

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES



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

PERMIT NUMBER: MOD043935048

PERMITTEE

Owner and Operator: City of Kansas City
601 Brasilia Avenue
Kansas City, MO 64153-2054

FACILITY LOCATION

MCI Maintenance & Engineering Base
9200 NW 112th Street
Kansas City, MO 64153
Platte County
T52N, R34W, S22, 23, 26, and 27
North Latitude – 39°17'15"
West Longitude – 94°41'21"

FACILITY DESCRIPTION

MCI Maintenance & Engineering Base (MCI M&E Base) is used for maintenance and overhauling activities performed on aircraft frames and engines. The Kansas City International Airport was opened in 1972, originally called Mid-Continent International Airport, and the International Air Transportation Association adopted MCI as the airport's designator code. The facility has two closed hazardous waste surface impoundments, which were used as a final step in treating wastewater produced during the maintenance activities. The facility also has one closed hazardous waste landfill, which was used historically to dispose of a combination of soil, debris, and various

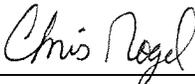
industrial waste materials. The final remedy for the contaminated soil and a groundwater-monitoring program have already been put in place at the facility. A hazardous waste permit is needed for continued post-closure care and corrective action activities. The general facility location is shown in Figure 1. The hazardous waste permitted boundaries are shown in Figure 2.

PERMITTED ACTIVITIES

This Permit requires post-closure care, including groundwater monitoring and corrective action for the closed hazardous waste surface impoundments and the landfill. This Permit requires implementation of a site-wide corrective action program to address releases from other Solid Waste Management Units and Areas of Concern. The Permit also contains provisions for contingent Corrective Action Conditions to address any potential newly identified releases to the environment from previously or newly identified Solid Waste Management Units and Areas of Concern, as necessary and appropriate.

EFFECTIVE DATES OF PERMIT: August 13, 2020 to August 12, 2030

August 13, 2020
Date



Chris Nagel, Director
WASTE MANAGEMENT PROGRAM

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INTRODUCTION

After public notice, according to Code of State Regulations 10 CSR 25-8.124, and review of MCI M&E Base'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 Sections 260.350 through 260.433, Revised Statutes of Missouri (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 MOD043935048, to City of Kansas City, as the facility owner and operator (hereafter referred to as the Permittee), for post-closure care and corrective action of the closed hazardous waste management units as described in the permit application and this Permit. 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, 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 post-closure care of closed hazardous waste management units, “planned,” and “contingent” corrective action activities and issued only to the Permittees named above. This Permit is issued for a period of 10 years and expires at midnight on August 12, 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 February 25, 2020 with additional information dated May 4, 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. Post-closure and corrective action activities 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 that 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 Solid Waste Management Unit, 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.

“Alternate Concentration Limit (ACL)” means a Department-approved maximum concentration limit or risk-based threshold for a hazardous constituent, facility-related contaminant, or combination thereof, in the groundwater that will not pose a substantial present or potential hazard to human health or the environment, as long as that concentration limit or risk-based threshold is not exceeded at defined compliance points.

“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 Solid Waste Management Unit, 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.

“Effectiveness Wells” means the wells installed at various locations to evaluate the efficacy of the corrective action(s) and/or evaluate the remedy(s) implemented at the site.

“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.

“Interim/Stabilization Measures (ISMs)” means actions to control or abate threats to human health or the environment from releases at hazardous waste treatment, storage, or disposal facilities, or to prevent or minimize the further spread of contamination while long-term remedies are pursued.

“Investigation Wells” means the wells used to evaluate the rate of migration and areal extent of groundwater contamination and assess any newly identified release(s) or risk limit exceedance(s) observed at the facility.

“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 bounded area, currently the facility-related contaminant plume, at which groundwater concentrations are measured to demonstrate the concentrations at and beyond this boundary will not exceed the GPS contained in Table 2 and 3.

“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.

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 revised Part A permit application, including all changes resulting from comments on the draft Permit, all permitted units at the facility, and a diagram of the facility that clearly outlines where each permitted unit is located.
 - C. 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.
 - D. 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.
 - E. 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 the remaining balance is \$9,000. An invoice is included with this Permit.

- F. If the conditions in the most currently approved Sampling and Analysis Plan do not adequately reflect the requirements of this Permit, Submit to the Department for review and approval, a revised 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 XVI.D.1.
- G. Submit to the Department for review and approval, a revised Quality Assurance Project Plan to reflect any additional requirements contained in this Permit, as required in Corrective Action Condition V.F.
- H. If the conditions in the most currently approved Post-Closure Care Plan do not adequately reflect the requirements of this Permit, Submit to the Department for review and approval an updated Post-Closure Care Plan, according to 40 C.F.R. § 264.118.
- I. Submit to the Department for evaluation, an updated post-closure care and corrective action cost estimate, according to 40 C.F.R. § 264.144.
- J. 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.
- K. Within 10 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.
- II. 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.
- 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 parties have executed the Environmental Covenant, record the executed Environmental Covenant with the county recorder of deeds, the local zoning authority, or the authority with jurisdiction over local land use, according to state law. 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.
 - D. 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 written certification stating the final remedy has been constructed according to the approved CMS, all corrective action measures conducted following CMS approval, and this Permit.
- IV. 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 6 and 7.

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, 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 IV.

STANDARD PERMIT CONDITIONS

The Permittee shall comply with the requirements set forth in the Missouri Hazardous Waste Management Law and all corresponding standards, rules, and regulations adopted under this Law, Sections 260.350 through 260.433, RSMo, et seq.; 10 CSR 25-8, 40 C.F.R. Part 264 Subpart F, G, and H, and 40 C.F.R. §§ 264.101, 270.10, 270.30, 270.32, 270.40, 270.42, and 270.51.

- 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 IV.

GENERAL PERMIT CONDITIONS

- I. 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 address listed in the "Submittal of Required Information" provision of this Permit.

- II. Reporting Requirements [40 C.F.R. § 270.30(l)(9)]
- III. 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.
 - A. Financial assurance cost estimates and draft financial assurance mechanisms submitted for post-closure care and 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 sampling and analysis of hazardous waste, residues, emissions, plants, odors and corrective action activities (excluding the Annual Progress Reports, 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.

IV. 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 is 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 III.
- 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.

SPECIAL PERMIT CONDITIONS

The Department established the following permit conditions for the Permittee and the hazardous waste facility specified in this Permit.

I. 100-Year Floodplain Requirements [40 C.F.R. § 264.18(b)]

The Permittee submitted information, as required in 40 C.F.R. §§ 270.14(b)(11)(iii) and 270.28, that identifies the facility as not being located in a 100-year floodplain. Therefore, a plan, as required in 40 C.F.R. § 264.18(b), for managing hazardous waste within a floodplain is not required. The Permittee shall maintain this information in the facility operating record.

II. Post-Closure [40 C.F.R. Part 264 Subpart G]

The Permittee shall comply with all applicable requirements in 40 C.F.R. Part 264 Subpart G, and all provisions of this Permit.

- A. Post-Closure Care and Use of Property [40 C.F.R. § 264.117]
1. According to 40 C.F.R. § 264.117(a)(1), post-closure care begins after closure certification for the hazardous waste management unit has been accepted and continues for 30 years after that date, unless modified according to 40 C.F.R. § 264.117(a)(2), or otherwise specified by the Department. The certifications of closure for the Surface Impoundment Area and the Ravine Area Landfill were accepted September 27, 1990, and March 2, 1995, respectively.
 2. At a minimum, post-closure care shall be extended until such time as the groundwater protection standard maximum concentration limits (MCLs) contained in Tables 2 and 3 or approved alternate concentration limits, as applicable, are met for a period of three consecutive years under the groundwater monitoring and corrective action conditions described in Corrective Action Condition XVI.
 3. During the post-closure care period, the Permittee shall comply with the applicable maintenance, monitoring, and reporting requirements in 40 C.F.R. Part 264 Subparts F and G.
 4. During the post-closure care period, the Permittee shall comply with the requirements in 40 C.F.R. § 264.310, including, but not limited to:
 - a. Maintaining the integrity and effectiveness of the final covers;
 - b. Maintaining and monitoring the groundwater monitoring system and complying with all applicable requirements in 40 C.F.R. Part 264 Subpart F;
 - c. Preventing run-on and runoff from eroding or otherwise damaging the final covers; and
 - d. Protecting and maintaining surveyed benchmarks used to comply with 40 C.F.R. § 264.309.
 5. In the event a significant ground subsidence or collapse occurs within 1,000 feet of any area under post-closure care on the Permittee's property, the Permittee shall notify the Department, verbally or in writing, within 5 calendar days of becoming aware of a subsidence or

collapse feature. The Permittee shall also notify the Department of any subsidence or collapse within the facility property boundary that alters surface or groundwater flows to or from any land-based units closed with waste in place. The Permittee shall allow the Department to inspect the feature in order to evaluate the subsidence or collapse before conducting any repairs.

Within 30 calendar days after receiving the Department's written request, the Permittee shall prepare and submit a plan for repairing the feature to the Department for review and approval. Any repair plan shall contain post-repair reporting provisions that include providing detailed documentation of the location, repair work conducted, before and after photographs, etc., in a final report to the Department. The Department shall review and approve the repair plan according to the procedures described in General Permit Condition III.

6. The Permittee shall continue providing proper operation and maintenance of any engineering controls implemented as part of the final remedy. 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 criteria. 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 operating and maintaining such controls.
7. Post-closure use of the property shall be restricted by the Permittee to prevent disturbing the integrity of the final cover on the Ravine Area Landfill, and the Surface Impoundment Area, 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 property use and will not increase the potential hazards to human health or the environment, or if it is necessary to reduce a threat to human health or the environment. The Permittee shall submit a request to the Department before any activities that disturb the integrity of the final cover.
8. The Permittee may submit a request to the Department to shorten the post-closure care period. Justification for shortening the post-closure care period shall accompany any such request. The Department may

approve the request if it determines a shortened post-closure care period is sufficient to protect human health and the environment. Approval to shorten the post-closure care period shall be according to the applicable permit modification procedures in 40 C.F.R. Part 270, 10 CSR 25-7, and 10 CSR 25-8.124.

B. Post-Closure Plan and Amendments [40 C.F.R. § 264.118]

1. Post-closure care shall be conducted according to the approved post-closure care plan(s) and all conditions of this Permit.
2. The post-closure care plan(s) may be amended at any time during the active life of the facility or the post-closure care period. Amendments are subject to the applicable permit modification requirements in 40 C.F.R. Part 270 Subpart D and 10 CSR 25-8.124. Written requests for amendments shall be submitted at least 60 calendar days before the proposed change in post-closure operations, or no later than 60 calendar days after an unexpected event occurs that affects the post-closure care plan(s).

The Department may request modifications to the post-closure care plan if changes in facility operations affect the approved post-closure care plan(s). No later than 60 calendar days after receiving the Department's request, the Permittee shall submit the modified post-closure care plan(s). Any modifications requested by the Department are subject to the applicable permit modification requirements in 40 C.F.R. Part 270 Subpart D and 10 CSR 25-8.124.

3. The facility contact shall keep the approved post-closure care plan(s) during the post-closure care period, as required by 40 C.F.R. § 264.118(c).

C. Future Removal of Hazardous Wastes [40 C.F.R. § 264.119(c)]

If the Permittee wishes to remove hazardous wastes, hazardous waste residues, contaminated soils, or contaminated sludges from within the boundaries of the Ravine Area Landfill or surface impoundments, the Permittee shall request a modification of this Permit, according to the applicable requirements in 40 C.F.R. Part 270 Subpart D and 10 CSR 25-8.124. The modification request shall include a demonstration that the

proposed action(s) will not increase potential hazards to human health or the environment, or the proposed action(s) is necessary to reduce threats to human health or the environment, according to 40 C.F.R. § 264.117(c). By removing contaminants, the Permittee may become a hazardous waste generator. The Permittee shall manage any removed material according to all applicable laws, regulations, and ordinances.

D. Certification of Completion of Post-Closure Care [40 C.F.R. § 264.120]

No later than 60 calendar days after completing the post-closure care period(s) (including any necessary extensions), the Permittee shall submit to the Department, by certified mail, a certification that the post-closure care period was performed according to the approved post-closure plan(s). The certification shall be signed by the Permittee and a professional engineer registered in Missouri, and shall include documentation supporting the certification.

CORRECTIVE ACTION CONDITIONS

I. Identification of SWMUs and AOCs

- A. EPA conducted a RCRA Facility Assessment (RFA) in March 1989, to identify and gather information on releases and potential releases from SWMUs at the facility. Following completion of the RFA, the Trans World Airlines Incorporated, Ground Operations Center (TWA) and EPA entered into a 3008(h) Administrative Order on Consent, Docket No. VII-89-H-0043, on September 29, 1989. Under the conditions of the Administrative Order on Consent, TWA was required to complete a RCRA Facility Investigation (RFI) and Corrective Measures Study (CMS). The RFA and Administrative Order on Consent identified 14 SWMUs to be addressed during the RFI. In addition to the original SWMUs identified in the RFA, 13 SWMUs (Units 15a through 15m) were subsequently identified as a result of RFI field investigation activities. One SWMU identified in the Administrative Order on Consent (Unit 6) was divided into two distinct areas (Units 6a and 6b). In addition, during construction activities at the facility, one additional SWMU (Unit 15n) was identified by TWA. The general location of the individual SWMUs at the facility are illustrated in Figure 2. The EPA 3008(h) Administrative Order on Consent governed corrective action activities at the facility until the original MHWMF Part I Permit was issued on August 7, 1998. Thereafter, EPA terminated their 3008(h) Administrative Order on Consent on March 31, 2006.

This MHWMF Part I Permit is now the sole instrument governing the corrective action activities at the facility.

- B. Several SWMUs identified during and subsequent to the RFI have had corrective measures completed. Results of the RFI and CMS indicate the levels of residual contamination remaining at these and other SWMUs do not pose unacceptable risk to human health and the environment, irrespective of site usage conditions. Based on EPA and Departmental approval of the CMS, inclusion in the Statement of Basis, and issuance of the original MHWMF Part I Permit, no further corrective action was required at the following SWMUs:

SWMU 4:	SPCC Pond (Cooper Road)
SWMU 15c:	Removed Waste Oil Underground Storage Tank (not including Groundwater)
SWMU 15e:	Delta Building Waste Storage Area
SWMU 15f:	New Chemical Wastewater Treatment Plant
SWMU 15h:	New Scrap Metal Storage Area in Wetdock/FIMCO Area
SWMU 15k:	Distressed Vegetation South of Building No. 2
SWMU 15m:	Scrap Metal Collection Area
SWMU 15n:	Oleum Collection Systems Line

- C. Soil and groundwater contamination discovered during the RFI at SWMUs having no interim corrective measures previously completed were evaluated during the CMS to determine if this contamination posed any threat to human health and the environment. Based on EPA and Departmental approval of the CMS, inclusion in the Statement of Basis, and issuance of the original MHWMF Part I Permit, remediation was not required to protect human health and the environment at the following SWMUs:

SWMU 9:	Conveyance Sewers and Storage Basins for Chrome and Cyanide Wastewater Streams
SWMU 10:	Fuel Farm and Adjacent Area and Fuel Farm Groundwater
SWMU 15a ₁ :	Area Adjacent to Ravine (not covered by RCRA cap)
SWMU 15b:	Subfloor Wetdock/Hangar Bay 10
SWMU 15i:	Area East of Fire Pump Station No. 1

- D. Based on EPA and Departmental approval of the CMS, inclusion in the Statement of Basis, and issuance of the original MHWMF Part I Permit, further corrective action was required to protect human health and the

environment for the following SWMUs. Results of the CMS Report submitted in February 1996, indicated long-term groundwater monitoring, in conjunction with other remedial measures, was necessary in the following areas, which effectively includes monitoring of the noted SWMU groups:

Surface Impoundment Area:

SWMU 1: Surface Impoundments (Closed Hazardous Waste Management (regulated) Land Disposal Units)
SWMU 5: Sludge Drying Basins
SWMU 7: Waste Oil Loading Area
SWMU 14: Wastewater Treatment Plant

Ravine Area:

SWMU 2: Ravine Landfill (Closed Hazardous Waste Management (regulated) Land Disposal Unit)
SWMU 3: SPCC Pond (South)
SWMU 12: Incinerator
SWMU 15a₂: Area Adjacent to the Ravine (covered by RCRA cap)

Barrel House/Oleum Still Area:

SWMU 11: Waste Solvent (Oleum) Recycling Unit
SWMU 13: Barrel House Complex
SWMU 15g: Old Scrap Metal Storage Area

Superhangar Area/Wetdock Area:

SWMU 6a: Old Fuel Farm near Superhangars
SWMU 6b: Wastewater Treatment Plant Sludge Staging Area
SWMU 15d: Solvent Reclamation Area in Wetdock
SWMU 15j: North Drainage Ditch
SWMU 15l: Subfloor Hangar Bay 9

Dumpsite Area:

SWMU 8: Dumpsite East of the Runway

Groundwater monitoring in the SWMU 8 area have demonstrated that the GPSs have not been exceeded in the previous six consecutive years. In accordance with Corrective Action Condition XIV., Certification of Completion of Corrective Measures, groundwater monitoring in the SWMU 8 area is no longer required.

- E. The status of the known SWMUs and AOCs 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 and AOCs, or any newly identified SWMUs and AOCs, including off-property release(s), as specified in Corrective Action Conditions II. and III.
 - F. 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 have been thoroughly delineated and reported, as specified in Corrective Action Conditions II. through IX. 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 available previously), 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 IV. 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 III. 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 III. 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 available previously), 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 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 III. 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 III. 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 III. 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 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 7 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, 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 will be reviewed and approved according to the procedures described in General Permit Condition III.

V. RCRA Facility Investigation (RFI) Work Plan

- A. Under the requirements of Task III of the EPA 3008(h) Administrative Order on Consent, Docket No. VII-89-H-0043, the initial draft of the RFI Work Plan was submitted to EPA in February 1990. Following receipt of EPA comments, the document was resubmitted and approved by EPA on October 8, 1990. The approved RFI Work Plan outlined the scope of work for field investigation

activities at 14 SWMUs. Additional field work activities were outlined in several addenda to the Work Plan. The scope of work described in the Work Plan and its addenda was based on a phased approach to the field investigations.

- B. An RFI Work Plan addendum, dated December 1996, addressing the installation of new monitoring wells for further groundwater investigations north of the Superhangar Area and the Wet Dock Area was approved by EPA and the Department on May 30, 1997. All data generated from the monitoring wells installed as part of this investigation shall continue to be provided in the Annual Groundwater Corrective Action Report submitted according to Corrective Action Condition XIX. of this Permit
- C. 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.
- D. 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, sediment, 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.

- E. 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.
- F. The supplemental RFI Work Plan shall include a Quality Assurance Project Plan (QAPP), which 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.
- G. The Permittee shall prepare and maintain a Health and Safety Plan during the project that ensures the supplemental RFI activities are conducted in a manner that is protective of human health and the environment.
- H. 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.

- I. The Department shall review and approve the supplemental RFI Work Plan(s) according to the procedures described in General Permit Condition III. 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. Under the requirements of Tasks IV. and V. of the EPA 3008(h) Administrative Order on Consent, Docket No. VII-89-H-0043, RFI field investigation activities were completed by TWA at 18 of the 27 SWMUs to evaluate the nature and horizontal/vertical extent of releases of hazardous waste and/or hazardous constituents from these SWMUs. Investigations were not required at the remaining nine SWMUs because those units were either previously investigated or were determined to have no associated contaminant releases. TWA submitted the RFI Report in March 1994, concluding five phases of RFI field work with final RFI Report revisions in January 1996 and December 1996. The nature and extent of groundwater and soil contamination at the facility was defined during the RFI field investigation activities. The RFI Report was conditionally approved by EPA on May 8, 1995. Final RFI Report approval was granted by EPA on May 9, 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 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; and

10. 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 III. 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 or equivalent, as described in Corrective Action Condition VII.

VII. Corrective Measures Study (CMS) Work Plan

A. The requirements of the EPA 3008(h) Administrative Order on Consent, Docket No. VII-89-H-0043, did not specifically require a CMS Work Plan to be prepared and approved by EPA. The information usually included in a CMS Work Plan was addressed in the RFI Work Plan approved by EPA October 8, 1990.

B. 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. 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.

C. As part of the supplemental CMS, 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.

- D. Within 60 calendar days after receiving the Department’s request to conduct a supplemental CMS, and after meeting with the Department to discuss the nature and scope of the supplemental CMS, the Permittee shall prepare and submit a supplemental CMS Work Plan to the Department for review and approval. The supplemental CMS Work 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 shall provide the following information, as appropriate, and a proposed schedule for implementing the elements of the supplemental CMS Work 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;
 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 and submitting a supplemental CMS Report and/or preferred remedy proposal, which is predicated on the date the Department approves the supplemental CMS Work 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.
- E. The Department shall review and approve the supplemental CMS Work Plan according to the procedures described in General Permit Condition III. The Permittee shall complete all activities described in the supplemental CMS Work Plan, according to the schedule contained in the approved plan.

VIII. Corrective Measures Study (CMS) Report

- A. Under the requirements of Task VII. through Task IX. of the EPA 3008(h) Administrative Order on Consent, Docket No. VII-89-H-0043, TWA prepared and submitted to the Department and EPA a CMS Report, dated February 1996, with modifications dated November 25, 1996, and May 1997. The CMS Report and modifications were approved by EPA and the Department in August 1997. The CMS Report identified and evaluated potential remedial alternatives for contaminated soil and groundwater at the facility that have the potential to adversely impact human health or the environment. Remedial actions determined to be protective of human health and the environment, based on evaluation criteria outlined in the Administrative Order on Consent, were implemented according to Special Permit Condition XV. of the original MHWMF Part I Permit at SWMUs requiring corrective action as identified in Special Permit Condition V.D. of the original MHWMF Part I Permit.
- B. Should submitting a 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 described in Corrective Action Condition VII. 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 III. Upon

approval of the supplemental CMS Report, the Department will approve a final remedy, as specified in Corrective Action Condition IX.

IX. Final Remedy Selection and Approval

- A. Following approval of the CMS Report by EPA and the Department in August 1997, a Statement of Basis was prepared summarizing the corrective measures alternatives that were evaluated by the Permittee, including the justification for the proposed final remedy. The proposed final remedy was designed to:
- 1) be protective of human health and the environment;
 - 2) 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 might pose a threat to human health and the environment; and
 - 3) meet all applicable federal, state, and local laws and regulations.
- Following preparation of the Statement of Basis, a public notice for the proposed final remedy was held concurrently with the public notice for the original draft MHWMF Part I Permit. The Department issued the original MHWMF Part I Permit to TWA, including the approved final remedy, effective August 7, 1998.
- 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 previous identified SWMUs and AOCs, and additional activities undertaken in response to any increasing trends in levels of contamination identified through long-term monitoring under Corrective Action Condition XVI.E.
1. If a supplement to the final remedy is determined to be necessary, following the approval of the supplemental CMS Report, 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 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

According to the requirements of Special Permit Condition XV. of the original MHWMF Part I Permit issued August 7, 1998, TWA prepared and submitted to the Department and EPA a CMI Work Plan on January 4, 1999, with revisions dated July 9, 1999. The Department approved the CMI Work Plan with revisions on July 22, 1999. The CMI Work Plan provided detailed plans for the implementation of corrective measures at the SWMUs requiring corrective action identified in Special Permit Condition V.D. of the original MHWMF Part I Permit that were consistent with the objectives specified in the approved CMS Report:

A. Surface Impoundment Area - SWMUs 1, 5, 7, 9, and 14

The Corrective Measures approved by the Department for the Surface Impoundment Area involved the installation of a passive interceptor trench according to Special Permit Condition XV.1. of the original MHWMF Part I Permit, to collect contaminated groundwater migrating toward Todd Creek. All applicable phased design and operating parameters including, but not limited to, size, location, materials of construction, and preliminary operational parameters for the interceptor trench were outlined in the CMI Work Plan. All design parameters were certified by a professional engineer registered in Missouri. Construction of the interceptor trench was completed

and accepted by the Department in February 2000. The interceptor trench continues to operate as designed.

A Vacuum Enhanced Groundwater Extraction (VEGE) system was installed in conjunction with the interceptor trench, to accelerate the remediation process at the Surface Impoundment Area. The VEGE system operated from November 12, 1999 to January 1, 2004, when it was shut down after receiving Department approval. Groundwater extracted by the VEGE system was treated, stored, and/or disposed of according to all applicable federal, state, and local laws and regulations.

Groundwater monitoring wells and the interceptor trench sump associated with the Surface Impoundment Area shall continue to be monitored according to Corrective Action Condition XVI. of this Permit. Surface water monitoring shall also be conducted according to Corrective Action Condition XVII. of this Permit. The ongoing operation and maintenance of the interceptor trench shall be conducted according to the specifications in the Operation and Maintenance Manual (Appendix D) of the approved CMI Work Plan.

B. Ravine Area - SWMUs 2, 3, 12, and 15a₂

The Corrective Measures approved by the Department for the Ravine Area Landfill involved the installation of an engineered RCRA cap and a leachate collection system. The engineered RCRA cap was constructed in 1994 with a flexible membrane liner under the surface to prohibit precipitation from contacting the waste material in the Ravine Area.

The Permittee shall continue long-term groundwater monitoring according to the SAP approved on July 27, 2012 until the revised Sampling and Analysis Plan (SAP) required by Corrective Action Condition XVI.D.1. of this Permit can be approved. Any groundwater extracted shall be treated, stored, and/or disposed of according to all applicable federal, state, and local laws and regulations. The Permittee shall maintain the previously-installed system to transfer groundwater from the Ravine Area Sump to a local sanitary sewer manhole for direct discharge to the publicly owned treatment works.

C. Barrel House/Oleum Still Area - SWMUs 11, 13, 15g, 15i, and 15m

The Permittee shall continue long-term monitoring of groundwater hydraulically upgradient and downgradient of these SWMUs to track the

direction, rate of movement, and contaminant concentrations in the groundwater. This groundwater monitoring shall be conducted according to Corrective Action Condition XVI. of this Permit and the SAP approved on July 27, 2012 until the revised SAP required by Corrective Action Condition XVI.D.1. of this Permit can be approved.

The Permittee conducted a pilot study to assess operation of a VEGE system at SWMU 11 in October 2005. The Permittee subsequently submitted a VEGE Pilot Study Report in July 2006 that recommended the implementation of a full-scale VEGE system at SWMU 11. The Department approved this request with conditions on September 11, 2006. The idle VEGE system at the Surface Impoundment Area was relocated to this area in October 2006, and began operating March 29, 2007. The VEGE system operated until December 2008, when it was shut down due to equipment failure. A request to discontinue operation of the VEGE system was submitted as required by Corrective Action Permit Condition XV.A.3.c. of the Permit dated August 11, 2010. Discontinuation of VEGE system operation was approved by the Department in a letter dated September 18, 2012.

- D. Superhangar Area/Wetdock Area - SWMUs 6a, 6b, 15b, 15d, 15h, 15j, and 15l

The Permittee shall continue long-term monitoring of groundwater hydraulically upgradient and downgradient of these SWMUs to track the direction, rate of movement, and contaminant concentrations in the groundwater. This groundwater monitoring shall be conducted according to Corrective Action Condition XVI. of this Permit and the SAP approved on July 27, 2012 until the revised SAP required by Corrective Action Condition XVI.D.1. of this Permit can be approved. The Permittee shall continue to conduct surface water monitoring in the west tributary of Todd Creek near the outfall and approximately 200 feet downstream of the outfall. Surface water monitoring shall be conducted according to Corrective Action Condition XVII. of this Permit.

- E. Dumpsite East of the Runway - SWMU 8

The Corrective Measures approved by the Department for SWMU 8 were the installation of a cap and slurry barrier wall to contain the migration of Volatile Organic Compounds and metals contamination. A groundwater collection system was integrated into the design to collect groundwater from beneath the

cap. The SWMU 8 cap and slurry wall were completed and certified in September 2000 by a professional engineer registered in Missouri.

All groundwater extracted from the SWMU 8 collection system shall be treated, stored, and/or disposed according to all applicable federal, state, and local laws and regulations. Groundwater monitoring in the SWMU 8 area have demonstrated that the GPSs have not been exceeded in the previous six consecutive years. In accordance with Corrective Action Condition XIV. Certification of Completion of Corrective Measures, groundwater monitoring in the SWMU 8 area is no longer required and may be discontinued. The ongoing operation and maintenance of the cap and slurry barrier wall shall be conducted according to the specifications in the Operation and Maintenance Manual (Appendix D) of the approved CMI Work Plan.

XI. Certification of Completion of Constructed Final Remedy

- A. If the Department or Permittee determines a 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 Work Plan. The certification shall be signed by the Permittee and a professional engineer registered in Missouri.

This certification shall be part of a Construction Completion (CC) Report. The CC 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 CC 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 XIX. 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)

TWA submitted a CMI Report to the Department and EPA March 14, 2001. The Department approved the CMI Report with modifications on May 18, 2001. The CMI Report contained a summary of corrective measures activities conducted at the facility and provided detailed descriptions of the long-term operation, maintenance and monitoring program associated with the corrective measures. For SWMUs requiring extended time periods for operation of the remedy, TWA and later the Permittee has summarized the progress of the remedy and continued to provide data obtained during remedy operation in the Annual Groundwater Monitoring Report required in Special Permit Condition XIX. of the original MHWMF Part I Permit. Any short-term completion of additional corrective action activities at individual SWMUs shall be included in the Annual Groundwater Monitoring Report required in Corrective Action Condition XIX. of this Permit.

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

- A. The Permittee shall submit an updated OM&M Plan within 60 calendar days after the effective date of this Permit. The updated 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 Health and Safety Plans;
 3. Institutional Controls;

4. A revised SAP to incorporate all groundwater monitoring, groundwater containment, and surface water monitoring conditions, and any additional requirements contained in this Permit;
 5. 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
 6. Other information, as necessary, pertaining to the operation, maintenance, and monitoring procedures for the approved final remedy.
- B. The Department shall review the OM&M Plan according to the procedures described in General Permit Condition III. 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 do not exceed the applicable GPS specified in Corrective Action Conditions XVI.A. 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 2 and 3 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 these 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. 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 XIX., 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 III.
- C. Within 60 calendar days after receiving the Department's approval of the documentation verifying completion of all corrective action under Corrective Action Condition XIV., 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. 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 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 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, AOC, or other area subject to AULs. 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 or AOCs having residual levels of contamination that exceed applicable regulatory thresholds.
2. The Permittee may, at its discretion, request to develop an Excavated Soil Management Plan. 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 Excavated Soil Management Plan according to the procedures described in General Permit Condition III.

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 or that any residual contamination will be addressed in the future via implementing enforceable institutional controls.

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(c), 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.

D. Deed Notice/Restrictions

The Permittee filed two deed notices in the chain-of-title for portions of the property associated with the Surface Impoundment Area and the Ravine Area, as described below.

1. The deed notice for the Surface Impoundment Area was filed April 6, 1990, in the Office of Recorder of Deeds of Platte 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 with the executed instrument. A copy of the deed notice can be found in Page 950 of Book 0740 in the Recorder of Deeds in Platte County.

2. The deed notice for the Ravine Area was filed January 4, 1995, in the Office of Recorder of Deeds of Platte 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 with the executed instrument. A copy of the deed notice can be found in Page 410 of Book 0823 in the Recorder of Deeds in Platte County.

E. Missouri Environmental Covenants Act

1. 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.
 - a. Residual levels of contamination in the soils remaining at the SWMUs identified in the following table may pose a threat to human health and the environment if site conditions change. SWMUs identified in Table 1 shall not be excavated or otherwise disturbed in any manner without the Department’s prior written approval:

Table 1 – SWMUs with Residual Levels of Soil Contamination

SWMU	Description of SWMU
1	Surface Impoundments (RCRA Regulated Unit)
2	Ravine Landfill (RCRA Regulated Unit)
3	SPCC Pond (South)
5	Sludge Drying Basins
6a	Old Fuel Farm Near Superhangars
6b	Wastewater Treatment Plant Sludge Staging Area
7	Waste Oil Loading Area
8	Dumpsite East of the Runway
9	Conveyance Sewers and Storage Basins for Chrome and Cyanide Wastewater Streams
10	Fuel Farm and Adjacent Area
11	Waste Solvent (Oleum) Recycling Unit

SWMU	Description of SWMU
12	Incinerator
13	Barrel House Complex
14	Wastewater Treatment Plant
15a	Area Adjacent to Ravine
15b	Subfloor Wetdock/Hangar Bay 10
15d	Solvent Reclamation Area in Wetdock
15g	Old Scrap Metal Storage Area
15i	Area East of Fire Pump Station No. 1
15j	North Drainage Ditch
15l	Subfloor Hangar Bay 9

- b. In the event that construction or excavation work that may expose workers to contaminated soil or groundwater is to be performed on the facility property, the Permittee shall ensure that actual notice is provided in advance, both verbally and in writing, to any person or entity performing any work that will or is likely to result in exposure to such soil or groundwater, so appropriate protective measures are taken to protect such workers' health and safety, according to applicable health and safety laws and regulations.
- c. 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 approved by the Department, in writing, in advance. The Permittee shall also prohibit installing any groundwater wells on the facility property, except those used for investigation, monitoring, or remediation purposes, without prior Department approval. Groundwater beneath the permitted facility, in zones that are known to be contaminated, shall not be used as a water supply for any purpose.

- d. The engineered controls implemented as part of the approved 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 or successive risk-based criterion. 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, according to 40 C.F.R. § 270.42.
2. The draft Environmental Covenant shall include the following:
 - a. A record of the type, location, and concentrations of hazardous wastes and hazardous constituents remaining in the subsurface soils and/or groundwater exceeding applicable regulatory risk-based thresholds/standards;
 - b. Two figures illustrating the approximate boundaries of each SWMU for which the levels of contamination in the subsurface soils and/or groundwater exceed the applicable regulatory risk-based thresholds/standards. One figure shall illustrate soil contamination in relation to individual SWMUs or groups of SWMUs. The second figure shall illustrate groundwater contamination in relation to individual SWMUs or groups of SWMUs. The figures shall be to scale and indicate the approximate location and dimensions of each SWMU with respect to key landmarks, such as major buildings, the permitted facility property line, etc. These figures shall also illustrate the location of any engineered controls implemented as part of the final remedy, which are to be restricted from disturbance;
 - c. Soil disturbance and groundwater use restrictions based on current land use; and
 - d. A provision to provide for proper operation and maintenance of any engineering controls implemented as part of the approved final remedy to prevent human exposure to soils and groundwater contaminated with hazardous wastes or hazardous

constituents in concentrations exceeding applicable regulatory risk-based thresholds/standards at the time of permit termination. The 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. The Department shall review and approve the draft Environmental Covenant according to the procedures described in General Permit Condition III.
4. Within 30 calendar days after the Department's approval of the draft Environmental Covenant, the Permittee shall execute the Environmental Covenant(s) and shall submit the Environmental Covenant to all other relevant parties for signature.
5. 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 and AOCs 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 Platte County, Missouri.
6. 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.
7. 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.

8. 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.
 9. 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 or facility owner 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 prepare 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 and AOC 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 approximate 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 III.
 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 Subpart F]

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

The GPS establish the MCLs for hazardous constituents (40 C.F.R. Part 261, Appendix VIII) in the groundwater at and beyond the point of compliance during the compliance period. The hazardous constituents and related contaminants, health- and/or environmental-based concentration limits, and maximum analytical detection limits specified in Table 2 and 3, constitute the GPS for the Permittee's Facility. The listed GPS hazardous constituents and related contaminants either have been detected in the groundwater beneath the permitted Facility or are reasonably expected to be in or derived from wastes managed at SWMUs and AOCs at the Facility.

1. The GPS for the hazardous constituents and related contaminants listed in Table 2 and 3 are based on protecting human health and the environment. These limits were derived from several different sources, as explained by the footnotes to Table 2 and 3.
2. The GPS for some hazardous constituents and related contaminants 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 and related contaminants covered by Corrective Action Condition XVI.A., which allows for adequate comparison with appropriate health- or

environmental protection-based GPS concentration limit(s) indicated in the footnotes to Table 2 and 3.

5. 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). 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 releases at the facility 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.E.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 related releases 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 related

releases 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 2 – Groundwater Protection Standards – Surface Impoundments

Hazardous Constituent	Chemical Abstract Number	Maximum Concentration
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Styrene	100-42-5	100.0 (a)	1.0
Tetrachloroethylene	127-18-4	5.0 (a)	1.0
Toluene	108-88-3	1,000.0 (a)	1.0
Trichloroethylene	79-01-6	5.0 (a)	1.0
Vinyl Chloride	75-01-4	2.0 (a)	1.0
Xylenes, total	1330-20-7	10,000.0 (a)	1.0

Table 3 - Groundwater Protection Standards – Ravine Area Landfill

Hazardous Constituent	Chemical Abstract Number	Maximum Concentration	Maximum Detection Limit *
1,1-Dichloroethane	75-34-3	2.8 (c)	1.0
1,1-Dichloroethene	75-35-4	7.0 (a)	1.0
1,1,1-Trichloroethane	71-55-6	200.0 (a)	1.0
1,1,2-Trichloroethane	79-00-5	5.0 (a)	1.0
1,2-Dichlorobenzene	95-50-1	600.0 (a)	1.0
1,2-Dichloroethene - cis	156-59-2	70.0 (a)	1.0
1,2-Dichloroethene - trans	156-60-5	100.0 (a)	1.0
1,2-Dichloroethane	107-06-2	5.0 (a)	1.0
1,3-Dichlorobenzene	541-73-1	600.0 (b)	1.0
1,4-Dichlorobenzene	106-46-7	75.0 (b)	1.0
Acetone	67-64-1	14,000.0 (c)	10.0
Benzene	71-43-2	5.0 (a)	1.0
Carbon Disulfide	75-15-0	81.0 (c)	10.0
Chlorobenzene	108-90-7	100.0 (a)	1.0
Chloroethane	75-00-3	21,000.0 (c)	1.0
Chloroform	67-66-3	70 (a)	1.0
Ethylbenzene	100-41-4	700.0 (a)	1.0
Hexachlorobutadiene	87-68-3	0.45 (b)	1.0
Methylene Chloride	75-09-2	5.0 (a)	1.0
Tetrachloroethylene	127-18-4	5.0 (a)	1.0
Toluene	108-88-3	1,000.0 (a)	1.0
Trichloroethylene	79-01-6	5.0 (a)	1.0
Vinyl Chloride	75-01-4	2.0 (a)	1.0
Xylenes, total	1330-20-7	10,000.0 (a)	1.0

Arsenic, total	7440-38-2	10.0 (a)	5.0
Beryllium, total	7440-41-7	4.0 (a)	1.0
Cadmium, total	7440-43-9	5.0 (a)	3.0
Chromium, total	7440-47-3	100.0 (a)	10.0
Copper, total	7440-50-8	1,300.0 (a)	10.0
Nickel, total	7440-02-0	100.0 (b)	30.0
Lead, total	7439-92-1	15.0 (a)	5.0
Mercury, total	7487-94-7	2.0 (a)	1.0
Selenium, total	7782-49-2	50.0 (a)	5.0
Thallium, total	7440-28-0	2.0 (a)	2.0
Zinc, total	7440-66-6	5,000.0 (b)	2.0

- * The lower of the Practical Quantitation Limits (PQLs) contained in the latest version of the EPA document entitled, Test Methods for Evaluating Solid Waste - Physical/Chemical Methods (SW-846), or method specific detection limits routinely achieved by the Permittee’s laboratory.
- (a) Denotes limits derived from state (10 CSR 60-4, dated August 31, 2018) and federal public drinking water regulations.
 - (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 the EPA Regional Screening Level Tables, dated November 2019 (IELCR = 1×10^{-6} , HI=1).

B. Point of Compliance [40 C.F.R. § 264.90(f)]

The point of compliance is defined as “a vertical surface located at the hydraulically down-gradient limit of the waste management area that extends down into the uppermost aquifer underlying the regulated units.” For the purposes of this Permit, and based on current knowledge of the hydrogeologic conditions at the Ravine Area Landfill, the point of compliance for this unit shall be a polygon constructed by connecting, via straight line segments, monitoring wells: M-214, A-2, T-1A, E-2, and M-238, as shown on Figure 4. Groundwater contamination at and beyond the point of compliance that exceeds the GPS shall be subject to corrective action pursuant to 40 C.F.R. § 264.100.

The Permittee’s groundwater corrective action program shall continue until the Permittee demonstrates the GPS limits contained in Table 2 or 3, as appropriate for the respective areas, 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. § 264.96]

The compliance period for the former surface impoundments shall be 18 years. The compliance period for the Ravine Area Landfill shall be 35 years. Each compliance period began on the effective date of the original MHWMF Part I Permit (August 7, 1998). 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.

The compliance period for the former surface impoundments was to expire in 2016. However, in 2016 and continuously since, the Permittee has been engaged in a groundwater corrective action program. Since the Permittee was engaged in a corrective action program at the end of the compliance period, the compliance period is extended until the Permittee demonstrates the GPS MCLs 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. § 264.97]

The Permittee shall comply with applicable sections of 40 C.F.R. § 264.97, for corrective action monitoring systems, as specified in 40 C.F.R. § 264.100, and the following additional requirements:

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 SAP to reflect any revised and additional requirements contained in this Permit and any new conditions at the facility. All SAP 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 SAP, according to the procedures described in General Permit Condition III.

2. The Permittee shall retain a copy of the approved groundwater SAP with the local facility representative and/or at the facility and comply with the approved sampling and analysis procedures. The groundwater SAP 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 SAP. 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 SAP modification to incorporate the new 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.

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 Section 256.614.1.(1), RSMo, 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 XIX.F.

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 Section 256.614, RSMo and 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 XIX.F.

- 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 III.

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 or installing any additional groundwater monitoring wells 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 SAP 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 all wells, according to the provisions contained in the Permittee's approved SAP, and shall be documented on a well inspection log sheet. 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 in accordance with the SAP. The Permittee's approved SAP shall specify the frequency and performance standards for this evaluation to assess down-well siltation and well screen occlusion in all monitoring wells. 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 SAP 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., 10 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 14 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 60 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 60 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 XIX.

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

All SWMUs specified in Corrective Action Condition I.D. of this Permit are subject to the corrective action program requirements of 40 C.F.R. § 264.101, and this Permit, until such time as these regulatory and permit requirements have been satisfied.

- 1. The Permittee's corrective action program for the Facility shall consist of groundwater and surface water monitoring, according to Corrective Action Conditions XVI. and XVII. Any additional investigation,

evaluation, or implementation of remedial alternatives necessary to address facility-wide groundwater contamination shall be according to Corrective Action Conditions V. through IX. 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 former surface impoundments and Ravine Area Landfill versus those potentially related to nearby SWMUs and AOCs, 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 2 and 3 at the property boundary or evidence of groundwater plume expansion may act as a “trigger” for additional investigation, evaluation, or implementation of additional groundwater remedial alternatives 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 to monitor releases from the Surface Impoundment Area and Ravine Area Landfill, according to the schedule presented in Table 4 and 5.
- a. Sampling and analysis according to this schedule shall begin during the next regularly scheduled sampling event, following approval of the revised SAP required by Corrective Action Condition XVII.D.1. Given the potential lag time between the effective date of this Permit and approval of the revised SAP, the Permittee shall continue sampling and analysis according to the latest version of the approved SAP, until such time as the revised SAP is approved.

- b. Sampling and analysis of groundwater from any newly installed wells required by 40 C.F.R. Part 264 Subpart F or 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 SAP.
 - c. Wells monitored to ensure adequate delineation of the horizontal and vertical extent of groundwater contamination (hereafter referred to as perimeter wells) shall be analyzed annually, according to Tables 4 and 5.
 - d. Specific perimeter wells to be monitored shall be specified in the Permittee's approved SAP required by Corrective Action Condition XVI.D.1.
 - e. Installing additional perimeter wells during the compliance period, including any extensions, 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 Tables 4 and 5. Adding new perimeter wells is subject to the permit modification procedures outlined in Corrective Action Condition XVI.D.7.
 - f. The Department shall approve, in writing, any future changes to the list of perimeter wells established in the Permittee's SAP. Within 30 calendar days after receiving the Department's approval, the Permittee shall submit additional SAP revisions to incorporate the approved changes.
3. Wells monitored to assess the effectiveness of the Permittee's corrective action program (hereafter referred to as effectiveness wells) shall be sampled and the samples analyzed annually, according to Tables 4 and 5.
 - a. Specific effectiveness wells and the trench sump to be monitored shall be specified in the Permittee's approved SAP.
 - b. Installing additional effectiveness 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 Tables 4 and 5. Installing effectiveness wells does not require a permit modification, but does require prior Department approval.

- c. The Department shall approve, in writing, any future changes to the list of effectiveness wells established in the Permittee's SAP. Within 30 calendar days after receiving the Department's approval, the Permittee shall submit additional SAP revisions to incorporate the approved changes.
4. Only single sample analyses (as opposed to replicates) are required for the parameters listed in Tables 4 and 5, 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 thickness, static water level, and total well depth shall be taken before well purging.
 - 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.
 - c. Well purge water cannot be discharged to surface waters of Missouri. They can be applied to the land surface and evaporate as long as they do not discharge to waters of the State, or they can be disposed of according to applicable federal, state, and local laws and regulations.
6. Within 1 year before the 5 and 10 years of this Permit, the Permittee shall sample and analyze groundwater from 2 historically contaminated wells in the Surface Impoundment Area and 2 historically contaminated wells at the Ravine Area Landfill for all

parameters contained in 40 C.F.R. Part 264, Appendix IX, as specified in Tables 4 and 5.

- a. The wells sampled to meet this requirement are left to the discretion of the Permittee; however, the choice of wells shall include one well containing low levels of dissolved phase contamination and one well containing moderate to high levels of dissolved phase contamination.
- 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 Surface Impoundment Area and Ravine Area Landfill 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 GPS 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 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 GPS constituent list and the monitoring program schedule specified in Tables 4 and 5.

Table 4 – Groundwater Monitoring, Sampling, Analysis, and Parameter Measurement Schedule – Surface Impoundment Areas

Parameters	Type*	Maximum Detection Limit (µg/l)	Frequency
Appendix IX (1)	HC	PQLs per SW-846 **	Every 5 years
Volatiles (2)	HC	Per Table 2	Annual
pH	FM	Not Applicable	Annual
Specific Conductance	FM	Not Applicable	Annual
Static GW Elevation (3)	FM	Not Applicable	Annual

Temperature	FM	Not Applicable	Annual
Total Well Depth	FM	Not Applicable	Annual

* HC = Hazardous Constituent FM = Field Measurement PQL = Practical Quantification Limit GW = Groundwater

** The SW-846 version, which is current at the time of sampling.

- (1) Appendix IX (40 C.F.R. Part 264) scan on two wells in this area. The wells to be sampled are left to the discretion of the Permittee, but shall include one well containing low levels of dissolved phase contamination and one well containing moderate to high levels of dissolved phase contaminants.
- (2) EPA SW-846 Method 8260 or equivalent.
- (3) Potentiometric measurements shall be obtained at the time of each regularly scheduled sampling event from all monitoring wells at the facility, including those which are not being sampled regularly.

Table 5 – Groundwater Monitoring, Sampling, Analysis, and Parameter Measurement Schedule – Ravine Area Landfill

Parameters	Type*	Maximum Detection Limit (µg/l)	Frequency
Appendix IX (1)	HC	PQLs per SW-846 **	Every 5 years
Volatiles (2)	HC	Per Table 3	Annual
Metals (total)	HC	Per Table 3	Annual
pH	FM	Not Applicable	Annual
Specific Conductance	FM	Not Applicable	Annual
Static GW Elevation (3)	FM	Not Applicable	Annual
Temperature	FM	Not Applicable	Annual
Total Well Depth	FM	Not Applicable	Annual

* HC = Hazardous Constituent FM = Field Measurement PQL = Practical Quantification Limit
 GW = Groundwater

** The SW-846 version, which is current at the time of sampling.

- (1) Appendix IX (40 C.F.R. Part 264) scan on two wells in the ravine area. The wells to be sampled are left to the discretion of the Permittee, but shall include one well containing low levels of dissolved phase contamination and one well containing moderate to high levels of dissolved phase contaminants.
- (2) EPA SW-846 Method 8260 or equivalent.
- (3) Potentiometric measurements shall be obtained at the time of each regularly scheduled sampling event from all monitoring wells at the facility, including those which are not being sampled regularly.

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

- A. Within 60 calendar days of the effective date of this Permit, the Permittee shall submit to the Department for review and approval, the surface water monitoring program to reflect any modifications contained in this Permit. Surface water monitoring shall continue throughout the post-closure care period, including any extensions, 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 the approved permit application, this Permit, and the approved SAP.
1. The Permittee's surface water monitoring program shall be incorporated directly into, and be submitted as part of, the groundwater SAP required by Special Permit Condition XVI.D.1.
 2. Sampling and analysis methods for chemical indicator parameters and hazardous constituents shall be consistent with those specified in Tables 2 and 3.
 3. After Department approval of the surface water monitoring program, the Permittee shall initiate the surface water sampling concurrently with the first groundwater sampling event performed under the approved groundwater SAP.
 4. Reporting and analysis of data and information collected as part of the surface water monitoring program is being required pursuant to 40 C.F.R. § 270.32(b), and shall be included as part of the Annual Groundwater Corrective Action Report, as defined in Corrective Action Condition XIX. In addition to other reporting requirements for the surface water monitoring program, the Permittee shall include with the Annual Groundwater Corrective Action Report a discussion of any exceedances of the effluent limits in the Missouri State Operating Permit issued by the Missouri Clean Water Commission.
 5. The Permittee shall perform statistical comparisons of analytical data obtained from the upgradient and downgradient surface water sampling locations in the Surface Impoundment Area. The Permittee

shall use a statistical method appropriate for the distribution of data undergoing analysis and shall ensure, to the greatest degree possible, protection of human health and the environment. These statistical comparisons shall be included in the Annual Groundwater Corrective Action Report required by Corrective Action Condition XIX.

- B. The Permittee may, at any time during the post-closure care period, including any extensions, make a demonstration to the Department for a surface water monitoring exemption. A successful demonstration for such an exemption shall, at a minimum, address the elements of 40 C.F.R. § 264.94(b), as applied to potentially affected surface water bodies. This demonstration shall be certified by a geologist or professional engineer registered in Missouri. Department approval of the Permittee's surface water monitoring exemption shall necessitate a permit modification, according to 40 C.F.R. § 270.42. In addition, any exemption shall not affect any obligation on the part of the Permittee to apply for and obtain a Missouri State Operating Permit from the Department's Clean Water Commission and Water Protection Program for discharges to waters of the State.

XVIII. Annual Progress Reports

- A. The Permittee shall prepare and submit Annual Progress Reports to the Department, summarizing all permitted corrective action activities undertaken during the previous calendar year (i.e., January through December). Annual Progress Reports are due by March 1 of each calendar year for the previous calendar year. The Annual Progress Reports shall continue to be submitted until the Permittee's corrective action activities (including any long-term operation, maintenance, and monitoring activities) are complete.
- B. The Annual Progress Reports and Annual Groundwater Monitoring Reports, required by Corrective Action Condition XIX., may be combined and submitted as a single report. The Annual 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 non-compliance with the corrective action requirements of this Permit not otherwise required to be reported elsewhere in this Permit.
- C. If the Department determines additional corrective action is required under Corrective Action Conditions II. through XII., the frequency of progress report submittals may increase. If an increase in reporting frequency is necessary, the Department shall provide written notification of the new reporting frequency to the Permittee.
- D. As part of any additional corrective action activities undertaken pursuant to this Permit, detailed technical information required to be submitted as part of ISMs, RFI, or CMS work plans and reports need not be reproduced as part of the Permittee's Annual Progress Reports.
- E. Copies of other reports (e.g., inspection reports), information, or data shall be made available to the Department and EPA upon request.

XIX. 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 monitoring program and all uninterpreted analytical data from the Permittee's annual groundwater sampling event 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 annual groundwater sampling events, groundwater analysis results, field parameter measurement results, copies of field sampling and well inspection log sheets, well repair documentation, QA/QC data, statistical analysis of groundwater data, field investigation results, volume of groundwater extracted, and other relevant groundwater-related information, as appropriate.

- B. A discussion of any exceedances of the GPS and effluent limits of the Missouri State Operating Permit issued by the Missouri Clean Water Commission.
- C. A narrative discussion of the nature and evolution of the Permittee's groundwater 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 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 (Tables 2 and 3) 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 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 also demonstrate increasing, decreasing, or stable contaminant trends for the past 10 years;
 5. 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
 6. The conclusions and summary, including statistical evaluation, of analytical results from groundwater monitoring conducted during the report period.
- F. 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 Condition XVI.D.5.

XX. 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 6.
- 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 7.

XXI. 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 through 260.430, 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 post-closure care, and corrective action activities identified pursuant to the provisions of this Permit.

I. Cost Estimates...

A. Post-Closure Care and Corrective Action Cost Estimates

1. Within 60 calendar days of the effective date of this Permit, the Permittee, as specified in Schedule of Compliance Item I.I., shall submit an updated, detailed cost estimate, in current dollars, of the cost of hiring a third party, as identified in Financial Assurance Condition I.A.1.a., to perform the post-closure care, and 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 or geologist registered in Missouri and developed using appropriate cost estimating software or cost estimating practices.
 - c. The post-closure care and 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 post-closure care and corrective action cost estimates shall be based on a “rolling” 30 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 post-closure care or corrective action cost estimates based on the estimated time remaining to achieve applicable remediation objectives/standards.
 - e. The post-closure care and corrective action cost estimates shall include a contingency cost allowance of 10 percent of the total cost of all post-closure and corrective action activities.
 - f. 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.
 - g. Discounting is not allowed for post-closure care cost estimates.
2. The Permittee shall submit each post-closure care, and 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 post-closure care and corrective action cost estimate that has received a final written response from the Department.

B. Revisions to Post-Closure Care and Corrective Action Cost Estimates

1. Annual Adjustment for Inflation

The Permittee shall annually adjust the post-closure care and 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 post-closure care and corrective action cost estimate if:

- a. The Permittee or the Department determines any additional post-closure care and corrective action activities are required; or
- b. Any other conditions increase or decrease the estimated cost of the post-closure care and 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 post-closure care and 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 post-closure care and 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 post-closure care and 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 10 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 post-closure care and 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 post-closure care and 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 post-closure care and corrective action activities performed according to this Permit; or
 - (2) Pay any other person whom the Department determines has performed or will perform the post-closure care and 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 post-closure care and 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 post-closure care and 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.
 - b. If the Permittee chooses to establish financial assurance by using a surety bond, the Permittee shall, at the same time, establish and maintain a standby trust fund. The standby trust fund shall meet the requirements of Financial Assurance Condition II.E.1. Funds from the surety bond shall be deposited into the standby trust fund if the Department directs the financial assurance provider to do so, pursuant to Financial Assurance Condition II.I.
3. Irrevocable Letter of Credit
- a. The letter of credit shall be issued by a financial institution that has the authority to issue letters of credit and whose letter of credit operations are regulated and examined by a federal or state agency.
 - b. If the Permittee chooses to establish financial assurance by using a letter of credit, the Permittee shall, at the same time, establish and maintain a standby trust fund. The standby trust fund shall meet the requirements of Financial Assurance Condition II.E.1. Funds from the letter of credit shall be deposited into the standby trust fund if the Department directs the financial assurance provider to do so, pursuant to Financial Assurance Condition II.I.
4. Policy of Insurance
- a. A policy of insurance shall provide the Department with rights, as a beneficiary, and be issued by an insurance carrier that has

the authority to issue insurance policies in Missouri and whose insurance operations are regulated and examined by a federal or state agency.

- b. The insurance policy shall be issued for a face amount at least equal to the current post-closure care and corrective action cost estimate for which the facility has received a final written response from the Department, except that the face amount may exclude costs covered by another financial assurance instrument, as permitted in Financial Assurance Condition II.D.
 - 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 post-closure care and corrective action activities performed according to this Permit; or
 - (2) Pay any other person whom the Department determines has performed or will perform the post-closure care or 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 post-closure care and 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 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 post-closure care and 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 post-closure care or 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 post-closure care or 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 post-closure care and 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 post-closure care and corrective action activities required by this Permit.
 - (2) The written proposal shall specify, at a minimum, the cost of the remaining post-closure care and 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 post-closure care and 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 Post-closure care and corrective action Activities

The Permittee's inability or failure to establish or maintain financial assurance for completing the post-closure care or 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 post-closure care and 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 post-closure care or corrective action activities required by this Permit; or
 - b. Is significantly or repeatedly deficient or late in performing the post-closure care or corrective action activities required by this Permit; or
 - c. Is implementing the post-closure care or 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 post-closure care or 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 post-closure care or 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 post-closure care and 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 post-closure care and 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 6 – Planned Submittal Requirements Pursuant to this Permit and Schedule of Compliance

Submittal Requirements	Due Date*	Permit Condition
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.
Revised Part A permit application	Within 60 calendar days after effective date of this Permit.	Schedule of Compliance Item I.B.
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.C.
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.D.
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.E.
Revised SAP	Within 60 calendar days after effective date of this Permit.	Schedule of Compliance Item I.F.
Revised QAPP	Within 60 calendar days after effective date of this Permit.	Schedule of Compliance Item I.G.
If the current Post-Closure Plan does not adequately reflect the requirements of this Permit; Updated Post-Closure Plan	Within 60 calendar days after effective date of this Permit.	Schedule of Compliance Item I.H.
Updated post-closure and corrective action cost estimate	Within 60 calendar days after effective date of this Permit.	Schedule of Compliance Item I.I.
Updated OM&M Plan	Within 60 calendar days after the effective date of this Permit.	Corrective Action Condition XIII.A.

Submittal Requirements	Due Date*	Permit Condition
Draft financial assurance instrument(s)	Within 30 calendar days after receiving the Department’s final written response regarding updated post-closure care and corrective action cost estimate.	Schedule of Compliance Item I.J.
Execute updated financial assurance instrument reflecting updated cost estimate	Within 10 calendar days after receiving Department’s final written response regarding draft financial assurance instrument.	Schedule of Compliance Item I.K.
Original executed financial assurance instruments and related documents	Within 30 calendar days after receiving Department’s final written response regarding draft financial assurance instrument.	Schedule of Compliance Item II.
Execute Environmental Covenant	Within 30 calendar days after receiving Department approval of draft Environmental Covenant	Schedule of Compliance Item IV.A.
Recordation of Executed Environmental Covenants	Within 15 calendar days after execution of approved Environmental Covenants	Schedule of Compliance Item IV.B.
Notarized statements certifying recordation of executed Environmental Covenants	Within 30 calendar days after recording executed Environmental Covenants	Schedule of Compliance Item IV.C.
Certification of final remedy construction	Within 30 calendar days after recording executed Environmental Covenants	Schedule of Compliance Item IV.D
Annual Progress Report	March 1 of each calendar year	Corrective Action Condition XVIII.A.
Annual Groundwater Monitoring Report	March 1 of each calendar year	Corrective Action Condition XIX.

Submittal Requirements	Due Date*	Permit Condition
Updated post-closure care and 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 II.
Certification of Completion of Post-Closure Care	Within 60 calendar days after completing post-closure care period.	Special Permit Condition II.E.
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 7 – Contingent Corrective Action Submittal Requirements Pursuant to the Corrective Action Conditions of this Permit

Contingent Submittal Requirements	Due Date	Corrective Action Condition
Written report of an Emergency Situation	Within 15 calendar days after the incident occurrence.	General Permit Condition I.
Written notification of newly identified SWMU(s) and AOC(s)	No later than 15 calendar days after discovery.	II.A.
SWMU/AOC Assessment Work Plan	Within 30 calendar days after notice by the Department that a work plan is required.	II.B.
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.A.1.
Notification of interim/stabilization measures not effective	Within 10 calendar days after determination.	IV.A.3.
RCRA Facility Investigation (RFI) Work Plan	Within 60 calendar days after notice by the Department that a work plan is required.	V.C.
RCRA Facility Investigation (RFI) Report	According to the schedule in the approved RFI Work Plan.	VI.B.

Contingent Submittal Requirements	Due Date	Corrective Action Condition
Corrective Measures Study (CMS) Work Plan	Within 60 calendar days after notice by the Department that a work plan is required.	VII.D.
Corrective Measures Study (CMS) Report	According to the schedule in the approved CMS Work Plan.	VIII.B.
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 60 calendar days after final remedy construction.	XI.
Corrective Measures Implementation (CMI) Report	According to the schedule in the approved CMI Work Plan.	XII.
Soil or Other Media Disturbance Notification	At least 30 calendar days before any planned activities at any area subject to AULs.	XV.A.
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.

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/mod043935048/2019-01-01-figure-1-facility-location--mod043935048.pdf>

Figure 2 – Location of SWMUs and AOCs 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/mod043935048/2006-05-22-figure 2-hazardous-waste-property-boundary-mod043935048.pdf](https://dnr.mo.gov/env/hwp/permits/mod043935048/2006-05-22-figure%20hazardous-waste-property-boundary-mod043935048.pdf)

Figure 3 - Former Surface Impoundment Area/Point of Compliance

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<https://dnr.mo.gov/env/hwp/permits/mod043935048/2006-02-20-figure-3-area-of-compliance-mod043935048.pdf>**

Figure 4 - Former Ravine Area Landfill/Point of Compliance

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<https://dnr.mo.gov/env/hwp/permits/mod043935048/2006-20-02-figure-4-area-of-compliance-mod043935048.pdf>