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THIRD FIVE-YEAR REVIEW REPORT FOR DAVENPORT AND FLAGSTAFF SMELTERS SUPERFUND SITE SALT LAKE COUNTY, UTAH

Prepared by

Utah Department of Environmental Quality
Division of Environmental Response and Remediation

For

U.S. Environmental Protection Agency
Region 8
DENVER, COLORADO

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Superfund and Emergency Management Division

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LIST OF ABBREVIATIONS & ACRONYMS

BHHRA	Baseline Human Health Risk Assessment
BLL	Blood Lead Level
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CDC	Center for Disease Control
CFR	Code of Federal Regulations
COC	Contaminant of Concern
DERR	Division of Environmental Response and Remediation (UDEQ)
EPA	United States Environmental Protection Agency
ERA	Ecological Risk Assessment
ESD	Explanation of Significant Differences
FYR	Five-Year Review
HHRA	Human Health Risk Assessment
ICs	Institutional Controls
LCCP	Little Cottonwood Canyons Partners LLC
mg/kg	milligram per kilogram
mg/L	Milligram per Liter
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
OU	Operable Unit
OU1	Operable Unit One
OU2	Operable Unit Two
OU3	Operable Unit Three
O&M	Operation and Maintenance
PRP	Potentially Responsible Party
RA	Remedial Action
RAO	Remedial Action Objectives
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
RI	Remedial Investigation
Site	Davenport and Flagstaff Smelters Superfund Site
SLCO	Salt Lake County
SLVSW	Salt Lake Valley Solid Waste
TCLP	Toxicity Characteristic Leaching Procedure
UDEQ	Utah Department of Environmental Quality
UU/UE	Unlimited use and unrestricted exposure
µg/dL	micrograms per deciliter

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 review reports such as this one. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The Utah Department of Environmental Quality (UDEQ), Division of Environmental Response and Remediation (DERR) in coordination with the U.S. Environmental Protection Agency (EPA) 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 third FYR for the Davenport and Flagstaff Smelters Superfund Site (Site). The triggering action for this statutory review is the completion of the second FYR in 2017. This 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 three Operable Units (OUs) and all three OUs will be addressed in this FYR. Operable Unit One (OU1) addresses residential properties with lead and arsenic contamination. Operable Unit Two (OU2) addresses contaminated soil within commercial and undeveloped areas of the Site. Operable Unit Three (OU3) addresses agricultural land near the Flagstaff Smelter.

The Davenport and Flagstaff Smelters Superfund Site Five-Year Review was led by Maureen Petit, Project Manager for DERR. Participants included Dave Allison, DERR Community Involvement Coordinator, Scott Everett, DERR Toxicologist, and Dania Zinner, EPA Remedial Project Manager. The review began on 1/3/2022.

The remedy for the Site is protective of human health and the environment. The lead- and arsenic-contaminated soil has been addressed. The contaminated soil left in place is managed effectively through the existing Institutional Controls. There have been no changes in the physical conditions of the Site or risk assessment methodology that would affect the protectiveness of the remedy.

Site Background

The Site is in a residential area at the mouth of Little Cottonwood Canyon, approximately fifteen miles southeast of Salt Lake City, Utah. The Davenport Smelter was located on the southern side of the canyon and the Flagstaff Smelter was located north of Little Cottonwood Creek. The Site includes parcels with residential, agricultural, and commercial land uses (Figure 1).

The Davenport and Flagstaff smelters were constructed around 1870 at the mouth of Little Cottonwood Canyon. The smelters processed lead and silver ore from mines near Alta, Utah. Both smelters were decommissioned and dismantled by 1879. The land where the smelters were located was used for agricultural purposes until the 1970s. Thereafter, the area was developed as a restaurant and residential community.

Contamination at the Site was associated with slag and other smelter waste. Contaminants of concern (COCs) at the Site are lead and arsenic in surface and subsurface soils. The Site was proposed to the National Priorities List (NPL) in December 2000 and was listed on the NPL April 30, 2003. The Site was divided into three Operable Units, described below.

- Operable Unit One (OU1) – This OU addresses residential properties with lead and arsenic soil contamination. The OU1 cleanup was conducted by the EPA as a Removal Action from 2004 to 2008.

- Operable Unit Two (OU2) – This OU addresses contaminated soil within commercial and undeveloped areas. The OU2 cleanup was conducted from 2011 to 2012 as a UDEQ-lead Remedial Action (RA).
- Operable Unit Three (OU3) – This OU addresses agricultural land that was developed into residential properties near the Flagstaff Smelter. OU3 was cleaned up in 2006 by a private entity as a non-time-critical removal with EPA and UDEQ oversight.

The primary surface water feature near the Site is Little Cottonwood Creek, which flows west through the length of the canyon and discharges into the Jordan River. Surface water within the Site is used for recreational and agricultural purposes; however, the Metropolitan Water District of Salt Lake and Sandy, Little Cottonwood Treatment Plant is located a half mile downstream of the Site and supplies drinking water. There is no current use of ground water at the Site, and ground water is an unlikely source of drinking water due to the depth of the primary drinking water aquifer and the discontinuous nature of a perched aquifer within the Site.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Davenport and Flagstaff Smelters Superfund Site		
EPA ID: UTD988075719		
Region: 8	**State:** UT	**City/County:** Salt Lake County
SITE STATUS		
NPL Status: Deleted		
Multiple OUs? Yes	**Has the Site achieved construction completion?** Yes	
REVIEW STATUS		
Lead agency: State ***[If "Other Federal Agency", enter Agency name]*:**		
Author name (Federal or State Project Manager): Maureen Petit		
Author affiliation: UDEQ Project Manager		
Review period: 1/3/2022 – 6/1/2022		
Date of site Inspection: 3/24/2022		
Type of review: Statutory		
Review number: 3		
Triggering action date: 9/26/2017		
Due date *(five years after triggering action date)*: 9/26/2022		

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

The COCs at the Site are lead and arsenic in surface and subsurface soils. Human Health Risk Assessments (HHRAs) for OU1 and OU2 were performed using samples from the OU1 and OU2 Remedial Investigations (RIs) to characterize risks related to residential, commercial and recreational exposures to contaminants of concern in the environment.

The HHRAs concluded that there was a risk to both adults and children from lead- and arsenic-contaminated soils. The most likely pathways for contaminated soils to enter the body were from eating the soil or inhaling contaminated dust. Children, particularly those under the age of seven, were the most vulnerable group because of their size and the fact that their bodies are still developing.

In addition to the OU2 HHRA, an Ecological Risk Assessment (ERA) was conducted to evaluate the potential threats to ecological receptors (plants and animals) in the wooded and marshy area of OU2. The ERA concluded that terrestrial animals were at risk from exposure to the contaminants of concern.

Response Actions

In 1991, the discovery of ladle casts in the Little Cottonwood Creek, near the Flagstaff Smelter, prompted a study of historical smelter sites in the Salt Lake Valley. During investigations performed in 1992 by the EPA and in 1994 by the UDEQ, elevated concentrations of arsenic and lead were detected in the soil at both smelter locations.

The EPA conducted a Phase I Site Assessment in April 1992 and a Phase II Site Assessment in July of the same year. UDEQ conducted a Preliminary Assessment in August 1992 and a Focused Site Inspection in June 1994.

A Site Characterization of the residential areas near the two smelters was performed in 1998 by UDEQ. Lead and arsenic contamination were found in surface and sub-surface soils in the residential areas surrounding both smelters. The Site was added to the NPL on April 30, 2003.

OU1

The selected remedy for OU1 addressed lead- and arsenic-contaminated soil in the residential areas of the Site through excavation and off-site disposal of contaminated soil and principal threat waste associated with smelter activities. Principal threat waste is defined as soil with leachable levels of lead and arsenic above 5 milligrams per liter (mg/L) based on the Toxicity Characterization Leachate Procedure (TCLP). Stabilization of principal threat waste renders lead in soil non-leachable, allowing soils to be disposed of in a Resource Conservation and Recovery Act (RCRA) Subtitle D Landfill. The Record of Decision (ROD) for OU1 was signed in September 2002.

Four Remedial Action Objectives (RAOs) were established in the OU1 ROD:

- Reducing risks from exposure to lead-contaminated soil such that no child under the age of seven has more than a five percent chance of exceeding a blood lead level of ten micrograms of lead per deciliter (µg/dl).
- Reducing risks from exposure to arsenic-contaminated soil such that no person has greater than a 1 in 10,000 increased risk of contracting cancer from contaminated soil.
- Remediating soils to levels that allow continued residential use.
- Preventing the occurrence and spread of windblown contamination.

The major components of the selected remedy include:

- Excavation of soils under non-native vegetation within OU1 where lead concentrations exceed 600 milligrams per kilogram (mg/kg) and arsenic concentrations exceed 126 mg/kg to a depth of 18 inches, where practicable.
- Hand excavation around areas of native vegetation within OU1 exceeding 600 mg/kg lead and 126 mg/kg arsenic to a depth of 18 inches (where practicable).
- Excavation of leachable principal threat wastes associated with smelter activities.
- Off-site landfill disposal, in accordance with RCRA Subtitle D, of contaminated soil not classified as hazardous waste.
- Replacement of excavated soil with clean backfill, six inches of topsoil, and landscaping of affected properties.
- Interior cleaning of affected homes to remove contaminated dust.
- Implementation of institutional controls, where needed, on properties containing residual contamination.

OU2

The selected remedy for OU2 addressed lead- and arsenic-contaminated soil associated with historical smelter activities in commercial and undeveloped areas of the Site. Surface water and ground water were evaluated and were found not to be impacted by Site contamination. The ROD for OU2 was signed in September 2009.

Four RAOs were established in the ROD:

- Reduce risk from exposure to lead-contaminated soil such that no developing fetus of an adult visitor has more than a five percent chance of exceeding a blood lead level of ten µg/dl.
- Reduce risk from exposure to arsenic-contaminated soil such that no person has a greater than a 1 in 10,000 increased risk of contracting cancer.
- Prevent the occurrence and spread of windblown contamination.
- Address source material risk for ecological receptors while minimizing damage that an undeveloped area would sustain through more extensive construction activities.

The components of the selected remedy include:

- Removal of existing vegetation from the contaminated areas.
- Excavation of all surface soils with lead concentrations exceeding 1,000 mg/kg to an expected maximum depth of 18 inches in commercial areas.
- Excavation of all surface soils with lead concentrations exceeding 3,000 mg/kg to an expected maximum depth of 18 inches in undeveloped areas.
- Excavation of all principal threat waste.
- Ex-situ treatment of all principal threat waste by stabilizing leachable lead in soil.
- Transportation and disposal of all excavated soil at an appropriate landfill.
- Placement of clean topsoil and re-vegetation of excavated areas.
- Removal and reclamation of access road.
- Environmental Covenants under the State of Utah’s Environmental Covenants Act and land use controls established through Salt Lake County Zoning Authorities to ensure the remedy remains protective.

A Minor Modification to the ROD was completed on March 22, 2011. The modification allowed for contamination above cleanup levels to remain in place where mature stands of Gambel oak were located to promote re-vegetation in the area. Access in this area is restricted by trees and other vegetation (Figure 3).

An Explanation of Significant Differences (ESD) was signed on July 3, 2012, that documented the following differences from the remedy selected in the ROD:

1. The expected maximum depth of excavation was exceeded;
2. Contamination at concentrations greater than action levels identified in the ROD was left in place due to physical restriction presented by the topography and existing utility structures or to leave mature vegetation in place to enhance overall remedy performance;
3. Principal threat waste remained after construction activities were completed.

Institutional controls (ICs) were required for the contamination and principal threat waste left in place. Both the Minor Modification and the ESD satisfied the RAOs of the OU2 ROD.

OU3

An ESD of the OU1 ROD, signed in April of 2005, applied the remedy components of OU1 to an undeveloped agricultural portion of the Site that a private entity wished to develop into residential properties. The agricultural area was then re-designated as OU3 under an Action Memorandum issued in July 2005. The cleanup of OU3 was performed under removal authority, and a ROD was not developed for OU3. The primary action of the Removal Action consisted of the excavation of contaminated soil exceeding 600 mg/Kg of total lead.

Little Cottonwood Canyon Partners (LCCP) entered into an agreement with the United States to remediate OU3 in order to develop a residential subdivision. The agreement, signed March 22, 2006, outlined the work required under the Action Memorandum. LCCP completed a non-time-critical removal action in summer 2006.

The Action Memorandum identified the following actions to be taken at OU3:

- Excavation of contaminated soil.
- Consolidation of contaminated soil at a staging area for treatment and disposal at an appropriate facility.
- On-site treatment of principal threat waste.
- Transportation and disposal of characteristically hazardous soil at a suitable, pre-approved, RCRA Subtitle C landfill or disposal of non-hazardous soil at a RCRA Subtitle D landfill.
- Development and implementation of Institutional Controls for any contamination left in place.

Pursuant to the OU1 ESD, the work performed under the Action Memorandum satisfied the RAOs of the OU1 ROD and was completed September 5, 2006.

Status of Implementation

OU1

From 2004 to 2008, the EPA conducted a removal action at OU1 under a 2004 Action Memorandum and a 2006 Action Memorandum. The EPA conducted cleanup activities on residential properties that contained soils impacted with elevated levels of lead and arsenic (Figure 2). Contaminated soils were removed and replaced with clean fill. Landscapes were restored at 26 properties. A total of 33,290 cubic yards of lead and arsenic impacted soils were removed, treated as necessary, and transported to the Salt Lake Valley Solid Waste Management Facility, a RCRA Subtitle D facility. The removal action met the cleanup criteria of the OU1 ROD. Construction activities for OU1 were completed September 30, 2008.

A visible barrier (orange vinyl fencing) was placed in areas where contaminated material remained, either at depths greater than 18 inches or at the property owners' request due to their desire to save native vegetation. At the conclusion of construction activities, letters were sent to each property owner. The letters contained a description of the removal and post-construction drawings to delineate the depth and extent of excavation. Slopes that were steep enough to preclude excavation were also shown on the post construction drawings. The areas with

remaining contamination on OU1 are protected under Salt Lake County Ordinance Number 1750, established in 2013. The Ordinance requires that all new development or change in land-use comply with the permitting and building requirements set forth in the ordinance in accordance with EPA and UDEQ regulatory guidelines.

OU2

Cleanup activities commenced in August 2011 and were completed on November 29, 2011. Cleanup consisted of the removal and off-site disposal of lead- and arsenic-contaminated soil. Excavated areas were backfilled and revegetated with a mix of native plants.

During construction, contaminated soil was discovered to extend deeper than was originally anticipated. The additional contaminated material consisted of a slag deposit ranging between 18 and 24 inches in thickness with lead concentrations as high as 40,000 mg/kg situated under a layer of fill. The slag layer met the description of principal threat waste. In order to avoid impact to slope stability and preserve mature Gambel oak trees beneficial for re-vegetation, contamination associated with the slag layer remains underneath three to four feet of fill material, which provides an effective barrier to human exposure. Excavation depths and areas where contamination was left in place are shown on Figures 3 and 4. The areas with remaining contamination on OU2 are protected under Salt Lake County Ordinance Number 1750, established in 2013. The Ordinance requires that all new development or change in land use comply with the permitting and building requirements set forth in the ordinance in accordance with EPA and UDEQ regulatory guidelines. Additionally, the Salt Lake City property on OU2 is protected under an Environmental Covenant signed June 25, 2014. Under the covenant, any change in land use must be approved by UDEQ.

OU3

LCCP conducted a non-time-critical removal action in summer 2006. The removal action consisted of excavation and off-site disposal of lead and arsenic contaminated soils. Soil classified as principal threat waste was treated with phosphate to reduce the leachability of lead and arsenic to non-hazardous levels. Approximately 49 acres of agricultural property were remediated to residential cleanup levels for use as 28 private, single-family, residential lots. The EPA and the UDEQ oversaw OU3 cleanup activities. Response actions for OU3 were completed in accordance with the Action Memorandum and the ESD of the OU1 ROD.

Two areas containing impacted soils were not remediated. One area is adjacent to Little Cottonwood Creek. Complete removal of this area would have compromised the stream bank and flooded the Site. At the recommendation of the EPA, this area was treated with phosphate, reinforced with construction fencing and backfilled with clean material. The second area consists of three 100- by 100-foot zones. This area contains lead concentrations averaging 1,350 mg/kg and consists of steep slopes greater than 30% that cannot be developed due to geotechnical considerations. This second area encompasses approximately 0.68 acres.

The EPA and the UDEQ conducted a final inspection of removal activities at OU3 on September 6, 2006. Neither the EPA nor the UDEQ had any outstanding issues with the cleanup.

The only areas with remaining contamination on OU3 are heavily vegetated slopes that are too steep to build on. Salt Lake County and Planning and Zoning had already established ordinances (Title 18, Buildings and Construction) that prevent construction on steep slopes. There were no additional ICs implemented specifically for OU3.

IC Summary Table

Table 1: Summary of 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 OUs	IC Objective	Title of IC Instrument Implemented and Date
Soil	Yes	Yes	OU1, OU2	Land use restrictions and notification of UDEQ for changes in land use or construction activities that impact contamination left in place.	Salt Lake County Institutional Control Ordinance (Ordinance No. 1750), June 18, 2013.
Soil	Yes	Yes	OU2	Land use restrictions and notification of UDEQ for changes in land use or construction activities that impact contamination left in place.	Environmental Covenant with Salt Lake City, June 25, 2014.

Systems Operations/Operation & Maintenance

OU1

There are no active operating systems at OU1 and Operation and Maintenance (O&M) at OU1 is not required. OU1 is protected under the Salt Lake County Institutional Control Ordinance (Ordinance No. 1750), signed June 18, 2013.

OU2

There are no active systems that require operation at OU2. Because current land use at the Site is recreational and commercial, the Site has been cleaned up to those action levels (3,000 and 1,000 mg/kg lead, respectively), which leaves contamination in place above the residential action level of 600 mg/kg. Additionally, there are highly inaccessible places where contamination remains in place above the recreational action level. Therefore, the remedy at the Site is in part reliant upon institutional controls such as the Environmental Covenant (2014) and the County Ordinance (2013). O&M activities as described in the Operations and Maintenance Manual for the Davenport and Flagstaff Smelters Superfund Site (OU2), consist of routine inspections of areas where contamination remains above the residential action level to determine if land use or accessibility has changed and if erosion is occurring. No regular maintenance is required; however, should it be determined that erosion is occurring, repair will consist of replacing eroded soil and re-vegetating.

DERR performed inspections at the Site during 2018, 2019, 2021 and 2022. Land use at the Site remained unchanged, vegetation was thriving and no visible erosion was occurring. A Site inspection did not take place in 2020 due to the COVID-19 Pandemic.

OU3

There are no active operating systems at OU3 and O&M at OU3 is not required. OU3 is protected under Salt Lake City Planning and Zoning Ordinance 7-14, Chapter 18.

III. PROGRESS SINCE THE LAST REVIEW

This section includes the protectiveness determinations and statements from the last FYR as well as the recommendations from the last FYR and the current status of those recommendations.

Table 2: Protectiveness Determinations/Statements from the 2017 FYR

OU #	Protectiveness Determination	Protectiveness Statement
1	Short-term Protective	The remedy at OU1 is protective of human health and the environment. The contamination from the Davenport and Flagstaff Smelters on residential properties has been addressed. The excavation and off-site disposal of contaminated soil and principal threat waste has effectively eliminated the majority of the risk associated with the lead and arsenic contamination. The risk associated with contaminated soil remaining after construction activities is effectively contained reduced by the clean fill, top soil and landscaping placed on each property. Areas that were not cleaned up due to steepness of the slopes remain heavily vegetated, preventing exposure and are impractical to develop. The Salt Lake County Ordinance was successfully implemented at the Site and continues to ensure the remedy remains protective. However, a new law allowing the creation of townships within the county as well as the annexation of parts of the Site into Sandy City has raised questions regarding which local entities have the authority and the resources to continue administering the Ordinance.
2	Protective	The remedy at OU2 is protective of human health and the environment. The contamination associated with OU2 has been addressed. The excavation, treatment and off-site disposal of contaminated soil have effectively reduced the risk of exposure to lead and arsenic. The Salt Lake County Ordinance and the environmental covenant on the Salt Lake City property were successfully implemented and continue to ensure the remedy remains protective. However, a new law allowing the creation of townships within the county as well as the annexation of parts of the Site into Sandy City has raised questions regarding which local entities have the authority and the resources to continue administering the Ordinance.
3	Protective	The remedy at OU3 is protective of human health and the environment. The contamination associated with OU3 has been addressed. The excavation, treatment and off-site disposal of contaminated soil have effectively reduced the risk of exposure to lead and arsenic. The contaminated soil remaining within OU3 is located on steep slopes that remain heavily vegetated, preventing exposure, and are impractical to develop.

Table 3: Status of Recommendations from the 2017 FYR

OU #	Issue	Recommendations	Current Status	Current Implementation Status Description	Completion Date (if applicable)
OU1 and OU2	A new law allowing the creation of township within the county as well as the annexation of parts of the Site into Sandy City has raised questions regarding which local entities have the authority and the resources to continue administering the ordinance.	Coordinate a review of the County Ordinance with Salt Lake Valley Health Department and Salt Lake County Planning and Zoning to evaluate authority and enforcement concerns.	Completed	Multiple Conversations were facilitated between UDEQ, Salt Lake Valley Health Department and Salt Lake County Planning and Zoning to determine the best method to continue administering the Ordinance. A series of recommended actions were established.	5/1/2021

IV. FIVE-YEAR REVIEW PROCESS

Document Review

This FYR included a review of relevant Site Documents including OU1 and OU2 RODs and the County Ordinance. A list of documents reviewed for the FYR is provided in Appendix A.

Community Notification, Involvement & Site Interviews

A public notice (Appendix B) was placed in the *Salt Lake Tribune* on March 20, 2022, stating that there was a FYR and inviting the public to submit any comments to the EPA. No comments were received in response to the public notice.

Upon completion of the Five-Year Review report, UDEQ will make the report available to the public in the administrative record located at the UDEQ Superfund Records Center in Salt Lake City, Utah. The EPA will make the report available on its website at https://www.epa.gov/superfund/davenport-and-flagstaff. As part of the FYR, the UDEQ interviewed stakeholders to discuss the review and address any concerns or issues with the Site. Community interviews were conducted from March 21 through April 4, 2022. The UDEQ contacted the Facility Manager of the La Caille Restaurant, the Salt Lake Valley Health Department, and Salt Lake City Public Utilities. Specific interview questions and responses are provided in Appendix C.

Interviewees did not have any health concerns or environmental issues and were not aware of any community concerns regarding the Site or cleanup over the last five years.

Data Review

There is no data to review because there are no active operating systems.

Site Inspection

Maureen Petit (UDEQ) and Dave Allison (UDEQ) conducted a site inspection on 3/23/2022. The purpose of the inspection was to assess the protectiveness of the remedy.

Inspection of OU1 showed that the fill, landscaping and vegetation on the cleaned properties remain in good condition. The areas not cleaned up due to the steepness of the slopes remain heavily vegetated, thus preventing exposure.

Inspection of OU2 showed that vegetation in clean-up areas is well established. No erosion was observed, and no contaminated soil is exposed at the site. Construction of a brick roadway is currently under way near the restaurant. The construction was approved by DERR in a Soil Management Plan submitted in 2021.

Inspection of OU3 showed that fill and landscaping on the cleaned properties remain in good condition.

V. TECHNICAL ASSESSMENT

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

Question A Summary:

The review of documents and of results of the Site Inspection indicates that the remedies at OU1, OU2 and OU3 are functioning as intended by the decision documents.

The excavation, treatment and off-site disposal of the lead- and arsenic-contaminated soil, associated with the Removal Action at OU1, and the subsequent backfilling and landscaping has achieved the remedial objective necessary to prevent direct contact with or ingestion of contaminants in soil. The landscaping and vegetation on the cleaned properties remain in good condition. The areas that were not cleaned up due to the steepness of the slopes remain heavily vegetated, thus preventing exposure.

The excavation, treatment and off-site disposal of lead-contaminated soil at OU2 have effectively minimized direct contact with or ingestion of the contaminants in the soil and are protective of human health and the environment. The imported fill and top soil have been planted with a native seed mix as well as native trees, shrubs and other vegetation. The vegetation is well established.

The excavation, treatment and off-site disposal of lead-contaminated soil at OU3 have effectively minimized direct contact with or ingestion of contaminants in the soil and remain protective of human health and the environment. The areas that were not cleaned up due to the steepness of the slopes remain heavily vegetated, thus preventing exposure.

Implementation of Institutional Controls and Other Measures

The Salt Lake Valley Health Department, in conjunction with the Salt Lake County Planning and Zoning Department and UDEQ, developed and enacted an Institutional Controls Ordinance to provide land-use controls in areas where contamination has been left in place at Superfund sites within the county. The Ordinance was approved by the Salt Lake County Council on June 18, 2013. OU1 and OU2 are managed through this Ordinance.

The Ordinance has been effectively administered since its approval. The Salt Lake County Planning and Zoning Department has coordinated the approval of building projects within the Site with both the Salt Lake Valley Health Department and the UDEQ.

In April 2021, DERR was contacted by a resident in OU1 (property F04) who encountered orange vinyl fencing while digging the base for a swimming pool. Excavation on the property began before a construction permit was granted by the Salt Lake County Planning and Zoning Department but halted when the vinyl barrier was discovered. Through the Ordinance, the Salt Lake Valley Health Department and the Salt Lake County Planning and Zoning Department issued a stop work order on the project while the resident hired a consultant to develop a Soil Management and Sampling Plan for the potentially contaminated soils. Sampling confirmed that the soils were contaminated with lead and arsenic. The material was disposed of off-site at an approved facility, and the Stop Work Order was lifted so construction could proceed. The Ordinance is functioning as intended if the proper channels are followed.

The Ordinance and the Environmental Covenant have been successfully implemented at the Site and continue to ensure that the remedy remains protective. Continued coordination and evaluation of the ordinance with the Salt Lake Valley Health Department is necessary to ensure that the ordinance remains effective and is enforced.

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 clean-up numbers for OU1 were derived from the exposure assumptions and toxicity data in the Baseline Human Health Risk Assessment for the Davenport and Flagstaff Smelter (July 19, 1999) (BHHRA), and the clean-up levels for OU2 were based on the BHHRA as well as the OU2 Ecological Risk Assessment (September 2007). There have been changes to the exposure assumptions and toxicity information since those documents were issued. Because these documents were developed prior to the EPA's Risk Assessment Guidance for Superfund Part F (2009), 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 µg/m3. 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 OU1, OU2 and OU3.

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 (µg/dL). The 10 µg/dL BLL target concentration is based (in part) on the 1991 Center for Disease Control's (CDC) blood lead "level of concern." In 2012, CDC accepted the recommendations of its Advisory Committee on Childhood Lead Poisoning Prevention that the "level of concern" be replaced by a reference value based on the 97.5th percentile of the National Health and Nutrition Examination Survey-generated BLL distribution in children 1-5 years old (currently 5 µg/dL). In 2021, CDC updated its blood lead reference value from 5 µg/dL to 3.5 µg/dL in response to the Lead Exposure Prevention and Advisory Committee recommendations.

For lead in soil, the EPA's Office of Solid Waste and Emergency Response Directives 9355.4-12 (EPA, 1994) and 9200.4-27P (EPA, 1998), were identified as federal chemical-specific To Be Considered guidance documents. However, since 1994 and 1998 when those documents were issued, increasing evidence has shown that blood lead levels below 10 µg/dL may also have negative health impacts. The EPA is currently evaluating its lead cleanup policy based on recent studies that suggest adverse health effects are associated with blood levels less than 10 µg/dL. The EPA will continue using current lead policy until the Agency provides modified guidance for sites with lead contamination.

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

No.

VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations
OU(s) without Issues/Recommendations Identified in the Five-Year Review:
None

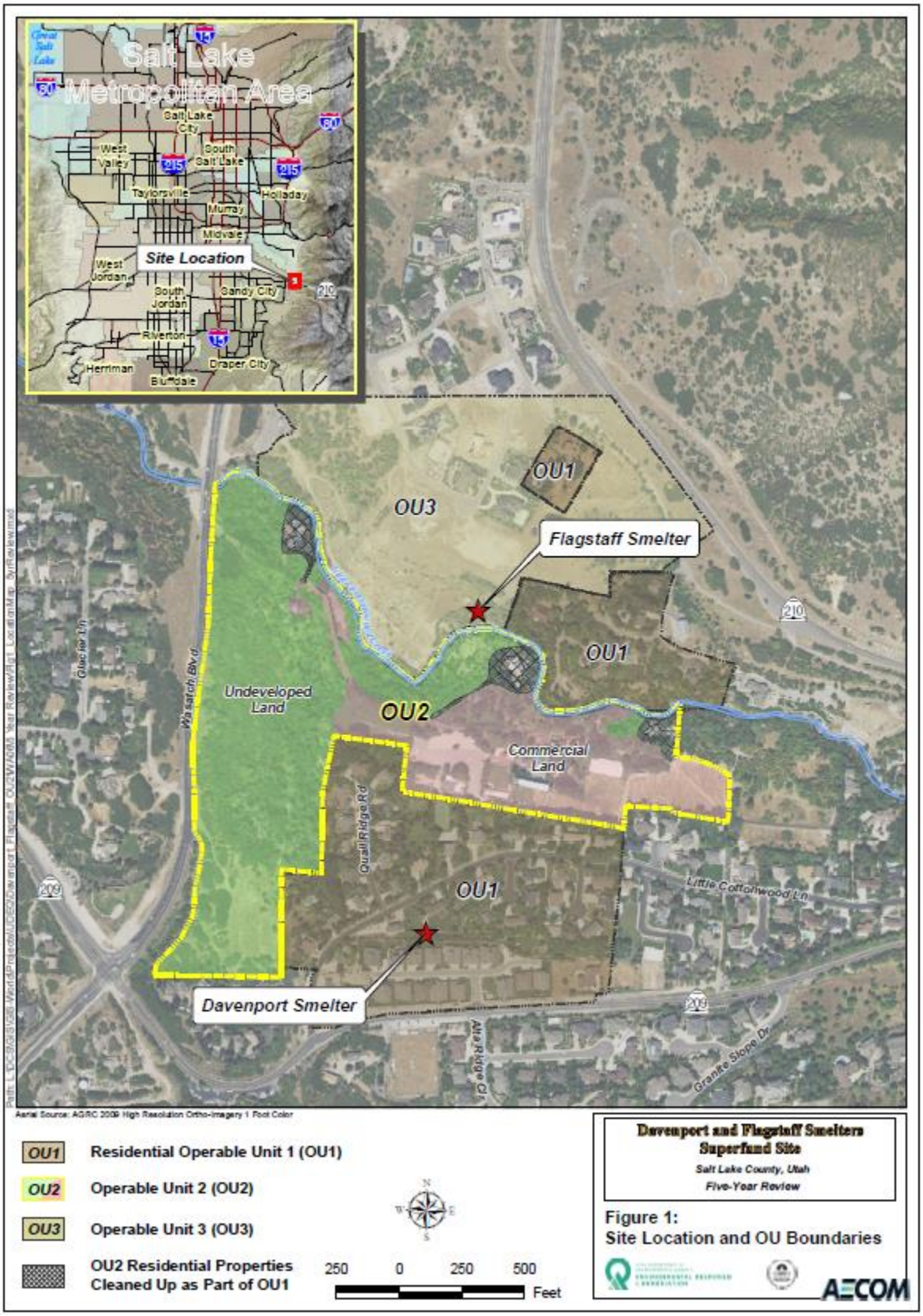
VII. PROTECTIVENESS STATEMENT

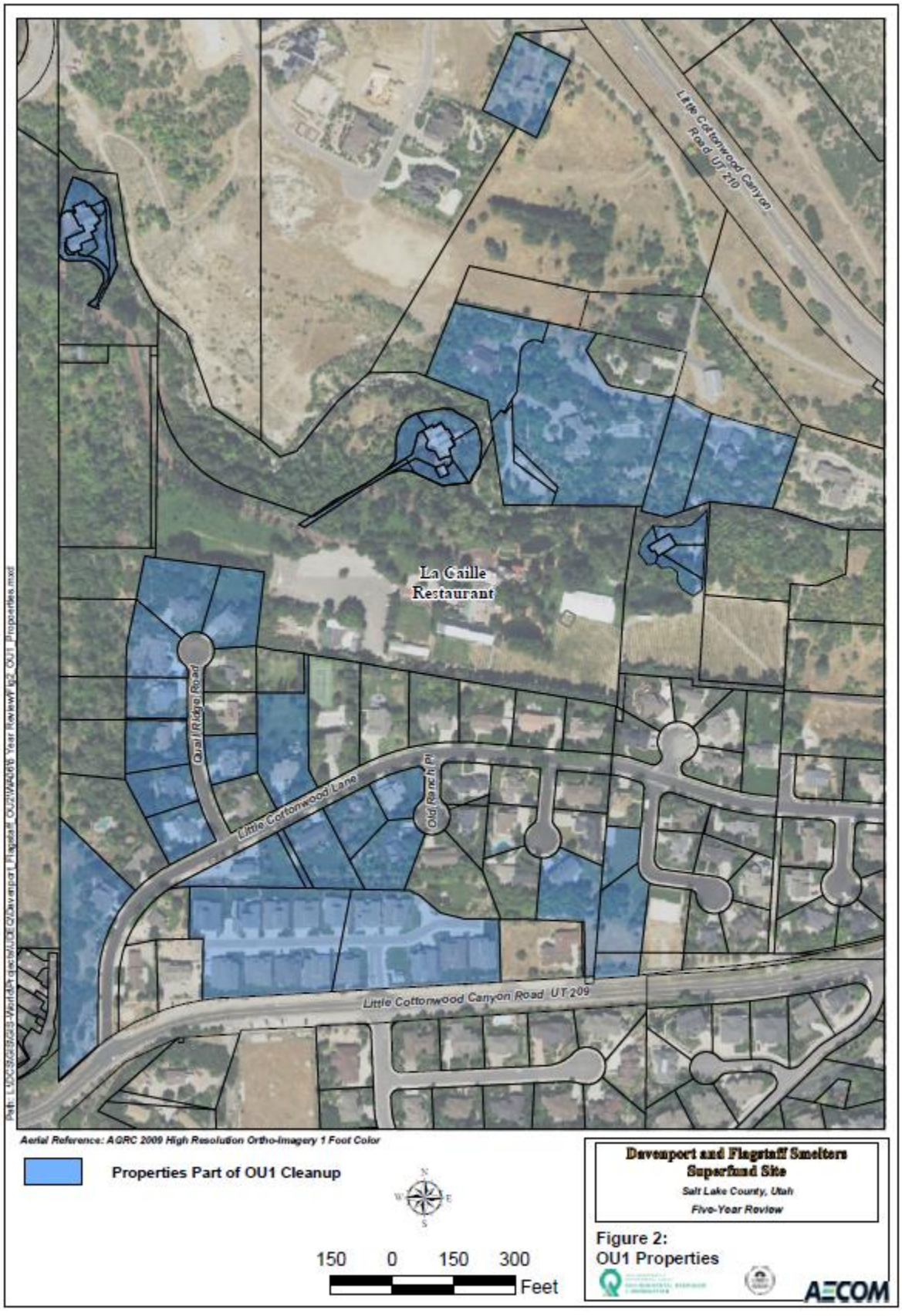
Protectiveness Statement(s)	
Operable Unit: OU1	*Protectiveness Determination:* Protective
Protectiveness Statement: The remedy at OU1 is protective of human health and the environment. The contamination from the Davenport and Flagstaff Smelters on residential properties has been addressed. The risk associated with contaminated soil remaining after construction activities is effectively reduced by the clean fill, topsoil and landscaping placed on each property. Areas that were not cleaned up due to steepness of the slopes are impractical to develop and remain heavily vegetated, thus preventing exposure. The Salt Lake County Ordinance was successfully implemented at the Site and continues to ensure the remedy remains protective.	
Operable Unit: OU2	*Protectiveness Determination:* Protective
Protectiveness Statement: The remedy at OU2 is protective of human health and the environment. The contamination associated with OU2 has been addressed. The Salt Lake County Ordinance and the environmental covenant on the Salt Lake City property were successfully implemented and continue to ensure the remedy remains protective.	
Operable Unit: OU3	*Protectiveness Determination:* Protective
Protectiveness Statement: The remedy at OU3 is protective of human health and the environment. The contamination associated with OU3 has been addressed. The contaminated soil remaining within OU3 is located on steep slopes that are impractical to develop and remain heavily vegetated, thus preventing exposure.	
Sitewide Protectiveness Statement	
Protectiveness Determination: Protective	
Protectiveness Statement: The remedy for the Site is protective of human health and the environment. The lead- and arsenic-contaminated soil has been addressed. Contaminated soil above unrestricted use levels are managed effectively through the existing ICs. There have been no changes in the physical conditions of the Site that would affect the protectiveness of the remedy. There have been no changes in the toxicity factors for the COCs or risk assessment methodology that could affect the protectiveness of the remedies for the Site.	

VIII. NEXT REVIEW

The next five-year review report for the Davenport and Flagstaff Smelters Superfund Site is required five years from the completion date of this review and is anticipated to be conducted in 2027.

FIGURES


Salt Lake Metropolitan Area
Site Location
Salt Lake City
West Valley
South Salt Lake
Taylorsville
Holladay
Murray
Midvale
West Jordan
South Jordan
Sandy City
Riverton
Draper City
Herriman
Bluffdale
OU1
OU3
Flagstaff Smelter
OU1
Undeveloped Land
OU2
Commercial Land
Quail Ridge Rd
OU1
Little Cottonwood Ln
Davenport Smelter
Granite Slope Dr
Wasatch Blvd
Glacier Ln
Aerial Source: AGRC 2009 High Resolution Ortho-Imagery 1 Foot Color
OU1 Residential Operable Unit 1 (OU1)
OU2 Operable Unit 2 (OU2)
OU3 Operable Unit 3 (OU3)
OU2 Residential Properties Cleaned Up as Part of OU1
250 0 250 500
Feet
Davenport and Flagstaff Smelters Superfund Site
Salt Lake County, Utah
Five-Year Review
Figure 1:
Site Location and OU Boundaries
AECOM


La Caille
Restaurant
Little Cottonwood Canyon
Road, UT 210
Quail Ridge Road
Little Cottonwood Lane
Old Ranch Rd
Little Cottonwood Canyon Road, UT 209
Aerial Reference: AGRC 2009 High Resolution Ortho-Imagery 1 Foot Color
Properties Part of OU1 Cleanup
N
W
E
S
150 0 150 300
Feet
Davenport and Flagstaff Smelters
Superfund Site
Salt Lake County, Utah
Five-Year Review
Figure 2:
OU1 Properties
AECOM


Remediation Areas and Depth (inches)
6" (0.99 acres)
12" (0.30 acres)
18" (0.02 acres)
24" (0.27 acres)
36" (0.04 acres)
Areas of Gambel Oak Retained
U2
Grids With RI Sample Results Exceeding Lead Clean-Up Level & Requiring Pre-Design Sampling
OU2 Boundary
30 0 30 60
Feet
18"
6"
U4
U5
36"
12"
6"
24"
U3
U2
6"
Davenport and Flagstaff Smelters Superfund Site
Salt Lake County, Utah
Five-Year Review
Figure 3:
Minor Modification to the ROD
AECOM

APPENDIX A - REFERENCE LIST

EPA Superfund Record of Decision**:** Davenport and Flagstaff Smelters Superfund Site, Operable Unit One. September 2002.

EPA Superfund Record of Decision: Davenport and Flagstaff Smelters Superfund Site, Operable Unit Two. September 2009.

Explanation of Significant Difference: Davenport and Flagstaff Smelters Superfund Site, Operable Unit One. April 2005.

Final Close Out Report: Davenport and Flagstaff Smelters Site, Operable Unit Three. September 7, 2006.

Removal Work Plan, Davenport Residential Soils Removal, Salt Lake County, Utah. April 30 2004.

Removal Work Plan: Davenport and Flagstaff Smelters Superfund Site, Salt Lake County, Utah. July 8, 2005.

US Army Corps of Engineers Final Site Report: Davenport and Flagstaff Smelters Superfund Site, Operable Unit 1. February 2010.

Final Remedial Design: Davenport and Flagstaff Smelters Superfund Site, Operable Unit Two. March 2011.

EPA Value Engineering Study Report: Davenport and Flagstaff Smelters Superfund Site, Operable Unit Two. September 2010.

Minor Modification to the Selected Remedy: Davenport and Flagstaff Smelters Superfund Site, Operable Unit Two. 2011.

First Five-Year Review Report: Davenport and Flagstaff Smelters Superfund Site. September 2012.

Salt Lake City Planning and Zoning, Ordinance No. 7-14. 2014.

Salt Lake County, Ordinance No. 1750. June 2013.

Second Five-Year Review Report: Davenport and Flagstaff Smelters Superfund Site. September 2017.

APPENDIX B - PUBLIC NOTICE

PUBLIC NOTICE
Five-Year Review Planned for the
Davenport and Flagstaff Smelters Superfund Site
Salt Lake County, Utah

The Utah Department of Environmental Quality, Division of Environmental Response and Remediation (UDEQ/ DERR), in cooperation with the U.S. Environmental Protection Agency (EPA) is conducting the second Five-Year Review of the Davenport and Flagstaff Smelters Superfund Site. The site is located at the mouth of Little Cottonwood Canyon in Salt Lake County, Utah.

The purpose of a Five-Year Review is to determine whether or not the cleanup and other actions taken at the site are protective of human health and the environment. Cleanup actions were completed in 2012 and included the removal and offsite disposal of lead and arsenic contaminated soils impacting residential and commercial properties. The contamination resulted from historic smelting operations at the former Davenport and Flagstaff Smelters that processed lead and copper ores during the 1870's.

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 "Flagstaff." **Or visit the EPA website at: https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0801257**

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

Maureen Petit, UDEQ Project Manager, phone: (385) 391-8127 or email: mpetit@utah.gov

Dave Allison, UDEQ Community Involvement, hone: (385) 391-8143 or mail: dallison@utah.gov

Dania Zinner, EPA Remedial Project Manager, phone: (303) 312-7122 or email: Zinner.dania@epa.gov

APPENDIX C - COMMUNITY INTERVIEWS

Davenport and Flagstaff Smelters Superfund site
Five-Year Review Community Interview

Site Name: Davenport and Flagstaff Smelters EPA ID: UTD988075719	March 23, 2022
Type of Contact: Site Visit	Contact Made By: Dave Allison, UDEQ/DERR Community Involvement Coordinator and Maureen Petit, UDEQ/DERR Project Manager
Person Contacted	
Name: John Murray, Facilities Manager	La Caille 9565 Wasatch Blvd Sandy, UT 84092

1. **Is your organization/department aware of the Davenport and Flagstaff Smelters Superfund site and the work that was completed to address environmental contamination?** John Murray is the Facilities Manager for La Caille Restaurant, located on 20-acres at the mouth of Little Cottonwood Canyon. Mr. Murray has worked for the business for nearly 40 years. Mr. Murray oversees building and grounds maintenance for the restaurant and vineyard. The restaurant had remediation work near a residential building and on undeveloped areas within Operable Unit 2 (OU2) in 2011, and Mr. Murray said he's familiar with the cleanup areas.

2. **What's your overall impression (your general sentiment) of the work that was completed at the Davenport and Flagstaff Smelters Superfund Site?** Mr**.** Murray said everything looks great and he is aware of the soil remediation history and location areas at the non-residential property. Mr. Murray has not had any issues maintaining the vegetative areas surrounding a rental cottage, cabin on the northwest section of the property, and small area in a driveway near a maintenance building. Mr. Murray said these areas remained undisturbed with no current plans of construction activities in these sections in the near future.

3. **Are you aware of any community concerns regarding the Davenport and Flagstaff Smelters Superfund Site or its operation and administration? If so, please give details**. Mr. Murray is not aware of any community environmental concerns regarding the cleanup areas, and the Superfund cleanup history never comes up. Mr. Murray says the restaurant is continually busy and currently expanding amenities for weddings and events with the construction of a reception barn which should be finished for the summer season.

4. **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 Davenport and Flagstaff Smelters Superfund Site requiring your office to respond? If so, please give details of the events and results of the response.** Mr**.** Murray said the property has not experienced any incidents damaging the property requiring any repair work.

5. **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 Davenport and Flagstaff Smelters Superfund Site**? Mr. Murray said they

manage their property to every detail and La Caille Managers worked with UDEQ this year for approval to coordinate a soils management plan and County soils ordinance for the construction of a cobble stone road and reception Barn. Mr. Murray said any property construction project plans would start with a call to UDEQ.

6. **Over the past five years, have there been any changes in land use surrounding the Davenport and Flagstaff Smelters Superfund Site? Are you aware of potential future changes in land use? If so, please describe**. Mr. Murray said a lot of work over the years has been taken to keep the property in its current use and the environmental requirements are the same since the cleanup occurred. Mr. Murray doesn't expect any changes in the future, and as indicated by the recent property Barn addition, Mr. Murray said La Caille is always looking for opportunities to make improvements to the property.

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?** Mr. Murray did not have any additional recommendations regarding the site management and said everything is working well.

Davenport and Flagstaff Smelters Superfund site
Five-Year Review Community Interview

Site Name: Davenport and Flagstaff Smelters EPA ID: UTD988075719	April 1, 2022
Type of Contact: Remote Teleconference	Contact Made By: Dave Allison, UDEQ/DERR Community Involvement Coordinator and Maureen Petit, UDEQ/DERR Project Manager
Person Contacted	
Name: Teresa Gray, Water Quality and Treatment Administrator, and Patrick Nelson, Watershed Manager	Salt Lake City Public Utilities 1530 S W Temple St Salt Lake City, UT 84115

1. **Is your organization/department aware of the Davenport and Flagstaff Smelters Superfund site and the work that was completed to address environmental contamination?** Teresa Gray, Water Quality and Treatment Administrator, and Patrick Nelson, Watershed Manager, work for the Salt Lake City Public Utilities Department, which oversees responsibilities with the Metropolitan Water District (MWD) of Salt Lake City, a two-city District comprised of Salt Lake City and Sandy City. Salt Lake City owns 52 acres of undeveloped watershed property south of the Little Cottonwood Creek that was remediated as part of Operable Unit 2 (OU2). This property is also a recharge zone, and this watershed contributes to 60 percent of drinking water to approximately 360,000 people in Salt Lake City and the cities of Cottonwood Heights, Holladay, Millcreek and parts of unincorporated Salt Lake County. Salt Lake City Public Utilities, under federal, state, city and agency rules, works to protect the area water supply and was concerned the remediation work would impact the water quality of the Little Cottonwood Creek. Surface and groundwater were not impacted with the cleanup of their property completed in 2012, and Salt Lake City Public Utilities operation and maintenance works to keep the watershed protected.

2. **What's your overall impression (your general sentiment) of the work that was completed at the Davenport and Flagstaff Smelters Superfund Site?** Ms**.** Gray and Mr. Nelson said the surface and groundwater were not impacted with the cleanup of their property completed in 2012, and Salt Lake City Public Utilities operation and maintenance works to keep the watershed protected. Ms. Gray and Mr. Nelson said there aren't any signs the soil capping remedy isn't working as intended. Mr. Nelson said he recently walked the intake area near Little Cottonwood Creek with UDEQ Project Managers, and the growth and vegetative cap are in great shape without any sign of erosion.

3. **Does your office conduct routine communications and/or activities (site visits, inspections, reporting activities, participation in meetings, etc.) for the Davenport and Flagstaff Smelters Superfund Site? If so, please briefly summarize the purpose and results of these communications and/or activities over the past several years.** Ms. Gray and Mr. Nelson said there are not any scheduled reporting activities, and Salt Lake City Public Utilities does inspect the watershed and little Cottonwood Creek frequently.

4. **Are you aware of any community concerns regarding the Davenport and Flagstaff Smelters Superfund Site or its operation and administration? If so, please give details**. Ms. Gray and Mr. Nelson said they were not aware of any community concerns with health and the environment. Mr. Nelson said the La

Montagne Town Homes was interested in an access road, and Salt Lake City declined the inquiry as it was not in line with current storm water plans and keeping water supplies protected goes with their day-to-day responsibilities.

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 Davenport and Flagstaff Smelters Superfund Site requiring your office to respond? If so, please give details of the events and results of the response**. There haven't been any incidents or emergency responses their department was involved with over the last five years. Last year Ms. Gray and Mr. Nelson said they were involved with a pool installation for a Cottonwood Heights property which required information, and the owner was not aware their home was in a former Superfund site. Swimming pools have specific discharge sewer permits, and the property was on a septic system, which may need additional infrastructure and possible digging on the remediated property. Ms. Gray and Mr. Nelson said a number of departments needed to be informed to ensure the soils, stormwater and watershed are not compromised.

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 Davenport and Flagstaff Smelters Superfund Site**? Ms. Gray and Mr. Nelson said they have very good communication with UDEQ and coordinate well with mutual interest in protecting site conditions. Mr. Nelson mentioned that Public Utilities is evaluating potential urban fire areas due to overgrowth of trees and shrubs and would want to coordinate a walk through OU2 areas with UDEQ. Identifying these areas and the remediation depths and locations would be important for Salt Lake City to not remove growth in areas most susceptible to erosion and yet maintain appropriate watershed stewardship.

7. **Over the past five years, have there been any changes in your department's policies or regulations that impact the Davenport and Flagstaff Smelters Superfund Site and/or your role? If so, please describe the changes and the impacts.** Ms. Gray and Mr. Nelson said there haven't been any changes to the way they do business that may impact the former Davenport and Flagstaff Smelter Site

8. **Over the past five years, have there been any changes in land use surrounding the Davenport and Flagstaff Smelters Superfund Site? Are you aware of potential future changes in land use? If so, please describe**. Ms. Gray and Mr. Nelson said there haven't been any land-use changes because of the watershed's importance to the Salt Lake Valley water supply. Ms. Gray said the environmental covenants and institutional controls are in place and are well-communicated. Ms. Gray and Mr. Nelson said the watershed property would likely never be used for anything other than what its current use is today. Infrastructure scenarios may happen where piping and diverting water may be necessary, and again, also unlikely if disturbing the soils were required and compromising the intake areas would be possible.

9. **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?** Ms. Gray and Mr. Nelson wanted to know if there were any GIS maps the Department could provide to update with their own permit and overlay zones. UDEQ said they would work with their contractor to see what digital mapping data could be coordinated. Ms. Gray and Mr. Nelson did not have any additional comments other than continued coordination or communication of information regarding any site developments.

Davenport and Flagstaff Smelters Superfund site
Five-Year Review Community Interview

Site Name: Davenport and Flagstaff Smelters EPA ID: UTD988075719	April 4, 2022
Type of Contact: Remote Teleconference	Contact Made By: Dave Allison, UDEQ/DERR Community Involvement Coordinator and Maureen Petit, UDEQ/DERR Project Manager
Person Contacted	
Dan Moore, Environmental Health Enforcement Coordinator	Salt Lake Valley (County) Health Department **Environmental Health** Division 788 East Woodoak Lane (5380 South) Murray, UT 84107

1. **Is your organization/department aware of the Davenport and Flagstaff Smelters Superfund site and the work that was completed to address environmental contamination?** Dan Moore is an Environmental Health Enforcement Coordinator and has worked for the Salt Lake Valley Health Department (SLVHD) for 18 years. Mr. Moore has also worked in the Hazardous Waste and Water Quality divisions of the SLVHD and has worked on environmental and institutional controls issues as they relate to the Davenport & Flagstaff Superfund Site for 8 years. Mr. Moore said the SLVHD has an active role with UDEQ and EPA implementing Institutional Controls (ICs) at Superfund cleanup sites throughout the County. To ensure the remedy remains protective, Salt Lake County established institutional controls, environmental covenants, and land-use controls with Salt Lake County Zoning in 2013 after the site was construction complete in 2012. Mr. Moore said the SLVHD's role with the Davenport and Flagstaff Smelters Superfund site, as well as contaminated properties in Salt Lake County, is of interest to the department to protect the public's health, safety and welfare.

2. **What's your overall impression (your general sentiment) of the work that was completed at the Davenport and Flagstaff Smelters Superfund Site?** Mr. Moore said the soil-capping remedy is working as well, as the SLVHD hasn't any issues at the Davenport/Flagstaff cleanup site and the soil cap remedy and the enforcement of institutional controls. Mr. Moore said the County Soils Ordinance works well because agency coordination with UDEQ is excellent and successful to keep the former Superfund site protective of public health and the environment.

3. **Does your office conduct routine communications and/or activities (site visits, inspections, reporting activities, participation in meetings, etc.) for the Davenport and Flagstaff Smelters Superfund Site? If so, please briefly summarize the purpose and results of these communications and/or activities over the past several years.** Mr. Moore said no formal meetings among agencies are regularly scheduled and held only in instances where specific coordination of institutional controls is necessary. Mr. Moore said the SLVHD and Zoning have worked with UDEQ to develop a mapping system to identify cleanup areas with Environmental Covenants to track property records within the Davenport and Flagstaff cleanup areas. Mr. Moore said the SLVHD coordinates permit approval for property development based on where a property lies, within or outside the overlay zone. If the property lies within the overlay zone, indicating potential impact from lead and arsenic contamination, the developer is required to submit a Sampling and Analysis plan for UDEQ to review.

   Mr. Moore said as the County Building Department communicates properties planning for development, the Environmental Health Department can flag a sensitive area, for additional measures to be taken by the developer to properly address any contamination, through the building permits process on cleanup

properties. Mr. Moore also said the SLVHD Environmental Staff has a great rapport with UDEQ, coordinating information quickly to property owners to expedite any construction issues safely.

4. **Are you aware of any community concerns regarding the Davenport and Flagstaff Smelters Superfund Site or its operation and administration? If so, please give details.** Mr. Moore said he does not hear any specific community health or environmental concerns regarding the former Davenport and Flagstaff Smelters cleanup site. The department coordinates reported calls with UDEQ and local municipalities in the area and has visibility with County building permits processes and ordinances to monitor construction on cleanup properties.

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 Davenport and Flagstaff Smelters Superfund Site requiring your office to respond? If so, please give details of the events and results of the response**. Mr. Moore said there was an incident where a property owner was in the process of putting in a swimming pool and was unaware the property was remediated as part of the Davenport and Flagstaff Superfund site. The pool contractor dug into the orange demarcation barrier and began asking permit questions with the county and UDEQ. Mr. Moore said this started an intricate exchange of information between the County, UDEQ and the property owner to work out the details. Mr. Moore said the project was able to move forward because the respective agencies worked so well together. Mr. Moore said this incident also opened doors with Cottonwood Heights City, which recently annexed this property, for his department and UDEQ to inform them of the Superfund Site history and County institutional controls currently in place. Mr. Moore said SLVHD also successfully coordinated oversight with UDEQ, without any complications, on a Soils Management Plan submitted this year for a construction project with property owners.

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 Davenport and Flagstaff Smelters Superfund Site**? Mr. Moore said the SLVHD has an excellent partnership with UDEQ to keep communication at a high level on cleanup activities such as reviewing inspection reports and formal decision documents. Mr. Moore said his staff said any issues with cleanup areas, health or environmental concerns, are communicated and coordinated with UDEQ very well.

7. **Over the past five years, have there been any changes in your department's policies or regulations that impact the Davenport and Flagstaff Smelters Superfund Site and/or your role? If so, please describe the changes and the impacts.** Mr**.** Moore said there have not been any changes regarding county processes and land-use controls currently in place at the Davenport and Flagstaff Smelter Site.

8. **Over the past five years, have there been any changes in land use surrounding the Davenport and Flagstaff Smelters Superfund Site? Are you aware of potential future changes in land use? If so, please describe.** Mr. Moore said nothing is in the works for the SLVHD responsibilities regarding the site. Moore did see a continual need to keep municipalities, Sandy City, Cottonwood Heights, the Utah Department of Transportation, Salt Lake City Public Utilities watershed areas informed of the cleanup areas. Mr. Moore said as respective decision documents are developed, updated and/or as land use changes by each entity, those anticipated changes could impact each department's work and better keep the remedy protective for the public and environment.

9. **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?** Mr. Moore said there is a need for the county departments to be better informed on cleanup areas throughout the valley and would welcome a presentation or opportunity for UDEQ to provide site history to his respective departments. Mr. Moore was thinking an annual meeting would enable county staff to anticipate any future issues and concerns to manage contaminated areas. The public benefits as well, as agencies would be better prepared to answer

questions quickly and provide information to make the best decisions, build trust and value in a well-coordinated manner.

APPENDIX D - SITE INSPECTION CHECKLIST

I. SITE INFORMATION	
Site name: Davenport and Flagstaff Smelters Superfund Site	**Date of inspection: 3/24/2022**
Location and Region:	**EPA ID:**
Agency, office, or company leading the five-year review: UDEQ	**Weather/temperature: Sunny, 65 degrees**

Remedy Includes: (Check all that apply)

- x Landfill cover/containment
- ☐ Access controls
- x Institutional controls
- ☐ Groundwater pump and treatment
- ☐ Surface water collection and treatment
- ☐ Other_____
  _____
- ☐ Monitored natural attenuation
- ☐ Groundwater containment
- ☐ Vertical barrier walls

Attachments: ☐ Inspection team roster attached ☐ Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** _____ _____ _____
   Name Title Date
   Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____
   Problems, suggestions; ☐ Report attached _____
   _____

2. **O&M staff** _____ _____ _____
   Name Title Date
   Interviewed ☐ at site ☐ at office ☐ by phone Phone no. _____
   Problems, suggestions; ☐ Report attached _____
   _____

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency Salt Lake Valley (County) Health Department
Contact Dan Moore, Environmental Health Enforcement Coordinator 4/4/2022 _____
Name Title Date Phone no.
Problems; suggestions; X Report attached _____
_____

Agency Salt Lake City Public Utilities
Contact Teresa Gray, Water Quality and Treatment Administrator 4/1/2022 _____
Name Title Date Phone no.
Problems; suggestions; X Report attached _____
_____

Agency Salt Lake City Public Utilities
Contact Patrick Nelson, Watershed Manager 4/1/2022 _____
Name Title Date Phone no.
Problems; suggestions; ☐ Report attached _____
_____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.
Problems; suggestions; ☐ Report attached _____
_____

4. **Other interviews** (optional) ☐ Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**

x O&M manual	x Readily available	x Up to date	☐ N/A
☐ As-built drawings	☐ Readily available	☐ Up to date	x N/A
☐ Maintenance logs	☐ Readily available	☐ Up to date	x N/A

Remarks_____

_____

2. **Site-Specific Health and Safety Plan** ☐ Readily available ☐ Up to date x N/A

☐ Contingency plan/emergency response plan ☐ Readily available ☐ Up to date ☐ N/A

Remarks_____

_____

3. **O&M and OSHA Training Records** ☐ Readily available x Up to date ☐ N/A

Remarks_____

_____

4. **Permits and Service Agreements**

☐ Air discharge permit	☐ Readily available	☐ Up to date	x N/A
☐ Effluent discharge	☐ Readily available	☐ Up to date	x N/A
☐ Waste disposal, POTW	☐ Readily available	☐ Up to date	x N/A
☐ Other permits_____	☐ Readily available	☐ Up to date	x N/A

Remarks_____

_____

5. **Gas Generation Records** ☐ Readily available ☐ Up to date x N/A

Remarks_____

_____

6. **Settlement Monument Records** ☐ Readily available ☐ Up to date x N/A

Remarks_____

_____

7. **Groundwater Monitoring Records** ☐ Readily available ☐ Up to date x N/A

Remarks_____

_____

8. **Leachate Extraction Records** ☐ Readily available ☐ Up to date x N/A

Remarks_____

_____

9. **Discharge Compliance Records**

☐ Air	☐ Readily available	☐ Up to date	☐ N/A
☐ Water (effluent)	☐ Readily available	☐ Up to date	☐ N/A

Remarks_____

_____

10. **Daily Access/Security Logs** ☐ Readily available ☐ Up to date x N/A

Remarks_____

_____

IV. O&M COSTS

1. **O&M Organization**

x State in-house	☐ Contractor for State
☐ PRP in-house	☐ Contractor for PRP
☐ Federal Facility in-house	☐ Contractor for Federal Facility

☐ Other_____

_____

2. **O&M Cost Records**

☐ Readily available ☐ Up to date

x Funding mechanism/agreement in place

Original O&M cost estimate_____ ☐ Breakdown attached

Total annual cost by year for review period if available

From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost

From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost

From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost

From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost

From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost

3. **Unanticipated or Unusually High O&M Costs During Review Period**

Describe costs and reasons: _____No_____

_____

_____

_____

_____

_____

V. ACCESS AND INSTITUTIONAL CONTROLS x Applicable ☐ N/A

A. Fencing

1. **Fencing damaged** ☐ Location shown on site map ☐ Gates secured x N/A

Remarks_____

_____

B. Other Access Restrictions

1. **Signs and other security measures** ☐ Location shown on site map x N/A

Remarks_____

_____

C. Institutional Controls (ICs)

1. **Implementation and enforcement**

Site conditions imply ICs not properly implemented ☐ Yes x No ☐ N/A

Site conditions imply ICs not being fully enforced ☐ Yes x No ☐ N/A

Type of monitoring (*e.g.*, self-reporting, drive by) Site inspection

Frequency Annual and as needed

Responsible party/agency UDEQ

Contact _____ _____ _____ _____
Name Title Date Phone no.

Reporting is up-to-date ☐ Yes ☐ No ☐ N/A

Reports are verified by the lead agency ☐ Yes ☐ No ☐ N/A

Specific requirements in deed or decision documents have been met ☐ Yes ☐ No ☐ N/A

Violations have been reported ☐ Yes ☐ No ☐ N/A
Other problems or suggestions: ☐ Report attached
_____
_____
_____
_____

2. **Adequacy** x ICs are adequate ☐ ICs are inadequate ☐ N/A
Remarks_____
_____
_____

D. General

1. **Vandalism/trespassing** ☐ Location shown on site map x No vandalism evident
Remarks_____
_____

2. **Land use changes on site** x N/A
Remarks_____
_____

3. **Land use changes off site** x N/A
Remarks_____
_____

VI. GENERAL SITE CONDITIONS

A. Roads x Applicable ☐ N/A

1. **Roads damaged** ☐ Location shown on site map x Roads adequate ☐ N/A
Remarks_____
_____

B. Other Site Conditions

Remarks _____
_____
_____
_____
_____
_____

VII. LANDFILL COVERS ☐ Applicable x N/A

A. Landfill Surface

1. **Settlement** (Low spots) ☐ Location shown on site map ☐ Settlement not evident
Areal extent_____ Depth_____
Remarks_____
_____

2. **Cracks** ☐ Location shown on site map ☐ Cracking not evident
Lengths_____ Widths_____ Depths_____
Remarks_____
_____

3. **Erosion** ☐ Location shown on site map x Erosion not evident
Areal extent_____ Depth_____

Remarks_____
_____

4. **Holes** ☐ Location shown on site map x Holes not evident
Areal extent_____ Depth_____
Remarks_____
_____

5. **Vegetative Cover** ☐ Grass x Cover properly established ☐ No signs of stress
☐ Trees/Shrubs (indicate size and locations on a diagram)
Remarks_____
_____

6. **Alternative Cover (armored rock, concrete, etc.)** x N/A
Remarks_____
_____

7. **Bulges** ☐ Location shown on site map x Bulges not evident
Areal extent_____ Height_____
Remarks_____
_____

8. **Wet Areas/Water Damage** x Wet areas/water damage not evident
☐ Wet areas ☐ Location shown on site map Areal extent_____
☐ Ponding ☐ Location shown on site map Areal extent_____
☐ Seeps ☐ Location shown on site map Areal extent_____
☐ Soft subgrade ☐ Location shown on site map Areal extent_____
Remarks_____
_____

9. **Slope Instability** ☐ Slides ☐ Location shown on site map x No evidence of slope instability
Areal extent_____
Remarks_____
_____

B. Benches ☐ Applicable x 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** ☐ Location shown on site map ☐ N/A or okay
Remarks_____
_____

2. **Bench Breached** ☐ Location shown on site map ☐ N/A or okay
Remarks_____
_____

3. **Bench Overtopped** ☐ Location shown on site map ☐ N/A or okay
Remarks_____
_____

C. Letdown Channels ☐ Applicable x 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** ☐ Location shown on site map ☐ No evidence of settlement
Areal extent_____ Depth_____
Remarks_____
_____

2. **Material Degradation** ☐ Location shown on site map ☐ No evidence of degradation
Material type_____ Areal extent_____
Remarks_____
_____

3. **Erosion** ☐ Location shown on site map ☐ No evidence of erosion
Areal extent_____ Depth_____
Remarks_____
_____

4. **Undercutting** ☐ Location shown on site map ☐ No evidence of undercutting
Areal extent_____ Depth_____
Remarks_____
_____

5. **Obstructions** Type_____ ☐ No obstructions
☐ Location shown on site map Areal extent_____
Size_____
Remarks_____
_____

6. **Excessive Vegetative Growth** Type_____
☐ No evidence of excessive growth
☐ Vegetation in channels does not obstruct flow
☐ Location shown on site map Areal extent_____
Remarks_____
_____

D. Cover Penetrations ☐ Applicable x N/A

1. **Gas Vents** ☐ Active☐ Passive
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance
☐ N/A
Remarks_____
_____

2. **Gas Monitoring Probes**
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____
_____

3. **Monitoring Wells** (within surface area of landfill)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____
_____

4. **Leachate Extraction Wells**
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ Evidence of leakage at penetration ☐ Needs Maintenance ☐ N/A
Remarks_____
_____

5. **Settlement Monuments** ☐ Located ☐ Routinely surveyed ☐ N/A
Remarks_____
_____

E. Gas Collection and Treatment ☐ Applicable x N/A

1. **Gas Treatment Facilities**
   ☐ Flaring ☐ Thermal destruction ☐ Collection for reuse
   ☐ Good condition ☐ Needs Maintenance
   Remarks_____
   _____

2. **Gas Collection Wells, Manifolds and Piping**
   ☐ Good condition ☐ Needs Maintenance
   Remarks_____
   _____

3. **Gas Monitoring Facilities** (*e.g.*, gas monitoring of adjacent homes or buildings)
   ☐ Good condition ☐ Needs Maintenance ☐ N/A
   Remarks_____
   _____

F. Cover Drainage Layer ☐ Applicable x N/A

1. **Outlet Pipes Inspected** ☐ Functioning ☐ N/A
   Remarks_____
   _____

2. **Outlet Rock Inspected** ☐ Functioning ☐ N/A
   Remarks_____
   _____

G. Detention/Sedimentation Ponds ☐ Applicable x N/A

1. **Siltation** Areal extent_____ Depth_____ ☐ N/A
   ☐ Siltation not evident
   Remarks_____
   _____

2. **Erosion** Areal extent_____ Depth_____
   ☐ Erosion not evident
   Remarks_____
   _____

3. **Outlet Works** ☐ Functioning ☐ N/A
   Remarks_____
   _____

4. **Dam** ☐ Functioning ☐ N/A
   Remarks_____
   _____

H. Retaining Walls ☐ Applicable x N/A

1. **Deformations** ☐ Location shown on site map ☐ Deformation not evident
   Horizontal displacement_____ Vertical displacement_____
   Rotational displacement_____
   Remarks_____
   _____

2. **Degradation** ☐ Location shown on site map ☐ Degradation not evident
   Remarks_____
   _____

I. Perimeter Ditches/Off-Site Discharge ☐ Applicable x N/A

1. **Siltation** ☐ Location shown on site map ☐ Siltation not evident
Areal extent_____ Depth_____
Remarks_____
_____

2. **Vegetative Growth** ☐ Location shown on site map x N/A
☐ Vegetation does not impede flow
Areal extent_____ Type_____
Remarks_____
_____

3. **Erosion** ☐ Location shown on site map ☐ Erosion not evident
Areal extent_____ Depth_____
Remarks_____
_____

4. **Discharge Structure** ☐ Functioning ☐ N/A
Remarks_____
_____

VIII. VERTICAL BARRIER WALLS ☐ Applicable x N/A

1. **Settlement** ☐ Location shown on site map ☐ Settlement not evident
Areal extent_____ Depth_____
Remarks_____
_____

2. **Performance Monitoring** Type of monitoring_____
☐ Performance not monitored
Frequency_____☐ Evidence of breaching
Head differential_____
Remarks_____
_____

IX. GROUNDWATER/SURFACE WATER REMEDIES ☐ Applicable x N/A

A. Groundwater Extraction Wells, Pumps, and Pipelines ☐ Applicable ☐ N/A

1. **Pumps, Wellhead Plumbing, and Electrical**
☐ Good condition☐ All required wells properly operating ☐ Needs Maintenance ☐ N/A
Remarks_____
_____
_____

2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
☐ Good condition☐ Needs Maintenance
Remarks_____
_____

3. **Spare Parts and Equipment**
☐ Readily available ☐ Good condition☐ Requires upgrade ☐ Needs to be provided
Remarks_____
_____

B. Surface Water Collection Structures, Pumps, and Pipelines ☐ Applicable x N/A

1. **Collection Structures, Pumps, and Electrical**
☐ Good condition☐ Needs Maintenance
Remarks_____
_____

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
☐ Good condition☐ Needs Maintenance
Remarks_____
_____

3. **Spare Parts and Equipment**
☐ Readily available ☐ Good condition☐ Requires upgrade ☐ Needs to be provided
Remarks_____
_____

C. Treatment System ☐ Applicable x N/A

1. **Treatment Train** (Check components that apply)
☐ Metals removal ☐ Oil/water separation ☐ Bioremediation
☐ Air stripping ☐ Carbon adsorbers
☐ Filters_____
☐ Additive (*e.g.*, chelation agent, flocculent)_____
☐ Others_____
☐ Good condition ☐ Needs Maintenance
☐ Sampling ports properly marked and functional
☐ Sampling/maintenance log displayed and up to date
☐ Equipment properly identified
☐ Quantity of groundwater treated annually_____
☐ Quantity of surface water treated annually_____
Remarks_____
_____

2. **Electrical Enclosures and Panels** (properly rated and functional)
☐ N/A ☐ Good condition☐ Needs Maintenance
Remarks_____
_____

3. **Tanks, Vaults, Storage Vessels**
☐ N/A ☐ Good condition☐ Proper secondary containment ☐ Needs Maintenance
Remarks_____
_____

4. **Discharge Structure and Appurtenances**
☐ N/A ☐ Good condition☐ Needs Maintenance
Remarks_____
_____

5. **Treatment Building(s)**
☐ N/A ☐ Good condition (esp. roof and doorways) ☐ Needs repair
☐ Chemicals and equipment properly stored
Remarks_____
_____

6. **Monitoring Wells** (pump and treatment remedy)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ All required wells located ☐ Needs Maintenance ☐ N/A
Remarks_____
_____

D. Monitoring Data

1. Monitoring Data
☐ Is routinely submitted on time ☐ Is of acceptable quality

2. Monitoring data suggests:

☐ Groundwater plume is effectively contained ☐ Contaminant concentrations are declining

D. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ All required wells located ☐ Needs Maintenance ☐ 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 is functioning as intended. The vegetation is well established and no signs of erosion was observed. Additionally, no construction (not approved under a soil management plan) was observed during the inspection. _____
_____
_____
_____

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.

_____
_O&M for OU2 is functioning adequately _____
_____

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.

_N/a_____
_____
_____
_____
_____
_____
_____
_____
_____

D. Opportunities for Optimization

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

APPENDIX E- SITE PHOTOS

Photo No. 1 – Construction of a new brick road on the La Caille Restaurant Property in OU2. Photo taken from the parking lot facing away from the restaurant.

Photo No. 2- Construction of a new brick road on the La Caille Restaurant Property in OU2. Photo taken from the parking lot in the direction of the greenhouse.

Photo No. 3 – Established vegetation behind the maintenance barn on OU2.

Photo No. 4 – Undeveloped portion of La Caille Restaurant property on OU2, vegetation is established.

Photo No. 5 – Established Gambel Oak on undeveloped portion of OU2.