

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES



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

PERMIT NUMBER: MOD007128978

PERMITTEE

Facility Owner and Operator: Greenfield Environmental Multistate Trust LLC
Trustee of the Multistate Environmental Response Trust
11 Flagg Street Unit No. 1
Cambridge, MA 02138

FACILITY LOCATION

2300 Oakland Avenue
Kansas City, Missouri 64126
Jackson County
North Latitude – 39°05'00”
West Longitude – 94°29'00”

FACILITY DESCRIPTION

The site is a former wood treating facility, located in western Missouri within the eastern city limits of Kansas City. The site legal description is NE 1/4, SE 1/4, Section 12, T49N, R33W, Jackson County, Missouri. The approximately 111-acre property is bordered on the west by the Blue River, on the east by railroad property owned/operated by multiple entities, and on the south by an abandoned meander loop (oxbow) of the Blue River. The facility location is shown in Figure 1.

The wood treating facility was originally constructed in 1907 by American Creosote Corporation to manufacture railroad ties using creosote as a wood preservative. Kerr-McGee Corporation purchased the facility in 1964, and it became part of Moss American Corporation, a wholly-owned subsidiary of Kerr-McGee Corporation. In 1974, Moss American became the Forest Products Division of Kerr-McGee Chemical Corporation, another wholly-owned subsidiary of Kerr-McGee Corporation. Kerr-McGee continued pressure-type creosote wood treating operations until early 1983. The plant's primary product was creosote treated railroad crossties.

Pressure treating railroad ties was accomplished through placing raw wood stock into a large treatment cylinder (retort). Once the cylinder was closed, the wood was steamed at high pressure to remove moisture and other wood impurities. A vacuum was then pulled on the cylinder to withdraw the materials steamed from the wood. The cylinder was then filled with a creosote mixture, heated, and pressurized to drive the creosote mixture into the wood matrix. Upon completing the pressurization cycle, the cylinder pressure was relieved and excess creosote mixture was pumped back to a holding tank for later reuse.

Contaminated process wastewater was generated primarily during the steam-conditioning phase through entraining residual creosote from the previous wood treating cylinder charge. Prior to the federal Resource Conservation and Recovery Act (RCRA) of 1976, contaminated process wastewater was treated in an oil/water separator and discharged to non-engineered surface impoundments (Ponds A and B) on the facility property. Although the majority of preservative compounds were recycled, some carryover of these compounds to the surface impoundments did occur.

An engineered surface impoundment was constructed and put into operation around 1975, as a replacement for the then closed non-engineered surface impoundments. The engineered surface impoundment covered an area where a shallow diked depression had formerly been located. This oblong depression had measured about 75 feet wide at its mid-point by 200 feet long, with a depth ranging from 6 inches to 1 foot. It served as a sedimentation basin for process water prior to off-site discharge. Eight exploratory test pits were dug around the periphery of the proposed engineered surface impoundment prior to construction. One or more of these pits, excavated in 1973, indicated the presence of creosote in the subsurface to a depth of at least 7 feet.

The engineered surface impoundment dimensions were approximately 365 feet long (north-south) by 210 feet wide (east-west), with a maximum capacity of approximately 3.6 million gallons when providing for a 2-foot freeboard. The surface impoundment bottom was excavated into the shallow silty clay alluvium of the Blue River. Care was taken to keep the pond bottom within 5 feet of the existing ground surface, to minimize the possibility of groundwater

entry during construction, and to mitigate any adverse side effects from seasonally high groundwater levels. This surface impoundment was constructed using clay obtained on-site as a base material. Eighteen inches of compacted clay material was installed in three 6-inch lifts. Laboratory testing indicated this material should have a permeability no greater than 1×10^{-7} cm/sec under a head of 6 feet of water. Dikes surrounding the surface impoundment were constructed on a 2:1 slope by compacting the clay to at least 95 percent of maximum density (ASTM D-698-70) at -1.0 to +4.0 percent of the optimum moisture content. Once the federal RCRA regulations became effective in 1980, the engineered surface impoundment was operated as a RCRA interim status hazardous waste management land based unit. In April 1983, wastewater discharge to this unit ceased and closure of the unit began.

Both the engineered and non-engineered surface impoundments were exposed to repeated contamination resulting from wastewater being continually discharged to and withdrawn from the surface impoundments for use as cooling and condenser water. The ultimate result of this recycling was the generation of a K001 listed hazardous waste (bottom sediment sludge from wastewater treatment at wood preserving operations), the majority of which built up on the floor of the engineered surface impoundment. Prior to closure, the engineered surface impoundment was estimated to contain about 10,200 cubic feet of K001 hazardous waste sludge, and an underlying volume of about 41,500 cubic feet of contaminated soil.

Another major historical source of creosote contamination at the facility is a result of drying practices related to freshly-treated wood. Following the release of pressure in the retort cylinders, treated wood was removed from the immediate treating area to dry in storage areas located on the facility property. Excess preservatives dripped from freshly treated wood ("kick-back") during the subsequent storage and drying period. The kick-back was not collected, but rather dripped on the ground beneath the drying areas, resulting in soil staining and contamination. Creosote was also released to soil and groundwater in the treating area from ruptured or damaged piping and leaking vessel valves/seals on treating equipment.

In September 1981, as part of the responsibilities under the RCRA interim status regulations, Kerr-McGee installed a groundwater "detection" monitoring system, designed to detect "leakage" from the engineered surface impoundment (interim status hazardous waste land based unit). Due to confirmed "statistically significant" increases in the facility's detection monitoring parameters, an interim status groundwater "assessment" monitoring program was initiated in May 1986, to determine the extent of releases from the engineered surface impoundment.

The Department approved the closure plan for the engineered surface impoundment on July 16, 1987. The closure was completed according to the approved closure plan, with waste left in place. As part of closure, a Deed Notice, filed with the Jackson County Recorder of Deeds on

December 6, 1988, was placed in the property chain-of-title, in order to inform potential future buyers of the property that the former interim status engineered surface impoundment area was used to manage hazardous waste. The Department accepted the final closure report on March 15, 1989. Because hazardous waste remained in place after closing the former engineered surface impoundment (i.e., groundwater contamination), this area is required to be managed under post-closure care. As part of post-closure care, the Permittee is required to operate and maintain a groundwater monitoring and remediation system, as well as inspect and maintain the cover over the closed surface impoundment.

Unit-specific and facility-wide “corrective action” to address groundwater and soil contamination began under the Hazardous and Solid Waste Amendments Part II Permit and Missouri Hazardous Waste Management Facility Part I Permit, issued to the facility in early 1992 and 1994, respectively, pursuant to the applicable state and federal regulations. Several interim measures were implemented under these permits, such as installing and operating a groundwater and free-product pump-and-treat system, and removing and capping contaminated soils. These interim measures were conducted in coordination with the City of Kansas City’s historical replacement of the 23rd Street overpass, which bisects the facility, and the U.S. Army Corps of Engineers’ historical realignment of the Blue River adjacent to the facility. Implementing and maintaining the referenced interim measures is ongoing, pending implementing an approved final remedy at the facility.

In the early 2000s, Kerr-McGee began an internal corporate restructuring through which its oil and gas business was separated from its chemical business and legacy (environmental and tort) liabilities. Unable to sell the liability-laden chemical business following the restructuring, Kerr-McGee decided to separate its chemical business from its oil and gas business through a multi-step transaction, involving both an initial public offering of Tronox Incorporated (Tronox) stock in 2005 and Kerr-McGee’s spin-off of Tronox in 2006. As part of the spin-off, Kerr-McGee transferred the Kansas City facility to Tronox.

In January 2009, burdened by legacy (especially environmental) liabilities, Tronox filed for Chapter 11 bankruptcy protection. Under a 2011 global bankruptcy settlement agreement, Tronox resolved its environmental liabilities with the United States, multiple state and local governments, and the Navajo Nation relating to numerous contaminated sites around the country, including the Kansas City facility. The settlement provided \$270 million of upfront cash funding and 88 percent of Tronox’s interest in a fraudulent conveyance case (described below) to the governments and bankruptcy-created trusts for cleanup costs incurred, or to be incurred, at these sites. The Multistate Environmental Response Trust (Multistate Trust) was one such trust created by the settlement to address a vast majority of Tronox’s owned, but non-operating facilities. As part of the Tronox bankruptcy settlement, Tronox provided facility-specific funding and

transferred all rights, title, and interest, with respect to the Kansas City facility, to the Multistate Trust.

On February 14, 2011, Greenfield Environmental Multistate Trust, LLC, not individually but solely in its representative capacity, was appointed as Trustee of the Multistate Trust by the bankruptcy court, to own, carry out administrative and property management functions, manage and/or fund implementation of future environmental activities approved by its governmental beneficiaries, and (to the extent possible) facilitate reuse of hundreds of former Tronox/Kerr-McGee sites in 31 states, including the Kansas City facility. Multistate Trust reports directly to its two beneficiaries - the United States and the State of Missouri, represented by EPA and the Department, respectively. For the first several years after its creation, the Multistate Trust continued operating the groundwater recovery system and performing the required post-closure care and corrective action activities at the facility with limited funds initially provided by the Tronox bankruptcy settlement.

During this time, a litigation trust, created by the Tronox bankruptcy settlement and the United States, pursued a fraudulent conveyance case, initiated by Tronox during its bankruptcy proceedings. The fraudulent conveyance case was filed against Kerr-McGee and related companies that were subsidiaries of Anadarko Petroleum Corporation (Anadarko) to recover, among other things, response costs for environmental cleanups at numerous sites around the country. The plaintiffs alleged that the defendants fraudulently transferred valuable assets out of the entity that became Tronox, imposed the legacy liabilities on Tronox, and left Tronox with insufficient funds to pay the liabilities that Tronox owed to governmental environmental and tort claimants. In December 2013, the bankruptcy court ruled in the plaintiffs' favor in the fraudulent conveyance lawsuit. In 2014, the parties reached an agreement to resolve the lawsuit, which was approved by a federal district court in late 2014. After the deadline for any appeals from the district court's decision passed in early 2015, without any appeal being filed, the fraudulent conveyance settlement agreement went into effect. Pursuant to that settlement, Anadarko paid \$5.15 billion (plus interest) to the litigation trust, so the settlement proceeds could be distributed to the litigation trust's environmental and tort beneficiaries. For example, additional funds became available for the Multistate Trust to maintain and enhance the previously implemented interim measures, complete additional corrective action investigation work, and position the facility for redevelopment.

The Multistate Trust is currently performing a Remedial Action Optimization (RAO) Investigation to update the environmental conditions, including the extent of residual contamination, and determine what, if any, additional measures are needed beyond the previously implemented interim measures as part of a proposed final remedy to protect human health and the environment. There are currently 50 monitoring wells, 2 piezometers, and

20 groundwater/creosote recovery wells comprising the groundwater monitoring system at the facility. The Multistate Trust's recent work showed shallow groundwater continues to be contaminated with facility-related chemicals at levels that could pose a threat to human health and the environment.

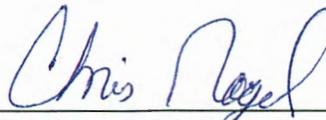
PERMITTED ACTIVITY

This Permit requires post-closure care for one closed hazardous waste management unit: the former engineered surface impoundment. This Permit addresses continuing implementation of the corrective action requirements, including facility-wide groundwater monitoring/remediation and off-property monitoring to address releases to the environment at or from the facility. This Permit also contains requirements that address further investigation of on- and off-property soil and groundwater contamination, in order to develop a comprehensive final remedy to address releases to the environment at or from the facility. This Permit also contains contingent corrective action activities to address any newly identified releases to the environment from previously or newly identified Solid Waste Management Units and Areas of Concern, as necessary and appropriate.

EFFECTIVE DATES OF PERMIT: February 4, 2020 to February 3, 2030

February 4, 2020

Date



Chris Nagel, Director

WASTE MANAGEMENT PROGRAM

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INTRODUCTION

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

Pursuant to Section 260.375.13, RSMo., and the Solid Waste Disposal Act, the Department hereby approves the permit application and issues this Missouri Hazardous Waste Management Facility Part I Permit (hereafter referred to as the Permit), Permit Number MOD007128978, to the Multistate Trust, as the facility owner and operator, (hereafter referred to as the Permittee) for post-closure care and corrective action activities, as described in the permit application and this Permit. This Permit also includes "contingent" corrective action requirements that may be triggered, if necessary, for Solid Waste Management Units and Areas of Concern, pursuant to the state-equivalent requirements of the federal Hazardous and Solid Waste Amendments of 1984 (HSWA) to RCRA, as administered and enforced by the Department. The Department is issuing this Permit under state authority.

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

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

Any appeals of this Permit, or specific permit conditions based on state authority, shall be filed according to 10 CSR 25-8.124(2). Any parties adversely affected or aggrieved by this decision

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

The provisions of this Permit are severable. If any provision of this Permit, or the application of any provision of this Permit to any circumstance, is held invalid, the application of such provision to other circumstances and the remainder of this Permit shall not be affected thereby.

This Permit is for hazardous waste post-closure and corrective action activities and is issued only to the Permittee named above. This Permit is issued for a period of 10 years and expires at midnight on February 3, 2030. This Permit is subject to review and modification by the Department, according to Section 260.395.12, RSMo., and 40 C.F.R. § 270.41. According to 40 C.F.R. § 270.51, if the Permittee submits a timely and complete application for a new permit and the Department, through no fault of the Permittee, is unable to issue a new permit on or before the expiration of this Permit, the conditions of this Permit will continue in force until the effective date or denial of a new permit.

All permit application information shall be 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 are available for public review at the Department's office in Jefferson City, Missouri.

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

- The Missouri Hazardous Management Facility Part I Permit Application for the Former Tronox/Kerr-McGee Facility at Kansas City, Missouri dated June 2019.

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

Section 260.395.12, RSMo., and 40 C.F.R. § 270.32(b)(2), require each permit issued under that section to contain terms and conditions as the Department determines necessary to protect human health and the environment. Ongoing post-closure care and corrective action activities at this hazardous waste facility and any future corrective action activities that are required shall be according to the provisions of this Permit; the Missouri Hazardous Waste Management Law and the rules and regulations promulgated thereunder as effective on the date of this Permit; all final engineering plans, petitions, specifications, and procedures submitted to the Department during the permit application review process, which are included in the approved permit application; and any other conditions, changes, or additions to the engineering plans, specifications, and procedures as specified in this Permit. The consolidated permit application, which includes the approved permit application, is therefore incorporated by this reference into the conditions of this Permit. All conditions specified in this Permit supersede any conflicting information in the consolidated permit application. Where conflicts arise between documents, the latest revision shall be effective.

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

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

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

DEFINITIONS

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

“Alternate Concentration Limit (ACL)” means a Department-approved maximum concentration limit or risk-based threshold for a hazardous constituent, facility-related contaminant, or combination thereof, in the groundwater that will not pose an unacceptable current and/or potential future risk to human health or the environment, as long as that concentration limit or risk-based threshold is not exceeded at the point of compliance.

“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 an unacceptable current and/or potential future risk to human health or the environment. Investigation and/or remediation of AOCs may be required pursuant to Section 260.395, RSMo. and 40 C.F.R. § 270.32(b)(2).

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

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

“Facility” means:

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

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

“Hazardous Waste” means any waste, or combination of wastes, as defined by or listed in 10 CSR 25-4, incorporating 40 C.F.R. Part 261, may cause or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness or that may pose a threat to the health of humans or other living organisms because of its quantity, concentration, physical, chemical, or infectious characteristics.

“Interim/Stabilization Measures (ISMs)” means near-term action(s) to control or abate actual and potential threats to human health or the environment related to releases at the facility, or to prevent or minimize the further spread of contamination while long-term remedies are pursued.

“Point of Compliance” is where the Permittee monitors groundwater quality to demonstrate progress towards and achievement of the GPS maximum concentration limits (or approved ACLs) specified in Table 1.

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

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

SCHEDULE OF COMPLIANCE

- I. Within 60 calendar days after the effective date of this Permit, the Permittee shall:
 - A. Submit to the Department two paper copies and one searchable electronic copy of the consolidated Permit application, incorporating any changes resulting from comments on the draft Permit, as defined in the Introduction of this Permit.
 - B. Submit to the Department a certification signed by the Permittee that the Permittee has read this Permit in its entirety and understands all Permit conditions contained herein.
 - C. Submit to the Department, to the attention of the Waste Management Program, a check or money order payable to "State of Missouri" for any outstanding engineering review costs.
 - D. Submit to the Department, to the attention of the Waste Management Program, a check or money order payable to "State of Missouri" for \$1,000 for each year this Permit is to be in effect beyond the first year. This Permit is effective for 10 years. Since the Permittee submitted a \$1,000 deposit with the permit application and paid a \$1,000 permit continuation fee for the current year, the remaining balance to be submitted by the Permittee is calculated as:

$$\text{Remaining balance} = \$9,000.00 - ((\$1,000.00 \div 365 \text{ days}) \times N_d)$$

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 based on the foregoing formula is included with this Permit.

- II. Within 90 calendar days after the effective date of this Permit, the Permittee shall submit to the Department for review and approval, a revised Sampling and Analysis Plan to incorporate all groundwater monitoring conditions outlined in this Permit and any new conditions at the facility, as required in Special Permit Condition II.D.7.
- III. The Permittee shall comply with the schedule for planned activities specified in this Permit, as summarized in Table 3.

- IV. The Permittee shall comply, as necessary, with the schedule for contingent activities specified in this Permit, as summarized in Table 4.

SUBMITTAL OF REQUIRED INFORMATION

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

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

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

STANDARD PERMIT CONDITIONS

The Permittee shall comply with the requirements applicable to this facility as 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.; 10 CSR 25-8; 40 C.F.R. Part 264 Subpart H, and 40 C.F.R. §§ 264.101; 270.10, 270.30, 270.40, 270.42, and 270.51.

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

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

GENERAL PERMIT CONDITIONS

The Permittee shall comply with the applicable requirements described in 40 C.F.R. Part 264 Subparts B, C, D, E, F, G, H, AA, BB, and CC; 40 C.F.R. Part 268; 40 C.F.R. Part 270, and the following.

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

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

Within 15 calendar days 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 C.F.R. § 264.56(i), and be provided to the addressee listed in "Submittal of Required Information" provision of this Permit.

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

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

III. Review and Approval Procedures

A. Following submission of any plan or report required by this Permit (excluding the Annual Progress Reports, Annual Groundwater Corrective Action Reports, unless proposed actions to address corrective action program inadequacies are contained therein; and Corrective Measures Implementation Report) 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's or report's deficiencies and specify a due date for submitting a revised plan, report, or associated activity schedule.

B. If the Department does not approve the revised plan, report, or associated activity schedule, the Department may modify the plan, report, or schedule and notify the Permittee, in writing, of the modifications. The plan, report, or schedule, as modified by the Department, shall be the approved plan, report, or schedule.

- C. If the Permittee disagrees with any Department-initiated plan, report, or schedule modifications, and a mutually acceptable resolution of such modifications cannot be informally reached, the Permittee may file an appeal of the Department-initiated modifications according to Sections 260.395.11 and 621.250, RSMo.
- D. Annual post-closure and corrective action cost estimates, budgets, and budget amendments shall be reviewed and approved by the Department, according to the procedures described in Special Permit Condition XVIII.

IV. Document and Activity Extension Requests

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

SPECIAL PERMIT CONDITIONS

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

The Permittee shall comply with all applicable requirements of 40 C.F.R. Part 264 Subpart G, and all provisions of this Permit for the closed surface impoundment (Solid Waste Management Unit (SWMU) #13).

- A. Post-Closure Care and Use of Property [40 C.F.R. § 264.117]

1. According to 40 C.F.R. § 264.117(a)(1), post-closure care begins after accepting the hazardous waste management units closure certification and continues for 30 years after that date, unless modified according to 40 C.F.R. § 264.117(a)(2) or otherwise specified by the Department. The Department accepted the certification of closure for the surface impoundment on March 15, 1989. The original post-closure care period for the surface impoundment was scheduled to end March 15, 2019, but was extended as explained below.
2. At a minimum, post-closure care for the closed surface impoundment shall be extended until such time as the groundwater protection standard maximum concentration limits (MCLs) contained in Table 1, or approved alternate concentration limits, as applicable, are met for a period of three consecutive years under the groundwater monitoring and corrective action conditions described in Special Permit Condition II., or as determined to be necessary by the Department. Post-closure care during this period shall consist of maintenance, monitoring, financial assurance, and reporting according to the approved post-closure care plan and 40 C.F.R. Part 264 Subparts F, G, H, and N.
3. Post-closure use of the property shall be restricted by the Permittee to prevent disturbing the integrity of the final cover on the closed surface impoundment, prevent damaging the monitoring systems, and provide for continued implementation of institutional and engineering controls. The Department may approve a use of the property that disturbs the integrity of the closed surface impoundment final cover, if necessary for the proposed property use and will not increase the potential hazards to human health or the environment, or if it is necessary to reduce a threat to human health or the environment.
4. The Permittee may submit a request to the Department to shorten the post-closure care period. Justification for shortening the post-closure care period shall accompany any such request. The Department may approve the request if it determines a shortened post-closure care period is sufficient to protect human health and the environment. Approval to shorten the post-closure care period shall be according to the applicable permit modification procedures in 40 C.F.R. Part 270, 10 CSR 25-7, and 10 CSR 25-8.124.

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

1. Post-closure care shall be conducted according to the post-closure care plan included in the approved permit application and all conditions of this Permit.
2. The post-closure care plan may be amended at any time during the post-closure care period. Amendments are subject to the applicable permit modification requirements of 40 C.F.R. Part 270 Subpart D and 10 CSR 25-8.124. Written requests for amendments shall be submitted at least 60 calendar days before the proposed change in post-closure requirements, or not later than 60 calendar days after the occurrence of an unexpected event that has affected the post-closure care requirements.

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

3. During the post-closure care period, the Permittee shall make the approved post-closure care plan available for inspection by the Department as required by 40 C.F.R. § 264.118(c).

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

Except as required to facilitate Department-approved corrective actions, including continued operation of the contaminated groundwater and mobile product recovery and treatment system, if the Permittee wishes to remove hazardous wastes, hazardous waste residues, contaminated soils, or contaminated sludge from within the boundaries of the closed surface impoundment, the Permittee shall request a modification of this Permit, according to the applicable requirements in 40 C.F.R. Part 270 Subpart D and 10 CSR 25-8.124. The modification request shall include a demonstration that the proposed action will not increase potential hazards to human health or the environment, or the proposed action is necessary to reduce threats to human

health or the environment, according to 40 C.F.R. § 264.117(c). By removing contaminants, the Permittee may become a hazardous waste generator and shall manage any removed material according to all applicable laws, regulations, and ordinances.

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

No later than 60 calendar days after completing the post-closure care period(s) (including any necessary extensions), the Permittee shall submit to the Department, by registered mail, a certification that the post-closure care period(s) was completed according to the approved Post-Closure Care Plan. Based on the Department's original closure certification acceptance date, this certification would have been due by May 15, 2019, for the closed surface impoundment, except that post-closure care has been extended due to the continued presence of contaminated groundwater above the groundwater protection standard maximum concentration limits (or approved ACLs) contained in Table 1. The post-closure completion certification shall be signed by the Permittee and a professional engineer registered in Missouri, and shall include documentation supporting the certification.

II. Groundwater Monitoring and Corrective Action Program [40 C.F.R. §§ 264.90 - 264.101]

A. Groundwater Protection Standards (GPS), Hazardous Constituents, and Concentration Limits [40 C.F.R. §§ 264.92, 264.93, and 264.94].

The GPS establishes the maximum concentration limits for hazardous and contaminant indicator constituents in the groundwater at the point of compliance during the compliance period. The groundwater monitoring constituents, maximum concentration limits, and required analytical detection limits specified in Table 1 constitute the GPS for all releases to groundwater attributable to the facility. The groundwater monitoring constituents listed in Table 1 have been detected in the groundwater beneath the facility property and are reasonably expected to be in or derived from chemicals previously managed at the facility while in operation.

1. The maximum concentration limits for the GPS groundwater monitoring constituents listed on Table 1 are based on protecting

human health and the environment. These limits were derived from a hierarchy of sources, as explained by the footnotes to Table 1.

2. The GPS maximum concentration limit for some groundwater monitoring constituents is below the lowest, reasonably achievable detection limit due to limitations in current analytical technology. In these cases, the GPS maximum concentration limit has been set at the corresponding GPS required detection limit.
3. The GPS required detection limit shall not exceed the GPS maximum concentration limit unless the required detection limit cannot be achieved due to matrix interferences or other reasonable analytical limitations. As long as appropriate supporting documentation is provided, affected samples and associated chemical analyses will be exempted from meeting the required detection limit. However, inability to meet the required detection limit does not in any way relieve the Permittee from complying with the GPS maximum concentration limits.
4. The Department reserves the right, based on future advances in analytical technology, to modify this Permit to require the Permittee to achieve analytical detection limits for the groundwater monitoring constituents covered by Special Permit Condition II.A.2., which allows for adequate comparison with appropriate health- or environmental protection-based concentration limit(s).
5. The Permittee may make a demonstration to the Department, at any time during the term of this Permit, for establishing Alternate Concentration Limits (ACLs) in lieu of the GPS maximum concentration limits specified herein. Any such demonstration shall ensure that any and all ACLs proposed in lieu of the GPS maximum concentration limits are protective of human health and the environment, according to the requirements of 40 C.F.R. § 264.94(b). In proposing an ACL(s), the Permittee shall consider and formally address the factors listed in 40 C.F.R. §§ 264.94(b)(1) and 264.94(b)(2). Any ACL(s) approved by the Department shall require a Permit modification, according to 40 C.F.R. 270.42.

6. The Permittee shall propose modification to the GPS to include any additional hazardous constituent(s) (40 C.F.R. Part 261, Appendix VIII.) identified in the groundwater during future sampling and analysis, if such constituents may be attributed to releases from operations at the facility and/or the degradation of facility-related hazardous constituents known to be present in the groundwater. The 40 C.F.R. Part 264, Appendix IX., groundwater sampling and analysis requirements contained in Special Permit Condition II.E.5., shall be used as the basis for determining if adding hazardous/groundwater-monitoring constituents to the GPS is necessary.

7. Any addition of hazardous/groundwater monitoring constituents to the GPS as a result of the above determination shall require a Class 1 Permit Modification With Prior Department Approval. Any other changes to the GPS list of hazardous/groundwater monitoring constituents shall require a permit modification, according to 40 C.F.R. § 270.42.

Table 1 - Groundwater Protection Standards

Groundwater Monitoring Constituent	CAS#	Maximum Concentration Limit (µg/l)	Required Detection Limit (µg/l)*
Acenaphthene	83-32-9	1200 (b)	0.10
Acenaphthylene	208-96-8	Not available (e)	0.10
Anthracene	120-12-7	9600 (b)	0.10
Benzene	71-43-2	5 (a, b)	0.20
Benzo(a)anthracene	56-55-3	0.10 (b, d)	0.10
Benzo(b)fluoranthene	205-99-2	0.10 (b, d)	0.10
Benzo(k)fluoranthene	207-08-9	0.10 (b, d)	0.10
Benzo(g,h,i)perylene	191-24-2	Not available (e)	0.10
Benzo(a)pyrene	50-32-8	0.10 (a, b, d)	0.10
Carbazole	86-74-8	Not available (e)	0.10
Chrysene	218-01-9	0.10 (b, d)	0.10
Dibenz(a,h)anthracene	53-70-3	0.10 (b, d)	0.10
Dibenzofuran	132-64-9	7.9 (c)	0.50
2,4-Dimethylphenol	105-67-9	540 (b)	3.0
Ethylbenzene	100-41-4	700 (b)	0.20
Fluoranthene	206-44-0	300 (b)	0.10
Fluorene	86-73-7	1300 (b)	0.10

Groundwater Monitoring Constituent	CAS#	Maximum Concentration Limit (µg/l)	Required Detection Limit (µg/l)*
Indeno(1,2,3-cd)pyrene	193-39-5	0.10 (b, d)	0.10
2-Methylnaphthalene	91-57-6	36 (c)	0.10
Naphthalene	91-20-3	20 (b**)	0.10
Phenanthrene	85-01-8	Not available (e)	0.10
Phenol	108-95-2	300 (b)	0.50
Pyrene	129-00-0	960 (b)	0.10
Toluene	108-88-3	1,000 (a)	0.2
Xylenes	1330-20-7	10,000 (a, b)	0.2

* The lower of the Practical Quantitation Limits (PQLs) contained in the latest version of the EPA document entitled, Test Methods for Evaluating Solid Waste - Physical/Chemical Methods (SW-846), or method specific detection limits routinely achieved by the Permittee's laboratory.

- (a) Denotes limits derived from state (10 CSR 60-4, dated August 31, 2018) and federal public drinking water regulations.
- (b) Denotes limits derived from Missouri Water Quality Standards (10 CSR 20-7.031, dated March 31, 2018) for protecting groundwater. **Health advisory concentration.
- (c) Denotes limits derived from risk-based concentration values for tap water as contained in the EPA Regional Screening Level Tables, dated May 2019 (IELCR = 1×10^{-6} , HI=1).
- (d) Health- and/or environmental-based levels are lower than the ability of current analytical technology to routinely attain detection limits at or below such levels. These constituents and their health- and/or environmental-based criteria are listed below.

Groundwater Monitoring Constituent	CAS#	Maximum Concentration Limit (µg/l)	Source
Benzo(a)anthracene	56-55-3	0.0044	(b)
Benzo(b)fluoranthene	205-99-2	0.0044	(b)
Benzo(k)fluoranthene	207-08-9	0.0044	(b)
Benzo(a)pyrene	50-32-8	0.2	(a, b)
Chrysene	218-01-9	0.0044	(b)
Dibenzo(a,h)anthracene	53-70-3	0.0044	(b)
Indeno(1,2,3-cd)pyrene	193-39-5	0.0044	(b)

- (e) Denotes a chemical that is not a hazardous constituent as defined in the Definitions section of this Permit, but is a groundwater monitoring constituent defined in 40 C.F.R. Part 264 Appendix IX. and/or is a chemical compound that is a plume indicator.

B. Point of Compliance [40 C.F.R. §§ 264.95 and 264.101]

The point of compliance is where the Permittee monitors groundwater quality to demonstrate progress towards and achievement of the GPS maximum concentration limits (or approved ACLs) specified in Table 1. Due to the commingling of facility groundwater contamination related to the closed

surface impoundment and former wood treating process/treated wood storage areas, the point of compliance for the facility is defined as “throughout the plume.” Using the “throughout the plume” point of compliance approach for the final clean up goals specified in Table 1 is consistent with the Department’s overarching goal of protecting human health and the environment by attempting to return “usable” groundwater to its maximum beneficial use and helps to ensure that operation and maintenance, including monitoring, continue for as long as necessary to ensure protection of human health and the environment. See Figures 3A/3B and 4A/4B for extent of shallow and deep groundwater contamination and flow directions.

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

C. Compliance Period [40 C.F.R. § 264.96]

The compliance period for the closed surface impoundment is equal to the active life of this former hazardous waste management unit, which is 19 years. The compliance period began on the effective date of the original facility Permit, issued February 1, 1994. The compliance period was scheduled to end January 31, 2012, but was extended due to the continued presence of groundwater contamination in excess of the GPS maximum concentration limits contained in Table 1.

If the GPS maximum concentration limits, or approved ACLs, are being exceeded at the end of the compliance period at any point within the groundwater contamination plume, the Permittee’s groundwater corrective action program shall continue until the Permittee demonstrates these limits have not been exceeded within the plume for a period of three consecutive years.

D. General Groundwater Monitoring Requirements [40 C.F.R. § 264.97]

The Permittee shall comply with those requirements of 40 C.F.R. § 264.97 applicable to monitoring programs conducted, according to 40 C.F.R. §§ 264.100 and 264.101, and the following additional requirements.

1. The Permittee's groundwater monitoring systems shall be designed, installed, operated, and maintained during the compliance period in a manner that ensures:
 - a. Detection and/or delineation of the horizontal and vertical extent of groundwater contamination throughout the groundwater contaminant plume, including beyond the facility property boundaries;
 - b. Determination of representative concentrations of hazardous constituents and contaminant plume indicator parameters in the groundwater; and
 - c. The Permittee's ability to determine the effectiveness of the groundwater corrective action activities in terms of contaminant removal, destruction, and/or containment.
2. The number, location, and depth of the Permittee's monitoring wells shall be sufficient to define the horizontal and vertical extent of groundwater contamination beneath the Permittee's property and beyond the facility property boundaries. If, at any time during the compliance period, the Permittee or the Department determines the existing monitoring system fails to define the horizontal and vertical extent of groundwater contamination, the Permittee shall submit, within 30 calendar days of such determination by the Permittee or written notification by the Department, a proposed plan for installing additional monitoring wells to define such extent.
3. The addition of new monitoring wells may require a Class 2 Permit Modification, according to 40 C.F.R. § 270.42(b). Procedures cited in the most current Department-approved version of the groundwater Sampling and Analysis Plan (SAP) shall be followed in the sampling and analysis of groundwater from any new wells required under this Permit.

When the Department determines the Permittee has adequately redefined the horizontal and/or vertical extent of groundwater contamination, the wells defining such extent shall be incorporated into, and be designated for continued monitoring in, the Permittee's

SAP. The Department shall notify the Permittee, in writing, when it makes this determination. Within 60 calendar days of receiving this notification, the Permittee shall submit appropriate SAP revisions to the Department for review and approval, according to the procedures described in General Permit Condition III.

4. Any new groundwater monitoring well(s) installed by the Permittee to meet the requirements of this Permit shall be designed and constructed according to the requirements of 40 C.F.R. § 264.97, the Monitoring Well Construction Code of the Missouri Well Construction Rules (10 CSR 23-1 through 10 CSR 23-4), and/or Department-approved well-specific plans and specifications.
 - a. The Permittee shall submit to the Department's Missouri Geological Survey (MGS) and Waste Management Program (WMP), a copy of the well certification report form and resulting certification acceptance required by 256.614 RSMo., for any new monitoring well(s) installed pursuant to this Permit. This information shall be reported as part of the Annual Groundwater and Corrective Action Reports, required by Special Permit Condition II.F.
 - b. Any change in the number of wells being monitored may require a Class 2 Permit Modification, according to 40 C.F.R. § 270.42(b). The Permittee shall consult the Department regarding the need for a permit modification and, if required, the Permittee may elect to submit an annual permit modification request to incorporate changes in the number of monitoring wells in lieu of a modification for each individual change.
5. Plugging and abandoning any groundwater monitoring well(s) operated by the Permittee pursuant to the requirements of this Permit shall meet the requirements of 10 CSR 23-4.080.
 - a. The Permittee shall submit to MGS and WMP, a copy of the well registration report form and resulting registration acceptance required by 10 CSR 23-4.080, for any monitoring wells plugged pursuant to this Permit. This information shall be

reported as part of the Annual Groundwater and Corrective Action Reports, required by Special Permit Condition II.F.

- b. Once MGS accepts the Permittee's well registration, the plugged wells shall be removed from the Permittee's Groundwater SAP. Within 60 calendar days of MGS' registration acceptance, the Permittee shall submit appropriate SAP revisions to the Department for review and approval, according to the procedures described in General Permit Condition III.
 - c. Any change in the number of wells being monitored may require a Class 2 Permit Modification, according to 40 C.F.R. § 270.42(b). The Permittee shall consult the Department regarding the need for a permit modification and, if required, the Permittee may elect to submit an annual permit modification request to incorporate changes in the number of monitoring wells in lieu of a modification for each individual change.
6. The Permittee shall contact the Department at least five working days before conducting any fieldwork associated with constructing or modifying the groundwater monitoring system required by this Permit. The Department shall then have the option to observe any portion of the system's construction or modification. This notification requirement applies to major work such as new wells, retrofitting existing wells, or abandoning wells. This notification requirement does not apply to minor well repairs, maintenance, or modification.
 7. Within 90 calendar days of the effective date of this Permit, the Permittee shall submit an updated groundwater SAP to the Department for review and approval. Additional groundwater SAP revisions may be necessary upon the Department's approval of a final remedy per Special Permit Condition XII. The time frame for submitting groundwater SAP revisions associated with the final remedy will be specified in the Department's approval of that remedy. All SAP updates shall address the requirements of this Permit and the final remedy, as appropriate. The Department shall review and approve

updated SAPs, according to the procedures described in General Permit Condition III.

All SAP procedures and techniques used in groundwater sampling, analysis, and measurement of groundwater-related parameters shall be designed to meet the requirements of 40 C.F.R. Part 264 Subpart F and this Permit. The Permittee's sampling, analysis, and measurement protocols shall ensure the representative nature of all analysis and measurement results.

8. A monitoring well inspection and maintenance program shall be implemented for the duration of the compliance period. This program shall be designed to ensure the structural integrity of all monitoring well installations. The Permittee's revised SAP shall address the details of this program relative to the following requirements.
 - a. Surface well integrity inspections shall be performed at the time of each sampling event and shall be documented on an inspection log sheet. Surface integrity evaluations for each monitoring well shall include a visual inspection of the outer protective casing, inner casing riser, surface well seal, well cap, and locking mechanism to document any damage or deterioration. The ground surface in the immediate vicinity of each monitoring well and the annular space between the outer protective casing and casing riser shall be inspected for visible anomalies (e.g., water collection or ponding, ground subsidence, etc.).
 - b. Subsurface well integrity inspections shall be performed every three years on all wells, according to the provisions contained in the Permittee's SAP, and shall be documented on a well inspection log sheet. Subsurface well integrity inspections may consist of a combination of elements, including total well depth measurements, groundwater turbidity measurements, in-situ hydraulic conductivity tests, casing caliper logs, down-hole television camera surveys, and/or other methods capable of verifying the subsurface integrity of the well casing and screen.

- c. The Permittee's SAP shall specify performing a wellbore siltation evaluation every three years to assess down-well siltation and well screen occlusion in all monitoring wells. This requirement is designed to ensure the representative nature of the Permittee's groundwater sample analysis and field measurement results through minimizing sampling and measurement interferences (e.g., turbidity, excessive well screen occlusion, etc.).

The Permittee's SAP shall specify a well redevelopment trigger criterion based on a percentage of well screen occlusion and the potential of such occlusion to compromise the representative nature of the Permittee's groundwater sample analysis and field measurement results. Wells demonstrating well screen occlusion equal to or in excess of the redevelopment trigger criterion shall be redeveloped to remove wellbore siltation prior to the next scheduled sampling event.

- d. Monitoring well repairs shall be undertaken within 30 calendar days of identifying any surface or subsurface well integrity problem. If adverse weather or site conditions preclude the Permittee from gaining access to and/or repairing impacted monitoring wells within the above-noted period, the Permittee shall take appropriate action as soon as practicable. A written justification for any delay, completed well inspection log sheets, a narrative description of any well repairs, and before and after photographic documentation (in the case of visible surface well repairs) shall be provided to the Department as part of the Annual Groundwater Corrective Action Reports, required by Special Permit Condition II.F.

E. Corrective Action Program [40 C.F.R. §§ 264.100 and 264.101]

Historical releases to groundwater from the closed surface impoundment and other former operational areas are subject to the corrective action requirements of 40 C.F.R. Part 264 Subpart F and this Permit.

1. The Permittee's corrective action program shall consist of groundwater and surface water monitoring (if required), according to Special Permit

Conditions II., and III., and the previously implemented interim/stabilization measures (ISMs) described in Special Permit Condition VII., until such time as a final remedy is implemented under Special Permit Condition XII. The corrective action program shall address any groundwater contamination that has migrated beyond the facility property boundaries. Integration of the corrective action-monitoring program for the closed surface impoundment with the facility-wide program is required due to:

- a. The need for continued operation of the groundwater recovery wells to maintain control of the contaminated groundwater plume to prevent any incremental plume migration, to recover any remaining mobile creosote, and to further reduce the concentration of facility-related contaminants in the groundwater.
 - b. The inability to differentiate groundwater contamination related to releases from the closed surface impoundment versus that related to nearby SWMUs that are subject to corrective action according to 40 C.F.R. § 264.101.
 - c. The desirability of implementing a holistic, facility-wide approach to groundwater investigation, monitoring, and remediation given the foregoing circumstances.
2. The Permittee shall perform groundwater sampling/analysis and field measurement of groundwater-related parameters, according to the schedule presented in Table 2.
- a. Sampling and analysis according to this schedule shall begin during the next regularly scheduled sampling event following approval of the revised SAP required by Special Permit Condition II.D.7. Given the potential lag time between the effective date of this Permit and approval of the revised SAP required by Special Permit Condition II.D.7., the Permittee shall continue sampling and analysis according to the latest Department-approved version of the SAP, until such time as the revised SAP is approved.

- b. Sampling and analysis of groundwater from any new wells shall be performed no later than the next regularly scheduled sampling event following their installation.
 - c. Installing new wells to maintain continued knowledge of the extent of groundwater contamination during the compliance period may be necessary to meet the requirements of 40 C.F.R. Part 264 Subpart F and this Permit. New wells may be subject to the monitoring requirements contained in Table 2 and a permit modification as outlined in Special Permit Condition II.D.3.
 - d. New monitoring wells installed following issuance of this Permit that are used for delineating the extent of groundwater contamination shall be subject to quarterly sampling and analysis for a period of time that is sufficient to establish contaminant trends in these wells.
 3. Only single sample analyses (as opposed to replicates) are required for the parameters listed in Table 2, with the exception of duplicate samples taken for Quality Assurance/Quality Control (QA/QC) purposes.
 4. Field parameter values measured and reported by the Permittee shall be representative of stabilized well conditions.
 - a. Down well measurement of Non-Aqueous Phase Liquid (NAPL) thickness, static water level, and total well depth shall be taken prior to well purging.
 - b. Specific conductance, pH, and temperature measurements reported to the Department shall be those taken immediately following well purging, according to the approved SAP.
 - c. Additional field parameter measurements, such as those taken to verify the adequacy of well purging, shall be recorded in the field logbook.

5. The Permittee shall sample and analyze groundwater every five years, as specified in Table 2, from at least two historically contaminated wells for all parameters contained in 40 C.F.R. Part 264, Appendix IX, except for metals, pesticides, herbicides, and dioxins.
 - a. The wells sampled to meet this requirement shall be left to the discretion of the Permittee. The specific wells to be sampled shall represent at least one well that has recently become contaminated and is therefore representative of the leading edge of the plume, and one well that has consistently contained immiscible phase liquids or high concentrations of dissolved contaminants. The sample to be analyzed from the free phase contaminated well shall be the groundwater (aqueous phase) obtained from this well, not the non-aqueous phase liquid.
 - b. This sampling and analysis is required to determine if additional hazardous constituents (40 C.F.R. Part 261, Appendix VIII) and/or contamination indicator parameters are present in the groundwater that may be attributable to a release at the facility and/or degradation of currently known facility-related groundwater monitoring constituents.
 - c. If hazardous constituents and/or groundwater contamination indicator parameters are identified that are not currently specified in the GPS, the Permittee may resample and analyze the groundwater, according to 40 C.F.R. § 264.99(g). If the Permittee's groundwater reanalysis confirms the presence of additional hazardous constituents or groundwater contamination indicator parameters that are reasonably related to facility releases, then the Permittee shall propose a Class 1 Permit Modification With Prior Department Approval, according to 40 C.F.R. § 270.42(a)(2), to add the confirmed hazardous constituents and/or groundwater contamination indicator parameters to the GPS in Table 1 and the monitoring program specified in Table 2.

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

Parameter	Type*	Required Detection Limit (µg/l)	Frequency
Appendix IX (1)	HC/GWMP	PQLs per SW-846**	Every 5 years
Semi-Volatiles (2)	HC/GWMP	Per Table 1	*** (see note)
Benzene, Ethylbenzene, Toluene, Xylene (3)	HC/GWMP	Per Table 1	*** (see note)
NAPL Thickness	FM	Not Applicable	**** (see note)
pH	FM	Not Applicable	*** (see note)
Specific Conductance	FM	Not Applicable	*** (see note)
Static Groundwater Elevation (4)	FM	Not Applicable	**** (see note)
Temperature	FM	Not Applicable	*** (see note)
Total Well Depth	FM	Not Applicable	**** Annually

- (1) 40 C.F.R. Part 264 Appendix IX scan on at least two historically contaminated wells.
- (2) EPA SW-846 Method 8270D or equivalent.
- (3) EPA SW-846 Method 8260C or equivalent.
- (4) Potentiometric measurements shall be obtained at the time of each regularly scheduled sampling event for all monitoring wells, including those that are not scheduled for sampling.
- * HC/GWMP = Hazardous Constituent/Groundwater Monitoring Parameter, FM = Field Measurement
- ** Per the current SW-846 version at the time of analysis.
- *** As specified in the most current approved groundwater SAP for established wells. New wells shall be sampled quarterly as per Special Permit Condition II.E.2.
- **** NAPL detection and thickness measurements shall be made at the time of sampling (prior to well purging) and prior to manual removal of NAPL from any well. Static groundwater elevations and total well depth measurements shall be made prior to well purging.

F. Groundwater and Corrective Action Reporting

The Permittee shall submit Annual Groundwater and Corrective Action Reports to the Department, for the preceding calendar year (i.e., January through December). The Permittee's Annual Groundwater and Corrective Action Reports shall be submitted by March 1 of each calendar year for the preceding calendar year. These annual reports shall continue to be submitted until such time as the Permittee's groundwater and corrective action activities are complete.

Each March 1 report shall be called the Annual Groundwater and Corrective Action Report and shall be a comprehensive evaluation of the facility-wide

groundwater monitoring program for the preceding calendar year (i.e., January through December) and shall include, but not be limited to, the following information for the time period being reported:

1. A narrative discussion of the nature and evolution of the Permittee's facility-wide groundwater monitoring program and conclusions concerning the overall adequacy of the program as related to its intended purpose. Any conclusions concerning inadequacies in the Permittee's groundwater monitoring program shall be accompanied by a general discussion of proposed measures to address these inadequacies. However, specific details concerning any proposed measures to address inadequacies should be further developed outside the scope of these reports and/or as otherwise specified in this Permit.
2. Groundwater analysis results, field parameter measurement results, copies of field sampling and well inspection log sheets, well repair documentation, QA/QC data, statistical analysis of groundwater data, field investigation results, volume(s) of groundwater and mobile product recovered/treated, and other relevant corrective action related information.
3. The Permittee's Annual Groundwater and Corrective Action Reports shall comprehensively address all technical requirements of 40 C.F.R. Part 264 Subpart F and this Permit. The Permittee shall summarize relevant groundwater monitoring information and shall present this information in the form of narrative discussions, groundwater flow calculations, and/or diagrammatic illustrations (e.g., tabular groundwater and statistical data summaries, hydrogeologic and potentiometric contour maps/cross-sections, chemical parameter trend graphs, calculated rate(s) of contaminant migration, contaminant concentration maps/cross-sections, fence/isometric diagrams, groundwater plume stability analysis, groundwater flow nets, etc.), as appropriate.
4. The Permittee's Annual Groundwater and Corrective Action Reports shall evaluate the effectiveness of the groundwater and corrective action program, including, but not limited to, the following:

- a. The direction and rate of migration of contaminated groundwater in impacted groundwater bearing zones and potential effects on any corrective action measures being designed or implemented at the facility for removal, containment or control of the groundwater contaminant plume(s);
- b. The horizontal and vertical extent and concentrations of hazardous constituents/groundwater monitoring parameters (Table 1) in groundwater throughout the contaminant plume(s) as evaluated from the data obtained through the Permittee's groundwater monitoring program;
- c. Any surface and/or subsurface well integrity problems and their potential or actual influence on the groundwater data or efficiency of the groundwater corrective action program;
- d. The quantity of mobile NAPLs and contaminated groundwater extracted from the subsurface. This information should be reported as a total amount and/or per well or extraction location, and shall be used in conjunction with dissolved phase contaminant concentration information to estimate quantities of contaminants removed;
- e. The conclusions and summary, including statistical evaluation, of analytical results from any surface water monitoring conducted during the reporting period; and
- f. Information related to extraction of contaminated groundwater, installing/operating the on-site groundwater treatment system, and discharging treated groundwater to the Kansas City sewer system, including the following:
 - (1) Groundwater extraction rates, volumes, and pressures to determine if plugging of the well screens and/or the surrounding geologic strata is occurring;
 - (2) Concentrations of the groundwater monitoring parameters (Table 1) in the groundwater treatment

system influent and treated effluent to demonstrate adequate removal of contaminants is being achieved by the groundwater treatment system, and whether the levels of treatment meet all applicable federal, state, and local requirements; and

- (3) Any groundwater treatment system operation and maintenance problems in terms of their potential or actual influence on effluent monitoring and contaminant removal efficiency.
5. The Permittee shall include in the Annual Groundwater and Corrective Action Reports detailed boring logs for new exploratory borings, detailed “as-built” monitoring well diagrams for any new monitoring wells installed during the corresponding reporting period and the monitoring well-related information specified in Special Permit Conditions II.D.3., and 4.

Each Annual Groundwater and Corrective Action Report shall also include a progress-reporting component that discusses the following information for the time-period being reported:

- a. A description of the work completed;
- b. Summaries of all findings, including summaries of laboratory data;
- c. Summaries of all problems or potential problems encountered during the reporting period and actions taken to rectify problems;
- d. Projected work for the next reporting period; and
- e. Any instances of noncompliance with the corrective action requirements of this Permit not required to be reported elsewhere in this Permit.

III. Surface Water Monitoring Program

- A. If required, the Permittee shall implement a surface water-monitoring program for storm water and/or land disturbance under a Missouri State Operating Permit (MSOP(s)) according to the requirements of the Department's Water Protection Program.
1. The Permittee's MSOP surface water monitoring program, if required, shall be described in the updated SAP required by Special Permit Condition II.D.7.
 2. The Permittee's MSOP surface water sampling and analysis methods for chemical indicator parameters and hazardous constituents shall be consistent with those specified in this Permit for groundwater.
 3. Reporting and analysis of data/information collected as part of the MSOP surface water monitoring program shall be included in the Annual Groundwater and Corrective Action Reports required by Special Permit Condition II.F. Analysis of the surface water data shall be part of the comprehensive evaluation included in the Annual Groundwater and Corrective Action Report.

IV. Identification of SWMUs and AOCs [40 C.F.R. § 264.101]

- A. On May 21, 1992, EPA issued the original Hazardous and Solid Waste Amendments (HSWA) Part II Permit for corrective action at the facility. At that time, the Department was not yet EPA-authorized for corrective action. The EPA HSWA Part II Permit expired April 21, 2002, but was administratively "continued" since the Permittee at that time (Kerr-McGee) submitted a timely application for permit renewal pursuant to 40 C.F.R. § 270.51. The original 1992 EPA HSWA Part II Permit required Kerr-McGee undertake a corrective action program to address releases of wood treating chemicals (creosote) to the environment. The corrective action program consisted of two phases: performing a RCRA Facility Investigation (RFI) and a Corrective Measures Study (CMS). The types of contaminants previously found at the facility included wastewater and wastewater sludge containing K001 hazardous waste constituents, as well as hazardous constituents from creosote wood preservative, gasoline, and diesel fuel.

- B. The general location of 16 historical contamination source areas present at the facility, as identified in the March 1987 RCRA Facility Assessment Report prepared by EPA’s contractors, the original 1992 EPA HSWA Part II Permit and the 1994 RFI Work Plan are shown on Figure 2. The SWMU-related areas (SRAs) identified in the reports are as follows:

SRA	SWMUs included in SRA	Purpose	Location on Property
I	1, 2, 3, 6-10, 12, 14	Production areas: retort, creosote and fuel storage, ponds	East-central
II	5	Shallow NAPL impact; unknown source	Area near well KC-17
III	4, 11	North drip track	North
IV	13	Surface impoundment (closed)	West-central
V	15	Creosote sludge disposal pit	Southwest
VI	16	Surface disposal area	Southwest

V. Notification Requirements for, and Assessment of, Newly Identified SWMU(s) and AOC(s)

- A. The Permittee shall notify the Department, in writing, no later than 15 calendar days after discovery of any SWMU(s) or AOC(s) identified subsequent to the issuance of this Permit.
- B. The Department may require a SWMU/AOC Assessment Work Plan for conducting an investigation of the newly identified SWMU(s) or AOC(s). Within 60 calendar days after receiving the Department’s written request for a SWMU/AOC Assessment Work Plan, the Permittee shall submit a SWMU/AOC Assessment Work Plan to the Department for review and approval. The SWMU/AOC Assessment Work Plan shall include a discussion of past waste management practices at the unit, as well as a sampling and analysis program for groundwater, land surface and subsurface strata, surface water and/or air, as necessary, to determine whether a release of hazardous waste, including hazardous constituents from such unit(s) has occurred, or is occurring. The sampling and analysis program shall be capable of yielding representative samples and shall include monitoring parameters sufficient to assess the release of hazardous waste and/or hazardous constituents from the newly identified SWMU(s) or AOC(s) to the environment. The SWMU/AOC Assessment Work Plan shall specify any data to be collected to provide for a

complete SWMU/AOC Assessment Report, as specified below. The SWMU/AOC Assessment Work Plan shall contain a schedule for conducting the work specified therein.

- C. The Department shall review and approve the SWMU/AOC Assessment Work Plan according to the procedures set forth in General Permit Condition III. The Permittee shall implement the Department-approved plan according to the schedule contained therein.

- D. The Permittee shall submit a SWMU/AOC Assessment Report to the Department, according to the schedule specified in the approved SWMU/AOC Assessment Work Plan. The SWMU/AOC Assessment Report shall present and discuss the information obtained from implementing 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 available;
 - 6. The results of any sampling and analysis conducted;
 - 7. Past and present operating practices;
 - 8. Previous uses of area occupied by the SWMU or AOC;
 - 9. Amounts of waste handled; and
 - 10. Drainage areas and/or drainage patterns near the SWMU or AOC.

- E. The Department shall review and approve any required SWMU/AOC Assessment Report according to the procedures set forth in General Permit Condition III. Based on the findings of this report, the Department shall determine the need for additional investigations, including ISMs, an RFI, or a CMS, at specific unit(s) identified in the SWMU/AOC Assessment Report.
 - F. If the Department determines additional investigations are needed, the Department may require the Permittee to prepare and submit to the Department for approval, a work plan(s) for such investigations. Any work plan for additional investigations shall contain a schedule for conducting the work specified therein. The Department shall review and approve any work plan according to the procedures set forth in the General Permit Condition III. The Permittee shall implement the approved work plan, according to the schedule contained therein.
- VI. Notification Requirements for, and Assessment of, Newly Identified Releases from Previously Identified SWMUs and AOCs
- A. The Permittee shall notify the Department, in writing, no later than 15 calendar days after discovery, of any newly identified release(s) of hazardous waste, including hazardous constituents, from previously identified SWMU(s) or AOC(s) discovered during the course of groundwater monitoring, field investigation, environmental auditing, or other activities undertaken after issuance of this Permit.
 - B. The Department may require a Newly Identified Release Work Plan for conducting an investigation of the newly identified release(s). Within 60 calendar days after receiving the Department's written notice requiring a Newly Identified Release Work Plan, the Permittee shall submit a Newly Identified Release Work Plan to the Department for review and approval. The Newly Identified Release Work Plan shall include a discussion of the hazardous waste/chemical management practices related to the release(s); a sampling and analysis program for groundwater, land surface and subsurface strata, surface water and/or air, as necessary, to determine whether the release poses a threat to human health or the environment. The sampling and analysis program shall be capable of yielding representative samples and shall include monitoring parameters sufficient to assess the release of hazardous waste and/or hazardous constituents to the environment. The Newly Identified Release Work Plan shall contain a schedule for conducting the work contained

therein and shall specify any data to be collected to provide for a complete Newly Identified Release Report, as specified below.

- C. The Department shall review and approve the Newly Identified Release Work Plan according to the procedures set forth in General Permit Condition III. Upon approval thereof by the Department, the Permittee shall implement the approved plan according to the schedule contained therein.
- D. The Permittee shall submit a Newly Identified Release Report to the Department, according to the schedule specified in the approved Newly Identified Release Work Plan. The Newly Identified Release Report shall present and discuss the information obtained during implementing 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 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 comprise the release;
 - 5. The results of any sampling and analyses 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; and
 - 9. Drainage areas and/or discharge patterns near and at the location of the release.

- E. The Department shall review and approve the Newly Identified Release Report according to the procedures set forth in General Permit Condition III. Based on the findings of the report and any other available information, the Department will determine the need for additional investigation, including ISMs, an RFI, or a CMS.

VII. Interim/Stabilization Measures (ISMs)

- A. If the Permittee becomes aware of a situation that may require ISMs to protect human health and the environment, the Permittee shall notify the Department within 24 hours of the time the Permittee becomes aware of the situation.
- B. If, during the course of any activities initiated under this Permit, the Permittee or Department determines a release or potential release of hazardous waste, including 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 can be implemented. The Department shall determine, in coordination with the Permittee, the specific action(s) that shall be taken to implement ISMs, including potential permit modifications, and the schedule for implementing the ISM requirements. The Department shall inform 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.
- C. If, at any time, the Permittee determines or should have known that the ISM program is not effectively limiting or stopping the further spread of contamination, the Permittee shall notify the Department, in writing, (e-mail is acceptable) no later than 10 calendar days after such a determination is made. The Department may require the ISM program be revised to make it effective in limiting or stopping the spread of contamination, or that final corrective action measures are required to remediate the contaminated media.
- D. In cases where releases or potential releases present minimal human health and environmental exposure concerns, or the proposed remedial solution is relatively uncomplicated, the Permittee may propose ISMs to the Department for review and approval according to the procedures set forth in General Permit Condition III. These ISMs shall be consistent with, and may supplement and/or satisfy the requirements for, a final remedy(s) in specific

areas. Proposed ISMs which the Department determines to be significant (e.g., those which are anticipated to comprise a substantial portion of a final remedy) may be subject to public review and comment prior to final Department approval.

VIII. RCRA Facility Investigation (RFI) Work Plan

- A. Kerr-McGee submitted an RFI Work Plan pursuant to the requirements of the original 1992 EPA HSWA Part II Permit. Following multiple revisions, EPA approved the RFI Work Plan on February 10, 1994. The RFI objectives are summarized in Special Permit Condition VIII.C. Implementing the approved RFI Work Plan began on March 7, 1994.
- B. Following transfer of the “continued” Part I, and EPA Part II HSWA Permits to the Multistate Trust (the current Permittee) in 2011, additional investigations were conducted by the Permittee under work plans approved by the Department. These investigations were implemented to update knowledge regarding the nature and extent of historical releases to the environment at/from the facility, with the primary focus on groundwater, optimizing previously implemented ISMs and developing an updated final remedy proposal.
- C. If the Department determines additional investigations are needed for newly identified SWMUs or AOCs or newly identified releases from previously identified SWMUs or AOCs, pursuant to Special Permit Conditions V. or VI., the Department shall notify the Permittee, in writing, of this decision. The Department may require the Permittee to prepare and submit an additional RFI Work Plan or equivalent for such investigations. If an RFI Work Plan is required, the Permittee shall submit it according to the time frame specified in the Department’s written notice. The RFI Work Plan shall contain provisions designed to meet the following objectives:
 1. Full characterization of the nature, vertical and horizontal extent, and rate of migration of releases of hazardous waste and hazardous constituents from a newly identified SWMUs and AOCs, or groups of SWMUs and AOCs, or newly identified release(s) at the facility and the actual or potential receptors of such releases; and

2. Collection of any other pertinent data that may be used to substantiate future corrective action decisions.
- D. The content of the RFI Work Plan shall be appropriate for facility-specific conditions and shall be consistent with and address all applicable investigation elements described in the EPA document entitled, RCRA Facility Investigation (RFI) Guidance, EPA 530/SW-89-031, May 1989, or the most recent version. Any required RFI activities shall also be conducted using the approaches contained in the EPA document entitled, Resource Conservation and Recovery Act Facilities Investigation Remedy Selection Track (RCRA FIRST): A Toolbox for Corrective Action, May 20, 2016. At a minimum, the RFI Work Plan shall detail all proposed activities and procedures to be conducted at the facility, including a description of current conditions; the schedule for implementing and completing such investigations and for submitting reports (including the final RFI Report); the qualifications of personnel performing or directing the investigations, including contractor personnel; and the overall management of the RFI activities.
- E. The 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 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 or choose to use a phased approach that requires submitting supplemental RFI Work Plans.
- H. The Department shall review and approve the RFI Work Plan(s) according to the procedures set forth in General Permit Condition III. The Permittee shall implement the approved plan(s), according to the schedule contained therein.

IX. RCRA Facility Investigation (RFI) Report

- A. Kerr-McGee submitted an RFI Final Report on December 15, 1994, which EPA approved January 11, 1996, pursuant to the requirements of the original 1992 EPA HSWA Part II Permit.
- B. Following transfer of the “continued” Part I, and EPA HSWA Part II Permits to the Multistate Trust (the current Permittee) in 2011, additional investigations were implemented by the Permittee, pursuant to a work plan the Department approved October 13, 2016. The results of this investigation were reported to the Department and included information that updated knowledge regarding the nature and extent of historical releases to the environment at/from the facility, with a primary focus on groundwater and the efficacy of previously implemented ISMs. Proposed changes and additions to update and optimize the proposed final remedy, originally outlined in Kerr-McGee’s 1998 CMS Report approved by EPA, are being evaluated in light of the additional investigation findings pursuant to a new CMS-equivalent Work Plan (i.e., RAO Status & Recommendations Memo) submitted by the Permittee on October 6, 2017, and approved by the Department on July 30, 2018.
- C. The Permittee shall submit any additional RFI Report or equivalent required by this Permit to the Department, according to the schedule contained in the corresponding approved RFI Work Plan. The RFI Report shall present all information gathered under the approved RFI Work Plan, along with a brief facility description and map showing the property boundary and all SWMUs and AOCs. The information presented in the RFI Report shall be presented in a form consistent with Section 5 of the EPA document entitled, RCRA Facility Investigation 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 corrective measures 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 movement 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 (e.g., a Focused or Baseline Risk Assessment);
6. Extrapolations of future contaminant movement, including description of contaminant fate and transport mechanisms, and pathways for human and environmental exposure;
7. Laboratory, bench-scale, pilot-scale, and/or appropriate tests or studies to determine the feasibility or effectiveness of treatment technologies or other technologies that may be appropriate in implementing remedies at the facility;
8. Statistical analyses to aid in interpreting data;

9. Results of any ISMs previously implemented;
 10. Revision of the groundwater-monitoring program until such time as this Permit is modified to implement a final remedy. This plan shall specify the wells to be monitored, the frequency of monitoring, and the analytical parameters. Groundwater monitoring shall be conducted according to Special Permit Condition II.; and
 11. Evaluation of data quality that could affect the nature and scope of a CMS Work Plan or evaluation of corrective measure alternatives thereunder (e.g., identifying any potential bias in the RFI data and documenting its precision, accuracy, representativeness, completeness, comparability, validation, etc.).
- E. The Department shall review and approve the RFI Report or equivalent according to the procedures set forth in General Permit Condition III. After review of the RFI Report or equivalent, if the Department determines the objectives of the RFI have not been met, the Department may require additional investigation. Upon approval of the RFI Report or equivalent, the Department shall advise the Permittee as to the next step in the corrective action process, which may include submitting a CMS Work Plan pursuant to Special Permit Condition X.

X. Corrective Measures Study (CMS) Work Plan

- A. Kerr-McGee originally prepared and submitted a CMS Work Plan to EPA on November 20, 1995, which EPA approved on June 18, 1998. As a result of additional investigations implemented by the Multistate Trust (the current Permittee), proposed changes and additions to update and optimize the proposed final remedy originally outlined in the 1998 CMS Report are being evaluated. This evaluation is being conducted pursuant to a new CMS-equivalent Work Plan (i.e., RAO Status & Recommendations Memo) approved by the Department on July 30, 2018.
- B. If the Department determines that a release(s) of hazardous waste or hazardous constituents from newly or previously identified SWMUs or AOCs pursuant to Special Permit Conditions V. or VI. may present a threat to human health or the environment, the Department may require the Permittee to prepare and submit an additional CMS Work Plan or equivalent. The

Department shall notify the Permittee, in writing, of this decision. This notice shall identify the hazardous constituent(s) of concern and may specify remedial alternatives to be evaluated by the Permittee during the CMS.

- C. As part of the CMS, the Department may require the Permittee to identify and evaluate one or more specific potential remedies for removing, containing, or treating hazardous waste and hazardous constituents in contaminated media, based on the objectives established for the corrective action. These remedies may include a specific technology or combination of technologies that, in the Department's judgment, may be capable of achieving standards for protecting human health and the environment.
- D. The Permittee shall submit a CMS Work Plan or equivalent to the Department, according to the time frame specified in the Department's written notice requiring a CMS. The CMS Work Plan or equivalent shall be consistent with guidance contained in the EPA document entitled, RCRA Corrective Action Plan (Final), May 1994, OSWER Directive 9902.3-2A, May 1994, or the most recent version. Any required CMS activities shall be conducted using the approaches contained in the EPA document entitled, Resource Conservation and Recovery Act Facilities Investigation Remedy Selection Track (RCRA FIRST): A Toolbox for Corrective Action, May 20, 2016. At a minimum, any CMS Work Plan or equivalent required by this Permit shall include an implementation schedule and shall provide the following information, as appropriate:
1. A description of the general approach to investigating and evaluating potential remedies;
 2. A definition of the specific objectives of the study;
 3. A description of the remedies which will be studied;
 4. A description of those potential remedies which were initially considered, but were dropped from further consideration, including the rationale for elimination;
 5. The specific plans for evaluating remedies to ensure compliance with remedy standards;

6. The schedules for conducting the study and submitting a CMS Report;
 7. The proposed format for presenting information; and
 8. 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.
- E. The Department will review and approve any CMS Work Plan or equivalent required by this Permit according to the procedures set forth in General Permit Condition III. The Permittee shall implement the approved plan, according to the schedule contained therein.

XI. Corrective Measures Study (CMS) Report

- A. Kerr-McGee originally prepared and submitted a CMS Report to EPA and the Department on October 21, 1997, which EPA approved June 16, 1998, and contained a proposed final remedy for the facility. As noted above, an updated remedy evaluation is being conducted pursuant to a new CMS-equivalent Work Plan (i.e., RAO Status & Recommendations Memo), approved by the Department on July 30, 2018.
- B. Since taking over ownership and operational control of the facility in 2011, the Permittee's RAO investigation/evaluation efforts may result in the identification and proposal of revised/additional corrective measures to update the previously proposed final remedy. The Permittee shall submit RAO Reports and related documents as they are completed to the Department for review and approval, according to the procedures set forth in General Permit Condition III. As applicable, this CMS-equivalent information will be used to support approval and implementation of a final remedy according to Special Permit Condition XII.
- C. If the Department determines any additional CMS Report or equivalent is necessary to address a release(s) of hazardous waste or hazardous constituents from newly or previously identified SWMUs or AOCs pursuant to Special Permit Conditions V. or VI., or the performance of any long-term final remedy established pursuant to Special Permit Condition XII., the Permittee

shall submit a CMS Report or equivalent to the Department, according to the schedule contained in the approved CMS Work Plan.

The CMS Report or equivalent shall present all information gathered under the approved CMS Work Plan or equivalent 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. The CMS Report or equivalent shall summarize the results of the investigations for each remedy studied and any bench-scale or pilot tests conducted. The CMS Report or equivalent shall include, but not be limited to, the following information:

1. Evaluation of performance, reliability, ease of implementation, and potential impacts of each remedy studied, including safety impacts, cross media impacts, and control of exposure to any residual contamination;
 2. Assessment of the effectiveness of each remedy in achieving adequate control of sources and cleanup of the hazardous waste or hazardous constituents released from the SWMU(s) and AOC(s);
 3. Assessment of the time required to begin and complete each remedy;
 4. Estimation of the costs of implementing each remedy;
 5. Recommendation of a preferred remedy and rationale for the proposed selection; and
 6. Assessment of institutional requirements, such as state or local permit requirements, implementing a facility-specific environmental covenant containing property activity and use restrictions, or other environmental or public health requirements, which may substantially affect implementing the remedy.
- D. The CMS Report or equivalent shall contain adequate information to support the Department in the remedy approval decision-making process.
- E. The Department shall review and approve the CMS Report or equivalent according to the procedures set forth in General Permit Condition III. Upon

approval thereof, the Department will approve an updated final remedy, as specified in Special Permit Condition XII.

XII. Final Remedy Selection and Approval

- A. Following the approval of the CMS Report or equivalent (e.g., compendia of RAO-related reports), the Department shall prepare a Statement of Basis, in coordination with the Permittee, summarizing the corrective measures alternatives evaluated by the Permittee, including justification for the proposed final remedy identified by the Permittee in the CMS Report or equivalent.
- B. Following preparation of the Statement of Basis, a Class 3 permit modification shall be initiated according to 40 C.F.R. §§ 270.41 or 270.42(c), as applicable, to facilitate public review and comment on the Statement of Basis and proposed final remedy, Department approval of a final remedy, and Permittee implementation of the approved final remedy.
- C. Upon completion of the public participation activities associated with the permit modification to implement the proposed final remedy, the Department will 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 might pose a threat to human health and the environment; and
 - 3. Meet all applicable federal, state, and local laws and regulations.
- D. The previously implemented regulated unit closure activities and ISMs that may become part of the overall final remedy at the facility consist of the following:
 - 1. Removing contaminated soils from the closed surface impoundment that was operated as a hazardous waste management unit. Contaminated soils were replaced with clean fill and a clay cap with vegetated cover was placed over the former surface impoundment

during closure. The former surface impoundment area was then fenced for security purposes and to mitigate potential disturbance of the cap.

2. Installing and operating multiple contaminated groundwater/creosote recovery wells. These wells remove contaminated groundwater and mobile creosote for treatment and provide hydraulic control of the groundwater contaminant plume to prevent additional migration.
3. Installing and operating a contaminated groundwater and creosote treatment system. The treatment process includes primary and secondary oil/water separation with the addition of chemical flocculant to break down emulsified oil/water mixtures. During calendar year 2018, the groundwater recovery and treatment system (operational since the early 1990s) recovered and treated approximately 1,073,771 gallons of contaminated groundwater and recovered approximately 1,810 gallons of mobile creosote.
4. Implementing institutional controls, including an informational notice and survey plat regarding the closed surface impoundment recorded in the property chain-of-title, and property activity and use limitations contained in Special Permit Condition XIV.
5. Implementing engineering controls, including maintaining facility security/fencing; inspection, maintenance, and mowing of capped areas; on-site personnel presence; and continued groundwater and creosote recovery, treatment, monitoring and reporting.

XIII. Construction Completion Report

Once a final remedy is approved and implemented, the Permittee shall submit a Construction Completion Report (CCR) for the final remedy within 90 calendar days of final completion of any required construction. The CCR shall summarize all ISMs, “as-built” plans, and corrective measures comprising the final remedy. As applicable, this includes details on extraction/monitoring wells, associated piping, any treatment process to recover contaminants or product, containment devices, sumps, implementation of engineering and/or institutional controls, and any other measures that are part of the final remedy.

XIV. Long-Term Operation, Maintenance, and Monitoring (LTOM&M) Plan

Within 60 calendar days after the Department's approval of a final remedy, the Permittee shall submit an LTOM&M Plan that addresses the following:

- A. Implementing and maintaining engineering and/or institutional controls to prevent unacceptable human and environmental exposures to residual facility-related contamination on the permitted property and, if applicable, beyond the facility property boundaries. The facility property shall not be used in any manner that would interfere with, or adversely affect, the integrity or protectiveness of the final remedy. The referenced controls shall include, but not be limited to, the following:
1. Public access to the facility property shall be minimized by appropriate means, such as fences, appropriate signage, and other security measures.
 2. Any future construction or maintenance activities involving excavating any contaminated soil shall comply with applicable Occupational Safety and Health Administration (OSHA) requirements regarding appropriate worker exposure protection and shall provide for managing and disposing contaminated soil according to applicable federal, state, and local regulations.
 3. Buildings, caps, structures, and pavement that currently cover contaminated soil on the facility property shall not be removed or altered unless the Permittee has provided for alternative corrective measures to protect human health and the environment, and has prior Department approval.
 4. Groundwater from contaminated water bearing zones beneath the facility property shall not be used as a drinking water or domestic use water supply.
 5. Unless prior Department approval is obtained, the areas with institutional controls may not be used for any purpose other than adult workers performing non-residential construction and maintenance activities consistent with the exposure assumptions in the approved CMS or equivalent and final remedy.

- B. Contingent provisions to supplement and/or continue appropriate engineering and institutional controls via executing an Environmental Covenant pursuant to the Missouri Environmental Covenants Act (Sections 260.1000 through 260.1039, RSMo.) in the event of a permit transfer and/or the conveyance of any interest in real property that is currently part of the facility, including but not limited to, fee interests, leasehold interests, and mortgage interests.
- C. The Permittee shall evaluate every five years, the availability and viability of innovative treatment technologies and their potential application to areas with substantial residual contaminant concentrations in groundwater with the objective of meeting the GPS. These evaluations shall be included every fifth year as part of the March 1 Annual Groundwater and Corrective Action Reports required by Special Permit Condition II.F.
- D. The operation and maintenance procedures for all elements/components of the final remedy, including the replacement schedule for equipment and installed components. All monitoring to be performed to determine effectiveness of the final remedy in meeting the GPS in Table 1.

The Department shall review and approve the LTOM&M Plan according to the procedures set forth in General Permit Condition III. Once the LTOM&M Plan is approved, any additional changes, updates, or revisions of the approved LTOM&M Plan shall be submitted to the Department for review and approval, according to General Permit Condition III.

XV. Certification of Completion of Corrective Action

- A. When the Permittee believes all corrective measures required by this Permit are complete and all applicable clean-up standards have been met (e.g., the GPS specified in Table 1, or approved ACLs), the Permittee shall submit a Corrective Measures Completion (CMC) Report to the Department. The CMC Report shall contain a summary of corrective measures activities conducted at the facility and a description of the long-term operation and maintenance and monitoring programs associated with the corrective measures.

To verify completion of corrective measures for groundwater, the Permittee shall demonstrate in the CMC Report that groundwater contaminant levels have not exceeded the GPS maximum concentration limits contained in

Table 1 (or approved ACLs) throughout the plume of groundwater contamination for a period of three consecutive years.

The Department shall review and approve the CMC Report according to the procedures set forth in General Permit Condition III.

- B. Elements of the final remedy may require extended time periods to complete. Until such time as the Permittee submits a CMC Report, the Permittee shall summarize remedy implementation progress and provide data obtained during remedy implementation in the Annual Groundwater and Corrective Action Reports required by Special Permit Condition II.F. Any short-term completion of corrective action activities (e.g., ISMs) shall also be summarized in the Annual Groundwater and Corrective Action Reports.
- C. Within 60 calendar days of the Department's approval of the CMC Report documenting completion of all corrective action pursuant to Special Permit Condition XV., the Permittee shall submit to the Department, by registered mail, a written certification stating that corrective action has been completed as approved by the Department. The certification shall be signed by the Permittee and a professional engineer registered in Missouri.

XVI. Environmental Covenant [Sections 260.1000 through 260.1039, RSMo.]

- A. The institutional (property activity and use limitations) and engineering controls specified in Special Permit Condition XIV., shall remain effective for the life of this Permit, including the term of any reissued Permit(s), unless this Permit is revised via the Department's approval of an appropriate permit modification pursuant to 40 C.F.R. §§ 270.41 or 270.42.
- B. At least 120 calendar days before submitting a CMC Report or proposed removal of all or a portion of the permitted property from the jurisdiction of this Permit, the Permittee shall contact the Department to discuss the need for executing an Environmental Covenant to continue any then-applicable institutional (property activity and use limitations) and/or engineering controls specified in Special Permit Condition XIV.
- C. If an Environmental Covenant is determined to be necessary, the Department will provide the Permittee with the most current standard template version of the Environmental Covenant to facilitate the Permittee's drafting of a

property-specific Environmental Covenant. The Permittee shall then prepare and submit to the Department a draft Environmental Covenant using the supplied template in conformance with the Missouri Environmental Covenants Act, Sections 260.1000 through 260.1039, RSMo. The Department will review and conditionally approved the Permittee's draft Environmental Covenant according to the procedures set forth in General Permit Condition III.

Prior to final execution and recording of the Environmental Covenant, the conditionally approved draft Environmental Covenant will be subject to public review and comment as part of any permit modification request by the Permittee or Department-initiated permit modification proposing termination of this Permit based on the completion of corrective action and/or proposed removal of property from the jurisdiction of this Permit.

- D. Within 60 calendar days after the Department's response to public comments, if any, and final decision regarding the proposed action(s), the Permittee shall execute and record, in coordination with the Department and according to state law, the approved Environmental Covenant with the Jackson County Recorder's Office in the chain-of-title for the facility property, or on some other instrument which is normally examined during title search, that will, in perpetuity, notify any potential purchaser of the then-current environmental conditions and activity and use limitations on the property.
- E. Within 30 calendar days after recording the executed Environmental Covenant, the Permittee shall provide a statement to the Department certifying the executed Environmental Covenant has been recorded at the Jackson County Recorder's Office. A copy of the recorded information with the Recorder's notarized stamp and book/page or other information identifying the location of the notation in the County's records shall accompany the Permittee's certification statement.

XVII. Permit and Property Transfers [40 C.F.R. § 270.40]

Prior to conveyance of this Permit or any property at the facility, or transfer of custody or control of any real property, that is currently under control of the Permittee, the Department may require modification or revocation and reissuance of this Permit to change the name of the Permittee and incorporate such other

requirements as necessary to continue the engineering and institutional controls, as well as ongoing remediation and corrective action activities.

The Permittee and the Department shall follow the permit transfer requirements outlined in 40 C.F.R. § 270.40. In addition, the Permittee shall provide a copy of this Permit to any potential new owner/lease holder at least 120 calendar days before the date of the proposed property transfer or lease.

XVIII. Cost Estimates and Financial Assurance

Tronox's environmental liabilities at the Kansas City facility were resolved pursuant to a 2011 bankruptcy settlement that, in part, involved creating five environmental response trusts and a litigation trust. On February 14, 2011, Tronox transferred the Kansas City facility into the then newly created Multistate Trust and simultaneously provided funding to the Multistate Trust (the current Permittee) for future cleanup work and other administrative costs associated with the Kansas City facility. Funding provided at that time was based solely on the Tronox bankruptcy settlement amounts, as any additional proceeds from the then-pending Anadarko litigation were not yet available. The initial funding amount allocated to the Kansas City facility as a result of the bankruptcy was \$1,743,398. These funds were projected to provide for an estimated five years of operation, maintenance, monitoring and reporting of existing activities (with no new initiatives) under the original 1994 Part I Permit, which this Part I Permit replaces.

The Anadarko litigation was ultimately settled before the above-referenced initial bankruptcy settlement funding ran out. This resulted in additional funds being transferred into the Multistate Trust for activities at the Kansas City facility. From February 2015 to June 2016, seven separate distributions from the Anadarko litigation trust were placed in the Multistate Trust for activities at the Kansas City facility, totaling \$22,657,150.70. When added to the previous Tronox bankruptcy recovery, the total amount recovered for activities at the Kansas City facility was \$24,400,548.70.

Periodic "waterfall" distributions to the Multistate Trust are made as unneeded property is sold from the Kansas City and various other Multistate Trust facilities. Income derived from investing the Multistate Trust-maintained assets is also periodically placed in the Multistate Trust.

In order to provide for the full and final completion of the post-closure and corrective action activities required by this Permit, the Permittee shall establish and maintain financial assurance for the benefit of the Department in an amount at least equal to the projected future post-closure and corrective action costs.

- A. The Department acknowledges that the Multistate Trust is an acceptable form of financial assurance for post-closure care and corrective action. As a Trust Fund, the Multistate Trust is compliant with the requirements of 40 C.F.R. §§ 264.101, 264.145, and 264.151, in that it is:
 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.
- B. The trust agreement provides that the trustee shall make payments from the fund, as the Department shall direct in writing, as described below:
 1. To reimburse the Permittee for expenditures made by the Permittee for post-closure care and corrective action activities performed according to this Permit; and
 2. To facilitate payment by the trustee to third parties conducting post-closure care and corrective action activities required by this Permit.
- C. On or before January 1 of each calendar year, the Permittee shall submit an estimate of the projected costs for the upcoming calendar year to conduct post-closure care and corrective action activities at the facility. This cost estimate shall be itemized in sufficient detail across the range of planned activities, so as to facilitate the Department's review of all technical and administrative elements. The Department will review and approve the annual cost estimate according to General Permit Condition III. If the cost estimate requires modification, the Department shall notify the Permittee, in writing, of the estimate's deficiencies and specify a due date for submitting a revised cost estimate for further evaluation and final written approval.

- D. Any proposed amendments or changes to the approved annual budget amounts shall be submitted to the Department at the appropriate time for review and approval, according to General Permit Condition III.
- E. Annually, by June 1 of each calendar year, the Permittee shall submit a trust accounting to the Department detailing the assets and liabilities at the end of the preceding calendar year for the Kansas City facility. This accounting shall itemize the deductions from and additions to the net trust assets. This accounting shall also include a comparison of the amount approved by the Department for the preceding calendar year (including any mid-year amendments) versus actual expenditures during the calendar year.
- F. If, at any time, the Permittee wishes to change the form or terms of financial assurance from the current Trust Fund arrangement, the Permittee may submit a written proposal to the Department to do so. Any such proposal/change shall necessitate modifying this Permit according to 40 C.F.R. § 270.42.

XIX. Supplemental Information

All raw 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 reissued permits. Copies of other reports (e.g., inspection reports), information, or data not routinely reported pursuant to the requirements of this Permit shall be made available to the Department upon written request.

XX. Planned Activities

The Permittee shall comply with the schedule for planned groundwater monitoring, surface water monitoring (if required), corrective action, and other activities specified in this Permit, as summarized in Table 3.

XXI. Contingent Activities

The Permittee shall comply, as necessary, with the schedule for contingent corrective action and other activities as specified in this Permit, as summarized in Table 4.

FACILITY SUBMISSION SUMMARY

Table 3 - Summary of the Planned Submittals Required by this Permit

Planned Submittal	Due Date*	Permit Condition
Submit 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 I.A.
Submit a signed certification that the Permittee has read and understands all Permit conditions contained herein.	Within 60 calendar days after effective date of this Permit.	Schedule of Compliance I.B.
Submit a check or money order to the Department's Waste Management Program, payable to the State of Missouri, for any outstanding engineering review costs.	Within 60 calendar days after effective date of this Permit.	Schedule of Compliance I.C.
Submit a check or money order to the Department's Waste Management Program, payable to the State of Missouri, for \$1,000 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 I.D.
Permit Renewal Application	At least 24 months before expiration date of this Permit.	Standard Permit Condition I.
Revise and resubmit the Groundwater SAP	Within 90 calendar days after effective date of this Permit.	Special Permit Condition II.D.7.
Annual Groundwater and Corrective Action Reports	By March 1 of each calendar year.	Special Permit Condition II.F.
Remedial Action Optimization Reports and related documents in support of final remedy.	As completed.	Special Permit Condition XI.B.
Construction Completion Report for final remedy	Within 90 calendar days after completing construction of all final remedy elements.	Special Permit Condition XIII.

Planned Submittal	Due Date*	Permit Condition
Long Term Operation, Maintenance, and Monitoring Plan	Within 60 calendar days after Department approval of a final remedy.	Special Permit Condition XIV.
Annual post-closure and corrective action cost-estimate for upcoming year	On or before January 1 of each calendar year.	Special Permit Condition XVIII.C.
Annual accounting of previous year's expenditures, remaining trust balance, and comparison with approved budget	By June 1 of each calendar year.	Special Permit Condition XVIII.E.

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

Table 4 - Summary of the Contingent Submittals Specified in this Permit

Contingent Submittal	Due Date	Permit Condition
Notification of an Emergency Situation	At earliest practical moment upon discovery.	General Permit Condition I.
Written Report of an Emergency Situation	Within 15 calendar days after incident occurrence.	General Permit Condition I.
Biennial Report (if applicable)	By March 1 of each even numbered calendar year.	General Permit Condition II.
Document and Activity Extension Requests	At least 15 calendar days before scheduled document due date or activity completion date.	General Permit Condition IV.
Post-Closure Plan Amendment	At least 60 calendar days before proposed change or not later than 60 calendar days after occurrence of an unexpected event.	Special Permit Condition I.B.
Certification of Completion of Post-Closure Care	No later than 60 calendar days after completing post-closure care period(s), including any necessary extension(s).	Special Permit Condition I.D.

Contingent Submittal	Due Date	Permit Condition
Alternate Concentration Limit Demonstration	At any time during the term of this Permit.	Special Permit Condition II.A.5.
Plan for installing new monitoring wells to determine contamination extent	Within 30 calendar days after determination by Permittee or written notification by Department.	Special Permit Condition II.D.2.
Groundwater Sampling and Analysis Plan revisions to include new wells	Within 60 calendar days after Department's written notification that contamination extent has been defined.	Special Permit Condition II.D.3.
Groundwater Sampling and Analysis Plan revisions to remove plugged and abandoned wells	Within 60 calendar days after MGS' registration acceptance.	Special Permit Condition II.D.5.
Notification of field work associated with constructing or modifying the groundwater monitoring system	At least 5 calendar days before conducting work.	Special Permit Condition II.D.6.
Revise and resubmit the Groundwater SAP	As specified in the Department's final remedy approval.	Special Permit Condition II.D.7.
Perform monitoring well repairs	Within 30 calendar days, or as soon as practicable, following identification of any surface or subsurface well integrity problem.	Special Permit Condition II.D.8.
Surface Water Monitoring Program (if required) description incorporated into updated Groundwater SAP	At the time of the next Groundwater SAP update following implementing the surface water-monitoring program.	Special Permit Condition III.
Notification of new SWMU/AOC	Within 15 calendar days after discovery.	Special Permit Condition V.A.
Newly identified SWMU/AOC Assessment Work Plan	With 60 calendar days after Department's notification that a SWMU/AOC Work Plan is required.	Special Permit Condition V.B.

Contingent Submittal	Due Date	Permit Condition
SWMU/AOC Assessment Report	According to the schedule in the approved SWMU/AOC Work Plan.	Special Permit Condition V.D.
Notification of newly identified release from previously identified SWMU/AOC	Within 15 calendar days after discovery.	Special Permit Condition VI.A.
Newly identified release(s) from previously identified SWMU/AOC Assessment Work Plan	With 60 calendar days after Department's notification that a SWMU/AOC Work Plan is required.	Special Permit Condition VI.B.
SWMU/AOC Assessment Report	According to the schedule in the approved SWMU/AOC Work Plan.	Special Permit Condition VI.D.
Notification of potential need for Interim/Stabilization Measures (ISMs)	Within 24 hours of discovery of a situation that may require ISMs.	Special Permit Condition VII.A.
Submission of proposed Interim/Stabilization Measures (ISMs)	As specified in Department's written notification that ISMs are needed.	Special Permit Condition VII.B.
Notification that ISMs are not effective	Within 10 calendar days after determination by Permittee.	Special Permit Condition VII.C.
RFI Work Plan or equivalent	As specified in Department's written notification that an RFI Work Plan is required.	Special Permit Condition VIII.C.
RFI Report or equivalent	According to the schedule in the approved RFI Work Plan.	Special Permit Condition IX.C.
CMS Work Plan or equivalent	As specified in Department's written notification that a CMS Work Plan is required.	Special Permit Condition X.D.
CMS Report or equivalent	According to the schedule in the approved CMS Work Plan.	Special Permit Condition XI.C.

Contingent Submittal	Due Date	Permit Condition
Corrective Measures Completion (CMC) Report	When the Permittee believes that all corrective measures have been completed.	Special Permit Condition XV.A.
Certification of Completion of Corrective Measures	Within 60 calendar days after Departmental approval of the CMC Report.	Special Permit Condition XV.C.
Environmental Covenant discussion with Department	At least 120 calendar days before submitting a CMC Report or proposed removal of all or a portion of the permitted property from the jurisdiction of this Permit.	Special Permit Condition XVI.B.
Draft Environmental Covenant	Per discussion with the Department.	Special Permit Condition XVI.C.
Execute and Record Final Environmental Covenant	Within 60 calendar days after Department's final decision regarding the proposed action(s).	Special Permit Condition XVI.D.
Certification of Environmental Covenant Recording	Within 30 calendar days after recording at the Jackson County Recorder's Office.	Special Permit Condition XVI.E.
Copy of this Permit to any new potential owner or lease holder	At least 120 calendar days before the date of the proposed property transfer or lease.	Special Permit Condition XVII.
Proposed amendments or changes to the approved annual budget	As needed.	Special Permit Condition XVIII.C.

Contingent Submittal	Due Date	Permit Condition
Change in the form or terms of financial assurance from the current Trust Fund arrangement	As needed.	Special Permit Condition XVIII.F.

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Trustee of the Multistate Environmental Response Trust
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Figure 1 - Facility Location

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Please see hard copy or separate electronic file online at

<https://dnr.mo.gov/env/hwp/permits/mod007128978/20190601-figure1.pdf>

Figure 2 - Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs)

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<https://dnr.mo.gov/env/hwp/permits/mod007128978/20190222-figure2.pdf>

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Figure 3A - Extent of Shallow Groundwater Contamination

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<https://dnr.mo.gov/env/hwp/permits/mod007128978/20190604-figure3a.pdf>

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Figure 3B - Shallow Groundwater Flow Direction

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<https://dnr.mo.gov/env/hwp/permits/mod007128978/20181221-figure3b.pdf>

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Figure 4A - Extent of Deep Groundwater Contamination

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<https://dnr.mo.gov/env/hwp/permits/mod007128978/20190605-figure4a.pdf>

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Figure 4B - Deep Groundwater Flow Direction

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<https://dnr.mo.gov/env/hwp/permits/mod007128978/20181220-figure4b.pdf>