

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES



**REMEDIAL ACTION PLAN PERMIT
FOR HAZARDOUS REMEDIATION WASTE MANAGEMENT**

PERMITTEE

Owner and Operator: The Doe Run Resources Corporation
1801 Park 270 Drive, Suite 300
St. Louis, Missouri 63146

Facility Contact: Genevieve M. Sutton
EHS Technical Supervisor
P.O. Box 500
Viburnum, MO 65566

FACILITY LOCATION

The Doe Run Resources Corporation
500 Casteel Drive
Viburnum, Missouri 65566
Iron County
North Latitude – 37°43'47''
West Longitude – 91°05'45''
EPA ID# MOD000823252

FACILITY DESCRIPTION

The Doe Run Resources Corporation's Viburnum facility is currently a non-operating lead mine and mill, with multiple lead tailings piles. The mine tailings piles are permitted by the Missouri Department of Natural Resources, under the Missouri Metallic Minerals Waste Management Act (MMWMA), Permit MM-008. Since 2005, Doe Run has been allowed to use the facility as a hazardous remediation waste management site. Doe Run currently is performing

non-time-critical removal of remediation waste from properties located within the Viburnum Trend Haul Road (VTHR) Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) site, which is regulated under Administrative Orders with the U.S. Environmental Protection Agency (EPA).

PERMITTED ACTIVITIES

Pursuant to Code of State Regulations 10 CSR 25-7.270(1), incorporating Code of Federal Regulations 40 CFR 270, Subpart H, the Missouri Department of Natural Resources (hereafter the Department) hereby approves the Permittee's Remedial Action Plan (RAP) application, dated March 31, 2017, with additions dated May 23, 2017 (hereafter collectively referred to as the approved RAP application), and issues a RAP Permit to The Doe Run Resources Corporation (hereafter the Permittee) authorizing the treatment, storage, and disposal of hazardous remediation waste at the Permittee's tailings facility located in Viburnum, Missouri (hereafter referred to as the remediation waste management site). This RAP acknowledges the validity and incorporates all previous permitted activities and actions taken by the Permittee under the authority of the RAP issued by EPA on September 12, 2006. This RAP replaces the EPA RAP.

This RAP allows the Permittee to manage lead-contaminated soils, sediments, and other lead-impacted materials (hazardous remediation waste) excavated from properties and/or child high use areas located in the VTHR CERCLA site, including soils from yards and/or child high use areas in the Middlebrook Railhead Operable Unit and in the City of Viburnum, known as the St. Joe Minerals Operable Unit. This RAP also allows the Permittee to manage lead-contaminated soils from residences and/or child high use areas in the vicinity of the Buick Smelter, also owned and operated by Doe Run, as a part of its Resource Conservation and Recovery Act (RCRA) corrective action activities; and lead-bearing sludge removed from the Viburnum city sanitary lagoons. The Permittee is allowed to dispose of approximately 23,000 cubic yards of material already present in the staging area that was placed there under the original EPA RAP; and approximately 390,000 cubic yards of additional material from the City of Viburnum removal action, VTHR CERCLA site, and Viburnum city sanitary lagoons.

This RAP does not allow the Permittee to treat, store, and/or dispose of other hazardous remediation wastes from other sources than those mentioned above. Potential remediation waste(s) excavated as part of any future Viburnum Trend Lead Mining Area activities, RCRA corrective action activities, or other corrective/remedial actions, restoration, or cleanup activities conducted under EPA or State of Missouri authority may not be managed by the Permittee without prior review and approval from the Department. These sources, and other as of yet undetermined sources of hazardous remediation waste(s), may be added to this RAP through the modification procedures outlined in General Permit Condition V, and in limited circumstances Special Permit Condition I.

Hazardous remediation waste to be managed under this RAP may be characteristic hazardous waste based on failure of the Toxicity Characteristic Leaching Procedure (TCLP) for lead, or potentially other hazardous waste(s) as defined in 40 CFR 261.24. Pursuant to this RAP and the approved RAP application, the Permittee may transport hazardous remediation waste to the staging area of the remediation waste management site for placement on the tailings areas identified in the approved RAP application. Remediation waste(s) that does not fail TCLP may be placed, as received, onto the tailings piles identified in the approved RAP application. Hazardous remediation waste(s) that fails TCLP must be stored in staging areas, treated, and tested to meet applicable Land Disposal Restriction (LDR) treatment standards prior to placement on the tailings pile areas identified in the approved RAP application.

EFFECTIVE DATES OF PERMIT: February 20, 2019 to February 19, 2029

February 20, 2019
Date

[Original signed by Ed Galbraith]

Ed Galbraith, Director
DIVISION OF ENVIRONMENTAL QUALITY

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INTRODUCTION

This RAP is a special form of permit, issued under state authority, pursuant to the state's RCRA-equivalent requirements that allow owners/operators to treat, store, and/or dispose of hazardous remediation waste at a remediation waste management site. All citations to federal regulations throughout this Permit are for the sake of convenient reference. The federal regulations are adopted by reference in 10 CSR 25. Applicable regulations are found in 10 CSR 25-7.270(1), incorporating 40 CFR 270, Subpart H; general permit conditions in 40 CFR 270.30; and applicable requirements of 40 CFR 264, 266, and 268, as incorporated in the corresponding state regulations. This RAP is issued by the Department pursuant to state authority, as Missouri is authorized to administer its RCRA-equivalent program in lieu of EPA.

After review of the Permittee's RAP application, dated March 31, 2017, with additions dated May 23, 2017, the Department determined the RAP application is complete and adequate pursuant to 10 CSR 25-7.270(1), incorporating 40 CFR 270.110. This RAP is for hazardous remediation waste treatment, storage, and disposal activities and is issued only to the Permittee named above. This RAP is issued for a period of ten years and expires at midnight on February 19, 2029. This RAP is subject to review and modification by the Department in accordance with 10 CSR 25-7.270(1), incorporating 40 CFR 270.175. According to 10 CSR 25-7.270(1), incorporating 40 CFR 270.51, if the Permittee submits a timely and complete application for a new RAP and the Department, through no fault of the Permittee, is unable to issue a new RAP on or before the expiration of this RAP, the conditions of this RAP will continue in force until the effective date or denial of a new RAP.

According to 10 CSR 25-7.270(1), incorporating 40 CFR 270.155, this RAP may be appealed to the same extent as final permit decisions. Any appeals of this RAP, or specific RAP 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 RAP 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 that a copy of any appeal request be provided to the Missouri Department of Natural Resources, Hazardous Waste Program Director, P.O. Box 176, Jefferson City, MO 65102-0176.

All RAP 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.

The RAP and accompanying material shall be available for public review at the Department's office in Jefferson City, Missouri.

According to 10 CSR 25-7.270(1), incorporating 40 CFR 270.175(a)(6), any inaccuracies found in information submitted by the Permittee may be grounds for the termination, revocation and reissuance, or modification of this RAP, and for potential enforcement action. The Permittee shall inform the Department of any deviation from, or changes in, the information provided in the RAP application that would affect the Permittee's ability to comply with the applicable regulations or RAP conditions.

When the Department receives any information, such as inspection results or information or requests from the Permittee, it may decide whether cause exists to modify, revoke and reissue, or terminate this RAP. Any such actions by the Department shall be handled in accordance with 10 CSR 25-7.270(1), incorporating 40 CFR 270.170, 40 CFR 270.175, 40 CFR 270.180, 40 CFR 270.185 and 40 CFR 270.190, as appropriate.

The location of the remediation waste management site is shown in Figure 1. Transportation, treatment, storage, and disposal of hazardous remediation waste at this remediation waste management site shall be in accordance with the provisions of this RAP, the requirements of the Department of Transportation, and all applicable federal and state environmental laws and the rules and regulations promulgated thereunder, as effective on the date of this RAP, including the Missouri Hazardous Waste Management Law (Sections 260.350 to 260.434, RSMo) and the Missouri Metallic Minerals Waste Management Act (Sections 444.350 and 444.380, RSMo), as administered by the Department's Land Reclamation Program. The approved RAP application, which includes all final engineering plans, petitions, specifications, and operating procedures submitted to the Department during the RAP application review process, is incorporated by this reference into the conditions of this RAP.

The Permittee is required to comply with all applicable environmental laws and regulations enforced by the Department. These environmental laws and regulations are administered by the Air Pollution Control Program, Hazardous Waste Program, Land Reclamation Program, Solid Waste Management Program, and Water Protection Program. Failure to comply with all applicable state and federal laws, regulations, and permits may, in certain circumstances, result in the suspension or revocation of this RAP and may subject the Permittee to civil and criminal liability.

DEFINITIONS

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

“Approved RAP Application” means the RAP application, dated March 31, 2017, with additions, dated May 23, 2017, and all subsequent revisions or addenda to the RAP application, and any completeness and technical information submitted as referenced in the Introduction of this RAP.

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

“Hazardous Remediation Waste” means all solid hazardous wastes, and all media (including lead-contaminated soils, sediments, and other lead-impacted materials) and debris that are managed for implementing cleanup, as defined by 10 CSR 25-3.260(1), incorporating 40 CFR 260.10.

“Land Disposal Restriction (LDR)” means the treatment standards established in the regulations found in 10 CSR 25-7.268(1), incorporating 40 CFR 268.

“Permittee” means the owner and operator of The Doe Run Resources Corporation tailings facility located in Viburnum, Missouri.

“Remedial Action Plan (RAP)” means a special form of permit, issued under state authority, pursuant to the state’s RCRA-equivalent requirements that allow owners/operators to treat, store, and/or dispose of hazardous remediation waste at a remediation waste management site.

“Remediation Waste Management Site” means The Doe Run Resources Corporation tailings facility, located in Viburnum, Missouri, which is authorized under this RAP to accept selected hazardous remediation wastes for treatment, storage, and disposal. A remediation waste management site is not a facility that is subject to corrective action under 40 CFR 264.101, but is subject to corrective action requirements if the site is located in such a facility.

“Toxicity Characteristic Leaching Procedure (TCLP)” means a lab procedure designed to predict whether a particular waste is likely to leach chemicals into groundwater at dangerous levels.

SCHEDULE OF COMPLIANCE

- I. Within 180 calendar days of the effective date of this RAP, material subject to this RAP that currently is located at the remediation waste management site staging area that previously has been treated shall be tested, as necessary, to ensure compliance with LDRs. If compliant, the material shall be placed on the tailings areas identified in the approved RAP application.
- II. Within 180 calendar days of the effective date of this RAP, material subject to this RAP that currently is located at the remediation waste management site that previously have not been treated shall be tested, as necessary, to ensure compliance with LDRs. If compliant, the material shall be placed on the tailings areas identified in the approved RAP application.

If the material is found to not be in compliance with the LDRs, the material shall be treated and re-tested until compliance with the LDRs is confirmed. The material shall be placed on the tailings areas identified in the approved RAP application within 180 calendar days after compliance with the LDRs is confirmed, unless the Permittee submits a written extension request to the Department and receives approval for the extension from the Department.

- III. If the Permittee has not already done so as of the effective date of this RAP, within 90 calendar days of the effective date of this RAP, the Permittee shall establish third party liability coverage in accordance with 10 CSR 25-7.264(1), incorporating 40 CFR 264 Subpart H., and Financial Assurance Condition III.
- IV. If the Permittee has not already done so as of the effective date of this RAP, within 90 calendar days of the effective date of this RAP, the Permittee shall develop and submit to the Department a contingency and/or emergency plan to address any accidents that may be anticipated to occur at the remediation waste management site as required in Special Permit Condition VIII.
- V. Within 90 calendar days of the effective date of this RAP, the Permittee shall submit for Department evaluation, an updated closure cost estimate, in accordance with 10 CSR 25-7.264(1), incorporating 40 CFR 264.142, and Financial Assurance Condition I.A.
- VI. Within 60 calendar days after receiving the Department's final written response regarding review of the updated closure cost estimate, the Permittee shall submit to the Department all documentation necessary to demonstrate the Permittee satisfies the financial assurance criteria in 10 CSR 25-7.264(1), incorporating 40 CFR 264.143,

for any closure activities that are not covered already by the financial assurance requirements of the Permittee's MMWMA Permit MM-008.

- VII. Within ten calendar days after receiving the Department's final written response regarding the draft financial assurance instrument(s), the Permittee shall execute or otherwise finalize all instruments or other documents required in order to make the selected financial assurance legally binding. The final financial assurance instrument(s) shall be in a form identical to the draft financial assurance documents reviewed by the Department, including any changes resulting from that review.
- VIII. Within 30 calendar days after receiving the Department's final written response regarding the draft financial assurance instrument(s), the Permittee shall ensure the issuing institution submits all original executed and/or otherwise finalized instruments or other documents to the Department. Facsimiles or photocopies are not acceptable.

SUBMITTAL OF REQUIRED INFORMATION

Unless otherwise requested by the Department, the Permittee shall submit two paper copies and one searchable electronic copy of all documents as requested by the Department, or required under the terms of this RAP, to:

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

GENERAL PERMIT CONDITIONS

The Permittee is required to comply with General Permit Conditions set forth in 10 CSR 25-7.270(1), incorporating 40 CFR 270.30, as listed below. Specifically, these requirements include:

I. Duty to Comply [40 CFR 270.30(a)]

The Permittee must comply with all conditions of this RAP. Any noncompliance, except under the terms of an emergency permit issued under 10 CSR 25-7.270(1), incorporating 40 CFR 270.61, may constitute a violation of Missouri's hazardous waste management law or regulations and may be grounds for an enforcement action; for RAP termination, revocation and reissuance, or modification; or for denial of a RAP renewal application.

II. Duty to Reapply [40 CFR 270.30(b) and 270.200]

If the Permittee wishes to continue an activity regulated by this RAP after its expiration date, the Permittee must apply for and obtain a new RAP. The Permittee shall submit a complete RAP renewal application to the Department at least 12 calendar months prior to the expiration date of this RAP. According to 10 CSR 25-7.270(1), incorporating 40 CFR 270.51, if the Permittee submits a timely and complete RAP renewal application and the Department, through no fault of the Permittee, is unable to issue a new RAP on or before the expiration of this RAP, the conditions of this RAP will continue in force until the effective date or denial of a new RAP.

III. Need to Halt or Reduce Activity Not a Defense [40 CFR 270.30(c)]

It shall not be a defense for the Permittee in an enforcement action, that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this RAP.

IV. Duty to Mitigate [40 CFR 270.30(d)]

In the event of noncompliance with this RAP, the Permittee shall take all reasonable steps to minimize releases to the environment and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment.

V. Proper Operation and Maintenance [40 CFR 270.30(e)]

The Permittee shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Permittee to achieve compliance with the conditions of this RAP. Proper operation and maintenance includes, but is not limited to, effective performance, adequate funding, adequate staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures.

VI. Permit Actions [40 CFR 270.30(f)]

This RAP may be modified, revoked and reissued, or terminated for cause. The Permittee's filing of a request for a RAP modification, revocation and reissuance, or termination, or notification of planned changes or anticipated noncompliance, does not stay any RAP condition.

The Permittee may request modification of this RAP to include additional wastes not identified in the approved RAP application, such as soils excavated as part of any future Viburnum Trend Lead Mining Area activities; materials excavated as part of any RCRA corrective action activities or other corrective remedial actions, restoration, or cleanup activities conducted under EPA or State of Missouri authority. Any modification to this RAP shall be reviewed and approved by the Department prior to implementing any proposed changes.

VII. Property Rights [40 CFR 270.30(g)]

This RAP does not convey any property rights of any sort, or any exclusive privilege.

VIII. Duty to Provide Information [40 CFR 270.30(h)]

The Permittee shall furnish to the Department, within a reasonable amount of time, any relevant information the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this RAP, or to determine compliance with this RAP. The Permittee shall furnish to the Department, upon request, copies of records required to be kept by this RAP.

IX. Inspection and Entry [40 CFR 270.30(i)]

The Permittee shall allow the Department, or an authorized representative, upon the presentation of credentials to:

- A. Enter, at reasonable times, upon the Permittee's premises where a regulated activity is located or conducted, or where records are kept under the conditions of this RAP;
 - B. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this RAP;
 - C. Inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this RAP; and
 - D. Sample or monitor, at reasonable times, for the purposes of assuring compliance with this RAP.
- X. Monitoring and Records [40 CFR 270.30(j)]

The following monitoring shall be conducted, and records shall be maintained, as described below.

- A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
- B. All sampling and analysis plans and quality assurance project plans associated with this RAP shall be approved by the Department prior to implementation.
- C. The Permittee shall retain records of all monitoring information and associated quality assurance/quality control (QA/QC) documentation, and copies of all reports required by this RAP. Unless otherwise required by the Department, these records shall be retained by the Permittee for a period of at least three years from the date of submission of any report containing final validated (level 2) analytical results/measurements. This period may be extended by request of the Department at any time. The Permittee shall maintain records from all groundwater monitoring wells and associated groundwater surface elevations in compliance with the requirements of MMWMA Permit MM-008. The period for retention of these records is automatically extended during the course of any unresolved enforcement action regarding this remediation waste management site.

- D. Records of monitoring information shall include:
1. The date, exact place and time of the sampling or measurement;
 2. The full name of the individual(s) who performed the sampling or measurement;
 3. The date(s) analyses were performed;
 4. The analytical techniques or methods used; and
 5. The final validated (level 2) results of such analyses, including any associated QA/QC information.

XI. Signatory Requirements [40 CFR 270.30(k)]

All reports submitted pursuant to this RAP must be signed by the Owner and Operator in accordance with 10 CSR 25-7.270(1), incorporating 40 CFR 270.105. All reports submitted pursuant to this RAP that require engineering and/or geological expertise review as part of the content(s) of the report shall be sealed, as appropriate, by a professional engineer and/or geologist registered in the State of Missouri, in accordance with the applicable State of Missouri regulations governing engineering and geologic practice.

XII. Reporting Requirements [40 CFR 270.30(l)]

- A. The Permittee shall notify the Department, in writing, at least 15 calendar days prior to any planned changes or physical alterations from operating conditions, identified in the approved RAP application or this RAP, related to the remediation waste management site.
- B. The Permittee shall notify the Department, at least 30 calendar days prior to any planned changes in the remediation waste management site or waste sampling, transport, and treatment activities that may result in noncompliance with the conditions of this RAP.
- C. This RAP may be transferred to a new owner or operator only after written advanced notice is provided to the Department pursuant to 10 CSR 25-7.270(1), incorporating 40 CFR 270.220, and the RAP is modified or revoked and reissued pursuant to 10 CSR 25-7.270(1), incorporating 40 CFR

270.170, to identify the new Permittee. Before transfer of ownership or operation of the facility, the Permittee shall notify the new owner or operator, in writing, of the requirements of 10 CSR 25-7.264(1), incorporating 40 CFR Parts 264; 10 CSR 25-7.270(1), incorporating 40 CFR Parts 270; and this RAP.

D. 24-Hour Reporting.

1. The Permittee shall report any noncompliance, which may endanger health or the environment, orally, within 24 hours from the time the Permittee becomes aware of the circumstances, including:
 - a. Information concerning a release of hazardous waste from the remediation waste management site that may cause an endangerment to public drinking water supplies;
 - b. Any information of a release or discharge of hazardous waste which could threaten human health or the environment outside the remediation waste site boundaries. The description of the occurrence shall include:
 - (1) Name, address, and telephone number of the Permittee;
 - (2) Name and telephone number of the remediation waste site manager and location of the remediation waste management site;
 - (3) Date, time, and type of incident;
 - (4) Name and quantity of materials involved;
 - (5) Extent of injuries, if any;
 - (6) Assessment of actual or potential hazards to public or private drinking water supplies and human health and/or the environment; and
 - (7) Estimated quantity and disposition of any recovered materials that resulted from the incident.

2. Within five calendar days of when the Permittee becomes aware of the circumstances of the incident, the Permittee shall submit a written submission to the Department, detailing the information listed in General Permit Condition XII.D. The Permittee shall also submit a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times (where possible); the anticipated time the noncompliance is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. The Department may waive the five-day written notice in favor of a written report within 15 calendar days.
- E. The Permittee shall report all instances of noncompliance with the requirements of this RAP not reported under the above paragraphs, to the Department, in writing, within 24 hours from the time the Permittee becomes aware of the circumstances.
- F. If the Permittee discovers it failed to submit any relevant information in a RAP application, or submitted incorrect information in its approved RAP application, subsequent RAP documentation, or in any report to the Department, the Permittee shall promptly submit the relevant and/or corrected information to the Department within 30 calendar days of discovery.

SPECIAL PERMIT CONDITIONS

The Department has established the following additional RAP conditions as required by 40 CFR 270.135, and information required under 40 CFR 270.110 (a) through (f).

I. RAP Modification, Revocation and Reissuance, or Termination

- A. The Department may modify, revoke and reissue, or terminate this RAP in accordance with 10 CSR 25-7.270(1), incorporating 40 CFR 270.170, and specifically the provisions of 40 CFR 270.175 (modification), 40 CFR 270.180 (revocation and reissuance), and 40 CFR 270.185 (termination). For any modification, revocation and reissuance, or termination that would significantly change the management of the hazardous remediation wastes, or that otherwise merits public review and comment, the Department will follow the procedures for public comment as outlined in 40 CFR 270.145.
- B. If the Permittee is placed under additional CERCLA Administrative Order(s) for further removal of hazardous remediation waste within the VTHR CERCLA site or other areas in Missouri that are not in effect at the time of issuance of this RAP, this RAP may be modified to include this additional hazardous remediation waste.
 1. The Permittee must submit to the Department for review and approval, a written modification request, which includes:
 - a. The estimated amount of additional hazardous remediation waste to be treated and disposed of at the remediation waste management site;
 - b. Location(s) of the additional material's removal; and
 - c. Information about the type of additional waste(s) being proposed to be disposed of at the remediation waste management site (i.e. media type, contaminants involved, concentration levels in the wastes, etc.).
 2. The modification request shall follow similar administrative procedures to a Class 1 permit modification with prior Director approval, as described in 10 CSR 25-7.270(1), incorporating 40 CFR 270.42.

II. Waste Transportation

Hazardous remediation wastes are to be transported by the Permittee and/or the Permittee's contractor(s) to the remediation waste management site. The location of the remediation waste management site is shown in Figure 1. The Permittee is responsible for ensuring these wastes are transported by or on behalf of the Permittee in a manner that protects human health and the environment. Waste spillage and/or the inadvertent spread of contamination must be prevented. To accomplish this, the Permittee must ensure that the following conditions are met. Failure to comply with any of these conditions may result in the immediate termination of this RAP in accordance with the provisions of 10 CSR 25-7.270(1), incorporating 40 CFR 270.185.

- A. Trucks transporting the hazardous remediation wastes by or on behalf of the Permittee to the remediation waste management site must be covered with tight-sealing, non-porous tarps that are kept in good condition at all times.
- B. Trucks and other vehicles and equipment shall be inspected, decontaminated (if necessary), and verified in documentation by the Permittee to be free from all visible contamination on the outer surface of the trucks prior to leaving the hazardous remediation waste point of origin and the remediation waste management site. The outer surface is defined as any part of the truck, wheels, or bed that is not covered by the tarp as required by Special Permit Condition II.A.

III. Waste Determination and Treatment

- A. Upon arrival at the remediation waste management site, the hazardous remediation wastes shall be placed in the staging area. Wastes shall be sampled and sent for TCLP analysis within 30 calendar days of arrival at the staging area. Specific sampling requirements for making a waste determination are contained in Special Permit Condition VII.
- B. Wastes found to be nonhazardous for lead [less than 5.0 mg/L (ppm) lead] and other hazardous waste(s), as defined by TCLP analysis, SW-846, Method 1311/6010, shall be placed directly on one or more of the tailings pile location(s) identified in the approved RAP application, within 45 days of receipt of confirmatory TCLP analytical results.

- C. Wastes that fail TCLP for lead [greater than 5.0 mg/L (ppm) lead] or other hazardous waste(s) are characteristic hazardous waste and must be treated in the staging area to meet applicable LDR standards prior to placement on a designated tailings pile location(s) identified in the approved RAP application. Waste treatment shall consist of the following:
1. Treatment of remediation wastes that fail TCLP shall be initiated within 30 calendar days of receiving final, validated (level 2) analytical data demonstrating the remediation waste has failed TCLP.
 2. Treated remediation wastes shall be analyzed within 30 calendar days after completing treatment per Special Permit Condition III.C.3. Within 45 calendar days of receipt of confirmatory analytical data, the treated remediation wastes shall be retreated if failing LDRs after treatment, per Special Permit Condition III.C.4.b., or, if compliant with LDRs per Special Permit Condition III.C.4.a., placed on one or more designated tailings pile areas.
 3. Treatment shall consist of blending a suitable stabilization chemical (SSC), such as 2% Tri-Super Phosphate or another Department-approved stabilization chemical having a similar effect by volume with the remediation waste. Blending of the SSC with the remediation waste shall be conducted using equipment that ensures consistent and adequate treatment to meet LDRs. Any change in the methods, composition, or use of a new SSC (beyond 2% Tri-Super Phosphate) shall be approved, in writing, by the Department prior to implementation. Such approval does not require modification of this RAP.
 4. After blending and curing (treatment) has occurred, the Permittee shall collect and analyze samples for total lead and TCLP analyses, as provided in Special Permit Condition VII.
 - a. Hazardous remediation wastes that have been treated and found to contain less than 10 times the Universal Treatment Standard (UTS) for lead in non-wastewater (7.5 mg/L as determined by the TCLP analysis), as defined by LDR regulations at 10 CSR 25-7.268(1), incorporating 40 CFR 268.40, Treatment Standards for Hazardous Wastes, may be placed on one or

more of the designated tailings pile location(s) according to the procedures outlined in Special Permit Condition IV.

- b. Hazardous remediation wastes that have been treated and reanalyzed, where the results of TCLP lead analyses are greater than 10 times the UTS LDR, must be retreated and reanalyzed until the results are less than the treatment standard prior to being placed on one or more of the designated tailings pile location(s) according to the procedures outlined in Special Permit Condition IV.
5. If the Permittee requires additional time to perform the requirements specified in Special Permit Condition III, the Permittee shall submit a written extension request to the Department for review and approval. The Permittee's extension request shall specify the amount of additional time needed and a justification for the extension request. The Department shall receive the extension request at least seven calendar days prior to expiration of the 30-day treatment requirement. An extension may also be requested if the Permittee notifies the Department that it is engaged or intends to engage in an investigation of alternative stabilization chemicals and/or appropriate dosing ratios.

IV. Waste Disposal

- A. Hazardous remediation wastes that are analyzed and determined to be nonhazardous (do not fail TCLP), or have been treated to 10 times the UTS, as outlined in Special Permit Condition III., may be placed on one or more of the designated tailings pile location(s) as indicated in the approved RAP application and according to the following procedures. The location of the approved tailings piles areas are shown in Figure 2.
 1. During on-property transportation and placement of hazardous remediation wastes, generation of visible lead-containing fugitive dusts shall be minimized by using engineering controls and/or best management practices;
 2. Hazardous remediation wastes shall be placed in approximately 6-inch lifts and compacted with appropriate earth moving equipment. To aid

in proper seed placement and growth, the final 6-inch lift in any area to be vegetated is not required to be compacted;

3. Placement of material shall be such that it minimizes potential erosion and/or channeling and minimizes the potential for migration of remediation waste;
4. Earth moving equipment used to place and compact hazardous remediation wastes on designated tailings pile locations must be decontaminated prior to leaving the remedial waste management site in order to minimize the potential for cross-contaminating other areas outside the remediation waste management site; and
5. Earth moving equipment leaving the remedial waste management site shall be inspected, decontaminated (if necessary), and verified in documentation by the Permittee to be free from all visible contamination on the outer surfaces.

V. Remediation Waste Management Site Operation

The Permittee shall operate the remediation waste management site in accordance with the following applicable requirements of 10 CSR 25-264(1), incorporating 40 CFR 264.1(j):

- A. The Permittee shall inspect the remediation waste management site on a calendar-quarterly basis, for malfunctions, deterioration, operator errors, erosion, slope failure, and discharges that may be causing, or may lead to, a release of hazardous remediation waste or hazardous constituents to the environment and/or that may pose a threat to human health or the environment. The Permittee shall take corrective action to remedy all problems identified during the quarterly inspection before they cause human health or environmental damage. If an imminent hazard or substantial threat is identified during a quarterly inspection, or already has occurred, the Permittee shall notify the Department in accordance with General Permit Condition XII. and must take immediate action to mitigate the hazard and/or threat;
- B. The Permittee shall provide personnel involved in construction, operation, or maintenance of the remediation waste management site with classroom or on-the-job training on how to perform their duties in a way that ensures the remediation waste management site and associated activities comply with all

the Missouri Hazardous Waste Management Law and regulations, RCRA, and this RAP. The training shall include corrective action procedures, identify emergency response actions, and include information to help personnel identify potential problems before they occur;

- C. The Permittee shall develop and maintain procedures to prevent accidents and a contingency and emergency plan to address any accidents that occur. The contingency and emergency plan shall designate at least one employee, either on the remediation waste management site or on call (i.e. available to respond to an emergency by reaching the remediation waste management site quickly), to coordinate any emergency response measures that become necessary. The employee(s) shall be available 24 hours a day;
- D. Trucks and other vehicles and equipment shall be inspected and decontaminated prior to leaving the remediation waste management site. A visual inspection and physical removal of all visible debris shall be conducted prior to leaving the remediation waste management site; and
- E. The Permittee shall maintain records documenting compliance with Special Permit Conditions V.A. through V.D.

VI. Remediation Waste Management Site Closure

- A. The remediation wastes shall serve as a cap for the designated tailings pile locations, as indicated in the approved RAP application, and as a substrate for surface vegetative growth.
- B. Following placement of all remediation wastes, the Permittee shall minimize wind and water erosion from the remediation waste placement locations through proper final grading and seeding the cap with a seed mix compatible with local vegetative and climatic conditions, and compliant with applicable MMWMA Permit MM-008 requirements. The seed mix shall include both fast growing plant varieties, to quickly stabilize the cap, and perennial varieties, to provide long term cap stability and erosion protection. Seeding shall occur as soon as practicable, based on anticipated seasonal weather conditions or as otherwise specified in the MMWMA Permit MM-008.
- C. The Permittee shall conduct biannual inspections of the vegetated capped areas, as part of the overall remediation waste management site inspections.

- D. The Permittee shall maintain the vegetation under the terms and conditions of this RAP until final closure as provided in Special Permit Condition VI.E.
- E. Final closure of the Viburnum tailings pile shall be conducted as specified in the Permittee's MMWMA Permit MM-008, which will be overseen by the Department's Land Reclamation Program.

VII. Sampling and Analyses

Sampling and analyses described in Special Permit Condition III. shall be conducted as follows:

- A. The Permittee is required to obtain samples of the hazardous remediation wastes in order to make a hazardous waste determination, as required by 10 CSR 25-4.261(1), incorporating 40 CFR 261.
 - 1. Hazardous remediation waste is to be sampled "as generated," meaning the sample needs to be representative of the waste following the procedures discussed in the EPA document entitled, Waste Analysis at Facilities that Generate, Treat, Store, and Dispose of Hazardous Wastes, EPA 530-R-12-001, April 2015, or the most recent version.
 - 2. One composite sample, consisting of 10 aliquots, shall be collected per 400 tons (500 cubic yards maximum) of hazardous remediation waste.
 - 3. Hazardous remediation waste samples shall be analyzed by the following approved methods. If the Permittee desires to use an alternate test method(s), the Permittee shall submit a written request to the Department for review and approval.
 - a. TCLP analyses - SW-846 Method 1311/6010.
 - b. Total Lead - Either field x-ray fluorescence (XRF) or SW-846 Method 7420/7421. If XRF is used, laboratory validation by SW-846 Method 7420/7421 is required for 10% of samples.
- B. Hazardous remediation waste that fail TCLP shall be treated as provided in Special Permit Condition III.C., resampled, and reanalyzed for TCLP lead until the treated materials meet the 10 times UTS LDR requirement.

Resampling, if required, shall occur at the same frequency as the initial sampling – one composite per 400 tons (500 cubic yards maximum) of hazardous remediation waste.

- C. Sampling to determine that runoff from the repository does not exceed standards protective of human health and the environment shall be conducted according to the requirements in the Permittee's most recent Missouri State Operating National Pollutant Discharge Elimination System (NPDES) Permit.
- D. Quarterly groundwater monitoring shall continue in accordance with the Permittee's MMWMA Permit MM-008, utilizing existing or future monitoring wells.

VIII. Contingency Plan and Emergency Procedures

If the Permittee has not already done so as of the effective date of this RAP, within 90 calendar days after the effective date of this RAP, the Permittee shall develop and submit a Contingency Plan to the Department for review and approval. The plan should provide an emergency response contractor to be immediately available to handle a release of hazardous waste material or address any accidents that may be anticipated to occur at the remediation waste management site.

FINANCIAL ASSURANCE CONDITIONS

- I. Closure Cost Estimate [40 CFR 264.142]
 - A. Within 90 calendar days of the effective date of this RAP, the Permittee shall submit an updated closure cost estimate, as specified in Schedule of Compliance Item V.
 - B. The Permittee shall submit the closure cost estimate to the Department for review and evaluation. If the cost estimate requires modification, the Department shall notify the Permittee, in writing, of the estimate's deficiencies and specify a due date for submitting a revised cost estimate for further evaluation and final written response.
 - C. The Permittee shall maintain, in the operating record, the most recent closure cost estimate that has received a final written response from the Department.
 - D. Revisions to Closure Cost Estimate
 1. Annually, within 60 calendar days prior to the anniversary date of the financial assurance instrument, the Permittee shall adjust the closure cost estimate to account for inflation until all activities required by this RAP are complete. The inflation adjustment shall be determined by using the procedures described in 10 CSR 25-7.264(1), incorporating 40 CFR 264.142(b).
 2. The Permittee shall also adjust the closure cost estimate if any other changes in the costs associated with implementation, operation, inspection, maintenance, and monitoring increase or decrease the estimated cost of the closure activities required by this RAP.
 3. If the Department determines that a new cost estimate is required, the Department shall notify the Permittee, in writing, of this requirement. The revised cost estimate is due within 60 calendar days of the Permittee's determination that a revised cost estimate is necessary or written notification by the Department that a new cost estimate is required.
 4. The Permittee shall submit each revised closure cost estimate to the Department for review and evaluation. If the revised cost estimate

requires further modification, the Department shall notify the Permittee, in writing, of the estimate's deficiencies and specify a due date for submitting a new revised cost estimate for further evaluation and final written response.

II. Financial Assurance [40 CFR 264.143]

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

- A. Within 30 calendar days after receipt of the Department's final written response regarding the Permittee's cost estimate(s) pursuant to this RAP, the Permittee shall submit to the Department for review and evaluation, the draft financial assurance instrument(s) and related documents for any closure costs that are not already covered by the closure financial assurance requirements of the Permittee's MMWMA Permit MM-008.
- B. Within 30 calendar days after receiving the Department's final written response regarding the draft financial assurance instrument(s), the Permittee shall ensure the issuing institution submits all original executed and/or otherwise finalized instruments or other documents to the Department required in order to make the selected financial assurance legally binding. The instruments or other documents shall be in a form identical to the financial assurance documents reviewed and responded to by the Department. Facsimiles or photocopies are not acceptable.
- C. The Permittee shall submit all required financial assurance instruments and related documents to the Department by certified mail.
- D. If, at any time, the Department determines a financial assurance instrument(s) provided pursuant to this RAP is inadequate, or no longer satisfies the requirements, the Department shall notify the Permittee in writing.
 1. Within 30 calendar days of receipt of such notice, the Permittee shall submit draft revised financial assurance instruments and related documents to the Department for review and evaluation. The draft

revised financial assurance instruments and related documents shall address the inadequacies outlined in the Department's notice.

2. Within 30 calendar days after receiving the Department's final written response regarding the draft revised financial assurance instrument(s), the Permittee shall ensure that the issuing institution submits all original executed and/or otherwise finalized instruments or other documents to the Department required in order to make the selected financial assurance legally binding. The instruments or other documents shall be in a form identical to the revised financial assurance documents reviewed and responded to by the Department. Facsimiles or photocopies are not acceptable.

E. If, at any time, the Permittee determines that any financial assurance instrument provided pursuant to this RAP is inadequate, or no longer satisfies the requirements described or incorporated by reference herein, the Permittee shall notify the Department, in writing, within ten calendar days of this determination. This applies whether due to an adjustment in the estimated cost of the closure activities required by this RAP or for any other reason. The Permittee shall follow the procedures in Financial Assurance Condition II.D. to update/replace the financial assurance instrument.

F. Release of Financial Assurance.

1. The Permittee may submit a written request to the Department to release the Permittee from the requirement to maintain financial assurance after the Department and the Permittee have mutually agreed that all closure activities required by this RAP are complete.
2. The Department shall notify both the Permittee and the financial assurance provider if and when the Permittee is released from all financial assurance obligations under this RAP.
3. The Permittee shall not release, cancel, or terminate any financial assurance provided pursuant to this RAP, except as provided in this paragraph.

III. Liability Requirements [40 CFR 264.147]

- A. If the Permittee has not already done so as of the effective date of this RAP, within 90 calendar days after the effective date of this RAP, the Permittee shall establish third party liability coverage in accordance with 10 CSR 25-7.264(1), incorporating 40 CFR 264.147.

FIGURES

Figure 1 – Facility Location

Figure not available due to size.
Please see hard copy or separate electronic file online at
dnr.mo.gov/env/hwp/permits/mod000823252/20181207-figure1.pdf

Figure 2 – Facility Approved Tailings Piles Location Areas

**Figure not available due to size.
Please see hard copy or separate electronic file online at
dnr.mo.gov/env/hwp/permits/mod000823252/20181127-figure2.pdf**