



Jeremiah W. (Jay) Nixon, Governor

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# DEPARTMENT OF NATURAL RESOURCES

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## MISSOURI HAZARDOUS WASTE MANAGEMENT FACILITY PERMIT PART I PERMIT NUMBER: MOD096726484

### PERMITTEE

Owner and Operator: Mallinckrodt LLC  
675 McDonnell Blvd.  
Hazelwood, Missouri 63042

### FACILITY LOCATION

3600 North Second Street  
St. Louis, Missouri 63147  
St. Louis City  
North Latitude – 38°39'30"  
West Longitude – 90°11'15"

### FACILITY DESCRIPTION

Mallinckrodt LLC produces bulk pharmaceuticals, diagnostic products used in the medical field, and many specialty inorganics and stearates that results in the generation of hazardous waste. Mallinckrodt LLC has owned and operated chemical manufacturing processes at this facility since 1867. The facility is located in an urban industrial area, zoned and developed for industrial use, and currently contains more than 50 manufacturing and support buildings in an approximately twelve city block area that covers approximately 45 acres. The general location of the facility is shown in Figure 1. The property boundaries for the facility are shown in Figure 2.



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**PERMITTED ACTIVITIES**

This facility previously had one hazardous waste drum storage unit that was permitted under the Missouri Hazardous Waste Management Facility Part I Permit issued on September 19, 1997. This permitted hazardous waste drum storage unit, known as the Hazardous Waste Storage Area, was used to store hazardous waste for greater than 90 days prior to shipment offsite for disposal. Due to operational changes at the facility, the addition of a new less than 90-day container storage area, and the construction of a new hazardous waste bulk storage tank for less than 90-day storage, the facility no longer stores hazardous waste in excess of 90 days. The previously-permitted Hazardous Waste Storage Area has undergone closure activities. The closure certification for this unit is pending final review and approval by the Department. As such, this Permit does not allow for the storage of hazardous waste in the unit undergoing closure.

This Permit requires Mallinckrodt LLC to conduct further investigation and monitoring to determine the nature and extent of hazardous waste, including hazardous constituents, which have been released to the environment as a result of past waste management/operational practices. This Permit requires implementation of additional corrective action activities, if needed, to address known releases to the environment from Solid Waste Management Units and Areas of Concern. In addition, this Permit contains contingent corrective action conditions to address any newly-identified releases to the environment from previously- or newly-identified Solid Waste Management Units and Areas of Concern.

EFFECTIVE DATES OF PERMIT: September 30, 2013 to September 30, 2023

September 30, 2013  
Date

[Original signed by David J. Lamb]  
\_\_\_\_\_  
David J. Lamb, Director  
HAZARDOUS WASTE PROGRAM

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## **INTRODUCTION**

After public notice, according to Code of State Regulations 10 CSR 25-8.124, and review of Mallinckrodt LLC's Missouri Hazardous Waste Management Facility Permit Application (hereafter referred to as the application), the Missouri Department of Natural Resources (hereafter referred to as the Department) has determined that the application conforms to the provisions of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 (RCRA) and regulations promulgated thereunder by the U.S. Environmental Protection Agency (hereafter referred to as EPA) (codified and to be codified in Title 40 of the Code of Federal Regulations) and the Missouri Hazardous Waste Management Law (and all standards, rules, and regulations adopted under this act), Section 260.350, et seq., RSMo. Pursuant to Section 260.375.13, RSMo, and the Solid Waste Disposal Act, the Department hereby approves the application and issues Permit Number MOD096726484 to Mallinckrodt LLC as the facility owner and operator (hereafter referred to as the Permittee) for the completion of closure of the previously-permitted Hazardous Waste Storage Area and to conduct further investigation and monitoring to determine the nature and extent of releases to the environment of hazardous waste, including hazardous constituents, from Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) as a result of past waste/operational management practices described in the application and this Permit. This Permit also addresses additional corrective action activities that may be required for SWMUs and AOCs pursuant to the state equivalent requirements of the federal Hazardous and Solid Waste Amendments of 1984 (HSWA) of RCRA, as administered and enforced by the Department. Applicable regulations are found in 40 CFR Parts 260 through 264, 266, 268, and 270, and 10 CSR 25-7, as specified in this Permit. The Department is issuing this Missouri Hazardous Waste Management Facility (MHWMF) Part I Permit (hereafter referred to as the Permit) under state authority.

All citations to federal regulations throughout this Permit are for the sake of convenient reference. The federal regulations are adopted by reference in 10 CSR 25. In instances where state regulations are more stringent, the appropriate state reference is given and shall apply.

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.

All permit application information shall be 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 review by the public at the Department's central office in Jefferson City, Missouri; and the EPA Region 7 office in Lenexa, Kansas.

Any appeals of this Permit, or specific permit conditions based on state authority, shall be filed according to 10 CSR 25-2.020 and Sections 260.395.11 and 621.250, RSMo. 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 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 is as follows: Administrative Hearing Commission, Truman State Office Building, Room 640, 301 West High Street, P.O. Box 1557, Jefferson City, MO 65102, telephone: 573-751-2422, fax: 573-751-5018, website: [www.oa.mo.gov/ahc](http://www.oa.mo.gov/ahc). The Department further requests that a copy of any appeal request be provided to the Director of the Department's Hazardous Waste Program, P.O. Box 176, Jefferson City, MO 65102-0176.

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

- The application submitted by the Permittee dated March 16, 2007, with a revised application submitted by the Permittee dated February 11, 2010.
- The additional technical information submitted by the Permittee by e-mail on June 26, 2013.

The “consolidated permit application” is defined as the approved permit application 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 original consolidated permit application at the facility.

Any inaccuracies found in information submitted by the Permittee may be grounds for the termination, revocation and reissuance, or modification of this Permit according to 40 CFR Part 270 Subpart D, incorporated by reference in 10 CSR 25-7.270(1) and modified in 10 CSR 25-7.270(2)(D), and for potential enforcement action. The Permittee shall inform the Department of any deviation from, or changes in, the information in the application, which would affect the Permittee's ability to comply with the applicable regulations or permit conditions.

When the Department receives any information, such as inspection results, information from the Permittee, or requests from the Permittee, it may decide whether cause exists to modify, revoke and reissue, or terminate this Permit. All such changes to this Permit shall be according to 10 CSR 25-7.270(2)(D), 10 CSR 25-8.124, and 40 CFR Part 270 Subpart D, as incorporated by reference in 10 CSR 25-7.270(1).

Completion of closure and any required corrective action program activities shall be according to the provisions of this Permit, the Missouri Hazardous Waste Management Law (Sections 260.350 to 260.434, RSMo), the rules and regulations promulgated thereunder [Code of State Regulations, Title 10, Division 25 (10 CSR 25)] as effective on the date of this Permit, all final engineering plans, petitions, specifications, and operating procedures that were submitted to the Department during the permit application review process, which are included in the final version of the 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 final engineering plans, specifications, and operating procedures, 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.

This Permit for completion of closure of the Hazardous Waste Storage Area and to conduct further investigation and monitoring to determine the nature and extent of hazardous waste, including hazardous constituents, that have been released to the environment as a result of past waste/operational management practices is issued only to the Permittee named above. This Permit is issued for a period of ten years and expires at midnight on September 30, 2023. This Permit is subject to review and modification by the Department according to Section 260.395.12, RSMo. According to 40 CFR 270.51, as incorporated in 10 CSR 25-7.270(1), the conditions of this Permit will continue in force until the effective date or denial of a new permit, if a timely and complete application is submitted.

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 had been previously adopted by the state. Thus, the corrective action requirements implemented by the state in lieu of EPA are incorporated into this and are under state authority.

40 CFR 264.101(a), as incorporated by reference in 10 CSR 25-7.264(1), requires all owners or operators of facilities seeking a Permit for the treatment, storage, or disposal of 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 CFR 264.101(b), as incorporated by reference in 10 CSR 25-7.264(1), requires that permits issued under the 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 CFR 264.101(c), as incorporated by reference in 10 CSR 25-7.264(1), requires that corrective action 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 action. 40 CFR 264.101(c) further stipulates that the owner or operator is not relieved of any responsibility to cleanup 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, according to 40 CFR 264.101.

40 CFR 270.32(b)(2), as incorporated by reference in 10 CSR 25-7.270(1), and Section 260.395.12, RSMo, requires that each permit issued under that section contain terms and conditions as the Department determines necessary to protect human health and the environment.

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, Hazardous Waste Program, Land Reclamation Program, Solid Waste Management Program, and Water Protection Program. Failure to comply with these environmental laws and regulations may, in certain circumstances, result in the suspension or revocation of 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 CFR Parts 260, 261, 264, 266, 268, and 270, and 10 CSR 25, unless this Permit specifically provides otherwise. Where terms are not defined in RCRA, the regulations, this Permit, or EPA guidance or publications, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

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

“Area of Concern (AOC)” means any area where an actual or potential release of hazardous wastes or hazardous constituents that is not from a 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. Investigation and/or remediation of AOCs may be required pursuant to Section 260.395, RSMo, and 40 CFR 270.32(b)(2), as incorporated by reference in 10 CSR 25-7.270(1).

“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.

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

“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 CFR 264.101, as incorporated by reference in 10 CSR 25-7.264(1) and as specified in this Permit.

“Hazardous constituent” means any chemical compound listed in 40 CFR Part 261 Appendix VIII, as incorporated by reference in 10 CSR 25-4.261.

“Hazardous waste” means any waste, or combination of wastes, as defined by or listed in 10 CSR 25-4, which, because of its quantity, concentration, physical, chemical, or infectious characteristics, may cause or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness or which may pose a threat to the health of humans or other living organisms.

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

“Release” means any spilling, leaking, pouring, emitting, emptying, discharging, injecting, pumping, escaping, leaching, dumping, or disposing of hazardous wastes or hazardous constituents into the environment (including the abandonment or discarding of 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 the management of 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 two paper copies and one searchable electronic copy of the consolidated permit application as required by 10 CSR 25-7.270(2)(B)7. and defined in the Introduction of this Permit.
  - B. Submit to the Department a certification by the Permittee that the Permittee has read this Permit in its entirety and understands all permit conditions contained in this Permit.
  - C. Submit to the Department, to the attention of the Hazardous Waste Program, Permits Section, a check or money order payable to “State of Missouri” for any outstanding engineering review costs.
  - D. Submit to the Department, to the attention of the Hazardous Waste Program, Permits Section, a check or money order payable to “State of Missouri” for \$1000 for each year this Permit is to be in effect beyond the first year. This Permit is effective for ten years. Since the Permittee has submitted a \$1000 deposit with the permit application and paid a \$1000 permit continuation fee for the current year, the remaining balance to be submitted by the Permittee is calculated as:

$$\text{Remaining balance} = \$9000.00 - \left( \left( \frac{\$1000.00}{365 \cdot \text{days}} \right)^{xN_d} \right)$$

where  $N_d$  equals the number of calendar days from the expiration date of the continued permit (which coincides with the anniversary date of the original permit issuance) to the date of permit reissuance. An invoice is included with this Permit based on the foregoing formula.

- II. Following receipt of the Department’s response to the Permittee’s responses on the Draft Consolidated RCRA Facility Investigation (RFI) Report, dated February 16, 2009, the Permittee shall:
- A. Within 60 calendar days arrange a coordination meeting with the Department to discuss the issues relating to the current state of the RFI activities at the facility and develop a path forward to address “data gaps” and/or other issues arising

from the Department's review of the Draft Consolidated RFI Report, including discussion of additional investigations or corrective actions that may be necessary.

- B. Within 90 calendar days after meeting with the Department as specified in Schedule of Compliance Item II.A. above, submit a Description of Current Conditions Report (DCCR) to the Department and EPA that summarizes the current sitewide environmental conditions at the facility and complies with the requirements of Corrective Action Condition VI.B.2 of this Permit.
- III. The Permittee shall maintain financial assurance for closure until such time as the Department accepts the closure certification report for the previously-permitted Hazardous Waste Storage Area, and notifies the Permittee in writing that the financial assurance mechanism for closure may be terminated.
- 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 1 and 2.

## **SUBMITTAL OF REQUIRED INFORMATION**

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

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

- II. 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, Waste Remediation and Permitting Branch  
U.S. Environmental Protection Agency Region 7  
Air and Waste Management Division  
11201 Renner Blvd.  
Lenexa, KS 66219

- III. Should the Permittee require 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 in accordance with Corrective Action Condition XVIII. of this Permit.

## **STANDARD PERMIT CONDITION**

- I. 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, Section 260.350, et seq., RSMo, 40 CFR Part 264 Subpart H, 40 CFR 264.101, 270.10, 270.30, 270.40, 270.42, and 270.51, as incorporated and modified in 10 CSR 25-7 and 10 CSR 25-8.

## **GENERAL PERMIT CONDITIONS**

- I. The Permittee shall comply with the applicable requirements described in 40 CFR Part 264 Subparts B, C, D, E, G, and H, 40 CFR Part 268, and 40 CFR Part 270, as incorporated and modified in 10 CSR 25-7 and 10 CSR 25-8.
- II. Notification of an Emergency Situation [Chapter 260.505.4, RSMo]

The Permittee shall, at the earliest practical moment upon discovery of an emergency involving the hazardous waste 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 1-800-424-8802.

Within 15 days of 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 CFR 264.56(j), as incorporated in 10 CSR 25-7.264, and be provided to the addressees listed in "Submittal of Required Information" provision.

## **SPECIAL PERMIT CONDITIONS**

In accordance with 40 CFR 270.32, as incorporated in 10 CSR 25-7.270(1), the Department has established the following permit conditions for the Permittee and the hazardous waste facility at the location specified in this Permit.

### **I. Storage in Containers [10 CSR 25-7.264(2)(D)]**

The Permittee submitted a draft Closure Plan for the previously-permitted Hazardous Waste Storage Area on September 12, 2008. The Department provided comments on the plan to the Permittee on February 5, 2009. The Permittee submitted an amended Closure Plan for the Hazardous Waste Storage Area in July 2009, which was approved with conditions by the Department as a Class 1 Permit Modification with Prior Director's Approval on August 28, 2009.

Closure activities for the Hazardous Waste Storage Area were initially started in the first calendar quarter of 2010 and included demolishing the concrete pad, soil excavation to a depth of approximately 4 to 6 feet below ground surface, and shoring of some nearby structures. Closure activities continued periodically through the first half of calendar year 2011. The Permittee submitted results for the soil samples collected in association with the closure activities on July 1, 2011, for Department review.

The Department provided comments on the soil sampling results and approved the facility to begin backfilling the closure excavation area in a November 18, 2011, letter. The November 2011 comment letter also requested submission of a closure report and indicated that additional sampling may be necessary to fully delineate the vertical and horizontal extent of the contamination associated with operation of the Hazardous Waste Storage Area. The Permittee submitted a closure report on January 18, 2012. This closure report for the Hazardous Waste Storage Area described the closure activities performed and included a closure certification from an independent professional engineer registered in Missouri stating that the Hazardous Waste Storage Area had been closed in accordance with the specifications in the approved closure plan. This closure report and the closure certification are pending final review and approval by the Department.

- A. The Permittee shall maintain financial assurance for closure until such time as the Department accepts the closure certification for Hazardous Waste Storage Area, and notifies the Permittee in writing that the financial assurance mechanism for closure may be terminated.
- B. If the Department determines that additional investigation(s) and/or corrective action are necessary or deemed appropriate for the Hazardous Waste Storage

Area, the Permittee shall conduct the additional investigation(s) and/or take corrective action according to the procedures described in Corrective Action Condition V. of this Permit.

II. 100-Year Floodplain Requirements [40 CFR 264.18(b)]

The Permittee has submitted information, as required in 40 CFR 270.14(b)(11)(iii) and 270.28, that identifies the facility as not being located in a 100-year floodplain. The Permittee shall maintain the submitted information in the facility operating record.

## CORRECTIVE ACTION CONDITIONS

The Permittee shall comply with the requirements of 40 CFR Part 264.101, as incorporated by reference in 10 CSR 25-7.264(1) and this Permit, for all previously- and any newly-identified SWMUs, AOCs, and releases identified pursuant to the provisions of this Permit.

### I. Identification of SWMUs and AOCs [40 CFR 264.101]

- A. The EPA conducted a RCRA Facility Assessment (RFA) to identify and gather information on releases and potential releases from SWMUs and AOCs at the facility. The final RFA Report dated September 29, 1993, investigated a total of 28 SWMUs and 14 AOCs during the assessment and the Final RFA Report identified eight SWMUs and two AOCs that required further investigation. The other SWMUs and AOCs identified in the RFA Report not explicitly listed below were determined to not require further evaluation or corrective action at that time.

Following further evaluation of the SWMUs and AOC identified as requiring additional investigation in the RFA Report and a review of other relevant site-specific information, the Department determined that a total of seven SWMUs and two AOCs would require further action, as required in the previous Missouri Hazardous Waste Management Facility Part I Permit dated September 19, 1997. These SWMUs and AOCs are listed below. Figure 3 shows the approximate locations of these SWMUs and AOCs at the facility.

SWMU 5	Building 5 Construction Area
SWMU 8	Building 501 Drum Storage Area
SWMU 14	Building 503 Less-Than-90-Day Storage Tank T-201 and Truck Loading/Unloading Station
SWMU 15	Building 503 Wastewater Sump
SWMU 18	Building 63 Historic Drum Storage Area
SWMU 20	Building 250 Drum Staging Area
SWMU 27	Building 98 Drum Storage and Staging Area
AOC G	Building 235 Tank Farm and Truck Unloading Area
AOC I	Site-Wide Groundwater

After completion of the RFA Report, the Department issued a MHWMF Part I Permit to the Permittee on September 19, 1997. Corrective Action Condition II.D. of the 1997 MHWMF Part I Permit required the Permittee to notify the Department and EPA of any newly identified SWMU(s) or AOC(s) subsequent to the issuance of the Permit. Pursuant to this requirement, the Permittee submitted a report entitled “*Assessment Report for Newly Identified SWMUs Report at the*

*Mallinckrodt Inc. St. Louis Facility*” on January 16, 1998. The January 1998 report identified eight new SWMUs that, based on historic practices, needed further evaluation for potential releases and/or to assess the investigation needs. These eight new SWMUs are listed below. Figure 3 shows the approximate locations of these SWMUs at the facility.

SWMU 36	Former Tannin Process Sludge Dumpster Area
SMWU 37	Former Drum Storage Area South of Former Building 82
SWMU 38	Former Waste Storage Area in Former Building 82T
SWMU 39	Drum Storage Pad East of Building 240
SWMU 40	Building 120 (Former AFI Remediation)
SWMU 41	Former Tank Car Unloading Area East of Building 63
SWMU 42	Former Drum Storage Pad North of Building 247
SWMU 43	Former Drum Storage Pad Southeast of Building 245

From 1942 to 1957, operations for the Manhattan Engineering District and Atomic Energy Commission (MED-AEC) involving radioactive materials were conducted at the facility. These operations resulted in some areas of the facility having residual radiological and chemical contamination. Areas of the facility associated with residual radiological and chemical contamination from the MED-AEC operations are being characterized and remediated by the U.S. Government through the Formerly Utilized Sites Remedial Action Program (FUSRAP). Responsibility for oversight of FUSRAP at this facility was originally under the jurisdiction of the Department of Energy (DOE) and was later transferred to the U.S. Army Corps of Engineers (USACE) in the late 1990s. While DOE, and later the USACE, were responsible for the remediation activities associated with FUSRAP, the Permittee is responsible for performing any necessary corrective action for any releases of hazardous waste, including hazardous constituents, to the environment attributable to SWMUs or AOCs in FUSRAP areas which are not explicitly the responsibility of the DOE, pursuant to the Federal Facilities Agreement between the DOE and EPA, dated June 26, 1990.

To address potential SWMUs located within the FUSRAP areas of the facility, the Permittee submitted a report entitled “*Assessment Report for FUSRAP Area SWMUs at the Mallinckrodt Inc. St. Louis Facility*” on November 9, 1998. The November 1998 report identified nine additional SWMUs as being located within these FUSRAP areas at the facility that needed to be evaluated for release potential and to assesses investigation needs. These nine additional SWMUs are listed below. Figure 3 shows the approximate locations of these SWMUs at the facility.

Unit F1-1	Lab Waste Storage Area
Unit F2-1	Wastewater Tanker Loading Spot
Unit F2-2	Former Less than 90-Day Drum Storage Pad
Unit F5-1	Bottles Under Building 250
Unit F5-2	Barium Carbonate Rail Unloading Area
Unit F6-1	Hazardous Waste Truck Staging Area and Waste Compactor
Unit F7-1	Waste Burial Trenches in Plant 7S
Unit F7-2	New less than 90-Day Hazardous Waste Storage Area
Unit F7-3	Fire Training Field in Plant 7N

In addition, to the above SWMUs and AOCs, the Permittee has identified one additional SWMU and two AOCs at the facility since the submittal of the 1998 Assessment Reports as detailed below.

During the first quarter of 2000, the Permittee provided notice to the Department regarding the discovery of fuel oil in the subsurface soil during remediation activities being conducted at Plant 2 by the USACE under FUSRAP. This fuel oil in the subsurface soil was believed to be the result of a No. 6 fuel oil spill (approximately 17,500 gallons) from a pipeline break that was detected on September 28, 1989. On April 5, 2000, the Department sent the Permittee a letter designating this fuel oil spill area as newly identified “AOC J, Building 501 Fuel Oil Release”. In the April 2000 letter, the Department acknowledged the initiation of interim corrective measures in this area, included the installation of a trench and sump system for the removal of free product and requested the Permittee prepare and submit an Interim Corrective Measures Report for the AOC J area. The Permittee subsequently submitted a report entitled “*AOC J Assessment Report and Work Plan for the Mallinckrodt Inc. St. Louis Facility*” on August 2, 2000. The Department provided comments on this report/work plan in a letter dated July 7, 2011, and requested the comments be “considered and/or addressed” in a future supplemental RFI Work Plan for the AOC J area.

The Permittee provided notice to the Department on August 25, 2008 regarding the discovery of some laboratory bottles at the north end of the Plant 6W area, which were found during the excavation of Unreacted Ore (URO) burials that were being removed by the Permittee under a license amendment with the U.S. Nuclear Regulatory Commission. The labels on the laboratory bottles identified the material as arsenic acid powder, a type of pesticide. A total of 40 bottles were removed from the excavation by hand, cleaned and released from radiological restriction, and lab packed for hazardous waste disposal. The Permittee reported that there was no visual evidence of released arsenic acid

powder within the excavation. The newly-identified SWMU was identified as “URO Burial #5, Plant 6W”. The Permittee indicated that any further investigation or corrective action for this SWMU would be addressed in the CA725 Environmental Indicator evaluation and in the supplemental RFI Work Plan.

The Permittee provided notice to the Department on December 1, 2009, regarding an incident where a drum of waste chloroform was punctured by a fork truck in an asphalt paved area located immediately east of Building 250 and within the Phase II Columbium-Tantalum Area (CT Area) on November 19, 2009. The incident released approximately eight gallons of chloroform waste onto asphalt pavement. Once the spill cleanup activities were complete, the asphalt pavement was found to be compromised within the footprint of the spill area. The asphalt pavement and gravel layer, approximately 5 feet square in size, were removed for proper disposal and an intact concrete pad was found beneath the gravel layer. This newly-identified release was identified as “AOC K”.

- B. 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 that 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-site release(s), as specified in Corrective Action Conditions II. and III. of this Permit.
- C. The Permittee shall conduct additional investigation(s) and/or take corrective action as deemed appropriate by the Department for the previously-identified SWMUs and AOCs or any newly-identified SWMUs and AOCs, including off-site release(s), demonstrating releases of hazardous waste or hazardous constituents to soil, surface water, sediment, groundwater, and/or air in excess of applicable regulatory thresholds, as specified in Corrective Action Conditions of this Permit. Any off-site releases to soil, surface water, sediment, or groundwater shall be addressed to the extent that these media are impacted by contamination originating from SWMUs and AOCs at the facility.
- D. The Permittee shall be responsible for working with the DOE and/or the USACE to avoid duplication of efforts in the development of site investigation and remediation criteria at FUSRAP and other areas of the site. The Permittee will attempt to resolve any disputes over its responsibility while the Permittee shall be

responsible for performing corrective action necessary to protect human health and the environment for any releases of hazardous waste, including hazardous constituents to the environment attributable to SWMUs or AOCs at the facility which are not the responsibility of DOE/USACE pursuant to the Federal Facilities Agreement between DOE and EPA dated June 26, 1990.

Further, the Department acknowledges that there should be minimal, if any, duplicative regulatory effort in investigating and remediating the FUSRAP areas. The Department will allow DOE/USACE to discharge its investigation and remediation obligations as fully as possible pursuant to the Federal Facilities Agreement prior to requiring any additional corrective action in the FUSRAP areas by the Permittee. The Department will decide whether additional site investigation and/or site remediation are necessary as quickly as possible once the appropriate data to make a decision are available to the Department.

II. Notification Requirements for, and Assessment of, Newly-Identified SWMUs and AOCs

- A. The Permittee shall notify the Department and EPA, in writing, no later than 15 calendar days after discovery (e.g., visual observations, laboratory test results, or information not previously available) or after discovery should have been made, of any new SWMU(s) or AOC(s) identified after the issuance of this Permit.
- 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 receipt of the Department's request to conduct an investigation, the Permittee shall prepare and submit a SWMU/AOC Assessment Work Plan to the Department and the EPA 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 of Departmental approval of the plan; and
  4. Identification of all data to be collected 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 as described in Corrective Action Condition XVII. of this Permit. 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 and EPA 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 and justification for the recommendation. If further action is recommended, 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 as described in Corrective Action Condition XVII. of this Permit. 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 that additional investigation is needed, the Department may require the Permittee to submit 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 as described in Corrective Action Condition XVII. of this Permit. 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 and EPA, in writing, no later than 15 calendar days after discovery or after discovery should have been made, of any newly-identified release(s) of hazardous wastes or hazardous constituents from any previously-identified SWMU(s) or AOC(s) at the facility, including those being investigated and reported as part of the corrective action process that 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 such a release has 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 receipt of the Department's request to conduct an investigation, the Permittee shall prepare and submit a Newly-Identified Release Work Plan to the Department and EPA 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 of Departmental approval of the plan; and
  4. Identification of all data to be collected 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 as described in Corrective Action Condition XVII. of this Permit. 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 and EPA 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 comprise 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 and justification for the recommendation. If further action is recommended, 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 as described in Corrective Action Condition XVII. of this Permit. 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 an RFI, at specific releases(s) identified in the Newly-Identified Release Report.

- F. If the Department determines that additional investigation is needed, the Department may require that the Permittee submit a work plan for such investigations in accordance with the applicable Corrective Action Conditions of this Permit. The Department shall review and approve any such work plan as described in Corrective Action Condition XVII. of this Permit. The Permittee shall complete all activities described in the work plan according to the schedule contained in the approved plan.

IV. Historical and Contingent Interim/Stabilization Measures

- A. In addition to the remediation activities undertaken by the USACE under FUSRAP to remove contaminated soils in certain areas of the facility, the Permittee has undertaken limited interim/stabilization measures (ISMs) at the facility including those listed below.
  - 1. For the AOC J area, the ISMs included the installation of a trench and sump system for the removal of free product associated with the No. 6 fuel oil spill.
  - 2. For the URO Burial #5, Plant 6W area, the laboratory bottles labeled “arsenic acid powder” were removed from the excavation by hand, cleaned and released from radiological restriction, and lab packed for hazardous waste disposal.
  - 3. For the AOC K area, the asphalt pavement and gravel layer, approximately 5 feet square in size, were removed for proper disposal. An intact concrete pad was found beneath the gravel layer.
  - 4. SWMUs 20, 39 and 42 are located within the footprint of the remedial excavations performed for the Columbium-Tantalum (CT) area project. This resulted in the removal of affected soils in these areas.
- B. Should the Permittee become aware of a situation with respect to identified SWMUs or AOCs that may require any additional ISMs that may be necessary to protect human health or the environment, the following conditions shall apply:
  - 1. The Permittee shall notify the Department and EPA within 24 hours after becoming aware or should have become aware of a situation that may require ISMs to protect human health or the environment. The

Department may examine the Facility's inspection records to determine if the Permittee should have known if such ISMs and notification should have occurred.

2. If, during the course of any activities initiated under this Permit, the Permittee or the Department determines that 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 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 ISMs, including potential permit modifications, and the schedule for implementing the ISMs. The Department shall notify the Permittee in writing of decisions regarding the action(s). This requirement shall not preclude the Permittee from responding to an emergency situation without direction from the Department.
3. The Permittee shall notify the Department and EPA, in writing, no later than ten 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 final corrective action measures are required to remediate the contaminated media.
4. In cases where releases or potential releases present minimal exposure concerns and/or the remedial solution is relatively uncomplicated, the Permittee may propose ISMs for review and approval by the Department. These ISMs shall be consistent with and may supplement or satisfy the requirements for a final remedy(s) in specific areas. Proposed ISMs that are determined by the Department 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 approval by the Department. Proposed ISMs that are determined by the Department not to be significant will be reviewed and approved as described in Corrective Action Condition XVII. of this Permit.

V. Historical and Contingent RCRA Facility Investigation (RFI) Work Plan

- A. The Phase 1 RFI Work Plan for the facility was submitted to the Department on January 16, 1998. The Department provided comments on the Phase 1 RFI Work Plan to the Permittee on April 24, 1998. The Permittee submitted a revised Phase 1 RFI Work Plan to the Department on June 19, 1998, which the Department approved on September 30, 1998.
- B. If the Department determines that additional investigations are needed based on the discussions associated with Schedule of Compliance Item II.A., the DCCR Report required by Schedule of Compliance Item II.B., and/or any other relevant information, the Department may require the Permittee to conduct further RFI activities. The Department shall notify the Permittee, in writing, of this decision. Within 60 calendar days after receipt of the Department's request to conduct further RFI activities, the Permittee shall prepare and submit a supplemental RFI Work Plan to the Department and EPA for review and approval.
- C. 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 that are sufficient to meet the following objectives and a proposed schedule for implementing the supplemental RFI Work Plan, which is predicated on the date of Departmental approval of 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 utilized to substantiate future corrective action decisions.
- D. 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. 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 submission of reports (including the RFI Report);
  3. The qualifications of personnel performing or directing the investigations, including contractor personnel; and
  4. The overall management of the RFI activities.
- E. The supplemental RFI Work Plan shall include a Quality Assurance Project Plan (QAPP). The QAPP shall present the policies, organization, objectives, functional activities, and specific quality assurance and quality control activities designed to achieve the data quality goals of the RFI. It shall include, at a minimum, the 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.
- F. The Permittee shall prepare and maintain a Health and Safety Plan during the project that assures the RFI activities are conducted in a manner that is protective of human health and the environment.
- G. Due to the complexity of defining the extent of contamination, the Permittee may be required to use a phased approach that requires the submittal of additional supplemental RFI Work Plans.
- H. The Department shall review and approve any supplemental RFI Work Plan as described in Corrective Action Condition XVII. of this Permit. The Permittee shall complete all activities described in the supplemental RFI Work Plan according to the schedule contained in the approved plan.

VI. Historical and Contingent RCRA Facility Investigation (RFI) Report

- A. The Permittee submitted the results from the Phase I RFI Work Plan to the Department on March 31, 1999, and other related documents in 1998 and 2001. The documents currently constituting the Consolidated Draft RFI Report are listed below. The Department provided comments on this Consolidated Draft RFI Report to the Permittee on May 22, 2008. The Permittee submitted responses to the Department's comment letter on February 16, 2009. These documents include:
- Assessment Report for the Newly Identified Solid Waste Management Units at Mallinckrodt Chemical Inc., St. Louis, Missouri facility, dated January 16, 1998.
  - Assessment Report for FUSRAP-Area SWMUs at the Mallinckrodt Inc., St. Louis facility, dated November 9, 1998.
  - Resource Conservation and Recovery Act Facility Investigation Report, Mallinckrodt Chemical Inc., St. Louis, Missouri facility, dated March 31, 1999.
  - Resource Conservation Recovery Act Facility Investigation Report for Area of Concern I (Site-Wide Groundwater), Mallinckrodt Chemical Inc., St. Louis, Missouri, facility, dated April 6, 2001.
- B. The Department's review follow-up on the Consolidated Draft RFI Report including the Permittee's February 2009 responses to the Department's May 2008 comment letter is still pending. Upon receipt of the Department's response to the Permittee's February 2009 letter regarding the Consolidated Draft RFI Report, the Permittee shall:
1. Within 60 calendar days arrange a coordination meeting with the Department to discuss the issues relating to the current state of the RFI activities at the facility and to develop a path forward to address "data gaps" and/or other issues arising from the Department's review of the Consolidated Draft RFI Report including discussion of additional investigations or corrective actions that may be necessary.
  2. Within 90 calendar days after meeting with the Department as specified in Corrective Action Condition VI.B.1 above, submit a DCCR Report to the

Department and EPA that summarizes the current sitewide environmental conditions at the facility. This DCRR shall:

- a. Summarize the historical environmental information associated with all previous investigations, monitoring and remediation conducted at the facility including that performed under FUSRAP.
  - b. Summarize the results of any sampling conducted on the contaminated media (e.g., soil/groundwater) at the facility that was used to characterize and define the extent of releases of hazardous waste and/or hazardous waste constituents to the environment.
  - c. Include a description of any ISMs or other corrective actions undertaken at the facility by the Permittee.
  - d. Summarize all remediation activities that have been completed, are currently being performed, or are planned in the future at the facility by the USACE under FUSRAP.
  - e. Evaluate and identify any potential “data gaps” with respect to the extent of environmental releases/impacts related to known SWMUs and AOCs at the facility, actual and potential human and environmental exposures identified during the above investigations and, if necessary, proposal of additional work that is needed to address any remaining data gaps and human/environmental exposures.
  - f. Include conclusions concerning the need for further evaluation(s) related to contaminated media (e.g., soil/groundwater) in light of current and potential future uses of the facility.
3. The Department shall review and approve the DCCR as described in Corrective Action Condition XVII. If the DCCR identifies and/or the Department concludes that further investigation is needed, the Department may require additional investigation to address the data gaps and/or actual or potential human or environmental exposures and shall so advise the Permittee in writing as to the next step in the corrective action process, which may include submission of a supplemental RFI Work Plan in accordance with Corrective Action Condition V.B. of this Permit.

- C. Should additional investigations become necessary, the Permittee shall submit an RFI Report to the Department and EPA according to the schedule specified in the approved RFI Work Plan described in Corrective Action Condition V.B. of this Permit. The RFI Report shall present all information obtained under the approved RFI Work Plan along with a brief facility description and map showing the property boundary and all SWMUs and AOCs. The RFI Report shall contain adequate information to support additional corrective action decisions at the facility. Information contained in the RFI Report shall be presented in a format that is 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.
- D. The RFI Report shall provide an interpretation of the RFI information gathered, supported with adequate documentation, to enable the Department to determine whether additional ISMs or a Corrective Measures Study (CMS) may be necessary. The 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 site-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 the interpretation of data;
  9. Results of any interim/stabilization measures 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., identification of any potential bias in the RFI data and documentation of its precision, accuracy, representativeness, completeness, comparability, validation, etc.).
- E. The Department shall review and approve the RFI Report as described in Corrective Action Condition XVII. of this Permit. If the Department determines that the objectives of the RFI have not been met, the Department may require additional investigation. Upon approval of the RFI Report, the Department shall notify the Permittee of the next step in the corrective action process, which may include submission of a CMS Work Plan as described in Corrective Action Condition VII. of this Permit.

VII. Corrective Measures Study (CMS) Work Plan

- A. A formal CMS has not been conducted at this facility. Previously-implemented and ongoing remediation activities have been handled through implementation of regulated unit closure requirements, corrective action interim measures, and FUSRAP. If the Department determines that 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 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 to be evaluated by the Permittee during the CMS.

- B. As part of the CMS, the Department may require the Permittee to evaluate one or more specific remedial alternatives for removal, containment, and treatment of 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 protection of human health and the environment.
- C. Within 90 calendar days after receipt of the Department's request to conduct a CMS, the Permittee shall prepare and submit a CMS Work Plan to the Department and EPA for review and approval. The CMS Work Plan shall be consistent with the EPA document entitled, RCRA Corrective Action Plan (Final), OSWER Directive 9902.3-2A, May 1994, or the most recent version. At a minimum, the CMS Work Plan shall provide the following information and a proposed schedule for implementing the CMS Work Plan:
1. A description of the general approach to investigating and evaluating potential remedial alternatives or combinations of alternatives;
  2. 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 potential remedial alternatives that were 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 criteria and cleanup standards;

6. A schedule, which is predicated on the date of Departmental approval of the CMS Work Plan, for conducting the study and submitting a CMS Report;
  7. The proposed format for ranking remedial alternatives or combination of alternatives in support of a preferred a remedial alternative or combination of alternatives; and
  8. Identification of laboratory, bench-scale, pilot-scale and/or other appropriate tests or studies that will be used to determine the feasibility or effectiveness of treatment technologies, or other technologies that may be appropriate in implementing remedial alternatives at the facility.
- D. The Department shall review and approve the CMS Work Plan as described in Corrective Action Condition XVII. of this Permit. The Permittee shall complete all activities described in the CMS Work Plan according to the schedule contained in the approved plan.

VIII. Corrective Measures Study (CMS) Report

- A. The Permittee shall submit a CMS Report to the Department and EPA according to the schedule specified in the approved CMS Work Plan described in Corrective Action Condition VII. of this Permit. The CMS Report shall present all information obtained under the approved CMS Work Plan and shall be consistent with guidance contained in the EPA document entitled, RCRA Corrective Action Plan (Final), OSWER Directive 9902.3-2A, May 1994, or the most recent version.
- B. The CMS Report shall describe and discuss each remedial alternative or combination of alternatives that was evaluated including any bench-scale or pilot tests conducted. The 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 exposures 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 and/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 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 implementation of the preferred remedial alternative or combination of alternatives (e.g., local ordinances), and a draft of any site-specific institutional controls that are 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).
- C. The CMS Report shall contain information that is sufficient to facilitate the Department's development of a Statement of Basis in support of the final remedy decision-making process.
- D. The Department shall review and approve the CMS Report as described in Corrective Action Condition XVII. of this Permit. Upon approval of the CMS Report, the Department will approve a final remedy as specified in Corrective Action Condition IX. of this Permit.

IX. Final Remedy Approval

- A. Following the approval of the CMS Report or equivalent, as described in Corrective Action Condition VIII. of this Permit, 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 final remedy.

- B. Following the Department’s preparation of the Statement of Basis, a permit modification shall be initiated in accordance with 40 CFR 270.41 or 270.42(c), as applicable, to facilitate public review and comment on the Statement of Basis and proposed final remedy, final remedy approval by the Department, and implementation of the approved final remedy by the Permittee. When, and if, required, the Permittee shall provide assurances of financial responsibility for the approved corrective action final remedy pursuant to 40 CFR 264.101(b) and as specified in Corrective Action Condition XVI. of this Permit.
- C. Upon completion of the public participation activities associated with the permit modification to implement the proposed final remedy, the Department shall approve a final remedy that shall:
  - 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 may pose a threat to human health and the environment; and
  - 3. Meet all applicable federal, state, and local laws and regulations.
- X. Corrective Measures Implementation (CMI) Work Plan
  - A. If the Department determines that a final remedy is necessary to address a release(s) of hazardous waste or hazardous constituents from newly- and/or previously-identified SWMUs/AOCs, the Permittee shall:
    - 1. According to the schedule established in conjunction with any permit modification to implement the approved final remedy, submit a CMI Work Plan to the Department and the EPA to provide detailed design specifications, construction plans, and a schedule for implementation of the final remedy. The CMI Work Plan shall provide detailed plans for remedy implementation consistent with all applicable CMI components as specified in the EPA document entitled, RCRA Corrective Action Plan (Final), OSWER Directive 9902.3-2A, May 1994, or the most recent version, and shall be consistent with the objectives specified in the approved CMS Report.

- B. The Department shall review and approve the CMI Work Plan as described in Corrective Action Condition XVII. of this Permit. The Permittee shall implement the CMI Work Plan in accordance with the schedule contained in the approved plan.

XI. Certification of Completion of Construction of Final Remedy

- A. If a final remedy is determined to be necessary by the Department, all Corrective Action Conditions of this Permit shall continue to be in force, unless and until appropriate permit modifications are reviewed and approved.
- B. Within 60 calendar days of completion of all construction activities associated with implementation of any approved final remedy, the Permittee shall submit a written certification to the Department and EPA, by certified mail, stating that the final remedy has been constructed according to the approved CMS Report, 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 corrective measure construction activities implemented at the facility (including any previously-implemented ISMs), 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.

XII. Activity and Use Limitations (AULs)

Activity and Use Limitations (AULs) are legal, physical restrictions, limitation on the use of, or obligations with respect to the 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 SWMUs or AOCs 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, prior to 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 development of an Excavated Soil Management Plan for review and approval by the Department as described in Corrective Action Condition XVII. of this Permit. Any such plan would be designed to expedite future subsurface utility and construction activities in known and potentially contaminated areas at the facility.

B. Transfer of Interest in Permitted Property

1. The Permittee shall notify the Department at least 90 calendar days before the transfer of any interest in any portion of the permitted property. The Permittee shall comply with all requirements of 40 CFR 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 property from the jurisdiction of this Permit shall require a submission of a demonstration that all contamination on that portion of the property proposed for removal is below applicable regulatory standards and/or that any residual contamination will be addressed in the future via implementation of enforceable institutional and/or engineering controls contained in an environmental covenant for that portion of the property.
3. Any parcel of the permitted 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 according to

40 CFR 270.42, as incorporated by reference in 10 CSR 25-7.270(1) and 10 CSR 25-8.124, to remove that portion of the property from the jurisdiction of this Permit.

C. Change in Use of Property

The Permittee shall notify the Department at least 30 calendar days before any proposed change in the use of the facility property, of any applications for building permits for work on the facility property, or proposals for work that could potentially be affected by contamination from a SWMU or AOC, in accordance with 40 CFR 270.30(h).

D. Deed Notice/Restriction

The City of St. Louis approved Ordinance 66777 on August 1, 2005. This Ordinance prohibits the use or attempted use of groundwater as a potable water supply and the drilling or installation of wells to be used for a potable water supply within the corporate limits of the City of St. Louis. This includes the facility property subject to the jurisdiction of this Permit.

E. Missouri Environmental Covenants Act

If, and when, the Department determines that implementation of an Environmental Covenant is required at the facility, the Environmental Covenant shall be developed/executed in conformance with the Missouri Environmental Covenants Act, Section 260.1000 through 260.1039, RSMo, and Departmental guidance provided to the Permittee. The following requirements shall apply to any Environmental Covenant required by this Permit.

1. Within 15 calendar days after execution (signature by all parties) of an approved Environmental Covenant for the 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, according to state law, the approved Environmental Covenant in the chain-of-title for all affected properties, or on some other instrument which is normally examined during title search, that will in perpetuity notify any potential purchaser of the environmental conditions at the property(ies).

2. Within 30 calendar days after recording an approved Environmental Covenant, the Permittee shall provide a notarized statement to the Department, certifying that an approved Environmental Covenant has been recorded, including a copy of the Environmental Covenant.
3. The Environmental Covenant shall run with the land 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.
4. In the event that future remediation on the 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 placement of an additional document in the property chain-of-title indicating that the Environmental Covenant, or portions thereof, have been rescinded and/or modified.

F. Environmental Covenant Provision Requirements Before Permit Termination

1. If the Permittee desires to rescind or modify all or part of a previously-executed Environmental Covenant, the Permittee shall submit a proposal to the Department at least 180 calendar days before the effective date of any proposed permit 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 and/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 ensuring that residual contaminant levels are protective of human health and the environment if specific AULs are rescinded and/or modified.

2. If the Department determines, based on the demonstration required in Corrective Action Condition XII.F.1. of this Permit, 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.
3. If the Department determines that the demonstration required in Corrective Action Condition XII.F.1. of this Permit is sufficient to support elimination and/or modification of established AULs, the Department shall direct the Permittee to prepare and submit 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 as described in Corrective Action Condition XVII. of this Permit.
5. The Permittee shall record the approved revised Environmental Covenant and submit related documentation to the Department as required by Corrective Action Condition XII.E.1. and 2. of this Permit.

### XIII. Semi-Annual Progress Reports

- A. The Permittee shall prepare and submit Semi-Annual Progress Reports to the Department and EPA, summarizing all permitted corrective action activities undertaken during the previous calendar half-year (i.e., January through June and July through December). Semi-Annual Progress Reports are due by March 1 and September 1 of each calendar year for the previous calendar half-year. The first Semi-Annual Progress Report shall be due within 60 calendar days after the end of the six-month period in which this Permit becomes effective. The Semi-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 Semi-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 noncompliance with the corrective action requirements of this Permit not otherwise required to be reported elsewhere in this Permit.
- C. Any detailed technical information that is part of any additional corrective action activities undertaken pursuant to this Permit and required to be submitted as part of the DCCR, ISMs, RFI and/or CMS work plans and reports, need not be reproduced as part of the Permittee's Semi-Annual Progress Reports.

XIV. 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 1.
- 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 2.

XV. Supplemental 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.

XVI. Closure and Corrective Action Cost Estimates and Financial Assurance

The Permittee shall comply with the requirements of the Missouri Hazardous Waste Management Law (and all standards, rules, and regulations adopted under this act), Section 260.350, et seq., RSMo, 40 CFR Part 264 Subpart H, 40 CFR 264.101, 270.30, 270.40, 270.42, and 270.51, as incorporated and modified in 10 CSR 25-7 and 10 CSR 25-8.

A. Cost Estimates

1. Closure Cost Estimate

The Permittee need not update the current cost estimate for closure of the previously-permitted Hazardous Waste Storage Area during the pendency of the Department's review of the previously submitted Closure Report and Certification of Closure as described in Special Permit Condition I. of this Permit.

2. Corrective Action Cost Estimate

If a Corrective Measures Study (CMS) or equivalent becomes necessary as part of the corrective action activities required by this Permit, the Permittee shall submit, as part of the CMS Report, a detailed, written cost estimate, in current dollars, of the cost of hiring a third party to implement each remedial alternative or combination of alternatives identified in the CMS required by this Permit.

- a. The corrective action cost estimate shall account for the total cost of all work activities that are expected to continue until such time as final clean-up objectives are met and confirmed. This includes any long-term costs such as final remedy operation, maintenance, monitoring; utility costs including electricity, water, and sewer; decommissioning of remediation equipment and proper plugging/abandonment of monitoring wells, payment of real estate taxes on the property and Departmental oversight cost reimbursement.
- b. The cost estimate contained in the CMS Report shall be certified by a registered professional engineer licensed in Missouri and developed using appropriate cost estimating software.
- c. The corrective action cost estimate shall be based on a "rolling" 30 years' duration unless the CMS Report includes a detailed evaluation of corrective measures alternatives that supports a shorter period of time based the projected length of time necessary to achieve applicable remediation objectives/standards.

The Permittee may, at any time during final remedy implementation, submit a demonstration for Department review and approval, to adjust the corrective action cost estimate in recognition of the estimated time remaining to achieve applicable remediation objectives/standards.

- d. A contingency cost allowance of 10 percent of the total cost of all corrective action activities shall be included in the cost estimate.
- e. 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.
- 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

The Department shall review the cost estimate contained in the CMS Report and notify the Permittee, in writing, as part of the CMS review, of the Department's approval, rejection, or modification of the cost estimate according to the review and approval procedures described in Corrective Action Condition XVII. of this Permit. If the Department does not approve the cost estimate, the Department shall identify the estimate's deficiencies and specify a due date for submittal of a revised CMS Report incorporating a revised cost estimate.

3. Revisions to the Corrective Action Cost Estimate

a. Annual Adjustment for Inflation

The Permittee shall annually adjust any corrective action cost estimate required by this Permit for inflation until all corrective action activities required by this Permit are complete. The inflation adjustment shall be determined by using the procedures described in 40 CFR 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 establishment 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 of the end of the provider's fiscal year.

b. Additional Corrective Action Activities

The Permittee shall increase the corrective action cost estimate if:

- (1) The Permittee or the Department determines that any additional corrective action activities are required; or
- (2) Any other conditions increase the estimated cost of the corrective action activities to be performed under this Permit.

If the Department determines that a new cost estimate is required, the Department shall notify the Permittee of this requirement.

The Permittee shall submit each revised corrective action cost estimate for review and approval by the Department within 60 calendar days of Department notification that a new cost estimate is required. The Department shall review each revised cost estimate and notify the Permittee, in writing, of the Department's approval, rejection, or modification of the cost estimate according to Corrective Action Condition XVII. of this Permit. If the Department does not approve the revised cost estimate, the Department shall notify the Permittee, in writing, of the estimate's deficiencies and specify a due date for submittal of a new revised cost estimate.

B. Financial Assurance

The Permittee shall maintain its current financial assurance for closure of the previously-permitted Hazardous Waste Storage Area during the pendency of the Department's review of the previously submitted Closure Report and Certification

of Closure as described in Special Permit Condition I. of this Permit. Upon the Department's acceptance of the Closure Certification for this unit, the Department will provide written notification to the Permittee regarding the termination of closure financial assurance.

In order to provide for the full and final completion of any 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 Department-approved corrective action cost estimate. The Permittee may use one or more of the financial assurance forms generally described in Corrective Action Condition XVI.B.11. of this Permit. All financial assurance instruments provided pursuant to this Permit shall be satisfactory in form and substance as determined by the Department. The Department reserves the right to limit the choices of the Permittee to one or more of the instruments described in Corrective Action Condition XVI.B.11. of this Permit, on a case-by-case basis, in order to ensure the full and final completion of the corrective action activities required by this Permit.

1. Timeframes for Financial Assurance Instruments (other than Financial Test or Corporate Guarantee)
  - a. Within 30 calendar days after the Department's approval of any corrective action final remedy pursuant to Corrective Action Condition IX. of this Permit or future revision of the Permittee's corrective action cost estimate(s) pursuant to this Permit, the Permittee shall submit draft financial assurance instruments and related documents to the Department for review and approval. This applies to all financial assurance instruments except the financial test or corporate guarantee. See Corrective Action Condition XVI.B.2. of this Permit for timeframes for financial tests and corporate guarantees.
  - b. Within ten calendar days after Department approval of 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 instruments or other documents shall be in a form identical to the financial assurance documents reviewed and approved by the Department.

- c. Within 30 calendar days after receiving Department approval of the draft financial assurance instrument(s), the Permittee shall ensure that the issuing institution submits all original executed and/or otherwise finalized instruments or other documents to the Department. Facsimiles or photocopies are not acceptable.

2. Timeframes for Financial Tests and Corporate Guarantees

- a. Within 30 calendar days after the Department's approval of the Permittee's corrective action cost estimate(s) pursuant to this Permit, the Permittee shall submit to the Department all documentation necessary to demonstrate that the Permittee satisfies the financial test criteria pursuant to Corrective Action Condition XVI.B.11.e. of this Permit.
- b. The Permittee's financial assurance shall be effective immediately upon the Department's approval of the Permittee's corrective action cost estimate or the Permittee's demonstration that the Permittee satisfies the financial test criteria under Corrective Action Condition XVI.B.11.e. of this Permit, whichever date is later.
- c. The Permittee agrees that if the Permittee provides financial assurance by means of a corporate guarantee or financial test, the Department may request additional information (including financial statements and accountant's reports) from the Permittee or corporate guarantor at any time. The Permittee shall promptly provide the requested information to the Department.

3. Certified Mail

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

4. Multiple Instruments

The Permittee may combine more than one mechanism to demonstrate financial assurance for the corrective action activities required by this Permit. However, mechanisms guaranteeing performance rather than payment may not be combined with other instruments.

5. Inadequate Financial Assurance Instrument

- a. If at any time the Department determines that a financial assurance instrument 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 increase in the estimated cost of the corrective action activities required by this Permit or for any other reason.
  - (1) Within 30 calendar days of receipt of such notice, the Permittee shall submit draft financial assurance instruments and related documents to the Department for review and approval. The draft financial assurance instruments and related documents shall address the inadequacies outlined in the Department's notice.
  - (2) Within ten calendar days after Department approval of 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 instruments or other documents shall be in a form identical to the financial assurance documents reviewed and approved by the Department.
  - (3) Within 30 calendar days after receiving Department approval of the draft financial assurance instrument(s), the Permittee shall ensure that the issuing institution submits all original executed and/or otherwise finalized instruments or other documents to the Department. Facsimiles or photocopies are not acceptable.
- b. Within ten calendar days, the Permittee shall notify the Department, in writing, if at any time the Permittee becomes aware of information indicating that any financial assurance instrument provided pursuant to this Permit is inadequate or no longer satisfies the requirements described or incorporated by reference herein. This applies whether due to an increase in the estimated cost of the corrective action activities required by this Permit or for any other

reason. The Permittee shall follow the procedures in Corrective Action Condition XVI.B.5.a. of this Permit to replace the financial assurance instrument.

6. Obligation to Complete Corrective Action Activities

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

7. Automatic Renewal

All financial assurance instruments shall automatically renew at the time of their expiration unless the financial assurance provider notifies both the Permittee and the Department by certified mail of a decision to cancel, terminate, or not renew a financial assurance instrument. The Permittee and the 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 of receipt of the notice by certified mail by both the Permittee and the Department.

Within 90 calendar days following receipt of such notice by both the Permittee and the Department, the Permittee shall provide alternate financial assurance and obtain written approval for such alternate financial assurance.

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 expiration of the instrument. The notification to the financial assurance provider shall instruct the financial assurance provider to immediately deposit the remaining funds obligated under the financial assurance into the standby trust fund or a newly created trust fund approved by the Department.

8. Modification of Amount and/or Form of Financial Assurance

a. Reduction of Amount of Financial Assurance

If the Permittee believes that the estimated cost to complete the corrective action activities required by this Permit has diminished below the amount covered by the existing financial assurance provided under this Permit, the Permittee may submit a written proposal to the Department to reduce the amount of the financial assurance provided under this Permit. The amount of the financial assurance proposed shall be at least equal to the estimated cost of the remaining corrective action activities required by this Permit. The written proposal shall specify, at a minimum, the cost of the remaining corrective action activities to be performed and the basis upon which such cost was calculated. In seeking approval of a revised financial assurance amount, the Permittee shall follow the procedures described in Corrective Action Condition XVI.B.8.b.(2) of this Permit. The Department shall notify the Permittee of its approval in writing. The Permittee may reduce the amount of the financial assurance after receiving the Department's written approval, but only according to and to the extent permitted by such written approval. No change to the form or terms of any financial assurance provided under this Section, other than a reduction in amount, is authorized except as provided in Corrective Action Condition XV.B.8.b. of this Permit.

b. Change of Form of Financial Assurance

- (1) If the Permittee wishes to change the form or terms of financial assurance, the Permittee may submit a written proposal to the Department to change the form of financial assurance. The submission of such a proposal shall be as provided in Corrective Action Condition XVI.B.8.b.(2) of this Permit. The approval of a proposal submitted under this Corrective Action Condition XVI.B.8. of this Permit shall be made at the Department's sole discretion.
- (2) A written proposal for a revised or alternative form of financial assurance shall specify, at a minimum:

- (a) The cost of the remaining corrective action activities to be performed;
- (b) The basis upon which such cost was calculated; and
- (c) 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. The Department shall notify the Permittee, in writing, of its decision to accept or reject a revised or alternative form of financial assurance submitted pursuant to this paragraph.

Within ten calendar days after receiving written approval of the proposed revised or alternative financial assurance, the Permittee shall execute and/or otherwise finalize all instruments or other documents required in order to make the selected financial assurance legally binding and effective in a form identical to the documents submitted to the Department.

Within 30 calendar days of receiving written approval of the proposed revised or alternative financial assurance, the Permittee shall ensure that the issuing institution submits all original executed and/or otherwise finalized instruments or other documents to the Department. Facsimiles or photocopies are not acceptable.

The Department shall release, cancel, or terminate the prior existing financial assurance instruments only after the Permittee has submitted all executed and/or otherwise finalized new financial assurance instruments or other required documents to the Department.

9. Performance Failure

a. In the event that the Department determines that the Permittee:

- (1) Has ceased implementation of any of the corrective action activities required by this Permit;
- (2) Is significantly or repeatedly deficient or late in its performance of the corrective action activities required by this Permit; or
- (3) Is implementing the corrective action activities required by this Permit in a manner that may cause an endangerment to human health or the environment;

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

b. If the Permittee fails to remedy the relevant Performance Failure to the Department’s satisfaction before the expiration of the ten calendar day notice period specified in Corrective Action Condition XVI.B.9.a. Of this Permit, 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:

- (1) Deposit into the standby trust fund, or a newly created trust fund approved by the Department, the remaining funds obligated under the financial assurance instrument; or
- (2) Arrange for performance of the corrective action activities required by this Permit.

- c. The Department shall give the Permittee written notice if:
  - (1) The Department determines that any of the circumstances described in Corrective Action Condition XVI.B.9.a. (1), (2), or (3) of this Permit have occurred; and
  - (2) The Department is nevertheless unable, after reasonable efforts, to secure the payment of funds or performance of the corrective action activities required by this Permit from the financial assurance provider.
- d. Within ten calendar days of receiving such written notice, the Permittee shall provide cash to fund the standby trust fund, or a newly created trust fund approved by the Department. The funds shall at least equal the cost of the remaining corrective action activities required by this Permit. The deposit shall be made in immediately available funds and without setoff, counterclaim, or condition of any kind.

10. Release of Financial Assurance

The Permittee may submit a written request to the Department to release the Permittee from the requirement to maintain financial assurance after the Department and the Permittee have mutually agreed that all corrective action activities required by this Permit are complete. The Department shall notify both the Permittee and the provider(s) of the financial assurance if and when the Permittee is released from all financial assurance obligations under this Permit. The Permittee shall not release, cancel, or terminate any financial assurance provided pursuant to this Permit except as provided in this paragraph or Corrective Action Condition XVI.B.8.b. of this Permit.

11. Financial Assurance Instruments

The wording of the financial assurance documents shall meet the requirements of 40 CFR 264.143 and 40 CFR 264.151, as incorporated and modified in 10 CSR 25-7 except that deviation in wording of a financial assurance instrument 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.

a. Trust Fund

The trust fund shall be:

- (1) Established for the benefit of the Department;
- (2) 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; and
- (3) Acceptable in all respects to the Department.

The trust agreement shall provide that the trustee shall make payments from the fund as the Department shall direct in writing:

- (4) To reimburse the Permittee for expenditures made by the Permittee for corrective action activities performed according to this Permit; or
- (5) To pay any other person whom the Department determines has performed or will perform the corrective action activities required by this Permit.

The trust agreement shall further state that the trustee shall not refund to the grantor any amounts from the fund until the Department has advised the trustee, in writing, that the corrective action activities performed according to this Permit have been completed to the satisfaction of the Department.

b. Surety Bond

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 the trust fund in Corrective Action Condition XVI.B.11.a. of this Permit; or
- (2) Performance of the corrective action activities required by this Permit. The Surety Company issuing the bond shall, at a minimum, be among those listed as acceptable sureties on Federal Bonds as described in Circular 570 of U.S. Department of the Treasury.

If the Permittee seeks 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 Corrective Action Condition XVI.B.11.a. of this Permit. 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 Corrective Action Condition XV.B.9. of this Permit.

c. Irrevocable Letter of Credit

An irrevocable letter of credit shall be payable at the direction of the Department into a standby trust fund that meets the requirements of Corrective Action Condition XVI.B.11.a. of this Permit. The letter of credit shall be issued by a financial institution:

- (1) That has the authority to issue letters of credit; and
- (2) Whose letter-of-credit operations are regulated and examined by a federal or state agency.

If the Permittee seeks 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 Corrective Action Condition XVI.B.11.a. of this Permit. 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 Corrective Action Condition XVI.B.9. of this Permit.

d. Policy of Insurance

A policy of insurance shall:

- (1) Provide the Department with rights as a beneficiary which are acceptable to the Department; and
- (2) Be issued by an insurance carrier that:
  - (a) Has the authority to issue insurance policies in Missouri; and
  - (b) Whose insurance operations are regulated and examined by a federal or state agency.
- (3) The insurance policy shall be issued for a face amount at least equal to the current approved corrective action cost estimate for the corrective action activities to be performed under this Permit, except where costs not covered by the insurance policy but are covered by another financial assurance instrument, as permitted in Corrective Action Condition XVI.B.4. of this Permit.
- (4) The insurance policy shall state that the insurer shall make payments up to an amount equal to the face amount of the policy as directed by the Department in writing:
  - (a) To reimburse the Permittee for expenditures made by the Permittee for corrective action activities performed according to this Permit; or
  - (b) To pay any other person whom the Department determines has performed or will perform the corrective action activities required by this Permit.
- (5) 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:

- (a) The Permittee is named as a debtor in a voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code; or
- (b) The Department notifies the insurer of the Permittee's failure to perform, under Corrective Action Condition XVI.B.9. of this Permit.

e. Financial Test

A Permittee may provide financial assurance through a demonstration by the Permittee that the Permittee meets the financial test criteria of 40 CFR.264.143(f), provided that all other requirements of 40 CFR 264.143(f), as incorporated and modified in 10 CSR 25-7, are satisfied. See Corrective Action Condition XVI.B.11.g. of this Permit for further requirements.

f. Corporate Guarantee

A direct or indirect parent company of a Permittee may provide a corporate guarantee executed in favor of the Department. Such guarantee shall state that the company providing the guarantee shall perform the corrective action activities required by this Permit or that the company shall establish a trust fund as permitted by Corrective Action Condition XVI.B.11.a. of this Permit. Any company providing such a guarantee shall demonstrate, to the satisfaction of the Department, that it meets the financial test requirements of 40 CFR 264.143(f), as incorporated and modified in 10 CSR 25-7. See Corrective Action Condition XVI.B.11.g. of this Permit for further requirements.

g. Additional Requirements for Financial Test/Corporate Guarantee

If at any time during the term of this Permit the Permittee demonstrates financial assurance for the corrective action activities required by this Permit by providing a financial test or corporate guarantee pursuant to Corrective Action Conditions XVI.B.11.e. or XVI.B.11.f. of this Permit, the Permittee shall also comply with the other relevant requirements of 40 CFR 264.143(f), 40 CFR 264.151(f), and 40 CFR 264.151(h)(1), as incorporated and

modified in 10 CSR 25-7, relating 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) Notification to the Department by certified mail within 90 calendar days after the close of any of the guarantor's fiscal year in which any such guarantor no longer satisfies the financial test requirements described at 40 CFR Part 264.143(f)(1), as incorporated and modified in 10 CSR 25-7.

If the Permittee provides financial assurance by means of a financial test or corporate guarantee, the Department may request additional information (including financial statements and accountant's reports) from the Permittee or corporate guarantor at any time. The Permittee shall promptly provide the requested information to the Department.

For purposes of the financial test or corporate guarantee described in Corrective Action Conditions XVI.B.11.e. and XVI.B.11.f. of this Permit, references in 40 CFR 264.143(f), as incorporated and modified in 10 CSR 25-7, to "the sum of current closure and post closure costs" and "the current plugging and abandonment cost estimates" and references in 40 CFR 264.101(c), as incorporated and modified in 10 CSR 25-7, to "Assurances of financial responsibility for such corrective action shall be provided" shall mean the sum of all environmental remediation obligations guaranteed by such company or for which such company is otherwise financially obligated, in addition to the cost of the corrective action activities required by this Permit. This includes obligations under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), RCRA,

Underground Injection Control Program, Toxic Substances Control Act, and any other state or tribal environmental obligation.

XVII. Review and Approval Procedures

- A. Financial assurance cost estimates and draft financial assurance mechanisms for corrective action shall be reviewed and approved by the Department according to this section and Corrective Action Condition XVI. of this Permit.
- B. Following submission of any plan or report pertaining to corrective action activities (excluding Semi-Annual Progress Reports, unless proposed actions to address corrective action program inadequacies are contained therein) and any Certification of Completion of Construction of Final Remedy, 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 or report's deficiencies and specify a due date for submittal of a revised plan or report.
- C. If the Department does not approve the revised plan or report, the Department may modify the plan or report and notify the Permittee of the modifications. The plan or report, as modified by the Department, shall be the approved plan or report.
- D. If the Permittee disagrees with any Department-initiated plan or report modifications, and a mutually acceptable resolution of such modifications cannot be informally reached, the Permittee may file any appeal of the Department-initiated modifications according to 10 CSR 25-2.020 and Sections 260.395.11 and 621.250, RSMo.

XVIII. Document and Activity Extension Requests

Should the Permittee require 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. The Department shall receive the extension request at least 15 calendar days before the scheduled due date of the document or activity. The Permittee's extension request shall specify the amount of additional time needed and shall be accompanied by the Permittee's justification for the extension. The Department shall review and approve the extension request according to the procedures described in Corrective Action Condition XVII. of this Permit.

**FACILITY SUBMISSION SUMMARY**

**Table 1 - Planned Submittal Requirements  
 Pursuant to this Permit and Schedule of Compliance**

<b>Submittal Requirements</b>	<b>Due Date*</b>	<b>Permit Condition</b>
Two paper copies and one searchable electronic copy of the consolidated permit application	Within 60 calendar days after effective date of this Permit.	Schedule of Compliance Item I.A.
Certification that Permittee has read and understands all permit conditions in this Permit	Within 60 calendar days after effective date of this Permit.	Schedule of Compliance Item I.B.
Check or money order for any outstanding engineering review costs	Within 60 calendar days after effective date of this Permit.	Schedule of Compliance Item I.C.
Check or money order for each year this Permit is to be in effect beyond the first year	Within 60 calendar days after effective date of this Permit.	Schedule of Compliance Item I.D.
Coordination meeting with the Department to discuss corrective action status and path forward	Within 60 calendar days after receipt of Department's response on the Consolidated Draft RFI Report.	Schedule of Compliance Item II.A.
Submit Description of Current Conditions Report (DCCR).	Within 90 calendar days after corrective action coordination meeting with the Department.	Schedule of Compliance Item II.B.
Closure Financial Assurance	Ongoing.	Schedule of Compliance Item III.
Semi-Annual Corrective Action Progress Reports	By March 1 and September 1 of each calendar year.	Corrective Action Condition XIII.
Quarterly Reports with information required by 10 CSR 25-5.262(2)(D) and 10 CSR 25-7.264(2)(E)	Within 45 calendar days after end of each quarter.	Standard Permit Condition I.
Biennial Report with information required by 40 CFR 264.75	March 1 of each even numbered calendar year.	General Permit Condition I.
Permit Renewal Application	Within 180 calendar days of 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 2 - Contingent Corrective Action Submittal Requirements  
Pursuant to the Corrective Action Conditions of this Permit**

<b>Contingent Submittal Requirements</b>	<b>Due Date*</b>	<b>Corrective Action Condition</b>
Written notification of newly-identified SWMU(s) and AOC(s)	No later than 15 calendar days after discovery.	II.A.
SWMU/AOC Assessment 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.B.1.
Notification of interim/stabilization measures not effective	Within ten calendar days after determination.	IV.B.3.
RCRA Facility Investigation (RFI) Work Plan	Within 60 calendar days of notice by the Department that an RFI Work Plan is required.	V.B.
RCRA Facility Investigation (RFI) Report	According to the schedule in the approved RFI Work Plan.	VI.C.
Corrective Measures Study (CMS) Work Plan	Within 90 calendar days of notice by the Department that a CMS Work Plan is required.	VII.C.

<b>Contingent Submittal Requirements</b>	<b>Due Date*</b>	<b>Corrective Action Condition</b>
Corrective Measures Study (CMS) Report	According to the schedule in the approved CMS Work Plan.	VIII.A.
Corrective Measures Implementation (CMI) Work Plan	According to the schedule in the permit modification to implement a final remedy.	X.
Activity and Use Limitations	At least 30 calendar days before activities requiring AULs.	XII.
Corrective action cost estimate	As part of any CMS required by this Permit.	XVI.A.2.
Updated corrective action cost estimate	Annually, within 60 calendar days before anniversary date of establishment of the financial assurance instrument.	XVI.A.3.
Draft financial assurance instrument(s) except for financial test or corporate guarantee	Within 30 calendar days after approval of any corrective action final remedy.	XVI.B.1.a.
Original executed financial assurance instruments	Within 30 calendar days after approval of draft financial assurance instrument(s).	XVI.B.1.c.
Financial test or corporate guarantee as financial assurance	Within 30 calendar days after approval of any corrective action final remedy.	XVI.B.2.

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

**FIGURES**

**Figure 1 - Location of the Facility in the St. Louis City Area**

**Figure not available due to size.  
Please see hard copy.**

**Figure 2 – Property Boundaries of the Facility**

**Figure not available due to size.  
Please see hard copy.**

**Figure 3 – Location of SWMUs and AOCs at the Facility**

**Figure not available due to size.  
Please see hard copy.**