

**FOURTH FIVE-YEAR REVIEW REPORT FOR
EUREKA MILLS SUPERFUND SITE
JUAB COUNTY, UTAH**



Prepared by

**Utah Department of Environmental Quality
Division of Environmental Response and Remediation**

For

**U.S. Environmental Protection Agency
Region 8
Denver, CO**

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LIST OF ABBREVIATIONS & ACRONYMS

µg/L	micrograms per liter
ARAR	Applicable or Relevant and Appropriate Requirement
BHHRA	Baseline Human Health Risk Assessment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COPC	Contaminant of Potential Concern
DERR	Division of Environmental Response and Remediation
EBB	Eagle Blue Bell Mine, Transition & Dump
EC	Environmental Covenant
EPA	United States Environmental Protection Agency
FS	Feasibility Study
FYR	Five-Year Review
GC	Gardener Canyon Drainage Channel
HQ	Hazard Quotient
ICs	Institutional Controls
KC	Knightsville Drainage Channel
LEG	Lower Eureka Gulch
mg/kg	milligrams per kilogram
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
OU	Operable Unit
PRG	Preliminary Remediation Goal
PRP	Potentially Responsible Party
QC	Quality Control
RA	Remedial Action
RAGS	Risk Assessment Guidance for Superfund
RAO	Remedial Action Objective
RAS	Response Action Structure
RAWP	Remedial Action Work Plan
RI	Remedial Investigation
ROD	Record of Decision
RPM	Remedial Project Manager
SARA	Superfund Amendments and Reauthorization Act
SHPO	State Historic Preservation Office
SSC	Superfund State Contract
UAO	Unilateral Administrative Order
UDEQ	Utah Department of Environmental Quality
UDOH	Utah Department of Health
UEG	Upper Eureka Gulch

I. INTRODUCTION

The purpose of a Five-Year Review (FYR) is to evaluate the implementation and performance of a remedy in order to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in FYR reports such as this one. In addition, the FYR identifies issues found during the review, if any, and documents recommendations to address them.

The Utah Department of Environmental Quality (UDEQ), Division of Environmental Response and Remediation (DERR) is preparing this FYR pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Contingency Plan (NCP)(40 CFR Section 300.430(f)(4)(ii)), and considering EPA policy.

This is the fourth FYR for the Eureka Mills Superfund Site (Site). The triggering action for this statutory review is the completion of the Third FYR on July 17, 2018. The FYR has been prepared due to the fact that hazardous substances, pollutants, or contaminants remain at the Site above levels that allow for unlimited use and unrestricted exposure (UU/UE).

The Site consists of Operable Units (OUs) and all five OUs will be addressed in this FYR.

- Operable Unit 00 (OU00) addresses the entire site including the residential areas.
- Operable Unit 01 (OU01) addresses the eastern Eureka mining areas May Day Waste Pile, the Godiva Shaft and Tunnel, and the Chief Mine #2.
- Operable Unit 02 (OU02) addresses the western Eureka mining areas including Bullion Beck and Gemini Mine Waste Piles.
- Operable Unit 03 (OU03) addresses the central Eureka mining areas (Chief Consolidated Mining Company) including the Chief Mine No. 1, Eureka Hill, Snowflake, Eagle Blue Bell, Chief Mill Site No. 1 and Chief No. 1 Mill Tailing mine waste areas. The Open Cell is also within OU3.
- Operable Unit 04 (OU04) addresses the Ecological Risk Assessment and groundwater and surface water pathways.

The Eureka Mills Superfund Site FYR was led by Craig Barnitz, Environmental Scientist, UDEQ/DERR. Participants included Sydney Chan EPA RPM; David Allison, UDEQ/DERR Community Involvement Coordinator; and, Scott Everett, UDEQ/DERR Toxicologist. The review began on 7/17/2022.

The EPA has determined in this five-year review the the remedies in place at OU's 00-04 at the Eureka Mills Superfund site are protective of human health and the environment. Exposures to the mine wastes were addressed through remedial and removal actions to grade and cap the mine wastes in place with geotextile liner and armored rock, excavation of contaminated soils in the residential and commercial properties, implementation of environmental covenants, and a local land use ordinance that created a Soil Excavation Permit Program to address excavation work in Eureka where contaminated soils were left in place.

Site Background

The Site is a historic mining site located in Eureka and some of the adjacent areas in Juab County, Utah (Figure 1). Eureka is situated in a southwest trending valley on the west side of the East Tintic Mountains in Juab County about 80 miles southwest of Salt Lake City, Utah. Elevations range from 6,300 feet to 6,700 feet above mean sea level. Eureka was founded in 1870 following the discovery of a high-grade mineralized outcrop containing silver and lead, as well as other minerals including gold, copper and arsenic. The area was extensively mined until 1958, which resulted in numerous mine waste piles left behind; many of which were located immediately adjacent to residential properties.

The remedial activity at the Site extended over approximately 450 acres and includes the residential and commercial properties within Eureka and some adjoining areas outside of the city limits in Juab County (Figure 2). Numerous large waste rock piles and associated waste materials from historic mining operations remain in the area. These are located primarily on the south side of the Eureka Valley and at the western edge of Eureka, near the residences and businesses. The current land use of the Site is primarily residential with some associated commercial uses (gas stations, convenience stores, restaurant, etc.). The Eureka Elementary and Tintic High Schools are also located within the city limits. Based on 2020 United States Census Data, Eureka currently has an approximate population of 662 residents.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Eureka Mills		
EPA ID: UT0002240158		
Region: 8	State: UT	City/County: Eureka, Juab County
SITE STATUS		
NPL Status: Deleted		
Multiple OUs? Yes	Has the site achieved construction completion? Yes	
REVIEW STATUS		
Lead agency: State <i>[If "Other Federal Agency", enter Agency name]:</i>		
Author name (Federal or State Project Manager): Craig Barnitz		
Author affiliation: UDEQ/DERR		
Review period: 7/17/2022 - 7/17/2023		
Date of site inspection: 8/17/2022 and 9/02/2022		
Type of review: Statutory		
Review number: 4		
Triggering action date: 7/17/2018		
Due date (five years after triggering action date): 7/17/2023		

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

The basis for taking action at the Site includes the findings of a July 2000 Site Inspection conducted by the DERR on behalf of the EPA. The hazardous substances that were identified as contaminants of concern at the Site were lead and arsenic found in the mine wastes, surface soil, and subsurface soil samples. Lead was the primary contaminant of concern for soils. Concurrent with the Site Inspection, the Central Utah Public Health Department

conducted blood lead testing on 18 children in Eureka under the Women, Infants & Children Program (WIC). Eleven of the 18 children had elevated blood lead levels above the reference value at the time established by the United States Centers for Disease Control of 10 micrograms per deciliter ($\mu\text{g}/\text{dL}$). All of the mine waste and soil samples showed extremely high levels of lead and arsenic.

Based on the results of the initial blood lead testing and soil sampling, EPA and the State of Utah initiated an extensive blood lead testing program for Eureka residents in the summer of 2000. In addition, EPA's Emergency Response program initiated an extensive soil sampling program of the residential properties and mine waste areas. In 2002, EPA completed a Baseline Human Health Risk Assessment (BHHRA) for the Site that evaluated the current and future risks to human health associated with elevated concentrations of metals in soils and mine wastes within the Site. The BHHRA concluded that there was a risk posed to both adults and children resulting from exposure to the lead and arsenic contaminated soils. The most likely exposure pathways for contaminated soils to enter the body were from incidentally ingesting the soil or inhaling contaminated dust. Children, particularly those under the age of seven, were the most vulnerable group because of their smaller size and the fact that their bodies are still developing. In addition, because children play outside, they were more likely to ingest contaminated soils when they are putting their fingers and toys that have been in contact with contaminated soil into their mouths. Older children who ride off-highway vehicles in the town and mountain trails were at risk from exposure to dust that could be inhaled or ingested.

Response Actions

The Site was proposed to be added to the National Priorities List (NPL) on June 14, 2001 and finalized on the NPL on September 5, 2002. A chronology of the Response Actions and significant milestones is summarized in the Site Chronology included as Appendix B.

As noted above, in 2002 the EPA completed a BHHRA for the Site. The BHHRA identified the following contaminants of potential concern (COPC) in the soils and mine waste materials: lead, arsenic, antimony, mercury and thallium. The COPC were co-located in the soils and mine waste materials; therefore, all contaminants were addressed through the same remedial actions.

The EPA issued a Record of Decision (ROD) on September 30, 2002. The selected remedy in the ROD for OUs 00-03 addressed only the remediation of the mine waste areas, referred to as Remedial Action Structures (RAS), and residential soils as they related to human exposure. Due to the urgency to limit exposure to the lead-contaminated soils evident from blood lead testing of children in Eureka, the 2002 ROD did not address the groundwater and surface water pathways or potential ecological risks. In 2010, EPA completed an investigation of the groundwater and surface water pathways and an ecological risk assessment - what constituted OU4- for the Site. On September 21, 2011, EPA issued a No Action ROD for OU4. The EPA and the DERR concluded that while there was a small risk to certain avian species, addressing the contamination would result in the destruction of valuable habitat for other avian species and wildlife that were not at risk.

OU_s 00 – 03

The Remedial Action Objectives (RAOs) in the ROD were as follows:

- Prevent exposure of children to lead in surface soil within current and future developmental properties and adjacent mine waste areas at the Eureka Mills Superfund Site where soil is determined to be the source of lead and the ingestion of soil is predicted to result in a greater than 5% chance that an individual child or a group of similarly exposed children will have a blood lead level greater than 10 $\mu\text{g}/\text{dL}$.
- Prevent exposure of adolescents and adults engaging in recreational activities to lead in surface soil within non-residential properties at the Eureka Mills Superfund Site where ingestion of soil is predicted to result in a greater than 5% chance that an individual or a group of similarly exposed individuals will have blood lead level greater than 11.1 $\mu\text{g}/\text{dL}$.

The COPCs Preliminary Remediation Goals (PRGs) for residential and recreational exposure were developed based on the RAOs and the findings of the BHHRA. The PRGs are listed in the following table:

Table 1-1 Preliminary Remediation Goals for Contaminants of Potential Concern (COPC)

CHEMICAL	RESIDENTIAL PRG milligrams per kilogram (mg/kg)	RECREATIONAL PRG (mg/kg)
Lead	231	735
Antimony	110	86
Arsenic	77.4	118
Mercury	82	65
Thallium	22	17

OU 04

OU04 was addressed in the September 2011 ROD. OU04 addressed the groundwater and surface water pathways and the ecological risks at the Site. The surface water and groundwater RI was conducted between 2007-2009. An ecological risk assessment was conducted between 2006-2010.

Surface water resources are very limited due to the arid conditions at the Site. There is only one very small pond, approximately 24 feet in diameter, fed by a spring. Eureka Gulch, which flows through the city, is an ephemeral drainage with water present only during precipitation events or spring runoff. For surface waters, the State of Utah, through the UDEQ Division of Water Quality, developed Standards for Quality for Waters of the State Designated Use codes which designate levels of surface water protection for defined beneficial uses. Beneficial uses include drinking water, fish and aquatic life, wildlife, agricultural, industrial, and recreational uses. Analysis of the surface water samples collected during the RI met the Utah State Criteria for agricultural and recreational use. See Table 2-1 below for surface water criteria including 2B (secondary recreational) and 4 (agricultural).

Table 2-1 Numeric Criteria for Surface Water

CHEMICAL	CONCENTRATION micrograms per liter (µg/L)	APPLICABLE USE DESIGNATION
Arsenic	100	Agricultural (Class 4)
Cadmium	10	Agricultural (Class 4)
Chromium	100	Agricultural (Class 4)
Copper	200	Agricultural (Class 4)
Lead	100	Agricultural (Class 4)
Selenium	50	Agricultural (Class 4)
pH	6.5-9.0	Recreational (2B)

During the RI, the EPA conducted the groundwater sampling in two phases. In Phase I, the EPA compiled information on existing private wells within the site boundaries. The EPA then obtained access from seven of the ten well owners and collected and analyzed groundwater samples from their wells. Under Phase II, the EPA installed four shallow monitoring wells to investigate the potential for elevated metal concentrations in groundwater downgradient of the major mine waste piles and to provide additional groundwater elevation data to determine groundwater flow direction.

Manganese, iron, arsenic and lead were detected above the PRGs in select private and monitoring wells. The EPA determined that the manganese and iron concentrations found in the groundwater were not related to mine wastes but were likely associated with materials used to construct the well casings. Lead was detected at a lower concentration in the filtered samples collected from each of the other monitoring wells when compared to the

unfiltered sample. This indicated that at least some of the lead found in the groundwater is from suspended solids in the water samples; therefore, concluded to be naturally occurring. An arsenic concentration above screening levels was identified in one well during one event. Four subsequent sampling events showed detections of arsenic and lead at concentrations below their respective screening levels.

Drinking water for Eureka comes from several wells located approximately 1.5 miles to the east in an area known as Homansville and another well located approximately 4 miles to the west of the city limits in the western Tintic Valley. The city's drinking water wells were completed in different geologic formations than the shallower groundwater wells sampled during the RI. Eureka also has a well located at the high school; however, the well is only used for irrigation of assorted ball fields. Eureka regularly samples its drinking water wells as part of the State's requirements for municipal water supplies. Sampling results show consistently high quality of water with no metals exceeding MCLs. Based on this analytical data, the EPA and DERR concluded that Eureka's drinking water does not pose a risk to human health and selected the No Action alternative for the groundwater and surface water aspect of OU4.

In 2010, a Baseline Ecological Risk Assessment (BERA) was completed for OU4. The BERA assessed the risk of aquatic insects exposed to contact with surface water and sediment, plants and soil invertebrates exposed to contact with soil, and birds and mammals exposed through the incidental ingestion of soil, sediment, surface water, or food items. The BERA predicted potential risk for some avian receptor groups. A subsequent risk evaluation was completed using the Spatially Explicit Exposure Model (SEEM), which relies on estimating species' specific use of the habitat in order to reflect more representative exposures to species using the Site. The results of the second assessment concluded that exposure and risks were much lower than predicted by the original risk assessment. The rationale for selecting the no further action alternative for ecological risk was based on several factors:

- The potentially at-risk avian wildlife is limited to a few individuals observed using the contaminated areas. The contaminated area makes up a small portion of the overall surrounding uncontaminated habitat that is also being used by these individuals;
- The exceedances of HQs (Hazard Quotients) for the potentially at-risk populations were only slightly greater than 1;
- The difficulty and cost associated with capping and restoring the habitat in areas that are currently vegetated, and;
- The presence and use by co-existing species assumed to use the same habitat but are not predicted to be at risk.

Status of Implementation

OU_s 00-03

The remedy chosen for both the mine waste and residential areas was containment (capping), to prevent direct contact with contaminated materials. Sampling and analysis conducted during the RI found that the materials in the waste rock are not readily leachable. The action levels selected in the ROD were based on the risks defined by the BHHRA. The areas remediated on-Site were based on sampling results that showed lead levels in the surface soils greater than the following:

- Residential areas: 231 ppm (parts per million)
- Recreational areas: 735 ppm (parts per million)

The ROD selected the remedy for the mine waste areas and non-residential areas to include:

- Prior to mine waste pile re-grading and capping, implementation of temporary measures to control dust from mine waste piles.

- Re-grading of existing waste piles. Includes option to excavate and relocate all or part of the mine waste piles to the Chief Mine #1 or a secondary location within Eureka.
- Covering mine waste piles with a rock or vegetative cover designed to prevent blowing of contaminated dust or contamination of surface water due to runoff.
- Addressing lead contamination in non-residential areas located primarily in the southeast quadrant of the Site in one of two ways: 1) excavate and dispose of lead contaminated soils up to a depth of 18 inches or 2) leave lead contaminated soils in place with appropriate institutional controls (i.e., local ordinance) until the cleanup can be undertaken by individual property owners at the time of development. For the immediate future, the non-residential areas were addressed through implementation of appropriate institutional controls and where appropriate, fencing.
- Implementation of institutional controls, in cooperation with the State and local government, at all mine waste areas and non-residential areas.

The ROD selected the remedy for the residential and commercial areas to include:

- Clean up lead-contaminated soils in yards where contamination was found in the top 18 inches.
- A marker barrier to delineate between the contaminated soil below the barrier and the clean soil (backfilled with 18-inches of protective cover material) above the barrier.
- Re-vegetate yards to prevent erosion.
- Disposal of contaminated soils excavated from yards.
- Construction of the Open Cell Repository to accept lead contaminated soils generated during future development.
- Implement public health actions like blood lead testing/health education during the remedial action (RA).
- Implementation of institutional controls (e.g.; zoning and/or building ordinances) to control the handling and disposal of contaminated soils that may be excavated during future construction activities.

The Remedial Action for the Site was completed in 2010.

OU04

OU04 includes groundwater and surface water pathways as well as the ecological risks associated with the Site contamination. These pathways and exposure risks were not addressed in the 2002 ROD because of the urgency needed to reduce exposures to the lead contaminated soils evident from blood lead testing of children residing in Eureka. These three exposure pathways were ultimately addressed under OU4. The OU4 ROD was issued in September 2011. The ROD concluded there were no groundwater or surface waters impacts resulting from the historical mining that presented a concern for human health or the environment. Based on these findings, EPA and UDEQ selected the no further action alternative for both the surface water and groundwater exposure pathway.

The ROD ultimately determined that although the mine waste piles presented a potential risk to a small population of birds, a remedial action would result in significant disruption to habitat areas shared by both the at-risk bird populations and wildlife species determined to be not at risk. Based on these findings, the no further action remedy alternative was selected to address the ecological risks at the Site. Therefore, there has been no remedy implemented at the Site associated with OU4.

IC Summary Table

Table 3-1: Summary of Planned and/or Implemented ICs

Media, engineered controls, and areas that do not support UU/UE based on current conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date (or planned)
Soil	Yes	Yes	Parcel XE00-4848 (discussed below)	EPA issued a Unilateral Administrative Order that required land use restrictions on the parcel to protect the remedy.	EPA issued a Unilateral Administrative Order (UAO) on March 18, 2013. Notice of Environmental Conditions placed on July 29, 2013
Soil	Yes	Yes	OUs 00-03	Notice of RAS located on the property. Places Land Use Restrictions to areas of the property where an RAS exists.	Various Environmental Covenants filed at various times (2005 – 2012)
Soil	Yes	Yes	OUs 00-03	City soils ordinance places provisions on soils excavated from remediated properties and undeveloped parcels within Eureka city limits.	Eureka Excavation Ordinance (October 2010)

The final remedy requires ICs because contaminated materials remain at the Site above levels that allow for unlimited use and unrestricted exposure. The ICs at the Site include environmental covenants (EC) and a local soil ordinance.

ECs were filed for each land parcel wholly or partially within the footprint of remediated mine waste areas or RASs. The RASs include the capped mine waste piles, drainage control features (sedimentation ponds and/or constructed drainages) and access roads. Filed by the property owner (usually a potentially responsible party or PRP), the ECs limit the type of land uses on the RAS. The ECs prohibit residential, public, and agricultural uses as well as other uses that could compromise the integrity of the remedy. The ECs also prohibit any disturbance or alteration of the RAS without prior approval by EPA and UDEQ and require compliance with Eureka’s soil ordinance. Future property owners will have to comply with the requirements of the ECs given that the ECs run with the land.

There was an exception to the filing of the ECs on land parcels within the surveyed foot print of the RAS. The owner of parcel XE 4848, GCL Eureka Properties LLC, refused to file an EC on the property. EPA issued a unilateral administrative order (UAO) requiring GCL Eureka Properties LLC and its member, Grant Loader, to abide by certain land use restrictions. EPA also filed a “Notice of Environmental Conditions” on July 29, 2013 with the Juab County Recorder’s Office on the property to notify future owners of the existence of a RAS on the property. GCL Eureka Properties LLC and Mr. Loader are in compliance with the conditions of the UAO.

In October 2010, Eureka adopted a local soil ordinance that governs future excavation activities within the city boundaries that have either been remediated and that have not yet been developed, known as the City Land Use Ordinance Chapter 13 Special Regulations - Eureka Mills Superfund Site (Appendix C). Undeveloped areas were not remediated at the time of RA because of thick vegetation (and limited exposure to contaminated soils). The 00-03 ROD determined that the most appropriate time to remediate undeveloped areas would be at the time of development. The soil ordinance requires property owners to obtain a permit for certain excavation activities defined as "restricted activities." Under the soil ordinance, all lead-contaminated soils that are displaced during excavation must either be disposed of at the Open Cell or capped with 18 inches of clean topsoil or a road base material or capped with a structure or paved surface (minimum 2-inch hard cover surface). The DERR provides technical and financial support to Eureka for the administration and enforcement of the soil ordinance.

Systems Operations/Operation & Maintenance

The Operations and Maintenance Plan (O&M Plan) and the Operations and Maintenance Manual (O&M Manual) were completed and approved on July 31, 2009, as attachments to the amended Superfund State Contract (SSC). The SSC requires the State to perform O&M for the fund-lead areas at the Site, including oversight of the city's soil ordinance. Beginning in 2016, the DERR assumed O&M responsibilities for all RASs at Eureka Mills after the PRP indicated to EPA that they were no longer able to perform O&M activities for the RAS and access roads at the PRP's properties. Funding for all the O&M activities at the site are provided through a Cooperative Agreement between the DERR and EPA. Under the O&M Plan, the DERR is responsible to conduct annual inspections and contract for any necessary maintenance and/or repairs of the mine waste cap systems, access roads, and drainage features (Figures 3, 4 and 5). Annual Site Inspections were conducted in 2019, 2021, and 2022 for this five-year review period. Annual Site Inspections were not conducted in 2018 due to the Third FYR report being completed or in 2020 due to concerns related to the COVID-19 pandemic.

Eureka performs the following for O&M: (1) administration/enforcement of its soil ordinance to govern excavation activities in the city; (2) day-to-day operation of the Open Cell and the management of the stockpiled material for excavation permits; and (3) maintenance of the Upper and Lower Eureka Gulches. The funding for Eureka to conduct the O&M responsibilities is funded through a Institutional Control (IC) Funding Agreement with the DERR with money apportioned from the Cooperative Agreement.

During the previous five years, two issues were identified in the management of the O&M activities under the administration of the soil ordinance. Dominion Energy initiated the installation of gas service lines to homes in Eureka. Dominion Energy developed the Soil Management Plan for Pipeline Installation in Eureka to manage the soils removed during the gas line operations. The plan was written to insure compliance with City Land Use Ordinance Chapter 13 Special Regulations - Eureka Mills Superfund Site but was not reviewed by EPA or the DERR. In September 2021, DERR was informed that during the excavation/boring work, the driller punctured underground water and sewer lines. The incident resulted in culinary water, drill muds and sediments intermingling in a trench. Given the 18-inch clean cover in the residential yards, a total of 480 cubic yards were assumed to be contaminated. DERR coordinated with the UDEQ Division of Water Quality and the UDEQ Division of Drinking Water to ensure the response actions were in compliance with applicable rules. Liquid wastes were removed from the excavation with a vac-truck and taken to the Open Cell and treated with thickening agents prior to disposal in the Open Cell.

During the subsequent site inspection, the DERR and EPA identified several issues with the disposal of soils in the Open Cell resulting from the Dominion Energy project. These issues are discussed further in the Site Inspection summary found in Section IV.

III. PROGRESS SINCE THE LAST REVIEW

This section includes the protectiveness determinations and statements from the **last** five-year review (Table 4) as well as the recommendations from the **last** five-year review and the current status of those recommendations.

Table 4-1: Protectiveness Determinations/Statements from the 2018 FYR

OU #	Protectiveness Determination	Protectiveness Statement
00	Protective	The remedy at OU-00 is protective of human health and the environment. Contaminated soils at the residential properties have been excavated and capped and the ICs are being implemented.
01	Protective	The remedy at OU-01 is protective of human health and the environment. All the RAS have been capped and the ICs have been implemented.
02	Protective	The remedy at OU-02 is protective of human health and the environment. The material has been capped.
03	Protective	The remedy at OU-03 is protective of human health and the environment because existing contamination has been capped or otherwise addressed.
04	Protective	The remedy at OU-04 is protective of human health and the environment. The remedy at OU-04 for groundwater, surface water and ecological risk is No Further Action.
Sitewide	Protective	Because the remedial actions at all OUs are protective, the Site is protective of human health and the environment.

There were no issues & recommendations made in the last FYR for OUs 00-04. However, the last FYR noted two issues in the ‘Other Findings’ section that required repair to prevent further degradation. The ‘Other Findings’ are as follows:

Other Findings #1: Erosion rills and exposed marker barriers (caused by weather related) were observed at several access roads and RASs. During the 2017 Annual Site Inspection cited in the Third Five-Year Review, a breakthrough was reported in the water bars located on the west side resulting in two major erosion rills. Inspection of the top of the Eagle Blue Bell Haul Road located just south of the waste pile showed two erosion rills that required repair (grading, contoured and replaced with roadbase). There were other major erosion rills and exposed marker barrier located on the main haul road and along Upper Access Road. Information recorded in the 2019 Annual Site Inspection indicates that the repair work to these areas was completed in October 2018.

Other Findings #2: A sinkhole associated with mining activities was observed on the eastern surface of the Chief Mine No. 1 Waste Pile. The sinkhole collapsed the armored cap and waste tailings soils beneath the cap into the abandoned mine shaft below the ground surface. The sinkhole was an oblong shape and measured at 100 feet by 30 feet and 80 feet deep. The Utah Department of Natural Resources, Division of Oil, Gas and Mining, Abandoned Mine Reclamation Program, in coordination with Eureka, DERR, and EPA, contracted the work to repair and close the sinkhole. An engineering proposal was developed by Spectrum Engineering to place a reinforced concrete plug near the bottom of the sinkhole and backfilled the remainder of the subsidence area with 12,831 cubic yards of soils removed from the Open Cell. The cap was then repaired with the installation of 16,000 square feet of geotextile fabric and covered with 440 cubic yards of crushed limestone. The work was completed in October 2018 and a summary of the activity is included as Appendix D of this report.

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

A public notice was published in the January 2023 Eureka Review newsletter mailed to each resident on 1/1/2023, stating that there was a FYR and inviting the public to submit any comments to the UDEQ and the EPA. The public notice is included in Appendix E. The FYR will be made available at the Site information repository located at Eureka City Hall, 15 North Church Street, Eureka, Utah. It will also be available at <http://eqedocs.utah.gov> and on EPA's site profile page: <http://www.epa.gov/superfund/eureka-mills>. During the FYR process, interviews were conducted to document any perceived problems or successes with the remedy that has been implemented to date. Community interviews were conducted on January 9 through February 14, 2023. The UDEQ contacted representatives from the Eureka Mayor's Office and Permit Coordinator, Juab County Roads Department, Dominion Energy, and the Department of Natural Resources. The community interviews are included in Appendix E. The results of the community interviews are summarized below.

As indicated in Appendix E, none of the interviewees expressed any health or environmental concerns with the remedy and felt the remedy remains protective. The City of Eureka has a New Mayor and Permit Coordinator and is committed to implementing the established Institutional Controls and Soils Ordinance and to continue effective collaborative efforts with the EPA and UDEQ. Juab County has not had any issues over the last five years maintaining their Knightsville Road responsibilities and installed a culvert to manage flood conditions since the last FYR. Dominion Energy began installing natural gas connection lines for the first time to properties within the last three years in Eureka. Dominion Energy uses the Open Cell and works with Permit Coordinator for access and dumping excess contaminated soil. As for the Department of Natural Resources, the Abandoned Mines and Reclamation Program successfully repaired a sinkhole problem in Eureka in 2018 requiring backfill soil from the local repository.

Data Review

No analytical data is currently collected from the Site. Site O&M is maintained through Annual Site Inspections discussed in the next section.

Site Inspection

The FYR and 2022 Annual inspection of the Site was conducted on August 17 and September 2, 2022. In attendance were Craig Barnitz UDEQ, DERR Project Manager; Sydney Chan, Remedial Project Manager (EPA Region 8); Michael Storek, former UDEQ/DERR Project Manager for the Eureka Mills site; and David Allison, UDEQ/DERR Community Involvement Coordinator.

Prior to conducting the September 2, 2022 Site inspection, the DERR met with Eureka Mayor Chris Dever, Lynn Elliott (Eureka - Permit Coordinator), and Drew Foula (Eureka) to discuss concerns with the maintenance of the Open Cell and the Upper and Lower Eureka Gulch areas identified during the August 17 inspection (previously identified in Section II – Site Operations/Operations and Maintenance).

The inspection was carried out following the guidance and the inspection checklist forms provided in the O&M Manual. The O&M Manual provides checklists for inspection of all RAS including capped mine waste piles, drainages, sediment ponds and haul/access roads. The Site Inspection Summary Report and Site photographs were completed by the DERR Project Manager and are included in Appendix F.

The inspection found that the RASs, including the capped mine waste piles, drainages, sediment ponds, and haul/access roads, were in generally good condition and remain protective of human health and the environment. However, there were several areas of concern identified during the Site inspection that will need to be addressed during the next five-year period. Within the Open Cell, the inspection found approximately 45-50 piles of soil that had not been properly graded or compacted. The DERR also identified what appeared to be construction debris

improperly disposed of in the Open Cell. The gate at the top of the Open Cell appeared damaged and in need of repair which may have lead to illegal dumping within the Open Cell. The drain line leading from the decontamination pad at the Open Cell was not functioning properly. Lynn Elliott believed the drain line has collapsed at a location beneath the access road, prohibiting water inside the decontamination pad from properly draining. Following the inspection, the DERR coordinated with Lynn Elliott and Drew Froula with concerns regarding the condition of the Open Cell. Lynn Elliott stated the construction debris was likely the result of illegal dumping and the City would remove the the steel posts for proper disposal in the municipal landfill. The City also coordinated with contractors for Dominion Energy to remove asphalt and concrete from the piles for proper off-site disposal and to grade and compact the soil piles. Information from Trent Hamada and Randy Johnson with Dominion Energy confirmed the removal of asphalt and concrete from the soil piles for off-site disposal and that the soil piles were properly graded and compacted in October 2022. The DERR continues to work with the city to address the needed repairs to the gate and decontamination pad. The repairs to the decontamination pad are being addressed through a work assignment with the Level of Effort (LOE) contractor and are scheduled for completion in the fall of 2023. The gate repairs will be made in the fall of 2023.

The inspection also found dense vegetation including brush and small trees within the Upper and Lower Eureka Gulches. Maintaining the gulches clear of debris and vegetation is the responsibility of the city of Eureka. The dense vegetation was noted during the previous 2021 inspection and did not appear to have been properly sprayed with herbicide. The issue was brought up with Lynn Elliott and Drew Froula during the September 2nd inspection and the DERR will continue to work with Eureka to clear the gulches.

Deep erosion rills were observed at two locations along the Chief Mill Site No.1 Access Road (Haul Road), the first at the base of the Chief Mine No. 2 Waste Pile and a second rill near the Gardner Canyon sedimentation ponds. The DERR will develop a scope of work to procure a contractor to conduct the maintenance repairs and anticipates that the work should be completed in the fall of 2023.

Other issues observed during the Site Inspection that do not directly affect the protectiveness of the remedy but will need to be resolved to allow for proper access by DERR, EPA and Eureka personnel and restrict trespass. The locks to several gates, notably gates to the Chief Mine #1, Snowflake Mine Waste Pile, Gemini Mine Waste Pile and the Bullion Beck Mill and Mine Waste Pile areas were reportedly removed and replaced by the property owners, prohibiting access to these areas for the inspection. The chainlink fence adjacent to the gate located at the east side to Chief Mine #1 was found to have been torn down and damaged. The chainlink fence on the east side of the head frame at the Eagle Blue Bell Mine Waste Pile was torn down allowing access to the mine shaft area. Although the mineshaft at Eagle Blue Bell was closed by the Utah Department of Natural Resources, Abandoned Mine Reclamation Program, potential safety hazards would still exist for trespassers. A rusted steel tank (approximately 500 gallons) likely from the historic mine was found rolled down the east slope of the Chief Mine No. 2 Waste Pile. The tank does not appear to affect the armored rock cap, and given the current location (low on the slope), is not easily accessible. However, the situation should be monitored and discussions held to determine if the tank can be removed. The culvert running east-west beneath Knightsville was blocked with debris on the west side and damage to the wire fencing on the west side of the road was also observed. These issues will need to be brought up to Juab County who maintains O&M for the Knightsville Road.

The property owner reportedly provided access to allow a camper to park their recreational vehicle (RV) along the May Day Access Road. The allowance for overnight camping is considered residential and against acceptable land use under the EC for the property. However, it was later learned through discussions with personnel at the city of Eureka that this individual is no longer camped at this location.

Vegetative growth was noted at multiple RAS and drainage areas. Although generally minor at the time of the inspection, the vegetation should be monitored closely during subsequent Site inspections and a contractor should be hired to spray the areas with herbicide to remove the shrubs if the vegetative growth becomes more substantial in the future.

V. TECHNICAL ASSESSMENT

QUESTION A: Is the remedy functioning as intended by the decision documents?

Yes. The review of relevant Site documents and the findings of the Site inspection indicates that the remedies at OU00, OU01, OU02 and OU03 are functioning as intended by the ROD.

Question A Summary:

Remedial Action Performance

The remedial actions at the Site included addressing contaminated soils in residential and commercial properties through the removal of the top 18 inches of lead-contaminated soils in yards. Land Use Controls to maintain the protectiveness of the remedial actions within the city are maintained through the City Land Use Ordinance Chapter 13 Special Regulations - Eureka Mills Superfund Site. The soils ordinance is managed by Eureka.

Contaminated soils in the mine waste areas adjoining the city were addressed through stabilization of mine wastes and capping the mine waste piles and drainages with a combination of geotextile fabric and an armored rock or vegetative cover. ECs were put in place to ensure the owners of the properties where these remedial actions occurred did not take actions to affect the remedy in place and restricted land use.

The remedy in place at the Site is containment. To ensure that remedial action objectives are maintained, ICs and the Site O&M Manual and O&M Plan were developed and put in place at the Site. In accordance with the O&M Manual, the Site is inspected annually and deficiencies in the remedy are noted and actions taken to make the needed repairs to the RAS. The containment of the wastes in combination with the Institutional Controls remains effective at preventing exposure to the surrounding population.

System Operations/O&M

The O&M requirements for the Site extend only to OU00, OU01, OU02, and OU03; there are no O&M requirements for OU4. The O&M activities for OU00, OU01, OU02 and OU03 are defined in the O&M Manual and the responsibilities for the O&M at the Site are defined in the O&M Plan. Under the O&M Plan, the responsibilities for the DERR include conducting annual inspections and providing for maintenance of the RASs on an as-needed basis to correct deficiencies. Eureka is responsible for oversight and enforcement of the soils ordinance and the maintenance of the Open Cell and the Upper and Lower Eureka Gulches. Inspection forms for each of the RASs and a description of each the remedial features requiring inspection are maintained in the O&M Manual. Within the five-year period, the DERR performed annual inspections in 2019, 2021 and 2022. The inspections were not conducted in 2018 due to ongoing five-year review activities nor in 2020 due to concerns related to COVID-19.

Implementation of Institutional Controls and Other Measures

A soil ordinance was adopted by Eureka in October 2010 to maintain the remedial actions within the city limits. The soil ordinance is documented in the City Land Use Ordinance as Chapter 13 Special Regulations - Eureka Mills Superfund Site. The soil ordinance is designed to control excavation and soil disturbance work within the remediated and non-remediated or undeveloped areas of the city. The soils ordinance is administrated and enforced by the Permit Coordinator for the City. The soils ordinance requires property owners to obtain a permit from the City for all defined "Restricted Activities". The ordinance defines the proper handling and disposal of the contaminated materials displaced during excavation. DERR maintains contact with the Permit Coordinator to discuss new permit applications related to new construction development primarily on an as-needed basis.

Under the IC Funding Agreement, Eureka is tasked with submitting an annual report to the DERR summarizing IC activities undertaken by the city. Eureka did not submit an annual report to the DERR during the five year period. The DERR and Eureka met in January 2023 to discuss the lack of reporting and the need for the city's compliance in submitting an annual report.

As noted earlier, during the latest Site inspection, the locks to several of the gates were removed and replaced by the property owner. The change in locks limited the inspection of the RASs by the DERR. The DERR and EPA will need to work with the property owners to resolve the issue and ensure proper access is provided to the DERR and EPA for inspection and repair work.

All information indicates that the institutional controls within the City Land Use Chapter 13 Special Regulations – Eureka Mills Superfund Site are operating as intended and effective at preventing exposure.

QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?

Question B Summary:

The soil cleanup levels selected in the ROD were based on the estimated risks defined in the BHHRA (September 2001). The assumptions for toxicity and risk assessment methods have not changed since the risk assessment in 2001. No new contaminants of concern or contaminant sources have been identified since the ROD and the commencement of the RA. There have been changes to the exposure assumptions and toxicity information since the document was issued. Because these documents were developed prior to EPA’s Risk Assessment Guidance (RAGS) Part F (2009) guidance, the exposure assumptions for the inhalation exposure pathway were conducted differently. The exposure metric that was used in the RODs and the BHHRA used inhalation concentrations that were based on ingestion rate and body weight (mg/kg-day). The updated methodology uses the concentration of chemical in the air, with the exposure metric of $\mu\text{g}/\text{m}^3$. The inhalation pathway is minor compared to the soil ingestion pathway, which is the major risk factor at this Site. Revising the inhalation calculations to be consistent with the most recent EPA guidance would not change the current cleanup levels for OU00, OU01, OU02 and OU03.

Under the current EPA Office of Land and Emergency Management policy, the soil lead screening level was established so that a typical child or similarly exposed group of children would have an estimated probability of no more than 5 percent of exceeding a blood lead level (BLL) of 10 micrograms per deciliter ($\mu\text{g}/\text{dL}$). The 10 $\mu\text{g}/\text{dL}$ BLL target concentration is based (in part) on the 1991 Center for Disease Control’s (CDC) blood lead “level of concern.” The most recent scientific literature on lead toxicology and epidemiology provide evidence that adverse health effects are associated with BLL less than 10 $\mu\text{g}/\text{dL}$ and there is no apparent threshold level for adverse effects. The EPA is in the process of reviewing lead toxicity and exposure studies to determine if the current lead cleanup policy and the IEUBK model require revisions. Until policy work is revised and finalized, the EPA’s current policy remains in effect. However, if a new lead policy is issued prior to the next FYR, the risk-based action levels for lead may be re-evaluated at that time.

In 2009-10, a Baseline Ecological Risk Assessment (BERA) was conducted and predicted a level of risk for some avian species at the Site. A subsequent risk evaluation was completed using the Spatially Explicit Exposure Model (SEEM), which relies on modeling of species’ specific use of the habitat and resulted in more representative exposures to species using the Site. The results of the second SEEM assessment concluded that exposure and risks were much lower than predicted by the BERA and a “no further action” alternative was selected.

The remedial actions implemented are still considered valid since site-specific results indicate risks to most other receptor groups are not likely, thus habitat disruption that would be needed for removal of contaminated soil at this Site would cause undue impacts to many species that are not considered at risk.

The current land use and reasonably expected future land use has not changed. If the current land use in some undeveloped areas within the limits of Eureka were to change, the ICs (both the ordinance and ECs) would ensure that future development occurs in a manner that protects human health against exposure to contaminants of concern.

QUESTION C: Has any **other** information come to light that could call into question the protectiveness of the remedy?

No other additional information has come to light that would call into question the protectiveness of the remedy.

VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations
OU(s) without Issues/Recommendations Identified in the Five-Year Review:
OU 00, 01, 02, 03 and 04

Other Findings

In addition, the following are recommendations that were identified during the FYR and improve management of O&M, but do not affect current and/or future protectiveness:

- The last funding agreement for the Eureka Institutional Controls Funding Agreement between the UDEQ and Eureka expired on August 10, 2020. A new funding agreement will need to be drafted and signed by the appropriate representatives for both agencies. A new funding agreement will be in place by August 2023. DERR will work with the city of Eureka and provide consistent reminders to ensure that all documentation including annuals reports covered under the funding agreement are submitted in a timely manner.
- Deep erosion rills with some areas of exposed marker barriers were observed at two locations along the Chief Mill Site No. 1 access road, the first at the base of the Chief Mine No. 2 Waste Pile and a second rill near the Gardner Canyon sedimentation ponds. The DERR will work to develop contracts for the repair work. Repairs to the Haul Road will be completed by November 2023.
- Repair the gate at the top of the Open Cell. The current damaged condition of the gate allows for trespass and illegal dumping of potentially unauthorized wastes in the Open Cell. The gate will be repaired by September 2024.
- The drain line to the decontamination pad was not functioning and did not drain water from the decontamination pad “tire wash” at the Open Cell. The drain line will need to be repaired to allow for proper decontamination of vehicles exiting the Open Cell.
- Repairs will need to be made to the east fence at Chief Mine #1. The damaged fence allows potential trespassing onto the property and the capped areas of Chief Mine #1. The DERR will discuss the damage to the fence at Chief Mine #1 with the property owner. Repairs will be completed by September 2024.
- Repair the chainlink fencing along the east side of the Eagle Blue Bell Mine Waste Pile head frame. The damaged fence allows for trespass into the mine shaft area. Although the mine shaft was closed by the Utah Division of Oil, Gas and Mining, Abandoned Mine Program, hazards still exist in the area. Repairs will be made by September 2024.
- The locks to several gates, notably gates to the Chief Mine #1, Snowflake Mine Waste Pile, Gemini Mine Waste Pile and the Bullion Beck Mill and Mine Waste Pile areas were reportedly removed and replaced by the property owners, prohibiting access to these areas for the inspection. The DERR and EPA will need to work with the property owners to restore access to these locations by September 2023.

- A small gravel blockage was noted on the west side of the drainage culvert underneath the road. Juab County is responsible for the maintenance of Knightsville Road and repairs will be completed by September 2023.
- Substantial amounts of vegetation, including small trees and bushes, were observed in the Upper and Lower Eureka Gulches. The DERR will work with Eureka to spray the Upper and Lower portions of the Eureka Gulch with herbicide in the fall of 2023 and remove dead vegetation in the spring of 2024.
- Inform property owner of prohibition on residential use, including RV parking.

VII. PROTECTIVENESS STATEMENT

Protectiveness Statement(s)	
<i>Operable Unit:</i> 00	<i>Protectiveness Determination:</i> Protective
<i>Protectiveness Statement:</i> The remedy at OU-00 is protective of human health and the environment. Contaminated soils at the residential properties have been excavated and capped and the ICs are being implemented.	

<i>Operable Unit:</i> 01	<i>Protectiveness Determination:</i> Protective
<i>Protectiveness Statement:</i> The remedy at OU-01 is protective of human health and the environment. Contaminated soils associated with the historic waste piles and other RAS at the May Day, Godiva, and Chief Mine #2 locations have been capped with geotextile fabric and armored rock. ICs are in place to prevent intrusive work within the RASs. Annual inspections are conducted to identify and correct deficiencies in the remedy.	

<i>Operable Unit:</i> 02	<i>Protectiveness Determination:</i> Protective
<i>Protectiveness Statement:</i> The remedy at OU-02 is protective of human health and the environment. Contaminated soils associated with the historic waste piles and other RAS at the Bullion Beck and Gemini Mines locations have been capped with geotextile fabric and armored rock. ICs are in place to prevent intrusive work within the RASs. Annual inspections are conducted to identify and correct deficiencies in the remedy.	

<i>Operable Unit:</i> 03	<i>Protectiveness Determination:</i> Protective
<i>Protectiveness Statement:</i> The remedy at OU-03 is protective of human health and the environment. Contaminated soils associated with the historic waste piles and other RAS at the Chief Mine No. 1, Eureka Hill, Snowflake, Eagle Blue Bell, Chief Mill Site No. 1 and Chief No. 1 Mill Tailing locations have been capped with geotextile fabric and armored rock. ICs are in place to prevent intrusive work within the RASs. Annual inspections are conducted to identify and correct deficiencies in the remedy.	

Operable Unit:
04

Protectiveness Determination:
Protective

Protectiveness Statement: The remedy at OU-04 is protective of human health and the environment. The remedy at OU-04 for groundwater, surface water and ecological risk is No Further Action.

Sitewide Protectiveness Statement

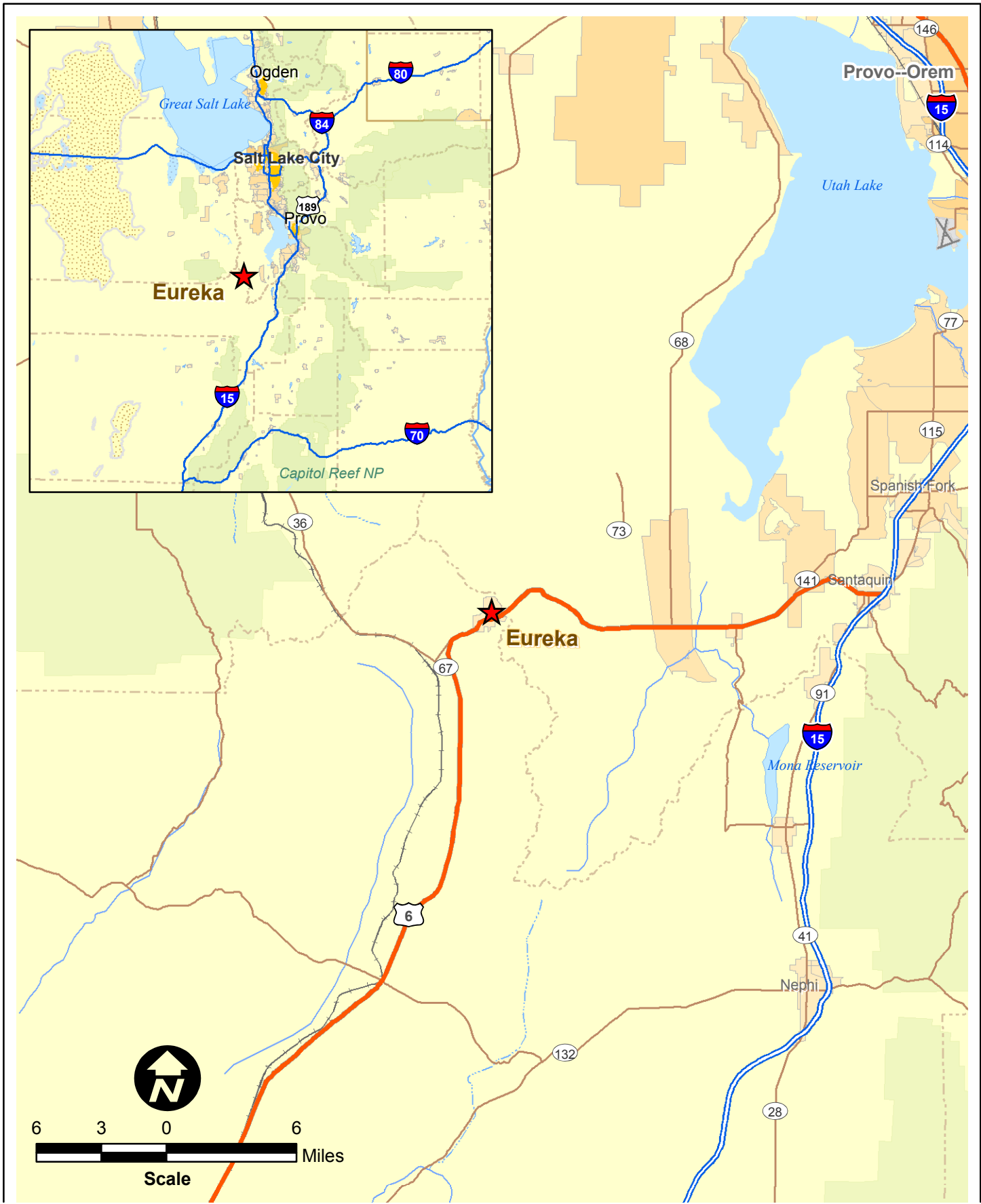
Protectiveness Determination:
Protective

Remedial Actions at the Site are complete. The annual Site inspection identified maintenance issues at several RAS that will need to be addressed to ensure the remedy remains protective in the future. However, the remedy at the Site is protective of human health and the environment.

VIII. NEXT REVIEW

The next five-year review report for the Eureka Mills Superfund Site is required five years from the completion date of this review.

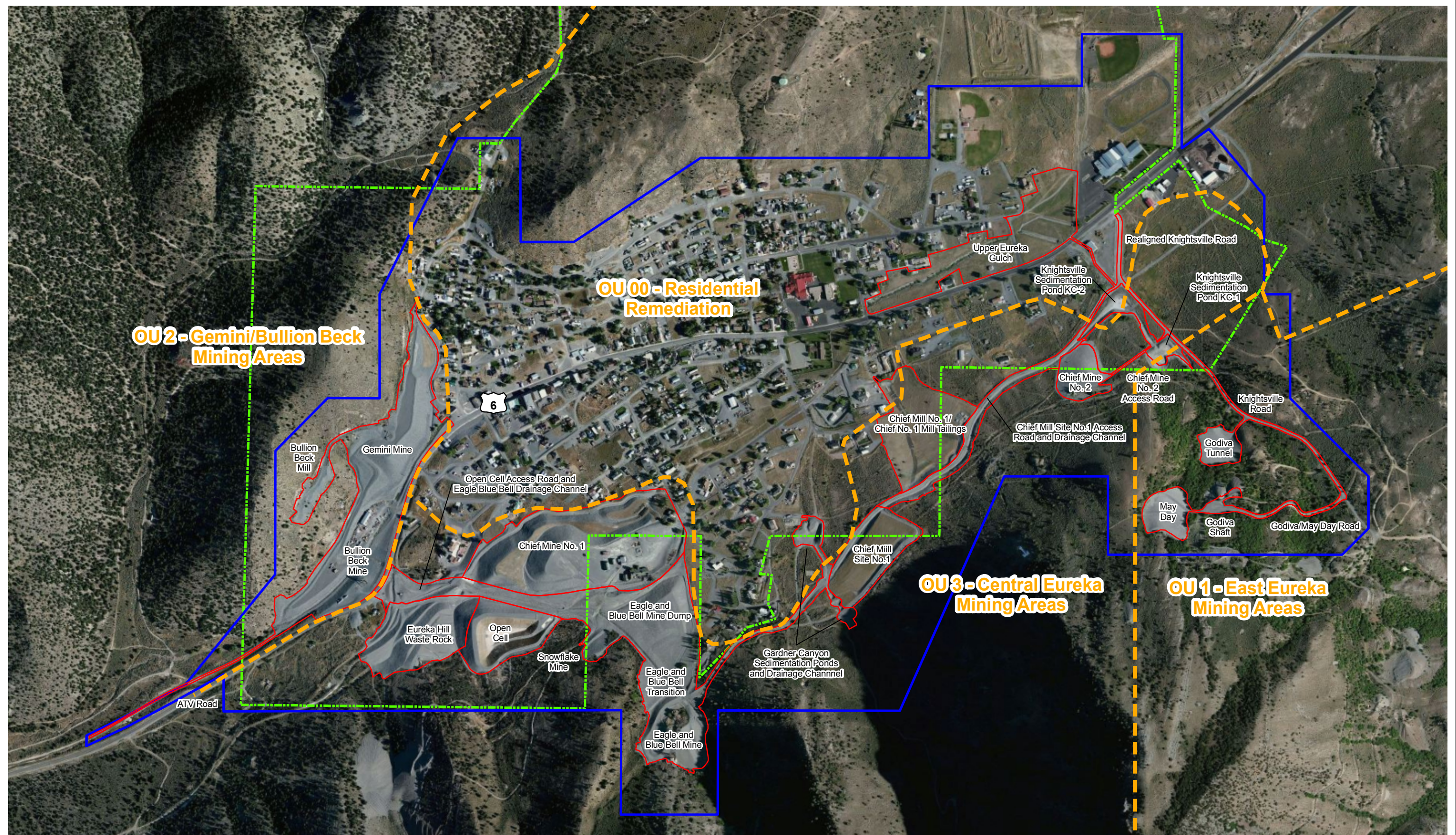
FIGURES



General Location of Eureka

5-Year Review Report
 Eureka Mills Superfund Site
 Eureka, UT

DATE	2013
FIGURE	1



OU 2 - Gemini/Bullion Beck Mining Areas

OU 00 - Residential Remediation

OU 3 - Central Eureka Mining Areas

OU 1 - East Eureka Mining Areas

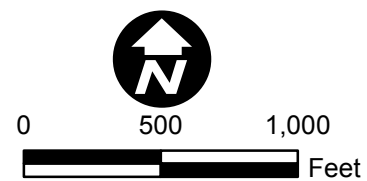
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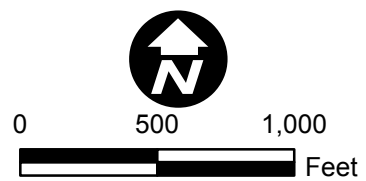
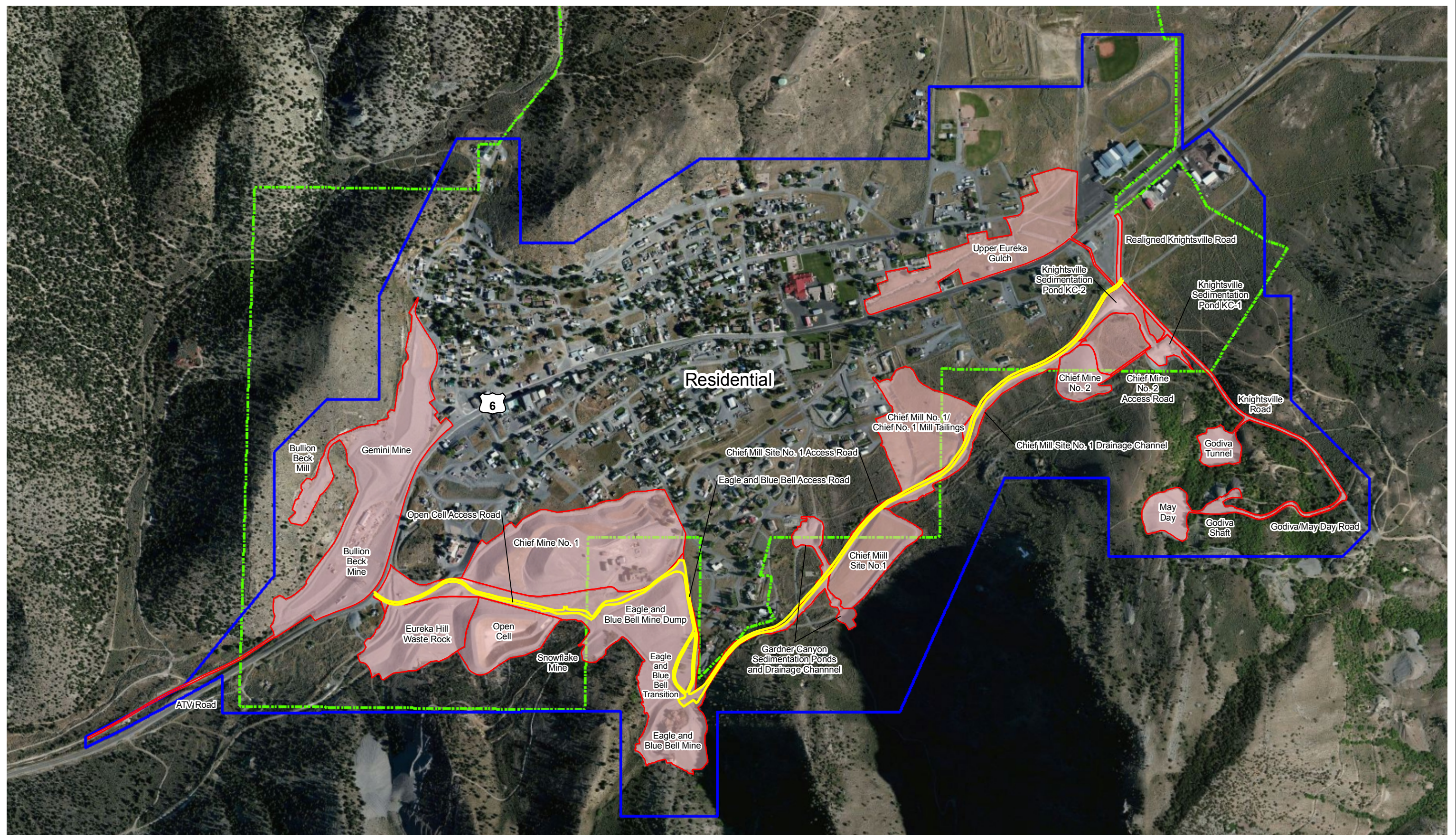
- Response Action Structures
- Operable Unit Boundary
- Site Boundary
- City Corporate Limits

Site Map & Operable Unit Boundaries

5-Year Review Report
 Eureka Mills Superfund Site
 Eureka, UT

DATE	2018
FIGURE	2



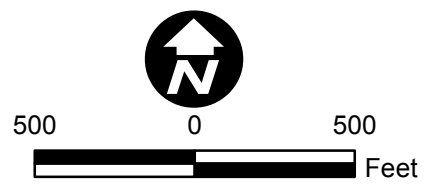
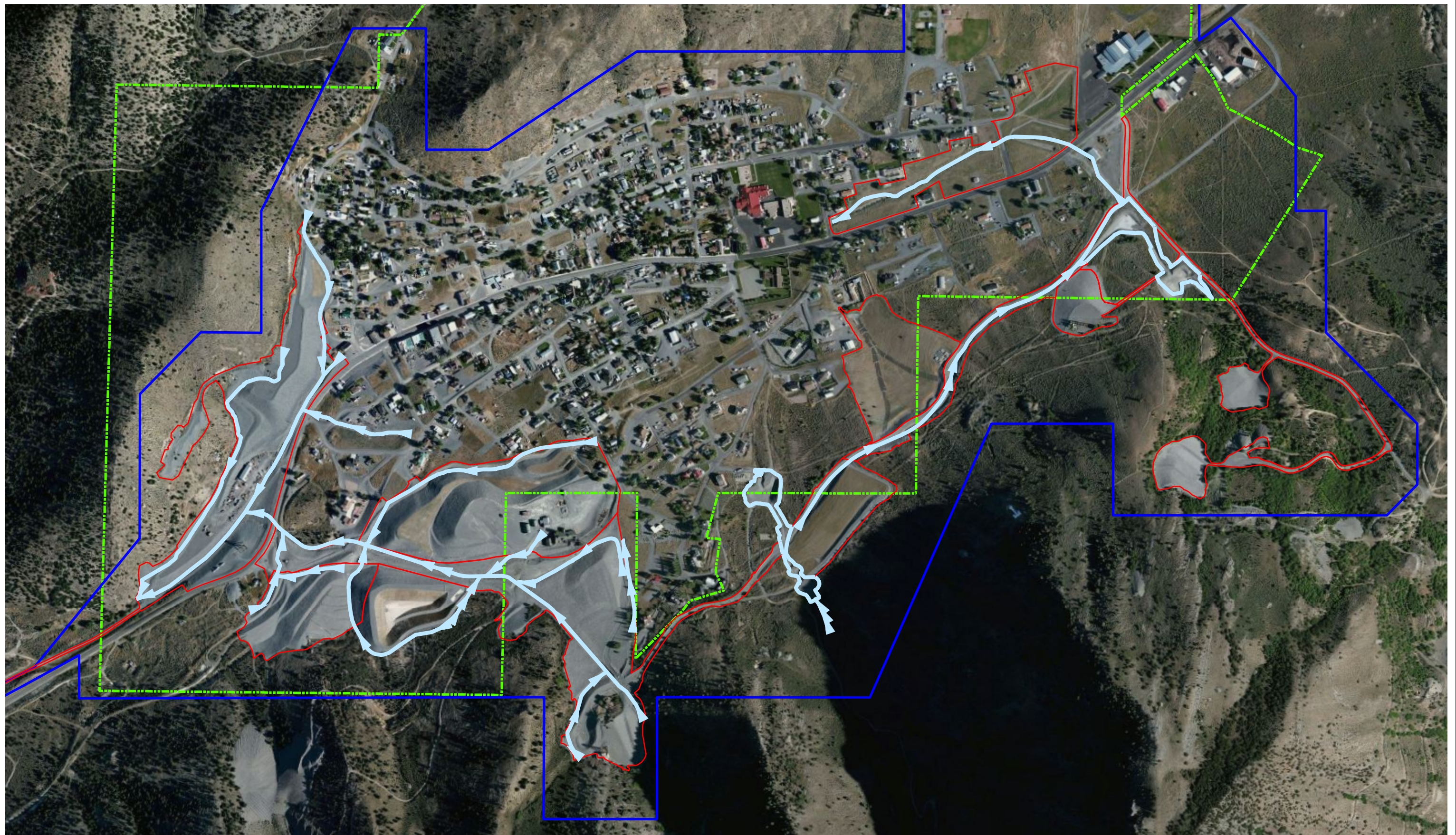






- Legend**
- Completed Access Roads Being Used During RA
 - Constructed Response Action Structures
 - Site Boundary
 - City Corporate Limits

Response Action Structures Subject to O&M

5-Year Review Report
 Eureka Mills Superfund Site
 Eureka, UT

DATE	2018
FIGURE	3

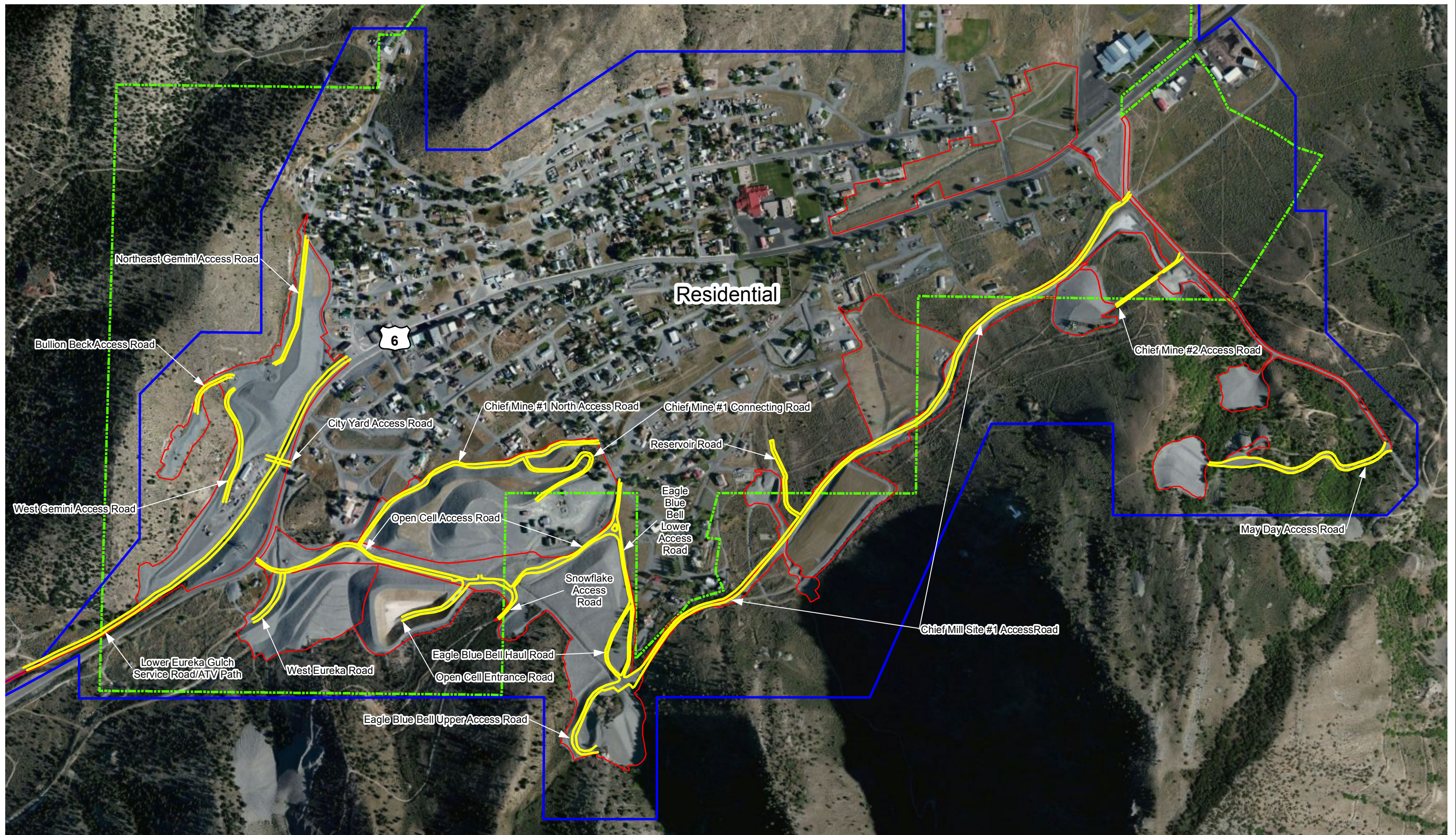


- Legend**
-  Drainage Channels Requiring Operation & Maintenance
 -  Response Action Structures
 -  Site Boundary
 -  City Corporate Limits

**Remedial Action Structures -
Drainage Features Subject to O & M**

5-Year Review Report
Eureka Mills Superfund Site
Eureka, UT

DATE	2018
FIGURE	4



0 500 1,000
 Feet

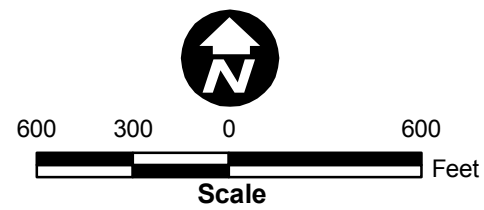
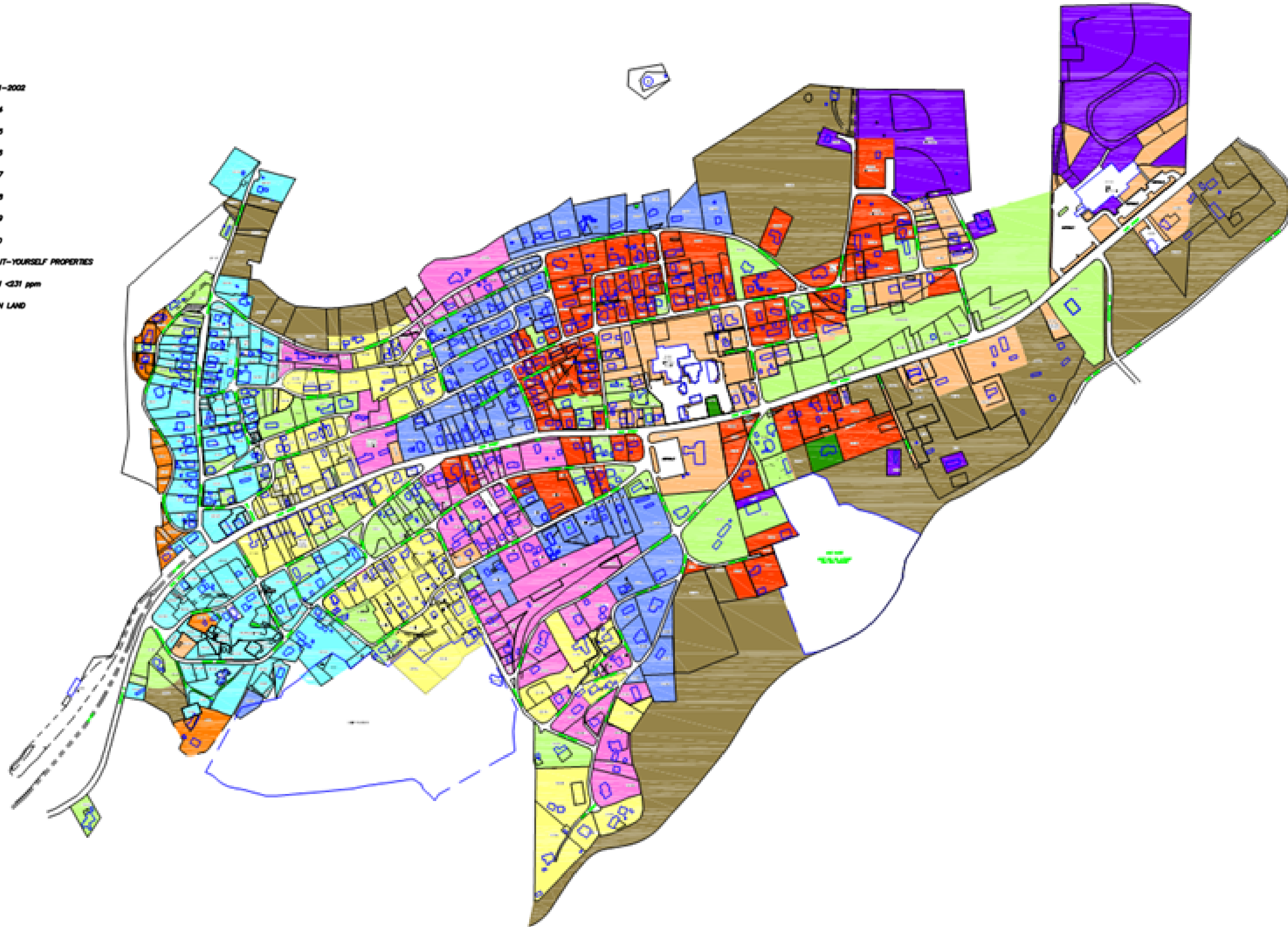
Legend

- Roads Requiring Operation & Maintenance
- Response Action Structures
- Site Boundary
- - - City Corporate Limits

**Response Action Structures -
 Access Road Features Subject to O&M**
 5-Year Review Report
 Eureka Mills Superfund Site
 Eureka, UT

DATE	2018
FIGURE	5

- 2001-2002
- 2004
- 2005
- 2006
- 2007
- 2008
- 2009
- 2010
- DO-IT-YOURSELF PROPERTIES
- Lead <31 ppm
- OPEN LAND



Progression of Residential Cleanup

5-Year Review Report
 Eureka Mills Superfund Site
 Eureka, UT

DATE
 2013

FIGURE
 6

APPENDIX A
REFERENCE LIST

REFERENCE LIST

BASIS FOR THE RESPONSE ACTION

- 2002, Record of Decision for Lead-Contaminated Soils for Operable Units 00-03 at the Eureka Mills NPL Site, Eureka, Utah, September 2002.
- 2011, Record of Decision, Eureka Mill Superfund Site Operable Unit 4: Groundwater, Surface Water and Ecological Risk, Eureka, Utah 84628, September 2011.

IMPLEMENTATION OF THE RESPONSE

- 2003 Remedial Action Work Plan (RAWP), amended in 2004, 2005, and 2009.
- 2004 Remedial Action Report for OU-01, prepared for the EPA Region 8 by the Atlantic Richfield Company, August 2005.
- 2004 Remedial Action Report for OU-02, prepared for the EPA Region 8 by the United States Army Corps of Engineers and Shaw Environmental Inc., September 2005.
- 2005 Remedial Action Report, prepared for the EPA Region 8 by the United States Army Corps of Engineers and Shaw Environmental Inc., 2006.
- 2006 Remedial Action Report, Eureka Mills Superfund Site, Mine Waste and Residential Properties, prepared for the EPA Region 8 by the United States Army Corps of Engineers and Shaw Environmental Inc., February 15, 2008.
- 2008, First Five-Year Review Report for the Eureka Mills Superfund Site, Eureka, Juab County, prepared by the EPA Region 8, September 26, 2018.
- Final 2007 Remedial Action Report, Eureka Mills Superfund Site, Mine Waste and Residential Properties, prepared for the EPA Region VIII by the United States Army Corps of Engineers and Shaw Environmental Inc., June 17, 2009.
- 2009, Superfund State Contract amended July 31, 2009.
- 2009, Operation and Maintenance Plan, Eureka Mills Superfund Site, City of Eureka, Utah, incorporated as Attachment B-2 of the into the Amended State Superfund Contract – July 31, 2009
- Final 2008 Remedial Action Report, Eureka Mills Superfund Site, Mine Waste and Residential Properties, prepared for the EPA Region 8 by the United States Army Corps of Engineers and Shaw Environmental Inc., April 19, 2010.
- 2010, Eureka Land Use Ordinance of Eureka, Utah Chapter 13 Special Regulations Eureka Mills Superfund Site, adopted October 12, 2010.
- Final 2009 Remedial Action Report, Eureka Mills Superfund Site, Mine Waste and Residential Properties, prepared for the EPA Region 8 by the United States Army Corps of Engineers and Shaw Environmental Inc., November 17, 2010.
- 2010, Eureka Insitutional Controls Funding Agreement, November 18, 2010
- Final 2010/2011 Remedial Action Report, Eureka Mills Superfund Site, prepared for the EPA Region 8 by the United States Army Corps of Engineers and Shaw Environmental Inc., September 2011.
- 2013, Second Five-Year Review Report for the Eureka Mills Superfund Site, City of Eureka, Juab County, prepared by the Utah Department of Environmental Quality, September 24, 2013
- 2015, Final Close-Out Report, Eureka Mills Superfund Site, Eureka, UT, prepared by EPA Region 8, September 2015.
- 2018, Third Five-Year Review Report for the Eureka Mills Superfund Site, Eureka, Juab County, prepared by the Utah Department of Environmental Quality Division of Environmental Response and Remediation, July 17, 2018.

SUPPORTING DOCUMENTS

- 2018, Abandoned Mine Reclamation Program Project Summary, Chief No. 1 Subsidence Project, Juab County, Utah.
- 2019 Annual Site Inspection Report, Eureka Mills, Utah Department of Environmental Quality Division of Environmental Response and Remediation, DERR Project Manager Michael Storck, May 2, 2019.
- 2021, Soil Management Plan for Pipeline Installations in Eureka, prepared by Tetra Tech for Dominion Energy Utah, May 12, 2021
- 2021 Annual Site Inspection Report, Eureka Mills, Utah Department of Environmental Quality Division of Environmental Response and Remediation, DERR Project Manager, Michael Storck, June 30, 2021.
- 2022 Annual Site Inspection Report, Eureka Mills, Utah Department of Environmental Quality Division of Environmental Response and Remediation, DERR Project Manager, Craig Barnitz, August 17, 2022 and September 2, 2022.

APPENDIX B
SITE CHRONOLOGY

APPENDIX B - SITE CHRONOLOGY

The following table presents the major milestones since the project began.

TABLE B1 - CHRONOLOGY OF SITE EVENTS	
EVENTS	DATE
Joint State Site Inspection/EPA Removal Site Assessment - soil/mine waste testing	7/2000
Central Utah Department of Health Blood Lead Testing (WIC program)	7/2000
Blood Lead Testing showed high percentage of children w/elevated blood lead	7/2000
Soil/mine waste testing showed extremely high levels of heavy metals incl. lead and arsenic	7/2000
EPA Emergency Response and Remedial Response programs initiate an extensive sampling of residential soils and mine waste areas in and around Eureka. Public meeting is held in August 2000 to inform the public of EPA's actions.	Summer/Fall 2000
EPA, UDOH, & ATSDR initiate an extensive blood lead testing program of all children and adults in Eureka. Testing includes sampling the interiors of a subset of households for indoor exposure pathways.	Summer/Fall 2000
EPA initiates an RI/FS for site	Fall 2000
EPA prepares Action Memorandum to conduct Removal Action at select residential properties.	Winter 2001
EPA commences Removal Action at selected residential properties with soil lead levels >3000 ppm.	Spring/Summer/Fall 2001
EPA proposed the site for listing on the National Priorities List.	06/14/2001
EPA completes Baseline Human Health Risk Assessment	9/2001
RI/FS released to public	Summer 2002
Proposed Plan identifying EPA's preferred remedy is made available for public comment. Public meeting is held during public comment period.	7/2000

TABLE B1 - CHRONOLOGY OF SITE EVENTS

EVENTS	DATE
Final listing on EPA National Priorities List	9/05/2002
ROD selecting remedy is signed.	9/30/2002
EPA settles with North Lily Mining Company in bankruptcy court for access to land parcels for borrow material and for water rights.	2003
EPA proceeds with Remedial Design (RD) in Fall 2002. EPA completes RD.	5/23/2003
EPA issues UAO to PRP (AR) for conduct of Remedial Action at OU 00, 01 & 03. ARCO complies with UAO on 6/20/2003.	6/20/2003
EPA signs SSC with State for conduct of fund-lead RA for OU02 - i.e., Gemini-Bullion Beck mine waste area	08/25/03
EPA commences fund-lead RA at OU 02 using USACE to perform work. USACE engages Shaw Environmental Inc. as the primary contractor.	9/03/2003
Consent Decree with Spent Hansen, Keystone Surveys, Godiva Mines, and Bullion Beck Mining Co. is approved by the Court.	04/07/2004
ARCO Consent Decree (CD) approved by the Court with the reduced SOW from the amended UAO.	1/2005
EPA signs SSC with State for conduct of fund-lead remedial action for the whole Site including OU-02 but minus the PRP-lead areas.	07/12/04
ARCO completes all work on-site per CD SOW. EPA and the State conduct Pre-final Inspection. AR is released from any further obligations at the Site.	9/2004
EPA completes all work on OU 02. EPA and the State conduct Pre-final Inspection.	10/2004
EPA commences residential cleanup in OU 00.	7/22/2004
Consent Decree w/Chief Consolidated Mining Co. is approved by the Court.	01/27/2005
UPRR (PRP) commences work on Upper Eureka Gulch under CD-SOW. A 2nd component of UPRR's SOW is to operate Lime Peak Quarry to produce 2 years of rock materials for EPA. Shaw Environmental, Inc., under contract to USACE holds the mine permit from the State and authorized UPRR to operate the quarry.	6/2005

TABLE B1 - CHRONOLOGY OF SITE EVENTS

EVENTS	DATE
ARCO submits final Construction Completion/RA report for OU 01 & EPA approves report. ARCO per its CD is released from any further obligations at the site.	9/04/2005
EPA submits final Construction Completion/RA report for OU 02 and report is approved.	9/30/2005
UPRR Consent Decree is approved by the Court.	11/14/2005
EPA continues residential cleanup and commences cleanup of other mine waste areas& construction of drainages, haul roads & Open Cell.	2004 - 2008
EPA completes remediation of Eagle Blue Bell, Snowflake, & Eureka Hill mine waste areas.	Fall 2006
UPRR completes all work on-site and EPA & the State conduct a Pre-final Inspection.	Fall 2006
EPA approves all UPRR work and releases it from further requirements.	8/2007
UPRR submits final Construction Completion/RA report for Upper Eureka Gulch and the report approved by EPA. UPRR transfers its land parcels in Eureka to the City. UPRR per its CD is released from any further obligations at the site.	8/2007
Eagle Blue Bell mine drainage and inspection was completed.	5/2008
First Five-Year Review Report	9/2008
Superfund State Contract was Amended (O&M responsibilities of State).	7/2009
Operation & Maintenance Plan and Operation & Maintenance Manual completed.	7/2009
Chief Mill Site No. 1, Chief No. 1 Mill Tailings, Gardner Canyon sediment ponds, Chief Mine No. 1 mine waste pile and repository, Open Cell were completed and inspected by UDEQ and EPA.	2010
Baseline Ecological Risk Assessment completed.	2/2010
Groundwater/Surface Water Remedial Investigation Report.	7/2010
Residential Cleanup completed.	9/2010

TABLE B1 - CHRONOLOGY OF SITE EVENTS

EVENTS	DATE
Excavation Ordinance adopted by the City.	10/2010
Institutional Controls Funding Agreement between UDEQ and City signed.	11/2010
EPA and UDEQ sign Consent Decree with Mueller Industries, Inc., (PRP), for partial reimbursement of past response costs.	12/2010
EPA's construction contractor demobilizes from the site.	12/2010
Inspection Report (eroded areas identified during May 2011 inspection and remediated).	5/24/2011
Operational and Functional Determination Letter concurrence.	7/18/2011
EPA issues Record of Decision (ROD) OU4	9/21/2011
Final Remedial Action Report completed.	9/12/2011
Preliminary Closeout Report completed.	9/21/2011
2012 State Annual Inspection completed	9/2012
EPA issues Unilateral Administrative Order for Directing Compliance for Land Use Restrictions for GCL Eureka Properties LLC and Grant Loader for Parcel XE00-4848.	3/18/2013
EPA places a Notice of Environmental Conditions on the GCL Eureka Properties, LLC and Grant Loader Parcel XE00-4848	7/29/2013
Second Five-Year Review Report	9/24/2013
2014 State Annual Inspection completed.	6/2014
Quality Assurance Project Plan (QAPP) – Appendix B to the Eureka City Land Use Ordinance, Chapter 13 was completed by AECOM under the Level of Effort contract.	9/5/2014
Final Close-Out Report, Eureka Mills Superfund Site, Eureka, Utah	9/2015
2015 State Annual Inspection completed.	10/2015
Amendment to the Environmental Covenant releasing a 1.5-acre portion of the Chief Consolidated property within Parcel XE00-6113-21.	3/2016
2016 State Annual Inspection completed.	7/2016

TABLE B1 - CHRONOLOGY OF SITE EVENTS

EVENTS	DATE
DERR assumes O&M for Spent Hansen properties within Eureka Mills Superfund Site including the Gemini Mine, Bullion Beck Mine, Bullion Beck Mill, Eureka Hill Mine, Chief Mine No. 2, May Day Mine, and Upper and Lower Godiva Mine areas	12/1/2016
2017 State Annual Inspection completed.	8/2017
Third Five-Year Review Report	7/17/2018
Site De-Listed from the NPL.	9/25/2018
AECOM submits the Eureka Mills Superfund Site – Maintenance and Repair Work Closeout Report for erosion repairs to Upper and Lower Godiva and Eagle Blue Bell mine waste piles. Erosion work also completed at the Chief Mine No. 2 and Open Cell access roads.	10/5/2018
Utah Division of Oil Gas and Mining, Abandoned Mines Program Chief No.1 Mine Subsidence Project completed.	10/23/2018
2019 State Annual Inspection completed.	5/2019
2020 State Annual Inspection not completed for 2020 due to ongoing COVID-19 health restrictions.	2020
2021 State Annual Inspection completed.	6/2021
2022 State Annual Inspection completed.	7/2022 and 9/2022

APPENDIX C
EUREKA CITY LAND USE ORDINANCE CHAPTER 13
SPECIAL REGULATIONS - EUREKA MILLS SUPERFUND SITE

July 19, 2010

CHAPTER 13

ESTABLISHING CHAPTER 13 OF THE EUREKA CITY, UTAH LAND USE ORDINANCE BY ADDING REGULATIONS AND PERMITTING PROCEDURES FOR EXCAVATIONS AND DEVELOPMENT IN THE EUREKA MILLS SUPERFUND SITE.

WHEREAS, the United States Environmental Protection Agency (“EPA”) has identified and designated an area within the municipal limits of the City of Eureka (“City”), known as the Eureka Mills Superfund Site (“Site”) (a map of the Site is attached hereto), as being contaminated with mining wastes containing high concentrations of lead and other metals and has consequently placed such Site on the EPA’s National Priorities List for cleanup and remediation under the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. Section 9601, et seq.; and

WHEREAS, EPA’s remedy for the Site recommends land use controls including restricting the movement, treatment, or disturbance of certain soil within the Site absent advance notice to and permission from the City and further requires information identifying the nature of the material to be moved or disturbed; the plans for handling, storing, or removing such materials; and any proposed or planned storage site for same; and

WHEREAS, EPA and the City agree that the purpose of land use controls restricting the movement, treatment or disturbance of contaminated soil within the Site is to protect the remedy that placed clean soil materials in the top 18 inches to prevent exposure to lead contaminated soils within the Site; and

WHEREAS, the City wishes to extend the protection of land use restrictions to all areas of the City where Contaminated Soils have not been remediated by EPA and those areas of the City that may now or in the future fall outside the Site boundaries; and

WHEREAS, the implementation and enforcement of land use controls by the City regulating excavation and building activities within the Site, for which the City is willing to take responsibility and which could minimize the disturbance, transfer, inhalation, and ingestion of contaminated soils, thus lessening the health risks posed by the Site to public health and safety; and

WHEREAS, EPA and the City have conferred and agreed that the adoption and enforcement of this ordinance will provide the appropriate mechanism by which the review and permitting of excavation and building activities within the Site can be efficiently and appropriately carried out at the local level; and

WHEREAS, the City has determined that this chapter of the land use ordinance is necessary to further public health, safety, and welfare.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF

EUREKA, UTAH, AS FOLLOWS:

Section 1

That the Eureka City Land Use Ordinance of Eureka, Utah, is hereby amended by adding new Chapter 13, "SPECIAL REGULATIONS - EUREKA MILLS SUPERFUND SITE," to the Eureka City Land Use Ordinance, which shall read as follows:

Chapter 13 SPECIAL REGULATIONS - EUREKA MILLS SUPERFUND SITE.

(1) APPLICABILITY.

- (A) These regulations shall apply to and govern any excavation, development, or other construction activity that may cause or contribute to the movement or disturbance of contaminated soil within the boundaries of the Eureka Mills Superfund Site ("Site") as those boundaries are identified and designated by the United States Environmental Protection Agency ("EPA") and within the City corporate limits. A map developed by EPA and incorporated into this ordinance, which depicts the boundaries of the Site and the current City corporate limits, shall be maintained in the City Hall. The map shall be available to the public during regular business hours.
- (B) The provisions of this chapter may be amended from time to time to address changes at the Site and/or in State or Federal laws and regulations applicable thereto or changes to the City corporate limits. The City will inform EPA and the State before it amends this Chapter to allow for their review and consultation with the proposed changes.
- (C) Nothing contained in this Chapter is intended or shall be construed to supersede or limit the authority vested in EPA or the Utah Department of Environmental Quality ("UDEQ") under the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. Section 9601, et seq., or any other Federal or State law, rule, or regulation.

(2) DEFINITIONS.

As used in this Section, the following terms shall have the meaning specified unless the context requires otherwise:

- (A) "CERCLA" or "Superfund" means the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. Section 9601, et seq., as amended.
- (B) "City" means the City of Eureka, Utah.

- (C) “Cleanup” means the remedial action conducted by EPA in accordance with EPA’s Record of Decision (ROD) for the Eureka Mills Superfund Site, Eureka, Utah, September, 2002 as it relates to residential cleanup and the Remedial Action Work Plan (2003, as amended). The Cleanup provides an 18 inch clean soil cover with the re-establishment of a vegetative cover, or an 18 inch clean rock cover or a paved surface (concrete or asphalt) or a permanent building with a floor. (In residential areas, EPA’s Cleanup did not include the removal of contaminated material more than 18 inches below the ground surface.)
- (D) “Coarse-Grained Soils” means soils with more than 50 percent of its particles larger than 0.075 millimeters. Refer to ASTM D 2487 (Unified Soil Classification System). Coarse-Grained Soils also means roadbase or gravel.
- (E) “Contaminated Soil” or “Contaminated Material” means soil or material containing lead concentrations of 231 parts per million (ppm) or greater for residential and commercial use areas and 735 ppm or greater for recreational use areas.
- (F) “Drip Line” means area within the dripline of an established tree, i.e., the area of the circle that could be drawn on the soil around a tree, with a radius equal to the distance from the trunk to the tip of its outermost branch.
- (G) “EPA” means the United States Environmental Protection Agency.
- (H) “Exempted Activity” is any soil disturbing activity within the Site and within the City corporate limits that does not require a permit under this chapter of the Eureka City Land Use Ordinance but requires the property owner or other responsible party to adhere to the Performance Standards in subsection 7 of this chapter of the Land Use ordinance. Exempted Activities include but are not limited to the following: planting trees, digging holes for installation of fence posts, emergency repair of underground utility lines, i.e., sewer, water, or gas.
- (I) “Fine-Grained Soils” means soils with less than 50 percent of its particles larger than 0.075 millimeters. Refer to ASTM D 2487 (Unified Soil Classification System).
- (J) “Hard Surface Cover” means a non-permeable barrier a minimum of 2 inches thick overlaying the ground surface, such as paving (asphalt or concrete) and including buildings and other permanent structures.
- (K) “Marker Barrier” – means a permeable geotextile fabric placed to delineate the presence of contaminated material below 18 inches, over which 18 inches of clean topsoil or clean roadbase material is placed.

- (L) "Open Cell" means a repository (or landfill) at the Site designated by EPA specifically and solely for the disposal of Contaminated Soil generated within the Site or the City limits.
- (M) "Permit Area" means the property or properties where Restricted Activities will take place pursuant to the requirements of the excavation permit issued by the City.
- (N) "Person" means an individual, partnership, corporation, association, company, landowner, tenant, occupant, contractor, subcontractor, or any public body or political subdivision.
- (O) "Protective Cap" shall mean a soil barrier placed over Contaminated Soil, to provide a protective barrier. The thickness of protective caps comprised of coarse-grained soil (gravel, roadbase, etc.) shall be 18 inches. The thickness of protective caps comprised of fine-grained soil (topsoil, clay, etc.) shall be 18 inches and have a vegetative cover. Soils comprising the protective cap shall have a lead concentration of 100 ppm or less.
- (P) "Recreational Use" shall mean use of property for sports fields, motocross tracks, open space, or other uses not specified as Residential/Commercial use. Trails and paths are included in the definition of Recreational Use only if they are designated and recognized by the City for a specific purpose
- (Q) "Residential/Commercial use" shall mean use of property for businesses, schools or residential homes, day care facilities, parks or play areas used by small children.
- (R) "Restricted Activity" means any excavation or earth moving activity within the Site or within the City corporate limits that is not an Exempted Activity and that results in a disturbance of soil, or which may disturb the soil, below the 18-inch clean soil cover or which reduces the clean soil cover to less than 18 inches in depth. Some areas within the Site have not been cleaned up, pending future development, because existing vegetation in those areas limits exposure to contaminated soils. In areas of the Site that have not been cleaned up, and/or where there is no 18 inch clean soil cover, "Restricted Activity" means any excavation or earth moving of any depth or the removal of the vegetative cover that limits exposure to the Contaminated Soils.
- (S) "Site" means those areas within the City that are within the boundaries of the Eureka Mills Superfund Site as designated by EPA in the September 2002 ROD pursuant to Superfund and as depicted on the official map maintained at City Hall.
- (T) "Soil" means inert earthen material disturbed as the result of excavation or construction within the Site regardless of grain size.

- (U) "State" means the State of Utah, Department of Environmental Quality.
- (V) "Vegetative Cover" means plant life, including, but not limited to, grass, trees, shrubs, vines, and sod, planted or installed to ensure stabilization of a Protective Cap comprised of fine-grained soil and to prevent its erosion. Adequacy of the Vegetative Cover consisting of grass plants shall be evaluated when the grass plants are a minimum 1 inch high. A Vegetative Cover of grass plants is satisfactory if there are a minimum 100 grass plants per square foot, bare spots are a maximum 6 inches square, and the total area of bare spots does not exceed 2 percent of the seeded area. Vegetable or flower gardens provide adequate Vegetative Cover for that portion of the garden that is actively planted and maintained during the normal growing season.

(3) RESTRICTED ACTIVITY.

All persons undertaking a Restricted Activity within the Site or within the City corporate limits shall comply with the procedures and performance standards provided in this Chapter. This chapter does not apply to the EPA or the State or their employees and contractors conducting cleanup or operation and maintenance activities under CERCLA within the Eureka Mills Superfund Site.

(4) UTILITY INSTALLATION AND REPAIR.

All Contaminated Soils or soils with unknown lead concentrations removed from excavations for utility installation or repair within a public right-of-way or utility easement that are not replaced in the excavation must be disposed of in the Open Cell. Upon completion of backfilling the final surface of the excavation must be covered with a Hard Surface Cover a minimum of 2 inches thick or Protective Cap that is a minimum of 18 inches thick.

(5) PERMITS REQUIRED.

No person shall undertake or conduct any Restricted Activity without first obtaining a permit from the City. Any excavation or earth moving resulting from an "Exempted Activity" shall not require a permit under this Chapter but shall be subject to the requirements as set forth in Subsection 7 of this Chapter 13. The requirements of this section do not apply to the EPA, the State or its designees conducting a federal Superfund or State hazardous waste response action or Operation and Maintenance of these actions. The requirements for obtaining a permit in this section do not apply to the City when conducting activities in the ordinary course of business; however, such activities shall otherwise comply with the Performance Standards of this Chapter.

(6) PERMIT PROCEDURES.

- (A) *Application.* All permit applicants shall use a form provided by the City. A fee shall be assessed in accordance with a schedule adopted under Chapter 1 of the

Eureka City Land Use Ordinance. Each applicant shall, at a minimum, provide the following information, which may also be required for a building permit:

- (i) The location and nature of the proposed activity, including the address and legal description of the property, and a legal property survey.
 - (ii) A site-plan drawing showing property boundaries, structures, other property improvements, and yard areas.
 - (iii) The estimated depth of any proposed excavation and estimated volume of material to be excavated or disturbed.
 - (iv) The estimated surface dimensions of all areas to be disturbed or affected by the proposed activity, including areas used for the stockpiling or handling of soils. Such area shall be defined as the "Permit Area."
 - (v) The estimated volume of material to be disposed in the Open Cell.
 - (vi) The applicant's plans for conserving the existing Protective Cap placed by EPA during the Cleanup. The area(s) where the Protective Cap material(s) will be stockpiled during the excavation and construction to prevent cross-contamination of material before it is re-laid over Contaminated Soil to a depth of 18 inches. The stockpile area must be adequately protected to ensure that recontamination does not occur during the excavation or construction activities.
 - (vii) The applicant's plans for conducting soil sampling (if necessary) or the results of sampling previously conducted, in accordance with the requirements for soil sampling in Appendix A.. Sampling shall be supervised by the City. The cost of soil sampling shall be borne by the property owner.
 - (viii) Such additional information as determined by the City to be reasonable and necessary to evaluate the safety of the proposed construction activity and its compliance with this Chapter.
- (B) No excavation permit shall be issued before the application has been reviewed and approved by the City, utilizing the performance standards set forth in Subsection 7. Nor shall any excavation permit be issued until the City has inspected the property to determine if conditions on the property and the applicant's plans for the excavation activities comply with this Chapter. All permits issued must comply with this Chapter.
- (C) The duration for the permit will be established in the terms of the permit.

(7) PERFORMANCE STANDARDS.

The following performance standards shall apply to all soil disturbing activities including Restricted and Exempted Activities within the Site and within the jurisdiction of the City.

(A) *Excavation and construction.*

- (i) **Properties Previously Cleaned Up:** For properties that were part of EPA's Cleanup, excavated material must be transported to the Open Cell for disposal as it is excavated. Excavated materials include materials generated from Exempted Activities and Restricted Activities.
1. Where the property owner wishes to conserve clean Protective Cap material(s) for re-use after excavation and construction, plans for stockpiling the clean material(s) on the Permit Area to prevent the materials from being contaminated during excavation or construction must be provided to the City prior to commencing excavation. Protective Cap material(s) must be kept an adequate distance from excavation activities or must be shielded from excavation activities by such measures as berms, silt fencing, and tarping to avoid cross-contaminating clean materials.
 2. During excavation, Contaminated Material, i.e., material removed below the 18 inch Protective Cap, must be transported to the Open Cell for disposal as it is excavated. Excavated materials include materials excavated by Exempted Activities and Restrictive Activities.
- (ii) **Properties Not Previously Cleaned Up:** For properties that were not part of EPA's Cleanup, excavated materials: 1) can be transported to the Open Cell for disposal as the Permit Area is excavated; or 2) do not need to be transported to the Open Cell if it is determined through representative sampling and analysis pursuant to the requirements in Appendix A that the excavated materials are not Contaminated Soils; or 3) can be used as fill within the Permit Area below a Protection Cap or Hard Surface Cover; or 4) can be disposed of elsewhere in accordance with federal and state hazardous waste regulations.
- (iii) Contaminated material can be stored on the Permit Area for up to 30 days on properties that have not been part of EPA's Cleanup. Any Contaminated Materials that are stored on the Permit Area, shall be securely contained on a durable non-permeable tarp and covered with a durable non-permeable tarp to prevent the transport of Contaminated Materials onto clean material. Alternatively, berms or other temporary diversion structures may be constructed to prevent stormwater runoff from leaving the Permit Area.

- (iv) It is the responsibility of the property owner and the permit holder to prevent migration of any Contaminated Material off the Permit Area, including but not limited to sediment due to stormwater runoff, tracking of Contaminated Materials from vehicle and construction equipment traffic and from wind erosion. The property owner should make every effort to limit the duration that the Contaminated Material on the Permit Area is exposed without a Protective Cap or Hard Surface Cover. The installation of a Protective Cap or Hard Surface Cover within the Permit Area shall be a condition of Certification of Occupancy.
 - (v) The Open Cell is solely for the purpose of disposing of lead Contaminated Soils displaced during future development or the repair or installation of utilities within the City corporate limits. Disposal of other types of waste – household waste, used oil and other chemical waste, vegetation, building debris, large items such as vehicles, appliances, etc. is prohibited.
- (B) *Driplines.* Within the dripline of established trees, removal of 18 inches of Contaminated Soil and replacement of 18 inches of clean soil is not feasible without severely compromising the viability of the tree. In such cases, less than 18 inches of clean soil is permissible; however, the applicant must excavate to the top of the tree roots place some clean soil over the roots and establish a Vegetative Cover within the dripline of the tree.
- (C) *Removal of Contaminated Soil.* All excavated Contaminated Soils that are removed from the Permit Area must be transported to and disposed at the Open Cell. Contaminated Soil removed, placed, stored, transported, or disposed anywhere other than the Open Cell is subject to State and/or Federal transportation and disposal requirements.
- (D) *Imported soil.* All imported soil used for a Protective Cap must have a lead concentration lower than the acceptable lead standard for the designated use as set forth in the definition above for Contaminated Soil or Contaminated Material and as determined in EPA's Record of Decision (2002). The exact location from where the imported soil is obtained must be identified in the permit application. The City may at its discretion require that the imported soil be tested according to the sampling and analysis procedures in Appendix A prior to the soil being brought into the Permit Area. Mine waste material is not an acceptable source of material for a Protective Cap.
- (E) *Dust suppression.* All Restricted Activity shall be accompanied by dust suppression measures, such as the application of water or other soil surfactant, to minimize the creation and release of dust and other particulates into the air. Application rates shall be regulated to control dust during excavation and from stockpiled soils while minimizing saturated conditions that could produce surface

runoff or significant accumulation of Contaminated Materials on excavation or hauling equipment.

- (F) *Marker Barrier.* Any Restricted Activity (i.e. requiring a permit) shall include the placement of a marker barrier after the final grading of sub-grade material and prior to placing the clean topsoil or roadbase material. A marker barrier is not necessary for areas that are capped with a “Hard Surface Cover” or where a permanent structure is constructed.
- (G) *Vegetative Cover on Non-Remediated Areas.* For areas that have not been remediated by EPA because a heavy vegetative cover exists to limit exposure to Contaminated Soils, the property owner shall not clear the vegetation without an excavation permit that meets the Performance Standards of subsection (7) of this ordinance.

(8) SOILS TESTING.

A property owner may sample and analyze excavated soils at the owner’s expense to determine the lead content of the excavated soils. Soil sampling shall be conducted by City staff or by a designated person (contractor) who has been approved by the City and has the appropriate experience and qualifications. All soil samples shall be analyzed by a laboratory accredited by the National Environmental Laboratory Accreditation Program that is qualified to conduct the appropriate soil analyses. All testing shall utilize and adhere to the protocols in Appendix A of this ordinance.

(9) NOTIFICATION OF COMPLETION.

Upon completion of any permitted activity or within 1 year from the commencement of excavation, which ever occurs first, the permit holder shall notify the City that the activity has been completed in conformance with the requirements of this Chapter and shall request a Certificate of Occupancy.

Prior to issuing a Certificate of Occupancy, the City shall inspect the Permit Area to determine whether the permit conditions have been met and whether the work conforms to the requirements of this Chapter.

- (A) When the work complies with the permit and this Chapter, the City shall issue a Certificate of Completion.
- (B) In the event that the work fails to comply with the permit or this Chapter, the City shall issue a Notice of Deficiency, which shall explain the deficiencies noted at the property. If the property owner fails to correct any such deficiencies, the City may take enforcement action in accordance with the Eureka City Plan, Chapter 7 and with this Chapter 13, Subsection 11.

- (C) For a Certificate of Completion, the City shall conduct a final inspection to determine whether the work complies with the requirements of the permit and this Chapter. Establishment of a Vegetative Cover for all soil areas shall be a condition for determining that the work is complete.

(10) INSPECTION AND MAINTENANCE.

In addition to all other requirements set forth in this Chapter 13, the following requirements shall apply to the use and maintenance of all lands within the Site and the jurisdiction of the City, including, but not limited to, lawns, play areas, and parking lots.

- (A) The City shall conduct periodic inspections of the permitted construction activity to ensure that the conditions of the permit are being adhered to.
- (B) All properties within the City limits shall be subject to inspection by persons authorized or appointed by the City in order to enforce the provisions of this Chapter 13 regardless of whether or not a permit is required.
- (C) All properties within the Site shall be maintained by the property owner with a Hard Surface Cover or Protective Cap.
- (D) All properties within the Site shall be maintained by the property owner in a manner that will minimize erosion, including the control of drainage and surface water run-off in a manner that will prevent the formation of ditches or gullies.

(11) PENALTIES

- (A) A violation of this Chapter 13 is punishable as a class B misdemeanor pursuant to the Eureka City Plan, Chapter 7; U.C.A. 76-3-204; and U.C.A. 76-3-301 or by imposition of a civil penalty pursuant to the Eureka City Plan, Chapter 7. Each provision of this Chapter 13 of the Eureka land use ordinance that is found to be not in compliance will constitute a separate violation.

(12) APPEALS.

- (A) Any person adversely affected by a City decision administering or interpreting this Chapter may, within 10 calendar days of the decision, appeal that decision to the Board of Adjustment (BOA) by alleging that there is an unreasonable error in any order, requirement, decision or determination made by the City in the administration or interpretation of the land use ordinance, including issuance of a permit.

- (B) No person may challenge in district court a City decision made under these ordinances until that person has exhausted the person's administrative remedies as provided for in Section 1, paragraph (12) of this Chapter 13, and UCA 10-9a-701 through 10-9a-708, as applicable.

Section 2

The City Clerk is directed to file and have recorded a certified signed copy of this Chapter, along with a certified copy of an official map depicting the boundaries of the Eureka Mills Superfund Site and the current City corporate limits, in the office of the Eureka City Recorder.

Section 3

This ordinance shall be effective upon recording in the office of the Eureka City Recorder.

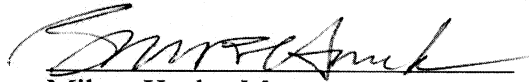
Section 4

If any section, subsection, sentence, clause, phrase, or portion of this ordinance is for any reason held invalid or unconstitutional in a court of competent jurisdiction, such portion shall be deemed a separate, distinct, and independent provision and shall not affect the validity of the remaining portions thereof.

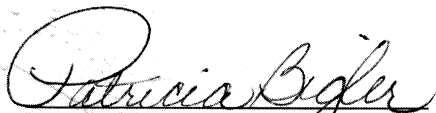
Section 5

A public hearing on the ordinance shall be held on the 12 day of July, 2010, in the City Council Chambers, Eureka City Hall, Eureka, Utah.

INTRODUCED, READ, AND ORDERED PUBLISHED as provided by law by the City Council of the City of Eureka on the 11th day of October, 2010.


Milton Hanks, Mayor


ATTEST:


Patricia Bigler, City Clerk

ADOPTED, PASSED, AND APPROVED this 11TH day of October, 2010.


Milton Hanks, Mayor

ATTEST:


Patricia Bigler, City Clerk

Appendix A
Soil Sampling and Analysis Plan

City of Eureka, Utah Zoning Ordinance Chapter 13
Regulations and Permitting Procedures for Excavations and
Development in the Eureka Mills Superfund Site

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ATTACHMENTS

Attachment A -Eureka Two Letter Street Identifiers

Attachment B - Standard Operating Procedures

Attachment B.1 - ERT SOP 2006 Sampling Equipment Decontamination

Attachment B.2 - ERT SOP 2012 Soil Sampling

Attachment B.3 - HDR Technical Procedure No. TP-8-001 Project Custody Documentation

Attachment B.4 - HDR Technical Procedure No. TP-13-001 Packing, Shipping and Labeling

LIST OF ACRONYMS

C	Composite
COC	Chain of Custody
cy	Cubic yard
EPA	Environmental Protection Agency
G	Grab
ID	Identification
mg/kg	Milligram/Kilogram
PPM	Parts per Million
QA	Quality Assurance
QC	Quality Control
RA	Remedial Action
RCRA	Resource Conservation and Recovery Act
ROD	Eureka Mills Superfund Site Record of Decision
SAP	Sampling and Analysis Plan
S	Soil Matrix
SF	Square Feet
SI	Site Inspection
Site	Eureka Mills Superfund Site
SOP	Standard Operating Procedures
SSAP	Soil Sampling and Analysis Plan
TP	Technical Procedure
UDEQ	Utah Department of Environmental Quality
UDOH	Utah Department of Health
µg/kg	Microgram/Kilogram
UDOT	Utah Department of Transportation

1. INTRODUCTION AND OBJECTIVE OF SOIL SAMPLING AND ANALYSIS PLAN

1.1. Introduction

The Environmental Protection Agency (EPA), in partnership with the Utah Department of Environmental Quality (UDEQ), has conducted remedial actions for residential and commercial in Eureka including the excavation and disposal of lead-contaminated soils from residential properties, pursuant to the Eureka Mills Superfund Site Record of Decision (ROD), dated 9/30/2002. To maintain the remedy, the City of Eureka has established Chapter 13 of the Eureka City Zoning Ordinance (Chapter 13) to enact regulations and permitting procedures for excavations and development in the Eureka Mills Superfund Site. The purpose of Chapter 13 is to prevent recontamination of areas where remedial action had been completed and for undeveloped areas.

The ROD identified five metals that are contaminant of concern for the Eureka Mills Superfund Site: lead, arsenic, antimony, mercury and thallium. Because the ROD established lead as the primary contaminant of concern at the Eureka Mills Superfund Site and since antimony, arsenic, mercury and thallium have been found to be co-located with lead at the Eureka Mills Superfund Site, this Soil Sampling and Analysis Plan (SSAP) will require sampling and analysis for lead only.

Chapter 13 allows the use of soil sampling and analysis data to establish the lead content in stockpiles, excavated surfaces and development areas within the boundaries of the Eureka Mills Superfund Site. The purpose of this SSAP is to establish requirements and procedures to be used to obtain data on the concentration of lead in soils to be used to answer specific questions that may arise during soil excavations regulated by Chapter 13. As described in Chapter 13, soil samples are not always necessary to meet the requirements of Chapter 13. Requirements and procedures, as well as the intended use of the data, described in this SSAP, may not be modified without approval of the City of Eureka, after consultation with EPA and UDEQ.

Note that this Appendix provides procedures to collect, analyze, and interpret data necessary to meet the requirements of Chapter 13 and does not contain procedures, guidelines, or directions for protecting the health and safety of those engaged in collecting or analyzing the data. The user of the information contained in this Appendix is solely responsible for protecting their safety and health and the safety and health of those they employ to complete activities described in this Appendix.

1.2. Objective of the SSAP

The objective of this SSAP is to ensure reliable analytical chemistry data is collected for the decision-making process. Data collected will be used to evaluate the lead concentration of the soils being investigated. The lead concentrations will then be compared to criteria established in the ROD to make decisions regarding the required construction activities necessary to meet the requirements of Chapter 13.

2. SOIL SAMPLING LOCATIONS

Features that may be soil sampled pursuant to this SSAP and purpose of the soil sampling is defined in Table 2-1.

**Table 2-1
Features to be Sampled and Purpose of Soil Sampling and Analysis**

Features to be Sampled	Purpose of the Soil Sampling and Analysis
Existing (Pre-construction) Ground Surface	Establishing an estimated lead concentration of the pre-construction surface soils to determine the applicability of Chapter 13 to the proposed excavation activities.
Post-Excavation Ground Surface	Establishing an estimated lead concentration of the post-construction surface soils
Soil Stockpiles	Establishing an estimated lead concentration of soil stockpiles created through excavation activities regulated by Chapter 13.
Imported Backfill	Establishing an estimated lead concentration of soil imported for the upper 18 inches of the final surface.

The following sections describe the types and frequency for soil sampling of the features listed in Table 2-1.

2.1. Existing Ground Surface

The sampling and analysis described in this Section can be used to determine the applicability of Chapter 13 to excavating activities on a property.

Each property will be divided into zones, with one composite being sampled from each zone. Properties will be divided into zones based on Table 2-2. For properties less than or equal to 10 acres in size Table 2-2 lists the number of zones required. For properties greater than 10 acres in size the number of zones required is 46 plus 2 additional zones for each additional acre. As an example, if a property is 15 acres in size, the number of zones required is 56. To determine how many zones are required for a property whose size is not a whole number, the number of acres shall be rounded up. As an example, if a property is 12.2 acres the number of zones required is 52.

**Table 2-2
Required Number of Zones**

Size of Property	Number of Zones Required	Size of Property	Number of Zones Required
<5000 SF	2	4.51 Acres - 4.75 Acres	25
5000 SF - 10,000 SF	3	4.76 Acres - 5.0 Acres	26
10,001 SF - 15,000 SF	4	5.01 Acres - 5.25 Acres	27
15,001 SF - 20,000 SF	5	5.26 Acres - 5.5 Acres	28
20,001 SF - 25,000 SF	6	5.51 Acres - 5.75 Acres	29
25,001 SF - 30,000 SF	7	5.76 Acres - 6.0 Acres	30
30,001 SF - 35,000 SF	8	6.01 Acres - 6.25 Acres	31
35,001 SF -40,000 SF	9	6.26 Acres - 6.5 Acres	32
40,000 SF - 1.0 Acres	10	6.51 Acres - 6.75 Acres	33
1.01 Acres - 1.25 Acres	11	6.76 Acres - 7.0 Acres	34
1.26 Acres - 1.5 Acres	12	7.01 Acres - 7.25 Acres	35
1.51 Acres - 1.75 Acres	13	7.26 Acres - 7.5 Acres	36
1.76 Acres - 2.0 Acres	14	7.51 Acres - 7.75 Acres	37
2.01 Acres - 2.25 Acres	15	7.76 Acres - 8.0 Acres	38
2.26 Acres - 2.5 Acres	16	8.01 Acres - 8.25 Acres	39
2.51 Acres - 2.75 Acres	17	8.26 Acres - 8.5 Acres	40
2.76 Acres - 3.0 Acres	18	8.51 Acres - 8.75 Acres	41
3.01 Acres - 3.25 Acres	19	7.76 Acres - 9.0 Acres	42
3.26 Acres - 3.5 Acres	20	9.01 Acres - 9.25 Acres	43
3.51 Acres - 3.75 Acres	21	9.26 Acres - 9.5 Acres	44
3.76 Acres - 4.0 Acres	22	9.51 Acres - 9.75 Acres	45
4.01 Acres - 4.25 Acres	23	9.76 Acres - 10.0 Acres	46
4.26 Acres - 4.5 Acres	24	10+ Acres	46+2/acre

A composite will consist of five aliquot sample locations within a zone. The aliquot locations will be determined by sub-dividing the zone into five approximately equal areas, with the aliquot being taken from the center of each. Each aliquot will be collected from the surface (0 – 2”).

2.2. Post-Excavation Ground Surface

The sampling and analysis described in this Section can be used to establish the estimated lead concentration of a post-construction ground surface not previously cleaned up by EPA and the State. If the concentration of lead on a post construction ground surface is less than 231 mg/kg, a protective cap, as defined in Chapter 13, is not required.

Each property will be divided into zones, with one composite being sampled from each zone. Properties will be divided into zones as described in Section 2.1.

A composite will consist of five aliquot sample locations within a zone. The aliquot locations will be determined by sub-dividing the zone into five approximately equal areas, with the aliquot being taken from the center of each. The aliquot will be collected from the surface of the excavation (0 – 2”).

2.3. Soil Stockpiles

Stockpiles generated during excavations regulated by Chapter 13 may be used as backfill if the material is documented through sampling and analysis to be clean material.

2.3.1. Soil Stockpiles from Properties Remediated by the EPA

On remediated properties, the soil above the marker barrier (approximately 18 inches of soil, unless under the drip line of a tree) is considered clean material and should be segregated for use as backfill. This material does not need to be verified as clean through sampling and analysis. Any material excavated below the marker barrier must be either:

- Assumed to contain high lead levels and disposed in the Open Cell Repository
- Placed in stockpiles and sampled as described in Section 2.3.3.

2.3.2. Soil Stockpiles from Properties Not Remediated by the EPA

On unremediated properties, any material excavated must be:

- Assumed to contain high lead levels and disposed in the Open Cell Repository
- Placed in stockpiles and sampled as described in Section 2.3.3.

2.3.3. Sampling Requirements for Stockpiles

One five-point composite sample and one discrete sample per every 100 cubic yards of homogeneous material are required for excavated stockpiles of soils. If the material is not homogeneous, additional discrete (grab) samples shall be collected from each type of material.

2.4. Imported Backfill

If, at the City's discretion they require, materials provided from suppliers shall be certified as uncontaminated by the supplier or sampled and analyzed. A minimum of one composite sample for each type of material imported to the property is required. If more than 1,000 cubic yards of a material is to be delivered to the Site, one sample per 1,000 is required.

3. SOIL SAMPLING AND ANALYSIS REQUIREMENTS

3.1. Sampling Methods

Soil sampling will be conducted in accordance with the following Standard Operating Procedures (SOPs) (see Attachment B):

- ERT SOP 2006 Sampling Equipment Decontamination
- ERT SOP 2012 Soil Sampling
- HDR Technical Procedure No. TP-8-001 Project Custody Documentation
- HDR Technical Procedure No. TP-13-001 Packing, Shipping and Labeling

3.2. Discrete/Composite Sampling Requirements

Soil samples will be collected using a disposable plastic scoop. If the soil cannot be sampled with the plastic scoop, a hand-coring device, a decontaminated shovel, pick, or chipping bar will be employed. If other than disposable equipment is used for sample collection, the equipment shall be decontaminated before each sample is collected. Refer to Attachment B for decontamination procedures.

3.2.1. Discreet Samples

Discreet or “grab” samples are samples collected from one location. Each soil sample will be placed in a labeled glass sampling jar or poly bag as required by the laboratory which is doing the analysis. Typically, at least 8 ounces of soil will need to be collected.

3.2.2. Composite Samples

Composite samples are samples collected from compositing of five grab samples (aliquots) collected at the approximate center and corners of the area to be sampled or five aliquots which represent approximately the same volume of material to be sampled. Each aliquots will be placed in a sealed poly bag, and the sample will be homogenized.

3.3. Analytical Requirements

Samples collected pursuant to this Appendix must be analyzed by a laboratory certified by the National Environmental Laboratory Accreditation Program for the analysis of soil samples in accordance with the Environmental Protection Agency’s publication *Test Methods for Evaluating Solid Waste (SW-846)* and certified for the specific test methods listed in Table 3-1. There are numerous laboratories in the Wasatch Front which meet these requirements

Table 3-1 Soil Sample Volumes, Containers, And Preservation				
Parameter	Analytical Method	Number – Sample Volume and Container Type	Preservation*	Holding Time**
Lead	EPA 6010/7470	1-8 oz Wide-Mouth Glass Jar or poly bags (as required by the laboratory)	4°C	6 months

* Sample preservation will be performed by the sampler immediately after sample collection.
 ** Holding times begin from the time of sample collection in the field.

4. FIELD OPERATIONS DOCUMENTATION

4.1. Field Documentation

Documentation that will be generated will include, but not be limited to, the following activities:

- Sample collection activities
- Laboratory-specific records of custody, analysis, and reports

All field data will be recorded in permanently bound notebooks. The following includes a list of the forms and/or checklists that will be completed for this sampling task:

- Completing Field Logbook Checklist (one per day)
- Documenting Sample Number and Completing Sample Labels Checklist (one per shipment)
- Custody Seals Checklist (one per shipment)
- Chain-of-Custody Forms Checklist (one per shipment)
- Packing Shipping Container Checklist (one per shipment)
- Shipping and Reporting Samples Checklist (one per shipment)

4.2. Field Logbook and/or Sample Field Sheets

Each field sampling event will be documented in a field logbook with the following information recorded: sampler(s) name, date, time of sampling event, sample location, matrix, test to be performed, SOPs utilized, sample identification (ID) assigned to the samples, and weather.

4.3. Photographic Records

Digital photographs shall be taken to document the location and conditions under which samples were taken. The digital files will have the following information included in their file name: Sample ID, date, and location.

4.4. Sample Numbering System

4.4.1. Sample Identification from Residential Properties

All samples will have a unique sample number assigned. Samples from residential properties will be identified by the two letter street identifier, then the property identification number followed by a sequential number identifying that sample, then a letter indicating the sample type (C for composite samples and G for grab samples), a letter indicating matrix (S for soil), and finally last the depth interval. Attachment A provides the two letter street identifiers for Eureka. Attachment A may need updating if

additional streets are added to the town through development. As an illustration of the sample numbering system, a sample taken from 112 East Main Street that is a fourth primary soil composite sample at a depth of 0-6 inches would be labeled as follows:

EM112-004-CS-06

This label is explained in Table 4-1.

Table 4-1 Sample Identification Number Breakdown - Residential Properties					
Street Name	Address #	Sample Number	Sample Type	Matrix	Depth
EM	112	004	C	S	06

All sample labels and tags will be completed using indelible ink. The sample labels will be affixed to the sample bottle and covered with clear tape. These labels will include the following information:

- Initials of the collector
- Date and time of collection
- Place of collection
- Sample ID number
- Analysis required
- Preservative
- Designation of “grab” or “composite” samples

All sample labels and tags will be completed using indelible ink. The sample labels will be affixed to the sample bottle and covered with clear tape. These labels will include the following information:

- Initials of the collector
- Date and time of collection
- Place of collection
- Sample ID number
- Analysis required

- Designation of “grab” or “composite” samples

4.4.2. Sample Labels and/or Tags

The laboratory shall provide label forms and tags.

4.4.3. Sample Custody

The primary objective of these procedures is to create an accurate written record that can be used to trace the possession and handling of the sample from the moment of its collection through analysis. Procedures to ensure the custody and integrity of the samples begin at the time of sampling and continue through transport, sample receipt, preparation, analysis and storage, data generation and reporting, and sample disposal.

Sample custody is initiated using detailed record keeping by field personnel. Following collection, sample custody for off-site samples will be documented using a Chain of Custody (COC) for the analysis to be completed by the off-site laboratory. These forms will be completed in indelible ink. A copy of the COC form from each group of samples will be provided to the City of Eureka. Information regarding sample custody for samples shipped to the laboratory is presented in Attachment B.

4.5. Documentation Data Management and Retention

Property owner is responsible for the providing copies of all field records generated during sampling events and the test results received from analytical laboratory to the City of Eureka.

5. SAMPLE PACKAGING AND SHIPPING REQUIREMENTS

Samples collected in the field will be transported to the laboratory as expeditiously as possible. When a 4° C requirement for preserving the sample is indicated, the samples will be packed on ice to keep them cool during collection and transportation. All samples being shipped to the analytical laboratory will be packaged and shipped in accordance with Packing, Shipping, and Labeling, presented in Attachment B. .

6. DECISION MAKING CRITERIA

Analytical results from soil samples will be compared to the Threshold Lead Concentrations shown in Table 6-1. Based on this criteria, decision will be made on the applicability of the

**Table 6-1
Decision Making Criteria**

Features to be Sampled	Threshold Lead Concentrations	Decision Summary
Existing (Pre-construction) Ground Surface	Residential Areas: 231 (mg/kg) Non-Residential Areas: 735 (mg/kg)	If the lead concentration is equal to or above the applicable criteria, the requirements of Chapter 13 apply to the excavation activities completed in the area represented by the sample. If the lead concentration is below the applicable criteria, the requirements of Chapter 13 do not apply to the excavation activities completed in the area represented by the sample. However imported fill, if being used for a protective cap, must meet the criteria for imported fill listed in this table.
Post-Excavation Ground Surface	Residential Areas: 231 (mg/kg) Non-Residential Areas: 735 (mg/kg)	If the lead concentration is equal to or above the applicable criteria, a protective cap, as defined in Chapter 13, must be installed. If the lead concentration is below the applicable criteria, a protective cap is not required by Chapter 13.
Soil Stockpiles	100 (mg/kg)	If the lead concentration is equal to or above 100 (mg/kg), the soil stockpile cannot be used for construction of a protective cap. If the lead concentration is below 100 (mg/kg), the soil stockpile can be used for construction of the protective cap.
Imported Backfill	100 (mg/kg)	If the lead concentration is equal to or above 100 (mg/kg), the imported backfill cannot be used for construction of a protective cap. If the lead concentration is below 100 (mg/kg), the imported backfill can be used for construction of the protective cap.

Appendix B
Quality Assurance Project
Plan

Eureka City Land Use Ordinance, Chapter 13

**Regulations and Permitting Procedures for Excavations and
Development in the Eureka Mills Superfund Site**

Document Approved

Organization: City of Eureka

Print Name: _____ Title: _____

Signature: _____ Date: _____

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List of Acronyms

EPA	The Environmental Protection Agency
MDL	method detection limit
PARCC	parameters of precision, accuracy, representativeness, comparability, and completeness
QAPP	Quality Assurance Project Plan
ROD	Record of Decision
RPD	relative percent difference
SSAP	Soil Sampling and Analysis Plan
UDEQ	Utah Department of Environmental Quality

A. INTRODUCTION AND OBJECTIVE

A.1 Introduction

The Environmental Protection Agency (EPA), in partnership with the Utah Department of Environmental Quality (UDEQ), has conducted remedial actions for residential and commercial land in the City of Eureka including the excavation and disposal of lead-contaminated soils from residential properties, pursuant to the Eureka Mills Superfund Site Record of Decision (ROD), dated 9/30/2002. To maintain the remedy, the City of Eureka has established Chapter 13 of the Eureka City Land Use Ordinance to enact regulations and permitting procedures for excavations and development in the Eureka Mills Superfund Site. The purpose of Chapter 13 is to prevent recontamination of areas where remedial action had been completed and for undeveloped areas.

Under Chapter 13, soil sampling may be required as part of the process of obtaining an excavation permit for activities conducted within the boundaries of the Eureka Mills Superfund Site. The property owner will submit all necessary soil sampling documentation to the City of Eureka and UDEQ. The soil sampling results will be used by the City of Eureka to evaluate the safety of the proposed construction activity and the handling of any lead-contaminated soil to be excavated or disturbed; and will be used by the UDEQ to document activities concerning lead-contaminated soil within the Eureka Mills Superfund Site to ensure protectiveness of the remedy as required under the Superfund program.

The ROD identified five metals that are contaminants of concern for the Eureka Mills Superfund Site: lead, arsenic, antimony, mercury and thallium. Because the ROD established lead as the primary contaminant of concern at the Eureka Mills Superfund Site and since antimony, arsenic, mercury and thallium have been found to be co-located with lead at the Eureka Mills Superfund Site, soil sampling for lead only is required.

Chapter 13 allows the use of soil sampling and analysis data to establish the lead content in stockpiles, excavated surfaces and development areas within the boundaries of the Eureka Mills Superfund Site. The Soil Sampling and Analysis Plan (SSAP), incorporated as Appendix A of Chapter 13, establishes requirements and procedures for gathering data on lead content in soils.

This Quality Assurance Project Plan (QAPP) describes the necessary quality assurance requirements and procedures for the soil sampling under Chapter 13 of the Eureka City Land Use Ordinance. The QAPP is a companion document to the SSAP and must be used in conjunction with the SSAP. Requirements and procedures, as well as the intended use of the data, described in this QAPP, may not be modified without approval from the City of Eureka, after consultation with EPA and UDEQ.

All soil sampling field activities and laboratory analysis will be managed by the property owner. The cost of soil sampling shall be borne by the property owner.

A.2 Quality Objectives & Criteria

The data quality objectives for the soil sampling are:

- Collect reliable analytical chemistry data for decision making.
- Evaluate lead concentration of soil being excavated or placed at the site.
- Compare data against decision making criteria to determine construction activities necessary to meet the requirements of Chapter 13.

The decision making criteria are listed in Table 1 of this Appendix.

Table 1
Decision Making Criteria
(From SSAP Table 6-1)

Features to Sample	Threshold Lead Concentration	Decision Summary
Existing (Pre-construction) Ground Surface	Residential Areas: 231 mg/kg Non-Residential Areas: 735 mg/kg	If the lead concentration is equal to or above the applicable criteria, the requirements of Chapter 13 apply to the excavation activities completed in the area represented by the sample. If the lead concentration is below the applicable criteria, the requirements of Chapter 13 do not apply to the excavation activities completed in the area represented by the sample. However imported fill, if being used for a protective cap, must meet the criteria for imported fill listed in this table.
Post-Excavation Ground Surface	Residential Areas: 231 mg/kg Non-Residential Areas: 735 mg/kg	If the lead concentration is equal to or above the applicable criteria, a protective cap, as defined in Chapter 13, must be installed. If the lead concentration is below the applicable criteria, a protective cap is not required by Chapter 13.
Soil Stockpiles	100 mg/kg	If the lead concentration is equal to or above 100 mg/kg, the soil stockpile cannot be used for construction of a protective cap. If the lead concentration is below 100 mg/kg, the soil stockpile can be used for construction of the protective cap.
Imported Backfill	100 mg/kg	If the lead concentration is equal to or above 100 mg/kg, the imported backfill cannot be used for construction of a protective cap. If the lead concentration is below 100 mg/kg, the imported backfill can be used for construction of the protective cap.

B. DATA GENERATION & ACQUISITION

B.1 Soil Sampling and Analysis

Soil samples must be collected, handled, and analyzed in accordance to the SSAP in Chapter 13 Appendix A. In accordance the SSAP, soil samples will be collected using disposable plastic scoops or equipment that has been decontaminated. In addition, field quality control samples must be collected as required in Section B.2 of this Appendix. Lead concentration in the sample must be determined using Method 6010B (or equivalent approved Method). The property owner is responsible for managing all required field activities.

B.2 Field Quality Control Samples

The field quality control requirements in Table 2 must be followed during soil sampling. The field quality control acceptance criteria listed in Table 2 will be used to validate data as specified in Section C of this Appendix.

B.3 Laboratory Requirements

All samples must be analyzed by a laboratory certified by the National Environmental Laboratory Accreditation Program. The laboratory method detection limit for lead must be below the threshold lead concentrations listed in Table 1 of this Appendix. The laboratory must follow the quality control requirements specified by the standard analytical method. The laboratory must provide the analytical data report in hard copy and electronic format. The analytical data report must include enough information to conduct the data validation as specified in Section C of this Appendix. Deviation from the quality control acceptance criteria specified by the standard analytical method must be noted with the laboratory analytical data report. Reporting requirements are listed in Section D. The property owner is responsible for identifying and coordinating with the qualified laboratory for the analysis of soil samples and reporting of analytical results.

**Table 2
Field Quality Control Requirements**

QC Sample	Purpose	Collection Frequency	Acceptance Criteria
Field Duplicate ¹	To check reproducibility of laboratory and field procedures. To indicate non-homogeneity.	One per twenty samples per matrix or one per day, whichever is more frequent. Assign two separate (unique) sample numbers (i.e. one number to the primary sample and one to the duplicate).	RPD ≤ 50% • If the parent sample and duplicate values are >5x RL, then <50% RPD soil • If the parent sample or duplicate sample value is <5xRL, then absolute difference is <3.5xRL
Matrix Spike/ Matrix Spike Duplicate ²	To check accuracy and precision of the analysis.	One per twenty samples per matrix or one per day, whichever is more frequent.	RPD ≤ 20% % Recovery must be within lab historical limits
Equipment Rinsate Blank ³ (Only required if non-dedicated equipment is used. If required, use laboratory supplied deionized water, NOT store bought water)	To check field decontamination procedures.	One per twenty samples per matrix per equipment type per decontamination event or one per day, whichever is more frequent.	NA
Cooler Temperature Blank	To check sample preservation procedures.	One per cooler.	≤ 6°C (but not frozen)

MDL = method detection limit

NA = not applicable

RPD = relative percent difference

¹Sufficient sample must be collected to allow material to be split into two samples (one as the normal sample, one as the field duplicate sample).

²Sufficient sample must be collected to allow the laboratory to perform this analysis.

³Collect equipment blank after equipment has been decontaminated.

C. DATA VALIDATION AND USABILITY

C.1 Data Validation

To ensure that soil analytical chemistry data collected in compliance with Chapter 13 are of an appropriate quality, all data will be validated to determine usability. Data validation is a systematic process of reviewing data against a set of established criteria to provide assurance of its validity prior to its intended use. The process of data validation must be independent of the data production and objective in its approach. This review will consist of evaluation of laboratory performance parameters and sample-specific parameters as applicable to the project end use objectives and the level of data package requested and received from the laboratory. All data will receive an evaluation of sample-specific parameters. All summary forms provided by the laboratory, which may include laboratory performance parameters, will be reviewed.

The laboratory performance parameters are indicators of overall performance and ability of the laboratory to generate data of known quality. The laboratory performance parameters that will be evaluated as part of validation based on end use objectives are:

- Initial Calibration
- Initial and continuing calibration verification
- Laboratory Control Sample (LCS) results
- Compound identification
- Result calculation
- Method specific QC requirements (e.g., interference check sample (ICS) analysis)

Sample-specific parameters are those that are sample related, where the sample matrix or the collection procedures could influence the results. The sample-specific parameters that will be evaluated are as follows as applicable to the method:

- Case narrative comments
- Chain-of-custody and sample conditions upon receipt
- Holding times
- Method blank results
- MS recoveries
- Inductively Coupled Plasma (ICP) serial dilutions
- Laboratory duplicate (LD) or spike duplicate results
- Post-digestion spike recoveries
- Results for field QC samples (e.g., field duplicates, rinsate blanks, temperature blanks).
- Any systematic problems noted in the review of the laboratory performance parameters.

All soil analytical chemistry data will be validated using guidance from the *EPA National Functional Guidelines for Inorganic Superfund Data Review* (October 2013). Quality acceptance criteria for field quality control samples are listed in Table 2. The data qualifiers in Table 3 may be used during data validation.

**Table 3
Data Qualifiers and Definitions**

Data Qualifier	Definition
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.

C.2 Data Quality Indicators - Usability

The analytical QA objectives are defined in terms of sensitivity and the parameters of precision, accuracy, representativeness, comparability, and completeness (PARCC). The primary goal of this QAPP is to define procedures that establish the quality and integrity of the collected samples, the representativeness of the results, the precision and accuracy of the analyses, and the completeness of the data. **The precision and accuracy limits presented in Table 2 will be used during data review.**

These limits will establish that routinely generated data are significantly valid and defensible and are of known and acceptable precision and accuracy. Data that meets the QA objectives and goals will be deemed acceptable. Data that do not meet the objectives and goals or do not fall within the acceptance criteria established will be evaluated for usability in meeting project objectives during data review and will be reviewed on a case-by-case basis to ascertain usefulness. Data quality indicators are defined in terms of the PARCC parameters that are summarized in the following subsections.

C.2.1 Accuracy

Accuracy is assessed through the analysis of quality control samples. The analytical accuracy is expressed as the percent recovery (%R) of an analyte which has been added to the environmental sample at a known concentration before analysis and is calculated according to the following equation.

$$\%R = \frac{S - U}{C_{sa}} \times 100$$

where: %R = percent recovery
 S = measured concentration in spiked aliquot
 U = measured concentration in unspiked aliquot
 C_{sa} = actual concentration of spike added

C.2.2 Precision

Precision is determined through the use of field duplicates, matrix spike/matrix spike duplicates and duplicate quality control samples. The relative percent difference (RPD) between the two results is used as an indication of the precision of the analyses performed. The following formula should be used to calculate the relative percent difference (RPD):

$$RPD = \frac{(C_1 - C_2)}{(C_1 + C_2)/2} \times 100$$

Where: RPD = relative percent difference
C₁ = larger of the two observed values
C₂ = smaller of the two observed values

C.2.3 Representativeness

Representativeness expresses the degree to which sample data precisely and accurately represents a characteristic of a population, parameter variations at a sampling location, a process condition, or an environmental condition. Representativeness is a qualitative parameter most concerned with the proper design of the sampling program, proper sampling locations, implementing proper sampling protocols, and collecting a sufficient number of investigative samples to meet the project objectives, such that the analytical data generated are representative of actual site conditions. Representativeness of data is critical to data usability assessments.

Representativeness is addressed throughout this document. The QAPP details the measures to be followed to obtain data that satisfy the DQOs, and the SOPs describe the sampling technologies to be used. Representativeness will also be qualitatively evaluated using precision and accuracy information developed from the evaluation of QC samples. The representativeness of the data will be maintained throughout the sampling by adhering to the SSAP, following appropriate and consistent procedures for sample collection, and by the application of generally recognized and documented analytical methods. Following these procedures increases the probability that representative samples will be collected from the sampling areas each time a sample is collected, and that consistent analytical methodologies are used.

C.2.4 Completeness

Completeness is defined as the measure of the amount of valid data compared to the amount of data that was expected to be obtained under ideal conditions. Data completeness will be expressed as the percentage of valid data obtained. For data to be considered valid, it must meet all the acceptable criteria including accuracy and precision, as well as any other criteria required by the prescribed analytical method.

The following formula should be used to calculate completeness:

$$\%C = \frac{V}{n} \times 100$$

Where: %C = percent completeness
V = number of measurements judged valid
n = total number of measurements required

The completeness goal is 100%. If the completeness goal is not achieved, the soil portion represented by the sample with the invalid result can be resampled and completeness re-evaluated. Otherwise, the soil portion represented by the sample with the invalid result will be considered lead-contaminated and must be handled according to Chapter 13 requirements.

C.2.5 Comparability

To evaluate the comparability of the data, sampling and analytical techniques must be considered. Comparability of the data generated during the field investigation will be maintained by strictly following sampling SOPs, using standard analytical methods, evaluating data, evaluating the QC samples, reviewing laboratory reports, and reporting values in consistent units.

C.2.6 Sensitivity

To evaluate the utility of the data for comparison to numeric standards, it is important that the sensitivity of the methods utilized is acceptable. This QAPP specifies the use of routine and commercially available USEPA approved methods. In general, these methods provide the necessary level of sensitivity. However, if sample specific factors (e.g. matrix effects or dilutions) result in reporting limits greater than the threshold lead concentrations listed in Table 1, the soil portion represented by the sample should be resampled, or considered lead-contaminated and must be handled according to Chapter 13 requirements.

D. DATA REPORTING

D.1 Reporting Requirements

In accordance with Chapter 13, Appendix A, Section 4.5, the property owner must provide documentation of the soil sampling event to City of Eureka. Soil sampling documentation includes but is not limited to the field documentation, laboratory analytical data report, and data validation summary. The documentation must be provided in hardcopy and in electronic format.

The property owner must also provide a hardcopy of the soil sampling documentation to the UDEQ within 30 days after submittal of the construction permit application to the City of Eureka. The soil sampling documentation shall be mailed to:

Utah Division of Environmental Quality
Division of Environmental Response and Remediation
Project Manager for the Eureka Mills Superfund Site
195 North 1950 West
Salt Lake City, Utah 84116

D.2 Field Documentation

The field documents detail site activities and observations so that an accurate and factual account of field procedures may be reconstructed. Required field documentation is described in Chapter 13, Appendix A, Section 4. The field documentation is part of the soil sampling documentation and must be submitted to the City of Eureka.

D.3 Laboratory Analytical Data Report

The laboratory analysis data report provides the analytical results for soil samples and quality control samples. The laboratory analysis data report must include enough information so soil sample results can be validated for quality and usability as described in Section C of this Appendix. At a minimum, laboratory analytical data reports must include the following:

- Sample documentation (location, date and time of collection and analysis, etc.)
- Chain of custody
- Sample receipt documentation
- Detailed case narrative
- Sample results
- Duplicate results
- Matrix spike and matrix spike duplicate recoveries
- Quality control sample results (e.g., Method Blank, Laboratory Control Sample)
- Reporting limit
- Method detection limit

The laboratory analytical data report is part of the soil sampling documentation and must be submitted to the City of Eureka.

D.4 Data Validation Summary

The data validation summary must include information and reasoning used to qualify the sample results for quality and usability. It should include a discussion of all PARCC parameters and sensitivity. The data validation summary is part of the soil sampling documentation and must be submitted to the City of Eureka.

P. O. Box 156
 15 North Church Street
 Eureka, Utah 84628



Phone: 435-433-6915
 Fax: 435-433-6891
 Email: eureka15@cut.net

EUREKA CITY CORPORATION

INCORPORATED NOV. 8, 1892

Website: eureka15.org

EXCAVATION / ENCROACHMENT PERMIT

<i>Applicant Information</i>			
Applicant Name	Permit Number	Date of Application	
Applicant Email Address:			Applicant Phone Number
<input type="checkbox"/> Franchise / Utility	<input type="checkbox"/> General Customer (Homeowner)	<input type="checkbox"/> Other (Plumber/Excavator)	
<i>Work Site Information</i>			
Address of Proposed Work		Legal Description of Property	
Owner Name		Owner Phone Number	
Name of Contractor		State License Number	
Contractor Email Address		Contractor Phone Number	
<input type="checkbox"/> Attach a Detailed Map/Site Plan (REQUIRED). Provide a detailed description below of the proposed work including lot addresses along the impacted areas. Site plan must show property boundaries, structures, other property improvements, and yard areas.			
<i>Excavation Description - Permit Area</i>			
Purpose of Excavation			
Size	Width	Length	Depth
Estimated volume of material to be excavated or disturbed.		Estimated surface dimensions of all areas to be disturbed or affected by the proposed activity, including areas used for the stockpiling or handling of soils	
Estimated volume of material to be disposed in the Open Cell			
Applicants plans for conserving the existing Protective Cap placed by the EPA during cleanup. (If more room is needed, use Additional Info. section).			
Applicant's plans for conducting soil sampling (if necessary) or the results of sampling previously conducted. Sampling shall be supervised by the City. The cost of soil sampling shall be borne by the property owner.			

Additional Information:

Starting Date _____

Completion Date _____

NOTE: Plans and Profile Drawings will need to be submitted prior to approval of Permit for Excavation.

PERMIT APPROVAL: YES NO

DATE: _____, 20__

Special Conditions and/or Provisions:

Permit Approved By: _____

Title: _____

APPLICANT'S AGREEMENT: The applicant, his successors and assigns, do hereby agree to assume all duties, obligations, and responsibilities required of them in the Eureka City Land Use/Excavation, Water & Wastewater Ordinances, and all Specifications approved and adopted by the Eureka City Council.

APPLICANT'S SIGNATURE: _____

DATE: _____

OFFICE USE ONLY:

PERMIT NO.: _____

PERMIT FEES PAID: _____

RECEIPT NO.: _____



APPENDIX D
UTAH ABANDONED MINE RECLAMATION PROGRAM PROJECT
SUMMARY REPORT FOR THE
CHIEF MINE No.1 SUBSIDENCE PROJECT



Abandoned Mine Reclamation Program PROJECT SUMMARY

CHIEF No. 1 SUBSIDENCE PROJECT

Project Location and Background

JUAB County, Utah

AMR/023/909

The Chief No. 1 mine shaft is located in the Tintic mining district of Juab County in the town of Eureka. Chief Consolidated Mining developed the shaft between 1909 and 1957 which reportedly extends to a depth of 1,800 feet. In 2002, the town and the surrounding areas were listed as an EPA Superfund site. Cleanup began shortly after, during which the Chief No. 1 shaft was closed by unknown means and the surrounding dump contoured and covered with geotextile, clean soil, and crushed limestone. The EPA determined “no further action” was required in 2011.



Subsidence in the waste rock at the shaft location was noted in 2016 and had grown to 100 ft diameter and 80 ft deep by spring 2017. Spectrum Engineering was contracted by AMRP to design a safeguard for the subsidence. Through coordination with the landowner, the City of Eureka, Utah DERR, US EPA, and AMRP, a design was developed to fill the subsidence hole with material from a nearby repository of contaminated soil. The design included a reinforced concrete plug at the bottom and recapping of the disturbed area.

Aerial image, June 2017.



Chief #1 Subsidence, 2017.



The AMRP in the Division of Oil, Gas and Mining, Utah Department of Natural Resources, was created in 1983 to address physical safety hazards associated with abandoned mines as authorized by the Surface Mining Reclamation and Control Act (SMCRA) of 1977. The Program is funded by The Utah Coal Producers who pay an abandoned mine reclamation fee to the Office of Surface Mining (OSM) on each ton of coal mined in Utah.

Owner:
LeadFX, a subsidiary of the Enirgi Group

General Contractor:
Nelco Contractors, Inc.

AMRP Project Manager:
Kent Phillips



Abandoned Mine Reclamation Program PROJECT SUMMARY

Chief No. 1 Subsidence Project, 2018-- Construction Summary

Nelco Contractors of Price, Utah was awarded the contract for the project. The work included: installation of a one-foot thick, reinforced concrete plug approximately 30' x 100' near the bottom of the subsidence hole; excavation, haulage, and dumping of approximately 12,831 cubic yards of contaminated waste soil for backfill from a repository located 1,000 ft from the site; and installation of a protective cap consisting of 16,000 sf geotextile and 440 cy crushed limestone.

Below: Chief No. 1 subsidence during reclamation.
Pouring the reinforced concrete plug.



PROJECT HIGHLIGHTS:

Project Cost: Bid Amount \$233,426.00
Final Amount **\$229,797.50**

Change Orders: 1 – (\$3,628.50)
- decrease fill material quantity
- increase decontamination and dust suppression water
- add regrade of haul road

Project Dates: Start: October 1, 2018
Finish: October 23, 2018
17 Work Days

Accomplishments: Subsidence plugged and backfilled
Protective cap replaced

Backfilling the subsidence hole.



Backfill complete. Preparing to replace cap of geotextile and crushed limestone.



Chief No. 1 Subsidence Project
AMLIS Key: UT000175
Construction Cost: \$229,797.50

APPENDIX E
PUBLIC NOTICE AND COMMUNITY INTERVIEWS



EUREKA REVIEW

VOLUME 15, ISSUE 1

JANUARY 2023



*Happy
New Year!*

*May you have
New Hopes, Aspirations
and Resolutions
for the coming year.*

NOTICES



PUBLIC NOTICE
Five-Year Review Planned for the former
Eureka Mills Superfund Site
Juab County, Utah



The Utah Department of Environmental Quality, Division of Environmental Response and Remediation (UDEQ/DERR) and the U.S. Environmental Protection Agency (EPA) are conducting the fourth Five-Year Review of the remedial actions performed for the Eureka Mills Superfund Site. The purpose of a Five-Year Review is to evaluate the implementation and performance of a remedy in order to determine if it is or will be protective of human health and the environment. The Five-Year Review will include a review of site documents, community interviews, and a site inspection to evaluate all remedy components, as well as the status of land-use controls. Upon completion of the review, a report will be made available to the public and is scheduled to be completed by July 17, 2023.

The U.S. EPA placed the site on the Superfund program's National Priorities List (NPL) on September 5, 2002 and completed cleanup of all properties within the city of Eureka in October 2011. More than 700 residential and commercial properties were addressed by remedial and removal cleanup which included capping and stabilizing thirteen large mine waste areas, construction of sediment ponds, and other drainage control features. In 2010, the City of Eureka adopted a land use ordinance, entitled "Regulations and Permitting Procedures for Excavations and Development," to ensure the protectiveness of the remedial actions to public health and the environment. With the completion of all response actions, the site was deleted from the NPL on September 25, 2018.

UDEQ and EPA invites community participation in the Five-Year Review process: As part of the Five-Year Review process, community members are encouraged to contact UDEQ staff with any information that may help EPA make its determination regarding the protectiveness and effectiveness of the remedies at the site. Additional site information is available at: DERR Offices located on the 1st Floor, at 195 North 1950 West, Salt Lake City, Utah, 84114. Please call for an appointment to review records at (801) 536-4100, Monday through Friday, from 8:30 A.M. to 4:30 P.M. Project documents are available online at: <http://eqedocs.utah.gov/> using the search phrase "Eureka Mills." **Or visit the EPA website at:** <https://cumulis.epa.gov/supercpad/cursites/csinfo.cfm?id=0801644>

If you would like more information about the review, please contact:

Craig Barnitz
UDEQ Project Manager
Phone: (801) 558-7511
Email: cbarnitz@utah.gov

Dave Allison
UDEQ Community Involvement
Phone: (385) 391-8143
Email: dallison@utah.gov

Sydney Chan
EPA Remedial Project Manager
Phone: (303) 312- 6691
Email: Chan.Sydney@epa.gov

**Eureka Mills Superfund Site
Five-Year Review
Interview of Local Agencies**

Site Name: Eureka Mills Superfund Site EPA ID: UT0002240158	January 9, 2023
Type of Contact: Visit	Contact Made By: Dave Allison, UDEQ/DERR Community Involvement Coordinator, Michael Storck, UDEQ/DERR Project Manager, Craig Barnitz, UDEQ/DERR Project Manager, and Sydney Chan, EPA Remedial Project Manager.
Person Contacted	
Mayor Chris Dever	Eureka City
Eureka City P. O. Box 156, 15 North Church Street Eureka, UT 84628	Phone: (801) 380-7700

1. **Is your organization/department aware of the Eureka Mills Superfund site and previous cleanup actions to address environmental contamination?** Mayor Christopher Dever took office in 2022 and a property owner in Eureka since 1997, of which one property received remediation as part of the Superfund cleanup. Mayor Dever knows the cleanup history of the former mining town delisted from the National Priority List in 2019 and is committed to managing the cleanup areas in the best way possible.
2. **What's your overall impression (your general sentiment) of the actions performed at the Eureka Mills Superfund Site?** Mayor Dever very rarely hears anything about the Superfund work completed in 2012 and other than the rock cap covering around town. Mayor Dever said he has a few questions related to the extent and thoroughness of the cleanup requirements and while digging on his property reached the orange marker detailing the depth of the soil removal cap. Mayor Dever said he knows the cleanup was thorough and runs throughout town. Mayor Dever said being relatively new in his position has a lot of questions and would like to know more details of how the City can best implement and utilize Institutional Controls and the Soils Ordinance.
3. **Does your office conduct routine communications and/or activities (site visits, inspections, reporting activities, participation in meetings, etc.) for the Eureka Mills Superfund Site? If so, please briefly summarize the purpose and results of these communications and/or activities over the past several years.** Mayor Dever said the city has a designated Permit Coordinator to oversee the City's soil ordinance. Mayor Dever said the City has participated in previous and current Five-Year Reviews and site related inspections with the EPA and UDEQ Project Managers. Mayor Dever said this is his first Five-Year Review and has had brief conversations with project managers notifying the city of site visits and activities.
4. **Are you aware of any community concerns regarding the Eureka Mills Superfund Site or its operation and administration? If so, please give details.** Mayor Dever said he's not aware of any current or past health or environmental concerns from the Eureka community and he doesn't have any as well.
5. **Over the past five years, have there been any complaints, violations, or other incidents (e.g., vandalism, trespassing, or emergency responses) at or related to the Eureka Mills Superfund Site requiring your office to respond? If so, please give details of the events and results of the**

response. Mayor Dever isn't aware of any incidents requiring a response for the City or a need to contact the EPA or UDEQ. However, Mayor Dever is aware of issues managing the soil repository, some fence repair, proper grading of soil piles, and drain repair. The drainage gulches need herbicides applied to keep the areas clear which are more typical maintenance issues. The introduction of natural gas to Eureka over the past year where connection lines are drilled below marker barriers has required detailed communication with Dominion Energy and the Eureka's Permit Coordinator. All of which the Mayor and Permit Coordinator are working through with UDEQ and EPA Project Managers to manage expectations of the Soils Ordinance.

6. **Do you feel well informed about the site's activities and progress over the last five years? Do you know how to contact the Environmental Protection Agency if you have questions or concerns about the Eureka Mills Superfund Site?** Mayor Dever said other than knowing the general - Superfund history of Eureka and as a new Mayor had many questions for managing the soils ordinance. Mayor Dever said he appreciated the opportunity to discuss requirements and responsibilities with the EPA and UDEQ Project Managers. Mayor Dever met with the UDEQ and EPA Project Managers, knew who to contact, and requested any training opportunities, advice, or guidance possible the EPA or UDEQ could provide to manage the cleanup work effectively.

Attention to the EPA funding agreement with the City and Permit Coordinator also needs defining for Mayor Dever to take any guesswork out of the reimbursement process and maintaining the Institutional Controls. Mayor Dever is also considering signage at both entrances to town for any contractors to coordinate with the Eureka Permit Coordinator too to eliminate potential surprises when digging is required.

7. **Over the past five years, have there been any changes in land use surrounding the Eureka Mills Superfund Site? Are you aware of potential future changes in land use? If so, please describe.** Mayor Dever said there haven't been any need or changes in land use impacting the Superfund remedy as Eureka has limited capacity for growth and it would take the right developer for Eureka. The City only sees a few construction applications a year and Mayor Dever said the City is focusing on growing Eureka from the inside out by developing small 50-foot to 100-foot lots.

Any large-scale developer would probably have to bring their own water shares as the ability to provide resources would determine the rate of potential growth opportunities. Mayor Dever said there are quality of life, small town decisions, as well as infrastructure needs for future development to take place in Eureka and it would have to be done in the right way.

8. **Do you have any comments, suggestions, or recommendations regarding the site's management or operation (institutional controls)? If so, what types of future problems do you think (1) could occur; or (2) would concern you and/or your department?** Mayor Dever said would like to continue to build the collaborative effort with EPA and UDEQ to keep the protective measures in place and refine processes which have been working well for Eureka. Mayor Dever said the only future problems are with a city with limited resources looking to repair areas where erosion is susceptible to curbing, roads, or retaining walls which intact are barriers to the capped cleanup soils. The Mayor would welcome any grant or funding resources applicable to address these issues when they occur.
9. **Do you have any additional comments?** No additional comments.

**Eureka Mills Superfund Site
Five-Year Review
Interview of Local Agencies**

Site Name: Eureka Mills Superfund Site EPA ID: UT0002240158	January 9, 2023
Type of Contact: Visit	Contact Made By: Dave Allison, UDEQ/DERR Community Involvement Coordinator, Michael Storck, UDEQ/DERR Project Manager, Craig Barnitz, UDEQ/DERR Project Manager, and Sydney Chan, EPA Remedial Project Manager.
Person Contacted	
Drew Froula, Permit Coordinator	Eureka City
Eureka City P. O. Box 156, 15 North Church Street Eureka, UT 84628	Phone: (435) 433-6915

- 1. Is your organization/department aware of the Eureka Mills Superfund site and previous cleanup actions to address environmental contamination?** Drew Froula said he is new to the Permit Coordinator position and took over four months ago for Eureka City. Froula works full time in the Eureka Public Works Department as a Utility Maintenance worker and had worked with the previous Permit Coordinator on various related tasks associated with the soil repository and access road, clearing weeds in drainage areas, and fence repair. Froula said the Permit Coordinator duties follow the soil ordinance requirements with any digging activities in Eureka. As a resident, Froula is aware of the Superfund cleanup history in Eureka.
- 2. What’s your overall impression (your general sentiment) of the actions performed at the Eureka Mills Superfund Site?** Froula said he has limited knowledge of the areas and doesn’t have any concerns or issues with the protectiveness of the cleanup.
- 3. Does your office conduct routine communications and/or activities (site visits, inspections, reporting activities, participation in meetings, etc.) for the Eureka Mills Superfund Site? If so, please briefly summarize the purpose and results of these communications and/or activities over the past several years.** Froula said he was briefly involved with EPA and UDEQ Project Managers during the site inspection last fall and during the current Five-Year Review. No regular communication tasks and Froula said he became aware of an annual reimbursement report which is required for payment from the EPA for services provided. Froula and Mayor Devers would like more information and guidance from UDEQ or EPA to meet expectations for any upcoming reporting needs for the Permit Coordinator duties.
- 4. Are you aware of any community concerns regarding the Eureka Mills Superfund Site or its operation and administration? If so, please give details.** Froula said no one has mentioned any health or environmental concerns that he has heard about living and working in Eureka. Froula said the only negative or complaint is a general feeling from a few residents that there was too much rock used to cap areas which changed the appearance of areas of town.
- 5. Over the past five years, have there been any complaints, violations, or other incidents (e.g., vandalism, trespassing, or emergency responses) at or related to the Eureka Mills Superfund Site requiring your office to respond? If so, please give details of the events and results of the response.** Froula said the City responded to an issue conveyed to his department by UDEQ where the repository wasn’t left in the best condition. Dominion Energy contractors working on natural gas installations within Eureka over the past year had left soil piles and some construction materials were

found below operation and maintenance standards. Froula said the issues were communicated and the City has a good rapport with Dominion Energy addressing grading the piles and restoring the repository to the intended use. Froula said the Dominion Contractors were responsive and great to work with. Froula said Dominion graded the repository while removing some concrete boulders and black top materials which were taken to an appropriate landfill.

6. Do you feel well informed about the site's activities and progress over the last five years? Do you know how to contact the Environmental Protection Agency if you have questions or concerns about the Eureka Mills Superfund Site? Having been introduced to the EPA and UDEQ Project Managers while learning on the job, Froula said he's knowledgeable of the site and able to contact the appropriate people if needed. Froula said if any issues arise he would coordinate and call EPA and UDEQ with any questions.

7. Over the past five years, have there been any changes in land use surrounding the Eureka Mills Superfund Site? Are you aware of potential future changes in land use? If so, please describe. Froula isn't aware of any land use changes which would impact the site and the soil ordinance.

8. Do you have any comments, suggestions, or recommendations regarding the site's management or operation (institutional controls)? If so, what types of future problems do you think (1) could occur; or (2) would concern you and/or your department? Froula doesn't have any recommendations with the site management and his permit coordinator responsibilities. Froula said he looks to continue Eureka's efforts to keep remedy safeguards in place and said it's always easier to maintain areas than repair. Froula said he expects to work with UDEQ and EPA to clarify the funding agreement and to help with any developing issues

9. Do you have any additional comments? No additional comments.

**Eureka Mills Superfund Site
Five-Year Review
Interview of Community Members**

Site Name: Eureka Mills Superfund Site EPA ID: UT0002240158	January 27, 2023
Type of Contact: Email	Contact Made By: Dave Allison, UDEQ/DERR Community Involvement Coordinator
Person Contacted	
Michael Gill Director, Engineering & Project Management	Organization: Dominion Energy Utah
Address: 1140 W 200 S Salt Lake City, Utah, 84104	Telephone Number: (801) 324-3787 Email Address: michael.gill@dominionenergy.com

1. **Are you aware of the Eureka Mills Superfund Site and the response work that was taken or is underway to address environmental contamination?** Yes
2. **What's your overall impression (your general sentiment) of the response work taken/underway that was completed at the Eureka Mills Superfund Site?** Site managers appear to be following management plans and communicating well with those working within site boundaries.
3. **What would you say are the effects that past and current mining operations had on the community surrounding the Eureka Mills Superfund Site?**

Not applicable to Dominion Energy Utah's role in the community.
4. **Are you aware of any community concerns regarding the Eureka Mills Superfund Site, as it pertains to actions taken or underway to address environmental contamination? If so, please give details.**
No
5. **Over the past five years, have there been any events, incidents, or activities at the Eureka Mills Superfund Site that concern you? If so, please provide details.** Dominion Energy Utah has been serving the community since 2021. No concerns have arisen during that time.
6. **Are you aware of any unusual activities at the Eureka Mills Superfund Site such as vandalism, trespassing, or emergency responses from local authorities? If so, please give date(s), details, and outcome(s) if known.** We are not aware of any unusual activities at the Eureka Mills Superfund Site.
7. **Do you feel well informed about the activities and progress over the last five years at the Eureka Mills Superfund Site? Do you know how to contact the Environmental Protection Agency and/or UDEQ-DERR if you have questions or concerns about the Eureka Mills Superfund Site? Also, do you feel the Agencies communicate with the public or respond effectively to their comments?** Dominion Energy Utah is a new community member. We have contact information for both agencies and UDEQ has served as the primary Superfund site contact for Dominion Energy Utah.
8. **Are you aware of any concerns about Eureka Mills Superfund Site impacts on development activities, land use, groundwater use, and/or historical preservation actions?** No concerns.
9. **Do you have any additional comments, suggestions, or recommendations regarding the Eureka Mills Superfund Site management (for example, questions pertaining to institutional controls)?**
No additional comments.

**Eureka Mills Superfund Site
Five-Year Review
Interview of Local Agencies**

Site Name: Eureka Mills Superfund Site EPA ID: UT0002240158	January 31, 2023
Type of Contact: Teleconference	Contact Made By: Dave Allison, UDEQ/DERR Community Involvement Coordinator, Craig Barnitz, UDEQ/DERR Project Manager, and Sydney Chan, EPA Remedial Project Manager.
Person Contacted	
Steve Fluke, Abandoned Mines & Reclamation Program Manager	Department of Natural Resources (DNR) Division of Oil, Gas & Mining (DOGGM)
Department of Natural Resources Division of Oil, Gas and Mining 1594 West North Temple, Suite 1210 Salt Lake City, Utah 84116	Phone: (801) 538-5259

1. Is your organization/department aware of the Eureka Mills Superfund site and previous cleanup actions to address environmental contamination? Steve Fluke is the Abandoned Mines & Reclamation Program (AMRP) Manager in the Department of Natural Resources (DNR) and has worked in the Tintic mining district of Juab County with closure projects in and around Eureka for 25 years. Fluke is familiar with the Superfund cleanup and said the AMRP includes sites to the northwest of Eureka, North Tintic area, Mammoth, and Silver City. Fluke said AMRP is currently in a final phase of closing some abandoned mines on Bureau of Land Management (BLM) land close to Eureka.

2. What's your overall impression (your general sentiment) of the actions performed at the Eureka Mills Superfund Site? Fluke said his program was involved to repair a massive sinkhole associated with the Chief No. 1 mine shaft located in town in 2016. Fluke said they were initially notified by the landowner, Eureka City, with some subsidence of waste rock in the shaft which increasingly grew. Fluke said the sinkhole measured 100 ft diameter and 80 ft deep and was a rare occurrence. Fluke said the sinkhole was filled without incident and repaired in October of 2018.

Through coordination with the City of Eureka, Utah DERR, US EPA, and AMRP, a design was developed to fill the sink hole with material from the local soil repository established by the Superfund cleanup for lead contaminated soils. Fluke said he doesn't know without the volume and proximity of the open cell repository soils how they could have backfilled the sizable sinkhole if they had to haul in soil. Fluke said it would have been three times the cost and having available backfill 1000-feet away was a huge break. The design included a reinforced concrete plug at the bottom and recapping of the disturbed area. Fluke said the top of the sinkhole was graded with a protective cap consisting of geotextile and crushed limestone. Using the repository soils really helped said Fluke and he has never seen such a large subsidence hole in his 15 years with the AMRP.

3. Does your office conduct routine communications and/or activities (site visits, inspections, reporting activities, participation in meetings, etc.) for the Eureka Mills Superfund Site? If so, please briefly summarize the purpose and results of these communications and/or activities over the past several years. Fluke said they only have regular project related activities and do not inspect closure work once they are completed. Fluke said they do have limited maintenance resources and would try to

respond to any unforeseen issues if they occur. Fluke said we have public meetings, send out flyers, or take public comment on mine closure or cultural resource activities.

4. Are you aware of any community concerns regarding the Eureka Mills Superfund Site or its operation and administration? If so, please give details. Fluke said no one had any concerns considering the sinkhole problem and his program worked well with the city on the project.

5. Over the past five years, have there been any complaints, violations, or other incidents (e.g., vandalism, trespassing, or emergency responses) at or related to the Eureka Mills Superfund Site requiring your office to respond? If so, please give details of the events and results of the response. Fluke said considering the sinkhole was an incident necessary for his program to respond was the extent of his involvement. Fluke did notice some of the former Chief Mining Company office structures in the area with vandalism but unrelated to their work or the Superfund remedy.

6. Do you feel well informed about the site's activities and progress over the last five years? Do you know how to contact the Environmental Protection Agency if you have questions or concerns about the Eureka Mills Superfund Site? I think so, said Fluke as we've collaborated on this and other projects. If the EPA or UDEQ notices anything we should be involved with, trusts we would make a call or notify them and vice versa. Fluke said he would know who to speak with if necessary.

7. Do you have any comments, suggestions, or recommendations regarding the site's management or operation (institutional controls)? If so, what types of future problems do you think (1) could occur; or (2) would concern you and/or your department? Fluke did not have any recommendations or future management issues and said there aren't any maintenance commitments from his program for the project. If something develops with the sinkhole area, a possible subsidence, Fluke said they would be happy to look at it and would appreciate a call if we see anything.

**Eureka Mills Superfund Site
Five-Year Review
Interview of Local Agencies**

Site Name: Eureka Mills Superfund Site EPA ID: UT0002240158	February 2, 2023
Type of Contact: Teleconference	Contact Made By: Dave Allison, UDEQ/DERR Community Involvement Coordinator, Craig Barnitz, UDEQ/DERR Project Manager, and Sydney Chan, EPA Remedial Project Manager.
Person Contacted	
Lynn Ingram, Juab County Roads Manager	Juab County
Juab County 160 N Main Nephi, UT 84648	Phone: (435) 660-9997

1. Is your organization/department aware of the Eureka Mills Superfund site and previous cleanup actions to address environmental contamination? Lynn Ingram is the Juab County Roads Manager and maintains the Knightsville Road and drainage channels associated with capped areas northeast of Highway 6. Ingram has worked for Juab County for 34 years and maintained the Superfund areas ever since they were turned over to the County. Juab County oversees nearly 1300 miles of roads, 175 miles paved and 1100 miles of dirt roads to grade and maintain.

2. What’s your overall impression (your general sentiment) of the actions performed at the Eureka Mills Superfund Site? Ingram said Knightsville Road isn’t travelled daily and is more of a side road leaving Highway 6 as it goes through Eureka and into Utah County and is just a short section of the Juab County road system. The road is primarily used by recreationalists, four-wheelers and side-by-sides than anything else. Ingram said the County really only visits the area a couple of times a year for grading the road in the spring and in the fall. Although the Knightsville Road and associated culverts is a small percentage, one-mile area of Juab County’s responsibilities, Ingram said if they see any issues they’ll address them during this time.

Ingram said he knows the importance of maintaining erosion controls in place and hasn’t seen anything the County hasn’t been able to keep protective from erosion. Ingram asked from a resource perspective, if there were an end point for the EPA and UDEQ oversight post-cleanup and the institutional controls and Five -Year Review requirements were in perpetuity.

3. Does your office conduct routine communications and/or activities (site visits, inspections, reporting activities, participation in meetings, etc.) for the Eureka Mills Superfund Site? If so, please briefly summarize the purpose and results of these communications and/or activities over the past several years. Ingram said aside from the maintenance grading checks twice a year, there are no routine communication activities or reports and the County has had an occasional call from UDEQ during annual inspections if repair work was necessary. Ingram said if they see any issues they fix the problem without requiring a report from anyone.

4. Are you aware of any community concerns regarding the Eureka Mills Superfund Site or its operation and administration? If so, please give details. Ingram is not aware of any community concerns regarding the road and drainage areas.

- 5. Over the past five years, have there been any complaints, violations, or other incidents (e.g., vandalism, trespassing, or emergency responses) at or related to the Eureka Mills Superfund Site requiring your office to respond? If so, please give details of the events and results of the response.** As far as incidents, Ingram said there was some flood damage with the original drainage culvert not able to handle the water coming down and the County installed an additional 24-inch culvert in 2019. This helped divide the flow into two culverts rather than one to resolve the problem. Ingram said this helped prevent erosion potential by taking water off the road sooner. Ingram isn't aware of any complaints or problems in general with the area.
- 6. Do you feel well informed about the site's activities and progress over the last five years? Do you know how to contact the Environmental Protection Agency if you have questions or concerns about the Eureka Mills Superfund Site?** Ingram feels well informed about site activities and has received an email once in a while to answer any questions from an inspection regarding the Eureka Mills cleanup. Ingram usually speaks to the UDEQ Project Manager with any concerns or issues and hasn't needed additional information.
- 7. Over the past five years, have there been any changes in land use surrounding the Eureka Mills Superfund Site? Are you aware of potential future changes in land use? If so, please describe.** Ingram said there has not been any changes to the road or drainage areas.
- 8. Do you have any comments, suggestions, or recommendations regarding the site's management or operation (institutional controls)? If so, what types of future problems do you think (1) could occur; or (2) would concern you and/or your department?** Ingram said so far everything has worked really well with everyone involved and hasn't had any issues with the maintenance responsibilities. If something has come up, Ingram said the County has been able to work through it to get it taken care of and has worked fine with UDEQ and EPA. Barring a major event, Ingram is anticipating a potential high-water runoff this year, and believes everything will work fine.

APPENDIX F
SITE INSPECTION AND PHOTOGRAPHS

Five-Year Review Site Inspection Checklist

(Working document for site inspection. Information may be completed by hand and attached to the Five-Year Review report as supporting documentation of site status. "N/A" refers to "not applicable.")

I. SITE INFORMATION															
Site name: Eureka Mills	Date of inspection: 8/17/2022 and 9/2/2022														
Location and Region: Eureka, Juab County, Utah	EPA ID: UT0002240158														
Agency, office, or company leading the five-year review: UDEQ/DERR	Weather/temperature: Mostly Sunny, Clear Skies	Temperature: 79F/93F	82F/89F												
Remedy Includes: (Check all that apply) <table style="width: 100%; margin-top: 5px;"> <tr> <td style="width: 50%;"><input checked="" type="checkbox"/> Landfill cover/containment</td> <td style="width: 50%;"><input type="checkbox"/> Monitored natural attenuation</td> </tr> <tr> <td><input checked="" type="checkbox"/> Access controls</td> <td><input type="checkbox"/> Groundwater containment</td> </tr> <tr> <td><input checked="" type="checkbox"/> Institutional controls</td> <td><input type="checkbox"/> Vertical barrier walls</td> </tr> <tr> <td><input type="checkbox"/> Groundwater pump and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Surface water collection and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Other _____</td> <td></td> </tr> </table>				<input checked="" type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation	<input checked="" type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment	<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls	<input type="checkbox"/> Groundwater pump and treatment		<input type="checkbox"/> Surface water collection and treatment		<input type="checkbox"/> Other _____	
<input checked="" type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation														
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<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls														
<input type="checkbox"/> Groundwater pump and treatment															
<input type="checkbox"/> Surface water collection and treatment															
<input type="checkbox"/> Other _____															
Attachments: <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached															
II. INTERVIEWS (Check all that apply)															
1. O&M site manager	Lynn Elliott	Permit Coordinator	8/17/2022 and 9/2/2022												
	Name	Title	Date												
Interviewed <input checked="" type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input checked="" type="checkbox"/> Report attached <u>Issues identified by Lynn Elliott are noted in the Site Inspection Report.</u>															

2. O&M staff	Drew Froula	Eureka Maintenance	8/17/2022 and 9/2/2022												
	Name	Title	Date												
Interviewed <input checked="" type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone no. _____ Problems, suggestions; <input checked="" type="checkbox"/> Report attached <u>Issues identified by Drew Froula are noted in the Site Inspection Report.</u>															

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)			
1.	O&M Documents <input checked="" type="checkbox"/> O&M manual <input checked="" type="checkbox"/> As-built drawings <input type="checkbox"/> Maintenance logs Remarks _____	<input checked="" type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A
2.	Site-Specific Health and Safety Plan <input type="checkbox"/> Contingency plan/emergency response plan Remarks _____	<input checked="" type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> N/A
3.	O&M and OSHA Training Records Remarks _____	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date <input type="checkbox"/> N/A
4.	Permits and Service Agreements <input type="checkbox"/> Air discharge permit <input type="checkbox"/> Effluent discharge <input type="checkbox"/> Waste disposal, POTW <input type="checkbox"/> Other permits _____ Remarks _____	<input type="checkbox"/> Readily available <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A
5.	Gas Generation Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A
6.	Settlement Monument Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A
7.	Groundwater Monitoring Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A
8.	Leachate Extraction Records Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A
9.	Discharge Compliance Records <input type="checkbox"/> Air <input type="checkbox"/> Water (effluent) Remarks _____	<input type="checkbox"/> Readily available <input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> N/A
10.	Daily Access/Security Logs Remarks _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date <input checked="" type="checkbox"/> N/A

IV. O&M COSTS			
1.	O&M Organization	<input type="checkbox"/> Contractor for State	
	<input checked="" type="checkbox"/> State in-house	<input type="checkbox"/> Contractor for PRP	
	<input type="checkbox"/> PRP in-house	<input type="checkbox"/> Contractor for Federal Facility	
	<input type="checkbox"/> Federal Facility in-house	<input type="checkbox"/> Contractor for Federal Facility	
	<input type="checkbox"/> Other _____		
2.	O&M Cost Records	<input type="checkbox"/> Up to date : Funding Agreement with Eureka and State of Utah is out of date.	
	<input checked="" type="checkbox"/> Readily available	<input type="checkbox"/> Breakdown attached	
	<input type="checkbox"/> Funding mechanism/agreement in place		
	Original O&M cost estimate _____		
	Total annual cost by year for review period if available		
	From _____ To _____	_____ Total cost	<input type="checkbox"/> Breakdown attached
	Date Date		
	From _____ To _____	_____ Total cost	<input type="checkbox"/> Breakdown attached
	Date Date		
	From _____ To _____	_____ Total cost	<input type="checkbox"/> Breakdown attached
	Date Date		
	From _____ To _____	_____ Total cost	<input type="checkbox"/> Breakdown attached
	Date Date		
	From _____ To _____	_____ Total cost	<input type="checkbox"/> Breakdown attached
	Date Date		
3.	Unanticipated or Unusually High O&M Costs During Review Period		
	Describe costs and reasons: _____		
	No unanticipated or unusually high O&M costs were noted during the review period.		

V. ACCESS AND INSTITUTIONAL CONTROLS <input type="checkbox"/> Applicable <input type="checkbox"/> N/A			
A. Fencing			
1.	Fencing damaged	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Gates secured <input type="checkbox"/> N/A
	Remarks Fencing and gate issues identified at the site are noted in the Site Inspection Report.		

B. Other Access Restrictions			
1.	Signs and other security measures	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A
	Remarks Signage issues identified at the site are noted in the Site Inspection Report. The locks on the gates at the Chief Mine #1, Bullion Beck, Gemini, and Snowflake mines were reportedly changed by the property owners.		

C. Institutional Controls (ICs)			
1.	Implementation and enforcement		
	Site conditions imply ICs not properly implemented	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
	Site conditions imply ICs not being fully enforced	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
	Type of monitoring (e.g., self-reporting, drive by)	Eureka implements and enforces the land use ordinance	
	Frequency	As required	
	Responsible party/agency	Eureka	
	Contact	Lynn Elliott	Permit Coordinator (435) 433-6915
		Name	Title Date Phone no.
	Reporting is up-to-date	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	Reports are verified by the lead agency	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	Specific requirements in deed or decision documents have been met	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	Violations have been reported	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	Other problems or suggestions:	<input checked="" type="checkbox"/> Report attached	
	Improper disposal of 45-50 soil piles were observed inside the Open Cell, the on-site repository for lead contaminated soils, during the site inspections conducted on 8/17/2002 and 9/2/2002. The soil piles were placed in the Open Cell without proper grading and compaction. Evidence of illegal dumping of materials were also observed in the Open Cell. A full description is noted in the Site Inspection Report.		
2.	Adequacy	<input checked="" type="checkbox"/> ICs are adequate	<input type="checkbox"/> ICs are inadequate <input type="checkbox"/> N/A
	Remarks	_____	

D. General			
1.	Vandalism/trespassing	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No vandalism evident
	Remarks	Issues involving vandalism and trespass were noted at the Upper Godiva-May Day mine areas and at the Open Cell. A full description is provided in the Site Inspection Report.	
2.	Land use changes on site	<input checked="" type="checkbox"/> N/A	
	Remarks	_____	

3.	Land use changes off site	<input checked="" type="checkbox"/> N/A	
	Remarks	_____	

VI. GENERAL SITE CONDITIONS			
A. Roads	<input checked="" type="checkbox"/> Applicable	<input type="checkbox"/> N/A	
1.	Roads damaged	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Roads adequate <input type="checkbox"/> N/A
	Remarks	Erosion rills were noted along several access roads. Two larger erosion rills along the Chief Mill Site No. 1 access road will require repair.	

B. Other Site Conditions		
Remarks _____ The Eureka Mills five-year review site inspection was conducted in accordance with the site-specific O&M Manual. The observations during the site inspection are documented in the Site Inspection Report included in Appendix F. For this checklist, it should be noted that Remedial Action Structures (RAS) consisting of capped mine waste piles, access roads, drainage channels, and sedimentation ponds at the site are addressed under the Landfill Covers _____ _____		
VII. LANDFILL COVERS <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A		
A. Landfill Surface		
1.	Settlement (Low spots) Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Settlement not evident
2.	Cracks Lengths _____ Widths _____ Depths _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Cracking not evident
3.	Erosion Areal extent _____ Depth _____ Remarks The Open Cell is an on-site repository for lead contaminated soils. Issues at the Open Cell were observed during the site inspection. A full description is provided in the Site Inspection Report.	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Erosion not evident
4.	Holes Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Holes not evident
5.	Vegetative Cover <input checked="" type="checkbox"/> Grass <input checked="" type="checkbox"/> Cover properly established <input type="checkbox"/> No signs of stress <input type="checkbox"/> Trees/Shrubs (indicate size and locations on a diagram) Remarks Portions of the Open Cell, the Chief Mine #1, and the Chief Mill Site #1 have a vegetative cover. No issues were observed in the vegetative cover at these locations.	
6.	Alternative Cover (armored rock, concrete, etc.) <input type="checkbox"/> N/A Remarks The RASs at the site, including mine waste piles, access roads, drainages, and sedimentation ponds are capped with a geotextile liner and armored rock. The RASs were generally noted to be in good condition at the site.	
7.	Bulges Areal extent _____ Height _____ Remarks _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Bulges not evident

8.	Wet Areas/Water Damage	<input type="checkbox"/> Wet areas/water damage not evident	
	<input type="checkbox"/> Wet areas	<input type="checkbox"/> Location shown on site map	Areal extent _____
	<input checked="" type="checkbox"/> Ponding	<input type="checkbox"/> Location shown on site map	Areal extent _____
	<input type="checkbox"/> Seeps	<input type="checkbox"/> Location shown on site map	Areal extent _____
	<input type="checkbox"/> Soft subgrade	<input type="checkbox"/> Location shown on site map	Areal extent _____
	Remarks <u>Improper grading in the Open Cell resulted in areas of ponded storm water.</u>		
9.	Slope Instability	<input type="checkbox"/> Slides	<input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> No evidence of slope instability
	Areal extent _____		
	Remarks _____		
B. Benches <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)			
1.	Flows Bypass Bench	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> N/A or okay
	Remarks _____		
2.	Bench Breached	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> N/A or okay
	Remarks _____		
3.	Bench Overtopped	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> N/A or okay
	Remarks _____		
C. Letdown Channels <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A			
(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)			
1.	Settlement	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> No evidence of settlement
	Areal extent _____	Depth _____	
	Remarks _____		
2.	Material Degradation	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> No evidence of degradation
	Material type _____	Areal extent _____	
	Remarks _____		
3.	Erosion	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> No evidence of erosion
	Areal extent _____	Depth _____	
	Remarks _____		

4.	Undercutting	<input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> No evidence of undercutting
	Areal extent _____	Depth _____	
	Remarks _____		
5.	Obstructions	Type _____	<input checked="" type="checkbox"/> No obstructions
	<input type="checkbox"/> Location shown on site map	Areal extent _____	
	Size _____		
	Remarks _____		
6.	Excessive Vegetative Growth	Type _____	
	<input type="checkbox"/> No evidence of excessive growth		
	<input type="checkbox"/> Vegetation in channels does not obstruct flow		
	<input type="checkbox"/> Location shown on site map	Areal extent _____	
	Remarks Vegetative growth was noted at multiple RASs. The vegetative growth was considered minor and did not require immediate removal. The vegetation will continue to be monitored during the annual inspections.		
D. Cover Penetrations <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
1.	Gas Vents	<input type="checkbox"/> Active <input type="checkbox"/> Passive	
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Needs Maintenance	
	<input checked="" type="checkbox"/> N/A		
	Remarks _____		
2.	Gas Monitoring Probes	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Needs Maintenance	<input checked="" type="checkbox"/> N/A
	Remarks _____		
3.	Monitoring Wells (within surface area of landfill)	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Needs Maintenance	<input checked="" type="checkbox"/> N/A
	Remarks _____		
4.	Leachate Extraction Wells	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition
	<input type="checkbox"/> Evidence of leakage at penetration	<input type="checkbox"/> Needs Maintenance	<input checked="" type="checkbox"/> N/A
	Remarks _____		
5.	Settlement Monuments	<input type="checkbox"/> Located	<input type="checkbox"/> Routinely surveyed <input checked="" type="checkbox"/> N/A
	Remarks _____		

E. Gas Collection and Treatment		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Gas Treatment Facilities	<input type="checkbox"/> Flaring	<input type="checkbox"/> Thermal destruction
		<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance
		<input type="checkbox"/> Collection for reuse	
	Remarks	_____	

2.	Gas Collection Wells, Manifolds and Piping	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance
	Remarks	_____	

3.	Gas Monitoring Facilities (e.g., gas monitoring of adjacent homes or buildings)	<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs Maintenance
		<input checked="" type="checkbox"/> N/A	
	Remarks	_____	

F. Cover Drainage Layer		<input checked="" type="checkbox"/> Applicable	<input type="checkbox"/> N/A
1.	Outlet Pipes Inspected	<input checked="" type="checkbox"/> Functioning	<input type="checkbox"/> N/A
	Remarks	_____	

2.	Outlet Rock Inspected	<input checked="" type="checkbox"/> Functioning	<input type="checkbox"/> N/A
	Remarks	_____	

G. Detention/Sedimentation Ponds		<input checked="" type="checkbox"/> Applicable	<input type="checkbox"/> N/A
1.	Siltation Areal extent _____	Depth _____	<input type="checkbox"/> N/A
	<input checked="" type="checkbox"/> Siltation not evident		
	Remarks	_____	

2.	Erosion Areal extent _____	Depth _____	
	<input checked="" type="checkbox"/> Erosion not evident		
	Remarks	_____	

3.	Outlet Works	<input checked="" type="checkbox"/> Functioning	<input type="checkbox"/> N/A
	Remarks	_____	

4.	Dam	<input type="checkbox"/> Functioning	<input checked="" type="checkbox"/> N/A
	Remarks	_____	

H. Retaining Walls		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Deformations	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Deformation not evident
	Horizontal displacement _____	Vertical displacement _____	
	Rotational displacement _____		
	Remarks _____		

2.	Degradation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Degradation not evident
	Remarks _____		

I. Perimeter Ditches/Off-Site Discharge		<input checked="" type="checkbox"/> Applicable	<input type="checkbox"/> N/A
1.	Siltation	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Siltation not evident
	Areal extent _____	Depth _____	
	Remarks _____		

2.	Vegetative Growth	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A
	<input type="checkbox"/> Vegetation does not impede flow		
	Areal extent _____	Type _____	
	Remarks Significant vegetative growth was noted in the Upper and Lower Eureka Gulches. The DERR will work with the city of Eureka to remove the vegetation.		

3.	Erosion	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Erosion not evident
	Areal extent _____	Depth _____	
	Remarks _____		

4.	Discharge Structure	<input checked="" type="checkbox"/> Functioning	<input type="checkbox"/> N/A
	Remarks _____		

VIII. VERTICAL BARRIER WALLS		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Settlement	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Settlement not evident
	Areal extent _____	Depth _____	
	Remarks _____		

2.	Performance Monitoring	Type of monitoring _____	
	<input type="checkbox"/> Performance not monitored		
	Frequency _____	<input type="checkbox"/> Evidence of breaching	
	Head differential _____		
	Remarks _____		

IX. GROUNDWATER/SURFACE WATER REMEDIES <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
A. Groundwater Extraction Wells, Pumps, and Pipelines <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
1.	Pumps, Wellhead Plumbing, and Electrical <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells properly operating <input type="checkbox"/> Needs Maintenance <input checked="" type="checkbox"/> N/A Remarks _____ _____ _____
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____
3.	Spare Parts and Equipment <input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided Remarks _____ _____
B. Surface Water Collection Structures, Pumps, and Pipelines <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A	
1.	Collection Structures, Pumps, and Electrical <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances <input checked="" type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____
3.	Spare Parts and Equipment <input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided Remarks _____ _____

C. Treatment System		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
1.	Treatment Train (Check components that apply) <input type="checkbox"/> Metals removal <input type="checkbox"/> Oil/water separation <input type="checkbox"/> Bioremediation <input type="checkbox"/> Air stripping <input type="checkbox"/> Carbon adsorbers <input type="checkbox"/> Filters _____ <input type="checkbox"/> Additive (e.g., chelation agent, flocculent) _____ <input type="checkbox"/> Others _____ <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> Sampling ports properly marked and functional <input type="checkbox"/> Sampling/maintenance log displayed and up to date <input type="checkbox"/> Equipment properly identified <input type="checkbox"/> Quantity of groundwater treated annually _____ <input type="checkbox"/> Quantity of surface water treated annually _____ Remarks _____ _____		
2.	Electrical Enclosures and Panels (properly rated and functional) <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____		
3.	Tanks, Vaults, Storage Vessels <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Proper secondary containment <input type="checkbox"/> Needs Maintenance Remarks _____ _____		
4.	Discharge Structure and Appurtenances <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____ _____		
5.	Treatment Building(s) <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Good condition (esp. roof and doorways) <input type="checkbox"/> Needs repair <input type="checkbox"/> Chemicals and equipment properly stored Remarks _____ _____		
6.	Monitoring Wells (pump and treatment remedy) <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells located <input type="checkbox"/> Needs Maintenance <input checked="" type="checkbox"/> N/A Remarks _____ _____		
D. Monitoring Data			
1.	Monitoring Data <input type="checkbox"/> Is routinely submitted on time <input type="checkbox"/> Is of acceptable quality		
2.	Monitoring data suggests: <input type="checkbox"/> Groundwater plume is effectively contained <input type="checkbox"/> Contaminant concentrations are declining		

D. Monitored Natural Attenuation			
1.	Monitoring Wells (natural attenuation remedy) <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells located <input type="checkbox"/> Needs Maintenance <input checked="" type="checkbox"/> N/A Remarks _____ _____		
X. OTHER REMEDIES			
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.			
XI. OVERALL OBSERVATIONS			
A. Implementation of the Remedy			
Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). _____ The remedy at the Eureka Mills site was functioning as intended to reduce exposure to the lead contaminated soils for the residents of Eureka. The remedy at the site consisted of the design of RASs that cap the historic mine waste in place, excavate the _____ soils from residential and commercial properties, institute public health actions until the remedial action is completed, and implement institutional controls including deed restrictions and a local land use ordinance to manage future activities within Eureka boundaries. _____ _____ _____ _____ _____			
B. Adequacy of O&M			
Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. _____ The site is inspected annually in accordance with the O&M Manual. The O&M Manual contains detailed checklists for each RAS that requires inspection. The local land use ordinance is defined in the Eureka City Land Use Ordinance Chapter 13 Special Regulations - Eureka Mills Superfund Site. The ordinance is overseen and enforced through the Permit Coordinator employed by the city of Eureka. The ordinance provides for the management and disposal of lead contaminated soils that remain in the city of Eureka. _____ _____ _____ _____ _____			

C. Early Indicators of Potential Remedy Problems

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

No issues indicating a problem with the remedy were observed. While repairs to the remedy are needed to maintain protectiveness
There was no noted increase in frequency or costs of these repairs.

D. Opportunities for Optimization

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

No opportunities for optimization were noted.



EUREKA MILLS ANNUAL/FIVE-YEAR REVIEW SITE INSPECTION REPORT August 17, 2022 and September 2, 2022

The Annual Site Inspection was conducted on two separate dates, August 17, 2022 and September 2, 2022, by Craig Barnitz, Project Manager for the Utah Division of Environmental Response and Remediation (DERR). Michael Storck and David Allison with the DERR and Sydney Chan with the United States Environmental Protection Agency, Region VIII (EPA) attended the August 17, 2022 inspection.

During the August 17, 2022 site inspection activity, the DERR and EPA arrived in the city of Eureka at 09:54 AM. The temperature was approximately 79°F Fahrenheit (F) on arrival with an anticipated high of 93°F and the weather was mostly sunny with clear skies.

Prior to conducting the September 2, 2022 site inspection activity, the DERR met with Eureka City Mayor Chris Dever, Lynn Elliott (Eureka City - Permit Coordinator), and Drew Froula (Eureka City) to discuss concerns with the maintenance of the Open Cell and the Upper and Lower Eureka Gulch areas identified during the August 17 inspection. The DERR arrived on-site at 10:00 AM. The temperature was approximately 82°F on arrival with an anticipated high of 89°F and the weather was mostly sunny with clear skies.

This Annual Site Inspection will also serve as the Site Inspection for the upcoming Fourth Five-Year Review.

Key concerns identified during the Annual Site Inspection that will need to be addressed in the coming year are as follows:

1. Accumulation of vegetation, primarily weeds, sage brush and small trees, was observed in the Upper and Lower Eureka Gulch. This issue was identified during the previous 2021 Annual Site Inspection but had not been addressed during the year.
2. The inspection of the Open Cell found approximately 45-50 piles of soil that had not been properly graded or compacted. The soil piles were observed in the Open Cell during the site visits on both August 17th and September 2nd. A discussion with Eureka personnel during the September 2nd site visit indicated that these piles would be compacted and graded by Dominion Energy contractors in the fall 2022 following completion of the natural gas line project.
3. Construction debris (including steel posts, asphalt and concrete) were observed within the Open Cell. During discussions on the September 2nd site visit, Eureka personnel stated that they would remove these waste materials for proper disposal.
4. The gate at the top of the Open Cell was both damaged and removed from the hinges and in need of repair.

5. A drainage line leading from the decontamination pad at the Open Cell was not functioning properly. Statements made by Eureka personnel indicate the drain line has collapsed at a location beneath the access road, prohibiting water inside the decontamination pad from properly draining.
6. At the Eagle Blue Bell Mine Waste Pile, fencing along the east side of the headframe was damaged allowing access to the mineshaft area.
7. At the Chief Mine #1 Waste Pile, the fencing at the east side of the entrance gate was severely damaged. The fence was torn down allowing for trespass to the site.
8. A rusted steel tank (approximately 500 gallons) likely from the historic mine was found rolled down the east slope of the Chief Mine No. 2 waste pile. The tank does not appear to affect the armored rock cap, and given the current location (low on the slope) is not easily accessible. However, the situation should be monitored and discussions held to determine if the tank can be removed.
9. The locks to several gates, notably gates to the Chief Mine #1, Snowflake Mine Waste Pile, Gemini Mine Waste Pile and the Bullion Beck Mill and Mine Waste Pile areas were reportedly removed and replaced by the property owners, prohibiting access to these areas for the inspection.
10. The property owner reportedly provided access to allow a camper to park their recreational vehicle (RV) along the May Day Access Road.
11. Deep erosion rills were noted at two locations along the Chief Mill Site No. 1 Access Road.

The *Operation & Maintenance Manual, Eureka Mills Superfund Site, Eureka City, Utah, July 31, 2009* provides checklists for inspection of all Remedial Action Structures (RASs) including: capped mine waste piles, drainages, sediment ponds and haul/access roads. The inspection checklists were completed by DERR as part of the Annual Site Inspection.

The following is a brief summary of the key points noted during the inspection (see attached photo log).

- **Bullion Beck Mill Site and Mine Waste Pile:** The inspection found that the locks to the gates have been removed and replaced prohibiting a thorough inspection. Visual inspection from accessible viewpoints showed no structural issues or deficiencies. Minimal vegetation was reported on the slopes of the waste piles. Access road appeared to be in good condition. However, DERR and EPA will work with property owner to address access issue from the changed locks.
- **Chief Mill No. 1/Chief No. 1 Mill Tailings Waste Pile:** Some minor intermittent weeds were observed on the armored rock slopes and caps. The vegetative cap on the North Toe of the waste pile is intact. A small amount of geotextile fabric was exposed on the southeast side where the armored rock meets the vegetative cover. The Chief Mine No. 1 drainage channel was in good condition with no blockage or erosion. No maintenance or repair is required.
- **Chief Mill Site No. 1:** The armored rock and vegetative caps are intact and show no displacement. Some vegetation was observed in the armored rock cap and drainage. A small amount of geotextile was exposed where the vegetative cover meets the armored rock on the north side. Minor rutting and erosion were observed along Reservoir Road. No repair or maintenance is required.

- **Chief Mill Site No. 1 Access Road/Drainage Channel:** Vegetation was observed in the Chief Mill Site No. 1 drainage channel. Significant erosion was noted in the two locations of the access road, at the base of the Chief Mine #2 tailings pile and near the Gardner Canyon drainage crossing. Missing signs and gates to the ATV Path and T Street were also noted during the inspection. Recommend evaluating alternative methods for repairs to the erosion rills along the access road.
- **Chief Mine #1 Waste Pile:** The fencing at the east side of the entrance gate was severely damaged. The fence was torn down allowing for trespass to the site. The gate itself was locked and in good condition. The locks to the north gate were reportedly cut and replaced by the property owner, prohibiting access to this location. Property owner has reportedly been accessing the historic buildings and adjacent areas. The vegetative and armored rock caps are intact except for some minimal marker barrier exposure at the base of the armored rock slope. The area of the sink hole noted in the 2018 Five-Year Review showed no evidence of displacement. The sedimentation pond at the base of the vegetative cap showed no erosion or displacement of slopes. Weeds and small bushes were observed on the slopes and floor surface of the sedimentation pond. Repair and maintenance are not urgent at this time but fencing should be repaired and the replaced locks and limited access for the site inspection should be addressed. Exposed marker barrier should be evaluated for repairs during the 2024 site inspection.
- **Chief Mine No. 2 Mine Waste Pile and Access Road:** Weeds and small bushes were observed on the slopes and cap surface of the mine waste pile and along the access road. Tire tracks from ATV or other vehicles were observed on the top of the cap. The fencing along the south side of the Chief Mine No. 2 headframe was damaged. A rusted steel tank (approximately 500 gallons) likely from the historic mine was found rolled down the east slope of the Chief Mine No. 2 waste pile. The Chief Mine No. 2 Access Road had some minor erosion rills but the overall access road was in good condition. The DERR will evaluate alternatives for removal of the tank. The tank does not appear to affect the armored rock cap, and given the current location (low on the slope) is not easily accessible. However, the situation should be monitored and discussions held to determine if the tank can be removed.
- **Eagle Blue Bell Mine Waste Pile:** Some sparse weeds were observed on the cap surface and armored rock slopes. Fencing along the east side of the headframe was damaged allowing access to the mineshaft area. The rebar enclosure at the top of the mineshaft appeared to be in good condition. The water bars located on the east side and the west side of the waste pile are in good condition. Some minor erosion rills were observed on the Eagle Blue Bell Haul Road as the road approached the mine. Recommend repairing the damaged fencing at the headframe to restrict access to the mineshaft area.
- **Eagle Blue Bell Drainage Channel:** No erosion was noted in the Eagle Blue Bell drainage channel or along the haul road where it crosses the drainage. Minor vegetative growth was noted in the channel but did not appear to be significant. No maintenance or repair is required and the overall cap remedy is protective and intact.
- **Eureka City Yard:** Vegetation and general debris were observed along the slopes and drainages at the Eureka City Yard. A stop sign was missing at the exit to the City Yard. Recommend continued monitoring of the vegetation and removal of debris from inside

the drainage. Missing sign does not affect the remedy, however, DERR will consult with Eureka about replacement.

- **Eureka Hill Mine Waste Pile:** The inspection showed minor weeds on the surface of the mine waste pile and drainage paths. No repairs or maintenance is required.
- **Gardner Canyon (GC) GC-1, GC-2 and GC-3 Sedimentation Ponds:** Varying amounts of vegetation were observed on the floor and embankments of the GC-1, GC-2 and GC-3 sedimentation ponds and associated drainages. Denser vegetation was noted in the drainage between GC-2 and GC-3 sedimentation ponds. No maintenance or repair is required.
- **Gemini Mine Waste Pile:** The inspection found that the locks to the gates have been removed and replaced prohibiting a thorough inspection. Visual inspection from accessible viewpoints showed no structural issues or deficiencies. Minimal vegetation was reported on the slopes and drainages at the waste piles. No erosion was noted in the waste pile. However, DERR and EPA will work with property owner to address access issue from the changed locks.
- **Knightsville Canyon (KC) KC-1 Sedimentation Pond:** Some vegetation, including small shrubs, were observed on the slopes and the floor of the sedimentation pond and drainage channel that connects the KC-1 and KC-2 sedimentation ponds. No erosion noted. No maintenance or repair is required.
- **KC-2 Sedimentation Pond:** Some vegetation, including small shrubs, were observed on the slopes and floor of the sedimentation pond. Some weeds and small bushes were observed within the drainage channel that connects the KC-1 to KC-2. Drain pipe at north end of pond was in good condition. No maintenance or repair is required.
- **Knightsville Road:** Minor rutting and erosion was observed along Knightsville Road. Several cuts in the wire fencing were observed on the west side of the road approximately halfway between the May Day Access Road and the Chief Mine #2 Access Road. A culvert that runs east to west beneath the road in this same area had a pile of debris blocking the pipe outlet on the west side of Knightsville Road. The drainage that runs parallel to Knightsville Road is in good condition. The fence and blockage of the culvert should be repaired in the future but it does not impact the overall remedy. Juab County is responsible for maintaining the road and drainage channels and will be notified of issues identified during the inspection.
- **Knightsville Road Storm Drain/Culvert:** This storm drain conveys runoff from KC-2 sedimentation pond to the Upper Eureka Gulch. Inspection of Highway 6 Surface Drainage Culvert found some vegetation, weeds and small bushes, inside the channel beneath the culvert outlet. Only two of the five manholes were located during the inspection. No maintenance or repair is required.
- **Lower Godiva Mine Waste Pile:** Minor erosion rills were observed on the lower slope of the mine waste pile. Overall the armored rock cap is in good condition and protective of the remedy. No maintenance or repair is required.
- **Upper Godiva Mine Waste Pile:** The chain-link fencing at the west side of the Godiva Ore Bin was damaged and detached from the fencepost but does not affect the remedy.

An erosion channel was observed on the northeast corner of the Upper Waste pile but does not require repair at this time. Some sparse vegetation and weeds were observed on the slopes of the waste pile. Tire tracks from ATV or other vehicles were observed on the top of the cap. No maintenance or repair is required.

- **May Day Access Road:** On the May Day Access Road minor erosion rills were observed on the north side of the access road towards the Godiva Mine. A fairly large erosion channel was observed on the northwest corner where the May Day Access Road meets Knightsville Road and should be closely monitored during the next annual inspection. Some fencing remains damaged on the north side of the access road. Repair of the fencing is not urgent but should be addressed when major repairs will be completed. The erosion rills observed on the access road do not require repair at this time. A camper/RV was parked on the access road between the Godiva Mine Waste Pile and May Day Waste Pile during both site visits. Although there did not appear to be an exposure risk or damage to the cap related to the RV, the situation raises concerns about appropriate use of property.
- **May Day Waste Pile:** From accessible viewpoints, the waste pile showed no signs of erosion of the cap. Some sparse vegetation and weeds were observed on the slopes of the waste pile. No maintenance or repair is required at this time. The camper/RV parked along the access road during both site visits blocked full access to the May Day Waste Pile. Recommend discussing with property owner acceptable use of the property.
- **McChrystal Drainage Channel:** The inspection of the channel found some vegetation inside of the channel. Following the 2021 inspection DERR recommended, and the permit coordinator concurred, on using a broad leaf herbicide to mitigate significant shrubs and tumbleweeds that may impact local drainage. It was not apparent whether this activity had occurred. Rock walls and slopes inside the channel appeared to be in good condition and no erosion noted. No maintenance or repair is required.
- **Open Cell Access Road:** The access road is in good condition and minor erosion rills were observed. Minor vegetation was observed in the drainage channels on each side of the road. No maintenance or repair is required.
- **Open Cell:** There were numerous issues identified inside the Open Cell. There were an estimated 45-50 soils piles on the floor of the Open Cell. Within these piles was evidence of general construction debris (including steel posts, asphalt and concrete) being disposed of inside the cell. The soil piles and floor of the Open Cell did not appear to be continually graded and compacted on the floor of the repository. The east to west slope was not being properly maintained inside the Open Cell. The gate at the top of the Open Cell was open and damaged. The drainage pipe located on the western end of the repository is in good condition and elevated to a standard height as required by the Operation & Maintenance Manual. Inspection of the vegetative cover and interior slopes of the Open Cell are in good condition. The drain line from the decontamination pad was damaged and no longer drained water from the pad. The DERR will discuss the proper maintenance of the Open Cell and necessary work to repair the drain line to the decontamination pad with the City of Eureka during the January 2023 City Council Meeting.

- **Snowflake Mine Waste Pile & Access Road:** The gate to the mine waste pile and access road was locked by the property owner and access to these areas restricted. Minor vegetation was observed on the caps and slopes from accessible viewpoints. The locks on the gate to the access road were reportedly removed and replaced with new locks by the property owner limiting DERR access to the Snowflake Mine Waste Pile for inspection. No repairs or maintenance is required. However, DERR and EPA will work with property owner to address access issue from the changed locks.
- **Lower Eureka Gulch:** The drainage located by the city office building and City Yard had visible debris and debris. Several small box elder trees remained on the bottom of the channel. There are numerous small shrubs growing on the sides and bottom of the lower channel. The culvert itself was free of obstructions. The flow of the channel is not limited at this time and the overall remedy remains intact. The city of Eureka is responsible for maintaining the entire Gulch as part of its responsibilities under their flood plain ordinance. It does not appear that treatment of the lower gulch has occurred in the past year. The EPA and DERR plan to discuss the vegetation issue with the Eureka City Council during the January 2023 Council Meeting.
- **Upper Eureka Gulch:** Inspection of the upper and lower Eureka gulch found small to medium sized trees growing inside the channel. Dense vegetation including sagebrush, tumble weeds, grasses, and some shrubs covered the floor of the gulch. The culvert at the east end of the gulch was clear of obstructions but encroaching vegetation was noted in the area. The City of Eureka is responsible for maintaining the entire Gulch as part of its responsibilities under their flood plain ordinance. It does not appear that treatment of the upper gulch has occurred in the past year. The EPA and DERR plan to discuss the vegetation issue with the Eureka City Council during the January 2023 Council Meeting.

PHOTOGRAPHS

Photo 1

Date: 08/17/2022

View: West

May Day Mine as viewed from the Upper Godiva Mine Waste Pile.



Photo 2

Date: 08/17/2022

View: East

Erosion Rill observed on the northeast corner of the Upper Godiva Mine Waste Pile



Photo 3

Date: 08/17/2022

View: East

Godiva Shaft and
fencing.



Photo 4

Date: 08/17/2022

View: East

Observed damage to
the west fence at the
Godiva Shaft



Photo 5

Date: 08/17/2022

View: East

Erosion rill on north side of access road to May Day and Godiva Mines.



Photo 6

Date: 08/17/2022

View: North

Erosion rill at northwest corner of Knightsville Road and the access road to May Day and Godiva Mines.



Photo 7

Date: 08/17/2022

View: West

Damaged/missing wire fencing on the west side of Knightsville Road.




Photo 8


Date: 08/17/2022

View: South

Debris blocking the culvert on the west side of Knightsville Road.



Eureka Mills		Photo 9
Date: 08/17/2022		
View: South		
<p>Observed vegetation in Sedimentation Pond KC-1.</p>		

Eureka Mills		Photo 10
Date: 08/17/2022		
View: North		
<p>Vegetation in the drainage channel between KC-1 and KC-2 Sedimentation Ponds.</p>		

Eureka Mills

Photo 11

Date: 08/17/2022

View: Southwest

Headframe at Chief Mine No. 2.



Eureka Mills


Photo 12


Date: 08/17/2022


View: North


Rusted storage tank at the east side of Chief Mine No. 2.





Eureka Mills	Photo 13
Date: 08/17/2022	
View: Northwest	
<p>Damaged fence at Chief Mine #1.</p>	

Eureka Mills	Photo 14
Date: 08/17/2022	
View: West	
<p>Cap at Chief Mine #1. Location of the former sinkhole identified in 2018 Five-Year Review is at center of photo.</p>	

Eureka Mills	Photo 15
Date: 08/17/2022	
View: West	
<p>Damaged/missing fencing at the Eagle/Blue Bell Mine Shaft.</p>	

Eureka Mills	Photo 16
Date: 08/17/2022	
View: North	
<p>Drainage on the east side of the Eagle/Blue Bell Mine Waste Pile.</p>	

Eureka Mills		Photo 17
Date: 08/17/2022		
View: Southwest		
<p>Erosion rills in the access road leading up to Eagle/Blue Bell.</p>		

Eureka Mills		Photo 18
Date: 08/17/2022		
View: Northwest		
<p>View of the drainage from the Eagle/Blue Bell Mine Chute.</p>		

Eureka Mills

Photo 19

Date: 08/17/2022

View: South

Drainage from Eagle/Blue Bell as it crosses access road north of the Mine Chute.



Eureka Mills


Photo 20


Date: 08/17/2022

View: Southwest

Mine Chute at Eagle/ Blue Bell Mine Waste Pile.



Eureka Mills		Photo 21
Date: 08/17/2022		
View: Southwest		
Soil piles staged inside the Open Cell. Staging of soils is not consistent with compaction and grading requirements for soil in the Open Cell.		

Eureka Mills		Photo 22
Date: 08/17/2022		
View: South		
Construction debris including asphalt, cement, and a steel pole dumped in the Open Cell.		

Eureka Mills

Photo 23

Date: 08/17/2022

View: Southwest

Damage to the fence at the top of the Open Cell.



Eureka Mills


Photo 24


Date: 08/17/2022

View: West

View of the Open Cell.



Eureka Mills	Photo 25
Date: 08/17/2022	
View: South	
View of Eureka Hill Waste Rock.	

Eureka Mills	Photo 26
Date: 08/17/2022	
View: North	
View of Bullion Beck and Gemini Mines from the Open Cell Access Road.	

Eureka Mills

Photo 27

Date: 08/17/2022

View: West

Lower Eureka
Gulch from the
City Offices



Eureka Mills


Photo 28


Date: 08/17/2022

View: South

McChrystal
Drainage near
corner of
McChrystal
Avenue and
Dublin Avenue.



Eureka Mills		Photo 29
Date: 09/02/2022		
View: West		
<p>View of the Open Cell. Additional soil piles have been added to the Open Cell with no effort to compact or grade the soils.</p>		

Eureka Mills		Photo 30
Date: 09/02/2022		
View: South		
<p>View south from Manhole 5 (at bottom) along Knightsville Drainage. Vegetation prevented the DERR from finding other manhole locations.</p>		

Eureka Mills

Photo 31

Date: 09/02/2022

View: South

Main Culvert from the KC Sedimentation Ponds from the north side of Highway 6.



Eureka Mills

Photo 32

Date: 09/02/2022

View: West

Deep erosion channel in the Chief Mill Site No.1 Access Road at the base of Chief Mine No.2 waste pile.



Eureka Mills

Photo 33

Date: 09/02/2022

View: Northwest

Chief Mill No. 1
Tailings as viewed
from the Haul
Road.



Eureka Mills

Photo 34

Date: 09/02/2022

View: South

Drainage culvert
from GC-2
Sedimentation
Pond. Culvert is
located just south
of the Haul Road.



Eureka Mills

Photo 35

Date: 09/02/2022

View: North

Drainage into the GC-3 Sedimentation Pond. Reservoir Road is at the center-right side of photo.



Eureka Mills

Photo 36

Date: 09/02/2022

View: North

Overlook of Eureka City from the Haul Road. Chief Mine #1 (foreground) and Gemini Mine (background) are visible in the photo.



Eureka Mills

Photo 37

Date: 09/02/2022

View: South

Drainage from underneath Highway 6 into the City Yard. Drainage is carried by the MC-3 Culvert, visible at top of vegetation on left side of photo.



Eureka Mills


Photo 38


Date: 09/02/2022

View: West

Lower Eureka Gulch through the City Yard. Debris and vegetation visible in the gulch.



Eureka Mills		Photo 39
Date: 09/02/2022		
View: Northeast		
<p>Access road leading up to the Bullion Beck and Gemini Mine Waste piles. Gate at the top of the access road was reportedly locked and locks changed.</p>		

Eureka Mills		Photo 40
Date: 09/02/2022		
View: North		
<p>Bullion Beck Mill from the lower access road.</p>		