



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
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Ref: SEMD-EMB

ACTION MEMORANDUM

SUBJECT: Approval and Funding for an Emergency Removal Action at the St. George Mercury Site, Washington County, Utah, pursuant to the On-Scene Coordinator's delegated authority under CERCLA Section 104

FROM: Joyel Dhieux, Federal On-Scene Coordinator
Emergency Response Section

THRU: Kerry Guy, Supervisor
Emergency Response Section

THRU: Deirdre Rothery, Manager
Emergency Management Branch

TO: Ben Bielenberg, Acting Director
Superfund and Emergency Management Division

Site ID# B8F8

I. PURPOSE

The purpose of this memorandum is to document the decision to initiate emergency response actions described herein for the St. George Mercury Site (Site) located in St. George, Washington County, Utah, pursuant to the On-Scene Coordinator's delegated authority under CERCLA Section 104. This emergency removal action involves the collection, removal and disposal of elemental mercury at a residence. Conditions existing at the Site present a threat to public health and the environment and meet the criteria for initiating a removal action under 40 CFR 300.415(b)(2) of the National Contingency Plan (NCP).

This removal action involves no nationally significant or precedent-setting issues. This emergency removal action will not establish any precedent for how future response actions will be taken and will not commit the US Environmental Protection Agency (EPA) to a course of action that could have a significant impact on future responses or resources.

II. SITE CONDITIONS AND BACKGROUND

Site Name:	St. George Mercury
Superfund Site ID (SSID):	B8F8
NRC Case Number:	1360028
CERCLIS Number:	UTN000821208
Site Location:	St. George, Washington County, Utah
Latitude/Longitude:	37.072431298931356 / -113.56752392331605
Potentially Responsible Party (PRP):	
NPL Status:	Non NPL
Removal Start Date:	02/15/2023

A. Site Description

1. Removal Site Evaluation

On February 15, 2023, the Utah Department of Environmental Quality (UDEQ) requested assistance from the U.S. Environmental Protection Agency (EPA) in response to a mercury spill inside a basement storage room in St. George, Utah. Reportedly, the homeowner was opening the freezer in their basement when a mercury containing thermometer fell out of the freezer and onto the concrete floor, causing the mercury to spill. OSC Joyel Dhieux deployed to the Site on February 15, 2023, along with START and the Emergency and Rapid Response Services (ERRS) contractor. In addition, representatives from EPA's Environmental Response Team (ERT) in Las Vegas, Nevada deployed to the Site to conduct initial air monitoring.

On the evening of February 15, 2023, EPA's Environmental Response Team (ERT) arrived at the Site and conducted initial air monitoring and identified mercury vapor concentrations up to approximately 1,500 nanograms per cubic meter (ng/m³) in the breathing zone of the basement storage room. Small beads of mercury were observed on the floor in the vicinity of the freezer where the spill occurred. No elevated mercury vapor concentrations were identified outside of the basement storage room.

On the morning of February 16, 2023, OSC Dhieux, ERT, START, and ERRS met at the Site and conducted additional screening for mercury vapors. Screening by START confirmed the results identified the previous evening by ERT with mercury vapor concentrations up to approximately 1,500 ng/m³ identified in the breathing zone of the basement storage room; no elevated mercury vapor concentrations were identified outside of the basement storage room.

2. Physical Location

The Site is located St. George, Washington County, Utah. The Site is within a residential neighborhood just south of central St. George, Utah on the southern side of Virgin River near Larkspur Park. In the 2020 U.S. Census, St. George had a population of 95,342.

3. Site Characteristics

The Site is located within a residential area. According to the EPA's Environmental Justice (EJ) Screening and Mapping Tool, the data indicate potential areas of EJ concern at or near the Site. Elemental mercury was released inside a basement storage room inside a residence. Mercury vapors were detected within the storage room but there were no elevated mercury concentrations detected outside of the storage room.

4. Release or Threatened Release into the Environment of a Hazardous Substance, Pollutant, or Contaminant

Based on EPA's initial assessment, mercury beads and elevated mercury vapors were detected within the storage room. Mercury vapors were also detected on some of the resident's clothing. Due to the extreme mobility and persistency of liquid mercury, this Site posed a substantial threat of a release of mercury into the environment.

Mercury is listed as a hazardous substance in 40 CFR §302.4 and Section 101(14) of CERCLA. Mercury is the only metal that is liquid at room temperature. In its pure form (often called metallic or elemental), mercury is a shiny, silver-white, odorless liquid. At room temperature, mercury vaporizes into a toxic, colorless, odorless gas.¹ In its vapor form, mercury is easily inhaled and extremely toxic. For elemental mercury, the most important route of absorption is through inhalation. Because of the chemical nature of elemental mercury vapor, deposition and retention in the lungs are quite high (on the order of 80 percent in humans).² Exposure to elemental mercury can adversely affect the nervous system (i.e., mercury is a neurotoxin).

When spilled or tracked into a small or poorly ventilated room, mercury can pose significant health threats. Small amounts of mercury, released into an enclosed space (such as a home or classroom), can raise air concentrations to harmful levels. Metallic mercury is extremely difficult to remove from shoes, clothes, furniture, carpet, and other porous items. It is easily tracked and transferred. If these items are not properly disposed or cleaned, the mercury can linger for months or years and continue to pose a health threat.³

5. NPL Status

This Site is neither on nor currently being considered for inclusion on the NPL.

¹ United States of America, Agency for Toxic Substances and Disease Registry, Division of Toxicology and Environmental Medicine Prevention, Response and Medical Support Branch Emergency Response Team. (2012, March 22). Action Levels for Elemental Mercury Spills.

² Arch Environ Health, 1976 Nov-Dec; 31(6):302-9. Clearance of mercury (HG-197, HG-203) vapor inhaled by human subjects.

³ <http://www.epa.gov/mercury/exposure.htm>

6. Maps, Pictures, Other Geographic Representations

A map of the Site is available in Attachment 1. Relevant Site photos are available in Attachment 2 of this document.

B. Other Actions to Date

1. Previous Actions

There have been no previous removal actions at the Site.

2. Current Actions

There are no current removal actions at the Site.

C. State and Local Authorities' Role

1. State and Local Actions to date

The UDEQ reported the release to the National Response Center and requested EPA assistance.

2. Potential for Continued State/Local Response

State and local entities do not have the resources or authority to conduct this removal action and requested EPA's assistance.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Conditions at the Site present a threat to public health and the environment and meet the criteria for initiating a removal action under 40 CFR 300.415(b)(2) of the NCP.

The EPA has considered all the factors described in 40 CFR 300.415(b)(2) of the NCP and determined that the following factors apply at the Site.

“(i) Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, or pollutants or contaminants:”

During the initial assessment, the EPA identified elemental mercury beads on the floor of the storage room. Air monitoring conducted within the room detected mercury vapor levels up to 1,500 ng/m³. Chronic exposure to mercury concentrations this high is potentially hazardous to human health.

The mercury was released within a residence and posed a substantial threat of being released into a residential neighborhood with sensitive populations including young families and retirees. Should the mercury contamination not be contained and removed, the material could be tracked into the neighborhood, nearby park, and nearby homes by residents and pets.

“(vii) The availability of other appropriate federal or state mechanisms to respond to the release.”

Local and state governments did not have the capability to conduct a removal action in a timely manner. The UDEQ requested assistance from EPA’s Emergency Response Program.

IV. SELECTED REMOVAL ACTIONS AND ESTIMATED COSTS

A. Planned Actions

1. Planned Actions

On February 15, 2023, the EPA, ERT, EPA’s Emergency and Rapid Response Services (ERRS) contractor and the EPA’s Superfund Technical Assessment and Response Team (START) assessed the release in the residence. Elemental mercury was visible on the floor of the storage room in the form of a bead and elevated mercury vapors were detected within the storage room. Mercury vapor concentrations outside of the storage room within the residence were below the EPA’s reference levels.

On February 16, 2023, ERRS used a mercury vacuum and HgX® solution to clean the floor of the basement storage room, focusing primarily on the area near and beneath the freezer where the spill occurred as well as nearby shelving units. ERRS also used heaters to heat the basement storage room and vented the room using a box fan in conjunction with an existing exhaust fan in the bathroom adjacent to the basement storage room. The exhaust fan vented directly to the outside of the home. ERRS packaged the mercury for proper disposal.

Potentially contaminated items were removed from the residence and bagged to be heated and screened. No items indicated mercury vapor concentrations exceeding 6,000 ng/m³ and they were returned to the homeowner after continued venting of the bagged items in the backyard throughout the day.

An eight-hour clearance test was conducted inside the basement storage room and EPA, ERT, START, and ERRS demobilized from the Site on February 17, 2023.

2. Contribution to Remedial Performance

This effort will, to the extent practical, contribute to any future remedial effort at the Site. However, no further federal action is anticipated at this time.

3. Engineering Evaluation/Cost Analysis (EE/CA)

An EE/CA is not required for an emergency response action.

4. Applicable or Relevant and Appropriate Requirements (ARARs)

This Action Memorandum addresses the emergency response actions at the St. George Mercury Site. Emergency response actions conducted under CERCLA are required, to the extent practicable considering the exigencies of the situation, to attain ARARs. In determining whether compliance with an ARAR is practicable, EPA may consider appropriate factors, including the urgency of the situation and the scope of the removal action to be conducted. To date, no ARARs have been identified for this Site.

5. Project Schedule

This emergency action was initiated on February 16, 2023. The assessment was conducted on February 15, 2023, followed by the removal action beginning the following morning. EPA, ERT, ERRS, and START contractors demobilized from the Site on February 17, 2023. EPA expects to complete the response action by March 30, 2023.

B. Estimated Costs*

Emergency Response and Rapid Services Team	\$ 50,000
Superfund Technical Assistance and Response Team	\$ 38,000
SUBTOTAL	\$ 88,000
Contingency	\$12,000
Total Removal Project Ceiling	\$ 100,000

*EPA direct and indirect costs, although cost recoverable, do not count toward the Removal Ceiling for this removal action. Liable parties may be held financially responsible for costs incurred by the EPA as set forth in Section 107 of CERCLA

V. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

A delay in action or no action at this Site would increase the actual or potential threats to the public health and/or the environment.

VI. OUTSTANDING POLICY ISSUES

None

VII. ENFORCEMENT

An investigation to evaluate potential enforcement options will be undertaken. A separate Enforcement Addendum will be prepared if appropriate providing a confidential summary of potential enforcement activities.

VIII. APPROVALS

This decision document represents the selected removal action for the St. George Mercury site in St. George, Washington County, Utah, developed in accordance with CERCLA as amended, and is not inconsistent with the NCP. This decision is based on the administrative record for the Site.

Conditions at the Site meet the NCP section 300.415(b) criteria for a removal action and, through this document, I am approving the proposed removal actions. The total project ceiling is \$100,000; this amount will be funded from the regional removal allowance.

Joyel Dhieux, Federal On-Scene Coordinator
Emergency Management Branch

Date

Attachments: Attachment 1: Site Map
Attachment 2: Site Photos

Attachment 1: Site Map



Map 1. The Site is located within a residential neighborhood in St. George, Utah just south of central St. George.

Attachment 2: Site Photos

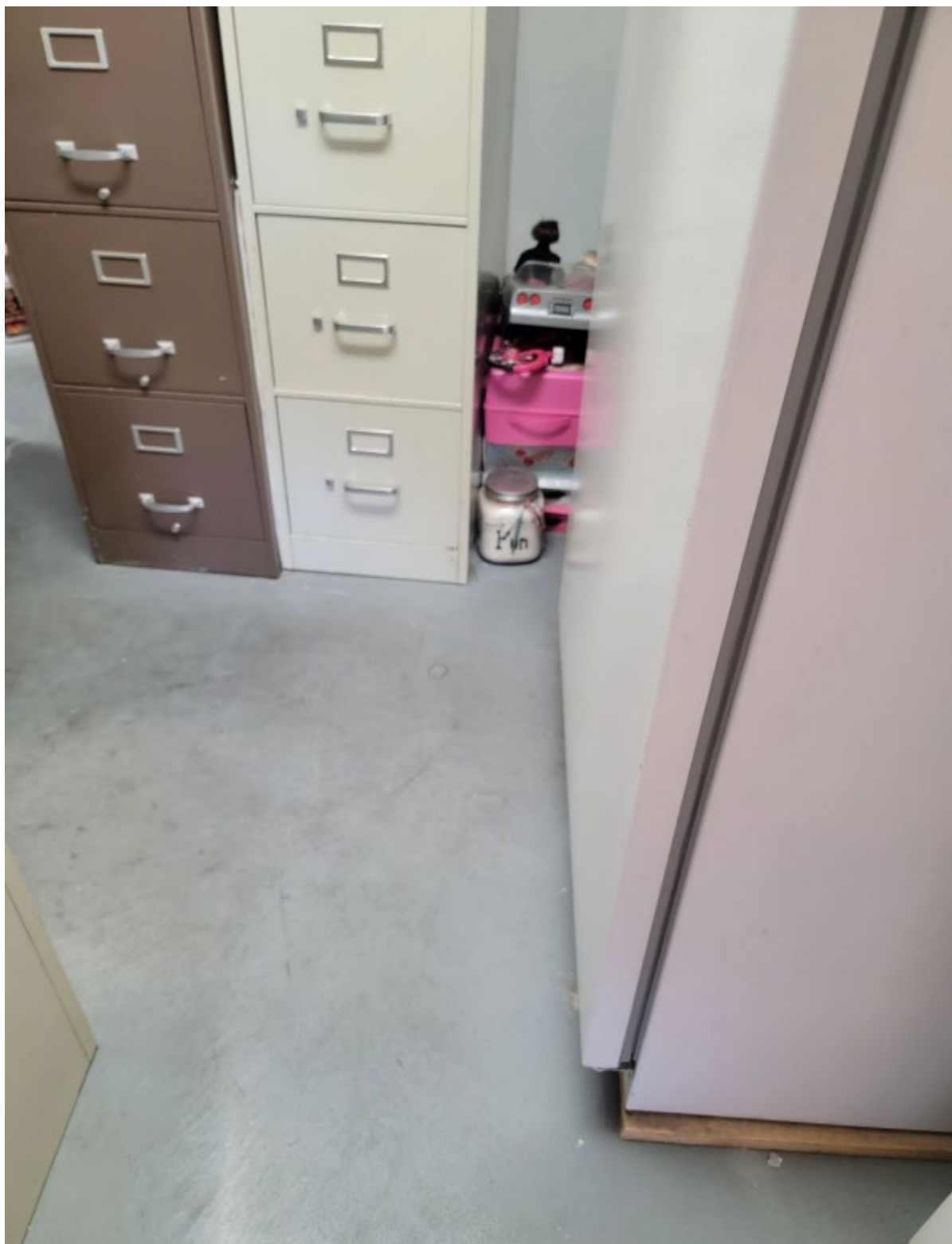


Image 1: Floor of the storage unit with elemental mercury bead circled in black.

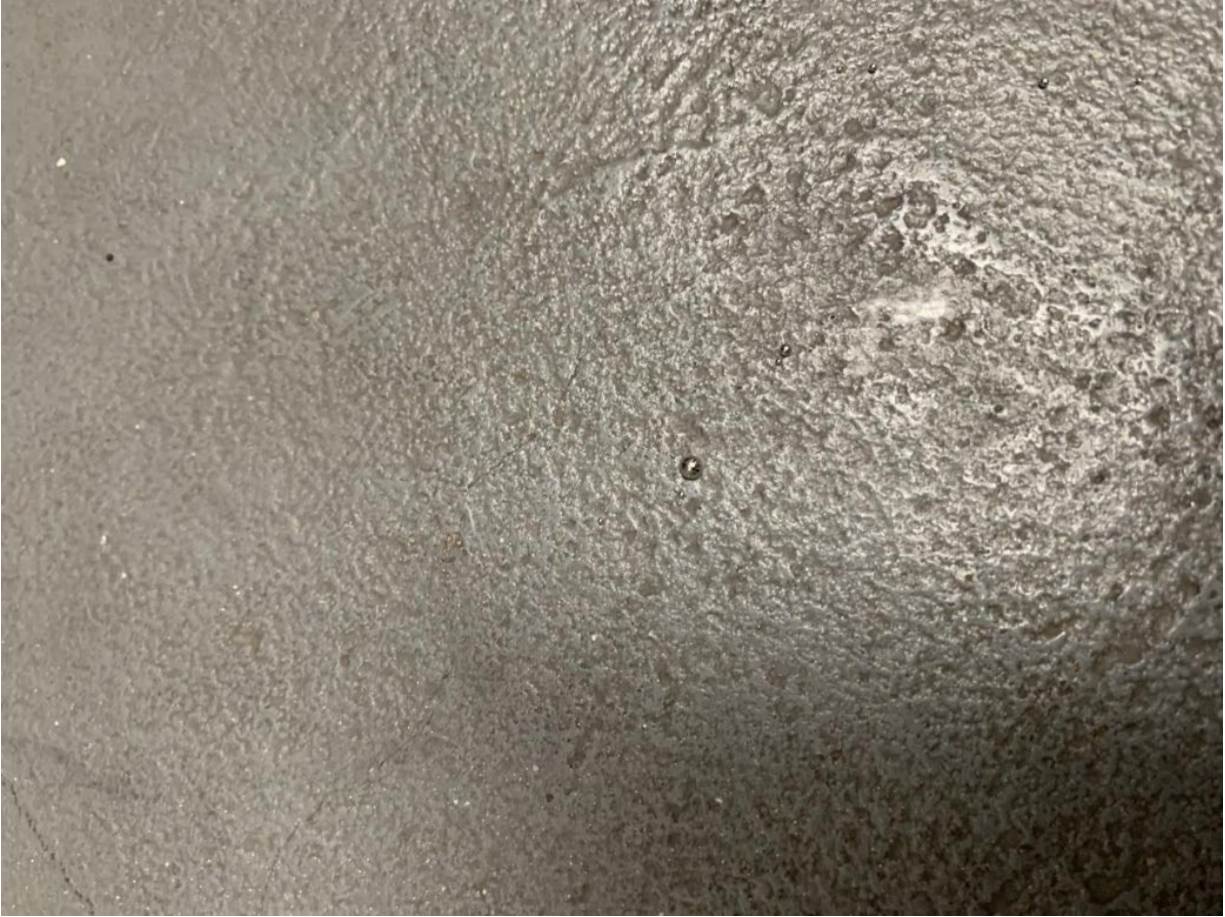


Image 2: Elemental mercury bead on the concrete floor of the storage room.