective Action Condition XIII.

- a. Sampling and analysis according to this schedule shall begin during the next regularly scheduled sampling event, following approval of the revised MSAP required by Corrective Action Condition XIII. Given the potential lag time between the effective date of this Permit and approval of the revised MSAP, the Permittee shall continue sampling and analysis according to the latest version of the approved MSAP, until such time as the revised MSAP is approved.
- b. Monitoring wells for hydraulic control monitoring serve a dual purpose:
  - (1) Provide semi-continuous water level data to verify capture, containment, and control of groundwater within the B1 hydrogeologic zone as specified in the MSAP; and
  - (2) Provide evidence of hydraulic control needed to demonstrate minimal discharge of contaminated groundwater or impacts to Jordan Creek, in conjunction with the Surface Water Monitoring Program, described in Corrective Action Condition XVII.
- c. Sampling and analysis of groundwater from any newly installed wells required by this Permit shall be performed no later than the next regularly scheduled sampling event following their installation and according to the latest version of the approved MSAP.
- d. Perimeter wells monitored to ensure adequate delineation of the horizontal and vertical extent of groundwater contamination shall be analyzed, according to Table 3.
- e. Specific perimeter wells to be monitored shall be specified in the Permittee's approved MSAP required by Corrective Action Condition XIII.
- f. The Department shall approve, in writing, any future changes to the list of perimeter wells established in the Permittee's MSAP. Within 30 calendar days after receiving the

Department's approval, the Permittee shall submit additional MSAP revisions to incorporate the approved changes.

3. Wells monitored to evaluate the performance of the Permittee's corrective action program shall be sampled and the samples analyzed, according to the parameter measurement schedule in Table 3 and the well classifications to be noted in the MSAP element of the approved OM&M Plan.
  - a. Sampling and analysis in accordance with this schedule shall be performed as described in the MSAP
    - (1) Chemical sampling locations at the facility are classified into three categories: perimeter wells, performance wells and Point of Compliance wells. Point of Compliance wells are discussed under Corrective Action Condition XVI.B. The purposes of perimeter and performance wells, as discussed in the MSAP, are to document plume stability through the measurement of horizontal and vertical trends in groundwater contamination over time and to provide continued verification of the efficiency and effectiveness of the groundwater portion of the corrective action final remedy.
    - (2) Perimeter wells shall be monitored to ensure adequate delineation of the extent of groundwater contamination and to assure that the known extent of groundwater contamination is maintained vertically and horizontally within the boundaries of the monitoring network.
    - (3) Performance wells shall be monitored to verify control and containment within the contaminated areas of each hydrogeologic zone, and to provide a means of monitoring changes in contaminant concentration trends over time.
  - b. Specific wells to be monitored are specified in the Permittee's MSAP.

- c. Installing additional monitoring wells during the term of this Permit period, including any permit continuations, may be necessary to meet the requirements of 40 C.F.R. Part 264 Subpart F and this Permit. If any such wells are installed, they may be subject to the monitoring requirements contained in Table 3.
  - d. Installation of new monitoring wells following the effective date of this Permit that are used for the purpose of delineation of the extent of groundwater contamination shall be subject to quarterly sampling and analysis for a period of time which is sufficient to establish contaminant trends in such wells. Thereafter, the monitoring frequency may be modified to reflect the long-term monitoring strategy and usage of such wells.
  - e. The Department shall approve, in writing, any future changes to the list of monitoring wells established in the Permittee's MSAP. Within 30 calendar days after receiving the Department's approval, the Permittee shall submit additional MSAP revisions to incorporate the approved changes. Point of Compliance well changes shall be made in accordance with Corrective Action Condition XVI.D.7.
4. Only single sample analyses (as opposed to replicates) are required for the parameters listed in Table 3 and the MSAP, with the exception of duplicate samples taken for QA/QC purposes.
5. Field parameter values measured and reported by the Permittee shall be representative of stabilized well conditions.
  - a. Down well measurement of non-aqueous phase liquid (NAPL) thickness and static water level taken before well purging (semi-annually frequency in all currently or previously known NAPL-producing wells in addition to those in which dedicated pumping equipment has or would be installed) as specified in the MSAP element of the OM&M Plan. Quarterly measurements shall be taken for a period of time in any new wells which is sufficient to establish NAPL trends. Thereafter, measurement frequency may be modified to reflect the

long-term monitoring strategy. Total well depth shall be taken annually in wells as specified in the MSAP.

- b. Specific conductance, pH, and temperature measurements reported to the Department shall be those taken upon stabilizing these parameters during well purging. Any additional field parameter measurements, such as those taken -to verify the adequacy of well purging, shall be recorded in the field logbook.
6. Every five years, the Permittee shall sample and analyze groundwater from a selected well for all parameters contained in 40 C.F.R. Part 264, Appendix IX, as per MSAP protocol.
    - a. The well sampled to meet this requirement is left to the discretion of the Permittee; however, the choice of well shall be the well with the highest overall concentrations of GPS analytes, and preferably demonstrating the presence of free phase contamination (if applicable). The sample to be analyzed from the free phase contaminated well shall be the groundwater (aqueous phase) obtained from this well, not the non-aqueous phase liquid.
    - b. This sampling and analysis is required to determine if additional hazardous constituents (40 C.F.R. Part 261, Appendix VIII.) or contamination indicator parameters are present in the groundwater that may be attributable to a release(s) from the SWMUs or degradation of currently known hazardous constituents.
    - c. If hazardous constituents and/or contamination indicator parameters are identified in the groundwater, which are not currently specified in the Table 1 constituent list, the Permittee may resample the groundwater, according to 40 C.F.R. § 264.99(g). If the Permittee's subsequent groundwater analyses confirms the presence of additional hazardous constituents that equal or exceed GPS concentration limits or contamination indicator parameters, the Permittee shall propose a Class 1 Permit Modification with Prior Director's Approval, according to 40 C.F.R. § 270.42, to add the

confirmed hazardous constituent(s) or contamination indicator parameter(s) to the Table 1 constituent list and the monitoring program schedule specified in Table 1.

**Table 2 - Groundwater Monitoring, Sampling, Analysis, and Parameter Measurement Schedule**

| Parameters                       | Type    | Maximum Detection Limit (µg/l) | Frequency           |
|----------------------------------|---------|--------------------------------|---------------------|
| Volatiles (1) (a)                | HC      | Per Table 1                    | *(see note)         |
| Semi-Volatiles (2)(a)            | HC      | Per Table 1                    | ** (see note)       |
| Metals (3)(a)                    | HC      | Per Table 1                    | ** (see note)       |
| Dioxin compounds (4) (a)         | HC      | Per Table 1                    | *** (see note)      |
| Appendix IX (5) (a)              | HC      | PQLs per SW-846                | Every five years    |
| NAPL thickness                   | FM/NAPL | Not Applicable                 | Semi-annually****   |
| Static Groundwater Elevation (6) | FM      | Not Applicable                 | Quarterly*****<br>* |
| Total Well Depth                 | FM      | Not Applicable                 | Annually            |

FM = Field Measurement, HC = Hazardous Constituent, NAPL = Non-Aqueous Phase Liquid, PQL = Practical Quantification Limit

- \* Sample from Point of Compliance wells, performance wells, and Perimeter wells (specified in MSAP) shall be analyzed for volatiles annually. Samples from new wells shall be analyzed for volatiles quarterly as per Corrective Action Condition XVI.F.3.d.
- \*\* Semi-volatiles and Metals (Table 1) to be sampled from wells specified in the MSAP
- \*\*\* Sample from Point of Compliance wells (Table 2), and performance and perimeter wells (specified in the MSAP) that historically have had detectable levels of dioxin compounds shall be analyzed for dioxin compounds annually. Samples from new wells containing DNAPL or suspected to contain DNAPL shall be analyzed for dioxin compounds quarterly as per Corrective Action Condition XVI.F.3.d.
- \*\*\*\* DNAPL thickness shall be taken in all known NAPL-containing wells in addition to those in which dedicated pumping equipment has been installed, as specified in the MSAP.
- \*\*\*\*\* Elevation measurements shall be to the nearest 0.01 foot in all wells.
- (1) EPA SW-846 Method 8260B or equivalent.
- (2) EPA SW-846 Method 8270C or equivalent.
- (3) EPA SW-846 Method 6010B or equivalent.
- (4) 2,3,7,8-tetrachlorodibenzo-p-dioxin, EPA SW-846 Method 8280B or equivalent.
- (5) See Corrective Action Condition XVI.F.6 and 40 C.F.R. Part 264, Appendix IX.

- (6) Potentiometric measurements shall be obtained at the time of each regularly scheduled sampling event from each sampled well. Elevation shall be to the nearest 0.01 foot.
- (a) Current EPA SW-846 version at time of sampling.

Note: The full suite of constituents for each EPA SW-846 method used shall be tested for and reported in the Annual Groundwater Corrective Action Reports, Corrective Action Condition XX.

XVII. Surface Water Monitoring [40 C.F.R. § 270.32(b)]

- A. The Permittee shall implement a surface water monitoring program throughout the compliance period or until such time as the Permittee makes a successful demonstration for exemption from these requirements. Compliance with this monitoring program is for the purposes of this Permit only and does not relieve the Permittee of the obligation to comply with any other federal, state or local water monitoring requirements. The Permittee's surface water monitoring program shall be performed as described in this Permit and in accordance with procedures contained in the MSAP element of the OM&M Plan required by Corrective Action Condition XIII. Prior to revised MSAP approval under this Permit, the Permittee shall continue to conduct surface water monitoring in accordance with the approved MSAP, dated March, 2012, and all approved revisions/additions, the approved permit application, and the document entitled Proposal for Surface-Water Monitoring Program at Clariant LSM (Missouri) Inc., Facility, August 2, 2005.
  - 1. The purpose of the surface water monitoring program is to directly verify no adverse impact to surface waters from the discharge of contaminated groundwater to surface water at the facility. Surface water monitoring will also provide an indication of the effectiveness of the groundwater containment/control portion of the final remedy.
  - 2. The revised MSAP shall include the surface water monitoring program, including methods and procedures to accomplish sampling and analysis of surface water. The Permittee's analytical methods for surface water shall be consistent with those methods specified in Table 3 for groundwater. Specific procedures and protocols for selection of chemical sampling times, hydraulic and chemical data collection and processing, and data evaluation and statistical analysis shall be included in the revised MSAP.
  - 3. Unless otherwise approved in the revised MSAP, surface water samples shall be taken at the locations identified and for the parameters described in Appendix B of the approved MSAP. The Permittee may propose

changes in the Surface Water Monitoring Program in the revised MSAP that shall be submitted for review and approval as part of the OM&M Plan, Corrective Action Condition XIII. Any proposed changes shall be reviewed and approved by the Department in writing prior to implementation.

4. Reporting of data/information collected as part of the surface water monitoring program shall be included in the Annual Groundwater Corrective Action Report required by Corrective Action Condition XX. Conclusions regarding the analysis of the data shall be included in each Annual Groundwater Corrective Action Report.
- B. The Permittee may, at any time during the compliance period, make a demonstration to the Department for a surface water monitoring exemption. A successful demonstration for such an exemption shall, at a minimum, adequately address the elements described in 40 C.F.R. § 264.94(b), as applied to potentially affected surface water bodies. Departmental approval of the Permittee's surface water monitoring exemption shall necessitate a permit modification, in accordance with 40 C.F.R. § 270.42.

#### XVIII. Groundwater Containment/Control

The Permittee submitted a Proposed Pilot Study Work Plan for Hydraulic Testing for Control and Compliance (hereafter referred to as the Pilot Study Work Plan) on August 7, 2006. The Department and EPA approved the Pilot Study Work Plan on September 15, 2006. On February 18, 2010, the Permittee submitted a document entitled Preliminary Groundwater Containment Standard.

Performance goals are based on the ongoing effectiveness of groundwater containment/control and ultimately, achievement of the maximum concentration limits specified in Table 1. The groundwater containment/control system is an integral part of the final remedy at the facility. The Permittee shall continue operating this system pursuant to this Permit, until such time as the Permittee submits, and the Department approves, a demonstration that operation of this system is no longer necessary to protect human health and the environment.

##### A. Intermediate Performance Goals

Ongoing effectiveness of the final remedy for groundwater is governed by intermediate performance standards related to containment/control of

contaminated groundwater. The goals for this remedy element are to prevent/minimize adverse impacts to the streams adjacent to the facility and to ensure that groundwater contamination does not spread beyond its current limits. The Permittee shall, at the earliest practical moment upon discovery of a significant release of contaminated groundwater into the adjacent streams, notify the Department's Southwest Regional Office and Waste Management Program to facilitate discussion of what, if any, additional action(s) may be necessary. Intermediate performance standards are gauged in three ways, by measurement of the: 1) cone of depression developed by capturing groundwater contamination via pumping, 2) groundwater flow patterns reflecting minimal discharge to the streams, and 3) potentiometric (elevation) head differences between the streams and underlying contaminated groundwater. The intermediate performance standards shall be described in the MSAP element of the OM&M Plan, required by Corrective Action Condition XIII. Prior to revised MSAP submission and approval, the Permittee shall abide by the current approved MSAP, dated March, 2012, and all approved revisions/additions. The Permittee shall operate the groundwater containment/control system in accordance with the following intermediate performance standards:

1. The groundwater level within the primary extraction wells SXD1 and ITD4, specified in the revised MSAP, shall be maintained at 30 feet or greater below the well head measurement reference point.

The groundwater level within primary extraction well ITO2R, specified in the revised MSAP, shall be maintained at 25 feet or greater below the well head measurement reference point.

Compliance with this performance standard shall be determined by calculation of the 30-day rolling average groundwater level for each specified well. The groundwater level shall be calculated by subtracting the 30-day rolling average groundwater elevation for the well from the wellhead measurement reference elevation for that well. The value of this calculation shall be equal to or greater than the specified compliance level for each primary well.

2. The groundwater containment/control system shall maintain a positive groundwater flow potential (hydraulic gradient) from the adjacent streams towards the extraction wells, as expressed in well pairs SXD1/ITO6 and ITD4/15B1. The average hydraulic gradient in these wells shall be, at a

minimum, 0.15 foot/foot and 0.25 foot/foot, respectively, with flow inward toward the pumping wells and away from the creeks.

Compliance with these performance standard shall be determined by calculating these hydraulic gradients by using the difference of the 30-day rolling average water level elevation for the specified well pairs divided by the horizontal distance between them in feet.

3. The groundwater containment/control system shall maintain a groundwater potentiometric surface elevation at the edge of the stream transition zone (as currently defined by wells ITO2 and ITO6) that averages 0.25 feet lower than the stream water elevation at the closest point. The elevation difference shall be calculated by determining the value of the 30-day rolling average of the B1 groundwater potentiometric surface elevation at the edge of the stream transition zone and subtracting that value from the 30-day rolling average value for the stream water level elevation at the closest point (as defined by water elevation measured at the Jordan Creek Environmental Bridge). The value of this calculation shall be negative 0.25 feet or greater. (i.e., essentially representing a “losing” stream condition).

B. Long-Term Performance Goals

The long-term performance goal is achievement of the GPS maximum concentration limits as discussed in Corrective Action Condition XVI.A, and as specified in Table 1. The GPS maximum concentration limits (or ACLs if established via a successful permit modification) must be met at and beyond the Point of Compliance for three consecutive years before a demonstration of final remedy completion may be submitted by the Permittee for Departmental review and approval. Any such demonstration shall be in accordance with Corrective Action Condition XIV.

C. Operating Parameters

1. The groundwater containment/control system operating parameters, such as groundwater and stream water level elevation, pumping flow rates and volumes, local precipitation information and other parameters, as appropriate shall be measured and recorded by a mode and at a frequency specified in the MSAP element of the OM&M Plan required by Corrective Action Condition XIII. The Permittee shall operate the groundwater

containment system in accordance with these operating parameters to maintain the intermediate performance standards.

2. All extraction wells shall be operational unless prevented by equipment failures or a catastrophic event. All extraction wells shall be available for service and able to respond to the automated control system; however, the Permittee shall have flexibility in the operation of individual wells. The Permittee may operate one or more wells at any one time at its discretion as long as the intermediate performance standards are maintained. This requirement may be waived by the Department for certain approved pilot testing period.
3. In the event that a strike or an act of God, war, riot or other catastrophe should arise, the Permittee shall use best efforts to avoid adverse impacts on the groundwater containment/control system or the data collected. Examples of events that are not catastrophic events include, but are not limited to, the increased cost or expense of any work to be performed under this Permit or any financial difficulty of the Permittee to perform such work. Operational performance shall not be required during a catastrophic incident. Data that is collected during periods that the groundwater containment system is adversely impacted shall not be required to be included in the performance standard monitoring calculations. The requirement that the Permittee exercise “best efforts to avoid adverse impacts” includes:
  - a. Using best efforts to anticipate any potential catastrophic event; and
  - b. Using best efforts to address the effects of any potential catastrophic event as it is occurring and following the potential catastrophic event such that the adverse impact is minimized to the greatest extent practicable.

D. Monitoring, Inspection and Modification

1. The Permittee shall maintain, calibrate, and operate monitoring and data collection network equipment that monitors and records the operating parameters specified in the MSAP element of the OM&M Plan, Corrective Action Condition XIII., and any daily values used to calculate 30-day rolling averages.

2. For purposes of this Permit, the following terms shall have the meanings stated herein:
  - a. A 30-day rolling average (30DRA) shall be defined as the arithmetic mean of the 30 most recent values obtained daily. The 30DRA values and daily values shall be collected and recorded either by the Permittee's data collection network, by remote data collection devices, or by approved manual means.
  - b. For purposes of compliance with this Permit, a day or a daily period shall refer to the period of time from midnight to midnight.

XIX. Quarterly Progress Reports

- A. The Permittee shall prepare and submit to the Department signed Quarterly Progress Reports, summarizing all permitted corrective action activities undertaken during the previous calendar quarter.
  1. Each Quarterly Progress Report shall be due within 60 calendar days following the last day of each reporting period (i.e., March 1, June 1, September 1, and December 1).
  2. The first Quarterly Progress Report shall be due within 60 calendar days after the end of the calendar quarter in which this Permit becomes effective. The Quarterly Progress Reports shall continue to be submitted until the Permittee's corrective action activities are complete, including any long-term operation, maintenance, and monitoring activities.
- B. The Quarterly Progress Reports shall include the following information for the time period being reported:
  1. A description of the work completed;
  2. Summaries of all findings, including summaries of laboratory data;
  3. Summaries of all problems or potential problems encountered during the reporting period and actions taken to rectify problems;
  4. Projected work for the next reporting period; and

5. Any instances of noncompliance with the corrective action requirements of this Permit not otherwise required to be reported elsewhere in this Permit.
- C. Any detailed technical information that is part of any additional corrective action activities undertaken pursuant to this Permit and required to be submitted as part of ISMs, RFI or CMS work plans and reports, or Annual Groundwater Corrective Action Reports, need not be reproduced as part of the Permittee's Quarterly Progress Reports.
- D. Copies of other reports (e.g., inspection reports), information, or data shall be made available to the Department upon request.

XX. Annual Groundwater Corrective Action Reports

The Permittee shall prepare and submit Annual Groundwater Corrective Action Reports to the Department, providing a comprehensive evaluation of the facility-wide groundwater corrective action program and all uninterpreted analytical data from the Permittee's groundwater sampling program for the previous calendar year (i.e., January through December). The Annual Groundwater Corrective Action Reports are due by March 1 of each calendar year for the previous calendar year. Each Annual Groundwater Corrective Action Report shall include the following information for the time period being reported:

- A. All original, uninterpreted laboratory analytical data package reports from the Permittee's groundwater sampling events, groundwater analysis and surface water results (the full suite of constituents for each EPA SW-846 method used shall be tested for and reported), field parameter measurement results, copies of field sampling and well inspection log sheets, well repair documentation, QA/QC data, statistical analysis of groundwater and surface water data, field investigation results, volume of groundwater extracted, amounts of DNAPL recovered and other relevant groundwater-related information, as appropriate, including results of the periodic Appendix IX groundwater sampling and analysis, as appropriate (see Corrective Action Condition XVI.F.6. and Table 3).
- B. A discussion of any exceedances of the GPS and effluent limits of the Missouri State Operating Permit (MO-0001970).

- C. A narrative discussion of the nature and evolution of the Permittee's groundwater corrective action and monitoring program, as well as conclusions concerning the overall adequacy of the program as related to its intended purpose, including any ISMs/remedial action plans. Any conclusions concerning inadequacies in the Permittee's groundwater corrective action and monitoring program shall be accompanied by a discussion of proposed remedies. Specific details concerning any proposed remedies shall be further developed outside the scope of these reports or as otherwise specified in this Permit.
  
- D. Comprehensively address all technical requirements of 40 C.F.R. Part 264 Subpart F and this Permit. The Permittee shall summarize relevant groundwater monitoring information and present this information in the form of narrative discussions, groundwater flow calculations, and/or diagrammatic illustrations (e.g., tabular groundwater and statistical data summaries, hydrogeologic and potentiometric contour maps/cross-sections, chemical parameter trend graphs, calculated rate(s) of contaminant migration, contaminant isoconcentration maps/cross-sections, fence/isometric diagrams, groundwater flow nets, etc.), as appropriate.
  
- E. Evaluate the effectiveness of the groundwater corrective action program, including, but not limited to, the following:
  - 1. The rate and direction of groundwater movement in underlying aquifers and potential effects on any corrective action measures being designed or implemented at the facility for removing, containing, or controlling the groundwater contaminant plume(s);
  - 2. The horizontal and vertical extent and concentrations of hazardous constituents (Table 1) in groundwater throughout the contaminant plume(s) as evaluated from the data obtained through the Permittee's groundwater monitoring program;
  - 3. Any surface and/or subsurface well integrity problems and its potential or actual influence on the groundwater data or effectiveness of the groundwater corrective action and monitoring program;
  - 4. An annual plume stability analysis, which shall demonstrate whether the plume is expanding, shrinking, or stable relative to the past

- 10 years. The analysis shall demonstrate increasing, decreasing, or stable contaminant trends for the past 10 years;
5. The amount of free NAPLs, if present, and groundwater extracted from the subsurface during operation of the groundwater corrective action program, and, if applicable, as part of stabilization activities and/or remedial action plans. This information should be reported both as a total amount and per well or extraction location if possible, and shall be used in conjunction with dissolved phase contaminant concentration information to estimate quantities of contaminants removed.
  6. Contaminant trend analyses from year to year using analytical results of the groundwater samples to help evaluate the overall progress/trends of the corrective action program, and to provide the basis for future decisions regarding the need for additional corrective action/ISMs or optimizing existing measures; and
  7. The conclusions and summary, including statistical evaluation, of analytical results from groundwater monitoring conducted during the report period.
  8. Information related to extraction of groundwater, installation, and operation of the on-property groundwater pumping system, groundwater treatment plant and discharge of treated groundwater to a publicly-owned treatment works, including the following
    - a. Groundwater extraction rates and volumes to determine if plugging of the well screens and/or the surrounding geologic strata is occurring;
    - b. Concentrations of the groundwater monitoring parameters (Table 1) in the groundwater treatment system influent and treated effluent to determine if substantial removal of contaminants is being achieved by the groundwater treatment system, and whether the levels of treatment meet all applicable federal, state, and local requirements;
    - c. Results of any inspection and maintenance activities performed, system downtime, and any problems or unusual

conditions noted within the system in terms of their potential or actual influence on effluent monitoring and treatment plant efficiency; and

- d. Pumping well network performance data regarding the maintenance of hydraulic capture sufficient to minimize discharge to Jordan, Fassnight or Wilson Creeks.
- F. The statistical analyses should be based on appropriate methods contained in the most recent version of the EPA guidance document entitled, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Unified Guidance and any subsequent addenda, (the current version is dated March 2009) or other methods that are approved in advance by the Department. To choose appropriate methods for the data set being evaluated, the distribution of the data shall be characterized and compared to the requirements for the various methods. The guidance explains this approach.
- G. Contain detailed boring logs for new exploratory borings and/or detailed “as-built” monitoring well diagrams for any new monitoring wells installed during the corresponding reporting period and the monitoring well-related information specified in Corrective Action Conditions XVI.D.3. and 4.

XXI. Planned and Contingent Activities

- A. The Permittee shall comply with the schedule for planned corrective action activities, as specified in this Permit and summarized in Table 4.
- B. The Permittee shall comply, as necessary, with the schedule(s) for contingent corrective action activities, as specified in this Permit and summarized in Table 5.

XXII. Data

All uninterpreted data, such as laboratory reports, drilling logs, bench-scale or pilot-scale data, and other supporting information gathered or generated during activities undertaken pursuant to this Permit shall be maintained by the Permittee during the term of this Permit, including the term of any continued or reissued permits.

## FINANCIAL ASSURANCE CONDITIONS

The Permittee shall comply with all applicable financial assurance requirements contained in the Missouri Hazardous Waste Management Law (and all standards, rules, and regulations adopted under this act), Section 260.350, et seq., RSMo; 40 C.F.R. Part 264 Subpart H; 40 C.F.R. §§ 264.101, 270.30, 270.40, 270.42, and 270.51; and all provisions of this Permit for corrective action activities identified pursuant to the provisions of this Permit.

### I. Cost Estimates

#### A. Corrective Action Cost Estimates

1. Within 120 calendar days of the effective date of this Permit, the Permittee shall submit, in compliance with 40 C.F.R. § 264.101, an updated, detailed written cost estimate, in current dollars, of the cost of hiring a third party to perform the corrective action activities required by this Permit.
  - a. A third party is a party who:
    - (1) Is neither a parent nor a subsidiary of the Permittee; and
    - (2) Does not share a common parent or subsidiary with the Permittee.
  - b. The cost estimates shall be certified by a professional engineer registered in Missouri and developed using appropriate cost estimating software.
  - c. The corrective action cost estimates shall account for the total cost of all work activities and related costs expected to continue until such time as final cleanup objectives are met and confirmed. This includes, but is not limited to, any long-term costs, such as:
    - (1) Final remedy operation, maintenance, and monitoring;
    - (2) Utilities, including electricity, water, and sewer;

- (3) Decommissioning remediation equipment and plugging/abandoning monitoring wells;
    - (4) Real estate taxes on the property; and
    - (5) Departmental oversight cost reimbursement.
  - d. The corrective action cost estimates shall be based on a “rolling” 15 years’ duration unless the Permittee makes a successful demonstration for a shorter time period. The Permittee may, at any time, submit to the Department for review and approval, a demonstration to adjust the corrective action cost estimates based on the estimated time remaining to achieve applicable remediation objectives/standards.
  - e. The corrective action cost estimates shall include a contingency cost allowance of 15 percent of the total cost of all corrective action activities.
  - f. The corrective action cost estimates shall include an engineering cost allowance of 10 percent of the total cost of all corrective action activities.
  - g. The cost estimates shall not include any salvage value that may be realized from the sale of wastes, facility structures or equipment, land, or other assets associated with the facility.
  - h. Discounting is not allowed for corrective action cost estimates.
2. The Permittee shall submit each corrective action cost estimate to the Department for review and evaluation. If the cost estimate requires modification, the Department shall notify the Permittee, in writing, of the estimate’s deficiencies and specify a due date for submitting a revised cost estimate for further evaluation and final written response.
  3. The Permittee shall maintain, in the operating record, the most recent corrective action cost estimate that has received a final written response from the Department.

B. Revisions to Corrective Action Cost Estimates

1. Annual Adjustment for Inflation

The Permittee shall annually adjust the corrective action cost estimates, as applicable, for inflation until all activities required by this Permit are complete. The inflation adjustment shall be determined by using the procedures described in 40 C.F.R. § 264.142(b), except that the inflation factor should be derived from the most recent annual Implicit Price Deflator for the Gross Domestic Product, instead of the Gross National Product. The cost estimate is due within 60 calendar days before the anniversary date of the financial assurance instrument used to comply with this section. If the Permittee uses a financial test or corporate guarantee to demonstrate financial assurance, the cost estimate is due within 30 calendar days after the close of the guarantor's fiscal year.

2. The Permittee shall also adjust the corrective action cost estimate if:

- a. The Permittee or the Department determines any additional corrective action activities are required; or
- b. Any other conditions increase or decrease the estimated cost of the corrective action activities to be performed under this Permit.

3. If the Department determines a new cost estimate is required, the Department shall notify the Permittee, in writing, of this requirement. The revised cost estimate is due within 60 calendar days of the Permittee's determination that a revised cost estimate is necessary or the Department's written notification that a new cost estimate is required.

4. The Permittee shall submit each revised corrective action cost estimate to the Department for review and evaluation. If the revised cost estimate requires further modification, the Department shall notify the Permittee, in writing, of the estimate's deficiencies and specify a due date for submitting a new revised cost estimate for further evaluation and final written response.

II. Financial Assurance

In order to provide for the full and final completion of the corrective action activities required by this Permit, the Permittee shall establish and maintain financial assurance, for the benefit of the Department, in the amount at least equal to the most recent corrective action cost estimate that received a final written response from the Department. All financial assurance instruments provided pursuant to this Permit shall be satisfactory in form and substance as determined by the Department.

A. Certified Mail

The Permittee shall submit all required financial assurance instruments and related documents to the Department by certified mail.

B. Timeframes for Financial Assurance Instruments (other than Financial Test or Corporate Guarantee)

1. Within 30 calendar days after receiving the Department's final written response regarding the Permittee's cost estimate(s) pursuant to this Permit, the Permittee shall submit to the Department for review and evaluation, the draft financial assurance instrument(s) and related documents. This applies to all financial assurance instruments except the financial test or corporate guarantee. See Financial Assurance Condition II.C.
2. Within 20 calendar days after receiving the Department's final written response regarding the draft financial assurance instrument(s), the Permittee shall execute or otherwise finalize all instruments or other documents required in order to make the selected financial assurance legally binding. The final financial assurance instrument(s) shall be in a form identical to the draft financial assurance documents reviewed and responded to by the Department, including any changes resulting from that review.
3. Within 30 calendar days after receiving the Department's final written response regarding the draft financial assurance instrument(s), the Permittee shall ensure the issuing institution submits to the Department, all original executed and/or otherwise finalized instruments or other documents required in order to make the selected financial assurance legally binding. The instruments or other

documents shall be in a form identical to the financial assurance documents reviewed and responded to by the Department. Facsimiles or photocopies are not acceptable.

C. Timeframes for Financial Tests and Corporate Guarantees

1. Within 30 calendar days after receiving the Department's final written response regarding the Permittee's cost estimate(s) pursuant to this Permit, the Permittee shall submit to the Department for review and evaluation, all documentation necessary to demonstrate the Permittee satisfies the financial test criteria. See Financial Assurance Condition II.E.5.
2. The Permittee's financial assurance shall become effective immediately upon the Permittee receiving the Department's final written response regarding either the Permittee's cost estimate(s) or the Permittee's demonstration that the Permittee satisfies the financial test criteria, whichever date is later.

D. Multiple Instruments

The Permittee may combine more than one mechanism generally described in Financial Assurance Condition II.E., to demonstrate financial assurance for the corrective action activities required by this Permit. As specified in 40 C.F.R. §§ 264.143(g) and 264.145(g), these mechanisms are limited to trust funds, surety bonds guaranteeing payment into a trust fund, letters of credit, and insurance. Using the foregoing instruments in combination with the financial test or corporate guarantee is not allowed. The Department reserves the right to limit the Permittee's choices to one or more of the instruments, on a case-by-case basis, in order to ensure the full and final completion of the corrective action activities required by this Permit.

E. Financial Assurance Instruments

The Permittee must choose from the mechanisms specified in 40 C.F.R. §§ 264.143, 264.145, and 264.146. The wording of the financial assurance documents shall meet the requirements of 40 C.F.R. § 264.151, except that deviation in wording to incorporate coverage for corrective action activities is allowed. All financial assurance instruments provided pursuant to this Permit shall be satisfactory in form and substance as determined by the Department.

1. Trust Fund
  - a. The trust fund shall be established for the benefit of the Department and administered by a trustee who has the authority to act as a trustee under federal or state law and whose trust operations are regulated and examined by a federal or state agency.
  - b. The trust agreement shall state that the trustee shall make payments from the fund, as the Department directs in writing, to:
    - (1) Reimburse the Permittee for expenditures made by the Permittee for corrective action activities performed according to this Permit; or
    - (2) Pay any other person whom the Department determines has performed or will perform the corrective action activities required by this Permit.
  - c. The trust agreement shall also state that the trustee shall not refund to the grantor any amounts from the fund until the Department notifies the trustee, in writing, that the corrective action activities performed according to this Permit have been completed to the Department's satisfaction.
2. Surety Bond
  - a. A surety bond shall unconditionally guarantee either:
    - (1) Payment, at the direction of the Department, into a standby trust fund that meets the requirements of Financial Assurance Condition II.E.1; or
    - (2) Performance of the corrective action activities required by this Permit. The Surety Company issuing the bond shall, at a minimum, be among those listed as acceptable sureties on Federal Bonds, as described in Circular 570 of the U.S. Department of the Treasury.



- c. The insurance policy shall state that the insurer shall make payments up to an amount equal to the face amount of the policy, as the Department directs in writing, to:
    - (1) Reimburse the Permittee for expenditures made by the Permittee for corrective action activities performed according to this Permit; or
    - (2) Pay any other person whom the Department determines has performed or will perform the corrective action activities required by this Permit.
  - d. The insurance policy shall also state that it may not be canceled, terminated, or non-renewed and the policy shall remain in full force and effect in the event that:
    - (1) The Permittee is named as a debtor in a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code; or
    - (2) The Department notifies the insurer of the Permittee's failure to perform, under Financial Assurance Condition II.I.
5. Financial Test or Corporate Guarantee
- a. A Permittee may provide financial assurance through a demonstration that the Permittee satisfies the financial test requirements described in 40 C.F.R. §§ 264.143(f) and 264.145(f).
  - b. A Permittee's direct or indirect parent company may provide a corporate guarantee, executed in favor of the Department. Such guarantee shall state the company providing the guarantee shall perform the corrective action activities required by this Permit, or that the company shall establish a trust fund as allowed in Financial Assurance Condition II.E.1. Any company providing such a guarantee shall demonstrate, to the satisfaction of the Department, that it satisfies the financial test requirements described in 40 C.F.R. §§ 264.143(f) and 264.145(f).

- c. The Permittee shall also comply with the applicable requirements of 40 C.F.R. §§ 264.151(f) and (h)(1), as related to these methods, unless otherwise provided in this Permit. This includes, but is not limited to:
  - (1) Initial submission of required financial reports and statements from the guarantors' chief financial officer and independent certified public accountant;
  - (2) Annual re-submission of such reports and statements within 90 calendar days after the close of each of the guarantor's fiscal year; and
  - (3) Notifying the Department, by certified mail, within 90 calendar days after the close of any of the guarantor's fiscal years in which any such guarantor no longer satisfies the financial test requirements.
- d. The Department may, at any time, request additional information from the Permittee or corporate guarantor, including financial statements and accountant's reports. Any Department request for this information shall be in writing and shall specify a due date for submitting the information. The Permittee shall promptly provide the requested information to the Department.
- e. References in 40 C.F.R. §§ 264.143(f) and 264.145(f), to "the sum of current closure and post-closure costs" and "the current plugging and abandonment cost estimates" and reference in 40 C.F.R. § 264.101(c) to "Assurances of financial responsibility for such corrective action shall be provided" shall mean "the sum of all environmental remediation obligations" guaranteed by such company or for which such company is otherwise financially obligated, in addition to the cost of the corrective action activities required by this Permit. This includes obligations under the Comprehensive Environmental Response, Compensation, and Liability Act; RCRA; Toxic Substances Control Act; Underground Injection Control Program; and any other state or tribal environmental obligation.

F. Automatic Renewal

All financial assurance instruments shall automatically renew each calendar year, at the time of their expiration, unless the financial assurance provider notifies both the Permittee and Department, by certified mail, of a decision to cancel, terminate, or not renew a financial assurance instrument. The Permittee and Department shall receive such notification at least 120 calendar days before expiration, cancellation, or termination of the instrument. Under the terms of the financial assurance instrument, the 120 calendar days shall begin on the date both the Permittee and Department receive the notice.

1. Within 90 calendar days after receiving such notice by both the Permittee and Department, the Permittee shall provide alternate financial assurance and obtain a final written response from the Department regarding such alternate financial assurance.
2. If the Permittee fails to provide alternate financial assurance within 90 calendar days, the Department shall notify the financial assurance provider, in writing, before the instrument expires. The notice to the financial assurance provider shall instruct the financial assurance provider to immediately deposit any and all funds obligated under the financial assurance instrument into the standby trust fund, or a newly created trust fund acceptable to the Department.

G. Modifying Instruments

1. Inadequate Financial Assurance Instrument
  - a. If, at any time, the Department determines a financial assurance instrument(s) provided pursuant to this Permit is inadequate or no longer satisfies the requirements, the Department shall notify the Permittee, in writing. This applies whether there is an adjustment in the estimated cost of the corrective action activities required by this Permit, as independently determined by the Department, or for any other reason.
    - (1) Within 30 calendar days of receiving such notice, the Permittee shall submit to the Department for review and evaluation, draft revised financial assurance

instrument(s) and related documents. The draft revised financial assurance instrument(s) and related documents shall address the inadequacies outlined in the Department's notice.

- (2) Within 10 calendar days after receiving the Department's final written response regarding the draft revised financial assurance instrument(s), the Permittee shall execute and/or otherwise finalize all instruments or other documents required in order to make the selected financial assurance legally binding. The final financial assurance instrument(s) shall be in a form identical to the draft revised financial assurance documents reviewed and responded to by the Department, including any changes resulting from that review.
  - (3) Within 30 calendar days after receiving the Department's final written response regarding the draft revised financial assurance instrument(s), the Permittee shall ensure the issuing institution submits to the Department, all original executed and/or otherwise finalized instruments or other documents required in order to make the selected financial assurance legally binding. The instruments or other documents shall be in a form identical to the revised financial assurance documents reviewed and responded to by the Department. Facsimiles or photocopies are not acceptable.
- b. If, at any time, the Permittee determines a financial assurance instrument provided pursuant to this Permit is inadequate or no longer satisfies the requirements described or incorporated herein, the Permittee shall notify the Department, in writing, within 10 calendar days of this determination. This applies whether due to an adjustment in the estimated cost of the corrective action activities required by this Permit or for any other reason.

2. Reduction in Amount of Financial Assurance

- a. If the Permittee believes the estimated cost to complete the corrective action activities required by this Permit has diminished below the amount covered by the existing financial assurance provided under this Permit, the Permittee may submit a written proposal to the Department to reduce the amount of the financial assurance provided under this Permit.
  - (1) The amount of financial assurance proposed shall be at least equal to the estimated cost of the remaining corrective action activities required by this Permit.
  - (2) The written proposal shall specify, at a minimum, the cost of the remaining corrective action activities to be performed and the basis upon which such cost was calculated (e.g., years remaining until established cleanup standards are expected to be met).
- b. The Department shall notify the Permittee, in writing, regarding its evaluation of the revised financial assurance amount. The Permittee may reduce the financial assurance amount after receiving the Department's written response to the proposed revisions, but only according to, and to the extent permitted by, the Department's response. No change to the form or terms of any financial assurance provided under this Section is authorized, other than a reduction in amount.

3. Change of Form of Financial Assurance

- a. If the Permittee wishes to change the form or terms of financial assurance, the Permittee may submit a written proposal to the Department for a revised or alternative form of financial assurance. The written proposal shall specify, at a minimum:
  - (1) The cost of the remaining corrective action activities to be performed and the basis upon which such cost was calculated; and

(2) The proposed revised form of financial assurance, including all proposed instruments or other documents required in order to make the proposed financial assurance legally binding. The proposed revised or alternative form of financial assurance shall satisfy all requirements described or incorporated by reference in this Permit.

- b. The Department shall notify the Permittee, in writing, of its decision regarding the revised or alternative form of financial assurance. Acceptance of the written proposal shall be made at the Department's sole discretion.
- c. Within 30 calendar days after receiving the Department's final written response regarding the proposed revised or alternative financial assurance, the Permittee shall ensure the issuing institution submits to the Department, all original executed and/or otherwise finalized instruments or other documents required in order to make the selected financial assurance legally binding. The instruments or other documents shall be in a form identical to the financial assurance documents reviewed and responded to by the Department. Facsimiles or photocopies are not acceptable.
- d. The Department shall release, cancel, or terminate the prior existing financial assurance instruments only after the Permittee has submitted to the Department, all executed and/or otherwise finalized new financial assurance instruments or other required documents.

H. Obligation to Complete Corrective Action Activities

The Permittee's inability or failure to establish or maintain financial assurance for completing the corrective action activities required by this Permit in no way excuses performing any other requirements of this Permit, including, without limitation, the Permittee's obligation to complete all necessary corrective action activities in strict accordance with the terms of this Permit.

I. Performance Failure

1. In the event the Department determines the Permittee:
  - a. Has ceased implementing any of the corrective action activities required by this Permit; or
  - b. Is significantly or repeatedly deficient or late in performing the corrective action activities required by this Permit; or
  - c. Is implementing the corrective action activities required by this Permit in a manner that may cause an endangerment to human health or the environment;

the Department may issue, to both the Permittee and financial assurance provider, a written notice (“Performance Failure Notice”) of the Permittee’s failure to perform. The notice shall specify the grounds upon which the notice was issued and provide the Permittee 10 calendar days to remedy the circumstances.

2. If the Permittee fails to remedy the performance failure to the Department’s satisfaction before the 10 calendar days’ end, the Department shall have immediate access to, and benefit of, the financial assurance provided. The Department may, at any time thereafter, direct the financial assurance provider to immediately:
  - a. Deposit any and all funds obligated under the financial assurance instrument into the standby trust fund, or a newly created trust fund acceptable to the Department; or
  - b. Arrange for performance of the corrective action activities required by this Permit.
3. The Department shall notify the Permittee, in writing, if the Department is unable, after reasonable efforts, to secure the payment of funds from the financial assurance provider for performing the corrective action activities. Within 10 calendar days after receiving such notice, the Permittee shall provide cash to fund the standby trust fund, or a newly created trust fund acceptable to the Department.

- a. The funds shall at least equal the cost of the remaining corrective action activities required by this Permit.
- b. The deposit shall be made in immediately available funds and without setoff, counterclaim, or condition of any kind.

J. Release of Financial Assurance

1. After the Department and Permittee have mutually agreed that all corrective action activities required by this Permit are complete, the Permittee may submit a written request to the Department to release the Permittee from the requirement to maintain financial assurance.
2. The Department shall notify both the Permittee and financial assurance provider(s), in writing, if and when the Permittee is released from all financial assurance obligations under this Permit.
3. The Permittee shall not release, cancel, or terminate any financial assurance provided pursuant to this Permit, except as provided in Financial Assurance Condition II.G.2.

**FACILITY SUBMISSION SUMMARY**

**Table 3 - Planned Submittal Requirements  
Pursuant to this Permit and Schedule of Compliance**

| <b>Submittal Requirements</b>  | <b>Due Date*</b>   | <b>Permit Condition</b>            |
|--|--|------------------------------------|
| One paper copy and one searchable electronic copy of the consolidated permit application   | Within 60 calendar days after effective date of this Permit.   | Schedule of Compliance Item I.A.   |
| Certification that Permittee has read and understands all permit conditions in this Permit | Within 60 calendar days after effective date of this Permit.   | Schedule of Compliance Item I.B.   |
| Check or money order for any outstanding engineering review costs                          | Within 60 calendar days after effective date of this Permit.   | Schedule of Compliance Item I.C.   |
| Check or money order for each year this Permit is to be in effect beyond the first year    | Within 60 calendar days after effective date of this Permit.   | Schedule of Compliance Item I.D.   |
| Revised Site Operation, Maintenance and Monitoring (OM&M) Plan.                            | Within 90 calendar days after effective date of this Permit.   | Schedule of Compliance Item II.A.  |
| Revised Monitoring, Sampling, and Analysis Plan (MSAP)                                     | Within 60 calendar days after effective date of this Permit.   | Schedule of Compliance Item I.E.   |
| Updated draft financial assurance instrument(s)  | Within 30 calendar days after receiving the Department's final written response regarding updated corrective action cost estimate. | Schedule of Compliance Item IV.    |
| Execute Environmental Covenant   | Within 30 calendar days after receiving Department approval of draft Environmental Covenant  | Schedule of Compliance Item III.A. |
| Recordation of Executed Environmental Covenants  | Within 15 calendar days after execution of approved Environmental Covenants  | Schedule of Compliance Item III.B. |

| <b>Submittal Requirements</b>   | <b>Due Date*</b>  | <b>Permit Condition</b>              |
|---|---|--------------------------------------|
| Notarized statements certifying recordation of executed Environmental Covenants | Within 30 calendar days after recording executed Environmental Covenants  | Schedule of Compliance Item III.C.   |
| Certification of Completion of Constructed Final Remedy                         | Within 60 calendar days of completion of construction activities associated with implementation of the final remedy (combined with CMI Report).   | Corrective Action Condition XI.      |
| Corrective Measures Implementation (CMI) Report.                                | Within 60 calendar days of completion of construction activities associated with implementation of the final remedy.  | Corrective Action Condition XII.     |
| Quarterly Progress Reports  | Within 60 calendar days of the end of each reporting period (i.e., March 1 and September 1).  | Corrective Action Condition XIX.     |
| Annual Groundwater Corrective Action Report                                     | March 1 of each calendar year.  | Corrective Action Condition XX.      |
| Updated corrective action cost estimate   | Within 120 calendar days of the effective date of this Permit   | Financial Assurance Condition I.A.1. |
| Updated corrective action cost estimate inflation update                        | Annually, within 60 calendar days before the anniversary date of establishing the financial assurance instrument or within 30 calendar days of the end of the guarantor's fiscal year if a financial test or corporate guarantee is used. | Financial Assurance Condition I.B.1. |
| Biennial Report with information required by 40 C.F.R. § 264.75                 | March 1 of each even numbered calendar year, unless an extension is requested.  | General Permit Condition III.        |
| Permit Renewal Application  | At least 24 months before expiration date of this Permit.   | Standard Permit Condition I.         |

\*Extensions may be requested and approved by the Department for cause without modifying this Permit.

**Table 4 - Contingent Corrective Action Submittal Requirements  
Pursuant to the Corrective Action Conditions of this Permit**

| <b>Contingent Submittal Requirements</b>  | <b>Due Date</b>  | <b>Corrective Action Condition</b> |
|---|--|------------------------------------|
| Written notification of newly identified SWMU(s) and AOC(s)   | No later than 15 calendar days after discovery.                                      | II.A.                              |
| SWMU/AOC Assessment Report  | According to the schedule in the approved SWMU/AOC Assessment Work Plan.             | II.D.                              |
| Written notification of newly identified releases from previously identified SWMU(s) and AOC(s)                               | No later than 15 calendar days after discovery.                                      | III.A.                             |
| Newly Identified Release Work Plan  | Within 30 calendar days after notice by the Department that a work plan is required. | III.B.                             |
| Newly Identified Release Report   | According to the schedule in the approved Newly Identified Release Work Plan.        | III.D.                             |
| Notification of interim/stabilization measures  | Within 24 hours after discovery of need for stabilization.                           | IV.B.1.                            |
| Notification of interim/stabilization measures not effective  | Within 10 calendar days after determination.   | IV.B.3.                            |
| RCRA Facility Investigation (RFI) Work Plan for newly-identified releases from newly and/or previously-identified SWMUs/AOCs. | Within 60 calendar days after notice by the Department that a work plan is required. | V.B.                               |
| RCRA Facility Investigation (RFI) Report for newly-identified releases from newly and/or previously-identified SWMUs/AOCs.    | According to the schedule in the approved RFI Work Plan.                             | VI.B.                              |

| <b>Contingent Submittal Requirements</b>                               | <b>Due Date</b>  | <b>Corrective Action Condition</b>   |
|--|--|--------------------------------------|
| Corrective Measures Study (CMS) or Remedy Evaluation Work Plan         | Within 45 calendar days after notice by the Department that a work plan is required.   | VII.D.                               |
| Corrective Measures Study (CMS) or Remedy Evaluation Report            | According to the schedule in the approved CMS Work Plan.   | VIII.A.                              |
| Corrective Measures Implementation (CMI) Work Plan                     | According to the schedule in the permit modification to implement a final remedy.  | X.                                   |
| Certification of Final Remedy Construction                             | Within 30 calendar days after recording approved Environmental Covenant.   | XI.                                  |
| Construction Completion (CC) Report.                                   | Within 60 calendar days of completion of construction activities associated with implementation of the final remedy.               | XI.B.                                |
| Corrective Measures Implementation (CMI) Report                        | According to the schedule in the approved CMI Work Plan.   | X.                                   |
| Environmental Covenant Disturbance Notification for any SWMUs or AOCs. | At least 30 calendar days prior to any planned construction, excavation, or maintenance and repair activities at identified SWMUs. | XV.A.2.                              |
| Transfer of Interest in Permitted Property Notification                | At least 90 calendar days before transferring any interest in any portion of permitted property.                                   | XV.B.                                |
| Change in Use of Property Notification                                 | At least 30 calendar days before any proposed change in use of property.   | XV.C.                                |
| Corrective Action Cost Estimate.                                       | Within 60 calendar days after final remedy Permit modification.  | Financial Assurance Condition I.B.2. |

| <b>Contingent Submittal Requirements</b>           | <b>Due Date</b>   | <b>Corrective Action Condition</b>    |
|--|---|---------------------------------------|
| Draft Financial Assurance Instrument.              | Within 30 calendar days of approval of corrective action cost estimate(s).      | Financial Assurance Condition II.B.1. |
| Execution of Final Financial Assurance Instrument. | Within 10 calendar days of approval of draft financial assurance instrument(s). | Financial Assurance Condition II.B.2. |
| Original Executed Financial Assurance Instrument.  | Within 30 calendar days of approval of draft financial assurance instrument(s). | Financial Assurance Condition II.B.3. |

**Figure 1 - Facility Location**

**Figure not available due to size.**

**Please see hard copy or separate electronic file online at**

**<https://dnr.mo.gov/env/hwp/permits/mod095038329/2020-07-17-figure-1-facility-location-mod095038329.pdf>**

**Figure 2 - Location of SWMUs at the Facility**

**Figure not available due to size.**

**Please see hard copy or separate electronic file online at**

**<https://dnr.mo.gov/env/hwp/permits/mod095038329/2020-07-17-figure-2-location-of-swmus-at-the-facility-mod095038329.pdf>**