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**
   and
2. **Involves a known or likely SRM disturbance**
   and
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 website\(^1\), 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
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- 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.

**Slag and retort fragments**

**Slag and Retort Fragments – Photo A**

<table>
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<tr>
<th>Feature</th>
<th>Description</th>
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<tr>
<td><strong>Size:</strong></td>
<td>Gravel- to larger-size fragments(^3)</td>
</tr>
<tr>
<td><strong>Color:</strong></td>
<td>Black, gray, red, or purple (fresh surfaces may also be tan)</td>
</tr>
</tbody>
</table>
| **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 |

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\(^2\) [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
e-mail: 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
e-mail: 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

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**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?”

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 (SWP) (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.