THIRD FIVE-YEAR REVIEW REPORT FOR INTERNATIONAL SMELTING AND REFINING SUPERFUND SITE TOOELE 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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LIST OF ABBREVIATIONS & ACRONYMS

BERA	Baseline Ecological Risk Assessment
BHHRA	Baseline Human Health Risk Assessment
BLL	Blood Lead Level
BLRV	Blood Lead Reference Value
BSHW	Bureau of Solid and Hazardous Waste
CDC	Centers for Disease Control
COCs	Contaminants of Concern
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
DOGM	Division of Oil, Gas, and Mining
EPA	United States Environmental Protection Agency
ESD	Explanation of Significant Difference
FCOR	Final Close Out Report
FYR	Five-Year Review
ICs	Institutional Controls
IS&R	International Smelting and Refining
LEPAC	Lead Exposure Prevention and Advisory Committee
LTOM	Long Term Operation and Maintenance
MCL	Maximum Contaminant Level
mg/kg	Milligrams per Kilogram
mg/L	Milligrams per Liter
µg/dL	Micrograms per Deciliter
$\mu g/m^3$	Micrograms per cubic Meter
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
OU	Operable Unit
PRP	Potentially Responsible Party
RAGS	Risk Assessment Guidance for Superfund
RAOs	Remedial Action Objectives
RI	Remedial Investigation
ROD	Record of Decision
RPM	Remedial Project Manager
TCHD	Tooele County Health Department
TVRR	Tooele Valley Railroad
UAO	Unilateral Administrative Order
UDEQ/DERR	Utah Department of Environmental Quality, Division of Environmental Response and Remediation
UDWR	Utah Division of Wildlife Resources
UU/UE	Unlimited Use and Unrestricted Exposure

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, FYR reports identify issues found during the review, if any, and document recommendations to address them.

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

This is the third FYR for the International Smelting and Refining (IS&R) Superfund Site (Site). The triggering action for this statutory review is the previous FYR completed on September 26, 2017. 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 one operable unit (OU). OU1 encompasses the entire site, which includes: the smelter property which is now the Pine Canyon Conservation and Wildlife Management Area (Pine Canyon Conservation Area); portions of the former Tooele Valley Railroad (TVRR) grade; and the Pine Canyon Community.

The International Smelting and Refining Superfund Site FYR was led by Tony Howes, UDEQ/DERR Project Manager. Participants included Dania Zinner, EPA Remedial Project Manager (RPM); Dave Allison, UDEQ/DERR Community Involvement Coordinator, and Scott Everett, UDEQ/DERR Toxicologist. The review began on 11/30/2021.

The EPA has determined in the Five Year Review that the cleanup at the International Smelting and Refining Superfund Site is protective of human health and the environment. Groundwater use, including drinking the groundwater within the Pine Canyon Conservation Area, is prevented by a conservation easement and Environmental Covenant. Institutional controls (ICs) require soil sampling of undeveloped properties in the Pine Canyon Community to determine if remediation is needed for future residential development.

Site Background

The Site is approximately 2.5 miles northeast of the City of Tooele in Tooele County, Utah, as shown in Appendix B-Figure 1. The Site occupies the lower portion of Pine Canyon on the west flank of the Oquirrh Mountains at the mouth of Pine Canyon. The Pine Canyon Conservation Area is currently used for recreation purposes. The TVRR grade and Pine Canyon Community are used for residential purposes. The former smelter site historically included mine workings, a mill site, a smelter area, a slag pile, a tailings impoundment, and two landfill areas that were used for the disposal of smelter-related equipment and office wastes throughout the operational history of the Site.

The IS&R Company began operations near Tooele, Utah, in 1910. From 1910 through 1972, the IS&R Company operated the TVRR, a copper and lead smelter, and a lead-zinc flotation mill. The smelter processed ores mined from several areas in Utah and Nevada and the TVRR was used to transport these ores to the smelter facility. The copper smelter was originally designed to process 4,000 tons of ore per day, although it never sustained a rate this high. In the early years of IS&R operation, tailings and slag were produced at an estimated annual rate of approximately 650,000 tons/year with declining output in later years. Approximately 326 acres of tailings of an unknown volume were placed in the tailings impoundment. The copper smelter was closed in 1946, followed by the closure of the lead/zinc flotation mill in 1968, and finally, closure of the lead smelter in 1972. Shortly after the closing of the lead smelter in 1972, the process of dismantling and demolishing the principal IS&R facilities and

the TVRR began. A few incidental buildings that were left standing after 1972 were removed in 1986, including the main office, a residential home, a large warehouse, an assay lab and two smaller warehouse buildings.

The Anaconda Company acquired the IS&R Company in 1973 and in 1974 constructed and operated a mine and mill, known as the Carr Fork Operations, just east of the IS&R smelter site in Pine Canyon. Atlantic Richfield acquired the Anaconda Company in 1977 and merged Anaconda into Atlantic Richfield in 1981.

Tailings from the Carr Fork Operations were transported down Pine Canyon to the original IS&R tailings impoundment, and a new tailings dam along the western edge of the original tailings impoundment was constructed to contain the Carr Fork tailings. As a result of the short operational duration of the Carr Fork Mill, the Carr Fork tailings only encompassed 64 acres.

The Carr Fork operations were idled in November 1981 as a result of low copper prices. However, the economic feasibility of the Carr Fork operations did not improve, and the processing facilities were dismantled, sold and removed from the property. In 1985 Atlantic Richfield sold the land which housed the Carr Fork operations, along with several acres of land east of the IS&R smelter site and other Carr Fork holdings, to Kennecott. This sale excluded the former IS&R smelter site, slag pile and associated tailings impoundments. Atlantic Richfield is the Site's Potentially Responsible Party (PRP) and current owner of the former IS&R smelter site, slag pile and associated tailings impoundments.

Operation of the IS&R smelter facility resulted in the deposition of waste material containing heavy metals, primarily lead and arsenic, within the Pine Canyon Conservation Area. Historic flooding and the fallout of stack emissions from the IS&R smelter facility contaminated soils in the Pine Canyon Community with lead and arsenic. Operation of the TVRR, and the transport of materials to and from the IS&R smelter facility, resulted in the deposition of waste material containing heavy metals, primarily lead and arsenic, along the length of the railroad right-of-way.

The Site consists of the following three areas: the former smelter property now known as the Pine Canyon Conservation Area, the former TVRR grade, and Pine Canyon Community (Appendix B-Figure 2).

The Pine Canyon Conservation Area is 3,000-acres in size and includes the area occupied by the former IS&R smelter and tailings impoundments and adjacent property owned by Atlantic Richfield. Atlantic Richfield, in conjunction with the Utah Division of Wildlife Resources (UDWR), created a conservation easement in 1994 to protect reclaimed features. The current boundary for the Conservation Area coincides with the Atlantic Richfield property boundary.

The TVRR area of the Site is a former railroad right-of-way extending from the Conservation Area to the City of Tooele, Utah, and was used for transporting smelter ores, concentrates, equipment and personnel to and from the Site. The TVRR grade included in the Site runs from Vine Street in the city of Tooele, east to where the right-of-way intersects the Conservation Area boundary. The length of the former rail line is approximately 10,000 feet.

The Pine Canyon Community is a residential area that comprises approximately two square miles along the western edge of the Conservation Area. Residential development activities within the Pine Canyon Community have been steady in this area over the course of the last five years.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: International Smelting and Refining Site		
EPA ID: UTD093120921		
Region: 8	**State:** UT	**City/County:** Tooele/Tooele

SITE STATUS	
NPL Status: Deleted	
Multiple OUs? No	**Has the site achieved construction completion?** Yes

REVIEW STATUS
Lead agency: EPA
Author name: Tony Howes
Author affiliation: UDEQ/DERR
Review period: 11/30/2021 - 8/31/2022
Date of site inspection: 11/17/2021
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

Smelting and refining operations at the Site resulted in contamination that exceeded residential and recreational visitor cleanup values in soils at the Site. The EPA evaluated exposure to soil, groundwater, surface water and air in a Baseline Human Health Risk Assessment (BHHRA) and Baseline Ecological Risk Assessment (BERA) completed in 2003 and 2005, respectively, that concluded risks were highest from lead and arsenic in soils.

The Site has been the subject of environmental concern since 1984 when an investigation by the Utah Division of Environmental Health, Bureau of Solid and Hazardous Waste (BSHW) which later became UDEQ/DERR, identified arsenic concentrations in soil as high as 6,040 milligrams/kilogram (mg/kg) and lead concentrations in soil as high as 10,700 mg/kg. This initial investigation led to EPA involvement at the site starting in 1985. The Site's PRP, Atlantic Richfield, also began investigating soils and groundwater at the Site in 1985.

Response Actions

Interim Removal Actions completed by the PRP, Atlantic Richfield, with oversight from the EPA and UDEQ/DERR, mitigated the immediate risk posed by soil contaminated with lead and arsenic above cleanup levels.

Environmental reclamation and cleanup work was conducted by the PRP, Atlantic Richfield, at the former IS&R smelter property in 1986 under a plan approved by the Utah Division of Oil, Gas, and Mining (DOGM). Initially, reclamation work consisted of demolition and on-site disposal of structures and waste consolidation of 330 acres of tailings, 28 acres of metal-contaminated slag, 13 acres of settling ponds, 50 acres of landfills and 125 acres of smelting waste. In addition, drainage improvements to prevent erosion, soil capping, re-vegetation and the establishment of a permanent waste repository within the tailings impoundment were completed to remedy the former smelter operations. The Utah DOGM released the PRP of further mining-reclamation liability at the Site in 1990.

Atlantic Richfield, the Site's PRP, conducted a Remedial Investigation (RI) between 2001 and 2006, with the EPA's oversight, in connection with a 2001 Administrative Order on Consent for Remedial Investigation/Feasibility Study. The chief objective of the RI was to determine the nature and extent of contamination and the potential risk to human health and the environment from the historic smelting operations. The RI included an extensive groundwater study, took into account reclamation work completed in 1986, verified results from previous investigations, and assessed areas that were not addressed by the reclamation work completed in 1986, including near-by residential areas. Material sampled during the RI included soils, slag, sediment, surface water and groundwater. In addition to samples collected on the former smelter site and surrounding areas, residential yard samples and household dust samples were collected from residential properties in the Pine Canyon Community.

Pine Canyon Conservation Area

In 2006, a removal action was performed in the Conservation Area by the PRP, Atlantic Richfield, under a Unilateral Administrative Order (UAO) issued by the EPA. Eighteen locations of varying sizes that exceeded the cleanup levels of 8,000 mg/kg lead and 900 mg/kg arsenic were identified in the Conservation Area during the RI. These locations were addressed by placing a 12-inch-thick cap of clean soil over the contaminated soil and then re-seeding the surface. Two of the 18 locations identified in the RI were within the slag pile and could not be safely addressed as a result of steep and unstable slope conditions. Therefore, fencing and other physical barriers were constructed to limit access to these two locations. For purposes of establishing and supporting the growth of vegetation for wildlife, the removal action also addressed poor soil conditions where vegetation was limited and contaminant concentrations were below cleanup levels. These areas were addressed by removing 24 inches of soil, backfilling the excavation with clean soil, and re-seeding.

TVRR

Sampling conducted by the PRP, Atlantic Richfield, in 2003 and 2004, found areas where lead and arsenic concentrations were above the cleanup levels established in the 2003 BHHRA. In 2005, Atlantic Richfield completed a removal action under a 2004 UAO issued by the EPA that addressed the areas where lead and arsenic concentrations exceeded cleanup levels. For purposes of planning and conducting the removal action, the Site was divided into three corresponding sections that included the town, school, and extension sections. Removal work completed in the town and school sections consisted of removal of soil that exceeded residential risk levels to a depth of 18 inches followed by backfilling with clean soil. Removal work completed in the extension section consisted of removal of soil exceeding recreational risk levels to a depth of 18 inches followed by backfilling and covering areas where soil was not removed with a protective cap of clean soil and rock. Contaminated soils removed from the TVRR grade were transported to and placed in the tailing repository on the smelter property.

Pine Canyon Community

In 2005 and 2006, a residential soil removal action was completed at 19 Pine Canyon properties. Due to a high lead level in a blood test conducted by the Tooele County Health Department (TCHD) on one child in Pine Canyon and the risks identified by the 2003 Baseline Human Health Risk Assessment, the EPA and UDEQ/DERR determined that immediate implementation of a removal action was necessary. In July 2004, the EPA issued a UAO to Atlantic Richfield for a time-critical removal action to address potential risks in the residential area. The health-based cleanup levels used were 580 mg/kg for lead and 100 mg/kg for arsenic. A total of 9,100 cubic yards of material was excavated, transported to and placed in the tailing repository on the smelter property. After excavation, each property was backfilled with clean soil and landscaped or restored similar to the pre-construction condition.

The Record of Decision (ROD) for the Site was signed on September 27, 2007, and addressed the Pine Canyon Conservation Area, the TVRR grade and Pine Canyon Community. The ROD did not require any remedial construction since removal actions addressed contamination that exceeded the established cleanup levels shown in Table 1. The selected remedy was monitoring and Institutional Controls (ICs).

Table 1: Cleanup Levels

Area	Use Scenario	Cleanup level (mg/kg)	
		Lead	Arsenic
Pine Canyon Community	Residential	580	100
TVRR Town and School Section	Residential	580	100
TVRR Extension Section	Recreational Visitor	2,300	900
Pine Canyon Conservation Area	Not to Exceed Value	8,000	900

The following RAOs were identified in the ROD:

- For human and ecological receptors, prevent direct contact/ingestion with soil having lead and/or arsenic concentrations in excess of cleanup levels identified for the Site, and
- For human and ecological receptors, protect water quality in streams by minimizing migration of soil with lead and/or arsenic concentrations above cleanup levels into streams.

The 2007 ROD concluded that RAOs were not necessary for surface water, sediments, and groundwater since surface water and sediments were determined to not pose a risk to human health and the environment and arsenic levels in groundwater were likely from naturally occurring sources. The naturally occurring source is likely the result of reactions between groundwater and native material containing naturally occurring arsenic. Groundwater monitoring is conducted at the Site to confirm that concentrations remain within a range similar to previous monitoring events and ensure that waste material covered in place at the Site does not become a future source of groundwater contamination.

Components of the selected remedy consist of the following:

- ICs supplementing the Conservation Area easement to ensure it specifically addresses and protects existing remedial features.
- ICs supplementing existing private party agreements that limit future development and activities from penetrating the TVRR rock cover.
- ICs ordinances and permit programs for future residential development in the Pine Canyon Community where metal concentrations in undeveloped areas are below recreational cleanup levels but above residential cleanup levels.
- Monitoring the integrity of existing caps, covers, and storm water controls on regular basis.

- Groundwater monitoring to ensure that the former smelter area does not become a source of groundwater contamination in the future.

Status of Implementation

Response actions at the Site were completed on June 21, 2011, as documented in the Final Close-Out Report (FCOR). The Site was deleted from the NPL on October 21, 2011. A Consent Decree terminating the UAOs, and recognizing the Long-Term Operations and Maintenance (LTOM) Plan as an enforceable part for maintaining the effectiveness of the remedy was signed in 2016. Institutional Controls in the form of Environmental Covenants, as required by the ROD, have been put on sections of the Site to ensure protectiveness (Table 2).

Atlantic Richfield conducts routine site inspections to ensure that the integrity of existing caps, covers and storm-water controls are maintained and annual groundwater monitoring to ensure that the former smelter area does not become a future source of groundwater contamination. In addition to the annual groundwater monitoring and routine inspections, UDWR conducts surveillance and maintenance activities at the Conservation Area as part of their agreement with Atlantic Richfield.

IC Summary Table

Table 2: 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/Groundwater	Yes	Yes	Pine Canyon Conservation Area	Preserves wildlife habitat and, prohibits groundwater well drilling and activity that would impact remedial features	Conservation Easement by Atlantic Richfield Company to the Utah Division of Wildlife Resources, 4/29/1994
Soil/Groundwater	Yes	Yes	Pine Canyon Conservation Area	Prohibits land use changes, groundwater well drilling, or any action that would disturb remedial features.	Environmental Covenant between Atlantic Richfield Company, EPA, and UDEQ 8/14/2010
Soil	Yes	Yes	Pine Canyon Community	Establishes an environmental overlay zone map of undeveloped areas and provides guidelines for evaluating and remediating areas for residential use	Land Use Ordinance of Tooele County Chapter 29 Pine Canyon Environmental Overlay Zone, 9/22/2009

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	TVRR Trestle Area	Prohibits actions that would disturb the covered trestle area	Environmental Covenant between Atlantic Richfield, Tooele City, EPA and UDEQ 12/14/2009
Soil	Yes	Yes	TVRR Capped Area	Prohibits actions that would disturb covered areas of the rail road grade	Environmental Covenant between Atlantic Richfield and Zions Farm, L.C. 9/13/2010
Soil	Yes	No	Pine Canyon Conservation Area	Protect workers and benefit the community through the construction and operation of the Mona-Oquirrh power transmission line	Amendment to Environmental Covenant between Atlantic Richfield, EPA and UDEQ 9/7/2011

Systems Operations/Operation & Maintenance

Operation and maintenance (O&M) of the Site is conducted by UDWR and Atlantic Richfield in accordance with the Long Term Operation and Maintenance (LTOM) Plan and 2016 Consent Decree. Atlantic Richfield is responsible for O&M costs at the Site. The LTOM plan was updated in January 2022 to clarify the role of stakeholders and address changes in site contacts.

Quarterly inspections were completed during the last five years by Atlantic Richfield at the Pine Canyon Conservation Area, TVRR trestle area and TVRR capped area. Annual reports summarizing the findings of each inspection were prepared and provided to the EPA and UDEQ/DERR. The reports identified maintenance concerns that did not impact the overall integrity of the remedy such as breaks in the Conservation Area boundary fence, replacing and updating sign boards, illegal dumping of trash near the slag pile, and seasonal erosion of drainage features.

Maintenance concerns identified during the last five years have been addressed, and the remedy remains protective of human health and the environment. Atlantic Richfield repaired areas of seasonal erosion, and UDWR performed fence repair work and updated signboards. Atlantic Richfield, in conjunction with Tooele County and the adjacent property owner, installed a gate at the end of the Tooele County right-of-way on Smelter/Anaconda Road. Installation of this gate has restricted vehicle traffic and illegal dumping of trash that was occurring near the slag pile. Public access to the Conservation Area is still provided by an equestrian/pedestrian gate.

Annual groundwater monitoring was performed during the last five years by Atlantic Richfield to ensure that the former smelter site does not become a source of groundwater contamination in the future. Groundwater samples were collected from seven monitoring wells within the Conservation Area (Appendix B-Figure 3). Reports

summarizing the findings of each annual sampling event were prepared and submitted to the EPA and UDEQ/DERR. A summary of the results are included in the Data Review section of this FYR report.

III. PROGRESS SINCE THE LAST REVIEW

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

Table 3: Protectiveness Determinations/Statements from the 2017 FYR

OU #	Protectiveness Determination	Protectiveness Statement
Sitewide	Protective	The remedy currently protects human health and the environment because exposure pathways that could result in unacceptable risks are being controlled through institutional and access controls. However, in order for the remedy to be protective in the long-term, the requirements of the 2010 Pine Canyon Developer Guidelines need to be managed effectively. Moreover, because Tooele County Planning Department staff has changed in the past five years, a refresher on Site ICs is needed.

Table 4: Status of Recommendations from the 2017 FYR

OU #	Issue	Recommendations	Current Status	Current Implementation Status Description	Completion Date (if applicable)
1	The Tooele County ordinance and associated developer guidelines do not reflect staff and department level changes.	Update the ordinance and developer guidelines.	Completed	Updates were made by Tooele County to reflect staff and department level changes.	2/28/2019

Soil removal work was completed by Anderson Engineering Company Incorporated on behalf of Celtic Bank Corporation in November 2019 at three lots located within the environmental overlay zone. The soil removal work was performed in accordance with the Pine Canyon Developer Guidelines and consisted of excavating soils that exceeded residential clean up levels to a depth of 18 inches and placing the excavated soil in the IS&R repository.

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

A public notice was made available by a newspaper posting (Appendix C) in the Tooele Transcript Bulletin, on 2/1/2022, stating that there was a five-year review and inviting the public to submit any comments to the EPA and UDEQ/DERR. The results of the review and the report will be made available at the Site information repository located at UDEQ/DERR, 195 North 1950 West 1st Floor Salt Lake City, Utah, and at http://eqedocs.utah.gov. The

results of the review and the report will also be made available on the EPA's Site profile page at https://www.epa.gov/superfund/international-smelting.

The UDEQ/DERR conducted community interviews with individuals knowledgeable about the Site. Individuals interviewed included personnel with the Tooele County Planning and Zoning Department, UDWR, Tooele County Engineering, The Ranch at Pine Canyon Real Estate, Tooele County Health Department and Lincoln Water Corporation. None of the interviewees expressed any health or environmental concerns. The property owners and developers were aware of the ICs enforced by the Tooele County Health Department and its requirements for redevelopment activities. Coordination among County Engineering permitting and Planning/Zoning Departments rely on Tooele County Health Department approval and review of applicant work plans that are within the Pine Canyon Environmental Overlay Zone Map to ensure protectiveness. Reports summarizing the interviews are included in Appendix D.

Data Review

Annual groundwater monitoring data from 2017 through 2021 for seven monitoring wells located at the Conservation Area indicate that the former smelter area is not a source of groundwater contamination. A summary of analytical results and physical parameters for each monitoring well is provided in Appendix E. Monitoring wells GW-1, GW-7, and GW-8 were the only wells that exceeded the Maximum Contaminant Level (MCL) for arsenic (0.010 milligrams per liter) during the last five years. Arsenic concentration trends in these three monitoring wells and the 4-point rolling average for each well is provided in Appendix E. Arsenic levels in GW-1, GW-7, and GW-8 over the last five years have remained steady. There were no elevated levels of contaminants detected in monitoring wells GW-1BR, GW-11, GW-4, and GW-3A. during the last five years.

The LTOM Plan states that the EPA and UDEQ/DERR shall be notified if the rolling average increase is greater than 30 percent from the previous high concentration and that sampling shall continue per the O&M Plan. Results from the 2021 groundwater sampling event indicate that the 4-point rolling averages for arsenic in GW-1 and GW-8 are below the previous 5-year high values for those wells, and no additional action is required. The 4-point rolling average for well GW-7 increased to 45.7 percent above the previous 5-year high and the EPA and UDEQ/DERR were notified of the increase on 10/25/2021.

Site Inspection

The inspection of the Site was conducted on 11/16/2021. In attendance were UDEQ/DERR Branch Manager Hans Millican; UDEQ/DERR Project Manager Tony Howes; UDEQ/DERR Community Involvement Coordinator Dave Allison; Tooele County Health Department Environmental Health Director Bryan Slade; Anderson Engineering Project Manager Ryan Anderson; and Anderson Engineering Project Engineer Kevin Cosper. The purpose of the inspection was to assess the protectiveness of the remedy. The EPA was notified of the site inspection but was unable to attend due to transition of RPMs. It is recommended that the new RPM visit the Site at a later date.

The group toured the Site, inspected monitoring wells and fences, observed new single family residential development west of the Site, repair of a stream channel that was damaged by erosion in the winter of 2020/2021, and noted general site conditions. Photographs of the Site are provided in Appendix F and the completed site inspection check list is included in Appendix G.

V. TECHNICAL ASSESSMENT

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

Question A Summary:

The remedy is functioning as intended by the decision documents and continues to meet the RAOs of preventing exposure to contaminated soil and protecting water quality in streams. All current and future direct and indirect contact risks presented by potential exposure to contaminants of concern (COCs) are eliminated through longterm monitoring, ICs, and maintenance of caps and covers. Capped and revegetated areas and storm water controls are in good condition; the fencing is well maintained; and signs are posted throughout the Conservation Area to inform users of the restrictions and any potential danger areas. Annual groundwater monitoring is conducted and indicates that the former smelter area is not a source of groundwater contamination. The Tooele County Land Use Ordinance, Environmental Overlay Zone Map and developer guidelines are effective and have identified areas in the Pine Canyon Community where remediation is required for residential development.

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 were derived from the exposure assumptions and toxicity data in the 2003 BHHRA for the IS&R Site. There have been changes to the exposure assumptions and toxicity information since those documents. Because these documents were developed prior to EPA's Risk Assessment Guidance for Superfund (RAGS) 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 micrograms per cubic meter (ug/m^3). The inhalation pathway for the site COCs, Arsenic and Lead, is minor compared to the soil ingestion pathway which is the major risk factor at the Site. Revising the inhalation calculations to be consistent with the most recent EPA guidance would not change the current cleanup levels for the Site.

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 (i.e., 5 µg/dL). In 2021CDC updated its blood lead reference value (BLRV) from 5 µg/dL to 3.5 µg/dL in response to the Lead Exposure Prevention and Advisory Committee (LEPAC) 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 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 additional information has come to light that could call into question the protectiveness of the remedy.

- Tooele City is planning to install a municipal well just outside the western boundary of the Conservation Area and in close proximity to the location of a monitoring well with elevated concentrations. The EPA and UDEQ/DERR will coordinate with Tooele City, Atlantic Richfield, and other stakeholders to address concerns about the well's location.

VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations
OU(s) without Issues/Recommendations Identified in the FYR:
1
Issues and Recommendations Identified in the FYR:
None

OTHER FINDINGS

The following are recommendations that were identified during the FYR that do not affect current or future protectiveness:

- Residential development within the Pine Canyon Community is currently taking place. The EPA and UDEQ/DERR will continue to assist the Toole County Health Department as necessary to ensure compliance with ICs,
- The current Site boundary does not include the Pine Canyon Community and TVRR. The EPA will update the Site boundary to include the Pine Canyon Community and TVRR.
- An Explanation of Significant Difference (ESD) should be completed for the 2011 Amendment to the Environmental Covenant between Atlantic Richfield, the EPA, and UDEQ since this amendment was implemented after the completion of the 2007 ROD and is not include in any decision document.

VII. PROTECTIVENESS STATEMENT

Sitewide Protectiveness Statement
Protectiveness Determination: Protective
Protectiveness Statement: The remedy at the Site is protective of human health and the environment.

VIII. NEXT REVIEW

The next five-year review report for the International Smelting and Refining Superfund Site is required five years from the completion date of this review.

APPENDIX A – REFERENCE LIST

Anderson Engineering, 2004, International Smelting and Refining/Carr Fork Remedial Investigation Report. 10 vol.

Anderson Engineering, 2018, IS&R LTO&M Groundwater Sampling Report 2018 Annual Sampling Prepared for Atlantic Richfield Company, 121p.

Anderson Engineering, 2019, IS&R LTO&M Groundwater Sampling Report 2019 Annual Sampling Prepared for Atlantic Richfield Company, 203p.

Anderson Engineering, 2020, IS&R LTO&M Groundwater Sampling Report 2020 Annual Sampling prepared for Atlantic Richfield Company, 127p.

Anderson Engineering, 2021, IS&R LTO&M Groundwater Sampling Report 2021 Annual Sampling prepared for Atlantic Richfield Company, 127p.

Anderson Engineering, 2018, Annual Inspection and Maintenance Report IS&R/CARR Fork Site Prepared for U.S. Environmental Protection Agency Submitted by Atlantic Richfield Company, 72p.

Anderson Engineering, 2019, Annual Inspection and Maintenance Report IS&R/CARR Fork Site Prepared for U.S. Environmental Protection Agency Submitted by Atlantic Richfield Company, 91p.

Anderson Engineering, 2019 Celtic Bank Pine Canyon Reclamation Post Remediation Sample Report, 108p.

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U.S. Environmental Protection Agency, 2004, Tooele Valley Railroad Grade Site Tooele County, Utah, Unilateral Administrative Order for Removal Response Activities U.S. EPA Region VIII Docket No. CERCLA-08-2005-0001, 19p.

U.S. Environmental Protection Agency, 2004, International Smelting and Refining Site Pine Canyon Community, Tooele, County Utah, Unilateral Administrative Order for Removal Response Activities U.S. EPA Region VIII Docket No. CERCLA-08-2004-0016, 21p.

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APPENDIX B – SITE MAPS

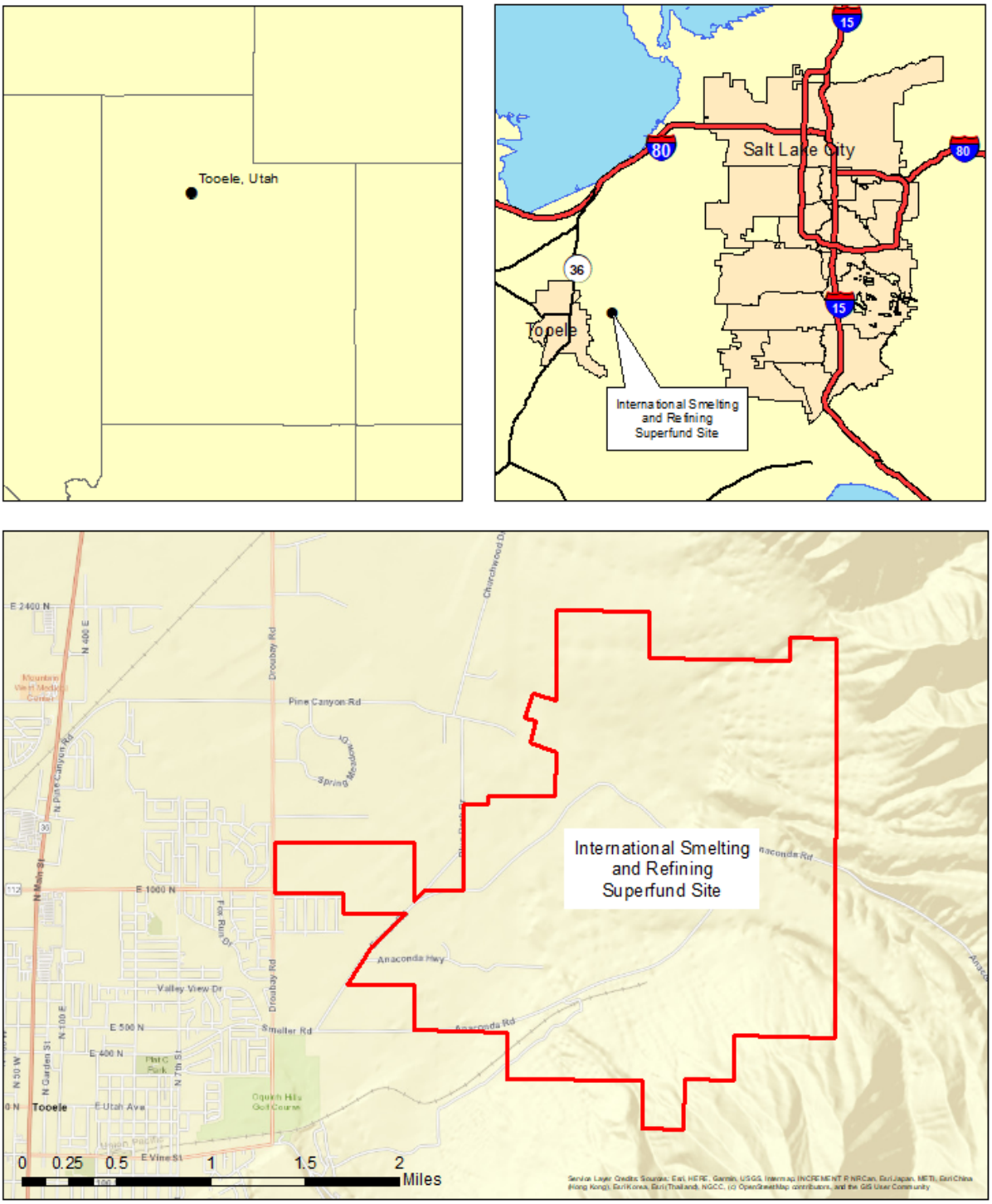
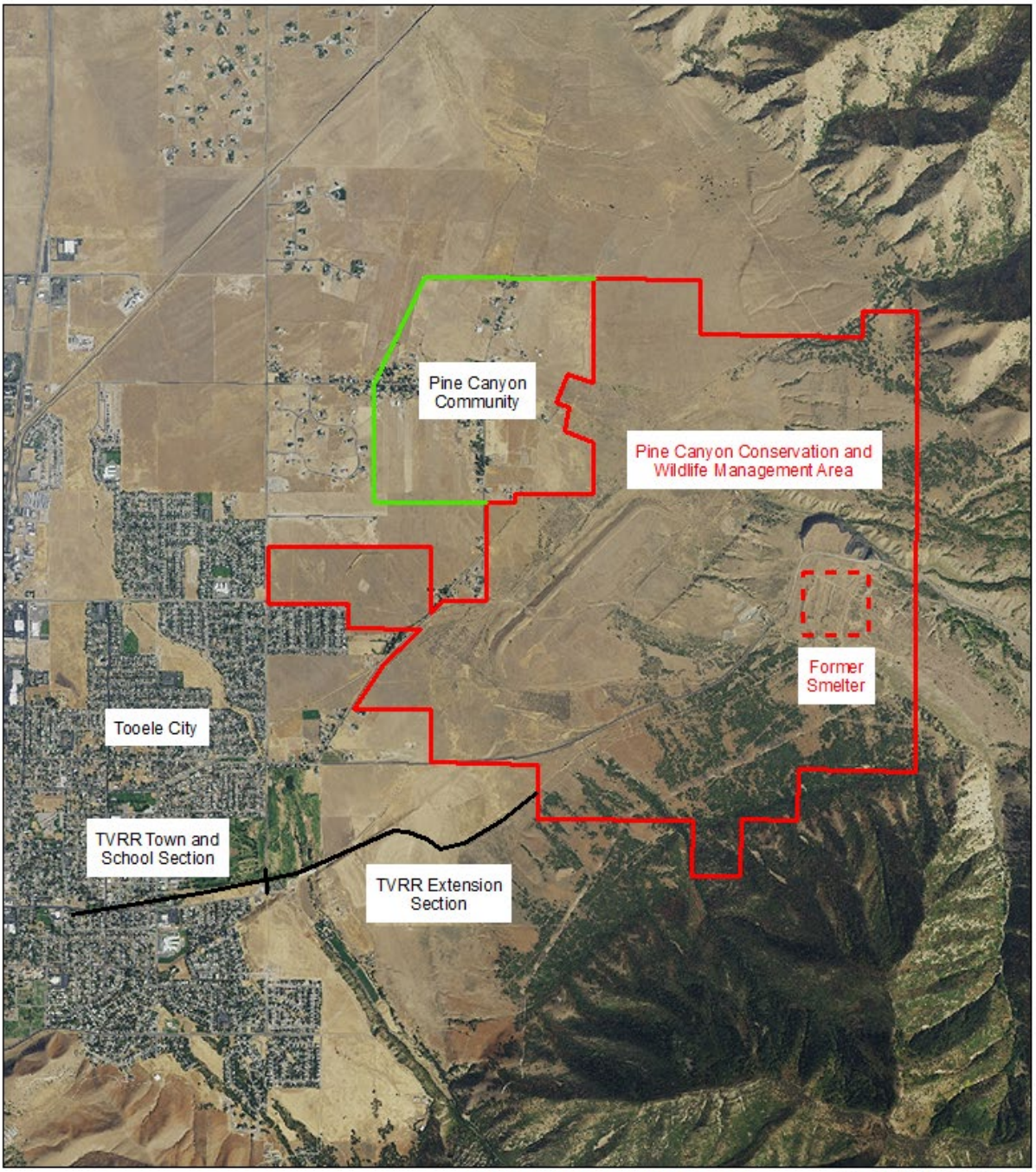


Figure 1: Site Location Map
International Smelting and Refining Site
Tooele, Tooele County, Utah



0 0.15 0.3 0.6 0.9 1.2 1.5 Miles

Pine Canyon Conservation and Wildlife Management Area

Smelter Site

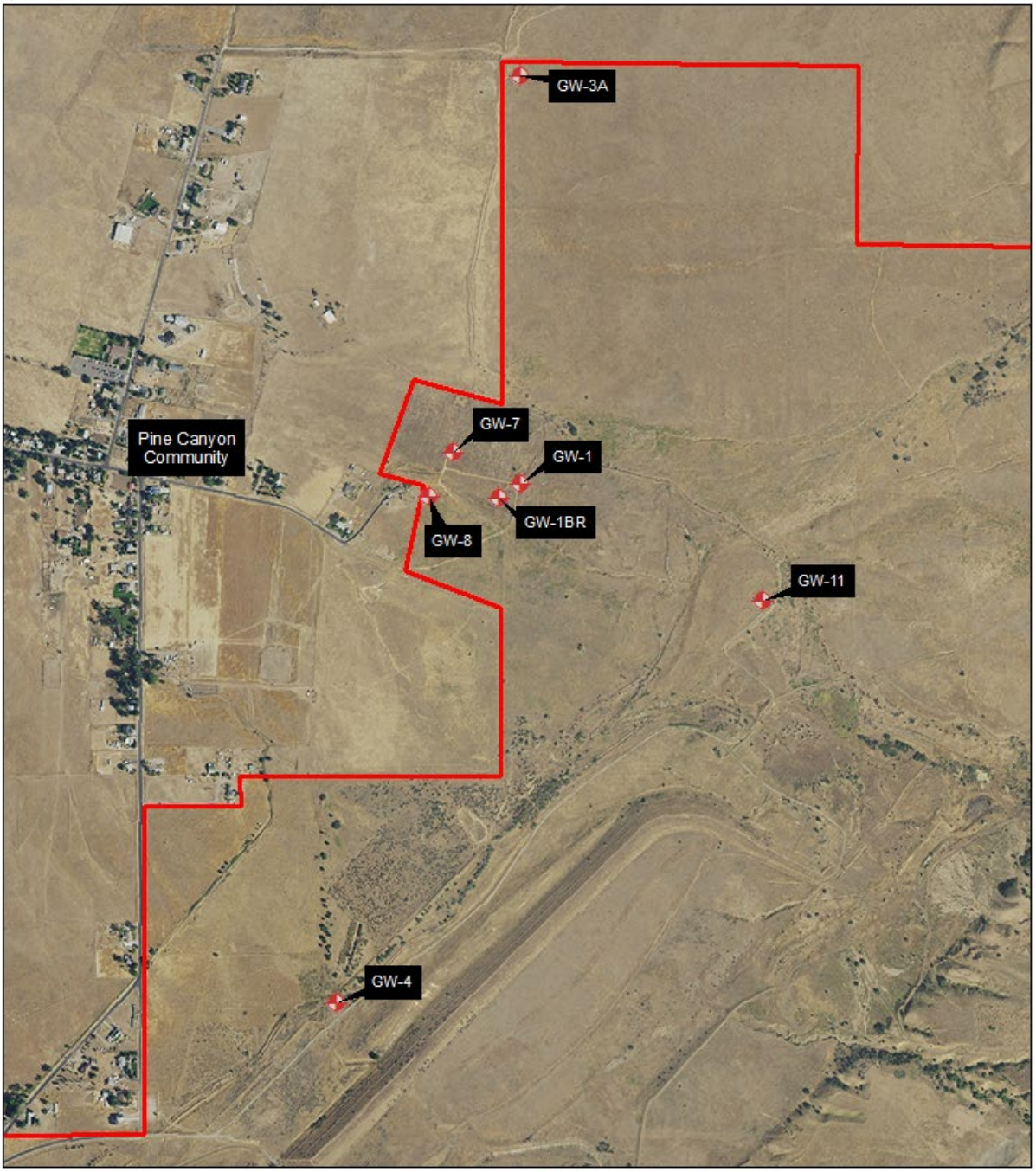
Tooele Valley Rail Road (TVRR)

Pine Canyon Community

N

Figure 2: International Smelting and Refining Site

Tooele, Tooele County, Utah



0 250 500 1,000 1,500 2,000 Feet

Pine Canyon Conservation and Wildlife Management Area

Monitoring Well

N

Figure 3: Monitoring Well Location Map
International Smelting and Refining Site
Tooele, Tooele County, Utah

APPENDIX C – PUBLIC NOTICE

PUBLIC NOTICE

Five-Year Review Planned for the International Smelting and Refining Superfund Site Tooele County, Utah

ENVIRONMENTAL RESPONSE & REMEDIATION

EPA United States Environmental Protection Agency

The Utah Department of Environmental Quality, Division of Environmental Response and Remediation (UDEQ/DERR) and the U.S. Environmental Protection Agency (EPA) is conducting the third Five-Year Review of the remedial actions performed for the International Smelting and Refining (IS&R) 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 is scheduled to be completed by September 30, 2022.

The 1,200-acre IS&R site is located approximately two miles northeast of Tooele, in Tooele County, Utah. From 1910 until 1972, copper, lead and zinc smelting and refining activities impacted the smelter property and adjacent lands. The site was added to the National Priorities List (NPL) in 2000 following investigations indicating the presence of heavy metals in soils, tailings and slag. Cleanup activities included removing or capping contaminated soils, adding fencing to restrict access, ongoing ground water monitoring to assess contaminant levels, and implementing a conservation easement, environmental covenants and a land use ordinance to limit future human contact with contaminated media. The site was deleted from the NPL in August 2011.

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 "International Smelting and Refining." **Or visit the EPA website at: https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0800650**

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

Tony Howes	**Dave Allison**	**Dania Zinner**
UDEQ Project Manager	**UDEQ Community Involvement**	**EPA Remedial Project Manager**
Phone: (385) 391-5917	Phone: (385) 391-8143	Phone: (303) 312-7122
Email: thowes@utah.gov	Email: dallison@utah.gov	Email: Zinner.Dania@epa.gov

APPENDIX D – COMMUNITY INTERVIEW SUMMARY REPORTS

International Smelting and Refining Superfund Site
Five-Year Review
Interview of Local Agencies

Site Name: International Smelting and Refining Superfund Site EPA ID: UTD093120921	November 16, 2021
Type of Contact: In Person	Contact Made By: Dave Allison, UDEQ/DERR Community Involvement Coordinator and Tony Howes, UDEQ/DERR Project Manager
Person Contacted	
Name: Bryan Slade, Environmental Health Director	Organization: Tooele County Health Department Tooele Office 151 North Main Street Tooele, Utah 84074

1. **Is your organization/department aware of the International Smelting and Refining Superfund Site and the actions underway to address environmental contamination?** Bryan Slade is the Tooele County Environmental Health Director and has worked and collaborated with EPA and UDEQ/DERR, on the International Smelting and Refining (IS&R) Superfund site from the very beginning of the remedial investigation.

2. **What's your overall impression (your general sentiment) of the actions performed at the International Smelting and Refining Superfund Site?** Slade said the cleanup remedy in the residential areas and Conservation Areas look great the institutional controls implemented within Pine Canyon are effectively managed by the Tooele County Health Department (TCHD).

3. **Does your office conduct routine communications and/or activities (site visits, inspections, reporting activities, participation in meetings, etc.) for the International Smelting and Refining Superfund Site?** Bryan said the TCHD is responsible for implementing the institutional controls to prevent unacceptable human and environmental exposure to contaminants that have been associated with the former IS & R site in Pine Canyon. This includes developer coordination of land in Pine Canyon who must contact the TCHD and review the overlay map showing areas with potentially impacted soil. 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 to the TCHD for review. Slade said the Pine Canyon housing market is active and his office has regularly provided technical support to developers in areas where soil has been reclaimed reviewing sampling procedures and confirming sampling results in cleanup areas. Slade coordinates his department developer approval with the Tooele County Planner and Engineering offices. Slade's department also is responsible for maintaining and sampling monitoring wells that were implemented during the remediation process. These wells monitor the levels of arsenic and lead in the groundwater and a database for arsenic and nitrates is maintained by TCHD.

4. **Are you aware of any community concerns regarding the International Smelting and Refining Superfund Site? If so, please give details.** Slade said despite the Pine Canyon area's history of cleanup he does not hear of any health or environmental concerns from the community and it's been 10 years since the IS&R site was delisted in 2011.

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 International Smelting and Refining Superfund Site requiring your office to respond? If so, please give details of the events**

and results of the response. Slade said his office hasn't had to respond to any incidents requiring his office to respond over the last five years.

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 International Smelting and Refining Superfund Site?** Slade said his office is well informed with regular communication from UDEQ/DERR and EPA as necessary and his office participates in Five Year Review activities for the IS&R site.

7. **Over the past five years, have there been any changes in your department's policies or regulations that impact the International Smelting and Refining Superfund Site and/or your role? If so, please describe the changes and the impacts**. Slade said the TCHD has not change their policies regarding the IS&R Superfund site and implementing institutional controls for the Pine Canyon area.

8. **Over the past five years, have there been any changes in land use surrounding the International Smelting and Refining Superfund Site? Are you aware of potential future changes in land use? If so, please describe.** Slade said Pine Canyon developers are looking to subdivide their properties more frequently and the land use is changing more residential from agricultural which will require more attention. Slade knows there are limited options for water resources which developers will have to figure out and an issue the TCHD will keep an eye on. Slade said Tooele City is looking to for a culinary well location on their property near the Boys Ranch where an arsenic plume is located.

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?** Slade does not have any recommendations and said the institutional control processes are working well.

International Smelting & Refining Superfund Site
Five-Year Review
Interview of Local Agencies

Site Name: International Smelting & Refining EPA ID: UTD093120921	February 4, 2022
Type of Contact: Remote Meeting	Contact Made By: Dave Allison, UDEQ/DERR Community Involvement Coordinator and Tony Howes, UDEQ/DERR Project Manager
Person Contacted	
Name: Jeff Miller, Planner	Organization: Community Development 47 South Main, Room #208 Tooele, UT 84074 Phone: (435) 843-3160

1. **Is your organization/department aware of the International Smelting & Refining Superfund site and the work that was completed to address environmental contamination?** Jeff Miller is the Tooele County Planner which serves the unincorporated areas of the Lincoln and Pine Canyon area where the IS&R Superfund cleanup work occurred on 19 residential properties. Miller said he has been the Tooele County Planner since 2017 and works within the Community Development Department which is charged with long- and short-range planning, development and building/land use code enforcement in unincorporated Tooele County. Miller's duties also include providing land use planning and administers zoning, subdivision and other land use ordinances. Miller said his office coordinates the cleanup parcels with the soil Overlay Zone maps with the Tooele County Environmental Health Department as developers apply for development.

2. **What's your overall impression (your general sentiment) of the work that was completed at the International Smelting & Refining Superfund Site?** Jeff Miller said he didn't know too much about the Superfund activities conducted at IS&R which was delisted in 2011. Miller said his frame of reference is working with the Tooele County Health Department mapping of reclaimed areas, agriculture and recreational zoned uses, and the residential areas as applicants look to subdivide large acreage properties which require more in-depth processes for approval. Some of the developments required a few inches of soil removal coordinated with the Health Department oversight prior to his Departments approval.

3. **Does your office conduct routine communications and/or activities (site visits, inspections, reporting activities, participation in meetings, etc.) for the International Smelting & Refining Superfund Site? If so, please briefly summarize the purpose and results of these communications and/or activities over the past several years.** Miller said as developers reach out his department and are located in the Pine Canyon area, he refers them to the Health Department IS&R Superfund Overlay Maps to begin the planning process requirements. Once the Health Department has reviewed a developer work plans and contacts planning for their okay to proceed to build. No other routine activities outside of the regular steps to develop property. Miller said there are a few property owners looking to reclaim property in Pine Canyon to sell it and just a few requests.

4. **Are you aware of any community concerns regarding the International Smelting & Refining Superfund Site or its operation and administration? If so, please give details**. Miller is not aware of any community concerns regarding the cleanup areas. Miller said the Tooele County and Tooele City Engineer's Office has mentioned concerns regarding an arsenic plume in the aquifer within the Pine Canyon area and future water capacity.

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 International Smelting &**

Refining Superfund Site requiring your office to respond? If so, please give details of the events and results of the response. Miller has not heard of any incidents requiring a response from his office and the institutional controls within the Health Department are working and property owners are receiving good advice and instruction to meet their needs.

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 International Smelting & Refining Superfund Site**? Miller said he hasn't needed to contact the EPA or UDEQ/DERR and relies upon his work with Brian Slade at the Tooele County Environmental Health Director to answer any questions regarding the IS&R Superfund Site. If there is a situation requiring more information, Miller said he would have no problem reaching out to UDEQ/DERR or EPA Project Managers.

7. **Over the past five years, have there been any changes in your department's policies or regulations that impact the International Smelting & Refining Superfund Site and/or your role? If so, please describe the changes and the impacts.** Miller said there haven't been any changes to his departments policies or requirements for planning in the Pine Canyon area.

8. **Over the past five years, have there been any changes in land use surrounding the International Smelting & Refining Superfund Site? Are you aware of potential future changes in land use? If so, please describe**. Miller also said the conversion agriculture properties hasn't been a problem and there is a company property owners have used to remove any elevated soils above residential standards of five hundred and eighty parts per million.

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?** Miller did not have any additional recommendations regarding the site management. Miller also gave his consent to use his department contact information for the review.

International Smelting & Refining Superfund Site
Five-Year Review
Interview of Local Agencies

Site Name: International Smelting & Refining EPA ID: UTD093120921	February 8, 2022
Type of Contact: Remote Meeting	Contact Made By: Dave Allison, UDEQ/DERR Community Involvement Coordinator and Tony Howes, UDEQ/DERR Project Manager
Person Contacted	
Name: Cody Deeter, Owner	Organization: The Ranch at Pine Canyon Real Estate Housing development in Tooele County, UT 2086 Churchwood Drive Tooele County, UT 84074

1. **How long have you lived in the area?** Cody Deeter is a resident and developer working the last three years of The Ranch at Pine Canyon homes development, 23 five-acre lots located on the northern end of properties located in remediated areas of the former IS&R Superfund Site cleanup.

2. **Are you aware of the International Smelting & Refining Superfund site and the work that was completed to address environmental contamination?** Deeter said he wasn't completely sure the existing conditions were reclaimed where his development property was located. Deeter said a portion of the undeveloped property was remediated to a recreational use and he was required to have a remediation plan to bring the development to residential use standards. Deeter needed to remove of the top two inches of soil contaminated within five parcels and all of the roads and infrastructure for The Ranch development are located outside of the IS&R cleanup areas.

3. **What's your overall impression (your general sentiment) of the work that was completed at the International Smelting & Refining Superfund Site?** Deeter said he likes the area and had to think through building in a superfund cleanup area, knowing what they could and couldn't do, with a steep learning curve. Deeter said he had to make sure the costs of remediating fit with his business plan.

4. **What would you say are the effects that site operations had on the community surrounding the International Smelting & Refining Superfund Site**? Deeter said what was done on the site was left at a recreation level of protectiveness and what was required was to bring the development to a residential standard and therefore the institutional control requirements came into his plans. Working with the Tooele County and Anderson Engineering to do things according to the requirements added a delay of 4-months to the process and Deeter said impact costs of about $150,000 of civil work was necessary to remove contaminated soils to the IS&R Superfund site repository. You'd love not to have to do remediation but the last thing Deeter would want is to have someone living in an unhealthy property. The site conditions were not an unknown prior to developing and worth the cost in the long run.

5. **Are you aware of any community concerns regarding the International Smelting & Refining Superfund Site and its administration? If so, please give details**. Deeter said one of their requirements is to provide disclosure documents to everyone who wants to purchase a lot (and lots not needing cleanup) which includes an approved report from Anderson Engineering and the Tooele County Health Department. Deeter has had a couple of interested buyers not want to proceed with a lot, not understanding the remediation reports. Hasn't been a big deal in a good housing market and may have been if market conditions were different. Deeter also has shares from the Lincoln Culinary Water Company which gets its water from springs in the canyon. Deeter is aware of an area aquifer impacted by

an arsenic plume and has informed people to be aware before drilling wells for secondary water uses. Deeter said Tooele City owns 5-acres in the area and has looked into drilling a well.

6. **Over the past five years, have there been any events, incidents, or activities at the International Smelting & Refining Superfund Site that concern you? If so, please provide details.** Deeter said he hasn't had any issues or incidents with his development.

7. **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 International Smelting & Refining Superfund Site?** Deeter said through his due diligence and work with the County and Tooele County Health Department he is informed for his needs and would be able to contact UDEQ/DERR or EPA.

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 business?** No comments and Deeter was curious if the conservation easement would ever be developed which is a question people have asked him. The Conservation easement area is an agreement with Atlantic Richfield and the Division of Wildlife Services who manages the area in perpetuity and outside of a legal action will remain so and not subject to development of any kind.

International Smelting & Refining Superfund Site
Five-Year Review
Interview of Local Agencies

Site Name: International Smelting & Refining EPA ID: UTD093120921	February 8, 2022
Type of Contact: Remote Meeting	Contact Made By: Dave Allison, UDEQ/DERR Community Involvement Coordinator and Tony Howes, UDEQ/DERR Project Manager
Person Contacted	
Name: Mark Farmer, Habitat Manager	Organization: Utah Division of Wildlife Resources Central Region 1115 N. Main St., Springville, UT 84663

1. **Is your organization/department aware of the International Smelting & Refining Superfund site and the work that was completed to address environmental contamination?** Marker Farmer is a Habitat Manager Central Region for the Utah Division of Wildlife Resources and oversees the maintenance of the Pine Canyon Conservation easement and Wildlife Management Area which covers 3,020 acres to be kept in its natural condition. Farmer said he has worked on the Conservation Area since 2005. The conservation easement is an agreement to preserve and protect the wildlife, natural, scenic, open space; and to prevent any use of the property that will significantly interfere with the wildlife habitat. During the remedial investigation in 2006 locations were identified in the Conservation Area that exceeded the cleanup levels and were addressed by placing a 12-inch thick cap of clean soil over the source material and then re-vegetated the surface. Fencing along the road and other physical barriers were constructed to limit access to the locations.

2. **What's your overall impression (your general sentiment) of the work that was completed at the International Smelting & Refining Superfund Site?** Farmer said he thinks the site looks pretty good overall and the surface vegetation continues to come in well.

3. **Does your office conduct routine communications and/or activities (site visits, inspections, reporting activities, participation in meetings, etc.) for the International Smelting & Refining Superfund Site? If so, please briefly summarize the purpose and results of these communications and/or activities over the past several years.** Farmer said routine activities from his agency include spraying herbicide in the Spring and mowing areas for fire prevention in the Summer. In addition, Farmer said they manage perimeter fencing and signage as needed. Farmer said they are in regular communication with Anderson Engineering (IS&R contractor) with any maintenance issues. DNR also has a regional biologist that lives in the Tooele area Farmer can call for assistance. Farmer said they are also on-site releasing pheasants for November hunting season.

4. **Are you aware of any community concerns regarding the International Smelting & Refining Superfund Site or its operation and administration? If so, please give details.** There is isn't any concerns from the community and Farmer said DNR has had to deny requests for a special use permit for conducting certain events such as a running race as they don't understand the reason for managing the area. Also, Farmer is aware of the importance watching the fuel loading of the dry grass near some of the residential areas to the west and wouldn't want any activity contributing to a fire.

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 International Smelting & Refining Superfund Site requiring your office to respond? If so, please give details of the events and results of the response.** There is a subdivision off Droubay Lane where rectangle of property DNR maintains and people want to make in part of their yard and plant gardens in may require fixing some

fencing. Farmer said when spraying preemergent to combat annual rye growth last year DNR put blue dye in their mix to tell where they sprayed and upset some of the residents not knowing it was a safe chemical with low very low dosage of active ingredient. Farmer said some of spray went past the fence line and they had to communicate with a couple property owners the chemical wasn't dangerous their animals or to people. There is also a chronic problem dealing with trespassing livestock grazing on the south end of the area and Farmer said the fence is constantly repaired.

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 International Smelting & Refining Superfund Site?** Farmer said the Five-Year Review has provided an additional contact with UDEQ/DERR and does rely on the site contractor Anderson Engineering to help communicate issues with EPA or the State. Farmer would like some notice if Anderson Engineering is doing any work in the area.

7. **Over the past five years, have there been any changes in your department's policies or regulations that impact the International Smelting & Refining Superfund Site and/or your role? If so, please describe the changes and the impacts.** Farmer said there are no changes to any policies or regulations related to the management of the Conservation Area.

8. **Over the past five years, have there been any changes in land use surrounding the International Smelting & Refining Superfund Site? Are you aware of potential future changes in land use? If so, please describe.** There are changes Farmer is aware of and expects the Conservation Area to remain the same for years to come.

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?** Farmer would like to see the fencing to the west upgraded where the residential areas are developing. Possibly a chain link only where the subdivisions are and in sections not to interfere with the wildlife.

International Smelting & Refining Superfund Site
Five-Year Review
Interview of Local Agencies

Site Name: International Smelting & Refining EPA ID: UTD093120921	February 8, 2022
Type of Contact: Remote Meeting	Contact Made By: Dave Allison, UDEQ/DERR Community Involvement Coordinator and Tony Howes, UDEQ/DERR Project Manager
Person Contacted	
Name: Jacob M. Clegg, P.E.	Organization: Tooele County Engineering Ensign Engineering & Land Surveying 169 North Main Tooele, Utah 84074

1. **Is your organization/department aware of the International Smelting & Refining Superfund site and the work that was completed to address environmental contamination?** Jay Clegg is the Tooele County Engineer contracted by the County and is aware of the IS&R Superfund Site and the Lincoln-Pine Canyon area with his working approving building and infrastructure permits. Clegg said the Pine Canyon area is a growing community and his department has people come in with requests with some of the larger parcels looking to subdivide the lots. Clegg knows of the Superfund areas and institutional controls with the Tooele County Health Department requiring for review and permit approval.

2. **What's your overall impression (your general sentiment) of the work that was completed at the International Smelting & Refining Superfund Site?** Clegg said the remedy doesn't pose any issues for his office and the institutional controls work well managing cleanup areas. Clegg says he really leans on Brian Slade, Tooele County Environmental Health Director, for keeping in line and not miss anything with the zoning maps and engineering requirements for the subdivisions. Clegg wants to make sure the guidelines are followed with good information provided to property owners.

3. **Does your office conduct routine communications and/or activities (site visits, inspections, reporting activities, participation in meetings, etc.) for the International Smelting & Refining Superfund Site? If so, please briefly summarize the purpose and results of these communications and/or activities over the past several years.** Clegg said the Engineering Department receives applications and permit requests after the Health Department reviews the application in the IS&R Overlay Zone prior proceeding to Zoning and Planning and his Department. Clegg says he really leans on Brian Slade, Tooele County Environmental Health Director, for keeping in line and not miss anything with the zoning maps and engineering requirements for the subdivisions. Clegg wants to make sure the guidelines are followed and his department works well with the Health Department exchange information as it comes across.

4. **Are you aware of any community concerns regarding the International Smelting & Refining Superfund Site or its operation and administration? If so, please give details.** Clegg has heard any concerns from the community expressed to his department.

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 International Smelting & Refining Superfund Site requiring your office to respond? If so, please give details of the events and results of the response**. Clegg said his department has not needed to respond to any incidents in the Pine Canyon 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 International Smelting & Refining Superfund Site? Clegg is aware of who to contact if he ever had reason to and hasn't to date.

7. **Over the past five years, have there been any changes in your department's policies or regulations that impact the International Smelting & Refining Superfund Site and/or your role? If so, please describe the changes and the impacts.** Clegg has does not believe so unless the health department has changed guidelines.

8. **Over the past five years, have there been any changes in land use surrounding the International Smelting & Refining Superfund Site? Are you aware of potential future changes in land use? If so, please describe.** No changes in land use have occurred however Clegg was wondering about BLM exchanging some land with School Institutional Trust Land Administration land just west of the Pine Canyon area with 5-acre agricultural zoned lots which is only in the high-level planning concept discussion stage and may need to know of the proximity next to IS&R Overlay properties. Clegg said SITLA may have to take remedies before they can develop the property and plans haven't been presented to the planning commission. Ensign Engineering is also the consultant for the Lincoln Culinary Water and is aware of the arsenic plume in the Pine Canyon area. Clegg said in the process of looking for potential drinking water well sites will look west of the Boys Ranch area to avoid naturally occurring water issues in the area.

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?** No additional suggestions and wants to maintain any communication with EPA or UDEQ/DERR to stay on top of any developments.

International Smelting & Refining Superfund Site
Five-Year Review
Interview of Local Agencies

Site Name: International Smelting & Refining EPA ID: UTD093120921	February 14, 2022
Type of Contact: Remote Meeting	Contact Made By: Dave Allison, UDEQ/DERR Community Involvement Coordinator and Tony Howes, UDEQ/DERR Project Manager
Person Contacted	
Name: Steve Smith, Water Board Member	Organization: Lincoln Culinary Water Corporation 1631 East Pine Canyon Road Tooele, UT 84074

1. **Is your organization/department aware of the International Smelting & Refining Superfund site and the work that was completed to address environmental contamination?** Steve Smith, is a Water Board Member and water operator for 9 years with the Lincoln Culinary Water Corporation, a non- profit enterprise organized for the purpose of providing culinary water to the community of Lincoln and Pine Canyon, Utah. Their community is a privately-owned water source, primarily from the Bruno tunnel and spring areas from a well located in Murray Canyon upgradient and to the east of the IS&R site. Smith said he is familiar with the IS&R Superfund Site cleanup areas as they pertain to residents they provide water to in Pine Canyon and the overall watershed for the unincorporated Tooele County community.

2. **What's your overall impression (your general sentiment) of the work that was completed at the International Smelting & Refining Superfund Site**? Smith said everything looks good, particularly for the watershed areas. Smith said he feels EPA and UDEQ/DERR did a great job, the remediation elements of the soil removal never impacted their operations as they get their water from above where the IS&R facility was located. Smith also understands the arsenic and nitrate plume aquifers in the Pine Canyon community the Lincoln Water Company has researched to avoid over the years are considered naturally occurring and not a result of the IS&R operations.

3. **Does your office conduct routine communications and/or activities (site visits, inspections, reporting activities, participation in meetings, etc.) for the International Smelting & Refining Superfund Site? If so, please briefly summarize the purpose and results of these communications and/or activities over the past several years.** Smith said the Water Company has to test their water monthly and has never seen any indication of any contamination related to impacts from the remediation of IS&R and their water supply. Smith said he has not seen any infiltration and testing has come back clean year after year. Every three years Smith said they do a Sanitary Survey which includes testing of every aspect of their operation from water wells to piping with the State Drinking Water and Tooele County Health officials.

4. **Are you aware of any community concerns regarding the International Smelting & Refining Superfund Site or its operation and administration? If so, please give details.** Smith is not aware of any community concerns regarding water supply or lead and arsenic contamination in Pine Canyon. Smith knows Tooele City owns property near the Boys Ranch area and is looking for a potential water well location where an arsenic plume is located which may present some challenges which wouldn't affect the Lincoln Water Company. Smith said he does not have any concerns as the Lincoln well receives its water away from the arsenic plume in the upper Murray Canyon Springs and a well in the Middle Canyon areas. Historically Smith said they've had to research multiple locations for two of their wells and drill over 700-feet deep to avoid running into the arsenic and nitrate aquifers.

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 International Smelting & Refining Superfund Site requiring your office to respond? If so, please give details of the events and results of the response**. There have not been any incidents related to the IS&R work. No damage due to the 5.7 Magna Earthquake in 2020 of which Smith said they were lucky after inspecting their entire system and all of their wells have fencing to avoid trespassing problems. Smith there are occasions due to fire or drought where they have to watch and communicate restrictions to the water communities on Facebook they supply but no emergencies or IS&R related incidents.

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 International Smelting & Refining Superfund Site?** Smith said they always felt good about the cleanup remedy and are confident if anything were to happen in the area, EPA and UDEQ would let us know. Really the only regular communications regarding Lincoln Culinary Water are monthly water test reports Smith provides to the State. Smith said they have used maps and information reports developed by EPA regarding the IS&R remediation areas and would not hesitate contact site regulators if a reason ever presented itself.

7. **Over the past five years, have there been any changes in your department's policies or regulations that impact the International Smelting & Refining Superfund Site and/or your role? If so, please describe the changes and the impacts.** Smith said there are no changes in any of their operations or water policies within the State and although their water lines run near or through certain areas of remediated property they have not had any leaks which may impact site conditions.

8. **Over the past five years, have there been any changes in land use surrounding the International Smelting & Refining Superfund Site? Are you aware of potential future changes in land use? If so, please describe**. Land use is not an issue for the Lincoln Culinary Water Company and Smith said water rights are attached to individual properties and virtually impossible to acquire by purchase in the area. There is development in the area and the Boys Ranch arsenic issues but nothing which impacts their company.

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?** Smith did not have any future concerns for the management of the IS&R site and the operations of the Lincoln Culinary Water Company. Smith said they are bringing a new updated well online in town with electronic sensors to automatically adjust release amounts between wells and make their operations more efficient. Smith is confident current monitoring activities are in place and communication with the State to anticipate any future issues in the Pine Canyon area.

APPENDIX E –ARSENIC FOUR POINT AVERAGE, ANALYTICAL RESULTS, AND PHYSICAL CHARCTERISTICS OF MONITORING WELLS

Arsenic Four-Point Average for Wells GW-1, GW-7, and GW-8

Well GW-1	
Date	**Arsenic mg/l**
12/17/2001	0.139
5/1/2002	0.140
6/20/2002	0.140
9/18/2002	0.141
12/5/2002	0.130
3/26/2003	0.137
3/26/2003	0.143
3/30/2004	0.154
6/2/2004	0.138
12/7/2005	0.150
12/10/2007	0.140
5/28/2008	0.160
11/6/2008	0.170
5/28/2009	0.170
10/29/2009	0.180
6/10/2010	0.170
2/15/2011	0.186
6/8/2011	0.180
11/23/2011	0.140
6/5/2012	0.136
11/28/2012	0.157
6/7/2013	0.170
8/5/2014	0.170
5/20/2015	0.154
6/24/2016	0.168
8/9/2017	0.157
6/15/2018	0.173
*5/30/2019	0.184
7/13/2020	0.123
6/18/2021	0.163
4-point average, mg/l	**0.1608**

*Previous 5-yr maximum

Well GW-7	
Date	**Arsenic mg/l**
6/22/2004	0.171
12/6/2005	0.110
12/11/2007	0.097
5/29/2008	0.089
11/7/2008	0.088
5/28/2009	0.081
10/30/2009	0.092
6/11/2010	0.090
2/16/2011	0.060
6/8/2011	0.054
11/23/2011	0.019
6/6/2012	0.063
11/28/2012	0.098
6/7/2013	0.075
8/4/2014	0.059
5/21/2015	0.067
6/27/2016	0.0036
8/11/2017	0.0025
6/14/2018	0.0021
9/10/2019	0.0060
*7/12/2020	0.0188
6/17/2021	0.0827
4-point average, mg/l	**0.0274**

*Previous 5-yr maximum

Well GW-8	
Date	**Arsenic mg/l**
6/29/2004	0.166
12/6/2005	0.130
12/12/2007	0.100
5/30/2008	0.097
11/7/2008	0.099
5/29/2009	0.100
10/28/2009	0.110
6/11/2010	0.097
2/16/2011	0.097
6/8/2011	0.081
11/28/2011	0.073
6/6/2012	0.068
11/29/2012	0.073
6/7/2013	0.067
8/6/2014	0.068
5/22/2015	0.058
*6/23/2016	0.0749
8/10/2017	0.0688
6/18/2018	0.0700
6/4/2019	0.0687
7/10/2020	0.0418
6/10/2021	0.0471
4-point average, mg/l	**0.0569**

*Previous 5-yr maximum

Monitoring Well Analytical Results

GW-1BR: (mg/L)

Field Sample ID	Date Collected	Fraction	Arsenic	Calcium	Iron	Lead	Magnesium	Chloride	Sulfate	TDS	TSS	Alkalinity (Total)	Alkalinity (HCO3-)	Alkalinity (CO3)	Manganese	Potassium	Sodium
ISR-GW-1BR-170808	8/8/2017	Total	NA	NA	NA	NA	NA	21	95.4	428	6.8	221	N/A	N/A	N/A	N/A	N/A
ISR-GW-1BR-170808	8/8/2017	Dissolved	<0.0010	70.4	0.0728	<0.0010	31.2	NA	NA	NA	NA	NA	N/A	N/A	N/A	N/A	N/A
ISR-GW-1BR-180612	6/12/2018	Total	NA	NA	NA	NA	NA	21.2	108	444	70.2	231	N/A	N/A	N/A	N/A	N/A
ISR-GW-1BR-180612	6/12/2018	Dissolved	<0.0010	65.8	0.0635	<0.0010	31.2	NA	NA	NA	NA	NA	N/A	N/A	N/A	N/A	N/A
ISR-GW-1BR-190603	6/3/2019	Total	NA	NA	NA	NA	NA	22.4	110	427	6.1	223	N/A	N/A	N/A	N/A	N/A
ISR-GW-1BR-190603	6/3/2019	Dissolved	0.0011	68.3	0.1340	<0.0010	30.4	NA	NA	NA	NA	NA	N/A	N/A	N/A	N/A	N/A
ISRGW1BR_202006	7/10/2020	Total	NA	NA	NA	NA	NA	23.1	104	435	6.4	504	N/A	N/A	N/A	N/A	N/A
ISRGW1BR_202007	7/10/2020	Dissolved	<0.0010	69.8	<0.0500	<0.0010	33.4	NA	NA	NA	NA	NA	N/A	N/A	N/A	N/A	N/A
ISRGW1BR_20210616	6/16/2021	Total	NA	NA	NA	NA	NA	22.9	100	471	9.3	234	234	<20.0	NA	NA	NA
ISRGW1BR_20210616	6/16/2021	Dissolved	<0.001	71.6	0.055	<0.001	32.4	NA	NA	NA	NA	NA	NA	NA	0.0265	1.940	28.40
	Drinking Water MCL		**0.01**			**0.015**											
	GW-1BR MIN		0.00038	63.0	0.0552	0.00009	29	20.5	95.4	384	6.1	179	234	<20.0	0.0265	1.940	28.40
	GW-1BR MAX		0.01100	86.0	3.8000	0.01900	37	35.2	166	1200	122	504	234	<20.0	0.0265	1.940	28.40

GW-1: (mg/L)

Field Sample ID	Date Collected	Fraction	Arsenic	Calcium	Iron	Lead	Magnesium	Chloride	Sulfate	TDS	TSS	Alkalinity (Total)	Alkalinity (HCO3-)	Alkalinity (CO3)	Manganese	Potassium	Sodium
ISR-GW-1-170809	8/9/2017	Total	NA	NA	NA	NA	NA	26.8	130	514	<5.0	219	N/A	N/A	N/A	N/A	N/A
ISR-GW-1-170809	8/9/2017	Dissolved	**0.157**	76.6	<0.050	<0.0010	34.2	NA	NA	NA	NA	NA	N/A	N/A	N/A	N/A	N/A
ISR-GW-1-180615	6/15/2018	Total	NA	NA	NA	NA	NA	21.7	113	430	17.5	228	N/A	N/A	N/A	N/A	N/A
ISR-GW-1-180615	6/15/2018	Dissolved	**0.1730**	69.1	0.0586	<0.0010	32.5	NA	NA	NA	NA	NA	N/A	N/A	N/A	N/A	N/A
ISR-GW-1-190530	5/30/2019	Total	NA	NA	NA	NA	NA	22.9	109	417	<5.0	228	N/A	N/A	N/A	N/A	N/A
ISR-GW-1-190530	5/30/2019	Dissolved	**0.1840**	70.4	<0.0500	<0.0010	31.2	NA	NA	NA	NA	NA	N/A	N/A	N/A	N/A	N/A
ISRGW1_20200713	7/13/2020	Total	NA	NA	NA	NA	NA	21.6	110	447	<5.0	211	N/A	N/A	N/A	N/A	N/A
ISRGW1_20200713	7/13/2020	Dissolved	**0.1230**	71.6	0.0968	<0.0010	33.9	NA	NA	NA	NA	NA	N/A	N/A	N/A	N/A	N/A
ISRGW1_20210618	6/18/2021	Total	NA	NA	NA	NA	NA	22.3	103	448	<5.0	234	234	<20.0	NA	NA	NA
ISRGW1_20210618	6/18/2021	Dissolved	**0.1630**	68.0	0.0794	<0.001	30.4	NA	NA	NA	NA	NA	NA	NA	30.4	1.480	28.90
	Drinking Water MCL		**0.01**			**0.015**											
	GW-1 MIN		0.123	62.5	<0.0227	<0.000051	28.6	21.0	100	82	<4.34	32	234	<20.0	30.4	1.480	28.90
	GW-1 MAX		0.186	93.0	0.5500	0.0032	39.0	37.8	141	514	36.0	236	234	<20.0	30.4	1.480	28.90
	GW-1 AVG		0.152														

Note: Bold entries indicate dissolved sample concentrations which exceed the Drinking Water MCL

GW-3A: (mg/L)

Field Sample ID	Date Collected	Fraction	Arsenic	Calcium	Iron	Lead	Magnesium	Chloride	Sulfate	TDS	TSS	Alkalinity (Total)	Alkalinity (HCO3-)	Alkalinity (CO3)	Manganese	Potassium	Sodium
ISR-GW3A-130605	6/5/2013	Total	NA	NA	NA	NA	NA	45.5	65	444	<5.0	262	N/A	N/A	N/A	N/A	N/A
ISR-GW3A-130605	6/5/2013	Dissolved	0.0011	70.4	<0.05	<0.001	28.2	NA	NA	NA	NA	NA	N/A	N/A	N/A	N/A	N/A
ISR-GW-3A-140718	7/18/2014	Total	NA	NA	NA	NA	NA	44	67	440	19	260	N/A	N/A	N/A	N/A	N/A
ISR-GW-3A-140718	7/18/2014	Dissolved	0.00071	82	0.27	ND	30.0	NA	NA	NA	NA	NA	N/A	N/A	N/A	N/A	N/A
ISR-GW-3A-150602	6/2/2015	Total	NA	NA	NA	NA	NA	45.9	69.7	450	26	227	N/A	N/A	N/A	N/A	N/A
ISR-GW-3A-150602	6/2/2015	Dissolved	<0.0010	74.2	<0.0500	<0.0010	27.6	NA	NA	NA	NA	NA	N/A	N/A	N/A	N/A	N/A
ISRGW3A_20200713	7/13/2020	Total	NA	NA	NA	NA	NA	43.6	64.6	419	23.3	252	N/A	N/A	N/A	N/A	N/A
ISRGW3A_20200713	7/13/2020	Dissolved	<0.0010	69.4	<0.0500	<0.0010	30.6	NA	NA	NA	NA	NA	N/A	N/A	N/A	N/A	N/A
ISRGW3A_210614	6/14/2021	Total	NA	NA	NA	NA	NA	44.6	68.6	433	14.9	279	279	<20.0	NA	NA	NA
ISRGW3A_210614	6/14/2021	Dissolved	<0.001	72.7	0.0509	<0.001	30	NA	NA	NA	NA	NA	NA	NA	0.0189	1.560	43.40
	Drinking Water MCL		**0.01**			**0.015**											
	GW-3A MIN		0.00059	69.4	<0.0227	0.000057	27.6	43.6	63.2	233	<4.34	227	279	<20.0	0.0189	1.560	43.40
	GW-3A MAX		0.0240	92	11	0.0114	37	56	74	483	30	292	279	<20.0	0.0189	1.560	43.40

Well GW-3A could not be sampled in June 2016, August 2017, June 2018 and May 2019 due to low water levels.

GW-4: (mg/L)

Field Sample ID	Date Collected	Fraction	Arsenic	Calcium	Iron	Lead	Magnesium	Chloride	Sulfate	TDS	TSS	Alkalinity (Total)	Alkalinity (HCO3-)	Alkalinity (CO3)	Manganese	Potassium	Sodium
ISR-GW-4-170807	8/7/2017	Total	NA	NA	NA	NA	NA	43.1	119	489	<5.0	186	N/A	N/A	N/A	N/A	N/A
ISR-GW-4-170807	8/7/2017	Dissolved	0.0013	72.8	<0.050	<0.0010	29.4	NA	NA	NA	NA	NA	N/A	N/A	N/A	N/A	N/A
ISR-GW-4-180611	6/11/2018	Total	NA	NA	NA	NA	NA	42	123	474	<5.0	202	N/A	N/A	N/A	N/A	N/A
ISR-GW-4-180611	6/11/2018	Dissolved	0.0014	69.5	<0.0500	<0.0010	29.6	NA	NA	NA	NA	NA	N/A	N/A	N/A	N/A	N/A
ISR-GW-4-190529	5/29/2019	Total	NA	NA	NA	NA	NA	50	137	502	<5.0	193	N/A	N/A	N/A	N/A	N/A
ISR-GW-4-190529	5/29/2019	Dissolved	0.0014	72.2	<0.0500	<0.0010	29.3	NA	NA	NA	NA	NA	N/A	N/A	N/A	N/A	N/A
ISRGW4_20200708	7/8/2020	Total	NA	NA	NA	NA	NA	39.6	124	500	<5.0	201	N/A	N/A	N/A	N/A	N/A
ISRGW4_20200708	7/8/2020	Dissolved	<0.0010	71.8	0.086	<0.0010	30.9	NA	NA	NA	NA	NA	N/A	N/A	N/A	N/A	N/A
ISRGW4_20210611	6/11/2021	Total	NA	NA	NA	NA	NA	29.4	124	467	<5.0	214	214	<20.0	NA	NA	NA
ISRGW4_20210611	6/11/2021	Dissolved	<0.001	73.1	0.0628	<0.001	29.4	NA	NA	NA	NA	NA	NA	NA	0.014	1.420	40.90
	Drinking Water MCL		**0.01**			**0.015**											
		GW-4 MIN	<0.000299	68.8	<0.0227	0.00014	27.4	20.2	61.2	434	<4.3	180	214	<20.0	0.014	1.420	40.90
		GW-4 MAX	0.00251	91	2.79	0.0038	37	52	180	570	47	238	214	<20.0	0.014	1.420	40.90

GW-7: (mg/L)

Field Sample ID	Date Collected	Fraction	Arsenic	Calcium	Iron	Lead	Magnesium	Chloride	Sulfate	TDS	TSS	Alkalinity (Total)	Alkalinity (HCO3-)	Alkalinity (CO3)	Manganese	Potassium	Sodium
ISR-GW-7-170811	8/11/2017	Total	NA	NA	NA	NA	NA	25.7	114	509	21.2	209	N/A	N/A	N/A	N/A	N/A
ISR-GW-7-170811	8/11/2017	Dissolved	0.0025	65.7	0.538	<0.0010	33.1	NA	NA	NA	NA	NA	N/A	N/A	N/A	N/A	N/A
ISR-GW-7-180614	6/14/2018	Total	NA	NA	NA	NA	NA	23.2	109	416	<5.0	216	N/A	N/A	N/A	N/A	N/A
ISR-GW-7-180614	6/14/2018	Dissolved	0.0021	62.4	0.274	<0.0010	31.6	NA	NA	NA	NA	NA	N/A	N/A	N/A	N/A	N/A
ISR-GW-7-0919	9/10/2019	Total	NA	NA	NA	NA	NA	48.1	148	864	71.1	180	N/A	N/A	N/A	N/A	N/A
ISR-GW-7-0919	9/10/2019	Dissolved	0.0060	92.2	25.800	<0.0010	35.8	NA	NA	NA	NA	NA	N/A	N/A	N/A	N/A	N/A
ISRGW7_20200712	7/12/2020	Total	NA	NA	NA	NA	NA	21.6	101	440	32.4	223	N/A	N/A	N/A	N/A	N/A
ISRGW7_20200712	7/12/2020	Dissolved	**0.0188**	70.9	0.255	<0.0010	32.9	NA	NA	NA	NA	NA	N/A	N/A	N/A	N/A	N/A
ISRGW7_20210617	6/17/2021	Total	NA	NA	NA	NA	NA	22.2	99.7	407	8.1	230	230	<20.0	NA	NA	NA
ISRGW7_20210617	6/17/2021	Dissolved	**0.0827**	67.9	0.409	<0.001	30.3	NA	NA	NA	NA	NA	NA	NA	0.0258	1.390	28.80
	Drinking Water MCL		**0.01**			**0.015**											
		GW-7 MIN	0.0021	62.2	<0.050	<0.000051	28.9	20	96	394	<5.0	180	230	<20.0	0.0258	1.390	28.80
		GW-7 MAX	0.1740	92.2	25.8	0.00258	38	48.1	148	864	71.1	236	230	<20.0	0.0258	1.390	28.80
		GW-7 AVG	0.073														

Note: Bold entries indicate dissolved sample concentrations which exceed the Drinking Water MCL

GW-8: (mg/L)

Field Sample ID	Date Collected	Fraction	Arsenic	Calcium	Iron	Lead	Magnesium	Chloride	Sulfate	TDS	TSS	Alkalinity (Total)	Alkalinity (HCO3-)	Alkalinity (CO3)	Manganese	Potassium	Sodium
ISR-GW-8-170810	8/10/2017	Total	NA	NA	NA	NA	NA	18.7	86.9	447	<5.0	216	N/A	N/A	N/A	N/A	N/A
ISR-GW-8-170810	8/10/2017	Dissolved	**0.0688**	66.6	0.155	<0.0010	29.5	NA	NA	NA	NA	NA	N/A	N/A	N/A	N/A	N/A
ISR-GW-8-180618	6/18/2018	Total	NA	NA	NA	NA	NA	18.1	82.4	375	<5.0	231	N/A	N/A	N/A	N/A	N/A
ISR-GW-8-180618	6/18/2018	Dissolved	**0.0700**	63.3	0.13	<0.0010	29.8	NA	NA	NA	NA	NA	N/A	N/A	N/A	N/A	N/A
ISR-GW-8-190604	6/4/2019	Total	NA	NA	NA	NA	NA	18.9	77.8	370	<5.0	226	N/A	N/A	N/A	N/A	N/A
ISR-GW-8-190604	6/4/2019	Dissolved	**0.0687**	63.8	0.137	<0.0010	29.5	NA	NA	NA	NA	NA	N/A	N/A	N/A	N/A	N/A
ISRGW8_20200710	7/10/2020	Total	NA	NA	NA	NA	NA	16.3	72.7	376	13.2	210	N/A	N/A	N/A	N/A	N/A
ISRGW8_20200710	7/10/2020	Dissolved	**0.0418**	61.3	0.115	<0.0010	29.0	NA	NA	NA	NA	NA	N/A	N/A	N/A	N/A	N/A
ISRGW8_20210610	6/10/2021	Total	NA	NA	NA	NA	NA	15.9	71.5	348	5.2	234	234.0	<20.0	NA	NA	NA
ISRGW8_20210610	6/10/2021	Dissolved	**0.0471**	64.5	1.04	<0.001	29.0	NA	NA	NA	NA	NA	NA	NA	0.0438	1.36	22.0
	Drinking Water MCL		**0.01**			**0.015**											
		GW-8 MIN	0.0418	58.7	0.115	<0.000051	26.2	14	71.5	348	5	208	234	<20.0	0.0438	1.36	22.0
		GW-8 MAX	0.166	86	2.7	0.0016	34	31.6	135	447	21	234	234	<20.0	0.0438	1.36	22.0
		GW-8 AVG	0.09037														

Note: Bold entries indicate dissolved sample concentrations which exceed the Drinking Water MCL

GW-11: (mg/L)

Field Sample ID	Date Collected	Fraction	Arsenic	Calcium	Iron	Lead	Magnesium	Chloride	Sulfate	TDS	TSS	Alkalinity (Total)	Alkalinity (HCO3-)	Alkalinity (CO3)	Manganese	Potassium	Sodium
ISR-GW-11-170808	8/8/2017	Total	NA	NA	NA	NA	NA	26.1	135	506	5.2	231	N/A	N/A	N/A	N/A	N/A
ISR-GW-11-170808	8/8/2017	Dissolved	<0.0010	71.6	0.0536	<0.0010	35.1	NA	NA	NA	NA	NA	N/A	N/A	N/A	N/A	N/A
ISR-GW-11-180612	6/12/2018	Total	NA	NA	NA	NA	NA	24.8	145	500	51.2	245	N/A	N/A	N/A	N/A	N/A
ISR-GW-11-180612	6/12/2018	Dissolved	<0.0010	67.6	0.0885	<0.0010	35.3	NA	NA	NA	NA	NA	N/A	N/A	N/A	N/A	N/A
ISR-GW-11-190907	9/7/2019	Total	NA	NA	NA	NA	NA	260	145	2910	63.3	286	N/A	N/A	N/A	N/A	N/A
ISR-GW-11-190907	9/7/2019	Dissolved	<0.0010	338	36.7	0.002	91.4	NA	NA	NA	NA	NA	N/A	N/A	N/A	N/A	N/A
ISRGW11_20200709	7/9/2020	Total	NA	NA	NA	NA	NA	26.4	129	470	<5.0	232	N/A	N/A	N/A	N/A	N/A
ISRGW11_20200709	7/9/2020	Dissolved	<0.0010	71.4	<0.0500	<0.0010	36.5	NA	NA	NA	NA	NA	N/A	N/A	N/A	N/A	N/A
ISRGW11_20210612	6/12/2021	Total	NA	NA	NA	NA	NA	26.1	131	453	43.7	249	249	<20.0	NA	NA	NA
ISRGW11_20210612	6/12/2021	Dissolved	<0.001	69.6	<0.050	<0.001	34.8	NA	NA	NA	NA	NA	NA	NA	0.0463	1.300	39.80
	Drinking Water MCL		**0.01**			**0.015**											
		GW-11 MIN	<0.000299	66	0.021	<0.000051	31.8	24.8	129	430	5.2	215	249	<20	0.0463	1.3	39.8
		GW-11 MAX	0.0035	338	36.7	0.0032	91.4	260	196	2910	83	286	249	<20	0.0463	1.3	39.8

Physical Characteristics of Monitoring Wells

Well Designation	Date	Casing Diameter (inch)	Screened Interval (feet)	Depth of Well - As Measured (feet)	Depth to Water (feet)	Surface Casing Elevation (feet)	Water Elevation (feet)	Year Installed
GW-1	6/18/2021	6	600 - 650	666.13	620.11	5006.70	4386.59	1975
GW-1BR	6/16/2021	4	736 - 746	749.95	630.60	5003.49	4372.89	2004
GW-3A	6/14/2021	6	630 - 650	644.61	631.08	5003.90	4372.82	2002
GW-4	6/11/2021	6	610 - 739	734.90	698.65	5071.62	4372.97	unknown
GW-7	6/17/2021	4	605 - 655	659.89	602.92	4988.70	4385.78	2004
GW-8	6/10/2021	4	615 - 665	660.65	606.65	4992.80	4386.15	2004
GW-11	6/12/2021	6	684 - 730	732.42	712.76	5087.20	4374.44	2005

APPENDIX F – SITE INSPECTION PHOTOS

Gate installed in 2021 to restrict access and unauthorized dumping of garbage

Repaired stream channel

TVRR trestle area

Monitoring well GW-1

APPENDIX G – SITE INSPECTION CHECKLIST

FIVE-YEAR REVIEW SITE INSPECTION CHECKLIST	
I. SITE INFORMATION	
Site name: International Smelting and Refining Site	**Date of inspection: November 17, 2021**
Location and Region: Tooele County, UT EPA Region 8	**EPA ID: UTD093120921**
Agency, office, or company leading the five-year review: Utah Department of Environmental Quality Division of Environmental Response and Remediation	**Weather/temperature: Cloudy/52° Fahrenheit**

Remedy Includes: (Check all that apply)

- ☒ Landfill cover/containment
- ☒ Access controls
- ☒ 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: Ryan Anderson Title: Principal-Portfolio Manager Date: 11/17/2021
Interviewed ☒ at site ☐ at office ☐ by phone Phone no. 801-972-6222
Problems, suggestions; ☐

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

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 Tooele County Health Department
Contact Bryan Slade (Name) Environmental Health Director (Title) 11/16/21 (Date) 435-277-2440 (Phone no.)
Problems; suggestions; ☒ Report attached _____

Agency Tooele County Community Development
Contact Jeff Miller (Name) Planner (Title) 2/4/22 (Date) 435-843-3160 (Phone no.)
Problems; suggestions; ☒ Report attached

4. **Other interviews** (optional) ☒ Report attached
Local community government officials, Utah State employee and a real estate developer.

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

1. **O&M Documents**

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

Remarks: _____

2. **Site-Specific Health and Safety Plan**	☐ Readily available	☐ Up to date	☒ N/A
☐ Contingency plan/emergency response plan	☐ Readily available	☐ Up to date	☒ N/A
Remarks: _____			
3. **O&M and OSHA Training Records**	☐ Readily available	☐ Up to date	☒ N/A
Remarks: _____			
4. **Permits and Service Agreements**			
☐ Air discharge permit	☐ Readily available	☐ Up to date	☒ N/A
☐ Effluent discharge	☐ Readily available	☐ Up to date	☒ N/A
☐ Waste disposal, POTW	☐ Readily available	☐ Up to date	☒ N/A
☐ Other permits _____	☐ Readily available	☐ Up to date	☒ N/A
Remarks: _____			
5. **Gas Generation Records**	☐ Readily available	☐ Up to date	☒ N/A
Remarks: _____			
6. **Settlement Monument Records**	☐ Readily available	☐ Up to date	☒ N/A
Remarks: _____			
7. **Groundwater Monitoring Records**	☒ Readily available	☒ Up to date	☐ N/A
Remarks: Annual groundwater monitoring and sampling is performed at the site and reports summarizing the results are provided to EPA and UDEQ/DERR.			
8. **Leachate Extraction Records**	☐ Readily available	☐ Up to date	☒ 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	☒ N/A
Remarks: _____			
IV. O&M COSTS			
1. **O&M Organization**			
☐ State in-house	☐ Contractor for State		
☒ PRP in-house	☒ Contractor for PRP		
☐ Federal Facility in-house	☐ Contractor for Federal Facility		
☐ _____			

2. **O&M Cost Records**

☒ Readily available ☒ Up to date

☐ Funding mechanism/agreement in place

Original O&M cost estimate _____ ☐ Breakdown attached

Total annual cost by year for review period if available

From mm/dd/yyyy Date	To mm/dd/yyyy Date	_____ Total cost	☐ Breakdown attached
From mm/dd/yyyy Date	To mm/dd/yyyy Date	_____ Total cost	☐ Breakdown attached
From mm/dd/yyyy Date	To mm/dd/yyyy Date	_____ Total cost	☐ Breakdown attached
From mm/dd/yyyy Date	To mm/dd/yyyy Date	_____ Total cost	☐ Breakdown attached
From mm/dd/yyyy Date	To mm/dd/yyyy Date	_____ Total cost	☐ Breakdown attached

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

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

A. Fencing

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

Remarks: Perimeter fencing is routinely inspected the PRP's contractor and repaired as necessary.

B. Other Access Restrictions

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

Remarks: Adequate signage has been established around the site's perimeter to inform the public about prohibited activities at the Site. Signs are inspected during annual inspections and replaced if damaged.

C. Institutional Controls (ICs)

1. Implementation and enforcement

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

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

Type of monitoring (e.g., self-reporting, drive by) _____

Frequency _____

Responsible party/agency _____

Contact _____ Name _____ Title mm/dd/yyyy Date _____ Phone no.

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

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

☐ N/A

Specific requirements in deed or decision documents have been met ☒ Yes ☐ No

Violations have been reported ☐ Yes ☐ No ☒ N/A

Other problems or suggestions: ☐ Report attached

2. Adequacy	☒ **ICs are adequate**	☐ **ICs are inadequate**	☐ **N/A**
Remarks:			
D. General			
1. Vandalism/trespassing	☐ **Location shown on site map**	☒ **No vandalism evident**	
Remarks:			
2. Land use changes on site	☒ **N/A**		
Remarks:			
3. Land use changes off site	☐ **N/A**		
Remarks: Vacant land west of the site is being developed into single family residential areas.			
VI. GENERAL SITE CONDITIONS			
A. Roads	☒ **Applicable**	☐ **N/A**	
1. Roads damaged	☐ **Location shown on site map**	☐ **Roads adequate**	
☒ **N/A**			
Remarks:			
B. Other Site Conditions			
Remarks:			
VII. LANDFILL COVERS	☒ **Applicable**	☐ **N/A**	
A. Landfill Surface			
1. **Settlement** (Low spots)	☐ Location shown on site map	☒ Settlement not evident	
Arial extent _____		Depth _____	
Remarks: _____			
2. **Cracks**	☐ Location shown on site map	☒Cracking not evident	
Lengths _____	Widths _____	Depths _____	
Remarks: _____			
3. **Erosion**	☒ Location shown on site map	☐ Erosion not evident	
Arial extent _____		Depth _____	
Remarks: A small area of erosion occurred along a drainage during the winter of 2020/2021. The eroded area was repaired in the summer and reseeded in the fall of 2021. Location of the eroded area was provided in the Annual Site Inspection Report.			
4. **Holes**	☐ Location shown on site map	☒ Holes not evident	
Arial extent _____		Depth _____	
Remarks: _____			
5. **Vegetative Cover**	☒ Grass	☒ Cover properly established	
☒ No signs of stress	☐ Trees/Shrubs (indicate size and locations on a diagram)		
Remarks:			
6. **Alternative Cover** (armored rock, concrete, etc.)		☒ N/A	
Remarks: _____			
7. **Bulges**	☐ Location shown on site map	☒ Bulges not evident	
Arial extent _____		Height _____	
Remarks: _____			
8. **Wet Areas/Water Damage**	☒ Wet areas/water damage not evident		
☐ Wet areas	☐ Location shown on site map	Arial extent _____	
☐ Ponding	☐ Location shown on site map	Arial extent _____	
☐ Seeps	☐ Location shown on site map	Arial extent _____	
☐ Soft subgrade	☐ Location shown on site map	Arial extent _____	
Remarks: _____			

9. **Slope Instability**	☐ Slides	☐ Location shown on site map
☒ No evidence of slope instability Arial extent _____ Remarks: _____		
B. Benches	☐ Applicable ☒ 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** Remarks: _____	☐ Location shown on site map	☒ N/A or okay
2. **Bench Breached** Remarks: _____	☐ Location shown on site map	☒ N/A or okay
3. **Bench Overtopped** Remarks: _____	☐ Location shown on site map	☒ N/A or okay
C. Letdown Channels	☐ Applicable ☒ N/A	
1. **Settlement** (Low spots) Arial extent _____ Remarks: _____	☐ Location shown on site map	☐ No evidence of settlement Depth _____
2. **Material Degradation** Material type_____ Remarks: _____	☐ Location shown on site map	☐ No evidence of degradation Arial extent _____
3. **Erosion** Arial extent _____ Remarks: _____	☐ Location shown on site map	☐ No evidence of erosion Depth _____
4. **Undercutting** Arial extent _____ Remarks: _____	☐ Location shown on site map	☐ No evidence of undercutting Depth _____
5. **Obstructions** ☐ Location shown on site map Size _____ Remarks: _____	Type _____ Arial extent _____	☐ No obstructions
6. **Excessive Vegetative Growth** ☐ No evidence of excessive growth ☐ Vegetation in channels does not obstruct flow ☐ Location shown on site map Remarks: _____	Type _____ Arial extent _____	
D. Cover Penetrations	☐ **Applicable** ☒ **N/A**	
1. **Gas Vents** ☐ Properly secured/locked ☐ Evidence of leakage at penetration Remarks: _____	☐ Active ☐ Functioning ☐ Routinely sampled ☐ Needs Maintenance	☐ Passive ☐ Good condition ☒ N/A

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: Require proper identification labeling of all wells

4. **Extraction Wells Leachate**

☐ 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 ☒ 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 ☒ N/A

1. **Outlet Pipes Inspected** ☐ Functioning ☒ N/A

Remarks: _____

2. **Outlet Rock Inspected** ☐ Functioning ☒ N/A

Remarks: _____

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

1. **Siltation** Area extent _____ Depth _____ ☐ N/A

☐ Siltation not evident

Remarks: _____

2. **Erosion** Area extent _____ Depth _____

☐ Erosion not evident

Remarks: _____

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

Remarks: _____

4. **Dam** ☐ Functioning ☐ N/A

Remarks: _____

H. Retaining Walls ☐ Applicable ☒ 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 ☒ N/A

1. **Siltation** ☐ Location shown on site map ☐ Siltation not evident
Area extent _____ Depth _____
Remarks: _____

2. **Vegetative Growth** ☐ Location shown on site map ☐ N/A
☐ Vegetation does not impede flow
Area extent _____ Type _____
Remarks: _____

3. **Erosion** ☐ Location shown on site map ☐ Erosion not evident
Area extent _____ Depth _____
Remarks: _____

4. **Discharge Structure** ☐ Functioning ☐ N/A
Remarks: _____

VIII. VERTICAL BARRIER WALLS ☐ **Applicable** ☒ **N/A**

1. **Settlement** ☐ Location shown on site map ☐ Settlement not evident
Area 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** ☒ **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 ☒ 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 ☒ 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

E. 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 and 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
The purpose of the remedy is to prevent exposure to contaminated soil and protect water quality in streams. Caps and covers remain in place and prevent exposure to contaminated soils. Engineered stormwater controls remain in place and protect water quality in streams.
B. Adequacy of O&M
Annual Groundwater monitoring and routine site inspections are completed at the Site. Groundwater monitoring ensures that the former smelter site does not become a future source of groundwater contamination. Routine site inspections ensure that the integrity of existing caps, covers, and storm water controls are maintained.
C. Early Indicators of Potential Remedy Problems
None
D. Opportunities for Optimization
None