Interim Risk Management Plan for National Zinc Site, Cherryvale, Kansas

APPROVED
Interim Risk Management Plan
for National Zinc Site,
Cherryvale, Kansas

Prepared for

CitiGroup Global Market Holdings, Inc.
United States Steel Corporation

On behalf of

The City of Cherryvale

Exponent
15375 SE 30th Place, Suite 250
Bellevue, WA  98007

May 2019

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<th>Definition</th>
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<td>ADS</td>
<td>Agency Decision Statement</td>
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<td>City</td>
<td>City of Cherryvale</td>
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<td>KAR</td>
<td>Kansas Administrative Rules</td>
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<td>KDHE</td>
<td>Kansas Department of Health and Environment</td>
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<td>mg/kg</td>
<td>milligrams per kilogram</td>
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<td>RAD</td>
<td>Removal Action Design</td>
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<td>RMP</td>
<td>Risk Management Plan</td>
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<td>ROW</td>
<td>right-of-way</td>
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<td>RSE</td>
<td>Removal Site Evaluation</td>
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<td>RSK</td>
<td>Risk-Based Standards for Kansas</td>
</tr>
<tr>
<td>Site</td>
<td>the corporate limits of the City of Cherryvale outside the former smelter property and excluding all operating and abandoned railroad rights of way</td>
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<td>SMP</td>
<td>Soil-Waste Management Plan</td>
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<td>SRM</td>
<td>smelter residue material, including associated impacted soil</td>
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<td>SSV</td>
<td>soil screening value</td>
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</table>
1 Introduction

This Interim Risk Management Plan (RMP) for the National Zinc Site, Cherryvale, Kansas, has been prepared by Respondents on behalf of the City of Cherryvale (the City), the Risk Management Program applicant, consistent with the Kansas Department of Health and Environment (KDHE) Risk Management Program regulations adopted in May 2016. The objective of this Interim RMP and the Final RMP is to provide a plan for the City and KDHE to manage long-term care and Site risks for smelter residue material and associated impacted soil, collectively referred to as “SRM”, in Cherryvale, Kansas in a manner that protects human health and the environment.

1.1 Purpose and Applicability

This Interim RMP serves as a mechanism to establish elements of long-term care and management that will be in effect through completion of the remedial actions described in the Removal Action Design (RAD) Plan approved by KDHE (Exponent 2018). Upon completion of those remedial actions, a Final RMP will be prepared on behalf of the City to facilitate long-term care and management of this low risk Site in accordance with KDHE’s Risk Management Program Act requirements in Kansas Administrative Regulations (KAR) 24-74-3. At KDHE’s request, this Interim RMP and the Final RMP will take the place of the Institutional Controls (IC) Plan required in the RAD Plan and discussed in the Soil-Waste Management Plan (SMP) (Exponent 2017) (Appendix A).

This Interim RMP applies to areas within the corporate limits of the City of Cherryvale outside the former National Zinc Smelter Property excluding all operating and abandoned railroad rights of way (the Site and the RMP area) as shown on Figure 1.

1.2 Parties Conducting RMP Activities

The following parties may conduct activities under this Interim RMP:

- The Respondents and remediation contractors
- The City and its contractors
- City franchisees and contractors
- Property owners and others (e.g., builders, residents, lessees, utility and landscaping contractors)

The Final RMP will go into effect when the remediation has been completed. At that time, the Respondents (and their remediation contractors) will have completed their remedial action obligations as defined in the RAD Plan approved by KDHE, and the Final RMP will not apply to the Respondents.
### 1.3 RMP Contacts

The following City and KDHE contacts will work together to establish and administer RMP requirements for the Site.

**City Administrator**

__________________ *(Office currently vacant)*

The City of Cherryvale  
123 West Main Street  
Cherryvale, Kansas 67335  
Phone: (620) 336-2776  
email: To be published at  
http://www.cherryvaleusa.com/i_want_to/city_administrator/index.php

**KDHE National Zine Site Manager — Interim RMP Period**

Pamela Green *(or subsequent party designated by KDHE)*  
Bureau of Environmental Remediation  
Kansas Department of Health & Environment  
1000 SW Jackson Street, Suite 410  
Topeka, Kansas 66612-1367  
Phone: (785) 296-1935  
email: Pamela.Green@ks.gov *(or email for subsequent party designated by KDHE)*

**KDHE RMP Manager — Long-Term RMP Period**

Andrea Schiller, P.G. *(or subsequent party designated by KDHE)*  
Long Term Stewardship & Brownfields  
Bureau of Environmental Remediation  
Kansas Department of Health & Environment  
1000 SW Jackson Street, Suite 410  
Topeka, Kansas 66612-1367  
Phone: (785) 296-0489  
email: Andrea.Schiller@ks.gov *(or email for subsequent party designated by KDHE)*

### 1.4 Report Organization

The remainder of this RMP is organized as follows:

- **Section 2**—Site Description and Background. Provides a Site description and background of the Site, including the former smelter property. Includes discussion of current and reasonably anticipated future uses of properties.

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1 Following completion of remedial actions and execution of an RMP agreement.
• **Section 3**—Site Conditions Summary. Summarizes historical and current Site conditions, and planned remedial actions that will be completed.

• **Section 4**—Long-Term Maintenance. Presents the plan for long-term maintenance following remedial actions.

• **Section 5**—Property Owner Notice. Presents community outreach notifications that will be issued during the Interim RMP and long-term RMP periods, and associated public meetings.

• **Section 6**—RMP Reporting. Describes RMP reporting that will be conducted by the City for the long-term care period under the Final RMP.

• **Section 7**—References.
2 Site Description and Background

This section presents a general Site description and background. More detailed Site information is provided in the RSE Work Plan (Exponent 2014b), Phase 2 RSE Report (Exponent 2016a), and the RAD Plan (Exponent 2018).

2.1 Site Description

The Site is located in southeastern Kansas and includes the area within the corporate limits of the City of Cherryvale outside the former National Zinc Smelter Property excluding all operating and abandoned rail road rights of way (the Site) in Montgomery County, Kansas as shown on Figure 1. SRM originated from the former smelter property that adjoins the Site in the northwest part of the City also shown on Figure 1. The current and reasonably likely future use of the Site is primarily residential with some non-residential use (commercial and industrial) and public spaces (e.g., parks).

The climate in Montgomery County, Kansas, is continental, typically warm to hot in the summers (average at 79°F), and cold in the winters (average at 37°F). Most precipitation occurs in spring and early summer, with average annual precipitation of 36.95 in. per year. The prevailing winds in Montgomery County are generally from the south, with an average annual speed of 11 miles per hour.

2.2 Site Background

Zinc smelting operations on what is now the former National Zinc Smelter Site began in approximately 1898. After World War I, smelting operations dwindled. The Cherryvale plant continued operating on a small scale, reprocessing smelter wastes, until 1976 (Junge and Bean 2006).

In the 1970s, the National Zinc Company conducted environmental response actions at the former zinc smelter property. After a restrictive covenant was issued on the former zinc smelter property in 1989, the City of Cherryvale acquired the property. The Respondents completed remediation of the smelter facility property in 2007 (KDHE 2016a). The City currently handles operation and maintenance of the remediated former smelter facility.

Solid waste consisting of furnace cinders, broken clay cylinder retorts, and metallic slag created during the smelting process (referred to at this Site as smelter residue material or SRM) was historically used as fill material at various locations throughout the Site. Investigation of the former smelter property and SRM at the Site has been summarized in various documents, including the Phase 1 and Phase 2 RSE reports (Exponent 2014a, 2016a; PNL 2014), and the RAD Plan (Exponent 2018).
3 Site Conditions Summary

SRM from historical smelter operations is the source of Site impacts, primarily from its historic use as fill material at various locations throughout the Site. Numerous investigations have been conducted documenting the nature and extent of SRM at the Site and these reports (e.g., Exponent 2014a, 2016a; PNL 2014) are available on the KDHE website or by request from KDHE or the City.

Lead in SRM and soil is the primary driver for the Site. Other contaminants include arsenic, cadmium, and zinc. Previous Site investigations have demonstrated that remediation of lead in soil to KDHE’s risk-based standards (Tier 2 Risk-Based Standards for Kansas [RSK]; KDHE 2015) addresses exceedances of the other few chemicals of concern at the Site. KDHE’s RSK for lead include a residential soil screening value (SSV) of 400 milligrams per kilogram (mg/kg) and a non-residential (i.e., commercial and industrial) SSV of 1,000 mg/kg. The routes of potential exposure during SRM handling include dermal contact and incidental ingestion and inhalation of particulates (dust).

Past investigations have shown that areas with visible SRM can exceed the SSVs. Visual identification of SRM has been relied upon to identify areas of the Site needing remediation, and will continue to be relied upon during the long-term care period, which is the purpose of this Interim RMP and the Final RMP. This long-term care includes promulgation of new and revised City Ordinances pertaining to handling and management of visible SRM as described in Section 4.

3.1 Summary of Remedial Actions

Environmental activities to address Site SRM began in 2001. A summary of relevant studies and interim removal actions conducted at the Site from 2001 to 2016 is presented in Table 13. Based on these studies, remedial actions were evaluated and a preferred alternative was identified and approved by KDHE in its Agency Decision Statement (ADS) published on December 2, 2016 (KDHE 2016). The selected remedy is detailed in the RAD Plan (Exponent 2018) which was approved by KDHE on April 26, 2018 (KDHE 2018), and includes sampling, removal, capping, rehabilitation, and stabilization activities for parcels (yards, drip lines, brick walkways and driveways), parks, City alleys, brick walkways and ditches.

As part of this remediation, areas disturbed during remedy implementation will be restored to approximately pre-remedy conditions. Excavations will be back-filled with clean soil and lightly compacted to approximate pre-excavation elevations. For yards, topsoil will be replaced and the soil removal area will be revegetated with sod or reseeded with grasses. All structures (e.g., fences, yard fixtures, and play structures) removed during the course of work, will be put back. Driveways will be replaced with compacted gravel or pavement, if removed. Any remediated

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2  http://www.kdheks.gov/remedial/site_remediation/national_zinc.html
3  This summary also includes former smelter property activities from 1976 through 2007, and RAD Plan completion in 2018.
walkways will be replaced with concrete. Surfaces in the area of drip lines will be restored and are typically soil or gravel. Parks will be restored by covering or filling with soil or gravel, depending on the use. Public property (e.g., streets, sidewalks, and right-of-ways [ROWs]) shall be restored in a manner satisfactory to the City in accordance with revisions to the City Ordinances described in Section 4.
4 Long-Term Maintenance

This section presents the plan for long-term maintenance following remedial actions. Long-term maintenance is needed to protect remediated areas where residual SRM has been left in-place at depth with demarcation fabric (i.e., orange plastic temporary construction fencing) placed as a warning, to address unremediated areas where SRM occurrence is suspected but will be left in place to be managed under the revised Ordinances referenced below, and to address unremediated areas where SRM may be unexpectedly encountered.

Long-term maintenance requirements are included in the Soil-Waste Management Plan (SMP) prepared for the Site (Exponent 2017) and provided as Appendix A. Given the large RMP area, long-term maintenance requirements will also be incorporated into the City Ordinances to promote community understanding and compliance. This includes a requirement to obtain an excavation permit for areas of known or suspected SRM occurrence (in addition, a permit is required for any excavation project on private property on which access was not granted in the 2016 City-wide SRM survey, unless the property has been remediated under the supervision of KDHE or the U.S. Environmental Protection Agency), and protocols for handling and management of SRM that is unexpectedly encountered. In both cases, follow-up City reporting is required. Proposed Ordinance revisions developed in discussion with the City and KDHE are included as Appendix B. A revised City excavation permit incorporating SRM requirements is provided as Appendix C. Permits that are approved for projects involving SRM, will be issued with a guide describing maintenance and other requirements entitled “Required Environmental Provisions for a City Excavation Permit: Quick Reference Guide”, included in Appendix D.

All SRM disturbance requires the following minimum Site cover maintenance protocols:

- Replace demarcation fabric if disturbed
- Add demarcation fabric if SRM is encountered and residual is left in place
- Backfill with clean soil not containing any SRM
- Restore cover/cap as discussed in Section 3.

In addition to long-term maintenance for SRM disturbances, the City will conduct long-term maintenance of City ditches throughout the long-term care period by picking up visible SRM, as time is available, as described in the RAD Plan.
5 Property Owner Notice

Property owners and occupants located in the RMP area will receive community outreach notifications during the Interim RMP period (i.e., the period of active remediation), and periodically, during the long-term care period under the Final RMP.

5.1 Interim RMP Notifications

Three community outreach notifications will be issued under the interim RMP. The first community outreach notice will invite all interested parties to a public meeting to discuss upcoming City-wide remedial actions and new SRM handling and management requirements contained in revised City Ordinances. The second community outreach notice will invite all interested parties to a public meeting that will be held near or immediately following completion of remedial actions to discuss the remediated Site, present the RMP area and boundaries, notify the community of its inclusion in the RMP area and participation in the Risk Management Program, and discuss the associated long-term Site maintenance requirements. In addition to these notifications for community outreach meetings, a postcard notice will be issued at the approximate mid-point of remediation activities to provide a reminder of SRM handling and management requirements, including permit provisions.

5.2 Long-Term RMP Notifications

Under the Final RMP, periodic notices will be given to property owners and occupants located within the Site to communicate the RMP area and boundaries, inclusion in the RMP area and participation in the Risk Management Program, and remind parties of the associated long-term Site maintenance requirements. This notice will be issued annually for the first 2 years, and biannually (every two years) thereafter. The parties may alter this Final RMP notification frequency upon agreement.

5.3 Notification Procedures

Community outreach notifications and public meetings will be planned and completed by the City and KDHE using the Community Outreach Plan provided in Appendix E as a guide. The City will make all notifications using its utility services mailing list. The mailing list includes names and addresses of property owners and occupants in the RMP area with utility service accounts (over 1,100 recipients). The City will use the up-to-date list maintained in its electronic system to mail each notice. The City will also provide KDHE with a copy of the notification and the date of mailing. Due to the large Site area, mailings and public meetings will suffice and formal verification of property owner and occupant notifications will not be required. An electronic or hard copy mailing list will be provided as part of the Final RMP along with a parcel map.
6 RMP Reporting

The City is the repository for property information and records, and will receive information on SRM disturbances as required by the revised City Ordinances. This includes information that will be received via the excavation permit process for known or suspected areas of SRM occurrence and received in required follow-up reports for areas where SRM is unexpectedly encountered. The City will in turn, submit periodic reports of this SRM information received to the KDHE Site Manager identified in Section 1.3. These periodic reports will also include community outreach notifications and dates of mailings as described in Section 5.

The City will submit an RMP report to KDHE within 90 days after completion of the RAD work, and every two years thereafter, by the end of the quarter following the reporting period, or on a different frequency agreed upon by the parties. RMP reports will not include work conducted by remediation contractors working under KDHE oversight. Remediation contractors will maintain records and complete reporting as required by KDHE.
7 References


Figure

Not included in the Interim RMP
Table
### Table 1. Summary of investigations and removal actions

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<th>Year(s)</th>
<th>Location</th>
<th>Entity Performing Work</th>
<th>Item</th>
<th>Action/Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1976–1983</td>
<td>Former Smelter Property</td>
<td>National Zinc Company</td>
<td>In 1976, KDHE identified heavy metals in sludge and liquid waste in the former smelter settling ponds.</td>
<td>Cleanup, including treatment and dewatering of approximately 95 million gallons of liquid from the settling ponds, removing ore and sludge from the former facility, and encapsulating approximately 300 tons of remaining ore and sludge in a former lagoon area onsite. Former smelter property considered “remediated” in 1983 with a restrictive covenant on its future use.</td>
</tr>
<tr>
<td>1995-1999</td>
<td>Former Smelter Property</td>
<td>KDHE</td>
<td>In 1995, KDHE determined that prior encapsulation efforts had failed, and significant concentrations of heavy metals were present in sludge, soil, and sediment.</td>
<td>In 1999, approximately 659 in situ soil samples were screened with XRF, and 19 samples were collected to evaluate the leachability of lead and cadmium using the TCLP. Groundwater, surface water, and sediment samples were also collected.</td>
</tr>
<tr>
<td>2003-2007</td>
<td>Former Smelter Property</td>
<td>Respondents</td>
<td>The Respondents investigated the smelter property further.</td>
<td>In 2007, soils and sediments at the former smelter property with heavy metal concentrations above commercial/industrial standards were excavated, consolidated, and capped onsite. Visibly affected sediments from segments of a nearby unnamed creek and Drum Creek were also excavated. A sediment catchment basin was installed downstream in Drum Creek.</td>
</tr>
<tr>
<td>2001</td>
<td>Residential Yards</td>
<td>KDHE</td>
<td>KDHE conducted an RSE.</td>
<td>Samples were collected in 11 residential yards, in adjacent alleys and ROWs, and likely in roadside ditches or sidewalks. TCLP results indicated that the soils would not be considered hazardous waste when excavated.</td>
</tr>
<tr>
<td>2001</td>
<td>Residential Yards</td>
<td>KDHE</td>
<td>KDHE conducted a Phase 2 RSE.</td>
<td>Additional residential yards sampled. The survey area was expanded beyond the previous RSE area to the south and east.</td>
</tr>
<tr>
<td>2001-2002</td>
<td>Residential Yards</td>
<td>EPA</td>
<td>EPA conducted a Time-Critical Removal Action.</td>
<td>35 of 67 residential properties were flagged as having some excavation, but excavation did not include alleys or ROWs.</td>
</tr>
<tr>
<td>2011</td>
<td>Residential Yards</td>
<td>Respondents</td>
<td>KDHE notified the Respondents regarding slag fragments observed at residential properties.</td>
<td>8 residential properties sampled.</td>
</tr>
<tr>
<td>2012</td>
<td>Residential Yards</td>
<td>Respondents</td>
<td>The Respondents conducted a Removal Action.</td>
<td>Soils removed from the 8 residential properties sampled.</td>
</tr>
<tr>
<td>2012</td>
<td>Residential Yards and City properties</td>
<td>KDHE</td>
<td>Residents reported slag on or near their properties.</td>
<td>KDHE inspected soils in various parts of town, including some city streets, parks, schools, and preschools, and collected samples at or near these sites.</td>
</tr>
<tr>
<td>2013</td>
<td>Residential Yards and City properties</td>
<td>Respondents</td>
<td>The Respondents conducted a Phase 1 RSE.</td>
<td>The Respondents' contractor collected soil samples at select locations in Cherryvale for evaluation of the bioavailability of lead and arsenic.</td>
</tr>
<tr>
<td>Year(s)</td>
<td>Location</td>
<td>Entity Performing Work</td>
<td>Item</td>
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<tr>
<td>2013</td>
<td>Residents of Montgomery County</td>
<td>KDHE</td>
<td>KDHE’s Kansas Healthy Homes and Lead Hazard Prevention Program, in partnership with the Bureau of Epidemiology and Public Health Informatics, Bureau of Environmental Remediation, the City of Cherryvale, and the Montgomery County Health Department, held a free county-wide blood lead screening clinic.</td>
<td>47 children were screened, of whom 2 had blood lead levels at or above the level (10 µg/dL) recommended for case management by a health-care professional. 85 adults were screened, of whom 0 (zero) had blood lead levels at or above the level (25 µg/dL) recommended for case management by a health-care professional.</td>
</tr>
<tr>
<td>2014</td>
<td>Schools</td>
<td>Respondents</td>
<td>The Respondents sampled schools as part of an early Phase 2 RSE.</td>
<td>Soil samples were collected from three schools, the former McKinley School, Lincoln Elementary School, and Cherryvale Middle/High School. Trace amounts of SRM were observed at each school location. Only one sample exceeded the residential SSV, and that was in an isolated location at the former McKinley School, which is not currently used by the City.</td>
</tr>
<tr>
<td>2015</td>
<td>City-Wide</td>
<td>Respondents</td>
<td>The Respondents conducted soil sampling as part of the Phase 2 RSE.</td>
<td>Removal actions were performed at one park property, and an isolated area of exposed brick next to the Logan Park gazebo.</td>
</tr>
<tr>
<td>2015</td>
<td>Parks</td>
<td>Respondents</td>
<td>The Respondents conducted an Early Action Removal.</td>
<td>Removal actions were performed at a small group of high-priority properties including five daycare facilities (housed at residences), and one owner-occupied single-family residence.</td>
</tr>
<tr>
<td>2015</td>
<td>Daycares, Residential Yards</td>
<td>Respondents</td>
<td>The Respondents conducted an Early Action Removal.</td>
<td>City-wide SRM visual survey was completed on properties and public ditches, walkways, and alley ROWs within the City limits of Cherryvale. During the City-wide survey, 1,113 properties were evaluated.</td>
</tr>
<tr>
<td>2016</td>
<td>City-Wide</td>
<td>Respondents</td>
<td>The Respondents collected soil samples as part of a Pre-RAD Sampling Program.</td>
<td>Soil sampling was completed for 87 yards, 54 drip lines, 30 driveways, and 18 walkways in an effort to provide better information regarding the number of properties that require remediation and for development of the RAD Plan.</td>
</tr>
</tbody>
</table>

Notes:

- EPA - U.S. Environmental Protection Agency
- KDHE - Kansas Department of Health and Environment
- RAD - removal action design
- ROW - right-of-way
- RSE - removal site evaluation
- SRM - smelter residue material
- SSV - soil screening value
- TCLP - toxicity characteristic leaching procedure
- µg/dL - micrograms per deciliter
- XRF - x-ray fluorescence
Appendix A

Soil-Waste Management Plan (2017)
Soil-Waste Management Plan for National Zinc Site, Cherryvale, Kansas
Soil-Waste Management
Plan for National Zinc Site,
Cherryvale, Kansas

Prepared for
CitiGroup Global Market Holdings, Inc.
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November 29, 2017

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1 Introduction

This Soil-Waste Management Plan (SMP) for the National Zinc Site, Cherryvale, Kansas, has been prepared on behalf of United States Steel Corporation and Citigroup Global Market Holdings, Inc. (Respondents), pursuant to the Second Amendment to Consent Order (SACO) (KDHE 2013b) between the Respondents and the Kansas Department of Health and Environment (KDHE) dated May 3, 2013.

1.1 Purpose and Applicability

As required by the SACO, the purpose of this SMP is to facilitate proper and lawful management and disposal of smelter waste, including contaminated soil associated with historical smelter operations at the former National Zinc Smelter Property (former smelter property) (Figure 1) during future construction and redevelopment activities performed in Cherryvale (the Site). This SMP serves as a general guidance document to manage disturbances of smelter waste in a manner that protects human health and the environment primarily following remedy implementation. This includes the City of Cherryvale’s (the City’s) as-needed remediation of right-of-way (ROW) areas and disturbance activities in previously remediated areas and areas where smelter waste is unexpectedly encountered. Site waste and soil removed during implementation of the initial remedy will follow the more detailed protocols included in the Removal Action Design (RAD) Plan (Exponent 2017), although certain aspects of this work such as transport and disposal are included in this SMP.

This SMP is not applicable to spills and/or emergency response or releases that may occur at the Site. These incidents require appropriate reporting and coordination with local, state, and federal agencies.

1.2 Objective

The objective of this SMP is to describe the protocols for managing and disposing of smelter residue and associated impacted soil (referred to herein as smelter residue material [SRM]). These protocols include pre-work decision-making and notifications, protecting personnel and the public during disturbances or other routine work activities, meeting local, state, and federal requirements (including Excavation Permit application to the City), and maintaining the integrity of remediated areas and engineering controls. Guidelines for appropriate controls for Site features (e.g., streets, alleys, ditches, brick walkways, driveways, etc.) to minimize smelter residue exposures will be established in a separate Institutional Control (IC) Plan.

This SMP should be updated, if warranted, based on changes in Site and/or project conditions. The SMP is a general guidance document and may not be appropriate for all future projects. If meeting future project objectives requires substantive deviations from this SMP, then the proposed work must be clearly communicated to KDHE for pre-approval before implementation.
1.3 Activities under the SACO

Pursuant to the SACO (KDHE 2013b) between the Respondents and KDHE, the Respondents performed a Removal Site Evaluation (RSE) in two phases. Phase 1 of the RSE focused on determining the bioavailability of lead and arsenic (Exponent 2014a; PNL 2014), and the Phase 2 RSE assessed the nature and extent of smelter-related soil lead exceedances within the City (Exponent 2016a). Based on this work, KDHE issued the Agency Decision Statement (ADS), which recommended the final remedy for the Site (KDHE 2016a). A RAD Plan was developed to present the remedy for the Site consistent with the ADS and was submitted to KDHE in draft on July 31, 2017 (Exponent 2017). Pre-RAD sampling and analysis conducted at 91 properties in 2016 was used as a basis to guide development of the RAD Plan. This SMP has been prepared as required by KDHE in the SACO, in follow-up to the RAD Plan.

1.4 Parties Conducting Disturbance Activities

Parties who may conduct disturbance activities under this SMP include the City, City franchisees’ workers, and contractors thereof, property owners, and others (e.g., residents, lessees, landscaping contractors). The City or its designated franchisees (e.g., companies responsible for natural gas, sewer, electric, phone, cable, fiber optic, etc.) or contractors will conduct remediation in ROWs on an as-needed basis in conjunction with other projects (e.g., construction, installation, and operation and maintenance activities unrelated to the remediation). In addition, smelter residue may be encountered on City-owned and private property in the future in areas not previously identified or as a result of disturbance activities.

This plan also addresses certain SRM management protocols for remediation contractors implementing the RAD Plan, namely SRM transport and disposal. All Site remediation must meet requirements in the RAD Plan (Exponent 2017).

1.5 Report Organization

The remainder of this SMP is organized as follows:

- **Section 2**—Site Description and Background. Provides a Site description and background of the Site, including the former smelter property.
- **Section 3**—Disturbance Activities. Summarizes disturbance activities covered in this SMP.
- **Section 4**—Nature of Contamination. Discusses the nature of contamination that may be encountered during disturbance activities. Includes descriptions and photographs of the most common types of SRM that have been observed across the Site to aid in field identification.
- **Section 5**—Soil and Waste Management Procedures. Presents procedures to follow before, during, and after disturbance activities.
- **Section 6**—Health and Safety. Addresses health and safety protocols for contractors and workers conducting remediation detailed in the RAD Plan.
and provides precautions for property owners and others to prevent direct contact with SRM.

- **Section 7**—References.
2 Site Description and Background

This section presents a general Site description and background. More detailed Site information is provided in the RSE Work Plan (Exponent 2014b), Phase 2 RSE Report (Exponent 2016a), and RAD Plan (Exponent 2017).

2.1 Site Description

The Site is located in Montgomery County, Kansas (Figure 1). The former smelter property adjoins the Site in the northwest part of the City (Figure 1). The approximately 360-acre former smelter property is east of U.S. Highway 169 and bounded on three sides by County Roads 5200 and 5500 to the north and east and Martin Street (County Road 5050) to the south. The former smelter property is bounded on the north and west by rural lands, on the south by residential properties and by the former Rodeo Grounds (now used for both residential and commercial/industrial), and on the east by commercial/industrial properties.

The overall area is generally flat, with approximately 30 feet (ft) of relief across the former smelter property. The former smelter property drains to the west via an unnamed intermittent stream that enters Drum Creek 0.75 miles west of the former smelter property. Undisturbed soils at the Site are Kenoma series soils, which are generally deep, moderately well drained, very slowly permeable soils on uplands of 0–2% slope. The average depth of Kenoma soils is 60 inches (in.) or greater.

The climate in Montgomery County, Kansas, is continental, typically warm to hot in the summers (average at 79°F), and cold in the winters (average at 37°F). Most precipitation occurs in spring and early summer, with average annual precipitation of 36.95 in. per year. The prevailing winds in Montgomery County are generally from the south, with an average annual speed of 11 miles per hour.

2.2 Site Background

The town site of Cherryvale was plotted in 1871 by the Leavenworth, Lawrence & Galveston Railway and incorporated in 1880. The Edgar Zinc Company facility was built in 1898 on 40 acres northwest of town. After World War I, zinc demand dropped, and by 1921, the Edgar Zinc Company in Cherryvale was one of only two remaining zinc smelters operating in Kansas, and managed to continue operations for another 10 years. Sometime after 1928, the Edgar Zinc Company was reorganized as the National Zinc Company. The Cherryvale plant continued operating on a small scale, reprocessing smelter wastes, until 1976 (Junge and Bean 2006).

In the 1970s, the National Zinc Company conducted response actions at the former zinc smelter property. They closed the former settling ponds that had been affected by runoff from slag and roasted ore, and they encapsulated materials in a former lagoon area located on the western portion of the property (KDHE 2013a). After a restrictive covenant was issued on the property in 1989, the City of Cherryvale acquired the property. The Respondents completed remediation of the smelter facility property in 2007 (KDHE 2016a). They also removed impacted sediments
from a nearby unnamed creek and Drum Creek and installed a sediment catchment basin in Drum Creek (KDHE 2016a). The remedy installed at the former smelter property is currently in the operation and maintenance phase by the City.

Solid waste consisting of furnace cinders, broken clay cylinder retorts, and metallic slag created during the smelting process (referred to at this Site as smelter residue material or SRM) has historically been used as fill material at various locations throughout the Site. Investigation of the former smelter property and SRM at the Site has been summarized in various documents, including the Phase 1 and Phase 2 RSE reports (Exponent 2014a, 2016a; PNL 2014), and the RAD plan (Exponent 2017). A summary of relevant studies and removal actions conducted at the former smelter property and the Site is presented in Table 1.
3 Disturbance Activities

The Site is covered with soil, gravel, landscaping, and features (e.g., buildings, driveways, and brick walkways) which act as a barrier preventing contact with SRM. Subsurface activities that remove this cover have the potential to disturb these materials. The following types of disturbance activities are contemplated in this Plan:

- **Public Properties and ROWs.** Remediation conducted by the City, City franchisees, or contractors thereof, in public properties and ROWs on an as-needed basis when SRM is encountered as required in the RAD Plan (Exponent 2017), including:
  - Streets
  - Ditches
  - Brick walkways
  - Alleys

- **Parks.** Future cover disturbance in parks when SRM is known or suspected to be present following implementation of the remedy, including:
  - Driveways (soil, stone)
  - Brick walkways

- **Private Properties.** Removal or cover of SRM that was not visible and previously removed in prior actions. Also, future cover disturbance on residential and commercial/industrial properties when SRM is known or suspected to be present below the surface following implementation of the remedy, including:
  - Driveways
  - Brick walkways
  - Yards
  - Drip lines

- **Remediated Areas with Residual SRM.** Future cover disturbance in previously remediated Site areas (e.g., yards and parks), where residual SRM remains beneath orange demarcation material placed as a warning.

This plan also addresses certain SRM management protocols for remediation contractors implementing the RAD Plan, namely SRM transport and disposal. All Site remediation must meet requirements in the RAD Plan (Exponent 2017).
4 Nature of Contamination

SRM from historical smelter operations is the source of Site impacts. Small-scale reprocessing of smelter wastes at the former smelter permanently ceased operations in 1976, and remediation of the smelter facility property was completed in 2007 (KDHE 2016a). Contaminants in soils from air deposition have been previously remediated. However, solid waste consisting of furnace cinders, broken clay cylinder retorts, and metallic slag created during the smelting process (referred to at this Site as SRM) has historically been used as fill material at various locations throughout the Site. Numerous investigations have been conducted to evaluate the nature and extent of SRM at the Site and these reports (e.g., Exponent 2014a, 2016a; PNL 2014) are available from the KDHE website\(^1\) or by request from KDHE or the City.

Lead in SRM and soil is the primary driver for the Site. Other contaminants include arsenic, cadmium, and zinc. Previous Site investigations have demonstrated that remediation of lead in soil to KDHE’s risk-based standards (Tier 2 Risk-Based Standards for Kansas [RSK]; KDHE 2015) addresses exceedances of the other few chemicals of concern at the Site. KDHE’s RSK for lead include a residential soil screening value (SSV) of 400 milligrams per kilogram (mg/kg) and a non-residential (i.e., commercial and industrial) SSV of 1,000 mg/kg. This SMP has been prepared to present procedures for handling SRM above SSVs. The routes of potential exposure during SRM handling include dermal contact and incidental ingestion and inhalation of particulates (dust).

Past investigations have shown that areas with visible SRM can exceed the SSVs. Therefore, visual identification of this material will be used as a guide for all parties and work conducted under this SMP, except for remediation conducted by the Respondents (whose contractors will use direct soil analyses). If material is visually identified as SRM or soil containing SRM, the soil and waste management protocols in this SMP must be implemented. This does not include areas where SRM has already been tested. To aid users of this SMP in making visual identifications, a description of the appearance of SRM commonly encountered across the Site is provided below along with photographs provided in Figure 2.

4.1 Identified Smelter Residue Material

Various types of SRM have been observed on the former smelter property and Site-wide. SRM was used over the decades by the City as a base for some roads and walkways, as gravel for some alleys, and as riprap for some ditches. Property owners also reportedly used this material as fill and/or gravel around some building foundations or for certain driveways and parking areas. The material consists of granular slag or cinder waste, which can be present ranging from sand-size to gravel-size. Other common SRM is crushed retort. Larger pieces of hard slag are also observed in fill locations throughout the City. The most common types of SRM that have been observed across the Site are described below and shown on Figure 2.

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\(^1\) [http://www.kdheks.gov/remedial/site_remediation/national_zinc.html](http://www.kdheks.gov/remedial/site_remediation/national_zinc.html)
4.1.1 Slag and Retort Fragments

These are gravel- to larger-size fragments that are typically black, gray, red, or purple, and often display hard, black, glassy crust with air bubbles on one or more surfaces (Figure 2, Photo A). The fragments may have a curved, flat, or blocky appearance with white or gray inclusions. They may appear fused, baked, burned, or rusty. These fragments have been observed in ditches, alleys, under roads, and in isolated areas. They can be found with brick, glass, wood, or metal debris and have sometimes been used as construction fill. They can be distinguished from local lime rock, shale, and sandstone by dark color, glassy crust, and irregular appearance.

4.1.2 Granular Slag

Granular slag is sand- to gravel-sized material that is black to red (Figure 2, Photo B). The particles may appear rounded or angular and look like cinders but are harder. They are typically hard and glassy with small air bubbles and white inclusions. However, they can be softer where weathered. Granular slag may have been used as a gravel surrogate in driveways, alleys, parking areas, and building foundations. It was also used as a base for brick walkways (Figure 2, Photo C) and probably paved or brick streets. SRM used as base for brick is typically gray-to-black colored ashy material with fines (finely crushed gray or black powdery or ashy looking material), and commonly has a charcoal-like appearance. SRM can be distinguished from common gravel by its dark color, ashy and/or hard glassy appearance with air bubbles. Grass in areas where granular slag is present may be thin or patchy.

4.1.3 Isolated Slag Fragments

This category refers to occurrences of isolated slag fragments (Figure 2, Photo D) that do not occur as a large collection, as in the “Slag and Retort Fragments” category. These are broken fragments with hard, black, glassy crusts, sometimes with air bubbles on one or more surfaces. They have a curved, flat, or blocky appearance and are up to several inches in size. They may contain hard white or gray inclusions and have the appearance similar to ceramic or fire brick. On fresh surfaces, the color is tan, gray, purple, or reddish. Isolated slag fragments have been observed in ditches, along alleys, under roads, and in isolated areas used as construction fill. The fragments can be distinguished from local lime rock, shale, and sandstone by their dark color, glassy crust, and irregular appearance.
5 Soil and Waste Management Procedures

This section presents soil and waste management procedures that will be implemented in the future when the Site cover is disturbed. Substantive deviations from this KDHE-approved SMP must be clearly proposed and pre-approved by KDHE before implementation.

5.1 Consistency with Institutional Controls

Soil and waste management procedures must be consistent with the ICs discussed in the RAD Plan (Exponent 2017) and detailed in a separate IC Plan. This IC Plan will include guidelines for appropriate controls for Site features (e.g., streets, alleys, ditches, brick walkways, driveways, etc.) to minimize SRM exposures. As part of this IC Plan, the City will adopt revisions to the following City Ordinances requiring ICs for certain activities:

- Chapter XIII, Article 2, Section 13-201 (amended), “Excavation Permit”
- Chapter XV, Article 2, Section 15-214 (amended), Subsection (a), “Excavation”
- Chapter XV, Article 5, Section 15-213 (amended), “Excavation”
- Chapter VIII, Article 9 (new), “Miscellaneous”
  - Section 8-901 (new), “Excavating in or under sidewalks and driveways on private property”
  - Section 8-902 (new), “Excavating in or under abandoned railroad right-of-way”
  - Section 8-903 (new), “Excavating below orange marker fabric”
  - Section 8-904 (new), “Excavation on private property”
  - Section 8-905 (new), “Collection and Disposal of Smelter Residue Material Found on the Surface of Private Property”

This SMP is consistent with ICs established by the City in its revised Ordinances.

5.2 Procedures for Pre-Disturbance Activities

Before handling SRM, preparatory activities must be completed as discussed below.

5.2.1 Required Notifications

Required notifications are summarized below for all parties who may conduct work under this SMP. Notifications will include a description of the planned work, contact information for persons responsible for the work, the location of disturbance activities, and the work schedule.
Notifications may also include dimensions of planned disturbance (depth, size, and volume of material disturbed) and other pertinent information.

**Remediation Contractors**

The contractors conducting remediation under the RAD Plan (Exponent 2017) with KDHE oversight will establish notification and reporting protocols separately with KDHE. This will likely include overall project notification using the KDHE online form available at: http://www.kdheks.gov/remedial/fieldactivities_notification.html. Remediation contractors will also make notifications required by local, state, and federal regulations, including utility clearance (natural gas, sewer, electric, phone, cable, fiber optic, etc.) and notifications required in Access Agreements for remediation on City-owned (February 5, 2007) and private property. Notification of the intended work will be provided to property owners in accordance with established Access Agreements.

Before implementing the remedy, the remediation contractors will meet with the City to discuss the nature of the work and notification and permitting requirements for the entire project and individual properties. Remedial action activities will be coordinated with the City’s Department of Public Works as needed “to maintain smooth traffic flow and vehicular and pedestrian safety in City work areas” (Cherryvale 2007).

Remediation contractors must request a utility clearance through “Kansas One-Call” before work begins, at which time the City will be made aware of work at specific locations. Property owners (or residents) will be consulted about the location and presence of utilities on their properties. Utilities must be located and marked in the work areas before any excavation. If work is to be conducted within 15 feet of a railroad ROW or natural gas line, then remediation contractors will separately notify these entities.

**The City and City Franchisees**

The City, City franchisees, and contractors thereof will notify KDHE before beginning their work using the KDHE online form shown on Figure 3 and available electronically at: http://www.kdheks.gov/remedial/fieldactivities_notification.html. In addition, they will notify the City Clerk, since even though they will not be required to obtain a permit from the City, they will be subject to the requirements of Sections 5.3, 5.4 and 6 of this SMP. Further, the City may consult with its departments and/or with KDHE as needed to discuss its work protocols or work proposed by others (e.g., property owners and others applying for an Excavation Permit).

The City, City franchisees, and contractors thereof are responsible for making any notifications required by other local, state, and federal regulations.

**Property Owners and Others**

Property owners and others (e.g., residents, lessees, landscaping contractors) must notify the City before starting work when a project may involve an activity that requires a permit from the City under any of the Ordinances listed in Section 5.1 of this SMP. This notification will be completed through an Excavation Permit application shown on Figure 4.
It is recommended that permit applications are made early in the project preparation phase to minimize delays. The current City contact for Excavation Permit applications and notifications is:

**City Clerk**
Karen Davis *(or subsequent party appointed by Mayor)*
The City of Cherryvale
123 West Main Street
Cherryvale, Kansas  67335
(620) 336-2776
email:  kseifert@cherryvaleusa.com *(or email for subsequent party appointed by Mayor)*

The City will review the scope of work, and, if approved, issue an “Excavation Permit” in accordance with the amended and new City Ordinances listed in Section 5.1 of this SMP.

If SRM is encountered unexpectedly, property owners and others must notify the City afterwards as required in the following Ordinances: Chapter VIII, Article 9, 8-904, and when requesting use of a plastic bin or bins from the City, in accordance with Chapter VIII, Article 9, Section 8-905.

Property owners and others are responsible for making any notifications required by local, state, or federal regulations, including utility clearance.

**KDHE**

The remediation contractor will work under KDHE oversight, and the City will consult with KDHE as needed. KDHE is also available as a resource for property owners and others with questions about subsurface work with the potential to encounter SRM at the Site. KDHE must pre-approve any substantive deviations from this KDHE-approved SMP before implementation. This will require submission of a clear proposal describing the planned work and reasons for the deviation(s) from this approved SMP.

The current KDHE contact for notification is:

**KDHE Site Manager**
Pamela Green *(or subsequent party designated by KDHE)*
Bureau of Environmental Remediation
Kansas Department of Health & Environment
1000 SW Jackson Street, Suite 410
Topeka, Kansas  66612-1367
(785) 296-1935
email:  Pamela.Green@ks.gov *(or email for subsequent party designated by KDHE)*

### 5.2.2 Permits and Approvals

The party conducting work is responsible for identifying and obtaining all necessary and applicable local, state, and federal permits and approvals before conducting work. Permitting
and approvals for remediation contractors and workers are discussed in the RAD Plan (Exponent 2017) and in Section 5.2.1.

The City will issue an Excavation Permit for excavation in areas of known or suspected SRM occurrence, except for work conducted by remediation contractors under the RAD Plan (Exponent 2017) or by the City, City franchisees, or contractors thereof. However, the City, City franchisees, and their contractors, must comply with requirements of Sections 5.3, 5.4, and 6 hereof. The permit will serve as the City’s approval and will include conditions that the permit holder must abide by. These conditions may include traffic control, stormwater pollution prevention controls and permitting, maintaining clean roadways, and other requirements as set out in Sections 5.3, 5.4, and 6 of this SMP. Any work that deviates substantively from this KDHE-approved SMP requires pre-approval by KDHE following submission of a proposal as discussed above.

### 5.3 Procedures for Disturbance Activities

Soil and waste management procedures that must be employed during disturbance of the Site cover and SRM are discussed in this section.

#### 5.3.1 Contaminated Media Management

Contaminated media will be managed in accordance with this SMP and as required by appropriate regulations, including the revised City Ordinances discussed in Section 5.1, which may include an Excavation Permit with conditions issued by the City. In addition, contractors completing initial Site remediation and City and City franchisees’ workers, including contractors thereof, managing SRM in public ROWs will also conduct work in accordance with the RAD Plan (Exponent 2017). Contaminated media may be encountered in areas of known SRM occurrence (e.g., beneath orange demarcation fabric placed during remediation), in areas of suspected SRM occurrence (e.g., beneath brick walkways and driveways), and may be encountered unexpectedly and visually identified as SRM, including soils containing SRM. Visual identification is discussed in Section 4.1, including photographs to aid in making this determination.

The following general procedures must be considered, and followed as applicable, when handling contaminated media:

- Before disturbance activities that require SRM management, ensure all applicable pre-disturbance activities have been completed. This includes, but is not limited to, making notifications, obtaining necessary permits and approvals, and locating and marking all utilities. It is important to identify sensitive areas, if any, before field work to avoid delays related to additional planning and requirements. These sensitive areas may include work within 15 feet of a railroad line or natural gas line, requiring additional notifications to these franchisees, work near or potentially affecting stormwater drainages, or other areas. Pre-work site visits may be required or necessary to visually inspect the work area, meet with stakeholders, and coordinate work (e.g., utility clearances).
• Restrict the work area as needed to prevent entry by the public in areas of exposed SRM. This may include placement of barricades and/or traffic control as deemed necessary or as required by revised City Ordinances.

• Manage all SRM, including soils containing SRM, removed from the Site in a manner consistent with the RAD Plan (Exponent 2017), and the revised City Ordinances. If SRM is known or suspected to be present, the City requires an Excavation Permit to conduct excavation work for all parties except remediation contractors, City and City franchisees’ workers, and contractors thereof. For SRM that is unexpectedly encountered in an excavation on private property, City Ordinances require the following soil and waste management procedures, which will be similar to the procedures required in an approved Excavation Permit:

  – Segregate and set aside SRM and/or soils containing SRM.
  – Upon completion of the excavation, take the following actions:
    1. Place SRM in the bottom of the excavation at least 12 in. below ground surface, except in gardens or play areas, where SRM must be placed at least 24 in. below ground surface.
    2. Obtain free orange marker fabric from the City and place on top of SRM.
    3. Backfill the excavation with clean soil that does not contain any SRM.
    4. Notify the City Clerk in writing within 30 days of the orange fabric placement, including the approximate location and date it was placed.
    5. Alternatively, arrange for transportation of SRM to a disposal location approved by KDHE and designated by the City. The person arranging for the hauling shall notify the City Clerk in writing within 30 days of the disposal, the date and approximate volume thereof.

• Excavated SRM and soil containing SRM should be placed directly into a container and sealed, or loaded directly onto trucks with plastic liners and covered for hauling to the KDHE-approved waste disposal location. Protect the loading area to ensure SRM does not spill onto clean surfaces during loading (e.g., load over plastic sheeting).

• All work areas exposing SRM must be restored as discussed in Section 5.4.1.

• If orange demarcation fabric is disturbed, removed or displaced, it shall be replaced using fabric available free of charge from the City and placed where the original material was located in accordance with revised City Ordinances.
- Remove SRM and soil containing SRM from reusable equipment (e.g., dry brushing) before re-use, and dispose of this residual with the excavated SRM waste.

- SRM can be placed at the bottom of a completed excavation in accordance with the procedures noted above, and specified in revised City Ordinances, or can be disposed of at the location approved by KDHE for Site-specific SRM waste. SRM and soils containing SRM cannot be reused in any other manner and cannot be disposed of or moved to another location without the approval of KDHE.

The focus of this SMP is to prevent exposure to SRM at the Site; soil and waste management procedures that do not relate to this issue have not been comprehensively identified and discussed herein. Therefore, in addition to the precautions and procedures identified in this SMP, general safety procedures and precautions should also be followed, such as excavation safety guidelines (shoring, confined space entry, etc.).

Soil and waste management protocols for the disposal location, including stockpile management, will be prepared under separate cover and are referenced in Section 5.3.3 below.

### 5.3.2 Environmental Protection

Engineering controls should be identified and implemented, as appropriate, to protect the environment and reduce exposure to SRM during management of these materials. This includes, but is not limited to, the following:

- Minimize soil excavations and areas of vegetation removal.
- Contain and control all SRM and soils containing SRM in a manner that minimizes or prevents dust formation and erosion (e.g., containerize with a sealed lid, load into a lined and covered truck, or, if temporarily stockpiling, cover with clean soil, plastic, blankets, or similar materials that are secured in place).
- Suppress/control dust during excavation, which may include spraying water onto the ground during work.
- Wear appropriate personal protective equipment (PPE) during handling and management as discussed in Section 6. This includes disposable gloves to prevent contact at all times when handling SRM and soils containing SRM, a dust mask during dry and windy conditions, and other equipment. Remediation contractors and workers conducting ongoing excavation work may need to employ monitoring in the work area.
- Employ appropriate best management practices (BMPs) to avoid stormwater pollution. A stormwater permit may be required; the party conducting work is responsible for identifying and obtaining all required permits. In general, take precautions to avoid 1) water accumulation in excavations, 2) disturbances of drainages (e.g., clogging), and 3) degradation of water quality (exposure to
SRM). BMPs should be used if deemed necessary, and, as allowed or required by law, may include diversion ditches, dikes, silt fences, settling ponds, or other features.

5.3.3 Transport

Remediation contractors and City and City franchisees’ workers, as well as the contractors thereof, will transport SRM and impacted soil to the disposal location discussed below. The following general procedures must be considered, and followed as applicable, when transporting Site wastes:

- The transporter is responsible for identifying and following all local, state and federal requirements for waste transport (e.g., U.S. Environmental Protection Agency [EPA] and Department of Transportation [DOT] regulations, etc.).
- Cover all waste to prevent spillage during transport. Close and seal containers for materials collected pursuant to City Ordinance Chapter VIII, Article 9, Section 8-905. Line trucks and trailers and properly cover in accordance with all applicable DOT regulations. Ensure no liquid is allowed to drain during transport (e.g., from dewatering of wet SRM or soil).
- Ensure SRM is not tracked outside the excavation area. Remove loose SRM-impacted debris from truck body and tires by dry brushing before transport.
- Minimize the number of vehicles used for waste loading and transport.
- Follow transportation routes that minimize, to the extent possible, driving in residential areas and areas where daycares and schools are located.
- Utilize street sweeping and washing as necessary to prevent dusting and/or tracking of SRM on streets.

Per the revised City Ordinances, the City will provide property owners with special bins—if requested—for these waste materials removed from the surfaces of individual properties. The City will pick up these bins and transport wastes to the disposal location discussed below. There may also be a provision by the City for property owners and others to drop off containerized Site waste at a central disposal location. If allowed, the City will issue any special transport procedures in addition to those provided in this SMP.

5.3.4 Disposal Location

During the remediation program, SRM and impacted soil must be disposed of at a location approved by KDHE. This location will also be designated by the City for disposal of Site SRM and soils containing SRM removed in accordance with the City Ordinances discussed in Section 5.1. This includes SRM collected from the surface of private property and containerized in special bins provided by the City that will be picked up by the City, SRM removed from public and private properties during excavation activities, and SRM collected by City Department of
Public Works field crews from time to time from the surface (bottom and sidewalls) of ditches along City streets.

The disposal location will likely be the current EPA repository on the former smelter property, an expansion of this current EPA repository, a new repository built on the former smelter property, or an alternative permitted facility. Work is underway to design and obtain approval for the disposal location(s), and an appropriate design plan will be submitted to KDHE for approval. The KDHE-approved disposal location will be communicated to the public and will be designated by the City in Excavation Permits issued under its revised Ordinances.

If wastes are disposed of at the former smelter property EPA repository (including an expansion of the current cell or a new location on the former smelter property), this disposal will be conducted in accordance with the disposal site design plan, with any Stockpile Management Plan, Stormwater Management permits, and/or other existing and/or updated or new permits that may be required (PNL 2013, PNL 2015, KDHE 2016b).

5.4 Procedures for Post-Disturbance Activities

Following disturbance, the Site cover must be restored, and inspections and surveys may be conducted. These post-disturbance activities are discussed below, along with recordkeeping and follow-up reporting.

5.4.1 Restoration

Following disturbance of the Site cover and SRM, work areas must be restored to prevent future exposure.

Remediation contractors, the City and City franchisees’ workers, and contractors thereof, must restore areas disturbed during remedy implementation to approximately pre-remedy conditions, as required by the RAD Plan. Driveways will be replaced with compacted gravel or pavement, if removed. Brick walkways will be replaced with concrete. Surfaces in the area of drip lines, typically soil or gravel, will be restored. Areas in parks will be restored by covering or filling with soil or gravel, depending on the use. Excavations will be filled with clean soil and lightly compacted to approximate pre-excavation elevations. For yards, topsoil will be replaced and the soil removal area will be revegetated with sod or reseeded with grasses. Fences, yard fixtures, play structures, and other items removed during the course of work will be put back. These general guidelines will also be used for future maintenance and other projects requiring disturbance and restoration in these areas. Public property (e.g., streets, sidewalks, and ROWs) shall be restored in a manner satisfactory to the City in accordance with revisions to City Ordinances.

Property owners and others who apply for a City Excavation Permit will follow restoration requirements specified in permit conditions and, if they unexpectedly encounter SRM, will follow restoration included in revisions to the City Ordinances. This may include placement of SRM if not disposed at 12 in. or lower below ground surface (24 in. for play areas and gardens), laying orange fabric on top of the SRM, and backfilling with clean soil that does not contain
visible SRM. Restoration of walkways and driveways is the same as required for remediation contractors, the City, and City franchisees as discussed above.

5.4.2 Inspection and Survey

The City may conduct inspections as part of its Excavation Permit program. If KDHE approves disposal at the former smelter property, then routine inspections will also be conducted by operators as required in permits. Examples include disposal site cover inspections and inspections of stormwater pollution prevention measures required by a National Pollutant Discharge Elimination System (NPDES) permit for discharging stormwater runoff from construction activities.

The repository will be surveyed as required in an agreement with KDHE following submission of the disposal site design plan and supporting documents. The surveying must be conducted by a surveyor licensed in the State of Kansas and completed in accordance with regulatory requirements.

5.4.3 Records and Reporting

The City is the repository for property information and records, which can be accessed to identify properties where SRM has been encountered. The City will receive information via the Excavation Permit process for known or suspected areas of SRM occurrence and by required follow-up reporting for areas where SRM is unexpectedly encountered. The City will in turn, submit periodic reports to the KDHE Site Manager identified in Section 5.2.1, transmitting information received via the Excavation Permit process. These procedures are required for all parties except the remediation contractors working under KDHE oversight, and City and City franchisees’ workers, as well as contractors thereof. Even though they will not be required to obtain a permit from the City, they will promptly notify the City Clerk if SRM is encountered in any disturbance per revised City Ordinances. Remediation contractors will maintain records and complete reporting as required by KDHE. City and City franchisees’ workers, as well as contractors thereof, will keep records and report as required by KDHE and the City’s governance.
6 Health and Safety

Remediation contractors, City and City franchisees’ workers, and contractors thereof will follow health and safety requirements specified in the RAD Plan (Exponent 2017) and comply with all local, state, and federal health and safety requirements. This will include preparation of a health and safety plan, and, depending on the activity, may include training and personal monitoring during work activities. A detailed discussion of health and safety protocols for these contractors and workers conducting remedy implementation or maintaining ROWs following remedy implementation is provided in the RAD Plan (Exponent 2017).

Property owners and others (e.g., residents, lessees, landscaping contractors) will not be routinely managing SRM, and, therefore, have a much lower potential for exposure than remediation contractors and workers. They may encounter SRM during work on driveways, brick walkways, or in excavations at previously remediated areas (e.g., yards) with residual impacts at depth where orange demarcation material was placed during the remedy to serve as a warning. Work on these features requires City notification and an Excavation Permit (approval) from the City before conducting the work. Property owners and others may also encounter SRM on private property unexpectedly, in areas where SRM was not observed in past site inspections. In this case, follow-up written notification to the City is required. They may also occasionally encounter SRM on the surface of their property, and in such cases, if they request use of a plastic collection bin from the City, notice to the City will automatically occur when use of the bin is requested.

Revised City Ordinances allow property owners and others to place SRM encountered in an excavation at the bottom of the completed excavation in accordance with the procedures outlined in Section 5.3.1., or to pick up SRM found on the surface and containerize and properly dispose of it at the KDHE-approved disposal location(s). General precautions are summarized below for property owners and others who may encounter SRM. Each scenario will likely have unique considerations, and these parties must comply with all pertinent local, state, and federal requirements.

General Work Precautions

- Wear disposable gloves when picking up and containerizing SRM and soil containing SRM.
- Dispose of gloves immediately following use in a trash receptacle.
- Do not clean and reuse disposable gloves. Disposable equipment is not intended to be cleaned and reused.
- Avoid eating, drinking, and smoking when handling SRM and soil containing SRM.
- Dampen soils and SRM to limit dust formation in the work area.
- Avoid working on windy days when dust can be mobilized.
• Wear a mask if conditions are dusty, resulting in airborne particulates from SRM and soil containing SRM.

• Remove residual SRM from reusable equipment (e.g., shovel) by dry brushing, and reuse or dispose of the residual in the same manner as the removed SRM.

• Keep children and pets away from the work area when SRM is exposed.

• Wash hands thoroughly after removing and disposing of gloves.

• Wash work clothes that may have encountered SRM. Wash clothes in a separate, individual load. Do not mix with other laundry.

• Remove shoes after work is completed and before entering a residence or work place. Dry scrub and/or wash shoes to avoid tracking SRM into indoor spaces.

• Abide by City requirements to cover or otherwise restore work areas.

• Dispose of SRM and soil containing SRM only at a disposal location approved by KDHE and designated by the City for this specific waste.

• Contact KDHE or the City (see contacts in Section 5.2.1) with any questions or concerns regarding SRM handling.
References

Cherryvale. 2007. Access agreement and easement of Section 8, Township 32, Range 17, granted by the City of Cherryvale, Kansas to United States Steel Corporation and Salomon Smith Barney Holdings, Inc. City of Cherryvale, Cherryvale, KS.


KDHE. 2016b. Notice of Intent (NOI) For Authorization to Discharge Stormwater Runoff from Construction Activities In accordance with the Kansas Water Pollution Control General Permit Under the National Pollutant Discharge Elimination System (NPDES), KS Permit No. S-VE07-0011, Federal Permit No. KSR111980. Reviewed May 10, 2016.


Figures
Figure 1. Cherryvale city limits and boundary of former National Zinc Smelter property

Source: KDHE (2013), City limits boundary from http://kansasgis.org
Figure 2. Photographs of SRM encountered in the City of Cherryvale

A. Slag and retort fragments
B. Granular slag
C. Granular slag underlying brick sidewalk
D. Isolated slag fragments

Source: Mark Landress, PNL
Bureau of Environmental Remediation Field Activities Notification Form

This is a new notification

*Project Name: [ ]
*KDHE Project Manager: [Select- ]

Location of work:
*County: [Select- ]
City (or nearest city): [ ]

Anticipated dates and duration of work:
*Start Date (mm/dd/yy): [ ]
*Duration of work (days): [ ]
☐ Check this box if work is expected to occur on any weekend or holiday days.

Primary Field Contact:
*Name: [ ]
*Affiliation/Company: [ ]
*Primary Phone Number: [ ]
Alternate Phone Number(s): [ ]
Email Address: [ ]

Alternate Contact:
*Name: [ ]
*Affiliation/Company: [ ]
*Primary Phone Number: [ ]
Alternate Phone Number(s): [ ]
Email Address: [ ]

*Brief Description of Work to Be Performed
(Include persons, nature of activities, general location information, and anticipated schedule of activities):

Submit  Reset Form

If you have any problems using this form, please call 785-296-1673
* Indicates a required field.

Source: http://kensas.kdhe.state.ks.us/plsISL/bow_adminl.fldnotif_edit

Figure 3. KDEH Field Activities Notification Form
**EXCAVATION PERMIT**

**CITY OF CHERRYVALE, KANSAS**

<table>
<thead>
<tr>
<th>JOB ADDRESS</th>
<th>DATE ISSUED</th>
</tr>
</thead>
<tbody>
<tr>
<td>NAME</td>
<td>RECEIPT NO.</td>
</tr>
<tr>
<td>MAILING ADDRESS</td>
<td>FEE</td>
</tr>
<tr>
<td>CITY</td>
<td>PHONE</td>
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</tbody>
</table>

**OWNER**

<table>
<thead>
<tr>
<th>NAME</th>
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</thead>
<tbody>
<tr>
<td>ADDRESS</td>
</tr>
<tr>
<td>CITY</td>
</tr>
<tr>
<td>PHONE</td>
</tr>
</tbody>
</table>

| PLOT PLAN (INDICATE BUILDING SETBACKS, ABUTTING STREET, ALLEY, ETC.) |
| O NEW |
| O ADD |
| O ALTER |
| O REPAIR |
| O DEMOLISH |
| O MOVE |

**SIGNATURE OF APPLICANT**

<table>
<thead>
<tr>
<th>DATE</th>
</tr>
</thead>
</table>

**APPROVED BY**

<table>
<thead>
<tr>
<th>DATE</th>
</tr>
</thead>
</table>

**CITY CLERK**

---

Figure 4. City of Cherryvale Excavation Permit Application
Table
Table 1. Summary of investigations and removal actions

<table>
<thead>
<tr>
<th>Year(s)</th>
<th>Location</th>
<th>Entity Performing Work</th>
<th>Item</th>
<th>Action/Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1976–1983</td>
<td>Former Smelter Property</td>
<td>National Zinc Company</td>
<td>In 1976, KDHE identified heavy metals in sludge and liquid waste in the former smelter settling ponds.</td>
<td>Cleanup, including treatment and dewatering of approximately 95 million gallons of liquid from the settling ponds, removing ore and sludge from the former facility, and encapsulating approximately 300 tons of remaining ore and sludge in a former lagoon area onsite. Former smelter property considered “remediated” in 1983 with a restrictive covenant on its future use.</td>
</tr>
<tr>
<td>1995-1999</td>
<td>Former Smelter Property</td>
<td>KDHE</td>
<td>In 1995, KDHE determined that prior encapsulation efforts had failed, and significant concentrations of heavy metals were present in sludge, soil, and sediment.</td>
<td>In 1999, approximately 659 <em>in situ</em> soil samples were screened with XRF, and 19 samples were collected to evaluate the leachability of lead and cadmium using the TCLP. Groundwater, surface water, and sediment samples were also collected.</td>
</tr>
<tr>
<td>2003-2007</td>
<td>Former Smelter Property</td>
<td>Respondents</td>
<td>The Respondents investigated the smelter property further.</td>
<td>In 2007, soils and sediments at the former smelter property with heavy metal concentrations above commercial/industrial standards were excavated, consolidated, and capped onsite. Visibly affected sediments from segments of a nearby unnamed creek and Drum Creek were also excavated. A sediment catchment basin was installed downstream in Drum Creek.</td>
</tr>
<tr>
<td>2001</td>
<td>Residential Yards</td>
<td>KDHE</td>
<td>KDHE conducted an RSE.</td>
<td>Samples were collected in 11 residential yards, in adjacent alleys and ROWs, and likely in roadside ditches or sidewalks. TCLP results indicated that the soils would not be considered hazardous waste when excavated.</td>
</tr>
<tr>
<td>2001</td>
<td>Residential Yards</td>
<td>KDHE</td>
<td>KDHE conducted a Phase 2 RSE.</td>
<td>Additional residential yards sampled. The survey area was expanded beyond the previous RSE area to the south and east.</td>
</tr>
<tr>
<td>2001-2002</td>
<td>Residential Yards</td>
<td>EPA</td>
<td>EPA conducted a Time-Critical Removal Action.</td>
<td>35 of 67 residential properties were flagged as having some excavation, but excavation did not include alleys or ROWs.</td>
</tr>
<tr>
<td>2011</td>
<td>Residential Yards</td>
<td>Respondents</td>
<td>KDHE notified the Respondents regarding slag fragments observed at residential properties.</td>
<td>8 residential properties sampled.</td>
</tr>
<tr>
<td>2012</td>
<td>Residential Yards</td>
<td>Respondents</td>
<td>The Respondents conducted a Removal Action.</td>
<td>Soils removed from the 8 residential properties sampled.</td>
</tr>
<tr>
<td>2012</td>
<td>Residential Yards and City properties</td>
<td>KDHE</td>
<td>Residents reported slag on or near their properties.</td>
<td>KDHE inspected soils in various parts of town, including some city streets, parks, schools, and preschools, and collected samples at or near these sites.</td>
</tr>
<tr>
<td>2013</td>
<td>Residential Yards and City properties</td>
<td>Respondents</td>
<td>The Respondents conducted a Phase 1 RSE.</td>
<td>The Respondents’ contractor collected soil samples at select locations in Cherryvale for evaluation of the bioavailability of lead and arsenic.</td>
</tr>
<tr>
<td>Year(s)</td>
<td>Location</td>
<td>Entity</td>
<td>Item</td>
<td>Action/Result</td>
</tr>
<tr>
<td>---------</td>
<td>---------------------------------</td>
<td>-------------------</td>
<td>----------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>2013</td>
<td>Residents of Montgomery County</td>
<td>KDHE</td>
<td>KDHE’s Kansas Healthy Homes and Lead Hazard Prevention Program, in partnership with the Bureau of Epidemiology and Public Health Informatics, Bureau of Environmental Remediation, the City of Cherryvale, and the Montgomery County Health Department, held a free county-wide blood lead screening clinic.</td>
<td>47 children were screened, of whom 2 had blood lead levels at or above the level (10 µg/dL) recommended for case management by a health-care professional. 85 adults were screened, of whom 0 (zero) had blood lead levels at or above the level (25 µg/dL) recommended for case management by a health-care professional.</td>
</tr>
<tr>
<td>2014</td>
<td>Schools</td>
<td>Respondents</td>
<td>The Respondents sampled schools as part of an early Phase 2 RSE.</td>
<td>Soil samples were collected from three schools, the former McKinley School, Lincoln Elementary School, and Cherryvale Middle/High School. Trace amounts of SRM were observed at each school location. Only one sample exceeded the residential SSV, and that was in an isolated location at the former McKinley School, which is not currently used by the City.</td>
</tr>
<tr>
<td>2014</td>
<td>City-Wide</td>
<td>Respondents</td>
<td>The Respondents conducted soil sampling as part of the Phase 2 RSE.</td>
<td>SRM class verification sampling performed on residential yards, daycares, parks, City ditches, City alleys, commercial/industrial properties, and parks.</td>
</tr>
<tr>
<td>2015</td>
<td>Parks</td>
<td>Respondents</td>
<td>The Respondents conducted an Early Action Removal.</td>
<td>Removal actions were performed at one park property, and an isolated area of exposed brick next to the Logan Park gazebo.</td>
</tr>
<tr>
<td>2015</td>
<td>Daycares, Residential Yards</td>
<td>Respondents</td>
<td>The Respondents conducted an Early Action Removal.</td>
<td>Removal actions were performed at a small group of high-priority properties including five daycare facilities (housed at residences), and one owner-occupied single-family residence.</td>
</tr>
<tr>
<td>2015</td>
<td>City-Wide</td>
<td>Respondents</td>
<td>The Respondents conducted a Phase 2 RSE.</td>
<td>City-wide SRM visual survey was completed on properties and public ditches, walkways, and alley ROWs within the City limits of Cherryvale. During the City-wide survey, 1,113 properties were evaluated.</td>
</tr>
<tr>
<td>2016</td>
<td>City-Wide</td>
<td>Respondents</td>
<td>The Respondents collected soil samples as part of a Pre-RAD Sampling Program.</td>
<td>Soil sampling was completed for 87 yards, 54 drip lines, 30 driveways, and 18 walkways in an effort to provide better information regarding the number of properties that require remediation and for development of the RAD Plan.</td>
</tr>
</tbody>
</table>

**Notes:**
- EPA - U.S. Environmental Protection Agency
- KDHE - Kansas Department of Health and Environment
- RAD - removal action design
- ROW - right-of-way
- RSE - removal site evaluation
- SRM - smelter residue material
- SSV - soil screening value
- TCLP - toxicity characteristic leaching procedure
- µg/dL - micrograms per deciliter
- XRF - x-ray fluorescence
Appendix B

City of Cherryvale Ordinance Revisions
1. Streets.

The text of Chapter XIII, Article 2, Section 13-201 of the City Ordinances, entitled "Excavation Permit", shall be amended so that said Section 13-201 shall read in its entirety as follows:

"Within the City limits of Cherryvale, Kansas, no person shall cut, bore, disturb, dig in or excavate any hole, ditch, trench or tunnel in, through or under, or otherwise disturb the surface of, any portion of any street, highway, alley, sidewalk or sidewall thereof (or in or under any berm, ditch or street sidewalk adjoining a street, highway or alley), or in or under any portion of any park, ball diamond, athletic field, school ground or other public property, or in or under any public easement on which any of the foregoing may be located, or in or under any public easement through private property, without first having secured a permit for such excavation, and all such digging or excavation shall be in accordance with all terms, conditions, and requirements of any permit so issued; provided, no such permit shall be required from persons or their contractor(s) performing environmental remediation work under the supervision of the Kansas Department of Health and Environment (“KDHE”). Applications for such permit shall be made to the City clerk. All excavations shall be adequately guarded with barricades and lights so as to protect the public from hazard. Streets, sidewalks, rights-of-way, and other public property disturbed in the course of the work shall be restored in a manner satisfactory to the City."

2. Water Utility.

The text of Chapter XV, Article 2, Section 15-214 of the City Ordinances, entitled "Excavation", shall be amended so that Subsection (a) of said Section 15-214 shall read in its entirety as follows (the remainder of said Section 15-214 shall remain unchanged):

(a) PERMIT; BOND. Within the City limits of Cherryvale, Kansas, no person shall cut, bore, disturb, dig in or excavate any hole, ditch, trench or tunnel in, through or under, or otherwise disturb the surface of, any portion of any street, highway, alley, sidewalk or sidewalk thereof (or in or under any berm, ditch or street sidewalk adjoining a street, highway or alley), or in or under any portion of any park, ball diamond, athletic field, school ground or other public property, or in or under any public easement on which any of the foregoing may be located, or in or under any public easement through private property, without first having secured an excavation permit from the City clerk; provided, no such permit shall be required from persons or their contractor(s) performing
environmental remediation work under the supervision of the Kansas Department of Health and Environment (“KDHE”). All excavations for building water installations shall be adequately guarded with barricades and lights so as to protect the public from hazard. Streets, sidewalks, rights-of-way, and other public property disturbed in the course of the work shall be restored in a manner satisfactory to the City. All such digging or excavation shall be in accordance with all terms, conditions, and requirements of any permit so issued. The cost of obtaining an excavation permit shall be $15.00. An excavation permit shall be effective for one (1) year from the date the permit is issued."


The text of Chapter XV, Article 5, Section 15-513 of the City Ordinances, entitled "Excavation", shall be amended so that said Section 15-513 shall read in its entirety as follows:

"All excavations for building sewer installations shall be adequately guarded with barricades and lights so as to protect the public from hazard. Streets, sidewalks, rights-of-way, and other public property disturbed in the course of the work shall be restored in a manner satisfactory to the City. Within the City limits of Cherryvale, Kansas, no person shall cut, bore, disturb, dig in or excavate any hole, ditch, trench or tunnel in, through or under, or otherwise disturb the surface of, any portion of any street, highway, alley, sidewalk or sidewalk thereof (or in or under any berm, ditch or street sidewalk adjoining a street, highway or alley), or in or under any portion of any park, ball diamond, athletic field, school ground or other public property, or in or under a public easement on which any of the foregoing may be located, or in or under any public easement through private property, without first having secured an excavation permit from the City clerk; provided, no such permit shall be required from persons or their contractor(s) performing environmental remediation work under the supervision of the Kansas Department of Health and Environment (“KDHE”). All such digging or excavation shall be in accordance with all terms, conditions, and requirements of any permit so issued."


A new Article 9, entitled "Miscellaneous" shall be added to Chapter VIII of the City Ordinances, and within said Article 9, add a new Section 8-901 entitled "Excavating in or under brick sidewalks and brick driveways on private property", so that said new Section 8-901 shall read in its entirety as follows:

"Within the City limits of Cherryvale, Kansas, no person shall cut, bore, disturb, dig in or excavate any hole, ditch, trench or tunnel in, through or under, or otherwise disturb the surface of, any portion of any brick driveway
or brick sidewalk located on private property without first having secured a permit for such excavation, and all such digging or excavation shall be in accordance with all terms, conditions, and requirements of any permit so issued; provided, no such permit shall be required from persons or their contractor(s) performing environmental remediation work under the supervision of the Kansas Department of Health and Environment (“KDHE”). Applications for such permit shall be made to the City clerk."

5. Abandoned Railroad Right-of-Way.

A new Section 8-902 entitled "Excavating in or under abandoned railroad right-of-way" shall be added to the new Article 9 of Chapter VIII of the City Ordinances, so that said new Section 8-902 shall read in its entirety as follows:

"Within the City limits of Cherryvale, Kansas, no person shall cut, bore, disturb, dig in or excavate any hole, ditch, trench or tunnel in, through or under, or otherwise disturb the surface of, any portion of abandoned railroad right-of-way, without first having secured a permit for such excavation, and all such digging or excavation shall be in accordance with all terms, conditions, and requirements of any permit so issued. Applications for such permit shall be made to the City clerk. All excavations shall be adequately guarded with barricades and lights so as to protect the public from hazard. Streets, sidewalks, rights-of-way, and other public property disturbed in the course of the work shall be restored in a manner satisfactory to the City."

6. Excavating Below Orange Marker Fabric on Public or Private Property.

A new Section 8-903 entitled "Excavating below orange marker fabric" shall be added to the new Article 9 of Chapter VIII of the City Ordinances, so that said new Section 8-903 shall read in its entirety as follows:

"Within the City limits of Cherryvale, Kansas, no person shall remove, dig in or under, cut, bore or excavate any hole, ditch, trench or tunnel in, through or under, or otherwise disturb any orange marker fabric left in place below the surface of the ground as a barrier or indicator after completion of excavation work conducted as part of remedial or removal activities performed on any public or private property within the City limits under the supervision of the Kansas Department of Health and Environment (“KDHE”), without first having secured a permit for such excavation, and all such digging or excavation shall be in accordance with all terms, conditions, and requirements of any permit so issued; provided, no such permit shall be required from persons or their contractor(s) performing environmental remediation work under the supervision of the KDHE. Applications for such permit shall be made to the City clerk. Any person who accidentally disturbs, removes or displaces any such orange marker
fabric shall obtain replacement orange marker fabric from the City (free of charge) and place it where the original orange marker fabric was located."

7. Excavation on Private Property.

A new Section 8-904 entitled "Excavation on private property" shall be added to the new Article 9 of Chapter VIII of the City Ordinances, so that said new Section 8-904 shall read in its entirety as follows:

"(a) Within the City limits of Cherryvale, Kansas, no person, other than persons or their contractor(s) performing environmental remediation work under the supervision of the Kansas Department of Health and Environment ("KDHE"), shall conduct any excavation on any private property on which access was not granted in the City-wide smelter residue material ("SRM") survey conducted under the supervision of KDHE in 2016, whether to install or maintain underground utilities such as natural gas, electric, telephone, water, sewer, cable, fiber optic or other such lines, to install lawn sprinkler systems, to demolish or construct building foundations, or otherwise and whether acting on his own behalf as owner or lessee, or acting as contractor on behalf of any owner or lessee, or acting as utility provider or contractor on behalf of a utility provider, without having first secured a permit for such excavation, and all such excavation shall be in accordance with all terms, conditions and requirements of any permit so issued; provided that a permit shall not be required for excavation on private property that has been remediated under the supervision of KDHE or the U.S. Environmental Protection Agency. Applications for such permit shall be made to the City clerk.

(b) Within the City limits of Cherryvale, Kansas, any person, other than persons or their contractor(s) performing environmental remediation work under the supervision of the KDHE, who in the course of excavation on any private property, on which access was granted in the City-wide SRM survey conducted in 2016 under the supervision of KDHE or that has been remediated under the supervision of KDHE or the U.S. Environmental Protection Agency, whether to install or maintain underground utilities such as natural gas, electric, telephone, water, sewer, cable, fiber optic or other such lines, to install lawn sprinkler systems, to demolish or construct building foundations, or otherwise and whether acting on his own behalf as owner or lessee, or acting as contractor on behalf of any owner or lessee, or acting as utility provider or contractor on behalf of a utility provider, unexpectedly encounters SRM in the course of such excavation, shall segregate and set aside the SRM or soils containing the SRM, and upon completion of excavation, take the following actions: (a) place the SRM in the bottom of the excavation hole at least twelve inches below the surface of the ground (eighteen inches if in a distinct children's play area and twenty-four inches if in a vegetable garden) unless the SRM is a granular
black sand underlying bricks in which case such placement is prohibited, (b) place orange marker fabric (which will be supplied by the City free of charge) on top of the SRM, (c) backfill the excavation hole with soil not containing any SRM, and (d) notify the City clerk in writing within thirty (30) days of the placement of the orange marker fabric, the approximate location, and the date thereof. Alternatively, the SRM may be hauled in enclosed trucks to a disposal location designated by the City and disposed of there. Such hauling and disposal is required for granular black sand SRM underlying bricks. Disturbance of bricks and underlying granular black sand SRM should be avoided if possible. If disturbance is necessary, the disturbed area shall be repaired by covering with brick (for small areas less than 20 square feet), or for larger areas by concrete (walkways or driveways), or compacted gravel or pavement (driveways). The person arranging for the hauling shall be responsible for the loading and trucking cost, but there shall be no charge to use the City's designated disposal location. The person arranging for the hauling shall notify the City clerk in writing within thirty (30) days of the disposal, the date and approximate volume thereof. Any person handling SRM shall follow protective precautions as detailed in the Soil-Waste Management Plan approved by KDHE. The City shall maintain specimens of the common types of materials known to be SRM that can be viewed for comparison purposes to determine if suspected material is SRM.


A new Section 8-905 entitled "Collection and disposal of smelter residue material found on the surface of private property" shall be added to the new Article 9 of Chapter VIII of the City Ordinances, so that said new Section 8-905 shall read in its entirety as follows:

"Within the City limits of Cherryvale, Kansas, any person, other than persons or their contractor(s) performing environmental remediation work under the supervision of Kansas Department of Health and Environment (‘KDHE’), who finds or discovers material believed to be smelter residue material ("SRM") on the surface of any private property owned or leased by him should collect the SRM, place it in special collection bins with lids to be provided by the City, and place the bin or bins at the curb for pick-up by the City. The City shall maintain specimens of the more common types of material known to be SRM that can be viewed for comparison purposes to determine if suspected material is SRM. Any person handling SRM shall follow protective precautions detailed in the Soil-Waste Management Plan approved by KDHE."
9. Use Limitations for Select Non-Residential Properties

City Ordinances related to “Zoning and Planning” are at Chapter XVI, Articles 1 through 3. Article 3 incorporates the City’s Zoning Regulations (1996). Proposed amendments to Article 4 of the Zoning Regulations are summarized below for commercial properties where remediation is not required because lead in soil exceeds the un-restricted (residential) standard of 400 milligrams per kilogram (mg/kg) but is less than the non-residential standard of 1,000 mg/kg.

(a) A new item 7 entitled “Use Limitations” shall be added to existing ““B-1” BUSINESS – OFFICE DISTRICT” of “ARTICLE 4, DISTRICT REGULATIONS” so that said new item 7 shall read in its entirety as follows:

“7. Use Limitations: Properties with contaminant concentrations in soil above the Kansas Department of Health and Environment (KDHE) risk-based standards for residential use but lower than the KDHE risk-based standards for non-residential use must remain zoned as non-residential (business or industrial), and day care and school uses shall not be permitted.”

(b) A new item E shall be added to existing item 7 “Use Limitations” in existing ““B-2” BUSINESS – HIGHWAY SERVICE” of “ARTICLE 4, DISTRICT REGULATIONS” so that said new item E shall read in its entirety as follows:

“E. Properties with contaminant concentrations in soil above the Kansas Department of Health and Environment (KDHE) risk-based standards for residential use but lower than the KDHE risk-based standards for non-residential use must remain zoned as non-residential (business or industrial), and day care and school uses shall not be permitted.”

(c) A new item C shall be added to existing item 7 “Use Limitations” in existing ““B-4” BUSINESS – PRIMARY DISTRICT” of “ARTICLE 4, DISTRICT REGULATIONS” so that said new item C shall read in its entirety as follows:

“C. Properties with contaminant concentrations in soil above the Kansas Department of Health and Environment (KDHE) risk-based standards for residential use but lower than the KDHE risk-based standards for non-residential use must remain zoned as non-residential (business or industrial), and day care and school uses shall not be permitted.”
Appendix C

City of Cherryvale Excavation Permit
# Revised City of Cherryvale Excavation Permit Application

<table>
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<td>WILL THE PROPOSED EXCAVATION INVOLVE DISTURBANCE OF SMELTER RESIDUE MATERIAL (SRM)?</td>
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If "YES", Applicant must adhere to the provisions outlined in Attachment 1 to this Permit. Check "YES" for any excavation project on private property if access to the property was not granted in the City-wide SRM survey conducted in 2016 under the supervision of the Kansas Department of Health and Environment (KDHE), unless the property has been remediated under the supervision of KDHE or the U.S. Environmental Protection Agency.
Revised City of Cherryvale Excavation Permit Application

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|  | PLOT PLAN (INDICATE BUILDING SETBACKS, ABUTTING STREET, ALLEY, ETC.) |

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CITY CLERK

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Attachment 1

City Cherryvale Excavation Permit

Provisions for SRM Disturbance

Note: These provisions apply when smelter residue material and associated impacted soil (collectively referred to as “SRM” in this attachment) is expected to be encountered on or below the surface of the ground (“SRM Disturbance”) within the corporate limits of the City outside the former National Zinc Site (excluding all operating and abandoned railroad rights of way). In addition, a permit is required for any excavation project on private property on which access was not granted in the City-wide SRM survey conducted under the supervision of KDHE in 2016, unless the property has been remediated under the supervision of KDHE or the U.S. Environmental Protection Agency.

Excavation Permit Applicants must adhere to the following:

1. Key Soil-Waste Management Plan (SMP) provisions for a City Excavation Permit. A copy is included with this approved permit as a Quick Reference Guide (“Required Environmental Provisions for a City Excavation Permit: Quick Reference Guide”). A simplified brochure providing key highlights related to SRM management during excavation activities is included in this Quick Reference Guide as Attachment 2 (“Simple Guide: SRM Management During Excavation Activities”). Complete requirements are published in the SMP (Exponent 2017) for SRM available at the KDHE website¹, the City Hall and the Cherryvale Library.

2. Applicable City Ordinances listed below, which provide detailed legal requirements. A copy is included with this approved permit (see Attachment 1 to the Quick Reference Guide).

3. Any special conditions specified by the City in the last section of this attachment.

Applicable City of Cherryvale Ordinances

- Chapter XIII, Article 2, Section 13-201, “Excavation Permit”
- Chapter XV, Article 2, Section 15-214, Subsection (a), “Excavation”
- Chapter XV, Article 5, Section 15-513, “Excavation”
- Chapter VIII, Article 9, “Miscellaneous”, Section 8-901, “Excavating in or under brick sidewalks and brick driveways on private property”
• Chapter VIII, Article 9, “Miscellaneous”, Section 8-902, “Excavating in or under abandoned railroad right-of-way”
• Chapter VIII, Article 9, “Miscellaneous”, Section 8-903, “Excavating below orange marker fabric”
• Chapter VIII, Article 9, “Miscellaneous”, Section 8-904, “Excavation on private property”
• Chapter VIII, Article 9, “Miscellaneous”, Section 8-905, “Collection and disposal of smelter residue material found on the surface of private property”

Copies of these Ordinances are provided as Attachment 1 to the Quick Reference Guide included with this approved permit.

**Reporting**

Excavation Permit Applicants must conduct required reporting as noted in the enclosed Quick Reference Guide. This includes submission of a letter report to the City within 30 days of completion of the SRM disturbance activity, including the following:

- Date, location and extent of SRM encountered.
- Location and extent of SRM residual remaining in-place, including the location and depth of orange marker fabric if installed.
- Transportation company, disposal location, volume of SRM, and dates of transport and disposal, if SRM is removed and disposed.

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**Special Conditions:**
Appendix D

Required Environmental Provisions for a City Excavation Permit: Quick Reference Guide
Required Environmental Provisions for a City Excavation Permit:

QUICK REFERENCE GUIDE
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This Quick Reference Guide promotes the safe management and disposal of smelter residue material and associated impacted soil, collectively referred to as “SRM”, in Cherryvale, Kansas. SRM is derived from the former National Zinc Company Smelter that was located in the northwest part of the City of Cherryvale. SRM was used within the City as backfill, and as a base for roads, and brick sidewalks and driveways. This Guide includes key provisions related to SRM contained in the City of Cherryvale Ordinances and a Soil-Waste Management Plan prepared for the lawful management and disposal of SRM encountered in the City (Exponent 2017) and approved by the Kansas Department of Health and Environment (KDHE). Copies of pertinent City of Cherryvale Ordinances are included in this Quick Reference Guide as Attachment 1. A simplified brochure providing key highlights related to SRM management during excavation activities is included in this Quick Reference Guide as Attachment 2, “Simple Guide: SRM Management During Excavation Activities.”

References to the City of Cherryvale, Kansas included in this Guide refer to the area within the corporate limits of the City of Cherryvale outside the former National Zinc Site (excluding all operating and abandoned railroad rights of way).

Figure 1. Cherryvale city limits and boundary of former National Zinc Smelter property
Who should use this Quick Reference Guide?

This Quick Reference Guide has been prepared for construction and redevelopment projects that may be conducted by the City and its contractors, City franchisees and contractors, property owners, builders, residents, lessees, utility and landscaping contractors, and others, and that meet all of the following requirements:

1. **Excavation project located within the City of Cherryvale**
   
2. **Involves a known or likely SRM disturbance**
   
3. **Requires a City of Cherryvale Excavation Permit**

This Quick Reference Guide shall also be followed when SRM is unexpectedly encountered. In such cases, a permit is not required, but the provisions of this Quick Reference Guide shall still be followed.

Which City of Cherryvale Ordinances relate to SRM disturbance?

All SRM disturbances must adhere to the following City of Cherryvale Ordinances that relate to the Excavation Permit process and SRM disturbance:

- Chapter XII, Article 2, Section 13-201, “Excavation Permit”
- Chapter XV, Article 2, Section 15-214 (a), “Excavation”
- Chapter XV, Article 5, Section 15-513, “Excavation”
- Chapter VIII, Article 9, “Miscellaneous”
  - Section 8-901, “Excavating in or under brick sidewalks and brick driveways on private property”
  - Section 8-902, “Excavating in or under abandoned railroad right-of-way”
  - Section 8-903, “Excavating below orange marker fabric”
  - Section 8-904, “Excavation on private property”
  - Section 8-905, “Collection and disposal of smelter residue material found on the surface of private property”

Copies of these Ordinances are included in this Quick Reference Guide as Attachment 1.
What is the Soil-Waste Management Plan (SMP)?

The Soil-Waste Management Plan (SMP) [Exponent 2017] was prepared to facilitate proper and lawful management and disposal of SRM associated with historical smelter operations at the former National Zinc Smelter Property during construction and redevelopment activities performed in the City of Cherryvale. All SRM disturbances must adhere to the SMP approved by KDHE, which is available at the KDHE website¹, the City Hall and the Cherryvale Library. The SMP serves as a general guidance document to manage SRM disturbances in a manner that protects human health and the environment. Key SMP provisions are contained in this Quick Reference Guide, and in the simplified brochure included as Attachment 2.

Note: If the SMP is modified in the future, this Quick Reference Guide will be updated accordingly and submitted to KDHE for pre-approval before use by the City of Cherryvale.

What general precautions should be followed for SRM disturbance?

General precautions are summarized below for property owners and others who may encounter SRM and associated impacted soil, collectively referred to as “SRM”. Each scenario will likely have unique considerations, and parties shall comply with all pertinent local, state, and federal requirements.

The primary contaminant in SRM is lead. Other contaminants include arsenic, cadmium, and zinc. People may be exposed during SRM handling by touching it (dermal contact), and incidental ingestion, and inhalation of particulates (dust).

- Wear disposable gloves when picking up and containerizing SRM.
- Dispose of gloves immediately following use in a trash receptacle.
- Do not clean and reuse disposable gloves. Disposable equipment is not intended to be cleaned and reused.
- Avoid eating, drinking, and smoking when handling SRM.
- Dampen soils and SRM to limit dust formation in the work area.
- Avoid working on windy days when dust can be mobilized.
- Wear a dust mask if conditions are dusty, resulting in airborne particulates from SRM and soil.
- Remove residual SRM from reusable equipment (e.g., shovel) by dry brushing, and reuse or dispose of the residual in the same manner as the removed SRM.
- Keep children and pets away from the work area when SRM is exposed.

¹ http://www.kdheks.gov/remedial/site_remediation/national_zinc.html

Required Environmental Provisions for a City Excavation Permit: Quick Reference Guide
• Wash hands thoroughly after removing and disposing of gloves.
• Wash work clothes that may have contacted SRM in a separate, individual load. Do not mix with other laundry.
• Remove shoes after work is completed and before entering a residence or work place. Dry scrub and/or wash shoes to avoid tracking SRM into indoor spaces.
• Restore areas of SRM disturbance as discussed above.
• Dispose of SRM only by placing it back in the excavation hole, or at a disposal location approved by KDHE and designated by the City for this specific waste, following procedures set forth above.
• Contact KDHE or the City with any questions or concerns regarding SRM handling.

**Important Note for Remediation Contractors, the City and its Contractors, and City Franchisees and Contractors**

Additional SRM management protocols for remediation contractors, the City and its contractors, and City franchisees and contractors are included in the SMP approved by KDHE such as preparation of a health and safety plan. These users must consult the SMP to identify and ensure compliance with all additional, applicable requirements.

**Where is SRM located?**

SRM was used within the City as backfill, and as a base for roads, and brick sidewalks and driveways. SRM has been surveyed and remediated (removed) at various properties in the City of Cherryvale since 2001. Another removal program will commence in spring 2019. This removal program will be City-wide and will continue until removal and rehabilitation has been completed in accordance with KDHE’s requirements. Separate from this City-wide removal, and after it is completed, SRM may still be found under City streets and alleys and rights of way, beneath brick walkways and driveways, beneath orange demarcation fabric placed during remediation, and on private property on which access was not granted in the 2016 City-wide survey and that has not been remediated under the supervision of KDHE or the U.S. Environmental Protection Agency. SRM may also be unexpectedly encountered in or on the surface in yards, gardens or ditches along residential properties.

**What activities may cause SRM disturbance?**

The City is covered with streets and alleys, soil, gravel, landscaping, buildings, driveways, brick walkways, and other features. This cover acts as a barrier, preventing contact with SRM that may be buried below the surface. Subsurface activities that remove this cover and are known or suspected to result in SRM disturbance require a City of Cherryvale Excavation Permit.
Activities that may cause SRM disturbance include work on streets and alleys, during utility projects on street or alley rights of way, or utility or other excavations on private property or on foundations, driveways, and brick walkways. SRM disturbances may also occur in excavations at previously remediated areas (e.g., yards) with residual impacts below depth (usually 12 inches) where orange demarcation material has been placed to serve as a warning.

What does SRM look like?

SRM from historical smelter operations or soil containing SRM can be easily identified visually. Common types of SRM encountered in the City are described and shown in the photos below. Additional information is available from the KDHE website\(^2\) or by request from KDHE or the City, including SRM specimens for viewing.

**A Slag and retort fragments**

---

**Slag and Retort Fragments – Photo A**

**Size:** Gravel- to larger-size fragments\(^3\)

**Color:** Black, gray, red, or purple (fresh surfaces may also be tan)

**Appearance:**
- Similar to ceramic or fire brick
- Curved, flat, or blocky with white or gray inclusions
- Fused, baked, burned, or rusty
- Hard, black, glassy crust with air bubbles on one or more surfaces

**Known or Suspected Use:** Construction fill\(^4\)

**Location:** Ditches, alleys, under roads, and in isolated areas

---

\(^2\) [http://www.kdheks.gov/remedial/site_ remediation/national_zinc.html](http://www.kdheks.gov/remedial/site_remediation/national_zinc.html)

\(^3\) Up to several inches.

\(^4\) May be found with brick, glass, wood, or metal debris
Granular Slag – Photos B and C

Size: Sand- to gravel-sized material

Color: Black-to-red or gray-to-black (base)

Appearance:
- Rounded or angular (looks like cinders but harder)
- Hard and glassy with small air bubbles and white inclusions (softer where weathered)
- Charcoal-like powdery or ashy material with fines (base material)
- May occur in thin or patchy grass areas

Known or Suspected Use: Replacement for gravel, and base material

Location: Driveways, alleys, parking areas, building foundations, and under brick walkways (Photo C) and streets (paved or brick)

Note: Granular black sand SRM shown underlying brick in Photo C, requires special handling protocols (no reuse and disposal only) as discussed in this Quick Reference Guide.

Isolated Slag Fragments – Photo D

Size: Isolated, broken gravel- to larger-size fragments

Color: Black, gray, red, or purple (fresh surfaces may also be tan)

Appearance:
- Similar to ceramic or fire brick
- Curved, flat, or blocky with white or gray inclusions
- Fused, baked, burned, or rusty
- Hard, black, glassy crust with air bubbles on one or more surfaces

Known or Suspected Use: Construction fill

Location: Ditches, alleys, under roads, and in isolated areas
What notifications are required for SRM disturbance?

If SRM is Known or Suspected

Apply for Excavation Permit before Starting Work

Notify the City before starting work when a project is expected to involve an SRM disturbance activity. Notice shall be made through submittal of an Excavation Permit application containing:

- Description of the work or planned work
- Contact information for persons responsible for the work
- Location and dimensions of planned disturbance (depth, size, and estimated volume of material disturbed), and
- Work schedule.

Note: It is recommended that permit applications be made as early as possible to minimize delays.

Unexpectedly Encountering SRM

If SRM is unexpectedly encountered an excavation permit is not required, but the provisions of this Quick Reference Guide shall still be followed, including City notification through submittal of a brief written report within 30 days of completion of the SRM disturbance activity (see “What reporting is required after SRM disturbance?” below).

Other Notifications and Approvals

Applicant is responsible for making any other notifications and obtaining any other approvals or permits required by local, state, or federal regulations, such as traffic control, storm water pollution prevention controls and permitting, and utility clearance before any digging through "Kansas One-Call".

Kansas One-Call (http://www.kansasonecall.com/)
Phone: 811

Applicant must identify sensitive areas, if any, before work. These sensitive areas may include work within 15 feet of a railroad right of way or natural gas right of way, requiring additional notifications to these franchisees, work near or potentially affecting stormwater drainages, or other areas. Pre-work site visits may be necessary to inspect the work area before permit application, or may be required by the City.
Whom can I contact with questions related to SRM disturbance?

City of Cherryvale:
Submit an Excavation Permit application and related questions

City Clerk
Karen Davis (or subsequent party appointed by Mayor)
The City of Cherryvale
123 West Main Street
Cherryvale, Kansas 67335
Phone: (620) 336-2776
email: kseifert@cherryvaleusa.com (or email for subsequent party appointed by Mayor)

Note: Alternatively, The City Public Works Director is also a resource.

Kansas Department of Health & Environment (KDHE):
SRM disturbance questions

KDHE National Zinc Site Manager
Pamela Green (or subsequent party designated by KDHE)
Bureau of Environmental Remediation
Kansas Department of Health & Environment
1000 SW Jackson Street, Suite 410
Topeka, Kansas 66612-1367
Phone: (785) 296-1935
email: Pamela.Green@ks.gov (or email for subsequent party designated by KDHE)

What are the requirements for managing SRM?

SRM must be managed as required by City Ordinances and any other applicable regulations, the SMP, and the Excavation Permit, including any special conditions issued by the City. The following general procedures (illustrated in Figure 2 below) must be considered, and followed as applicable, during disturbance of the cover and when handling SRM.
General SRM Management Procedures:

Step 1. Restrict Work Area

- Prevent entry by public in areas of exposed SRM.

Note: May include placement of barricades and/or traffic control as deemed necessary or as required by City Ordinances and the Excavation Permit.

Step 2. Manage all SRM removed from a project site as required by City Ordinances, the SMP, and the Excavation Permit. The following protocol may be used unless special City requirements are different.

Protocol:

- Segregate and set aside SRM and/or soils containing SRM.
- Take either Action 1 or Action 2 upon completion of excavation:

Action 1 – Place SRM back in excavation

1. Place SRM in bottom of excavation at least 24 inches (in.) below ground surface (BGS) in vegetable gardens, at least 18 in. in distinct children’s play areas, and at least 12 in. BGS in all other areas.
2. Obtain free orange marker fabric from the City and place on top of SRM.
3. Backfill excavation with clean soil that does not contain any SRM.
4. Notify City Clerk in writing within 30 days after the orange fabric placement, including the approximate location and date it was placed.

Note: Granular black sand SRM underlying bricks (shown in Photo C above) cannot be reused under Action 1, and disposal must be by Action 2. For this reason, it is strongly recommended that disturbance of brick sidewalks and driveways and the black sand SRM beneath them be avoided, and that small or partial disturbances of the brick (less than 20 square feet) be repaired without removal of the SRM and instead the missing brick be replaced either with brick or with a concrete patch.

or

Action 2 – Transport and disposal at approved facility

1. Arrange transportation and disposal of SRM at a location approved by KDHE and designated by the City (initially the Waste Deposition Area located at 598 West Martin Street in Cherryvale, Kansas [at the corner of West Martin and North School Streets]).
   - Arranger to pay loading and transportation costs
   - No charge to use designated disposal site

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5 Including soils containing SRM.
6 Utilize this protocol unless different procedures are specified in the special conditions of the Excavation Permit. Employ general safety procedures and precautions, such as excavation safety guidelines (shoring, confined space entry, etc.), in addition to these SRM-related precautions and procedures.
7 This does not apply to elevated (raised bed) gardens, as they would have likely been filled with imported soil and soil amendments. Distinct children’s play areas of adequate size to support routine play activities (400 square feet or larger).
2. Protect loading area to ensure SRM does not spill onto clean surfaces during loading (e.g., load over plastic sheeting).
3. Load SRM directly onto trucks with plastic liners and covered for hauling to the City designated disposal location.
4. Notify City Clerk in writing within 30 days after disposal, including the disposal date and approximate volume (by arranger).

CAUTION!

SRM and soils containing SRM cannot be reused in any other manner and cannot be disposed of or moved to another location without the prior approval of KDHE. See discussion below of the curbside SRM collection and disposal option only available to residents for projects that do not require an Excavation Permit.

Step 3. Restore all work areas exposing SRM (see “How should I restore areas of SRM disturbance?” below).

Step 4. Replace orange demarcation fabric that been disturbed, removed or displaced using fabric available free of charge from the City and place where the original material was located.

Step 5. Remove SRM and soil containing SRM from reusable equipment (e.g., dry brushing) before equipment re-use, and dispose of residual SRM and soil with excavated SRM.
**Figure 2.** Management of SRM generated from excavation activities flowchart

**Project involves a known or suspected SRM disturbance**

1. Apply for and obtain an Excavation Permit from the City
2. Follow “Required Environmental Provisions for a City Excavation Permit: Quick Reference Guide”
   
   *(In addition, a permit is required for any excavation project on private property on which access was not granted in the 2016 Citywide SRM survey, unless the property has been remediated under the supervision of KDHE or the U.S. Environmental Protection Agency)*

3. Identify and fulfill all other local, state and federal regulatory project requirements*

4. Restrict work area to prevent entry to public

   - Complete excavation
   - Segregate and set aside SRM and/or soils containing SRM
   - Select one of the SRM management options below
   - Restore SRM disturbance area(s)

**Action 1**

- Place SRM in bottom of excavation at least 12 in. below ground surface (BGS)
  
  *(Exceptions: SRM must be placed at least 24 in. BGS in vegetable gardens and at least 18 in. BGS in distinct children’s play areas)*

- Obtain orange marker fabric from the City and place on top of SRM

- Backfill excavation with clean soil that does not contain any SRM

- Notify City Clerk in writing within 30 days of disposal **
  
  *(disposal location, date, and volume; transportation company, and transportation date)*

**Curbside SRM Collection:** See discussion of the curbside SRM collection and disposal option only available to residents for projects that do not require an Excavation Permit in “What procedures should I follow for transport and disposal of SRM?”

**Action 2**

- Arrange for transportation of SRM and disposal at a location approved by KDHE and designated by the City
  
  *(Initially the Waste Deposition Area located at 598 West Martin Street in Cherryvale, Kansas - transportation arranged by property owner and typically will be the property owner’s contractor)*

- Notify City Clerk in writing within 30 days of disposal **
  
  *(disposal location, date, and volume; transportation company, and transportation date)*

**SRM is unexpectedly encountered during a project**

1. Excavation Permit not required
2. Follow “Required Environmental Provisions for a City Excavation Permit: Quick Reference Guide”

**Note:** This flow chart is a simplified illustration of the SRM management process. Complete information and discussion is included in the Soil-Waste Management Plan (SWMP) (Exponent 2017), including environmental protection, general SRM handling precautions, transport and disposal requirements, restoration, and reporting.
What environmental protections are required for SRM disturbance?

Applicants will identify and implement controls, as appropriate, to protect the environment and reduce exposure to SRM during management of these materials. This typically includes, but is not limited to the following (see illustration in Figure 2):

- **Minimize soil excavations** and areas of vegetation removal.
- Control all SRM and soils containing SRM in a manner that will **minimize or prevent dust formation and erosion**.

Example: Load into a lined and covered truck, or, if temporarily stockpiling, cover with clean soil, plastic, blankets, or similar materials that are secured in place.

- **Suppress/control dust** during excavation, which may include spraying water onto the ground during work.
- Wear appropriate **personal protective equipment (PPE)** during handling and management. Includes disposable gloves to prevent contact at all times when handling SRM and soils containing SRM, a dust mask during dry and windy conditions, and other equipment. Remediation contractors and workers conducting ongoing excavation work with potential exposure to airborne dust may need to employ respirable dust monitoring in the work area using a portable field monitor.

- **Employ appropriate best management practices (BMPs) to avoid stormwater pollution**. A stormwater permit may be required; the party conducting work is responsible for identifying and obtaining all required permits.

  In general, take precautions to avoid 1) water accumulation in excavations, 2) disturbances of drainages (e.g., clogging), and 3) degradation of water quality (exposure to SRM). BMPs should be used if deemed necessary, and, as allowed or required by law, may include diversion ditches, dikes, silt fences, settling ponds, or other features.

What procedures should I follow for transport and disposal of SRM?

Applicants may arrange for transportation of SRM to a disposal location approved by KDHE and designated by the City (initially the Waste Deposition Area located at 598 West Martin Street in Cherryvale, Kansas [at the corner of West Martin and North School Streets]). The person arranging for the hauling shall notify the City Clerk in writing within 30 days after the disposal, the date and approximate volume. The following general procedures must be considered, and followed as applicable, when transporting SRM wastes:
• The transporter is responsible for identifying and following all local, state and federal requirements for waste transport (e.g., U.S. Environmental Protection Agency and Department of Transportation (DOT) regulations, etc.).

• Cover all waste to prevent spillage during transport. Line trucks and trailers and properly cover in accordance with all applicable DOT regulations. Ensure no liquid is allowed to drain during transport (e.g., from dewatering of wet SRM or soil).

• Ensure SRM is not tracked outside the excavation area. Remove loose SRM-impacted debris from truck body and tires by dry brushing before transport.

• Minimize the number of vehicles used for waste loading and transport.

• Follow transportation routes that minimize driving in residential areas and areas where daycares and schools are located to the extent possible.

• Utilize street sweeping and washing as necessary to prevent dusting and/or tracking of SRM on streets.

• Dispose of all SRM and impacted soil at the location approved by KDHE and designated by the City in the approved Excavation Permit and City Ordinances.

Disposal Option for Residents and Non-Permitted Projects
Residents who encounter SRM on the surface of their properties may obtain a collection bin from the City (no charge), pick up the SRM following protective procedures described in this Quick Reference Guide, and place the bin at the curb for pick-up by the City. This option is only available for projects that do not require an Excavation Permit.

How should I restore areas of SRM disturbance?

Following disturbance of the cover and SRM, work areas must be restored to prevent future exposure. Applicant will make the following restoration, as applicable:

• If applicant elects to follow Action 1, then the SRM and soils containing SRM shall be placed back in the excavation hole at a depth of 12 in. BGS or lower (24 in. BGS for gardens and 18 in. BGS for play areas), laying orange fabric obtained free of charge from the City on top of the SRM, and backfilling with clean soil that does not contain visible SRM.

• Fill excavations with clean soil and lightly compact to approximate pre-excavation elevations. For yards, replace topsoil and revegetate the soil removal area with sod or reseed with grasses.

• Replace driveways with compacted gravel or pavement, if removed.

• Replace brick walkways with concrete.

Note: It is strongly recommended that brick driveways or walkways be left in place and that small areas of disturbed brick (less than 20 square feet) be repaired by replacing missing brick with either new brick or a concrete patch.
• Restore surfaces in the area of drip lines, which are typically soil or gravel.
• Public property (e.g., streets, sidewalks, and ROWs) shall be restored in a manner satisfactory to the City in accordance with the Excavation Permit and City Ordinances.

What reporting is required after SRM disturbance?

Within 30 days of completion of the SRM disturbance activity, submit the following to the City for its SRM record repository, unless the Excavation Permit specifies different reporting:

• Date, location and extent of SRM encountered.
• Location and extent of SRM residual remaining in-place, including the location of orange marker fabric if installed.
• Transportation company, disposal location, volume of SRM, and dates of transport and disposal, if SRM is removed and disposed.
1. Streets.

The text of Chapter XIII, Article 2, Section 13-201 of the City Ordinances, entitled "Excavation Permit", shall be amended so that said Section 13-201 shall read in its entirety as follows:

"Within the City limits of Cherryvale, Kansas, no person shall cut, bore, disturb, dig in or excavate any hole, ditch, trench or tunnel in, through or under, or otherwise disturb the surface of, any portion of any street, highway, alley, sidewalk or sidewalk thereof (or in or under any berm, ditch or street sidewalk adjoining a street, highway or alley), or in or under any portion of any park, ball diamond, athletic field, school ground or other public property, or in or under a public easement on which any of the foregoing may be located, or in or under any public easement through private property, without first having secured a permit for such excavation, and all such digging or excavation shall be in accordance with all terms, conditions, and requirements of any permit so issued; provided, no such permit shall be required from persons or their contractor(s) performing environmental remediation work under the supervision of the Kansas Department of Health and Environment ("KDHE"). Applications for such permit shall be made to the City clerk. All excavations shall be adequately guarded with barricades and lights so as to protect the public from hazard. Streets, sidewalks, rights-of-way, and other public property disturbed in the course of the work shall be restored in a manner satisfactory to the City."

2. Water Utility.

The text of Chapter XV, Article 2, Section 15-214 of the City Ordinances, entitled "Excavation", shall be amended so that Subsection (a) of said Section 15-214 shall read in its entirety as follows (the remainder of said Section 15-214 shall remain unchanged):

(a) PERMIT; BOND. Within the City limits of Cherryvale, Kansas, no person shall cut, bore, disturb, dig in or excavate any hole, ditch, trench or tunnel in, through or under, or otherwise disturb the surface of, any portion of any street, highway, alley, sidewalk or sidewalk thereof (or in or under any berm, ditch or street sidewalk adjoining a street, highway or alley), or in or under any portion of any park, ball diamond, athletic field, school ground or other public property, or in or under a public easement on which any of the foregoing may be located, or in or under any public easement through private property, without first having secured an excavation permit from the City clerk; provided, no such permit shall be required from persons or their contractor(s) performing
environmental remediation work under the supervision of the Kansas Department of Health and Environment ("KDHE"). All excavations for building water installations shall be adequately guarded with barricades and lights so as to protect the public from hazard. Streets, sidewalks, rights-of-way, and other public property disturbed in the course of the work shall be restored in a manner satisfactory to the City. All such digging or excavation shall be in accordance with all terms, conditions, and requirements of any permit so issued. The cost of obtaining an excavation permit shall be $15.00. An excavation permit shall be effective for one (1) year from the date the permit is issued.


The text of Chapter XV, Article 5, Section 15-513 of the City Ordinances, entitled "Excavation", shall be amended so that said Section 15-513 shall read in its entirety as follows:

"All excavations for building sewer installations shall be adequately guarded with barricades and lights so as to protect the public from hazard. Streets, sidewalks, rights-of-way, and other public property disturbed in the course of the work shall be restored in a manner satisfactory to the City. Within the City limits of Cherryvale, Kansas, no person shall cut, bore, disturb, dig in or excavate any hole, ditch, trench or tunnel in, through or under, or otherwise disturb the surface of, any portion of any street, highway, alley, sidewalk or sidewall thereof (or in or under any berm, ditch or street sidewalk adjoining a street, highway or alley), or in or under any portion of any park, ball diamond, athletic field, school ground or other public property, or in or under a public easement on which any of the foregoing may be located, or in or under any public easement through private property, without first having secured an excavation permit from the City clerk; provided, no such permit shall be required from persons or their contractor(s) performing environmental remediation work under the supervision of the Kansas Department of Health and Environment ("KDHE"). All such digging or excavation shall be in accordance with all terms, conditions, and requirements of any permit so issued."


A new Article 9, entitled "Miscellaneous" shall be added to Chapter VIII of the City Ordinances, and within said Article 9, add a new Section 8-901 entitled "Excavating in or under brick sidewalks and brick driveways on private property", so that said new Section 8-901 shall read in its entirety as follows:

"Within the City limits of Cherryvale, Kansas, no person shall cut, bore, disturb, dig in or excavate any hole, ditch, trench or tunnel in, through or under, or otherwise disturb the surface of, any portion of any brick driveway
or brick sidewalk located on private property without first having secured a permit for such excavation, and all such digging or excavation shall be in accordance with all terms, conditions, and requirements of any permit so issued; provided, no such permit shall be required from persons or their contractor(s) performing environmental remediation work under the supervision of the Kansas Department of Health and Environment (“KDHE”). Applications for such permit shall be made to the City clerk.

5. Abandoned Railroad Right-of-Way.

A new Section 8-902 entitled "Excavating in or under abandoned railroad right-of-way" shall be added to the new Article 9 of Chapter VIII of the City Ordinances, so that said new Section 8-902 shall read in its entirety as follows:

"Within the City limits of Cherryvale, Kansas, no person shall cut, bore, disturb, dig in or excavate any hole, ditch, trench or tunnel in, through or under, or otherwise disturb the surface of, any portion of abandoned railroad right-of-way, without first having secured a permit for such excavation, and all such digging or excavation shall be in accordance with all terms, conditions, and requirements of any permit so issued. Applications for such permit shall be made to the City clerk. All excavations shall be adequately guarded with barricades and lights so as to protect the public from hazard. Streets, sidewalks, rights-of-way, and other public property disturbed in the course of the work shall be restored in a manner satisfactory to the City."

6. Excavating Below Orange Marker Fabric on Public or Private Property.

A new Section 8-903 entitled "Excavating below orange marker fabric" shall be added to the new Article 9 of Chapter VIII of the City Ordinances, so that said new Section 8-903 shall read in its entirety as follows:

"Within the City limits of Cherryvale, Kansas, no person shall remove, dig in or under, cut, bore or excavate any hole, ditch, trench or tunnel in, through or under, or otherwise disturb any orange marker fabric left in place below the surface of the ground as a barrier or indicator after completion of excavation work conducted as part of remedial or removal activities performed on any public or private property within the City limits under the supervision of the Kansas Department of Health and Environment (“KDHE”), without first having secured a permit for such excavation, and all such digging or excavation shall be in accordance with all terms, conditions, and requirements of any permit so issued; provided, no such permit shall be required from persons or their contractor(s) performing environmental remediation work under the supervision of the KDHE. Applications for such permit shall be made to the City clerk. Any person who accidentally disturbs, removes or displaces any such orange marker
fabric shall obtain replacement orange marker fabric from the City (free of charge) and place it where the original orange marker fabric was located."

7. **Excavation on Private Property.**

A new Section 8-904 entitled "Excavation on private property" shall be added to the new Article 9 of Chapter VIII of the City Ordinances, so that said new Section 8-904 shall read in its entirety as follows:

"(a) Within the City limits of Cherryvale, Kansas, no person, other than persons or their contractor(s) performing environmental remediation work under the supervision of the Kansas Department of Health and Environment ("KDHE"), shall conduct any excavation on any private property on which access was not granted in the City-wide smelter residue material ("SRM") survey conducted under the supervision of KDHE in 2016, whether to install or maintain underground utilities such as natural gas, electric, telephone, water, sewer, cable, fiber optic or other such lines, to install lawn sprinkler systems, to demolish or construct building foundations, or otherwise and whether acting on his own behalf as owner or lessee, or acting as contractor on behalf of any owner or lessee, or acting as utility provider or contractor on behalf of a utility provider, without having first secured a permit for such excavation, and all such excavation shall be in accordance with all terms, conditions and requirements of any permit so issued; provided that a permit shall not be required for excavation on private property that has been remediated under the supervision of KDHE or the U.S. Environmental Protection Agency. Applications for such permit shall be made to the City clerk.

(b) Within the City limits of Cherryvale, Kansas, any person, other than persons or their contractor(s) performing environmental remediation work under the supervision of the KDHE, who in the course of excavation on any private property, on which access was granted in the City-wide SRM survey conducted in 2016 under the supervision of KDHE or that has been remediated under the supervision of KDHE or the U.S. Environmental Protection Agency, whether to install or maintain underground utilities such as natural gas, electric, telephone, water, sewer, cable, fiber optic or other such lines, to install lawn sprinkler systems, to demolish or construct building foundations, or otherwise and whether acting on his own behalf as owner or lessee, or acting as contractor on behalf of any owner or lessee, or acting as utility provider or contractor on behalf of a utility provider, unexpectedly encounters SRM in the course of such excavation, shall segregate and set aside the SRM or soils containing the SRM, and upon completion of excavation, take the following actions: (a) place the SRM in the bottom of the excavation hole at least twelve inches below the surface of the ground (eighteen inches if in a distinct children’s play area and twenty-four inches if in a vegetable garden) unless the SRM is a granular
black sand underlying bricks in which case such placement is prohibited,
(b) place orange marker fabric (which will be supplied by the City free of
charge) on top of the SRM, (c) backfill the excavation hole with soil not
containing any SRM, and (d) notify the City clerk in writing within thirty
(30) days of the placement of the orange marker fabric, the approximate
location, and the date thereof. Alternatively, the SRM may be hauled in
enclosed trucks to a disposal location designated by the City and disposed
of there. Such hauling and disposal is required for granular black sand SRM
underlying bricks. Disturbance of bricks and underlying granular black sand
SRM should be avoided if possible. If disturbance is necessary, the
disturbed area shall be repaired by covering with brick (for small areas less
than 20 square feet), or for larger areas by concrete (walkways or
driveways), or compacted gravel or pavement (driveways). The person
arranging for the hauling shall be responsible for the loading and trucking
cost, but there shall be no charge to use the City's designated disposal
location. The person arranging for the hauling shall notify the City clerk in
writing within thirty (30) days of the disposal, the date and approximate
volume thereof. Any person handling SRM shall follow protective
precautions as detailed in the Soil-Waste Management Plan approved by
KDHE. The City shall maintain specimens of the common types of
materials known to be SRM that can be viewed for comparison purposes to
determine if suspected material is SRM."


A new Section 8-905 entitled "Collection and disposal of smelter residue material
found on the surface of private property" shall be added to the new Article 9 of
Chapter VIII of the City Ordinances, so that said new Section 8-905 shall read in
its entirety as follows:

"Within the City limits of Cherryvale, Kansas, any person, other than
persons or their contractor(s) performing environmental remediation work
under the supervision of Kansas Department of Health and Environment
(“KDHE”), who finds or discovers material believed to be smelter residue
material ("SRM") on the surface of any private property owned or leased by
him should collect the SRM, place it in special collection bins with lids to
be provided by the City, and place the bin or bins at the curb for pick-up by
the City. The City shall maintain specimens of the more common types of
material known to be SRM that can be viewed for comparison purposes to
determine if suspected material is SRM. Any person handling SRM shall
follow protective precautions detailed in the Soil-Waste Management Plan
approved by KDHE."
9. **Use Limitations for Select Non-Residential Properties**

City Ordinances related to “Zoning and Planning” are at Chapter XVI, Articles 1 through 3. Article 3 incorporates the City’s Zoning Regulations (1996). Proposed amendments to Article 4 of the Zoning Regulations are summarized below for commercial properties where remediation is not required because lead in soil exceeds the un-restricted (residential) standard of 400 milligrams per kilogram (mg/kg) but is less than the non-residential standard of 1,000 mg/kg.

(a) A new item 7 entitled “Use Limitations” shall be added to existing “**B-1** BUSINESS – OFFICE DISTRICT” of “**ARTICLE 4, DISTRICT REGULATIONS**” so that said new item 7 shall read in its entirety as follows:

> “7. **Use Limitations:** Properties with contaminant concentrations in soil above the Kansas Department of Health and Environment (KDHE) risk-based standards for residential use but lower than the KDHE risk-based standards for non-residential use must remain zoned as non-residential (business or industrial), and day care and school uses shall not be permitted.”

(b) A new item E shall be added to existing item 7 “Use Limitations” in existing “**B-2** BUSINESS – HIGHWAY SERVICE” of “**ARTICLE 4, DISTRICT REGULATIONS**” so that said new item E shall read in its entirety as follows:

> “E. Properties with contaminant concentrations in soil above the Kansas Department of Health and Environment (KDHE) risk-based standards for residential use but lower than the KDHE risk-based standards for non-residential use must remain zoned as non-residential (business or industrial), and day care and school uses shall not be permitted.”

(c) A new item C shall be added to existing item 7 “Use Limitations” in existing “**B-4** BUSINESS – PRIMARY DISTRICT” of “**ARTICLE 4, DISTRICT REGULATIONS**” so that said new item C shall read in its entirety as follows:

> “C. Properties with contaminant concentrations in soil above the Kansas Department of Health and Environment (KDHE) risk-based standards for residential use but lower than the KDHE risk-based standards for non-residential use must remain zoned as non-residential (business or industrial), and day care and school uses shall not be permitted.”
Note to User:

This simplified brochure provides key highlights related to management of smelter residue material and associated impacted soil, collectively referred to as “SRM” during excavation activities, and does not contain comprehensive information and regulatory requirements (e.g., restoration, transportation, disposal, reporting, etc.). Please consult “Required Environmental Provisions for a City Excavation Permit: Quick Reference Guide”, the Soil-Waste Management Plan (SMP) approved by the Kansas Department of Health and Environment (KDHE), and related documents (including referenced City Ordinances) to obtain more complete information and identify and ensure compliance with all additional, applicable requirements.

What general precautions should be followed for SRM disturbance?

General precautions are summarized below for property owners and others who may encounter SRM. Each scenario will likely have unique considerations, and parties shall comply with all pertinent local, state, and federal requirements.

The primary contaminant in SRM is lead. Other contaminants include arsenic, cadmium, and zinc. People may be exposed during SRM handling by touching it (dermal contact), and incidental ingestion, and inhalation of particulates (dust).

- Wear disposable gloves when picking up and containerizing SRM.
- Dispose of gloves immediately following use in a trash receptacle.
- Do not clean and reuse disposable gloves. Disposable equipment is not intended to be cleaned and reused.
- Avoid eating, drinking, and smoking when handling SRM.
- Dampen soils and SRM to limit dust formation in the work area.
- Avoid working on windy days when dust can be mobilized.
- Wear a dust mask if conditions are dusty, resulting in airborne particulates from SRM and soil.
- Remove residual SRM from reusable equipment (e.g., shovel) by dry brushing, and reuse or dispose of the residual in the same manner as the removed SRM.
- Keep children and pets away from the work area when SRM is exposed.
- Wash hands thoroughly after removing and disposing of gloves.
- Wash work clothes that may have contacted SRM in a separate, individual load. Do not mix with other laundry.
• Remove shoes after work is completed and before entering a residence or work place. Dry scrub and/or wash shoes to avoid tracking SRM into indoor spaces.

• Restore areas of SRM disturbance as discussed above.

• See the simplified flowchart shown in Figure 1 below, “Management of SRM generated from excavation activities flowchart”. Dispose of SRM only by placing it back in the excavation hole, or at a disposal location approved by KDHE and designated by the City for this specific waste (initially the Waste Deposition Area located at 598 West Martin Street in Cherryvale, Kansas [at the corner of West Martin and North School Streets]), following procedures set forth above. SRM and soils containing SRM cannot be reused in any other manner and cannot be disposed of or moved to another location without the prior approval of KDHE. Note that City Ordinances allow residents who discover SRM on the surface of private property to collect the SRM, place it in special collection bins with lids to be provided by the City, and place the bin or bins at the curb for pick-up by the City. This curbside pick-up is only available to residents for projects that do not require an Excavation Permit.

• Granular black sand SRM underlying bricks cannot be reused under Action 1 shown in the flowchart, and disposal must be by Action 2 shown in the flowchart. For this reason, it is strongly recommended that disturbance of brick sidewalks and driveways and the black sand SRM beneath them be avoided, and that small or partial disturbances of the brick (less than 20 square feet) be repaired without removal of the SRM and instead the missing brick be replaced either with brick or with a concrete patch.

• Contact KDHE or the City with any questions or concerns regarding SRM handling.

**What environmental protections are required for SRM disturbance?**

Applicants will identify and implement controls, as appropriate, to protect the environment and reduce exposure to SRM during management of these materials. This typically includes, but is not limited to the following (see the flowchart in Figure 1):

• Minimize soil excavations and areas of vegetation removal.

• Control all SRM and soils containing SRM in a manner that will minimize or prevent dust formation and erosion.

Example: Load into a lined and covered truck, or, if temporarily stockpiling, cover with clean soil, plastic, blankets, or similar materials that are secured in place.

• Suppress/control dust during excavation, which may include spraying water onto the ground during work.

• Wear appropriate personal protective equipment (PPE) during handling and management.

Includes disposable gloves to prevent contact at all times when handling SRM and soils containing SRM, a dust mask during dry and windy conditions, and other equipment. Remediation contractors and workers conducting ongoing excavation work with potential exposure to airborne dust may need to employ respirable dust monitoring in the work area using a portable field monitor.
• Employ appropriate best management practices (BMPs) to avoid stormwater pollution. A stormwater permit may be required; the party conducting work is responsible for identifying and obtaining all required permits.

In general, take precautions to avoid 1) water accumulation in excavations, 2) disturbances of drainages (e.g., clogging), and 3) degradation of water quality (exposure to SRM). BMPs should be used if deemed necessary, and, as allowed or required by law, may include diversion ditches, dikes, silt fences, settling ponds, or other features.

**Figure 1. Management of SRM generated from excavation activities flowchart**

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**Curbside SRM Collection:** Residents who encounter SRM on the surface of their properties may obtain a collection bin from the City [no charge], pick up the SRM following protective procedures described in this Simple Guide, and place the bin at the curb for pickup by the City. This option is only available for projects that do not require an Excavation Permit.
Appendix E

Community Outreach Plan
Appendix E
Community Outreach Plan

Interim Risk Management
Plan, Former National Zinc
Site, Cherryvale, Kansas
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Purpose

This Community Outreach Plan has been prepared for the National Zinc Site, Cherryvale, Kansas. This Plan is a resource to engage and educate the public on the occurrence of, and potential risks related to residual smelter residue material and associated impacted soil, collectively referred to as “SRM”, that may be encountered on public and private properties within the City of Cherryvale (the City) after removal actions have been completed. The City and the Kansas Department of Health and Environment (KDHE) will consult this Plan to assist with community outreach activities conducted in preparation for and during the long-term care period.

Community outreach is required in the Removal Action Design (RAD) Plan (Exponent 2018) and the Interim Risk Management Plan (RMP) (Exponent 2018). The Interim RMP contains community outreach materials, notification frequencies, and detailed information on specific mailings and planned public meetings.

This Plan is divided into the following sections:

- **Resources and Information**
  - Fact sheets, flyers, guides, and/or brochures
  - Informed persons
  - SRM examples

- **Outreach Methods**
  - Location information repository
  - Online information repository
  - Mailings
  - Public meetings.
Resources and Information

The information and educational resources that will be developed and/or made available to the public are outlined below.

Fact Sheets, Flyers, Guides and/or Brochures

Easy-to-read and easy-to-understand fact sheets, flyers, guides and/or brochures will be used to support community outreach activities such as public meetings.

Materials have been prepared as part of the Interim Risk Management Plan (Interim RMP) to communicate the following information to the community:

- **For Private Property**
  - The potential to encounter SRM on private property
  - The potential risks related to the disturbance and handling of SRM and soil
  - The requirement to obtain a permit for excavation on private property if SRM is known or suspected to be present (in addition, a permit is required for any excavation project on private property on which access was not granted in the 2016 City-wide SRM survey, unless the property has been remediated under the supervision of KDHE or the U.S. Environmental Protection Agency)
  - A method for collection and disposal of SRM found on the surface of private property

- **For Brick Walkways and Driveways on Private Property**
  - The potential presence of SRM under brick walkways and driveways
  - The potential risks related to disturbance of the bricks walkways and driveways
  - The requirement to obtain a permit for any disturbance of bricks that could expose underlying SRM
  - Guidelines for safe maintenance of brick walkways and driveways

- **For City Alleys**
  - The potential presence of SRM and soil with elevated lead in and adjacent to alleys
  - The risks related to disturbance of the alley and adjacent areas
  - The need for a permit for any excavation in or adjoining the alley right-of-way

- **For City Ditches**
  - The potential presence of SRM and impacted soil in City ditches
  - The potential risks from exposure to ditch soil and SRM
  - The requirement to obtain a permit for any excavation in or adjacent to the ditches
• For City Parks
  – The potential presence of SRM in parks, including underneath brick walkways
  – The potential risks related to disturbance of park areas and bricks
  – The requirement to obtain a permit for any excavation or any disturbance of bricks that could expose the underlying SRM.

These prepared materials include the following:

• New and revised City Ordinances (Appendix B of the Interim RMP),
• A revised City excavation permit incorporating SRM requirements (Appendix C of the Interim RMP), and
• A guide that the City will issue with approved excavation permits for projects involving SRM entitled “Required Environmental Provisions for a City Excavation Permit: Quick Reference Guide” (the Guide), which contains a simplified brochure providing key highlights related to SRM management during excavation activities entitled “Simple Guide: SRM Management During Excavation Activities” (Appendix D of the Interim RMP).

Informed Persons

City and KDHE contacts familiar with SRM and associated handling and management requirements will be available to answer questions that may arise by the public and other parties. The current City contact is:

**City Clerk**
Karen Davis *(or subsequent party appointed by Mayor)*
The City of Cherryvale
123 West Main Street
Cherryvale, Kansas  67335
(620) 336-2776
email:  kseifert@cherryvaleusa.com *(or email for subsequent party appointed by Mayor)*

KDHE is also available as a resource for property owners and others with questions about subsurface work with the potential to encounter SRM at the Site. The current KDHE contact is:

**KDHE Site Manager**
Pamela Green *(or subsequent party designated by KDHE)*
Bureau of Environmental Remediation
Kansas Department of Health & Environment
1000 SW Jackson Street, Suite 410
Topeka, Kansas  66612-1367
(785) 296-1935
email:  Pamela.Green@ks.gov *(or email for subsequent party designated by KDHE)*
The KDHE contact for the long-term care period under the Final Risk Management Program (Final RMP) is:

**KDHE RMP Manager**

**Andrea Schiller, P.G. (or subsequent party designated by KDHE)**

Long Term Stewardship & Brownfields

Bureau of Environmental Remediation

Kansas Department of Health & Environment

1000 SW Jackson Street, Suite 410

Topeka, Kansas  66612-1367

Phone:  (785) 296-0489

email:  Andrea.Schiller@ks.gov (or email for subsequent party designated by KDHE)

**SRM Examples**

Examples of SRM will be available for the public to view at the local information repository (discussed in the next section). The location of the local repository is:

**Cherryvale City Hall Office**

123 West Main Street

Cherryvale, Kansas  67335

(620) 336-2776

Various types of SRM have been observed on the former smelter property and Site-wide. The most common types of SRM that have been observed at the Site will be available to view, and include slag and retort fragments, granular slag, and isolated slag fragments. Photographs and descriptions of these common types of SRM encountered in the City are included in the Soil-Waste Management Plan (SMP) (Exponent 2017) and the Guide discussed above that summarizes key provisions of the SMP that will be included in an approved excavation project for projects involving SRM (Appendix D of the Interim RMP).
Outreach Methods

The methods in which to communicate and distribute the informational resources to the public are outlined below. The methods described include some already developed for the Site and outlined in the *Community Involvement Plan* developed by KDHE in August 2014.

**Local Information Repository**

The local information repository is an existing collection of Site-specific information where residents and other parties can access official documents and other pertinent information about the Site, including SRM examples and any fact sheets, flyers, guides, and brochures that are developed (as discussed above). The City and KDHE will continue to periodically update the local information repository and add new resources and documents, as they become available. The location of the local repository is:

**Cherryvale City Hall Office**
123 West Main Street
Cherryvale, Kansas 67335
(620) 336-2776

**Online Information Repository**

The online information repository is an existing collection of Site-specific information where residents can access official documents and other pertinent information about the Site including any fact sheets, flyers, and brochures that are developed. The City and KDHE will continue to periodically update the online information repository and add new information and documents, as they become available. The internet website for the online repository is http://www.kdheks.gov/remedial/site_remediation/national_zinc.html

**Community Outreach Notifications**

The City will issue public notices using the utility services mailing list it maintains in an electronic database. The mailing list includes names and addresses for property owners and occupants with utility service accounts. More detailed information on specific community outreach notifications is presented in the Interim RMP (Exponent 2018).

**Public Meetings**

The City and KDHE will hold public meetings, as appropriate, to update the public on Site developments, educate residents on requirements, and address community questions and concerns. KDHE will schedule, prepare for, and lead all announced meetings. Appropriate KDHE and/or City staff will attend. The Interim RMP includes two public meetings scheduled as of this time. The first public meeting will be held in advance of remedial activities to implement the RAD Plan, at which the upcoming City-wide remedial actions will be discussed along with the new SRM handling and management requirements contained in the revised City...
Ordinances. The second public meeting will be held near or immediately following completion of RAD Plan implementation to discuss the remediated Site, present the Final RMP (long-term care) area and boundaries, and discuss long-term Site maintenance requirements. Community outreach notices will be issued to invite interested parties to these meetings as described above and in the Interim RMP (Exponent 2018). In addition to these notifications for community outreach meetings, a postcard notice will be issued at the approximate mid-point of remediation activities to provide a reminder of SRM handling and management requirements, including permit provisions.