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October 3, 2022 Project No. 14-01-156

Alan Pineda, PE
Professional Engineer
Bureau of Industrial Site Cleanup
Nevada Division of Environmental Protection
375 E. Warm Springs Rd., Ste. 200
Las Vegas, NV 89119

Re: Screening Level Ecological Risk Assessment, Revision 1
Three Kids Mine, Henderson, Nevada

Dear Mr. Pineda,

Broadbent & Associates, Inc. (Broadbent) is pleased to submit this *Screening Level Ecological Risk Assessment, Revision 1* (SLERA) for the Three Kids Mine located in Henderson, Nevada.

Please do not hesitate to contact us if you should have any questions or require additional information.

Sincerely,
BROADBENT & ASSOCIATES, INC.

Kirk Stowers, CEM
Principal Geologist

cc: JD Dotchin, NDEP
James Carlton Parker, NDEP
Joe McGinley, McGinley & Associates, Inc.
Caitlin Jelle, McGinley & Associates, Inc.
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Screening Level Ecological Risk Assessment, Revision 1
Three Kids Mine
Henderson, Nevada

JURAT: I, Karen Gastineau, hereby certify that I am responsible for the services in this document and for the preparation of this document. The services described in this document have been provided in a manner consistent with the current standards of the profession and to the best of my knowledge comply with all applicable federal, state and local statutes, regulation and ordinances.

Karen Gastineau

October 3, 2022

Karen Gastineau
Senior Hydrogeologist
Certified Environmental Manager #2468 (4/1/2023)

Date

ATTACHMENT A
Responses to NDEP Comments made on September 20, 2022

1. **Section 1 Introduction** – The second paragraph states that "the Site is currently vacant." While it is undeveloped for residential use, vacant is not an accurate term for the Site.

   The text in Section 1 was revised to "…the Site currently contains abandoned mine features."

2. **Section 2.1 Site Setting** – The second paragraph states that "soils in the heavily disturbed areas are generally lacking, indicative of past mining activities." Please clarify what the soils are lacking.

   The sentence was revised to "In these heavily disturbed areas, typical soil development is not present, which is indicative of past mining activities."

3. **Section 2.2.3 Receptors and Exposure Pathways** – The last sentence states that "amphibians and other aquatic or semi-receptors are not anticipated to be at the disturbed area of the Site due to a lack of waterbodies." This sentence should be revised to read semi-aquatic receptors.

   Section 2.2.3 was revised as suggested.

4. **Section 3.6 Criterion VI: Data Quality Indicators** – The second paragraph in the *Accuracy Evaluation* subsection indicates that 15 records from three samples were rejected. However, the final paragraph in the *Data Analysis* subsection states that "no data were rejected." Please clarify.

   The 15 results from three samples that were rejected and listed in Section 3.6 were part of the Remedial Investigation dataset but were not included in the SLERA. As a result, the text in Section 3.6 listing rejected data was deleted.

5. **Section 3.6 Criterion VI: Data Quality Indicators** – The discussion of representativeness may be somewhat misleading. Figure 5 indicates that the majority of the samples were collected from areas A3, A4, and B1. Moreover, the SAP indicates that the purpose of the data was 1) Establishing Site Background Concentrations of Metals, 2) Evaluating Tailings in Support of the Presumptive Remedy, and 3) Classifying Disturbed Soils, Sediments, and Dump Areas for Materials Management. It is suggested that this section acknowledge the limitations and uncertainties of using this data for the SLERA. For example, if the data set is representative of biased samples collected for purposes other than ecological risk characterization, the risks might be over overstated.

   The representativeness evaluation was revised as follows: "Additionally, sampling locations for each area were determined in the Phase II SAP (Broadbent 2021) and were analyzed for COPECs. Although some sampling locations were randomly selected to provide an overview of the area being evaluated, many sampling locations were biased toward locations that were disturbed. As a result, potential risks may be overestimated." Note that this is also discussed in the Data Uncertainty Section (Section 6.1).

6. **Section 4.3 Background Concentrations**
    a. This section states that "a total of 18 samples were collected within the Muddy Creek Formation (Stratum 111)." However, the table in Section 2.2 of the *Background Soil Report, Revision 2* indicates that 23 samples were collected from Stratum 111. Please correct this discrepancy.
    b. This section states that "a total of 22 samples were collected for this unit (Stratum 121)." However, the table in Section 2.2 of the *Background Soil Report, Revision 2* indicates that 27 samples were collected from Stratum 121. Please correct this discrepancy.

The text in Section 4.3 was corrected.

7. **Section 5.2 Soil Invertebrates** – The last sentence in the *Overburden strata* subsection states that "average EPCs exceed invertebrate Eco-SSLs for each of these metals [arsenic, copper, lead, manganese, and zinc] except for lead." This sentence should read "except for lead and copper" since the invertebrate Eco-SSL for copper is not exceeded either (per Table 6). Please edit accordingly.

The text was edited as suggested.

8. **Section 5.4 Birds**
    a. The subsection for *Disturbed soil, sediments, and other materials* states that "average EPCs exceed avian Eco-SSLs for 6 metals, all but chromium." This sentence should read "all but chromium and selenium" since the avian Eco-SSL for selenium is not exceeded either (per Table 6). Please edit accordingly.
    b. The subsection for *Overburden strata* states that "average EPCs exceed avian Eco-SSLs for 7 metals, all but silver." This sentence should read "all but barium and selenium (per Table 6). Please edit accordingly.

The text was edited as suggested.

9. **Section 7 Summary and Conclusions** – In discussion of the preferred remedy (pathway isolation via the cover), it is stated "This will eliminate ecological risks by removing the high concentrations of metals currently present, thus eliminating any exposure pathways to contaminated surface soil." The cover does not remove the metals; it isolates them. Please rephrase.

The text in Section 7 was edited.

10. **Figure 4 Ecological Conceptual Site Model** – Burrowing owls are known to burrow up to three feet deep (if not more). Additionally, plant roots can extend more than a foot bgs as such it seems that subsurface soil should be considered at least a partial exposure pathway for many of the receptors based on the definition of surface soil in this document.

It is acknowledged that some wildlife may burrow deeper than one foot in soil. As such, the ecological CSM has been updated to indicate that subsurface soil is a complete but insignificant exposure pathway and is not evaluated quantitatively. The surficial soil interval (0-12 inches) has the highest concentrations of COPECs in most strata. As such, potential risks are conservative and therefore protective of burrowing wildlife. The following sentence was added to Section 2.3: "It is acknowledged that some wildlife is capable of burrowing below surface soil and into subsurface soil (i.e., deeper than the top foot). However, the top foot generally has the highest concentrations of contaminants, and therefore provides a conservative evaluation." Additionally, the preferred alternative includes placing ten feet of clean cover over the former mine site. As a result, what is now one to three feet bgs will be greater than 10 feet bgs after remediation and reclamation occurs.

11. **Table 6 Average Concentration Data Screen** – The Mammal HQ and Bird HQ for silver in overburden strata are not provided. Please calculate and include in Table 6.

The table was edited as suggested.

Screening Level Ecological Risk Assessment, Revision 1

Three Kids Mine
Clark County, Nevada

Prepared for

Lakemoor Ventures, LLC

Prepared by

Broadbent and Associates, Inc.
and
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October 2022
Revision: 1.0

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LIST OF ACRONYMS AND ABBREVIATIONS

AE	Assessment endpoint
BMI	Black Mountain Industrial
Broadbent	Broadbent and Associates, Inc.
BTV	Background threshold value
COPEC	Contaminant of potential ecological concern
CSM	Conceptual site model
DQI	Data Quality Indicator
DVSR	Data Validation Summary Report
EA	EA Engineering, Science, and Technology, Inc., PBC
Eco-SSL	Ecological Soil Screening Level
EPA	U.S. Environmental Protection Agency
EPC	Exposure point concentration
FFS	Focused feasibility study
HQ	Hazard quotient
Lakemoor	Lakemoor Ventures, LLC
LCS	Laboratory control sample
LDC	Laboratory Data Consultants, Inc.
ME	Measurement endpoint
MS	Matrix spike
MSD	Matrix spike duplicate
NDEP	Nevada Division of Environmental Protection
PAH	Polycyclic aromatic hydrocarbons
PARCCS	Precision, accuracy, representativeness, comparability, completeness, and sensitivity
QA	Quality assurance
QC	Quality control
RI	Remedial Investigation
RPD	Relative percent difference
SAP	Sampling and Analysis Plan
Site	Three Kids Mine site
SL	Screening level

SLERA	Screening Level Ecological Risk Assessment
SOP	Standard operating procedure
SQL	Sample quantitation limit
TEF	Toxic equivalence factor
TEQ	Toxic equivalent quotient
UPL	Upper prediction limit
USACHPPM	U.S. Army Center for Health Promotion and Preventative Medicine
UTL	Upper tolerance limit
VOC	Volatile organic chemical

1. INTRODUCTION

This Screening Level Ecological Risk Assessment (SLERA) was prepared on behalf of Lakemoor Ventures, LLC (Lakemoor) by EA Engineering, Science and Technology, Inc., PBC (EA) and Broadbent and Associates, Inc. (Broadbent) to evaluate current ecological risks at the former Three Kids Mine site (the Site). The Site consists of approximately 1,165 acres located in Clark County, Nevada, just east of the City of Henderson (Figure 1). The former Three Kids Mine and Mill was used for the mining of manganese from 1917 to 1961.

Except for Parcels 2, 3, and 4, which consist of Laker Plaza and Lake Mead Boat Storage facilities, the Site is currently contains abandoned mine features (Figure 2). The Site is being remediated and reclaimed by Lakemoor in conjunction with residential development plans in cooperation with the City of Henderson, the Nevada Division of Environmental Protection (NDEP) Bureau of Industrial Site Cleanup, the U.S. Bureau of Land Management (BLM), and the U.S. Bureau of Reclamation. NDEP is the lead agency overseeing the reclamation of the Site.

A Phase I Environmental Site Assessment was conducted by Zenitech in 2007 (Zenitech 2007). Broadbent collected environmental samples in 2021 and 2022 according to the approved Phase II Sampling and Analysis Plan (SAP; Broadbent 2021). Results are documented in the Background Soil Report, Revision 2 (Broadbent 2022a) and Remedial Investigation (RI) Report (Broadbent 2022b). Based on the results of the Phase I and II investigations, visual observations, and process knowledge, it is estimated that 411 of the 1,165 total acres of the Site have been negatively impacted with wastes containing heavy metals and petroleum hydrocarbons. The 411 acres are referred to as “the disturbed area” which consists of the pits, overburden, mill site, and tailings and is the focus of this SLERA.

1.1 PURPOSE AND OBJECTIVES

This SLERA has been prepared as a response to a request made by NDEP and BLM in a letter dated December 22, 2021, which provided comments on the Risk Assessment Work Plan dated November 8, 2021. Specifically, the purpose of this SLERA is to quantitatively evaluate the current risks to ecological receptors, particularly any sensitive species and/or habitats that could occur in the area, from exposure to contaminants of potential ecological concern (COPECs) in environmental media.

The SLERA consists of Steps 1 and 2 of the U.S. Environmental Protection Agency’s (EPA) *Ecological Risk Assessment Guidance for Superfund* (EPA 1997). The SLERA was also prepared using NDEP’s *Screening Level Ecological Risk Assessment Guidelines for the BMI Complex, Henderson, Nevada* (NDEP 2006). The NDEP’s guidance was focused primarily in a no-build area of the nearby Black Mountain Industrial (BMI) complex, where a substantial area of ecological habitat existed (approximately 200 acres) and would remain as so into the future. A notable differentiator, the Three Kids Mine Site will be redeveloped in the future. Currently the Site, particularly the disturbed area, displays very limited habitat and is expected to remain so in the future due to residential redevelopment.

Per EPA (1997), the SLERA consists of the following components, followed by a list of references:

- Problem Formulation (Section 2)
  - Habitat description and potential for future habitat development
  - Selection (including rationale) of receptor species and exposure pathways
- Data Evaluation (Section 3)
- Exposure and Effects Analysis (Section 4)
- Risk Characterization (Section 5)
- Assumptions and Uncertainties (Section 6)
- Conclusions (Section 7)
  - Mitigation Potential

The SLERA presents a summary of the analytical data and a data quality assessment. The SLERA evaluates soil data collected as part of the Phase II Investigation for the disturbed area. These data correspond to the following elemental soil strata outlined in the Phase II SAP (Broadbent 2021) which are further described in the RI Report (Broadbent 2022b):

- 2.2 **Overburden Affected by Tailings**
- 3.1 **Overburden Strata** including waste rock, ore yard, compacted roadways, and scale house area
- 3.2.1 Hotspot detections in **General Mill Site Soils** by systematic random sampling
- 3.3 **Disturbed Soils, Sediments, and Other Materials**, include the following:
  - Chemical process (flotation circuit) soils and residues
  - Thermal process (kiln circuit) soils, sediments, and residues
  - Drainages potentially impacted by mill processes or discharges
  - Mill site dumps
  - Pit dumps and related soils
  - Fuel farm soils and residues
  - Transformer stands (including Parcel 8)
  - Wire burning sites

Figure 3 presents the locations of the different soil strata, including tailings, waste rock/overburden, and the mill site, which includes the disturbed soils listed above, except for the drainages, pit dump soils located in the three pits, and the wire burning sites located in the A-B Pit. The disturbed area (i.e., Mill Site) is outlined in green.

2. PROBLEM FORMULATION

Problem formulation is the initial step of the SLERA process and provides the basis for decisions regarding the scope and objectives of the SLERA. The problem formulation includes a description of the site setting, habitats, sensitive species, potential ecological receptors and exposure pathways, and concludes with the development of the ecological Conceptual Site Model (CSM). The CSM presents the potential exposure pathways and receptors. An exposure pathway describes a mechanism by which a population of organisms or individual organisms (in the case of special status species) may be exposed to contaminants present at a site.

2.1 SITE SETTING

Mill building foundations remain in part or in whole in the disturbed area of the Site, as are remnants of eight circular flotation cells used in the manganese beneficiation process. There are three major open pits on the property: the combined A and B Pits, the Hydro Pit, and the Hulin Pit. A smaller pit, the Original Three Kids Mine Pit is located east of the A-B Pit. Tailings were pumped into ponds constructed in the central and western portions of the disturbed area of the Site. The pits, waste rock, mill site, and tailings comprise the bulk of the large features visible at the present time.

Disturbed areas include minimal surface disturbance such as vegetation removal or drive-and-crush areas where shallow blading and soil removal has exposed parent material, areas with small to large pits where ore and other material were removed, areas with large tailings piles of discarded material, and areas impacted after the closure of the mining by activities such as vandalism and illegal dumping. In these heavily disturbed areas, typical soil development is not present, which is indicative of past mining activities. Surface water is not present at the Site.

The disturbed area of the Site consists of exposed surface waste rock and tailings piles. Based upon analytical results from waste rock and tailings, contaminants include metals (arsenic, cadmium, chromium, lead, and manganese) and polycyclic aromatic hydrocarbons (PAHs).

2.2 HABITAT DESCRIPTION

The Site is located within the Mohave Desert Biome. The main vegetation community is the Sonora-Mojave Creosotebush-White Bursage Desert Scrub. This ecological system forms a desert scrub matrix blanketing broad valleys, lower bajadas, plains, and low hills in the Mojave and lower Sonoran deserts. This desert scrub is characterized by xeromorphic microphyllous and broad-leaved shrubs. Creosote bush (*Larrea tridentata*) and tumbleweed (e.g., *Ambrosia dumosa)* are typically dominants, but many different shrubs, dwarf-shrubs, and cacti may co-dominate or form typically sparse understories. Associated species may include saltbush (*Atriplex* spp.*)*, brittlebush *(Encelia farinose)*, and prickly pear cactus (*Opuntia basilaris)*. The herbaceous layer is typically sparse but may have abundant seasonal ephemerals. Herbaceous species such as desert trumpet (*Eriogonum inflatum)* and desert fluff-grass *(Dasyochloa pulchella)* are common. This system can often appear as very open sparse vegetation, with the mostly barren ground surface being the predominant feature.

Much of the disturbed area and area surrounding the Site currently supports or is planned to support residential or commercial uses. These areas are not intended to and do not support habitat attractive to native plant and wildlife populations. These areas are landscaped with a variety of native and non-native ornamental plants. Wildlife that may be observed in these areas are likely to be transient, introduced species that are tolerant of human activity and typical of highly disturbed areas. In the 411 acres that make up the disturbed portion of the Site, particularly around former flotation cells and in the tailings, for which this SLERA is the focus, there is limited evidence of animal life. Occasional sightings of common lizards, bighorn sheep, and desert cottontail have occurred. Wildlife such as bighorn sheep and coyote likely use the area primarily as a pass-through to get to better habitat in nearby areas such as Lake Las Vegas or the Lake Mead National Recreational Area.

2.2.1 Potentially Present Sensitive Species

A compilation of sensitive species, including species listed under the Endangered Species Act, migratory birds listed under the Migratory Bird Treaty Act, and species recognized as sensitive by BLM as potentially occurring at the Site is provided in Table 1. For the preparation of this SLERA and in response to comments by NDEP and BLM, a field survey for evidence of sensitive species was conducted by two biologists. In particular, the survey focused on evidence of Mojave Desert tortoise (*Gopherus agassizii*), but all flora/fauna observed was recorded. Results are discussed below.

2.2.2 Field Survey Results

A field survey was conducted within the 411 acres of the disturbed area (green area on Figure 3) on 19 May 2022 by a Broadbent field biologist, with specialized experience conducting desert tortoise surveys, and an EA ecological risk assessor. The high temperature was 106°F and there were sunny, clear skies with a slight breeze. The survey was performed by slowly driving along the borders of the disturbed area and stopping in each vegetated location to look for signs of wildlife. Areas with potential habitat for sensitive species were visited and surveyed on foot, with a focus on desert tortoise habitat.

The disturbed area consists of portions of sparse vegetation and areas with barren ground and no vegetation. The primary plant species is creosote bush *(Larrea tridentata).* Desert tortoise may use creosote bush for shade and an occasional food source; however, no signs of desert tortoise (scat or burrows) were found in the disturbed areas. Other plant species observed were honey mesquite *(Prosopis glandulosa),* brittlebrush *(Encelia farinose),* and two desert globemallow *(Sphaeralcea ambigua).*

The only suitable habitat identified for desert tortoise was in the area of the Original Three Kids Mine Pit, located along the southeast corner of the disturbed area (Figure 3). The desert globemallow was observed here and was the only wildflower observed onsite. Although desert globemallow is a preferred food source for the desert tortoise, no evidence of tortoise was observed in the area of the Original Three Kids Mine Pit.

Two sensitive species were observed during the survey: bighorn sheep *(Ovis canadensis),* and desert horned lizard *(Phrynosoma platyrhinos)*. Other species observed included common side-blotched lizards *(Uta stansburiana),* long-nosed leopard lizard *(Gambelia wislizenii),* northern rough-winged swallows *(Stelgidopteryx serripennis),* and common nighthawk *(Chordeiles minor).* Bighorn sheep scat and coyote scat were also observed. Photographs from the survey of the disturbed area of the Site are available in Appendix A.

2.2.3 Receptors and Exposure Pathways

Based on the potential for species to utilize the disturbed area of the Site, the following general populations of receptors have been conservatively selected for evaluation in the SLERA:

- Terrestrial invertebrate populations
- Terrestrial plant populations
- Terrestrial reptile populations
- Terrestrial mammal populations
- Terrestrial bird populations

Although reptiles such as lizards, tortoises, and iguanas could inhabit the disturbed area of the Site, there is a paucity of toxicological information, exposure factors, and ecological screening values for these species. Therefore, an evaluation of potential risks to reptiles will be based on evaluations for other species.

Amphibians and other aquatic or semi-aquatic receptors are not anticipated to be at the disturbed area of the Site due to a lack of waterbodies.

2.3 ECOLOGICAL CONCEPTUAL SITE MODEL

Ecological receptors of concern that could potentially occur at the disturbed area of the Site include plants, invertebrates, and wildlife (birds and mammals). Media of concern (surface soil) and ecological receptors are evaluated to determine potential exposure routes linking the two, and to evaluate which pathways are complete and significant. It is acknowledged that some wildlife is capable of burrowing below surface soil and into subsurface soil (i.e., deeper than the top foot). However, the top foot generally has the highest concentrations of contaminants, and therefore provides a conservative evaluation. The sections below identify the major routes of exposure and their applicability to each receptor group. A graphical CSM is provided as Figure 4.

2.3.1 Plants and Invertebrates

Plants and invertebrates may be exposed to constituents in soil through direct contact. Plants may absorb chemicals from soil via their roots. They may also adsorb chemicals from air or airborne particles through their leaves, although the waxy surfaces of leaves limit this exposure.

Terrestrial invertebrates may be exposed to constituents in surficial soil through direct contact and absorption. The top 12 inches of soil generally contains the highest amount of organic matter

and has been identified as the biological active zone by EPA (2015a). Although earthworms are unlikely to exist in the arid desert climate, other terrestrial invertebrate species could potentially inhabit the disturbed area of the Site. As such, plant and invertebrate exposures to constituents are expected to occur in surface soil. Therefore, exposure pathways linking plants and soil invertebrates to surface soil are complete and relevant for assessment.

2.3.2 Wildlife

The most significant exposure route for wildlife is ingestion of constituents in contaminated media, which includes soil and food items (i.e., biota). Wildlife may ingest constituents in soil by incidental ingestion while grooming or foraging. Some constituents can bioaccumulate in animal tissues. Therefore, wildlife may also ingest constituents through the food web. Ingestion of constituents in soil and/or biota are considered complete and potentially significant exposure pathways for wildlife.

Wildlife may also be exposed to constituents in air and soil via direct contact during foraging or burrowing. Most wildlife have protective outer coverings such as fur, feathers, or scales that prevent or limit the dermal absorption of chemicals from environmental media (U.S. Army Center for Health Promotion and Preventative Medicine [USACHPPM] 2004). EPA guidance identifies that, in most cases, dermal exposures are likely to be less significant than exposures through ingestion, and their evaluation involves considerable uncertainty (EPA 2007; USACHPPM 2004). This exposure route is considered complete but relatively insignificant for wildlife.

Inhalation is a potentially complete pathway for wildlife. Birds and mammals may inhale constituents that have volatilized or that are adsorbed to airborne particulates. EPA guidance indicates that, in general, inhalation pathways are likely to be insignificant compared to ingestion pathways (EPA 2007). However, fossorial (i.e., burrowing) animals spend large portions of time in below-ground burrows and tunnels (approximately 30 to 50 centimeters) due to obligate foraging and/or reproductive behavioral habits (Gallegos et al. 2007). Burrows and tunnels are engineered for conductive air flow, but such habits may expose fossorial animals to vapor phase contaminants, including volatile organic chemicals (VOCs), that are more highly concentrated than in air at or above the ground surface. While VOCs do not generally attain levels that can adversely affect organisms in well-mixed surface air, they have greater potential to affect organisms exposed to subsurface air, where vapor concentrations can rise above that of ambient (surface) air (NDEP 2006).

For example, the antelope ground squirrel (*Ammospermophilus leucurus*) and the Merriam's kangaroo rat (*Dipodomys merriami*) spend vast amounts of time underground in burrows and also raise young in underground dens. Larger mammals, including coyote (*Canis latrans*), blacktail jackrabbit (*Lepus californicus*), and desert cottontail (*Sylvilagus auduboni*), are known to den underground, and many predators of fossorial mammals may also spend a considerable portion of their time in belowground burrows. Additionally, many reptiles spend large portions of time belowground, such as the banded gecko. Burrowing owls, a common species in the Las Vegas region (also highly tolerant of urban environments), spend substantial amounts of time belowground (NDEP 2006).

Fossorial mammals will be considered as other receptors in an inhalation pathway for any VOCs of concern in soil. Albeit organisms other than mammals are also exposed to contaminants in subsurface air, the lack of toxicity data for non-mammalian receptors makes it difficult to evaluate other taxa. Fossorial mammals will be the representative receptors for subsurface air contaminants for all taxonomic groups because fossorial mammals can be assumed to spend 100% of their time belowground. In addition, respiratory and respiration rates in mammals are typically greater than that for other fossorial organisms, such as reptiles and invertebrates, and likely equivalent to those for birds. Thus, the use of fossorial mammals as the sole receptor group for fossorial animals is a conservative choice for receptor selection, in the context of VOC contamination (NDEP 2006).

2.4 ASSESSMENT AND MEASUREMENT ENDPOINTS

Assessment endpoints (AE) are explicit expressions of the actual environmental values (e.g., ecological resources) that are to be protected (EPA 1992). It is not practical or possible to directly evaluate risks to the individual components of the ecosystem at a site. Instead, AEs focus the risk assessment on particular components of the ecosystem that could be adversely affected by contaminants from the Site. Valuable ecological resources include those without which ecosystem function would be significantly impaired, those providing critical resources (e.g., habitat, fisheries), and those perceived as valuable by humans (e.g., endangered species and other issues addressed by legislation). Because AEs focus the risk assessment design and analysis, appropriate selection and definition of these endpoints are critical to the utility of a SLERA. Useful AEs define both the valued ecological entity at a site (e.g., a species, ecological resource, or habitat type) and a characteristic(s) of the entity to protect (e.g., reproductive success, production per unit area, or areal extent) (EPA 1997). AEs for the SLERA have been selected based on the ecosystems, communities, and/or species potentially present at the disturbed area of the Site.

Per EPA (1992) the selection of assessment endpoints depends on the following:

- Ecological relevance
- Susceptibility to known or potential stressors
- Relevance to management goals

Measurement endpoints (ME) are developed for each AE. A ME is a measurable biological response to a stressor that can be related to the valued characteristic chosen as the AE (EPA 1992). Each ME has the same exposure pathway and toxic mechanism of action as the AE it represents. A weight-of-evidence approach is used if more than one ME is selected for an AE. If some lines of evidence conflict with others, professional judgement is used to determine which data are considered more reliable or relevant than others.

Based on the above, the following AEs and MEs were used to evaluate potential ecological risks at the disturbed area of the Site:

AE1: Protection and maintenance of plant populations

ME1a: Comparison of concentrations of constituents in surficial soil to established soil screening levels (SLs) protective of plants

AE2: Protection and maintenance of soil invertebrate communities
ME2a: Comparison of concentrations of constituents in surficial soil to established soil SLs protective of soil invertebrates

AE3: Protection of terrestrial mammal populations
ME3a: Comparison of concentrations of constituents in surficial soil to established soil SLs protective of mammals

AE4: Protection of terrestrial bird populations
ME4a: Comparison of concentrations of constituents in surficial soil to established soil SLs protective of birds

AE5: Protection of fossorial animal populations
ME5a: Comparison of concentrations of constituents in surficial soil to soil SLs protective of fossorial mammals

AE6: Protection of reptile populations
ME6a: Qualitative evaluation based on results of risks to birds and mammals

3. DATA EVALUATION

Analytical data evaluated in this SLERA were collected in September 2021, December 2021, and January 2022, and consist of surficial soil (i.e., 0-1 foot). Sample locations and methods for these data are described in the Phase II SAP (Broadbent 2021) and RI Report (Broadbent 2022b). The full SLERA dataset is presented in Appendix B.

The primary objective of the data evaluation was to ensure data were appropriate for use in the SLERA. The analytical data were reviewed for applicability and usability following procedures in EPA guidance (EPA 1989, 1992) and NDEP's Supplemental Guidance (NDEP 2010). Management of samples began at the time of collection and continued throughout the analytical process. Standard Operating Procedures (SOPs) were followed to ensure that samples were collected and managed properly and consistently and to optimize the likelihood that the analytical data are valid and representative. The data were evaluated, and it was determined that all results are appropriate for use in the SLERA. There were no rejected data associated with the dataset. Therefore, the analytical results are considered adequate in terms of quality for use in a SLERA.

Data usability was assessed with six criteria set forth by EPA and NDEP. Additionally, the NDEP's Data Usability Guidance includes a step for data usability analysis, which is discussed after these six evaluation criteria. Sample results were validated by a third party to Stage 2B validation. A full discussion of the data usability and data validation can be found in the RI Report (Broadbent 2022b). For this SLERA, a brief analysis of the six criteria is provided as they relate to the SLERA dataset. The six criteria include the following:

- Criterion I: Reports to Risk Assessor
- Criterion II: Data Sources
- Criterion III: Documentation
- Criterion IV: Analytical Methods and Detection Limits
- Criterion V: Data Review
- Criterion VI: Data Quality Indicators (DQIs)

3.1 CRITERION I: REPORTS TO RISK ASSESSOR

This criterion evaluates whether appropriate data and documentation are available for the risk assessment and other planned uses. The following information components for the determination of data usability are identified:

- A Site description provided in this report identifies the location and features of the Site, the characteristics of the vicinity, and contaminant transport mechanisms.

- Site maps with sampling locations are provided in the RI Report (Broadbent 2022b).

- A description of sampling design and procedures was included in the approved Phase II SAP (Broadbent 2021) and RI Report (Broadbent 2022b).

- Analytical methods and sample quantitation limits (SQLs) are provided in the dataset file included in Appendix B.

- A narrative of qualified data is provided with each analytical data package; the laboratory provided a narrative of quality assurance (QA)/quality control (QC) procedures and results. These narratives are included as part of the RI Report (Broadbent 2022b).

- QC results are provided by the laboratory, including blanks, replicates, and spikes. The laboratory QC results are included as part of the RI Report (Broadbent 2022b).

- Data flags used by the laboratory were defined adequately.

- Electronic files containing the raw data made available by the laboratory are included as part of the RI Report (Broadbent 2022b).

3.2 CRITERION II: DATA SOURCES

The review of data sources is performed to ensure analytical results and analytical techniques used in the investigation are appropriate for risk assessment purposes. The data collection activities were developed to characterize potential COPECs in the disturbed area. Analytical methods used were set forth in the Phase II SAP (Broadbent 2021) and are analytical methods established by EPA. Additionally, the laboratory that performed analytical methods evaluated in this analysis is accredited by the State of Nevada. Therefore, the analytical methods and data sources for the chemical and physical parameters are appropriate for use in the SLERA.

3.3 CRITERION III: DOCUMENTATION REVIEW

The documentation review ensures that each analytical result can be traced to a sample location and that the procedure(s) used to collect the environmental samples were appropriate. The samples were collected in accordance with the SOPs presented in the Phase II SAP (Broadbent 2021). The chain-of-custody forms prepared in the field were reviewed and compared to the analytical data results provided by the laboratory to ensure completeness of the dataset as discussed in the RI Report (Broadbent 2022b). Field procedures included documentation of sample times, dates, locations, and other sample-specific information (e.g., sample depth). This sample collection information is part of the project sample database. Figure 5 presents the location of samples collected for evaluation in the SLERA.

The laboratory reported the analytical data in a format that provides information needed for this SLERA. Each laboratory report describes the analytical method used, provides results and detection limits on a sample-by-sample basis, and provides the results of appropriate quality control samples. Reported sample analysis results were imported into the project database.

3.4 CRITERION IV: ANALYTICAL METHODS AND DETECTION LIMITS

For an analytical result to be usable for assessing risks, the analytical method must appropriately identify the chemical, and the sample detection limit must be at or below a concentration that is associated with risk-based benchmark levels. The analytical methods were reviewed in the Phase II SAP to ensure their detection limits were at or below risk-based SLs (Broadbent 2021). The laboratory reports detail the EPA analytical methods used to analyze samples, and the methods are documented in the laboratory reports. Metals were analyzed via EPA Method 6020A rather than EPA Method 6020B as specified in the Phase II SAP. Analytical results were reviewed to ensure laboratory SQLs were sufficient for the intended use.

3.5 CRITERION V: DATA REVIEW

The data review portion of the data usability process focuses primarily on the quality of the analytical data received from the laboratory. Soil sample data were subject to third-party data validation. The analytical data were validated, and the results of data validation are presented in the RI Data Validation Summary Report (DVSR) prepared by Laboratory Data Consultants, Inc. (LDC 2022). Data qualifications are summarized below.

The following data review presents a summary of the data validation codes applied to detected analytical results. A discussion of qualifiers applied to non-detected analytical results can be found in the RI DVSR (LDC 2022).

Holding Time Exceedances

Holding time refers to the period of time between sample collection and the preparation and/or analysis of the sample. Sample results were reviewed for compliance with the holding times set forth in the Phase II SAP (Broadbent 2021). Mercury results for three samples were qualified for holding time exceedances (LDC 2022).

Calibration

Requirements for instrument calibration ensure that the instrument is capable of producing acceptable quantitative data. Review included the instrument setup, operating conditions, initial calibration verifications, and continuing calibration verifications. None of the data were qualified due to calibration issues.

Blank Contamination

Field and laboratory blanks, consisting of contaminant-free water, were prepared and analyzed as part of standard QA/QC procedures to monitor for potential contamination of field equipment, laboratory process reagents, and sample containers. Two types of laboratory blanks were prepared analyzed: calibration and method blanks. Two types of field QC blanks were collected: equipment rinsate blanks and source water blanks. Samples from the background and SLERA dataset had results that were “J” flagged due to laboratory or field blank contamination. As a result of the blank contamination, sample analytical results were “J” (estimated) or “J+”

(estimated biased high) qualified. None of the results were "J-" (estimated biased low). As a result, the SLERA is not expected to underestimate potential risk concerns associated with blank contamination.

Spike Samples

Two types of spike samples were analyzed to monitor for potential interferences during analysis: matrix spike (MS) and matrix spike duplicate (MSD) samples; and blank spike samples, also known as laboratory control samples (LCS). Data were qualified if either recovery in the pair failed to meet criteria. None of the detected results were qualified based upon the spike sample analysis. One non-detect result for antimony was qualified.

Surrogate Spikes

Surrogate spikes were prepared by adding compounds similar to target compounds of interest to sample aliquots and associated QC samples for organic analyses only. Surrogate spike recoveries monitor the efficiency of contaminant extraction from the sample medium into the instrument measuring system and measure possible interferences from the sample matrix that may affect the data quality of target compound results. No data were qualified or rejected based on surrogate recoveries.

Internal Standards

Internal standards were used for quantitation of semi-volatile organic compounds and plasma-atomic emission spectrometry/mass spectrometry by adding compounds similar to target compounds of interest to sample aliquots. Internal standards are used in the quantitation of target compounds in the sample or sample extract. No data were qualified or rejected due to internal standard recoveries.

Duplicate Samples

Duplicate samples involved the preparation and analysis of an additional aliquot of a field sample. Results from duplicate sample analysis measure laboratory precision as well as homogeneity of contaminants in the field matrix. Spiked duplicates such as MS/MSD pairs and/or LCS duplicates for organic analyses and metals were used to evaluate laboratory precision and provide insight into sample matrix homogeneity. At least one duplicate analysis was performed with each batch of field samples processed in the laboratory. The laboratory calculated the relative percent difference (RPD) between the two detected values for duplicate analyses. RPD values within the acceptable limits indicate both laboratory precision and minimal matrix heterogeneity of compounds detected in the samples. No samples were qualified based upon duplicate samples.

3.6 CRITERION VI: DATA QUALITY INDICATORS

DQIs address field and analytical data quality to ensure it is appropriate for making decisions affecting activities at the Site. The DQIs address the field and analytical data quality aspects as

they affect uncertainties in the data collected. The DQIs include precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS). The Phase II SAP provides the definitions and specific criteria for assessing DQIs using field and laboratory QC samples. Data validation activities included the evaluation of PARCCS parameters, and data not meeting the established PARCCS criteria were qualified during the validation process.

Completeness Evaluation

Completeness measures the amount of useable data from the data collection activity. Analytical completeness is a measure of the number of overall accepted analytical results, including estimated values, compared to the total number of analytical results requested on samples submitted for analysis after review of the analytical data. Results for three metals and 12 SVOCs were rejected, resulting in a percent completeness of 99.9%. The percent completeness was acceptable to support the decision-making process and reporting activities for the SLERA.

Comparability Evaluation

Comparability is a qualitative evaluation that considers the confidence with which data are considered to be equivalent. The comparability goal is achieved through using standard techniques to collect and analyze representative samples and reporting analytical results in appropriate units. SOPs were followed for sample collection. Samples were analyzed using the same laboratory methods and reported in the same units, with the exception of the methods used for the metals. The majority of the metals were analyzed via Method 6020A, however, the metal samples collected in January 2021 were analyzed via EPA Method 6010C and 6010D prior to the approval of the Phase II SAP. The metals samples analyzed by Method 6010 were collected from specific areas to answer important questions on moisture content and leaching characteristics of the tailings and waste rock. The metals samples analyzed by Method 6020A were collected to provide information for site characterization. Additionally, SQLs for each chemical were consistent for all samples.

Representativeness Evaluation

Representativeness is the extent to which data define the true risk to human health and the environment. The results of the risk assessment will be biased to the degree that the data do, or do not, reflect the chemicals and concentrations present at exposure points for each exposure area of interest (NDEP 2010). Samples were collected from the only medium of concern (i.e., soil) at a depth that is consistent with the CSM. Additionally, sampling locations for each area were determined in the Phase II SAP (Broadbent 2021) and were analyzed for COPECs. Although some sampling locations were randomly selected to provide an overview of the area being evaluated, many sampling locations were biased toward locations that were disturbed. As a result, potential risks may be overestimated. Several mercury sample results were qualified as estimated based on holding time issues, but this did not affect the representativeness of the analytical results. The data are usable as qualified.

Accuracy Evaluation

Accuracy measures the overestimation or underestimation of reported concentrations and is evaluated from the results of spiked samples. To measure accuracy, a standard or reference material containing a known concentration is analyzed or measured and the result is compared to the known value. Several QC parameters are used to evaluate the accuracy of reported analytical results, including:

- Calibration limits
- LCS percent recovery
- MS/MSD percent recovery
- Spike sample recovery (inorganics)
- Surrogate spike recovery (organics)
- Blank sample results

These DQIs were discussed in Section 3.5 in relation to the "J" flagged sample results. Results are considered sufficiently accurate for risk assessment purposes.

Data Precision Evaluation

Precision is a measure of the degree of agreement between replicate measurements of the same source or sample. Precision is expressed by RPD between replicate measurements. Precision is generally assessed using a subset of the measurements made. The precision of the data was evaluated using several laboratory QA/QC procedures, including MS/MSD samples. Results for antimony and silver were qualified as estimated based on MS/MSD duplicate precision, but the data are usable as qualified. Therefore, there do not appear to be any data usability issues associated with precision. No sample results were rejected based upon analytical duplicates, LCS, MS/MSD results. Results are considered sufficiently accurate for risk assessment purposes.

Data Analysis

Based upon the results of the data validation, validated results are either qualified or unqualified. Unqualified results mean that the reported values may be used as reported. Qualified results are annotated with codes as provided in the data validation report. The inclusion or exclusion of data within the SLERA on the basis of analytical qualifiers was performed in accordance with EPA guidance (EPA 1989, 1992). The following procedures were followed if qualifiers were present:

- Analytical results bearing the "U" and "UJ" qualifier (indicating that the analyte was not detected at the given reporting limit) were retained in the dataset and considered non-detects at the given reporting limit.

- Analytical results for analytes bearing the "J" qualifier (indicating that the reported value was estimated due to blank contamination) and "J+" (indicating the estimated concentration may be biased high) were retained at the reported concentration.

- Analytical results for analytes bearing the "R" qualifier (indicating that the data are rejected due to serious deficiencies in meeting QC criteria).

Data validation and usability evaluations address analytical data on an individual result basis. NDEP also requires an analysis of the data as a whole, which is conducted as part of data analysis. The intent of the data analysis is to identify any anomalies or unusual data trends that may indicate any potential laboratory issues. This is performed by reviewing summary statistics or other visual aids.

A review of the data qualifications reveals that data collected for evaluation in this SLERA are appropriate for use. No data points were qualified as a low bias result; therefore, any risks determined from this dataset are not expected to be underestimated. Additionally, no data were rejected, and all data are available for use in the SLERA.

Dioxins/Furans

Dioxins/furans were analyzed from 5 samples within the Thermal Process Area. There is a total of 17 dioxin/furan congeners. The toxicity of each individual congener is related to the toxicity of the most toxic congener: 2,3,7,8-tetrachlorodibenzo-p-dioxin. To calculate the toxic equivalent quotient (TEQ) for the end receptor species, each congener is multiplied by a toxic equivalence factor (TEF) and then summed. The TEFs are different for different organisms. TEFs for birds are based on Van den Berg et al. (1998). TEFs for mammals have been updated by Van den Berg et al. (2006) and accepted by the World Health Organization. To avoid overestimating the TEQ, the calculations treated non-detect data (U-qualified values) as 0 in the summation. TEFs for dioxins/furans are provided below.

Analyte	CASRN	Mammal TEFs (2005)[1]	Bird TEFs (1998)[2]
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4	0.01	0.01
1,2,3,4,6,7,8-Heptachlorodibenzodioxin	35822-46-9	0.01	0.001
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7	0.01	0.01
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9	0.1	0.1
1,2,3,4,7,8-Hexachlorodibenzodioxin	39227-28-6	0.1	0.05
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9	0.1	0.1
1,2,3,6,7,8-Hexachlorodibenzodioxin	57653-85-7	0.1	0.01
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9	0.1	0.1
1,2,3,7,8,9-Hexachlorodibenzodioxin	19408-74-3	0.1	0.1
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6	0.03	0.1
1,2,3,7,8-Pentachlorodibenzodioxin	40321-76-4	1	1
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5	0.1	0.1
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	0.3	1
2,3,7,8-Tetrachlorodibenzodioxin	1746-01-6	1	1
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9	0.1	1
Octachlorodibenzofuran	39001-02-0	0.0003	0.0001
Octachlorodibenzodioxin	3268-87-9	0.0003	0.0001

Analyte	CASRN	Mammal TEFs (2005)[1]	Bird TEFs (1998)[2]

Notes:

[1] Van den Berg et al. Toxicological Sciences 93(2), 223–241, 2006.

[2] Van den Berg et al., Environmental Health Perspectives,106 (12), 1998.

CASRN = Chemical Abstracts Service Registry Number

TEF = Toxicity equivalent factor

TEQ = Toxicity equivalent quotient

Sensitivity Evaluation

Sensitivity refers to the capability of a method or instrument to detect an analyte at a given concentration and reliably quantify it at that concentration. Analytical results were reviewed to evaluate laboratory SQLs to ensure they are sufficiently sensitive for the intended use. Table 2 presents summary statistics for detected results and includes a range of detection limits for non-detected results. Most non-detect results had SQLs below the risk-based SLs provided in Table 3. SQLs were greater than SLs in some cases, particularly for antimony, cadmium, chromium VI, and selenium. This is likely due to the very low SLs for these metals and indicates some uncertainty. However, the overall results of the SLERA are not likely impacted because the detection frequencies for these metals were high in each stratum.

4. EXPOSURE AND EFFECTS ANALYSIS

The following sections discuss the exposure and effects assessment that are used to evaluate potential ecological risks. The exposure assessment describes the dose of each COPEC to which the identified receptors are exposed. The effects assessment establishes levels that represent conservative thresholds for adverse ecological effects. In general, the toxicity of constituents is related to their bioavailability. Organic compounds may form complexes or compounds that bind them to soil and make them chemically inaccessible to ecological receptors. Alternatively, these elements and compounds may be present in forms that are easily dissolved and absorbed, or in forms that tend to bind to biological tissues. It is these forms of easily absorbed chemicals that are most toxic.

For metals, bioavailability is governed largely by formation of metallic compounds, the metal's ability to bind to the soil matrix, and metal speciation. The compounds and bonds formed by metals are determined by reduction and oxidation reactions, by the dominant pH in soil, and by the presence of organic carbon. Toxicological benchmarks such as Ecological Soil Screening Levels (Eco-SSLs), developed by EPA, were developed based on moderately bioavailable forms of metals. These benchmarks may overestimate toxicity for less bioavailable forms or underestimate toxicity for more bioavailable forms.

Acidity increases the bioavailability of many cationic metals, which may become more soluble at pH below 5. Some metals may also form complexes with iron oxides and hydroxides, which makes the metals less bioavailable and less mobile. Reduction and oxidation conditions also determine the speciation of metals. Some metals may exist in different valence states or chemical forms that demonstrate different toxicity and bioavailability.

4.1 EXPOSURE POINT CONCENTRATIONS

Estimates of chemical concentrations at points of potential exposure are necessary for evaluating COPEC ingestion by receptors. The concentrations of COPECs in the exposure medium (surficial soil) at the exposure point are termed "exposure point concentrations" (EPCs). For this SLERA, the maximum detected concentration is a realistic estimate of hot-spot exposures to organisms that may spend their entire lives in a small area. However, use of the maximum EPCs for assessment of most wildlife is conservative and is likely to overestimate risks because it assumes that individual organisms spend 100% of their time inhabiting and feeding from the area with the highest COPEC concentration. As such, both maximum and arithmetic average concentrations are used as EPCs.

4.2 ECOLOGICAL SOIL SCREENING VALUES

COPECs are selected by comparing EPCs to ecological screening values, representative of threshold level effects. Where available, EPA's Eco-SSLs are used. Many Eco-SSLs are available for multiple endpoint species—soil invertebrates, plants, mammals, and birds. EPCs are compared to Eco-SSLs for each endpoint species. Other literature sources are used for analytes without Eco-SSLs and include sources such as Efroymson et al. (1997 a,b,c) and the Los Alamos National Laboratory's EcoRisk Database (2017). EPA guidance on risk assessment of

pesticides suggests that birds can be used as surrogates for reptiles (EPA 2004). Furthermore, Salice et al. (2009) conducted a benchmark dose analysis on lead in western fence lizards (*Sceloporus occidentalis*) and found that results approximate the avian Eco-SSL which was based on risk to avian ground insectivores (e.g., woodcock). Therefore, Eco-SSLs that are protective of birds are assumed to also be protective of reptiles.

When the maximum detected concentration for an analyte is less than its respective ecological screening value, exposure is not expected to result in adverse effects or concerns for the population, and the analyte is not considered further. Analytes detected at concentrations that exceed their respective ecological screening value do not necessarily indicate risk. Instead, the results of the screening identify those analytes that warrant additional evaluation to determine whether adverse effects may occur to populations of ecological receptors. This is done in this SLERA by comparing the same SLs to alternative EPCs, based on average concentrations. Ecological SLs are presented in Table 3.

4.3 BACKGROUND CONCENTRATIONS

The development of background or reference site values is critical to an initial screen of COPEC data for naturally occurring inorganic chemicals and some ubiquitous organic chemicals. Since the natural environment contains naturally varying levels of chemical constituents, calculated background values should be seen as simplistic averages. Since the typical value of comparison is the upper 95th percentile on the mean background (or reference site) value, this means that on average, organisms encounter values higher than the sampled mean less frequently than lower values of a given constituent in their environment. This consideration makes the background comparison conservative as a screening tool. Additionally, organisms that occur indigenously to any given site have typically adapted (behaviorally, developmentally, and reproductively) to natural background site conditions.

Establishment of site background concentrations of various chemical constituents, but particularly inorganic elements and compounds, provides a formative basis on which to evaluate exceedances. A background study was conducted in May 2021 by Broadbent and EA to establish relevant site-specific background concentrations (Broadbent 2022a). Combined graphical and formal outlier tests were performed on the data to assure that data used to calculate the background threshold value (BTVs) are representative of background. Additional details are provided in the Background Soil Report, Revision 2 (Broadbent 2022a). BTVs representing not-to-exceed values for each metal were calculated for the following datasets:

- Muddy Creek Formation (Stratum 111)
- River Mountain volcanics (Stratum 121)

Stratum 1.1.1 Sedimentary Unit Background (Muddy Creek Formation)

Sedimentary unit background concentrations will be the basis for comparison to post-remediation soils in most portions of the disturbed area since the majority of native soils beneath the mill and tailings consist of consolidated Muddy Creek sediments or related alluvial deposits.

In addition, soil from this unit will also be used as clean cover during future Site development. A total of 23 samples were collected within the Muddy Creek Formation (Stratum 111), and 18 samples were included in developing the BTV.

Stratum 1.2.1 River Mountain Background

Outcrops of volcanic rocks may be encountered after remediation in some portions of the disturbed area. This unit has not been impacted by Site activities and may be considered an additional background dataset depending upon future Site development. In addition, soil from this unit will also be used as clean cover during future Site development. A total of 27 samples were collected for this unit (Stratum 121), and 22 samples were included in developing the BTV.

The dataset generated from the Muddy Creek Formation (Stratum 111) and the River Mountain volcanic rocks (Stratum 122) is used as background to screen the data as part of this SLERA. BTV data are presented on Table 4. None of the Site maximum or average detected concentrations are lower than BTVs; therefore, none of the COPECs can be eliminated from further evaluation based on a background comparison.

5. RISK CHARACTERIZATION

The following sections present the results of the comparison of EPCs to SLs for each of the four receptor groups (plants, soil invertebrates, birds, and mammals). Table 5 presents the screen of maximum EPCs to SLs. Table 6 presents the screen of average EPCs to SLs. Hazard quotients (HQs) are identified in the tables as the ratio of the concentration to the screening value. This value presents the magnitude of exceedance of the screening value. Potential risk is characterized for each receptor group by strata.

5.1 PLANTS

- Disturbed soils, sediments, and other materials
  Maximum EPCs exceed plant Eco-SSLs for 8 metals. Manganese concentrations have the highest exceedance, with an HQ of 1405, followed by lead with an HQ of 684 and arsenic with an HQ of 394. Two semi-volatile organic compounds exceed the plant Eco-SSL: benzo(a)anthracene and benzo(b)fluoranthene but both have HQs less than 10.

  Average EPCs exceed the plant Eco-SSL for the same metals except for antimony and selenium. Average manganese concentrations are 153 times higher than the screening value; lead concentrations are 50 times higher than the screening level, and arsenic concentrations are 34 times higher than the SL. No other constituents exceed the average EPCs.

- Hotspot detections in general mill site soils
  Maximum EPCs exceed plant Eco-SSLs for 6 metals: arsenic, copper, lead, manganese, selenium, and zinc. Arsenic, lead, and manganese have the highest exceedances with the maximum arsenic concentration exceeding the screening value by 67 times, lead exceeding it by 91 times, and manganese exceeding it by 764 times.

  Using the average EPC, the plant Eco-SSL for selenium is no longer exceeded; however, the 5 other metals remain in exceedance with the highest HQ for manganese (HQ = 115) and HQs less than 20 for the other metals.

- Overburden affected by tailings
  Maximum EPCs exceed plant Eco-SSLs for 7 metals. Arsenic concentrations have the highest exceedance, with an HQ of 427, followed by manganese with an HQ of 370.

  Using the average EPC, the plant Eco-SSLs for antimony and selenium are no longer exceeded; however, the 5 other metals remain in exceedance. Average manganese concentrations are 219 times higher than the SL, and average arsenic concentrations are 64 times higher than the SL.

- Overburden strata
  Maximum EPCs exceed plant Eco-SSLs for 7 metals. Manganese concentrations have the highest exceedance, with an HQ of 214, followed by lead with an HQ of 38.

Using the average EPC, only 4 metals exceed plant Eco-SSLs: arsenic, lead, manganese, and zinc. The HQ for manganese is 59; the remaining metals have HQs less than 10.

5.2 SOIL INVERTEBRATES

- Disturbed soils, sediments, and other materials
  Maximum EPCs exceed invertebrate Eco-SSLs for 6 metals. The highest exceedance is for arsenic, which has a HQ of 1043, followed by manganese (687). Nine PAHs also have invertebrate Eco-SSLs that are exceeded by a factor of 16 to 792. Five VOCs exceed their respective Eco-SSLs, with acetone having the highest HQ (212).

  Average EPCs exceed invertebrate Eco-SSLs for 6 metals, 7 PAHs, and 2 VOCs. HQs are highest for arsenic (89) and manganese (75), followed by acetone (59), benzo(a)pyrene (37), and benzo(g,h,i)perylene (29).

- Hotspot detections in general mill site soils
  Maximum EPCs exceed invertebrate Eco-SSLs for 5 metals: arsenic, copper, lead, manganese, and zinc. The highest exceedances were for arsenic (HQ=176) and manganese (HQ=373). Concentrations of 2 PAHs also slightly exceed their respective invertebrate Eco-SSLs: benzo(g,h,i)perylene and indeno(1,2,3-cd)pyrene.

  Average EPCs exceed invertebrate Eco-SSLs for 4 of the same metals with the highest HQs for manganese (56) and arsenic (31); the average EPC for copper does not exceed its invertebrate Eco-SSL. None of the average PAH EPCs exceed their Eco-SSLs.

- Overburden affected by tailings
  Both maximum and average EPCs exceed invertebrate Eco-SSLs for 5 metals: arsenic, copper, lead, manganese, and zinc. Arsenic had the highest HQs, followed by manganese. One detection of acetone exceeded its Eco-SSL.

- Overburden strata
  Maximum EPCs exceed invertebrate Eco-SSLs for 5 metals: arsenic, copper, lead, manganese, and zinc. The highest HQs are for manganese, followed by arsenic. Average EPCs exceed invertebrate Eco-SSLs for each of these metals except for lead and copper.

5.3 MAMMALS

- Disturbed soils, sediments, and other materials
  Maximum EPCs for 9 metals exceed mammalian Eco-SSLs; this includes all metals except for hexavalent chromium. The highest exceedance is for lead (1466), followed by arsenic (154), and manganese (77). Maximum EPCs for 7 PAHs exceed mammalian Eco-SSLs with HQs ranging from 1 to 68. Acetone exceeds the Eco-SSL with an HQ of 7. TEQ Mammal concentrations exceed the Eco-SSL by a factor of 88.

Average EPCs exceed mammalian Eco-SSLs for 7 metals, all but chromium and selenium. Lead concentrations exceed the screening value by 107 times. The remaining metals exceed their respective screening values by less than 15.

- Hotspot detections in general mill site soils
  Maximum EPCs for all 9 metals exceed mammalian Eco-SSLs with HQs ranging from 2 to 195 for lead.

  Average EPCs exceed the mammalian Eco-SSLs for 7 of the same metals; only chromium and selenium mammalian Eco-SSLs are not exceeded. HQs range from 1 for cadmium to 34 for lead.

- Overburden affected by tailings
  Maximum EPCs exceed mammalian Eco-SSLs for 8 metals. The highest exceedance is for arsenic with an HQ of 167, followed by lead with an HQ of 89, and cadmium with an HQ of 44.

  Average EPCs exceed mammalian Eco-SSLs for 7 metals, all but selenium. The highest HQ is for lead (54), followed by arsenic (25). The remainder of the metals have HQs less than 20.

- Overburden strata
  Maximum EPCs exceed mammalian Eco-SSLs for 9 metals with HQs ranging from 1 for silver and selenium to 82 for lead.

  Average EPCs exceed mammalian Eco-SSLs for each of these metals except for selenium, with HQs ranging from 1 for copper to 17 for lead.

5.4 BIRDS

- Disturbed soils, sediments, and other materials
  Maximum EPCs exceed avian Eco-SSLs for 7 metals. There is no avian Eco-SSL for antimony. The HQ is highest for lead (7464), followed by arsenic (165), and manganese (72). One detected polychlorinated biphenyl (Aroclor 1260) exceeded the avian Eco-SSL by a factor of 4. Two PAHs had maximum concentrations that exceed the avian Eco-SSLs, with the highest HQ for benzo(a)anthracene (192), followed by pyrene (12). Maximum EPC for acetone also slightly exceeded the Eco-SSL. Bird TEQ exceeded the avian Eco-SSL by a factor of 55.

  Average EPCs exceed avian Eco-SSLs for 6 metals, all but chromium and selenium. The highest HQ is for lead (546); the remainder of the metals have HQs less than 15. The average EPC for benzo(a)anthracene exceeds the Eco-SSL by a factor of 10; the average EPC for Bird TEQ exceeds the Eco-SSL by a factor of 12.

- Hotspot detections in general mill site soils
  Maximum EPCs exceed avian Eco-SSLs for 7 metals. Maximum lead concentrations have the greatest exceedance of screening values with an HQ of 991. Only selenium has a maximum EPC that is less than the avian Eco-SSL. There is no avian Eco-SSL for antimony.

  Average EPCs exceed all avian Eco-SSLs except for cadmium and selenium. Average lead concentrations exceed the screening value by 173 times. The remaining metals have HQs less than 10.

- Overburden affected by tailings
  Maximum EPCs exceed avian Eco-SSLs for 7 metals. The highest exceedance is for lead, which has an HQ of 454, followed by arsenic with an HQ of 179, and zinc with an HQ of 48. The remaining metals have HQs less than 25.

  Average EPCs exceed avian Eco-SSLs for 6 metals, all but selenium. Lead has the highest HQ of 276, followed by arsenic with an HQ of 27, and manganese with an HQ of 11.

- Overburden strata
  Maximum EPCs exceed avian Eco-SSLs for 8 metals. The greatest exceedance is for lead, which has maximum concentrations that exceed the screening value by 417 times. The remaining metals have HQs less than 15.

  Average EPCs exceed avian Eco-SSLs for 7 metals, all but barium and selenium. Lead has the highest HQ of 85. The remainder of the metals have HQs below 10.

5.5 OTHER RECEPTORS

5.5.1 Fossorial Animals

Ten VOCs were detected in the Disturbed Soils, Sediments, and Other Materials strata at a rate of 5 to 20% of samples. None of the maximum or average EPCs exceed the screening values identified by Gallegos et al. (2007) for inhalation by fossorial animals. Two VOCs were detected in General Mill Site Soils; however, none of the maximum EPCs exceeded any screening values so the average EPCs were not evaluated. One detection of acetone exceeds the Eco-SSL for invertebrates in the Overburden Affected by Tailings but does not exceed the 223 milligrams per kilogram SL for inhalation risks to fossorial animals identified by Gallegos et al. (2007).

5.5.2 Reptiles

As previously mentioned, there is limited toxicological information and data available for reptiles. Benchmark dose studies conducted by Salice et al. (2009) indicate toxicity from metals to reptiles, particularly lead, are similar to that of birds. EPA (2004) also recommends birds can be used as surrogates for reptiles. Therefore, potential risks to reptiles are anticipated to be similar to that of birds.

6. UNCERTAINTY

Uncertainties are inherently associated with the estimates of potential ecological risk. As directed by EPA (1997), a conservative approach is used in the SLERA to ensure that risks are not overlooked. Accordingly, the risks are likely to be overestimated. The main areas of uncertainty associated with the SLERA are data uncertainty and the uncertainties with the development of toxicological-based screening values.

6.1 DATA UNCERTAINTY

Of the potential uncertainties associated with environmental sampling, the sample design is likely to have the greatest impact on the evaluation of risks to ecological resources. The sample design was developed based on the available historical information regarding the activities that took place at the Site. Focusing the study design to provide analyses for certain chemicals to specific suspected source areas is a valid and accepted means of maintaining a practical and efficient limit on the field effort. However, there is always a possibility that the study design could miss locations where these chemicals are present or miss other types of chemicals in a specific sample.

Samples are biased to areas of contamination in an effort to characterize the areas that were most impacted from historical activities. Screening values assume that mammals and birds obtain all their food only from the disturbed area of the Site. This is a highly conservative assumption considering there is little to no flora or fauna upon which animals may forage. With the exception of fixed or limited mobility receptors (e.g., plants), ecological receptors are unlikely to use the areas of highest contamination. Ecological receptors are more likely to forage over a larger area that includes areas of less contaminated outlying areas, such as nearby Lake Las Vegas, which boasts man-made waterbodies, trees, and healthy vegetation. Based on the conservatism in the sampling design and the lack of observed receptors in the most disturbed areas, potential risks are likely to be overestimated.

6.2 SCREENING VALUE UNCERTAINTY

Eco-SSLs were derived by EPA based on back-calculated soil concentrations from standard food web models that incorporate incidental ingestion of soil and ingestion of food items that have been contaminated due to uptake from soil. These equations require exposure parameters such as food ingestion rate, body weight, soil ingestion rate, as well as toxicity reference values. Furthermore, the uptake of contaminants from soil into food items, particularly metals, is estimated based on a linear, log-linear, or direct relationship. Estimates of water content for dietary items is also required. The equations used to develop Eco-SSLs require multiple input terms that are estimated from the literature and may vary widely between species. As a conservative approach, the lowest calculated value is selected to be protective of all groups. Based on the conservatism incorporated into the calculation of Eco-SSLs, potential risks are likely to be overestimated.

7. SUMMARY AND CONCLUSIONS

This SLERA fulfills Steps 1 and 2 of EPA's eight step ERA process. It provides a Problem Formulation that includes an ecological CSM that identifies receptors and exposure pathways and identifies the assessment and measurement endpoints. The SLERA evaluated the top foot of surficial soil collected from the disturbed area of the Site from various geological strata. Eco-SSLs are toxicity threshold values published by EPA to be soil concentrations that are protective of populations of plants, soil invertebrates, birds, and mammals. Maximum and average EPCs were calculated and compared to Eco-SSLs for each receptor group and each stratum. To evaluate potential risks to reptiles, a qualitative evaluation was conducted, based on risks to other receptors. Fossorial animals were also evaluated using soil screening values protective of the inhalation of VOCs. Potential risks are estimated by calculating an HQ, which indicates the magnitude that the EPC exceeds the SL.

There are no potential risks to fossorial animals exposed to VOCs in burrows via inhalation. Overall, potential risks are highest for all other receptor groups in all strata from manganese, arsenic, and lead. Summary tables of HQs for these COPECs are presented in Tables 7 and 8, based on maximum concentrations and average concentrations, respectively.

Based on maximum concentrations (Table 7), HQs for arsenic range from 6 for mammals in the Overburden Strata to 1131 for soil invertebrates in the Overburden Affected by Tailings. HQs for lead range from 3 for soil invertebrates in the Overburden Strata and Overburden Affected by Tailings to 7464 for birds in the Disturbed Soils Sediments and Other Materials. HQs for manganese range from 11 for birds in the Overburden Strata to 1405 for plants in the Disturbed Soils Sediments and Other Materials.

Based on average concentrations (Table 8), HQs for arsenic range from 3 for mammals and birds in the Overburden Strata to 170 for soil invertebrates in the Overburden Affected by Tailings. For lead, average concentrations do not exceed an HQ of 1 for soil invertebrates in the Overburden Strata and only slightly exceed the threshold of 1 for soil invertebrates in the General Mill Site Soils. Lead HQs greater than the acceptable threshold of 1 range from 2 for soil invertebrates in the Overburden Affected by Tailings to 546 for birds in the Disturbed Soils Sediments and Other Materials. HQs for manganese range from 3 for mammals and birds in the Overburden Strata to 219 for plants in the Overburden Affected by Tailings.

Potential ecological risks at the disturbed area of the Site described above will be addressed as part of redevelopment activities. As presented in the Focused Feasibility Study (FFS) Report - Soil and Mine Wastes, Revision 2, the preferred alternative includes placing 10 feet of clean soil cover across the disturbed area of the Site prior to development for residential use (EA 2022). This will eliminate ecological risks by isolating the high concentrations of metals currently present, thus eliminating any exposure pathways to contaminated surface soil. Following residential development, there is anticipated to be minimal ecological habitat, likely limited to manicured lawns and ornamental plants. Two community parks are planned; however, these would be maintained for recreational purposes. Any remaining habitat will no longer present an ecological risk.

8. REFERENCES

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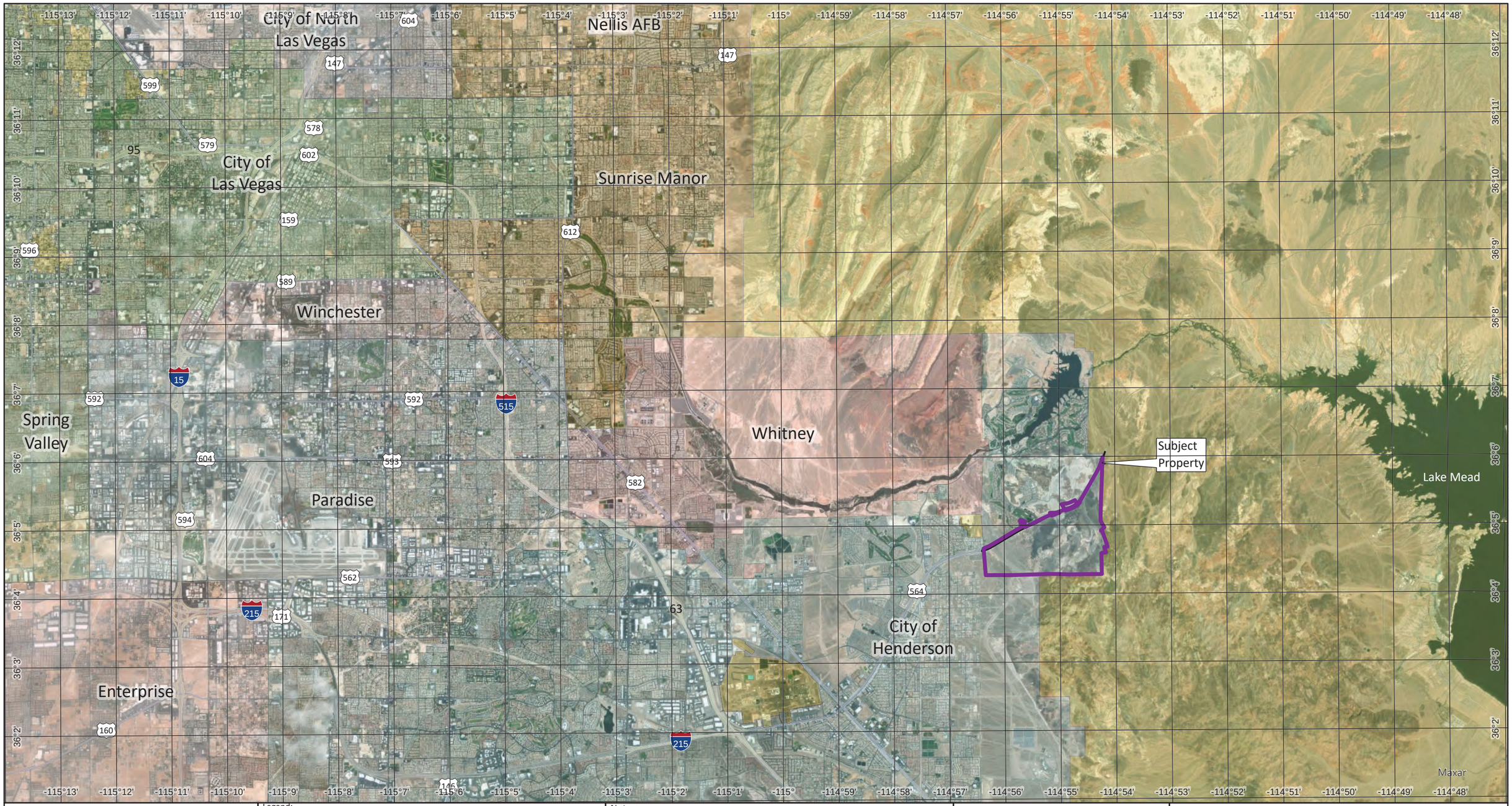
Figures



BROADBENT
8 West Pacific Avenue
Henderson, NV, 89015
(702) 563-0600 (P) * (702) 563-0610 (F)

Job # 14-01-156 Date: 10/7/2021

Legend:

- Subject Property
- City of Henderson
- City of Las Vegas
- City of North Las Vegas
- Unincorporated Clark County
- Enterprise
- Nellis AFB
- Paradise
- Spring Valley
- Sunrise Manor
- Whitney
- Winchester

Notes:
1. Imagery Source: Esri World Imagery
2. Datum: NAD 1983 StatePlane Nevada East FIPS 2701 Feet
3. Political Boundary Source: Clark County GIS Management Office.
4. Parcel Boundary Source: Clark County Assessor.
5. Roads Source: Nevada DOT GeoHub.
6. Geographic grid divided at every minute of latitude and longitude.

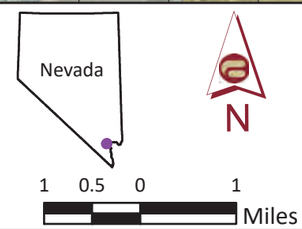
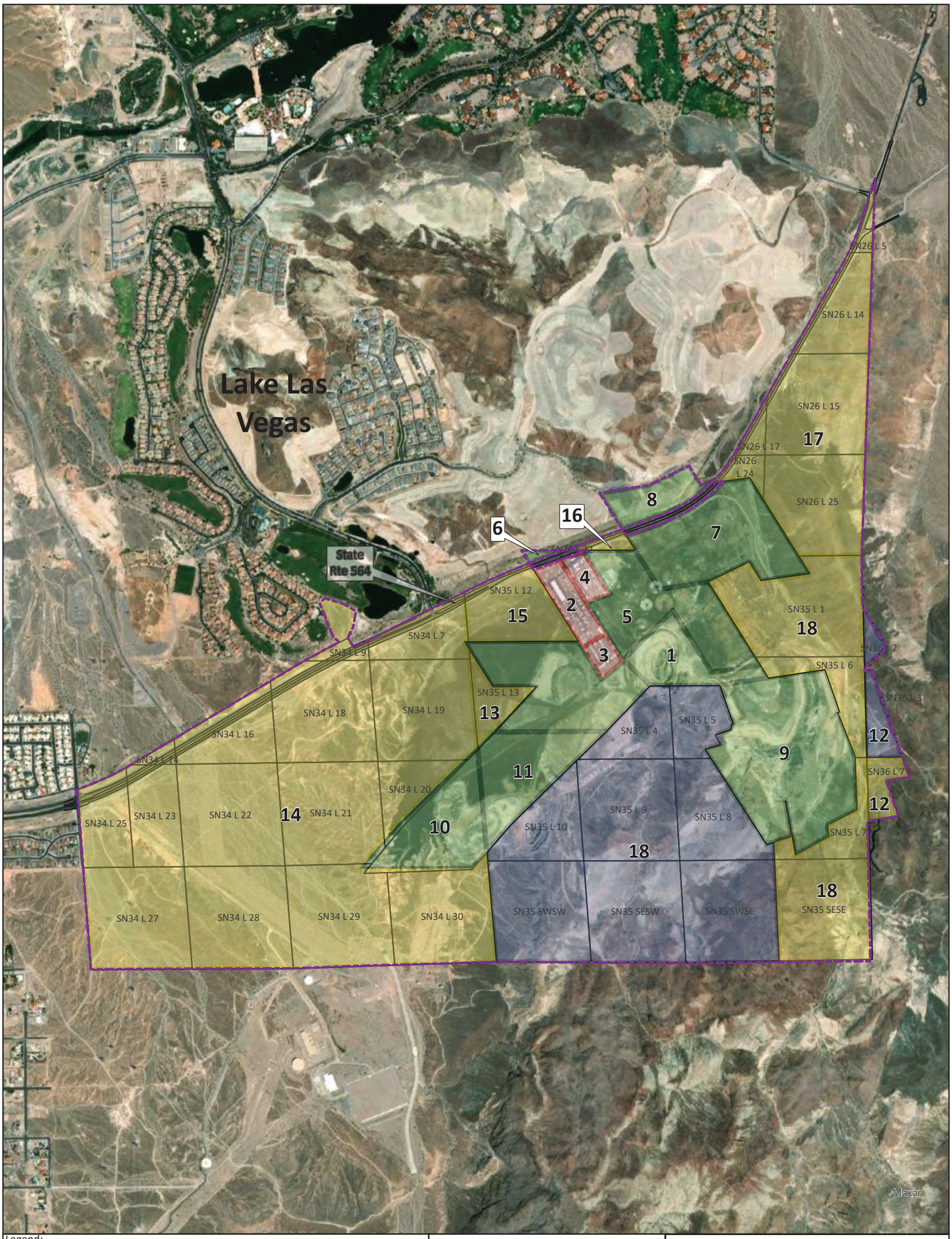


Figure 1

Site Location

Former Three Kids Mine

Designed	
Drawn	JCM
Approved	



Legend:

- Project Area
- BOR Withdrawn
- Three Kids Inc. et al. and Kings Beach Ltd.
- M&R LP and Laker Plaza Inc.
- BLM
- Public Lands Survey System (BLM, 10/29/2020)

N

Scale: 1:15,000

1,000 500 0 1,000

Feet

Figure 2

Parcel Map

Former Three Kids Mine

BROADBENT

8 West Pacific Avenue
Henderson, NV, 89015
(702) 563-0600 (P) * (702) 563-0610 (F)

Job # 14-01-156 Date: 5/1/2021

Notes:

1. Imagery Source: Esri World Imagery
2. Datum: NAD 1983 StatePlane Nevada East FIPS 2701 Feet
3. Not a survey.
4. Parcel Source: Clark County Assessor and BLM Administrative Units.

Designed	
Drawn	JCM
Approved	

Legend:

- Site Feature
- Unimproved Road
- Tailings Dam
- Project Area
- Mine Site
- Sedimentary Units (alluvium and Muddy Creek Formation)
- River Mountain Volcanics

N

Scale: 1:14,000

1,000 500 0 1,000

Feet

Figure 3

Mill Site Layout

Three Kids Mine

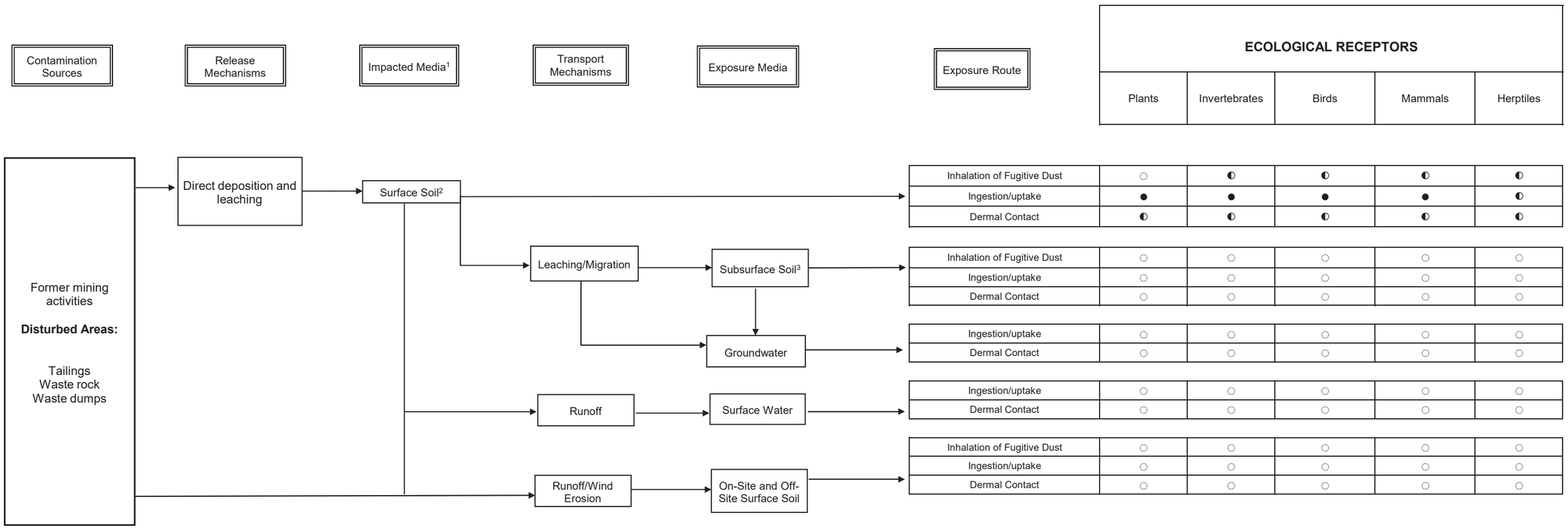
BROADBENT

8 West Pacific Avenue
Henderson, NV, 89015
(702) 563-0600 (P) • (702) 563-0610 (F)

Job # 14-01-156 Date: 4/28/2022

Notes:
1. Imagery Source: Esri World Imagery
2. Datum: NAD 1983 StatePlane Nevada East FIPS 2701 Feet
3. Not a survey. Derived from aerial imagery.

Designed	
Drawn	JCM
Approved	



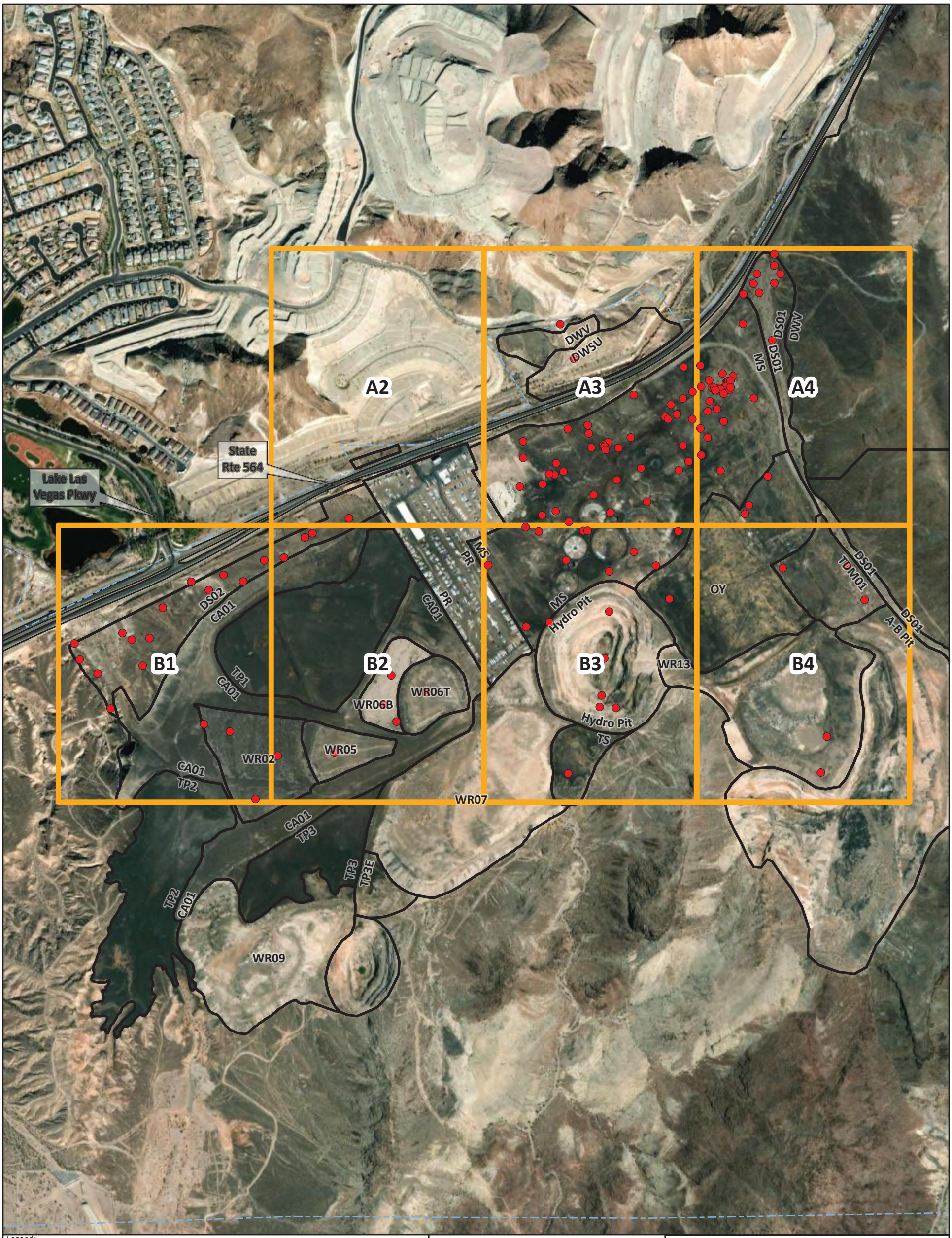
Notes:

1 - Impacted media are also exposure media.
2 - Surface soil is considered the top 0 to 1 foot of soil, tailings, or waste materials.
3 - Subsurface soil is considered media collected deeper than 1 foot.

Key:

- ● Complete exposure pathway
- ◐ Complete but insignificant pathway (not quantitatively evaluated)
- ○ Incomplete exposure pathway (no expected exposure)

Figure 4. Ecological Conceptual Site Model



Legend:

- Sample location
- Map Series Index
- Investigative Unit
- Project Area

Nevada

N

Scale: 1:8,000

500 250 0 500

Feet

Figure 5 - Index

Surface Soil Sampling Locations

Three Kids Mine

Designed	
Drawn	JCM
Approved	

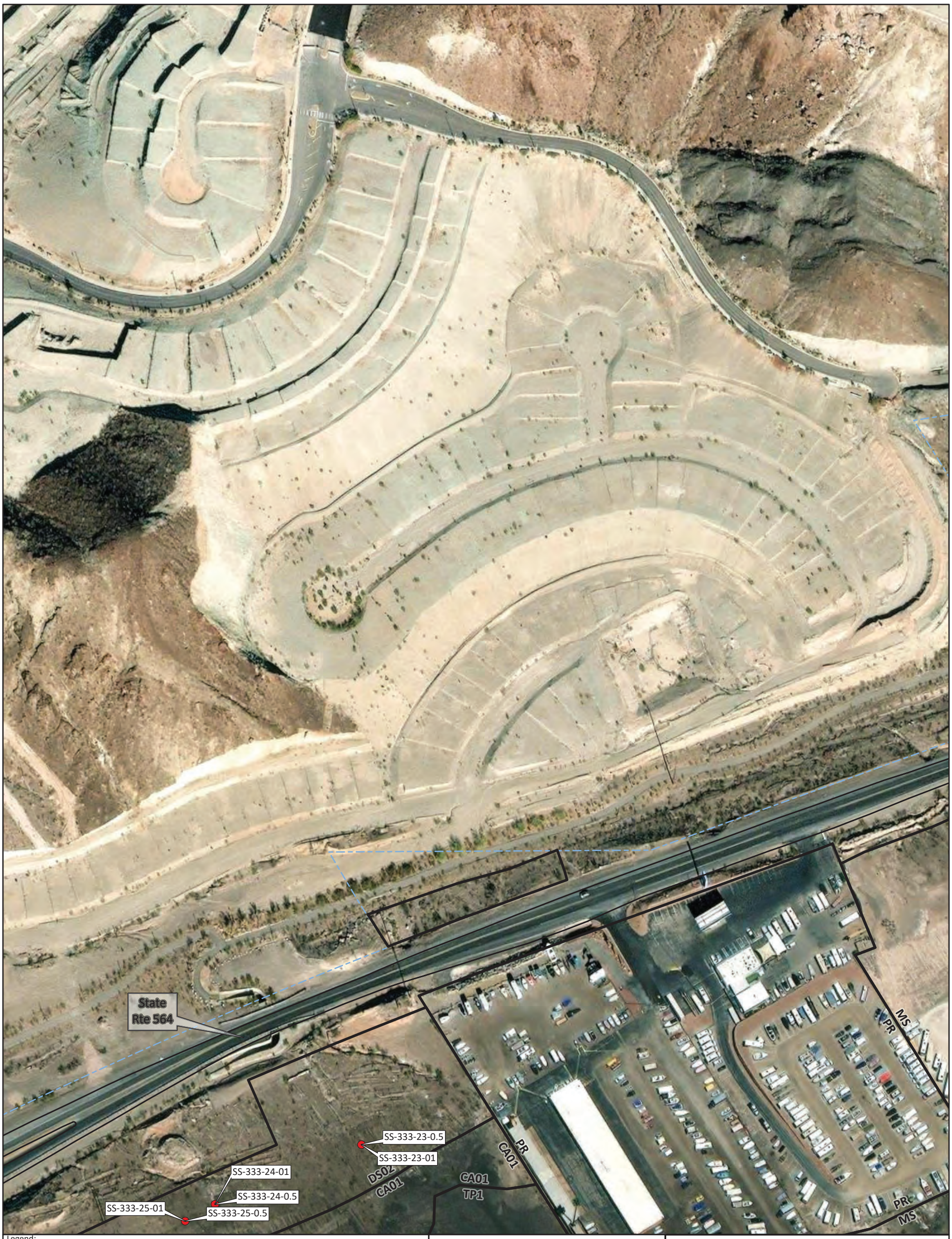
BROADBENT

8 West Pacific Avenue
Henderson, NV, 89015
(702) 563-0600 (P) * (702) 563-0610 (F)

Job # 14-01-156 Date: 6/17/2022

Notes:

1. Imagery Source: Esri World Imagery (Maxar)
2. Datum: NAD 1983 StatePlane Nevada East FIPS 2701 Feet
3. Not a survey.
4. Investigative Units are abbreviated as: A-B Pit = A-B Pit, CA01 = Compacted Area 01, DS## = Disturbed Soils ##, DWSU = Downwind sedimentary units, DWV = Downwind volcanics, Hulin Pit = Hulin Pit, Hydro Pit = Hydro Pit, MS = Mill Site, OY = Ore Yard, PR = Laker Plaza and Lake Mead Boat Storage, TDM01 = Scale house, TP # = Tailings Pond #, TS = Tailings Stockpile, WR## = Overburden ##.



Legend:

- Sample location
- Project Area

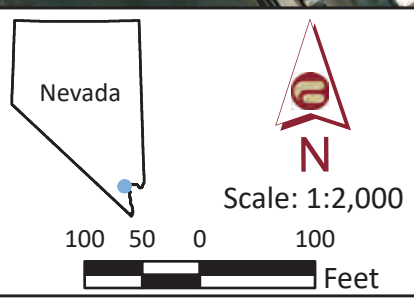


Figure 5 - A2

Surface Soil Sampling Locations

Three Kids Mine

Designed	
Drawn	JCM
Approved	

BROADBENT
8 West Pacific Avenue
Henderson, NV, 89015
(702) 563-0600 (P) * (702) 563-0610 (F)

Job # 14-01-156 Date: 6/17/2022

Notes:
1. Imagery Source: Esri World Imagery (Maxar, Microsoft)
2. Datum: NAD 1983 StatePlane Nevada East FIPS 2701 Feet
3. Not a survey.
4. Investigative Units are abbreviated as: A-B Pit = A-B Pit, CA01 = Compacted Area 01, DS## = Disturbed Soils ##, DWSU = Downwind sedimentary units, DWV = Downwind volcanics, Hulin Pit = Hulin Pit, Hydro Pit = Hydro Pit, MS = Mill Site, OY = Ore Yard, PR = Laker Plaza and Lake Mead Boat Storage, TDM01 = Scale house, TP # = Tailings Pond #, TS = Tailings Stockpile, WR## = Overburden ##.

Legend:

- Sample location
- Investigative Unit
- Project Area

Nevada

N

Scale: 1:2,000

100 50 0 100

Feet

Figure 5 - A3

Surface Soil Sampling Locations

Three Kids Mine

Designed	
Drawn	JCM
Approved	

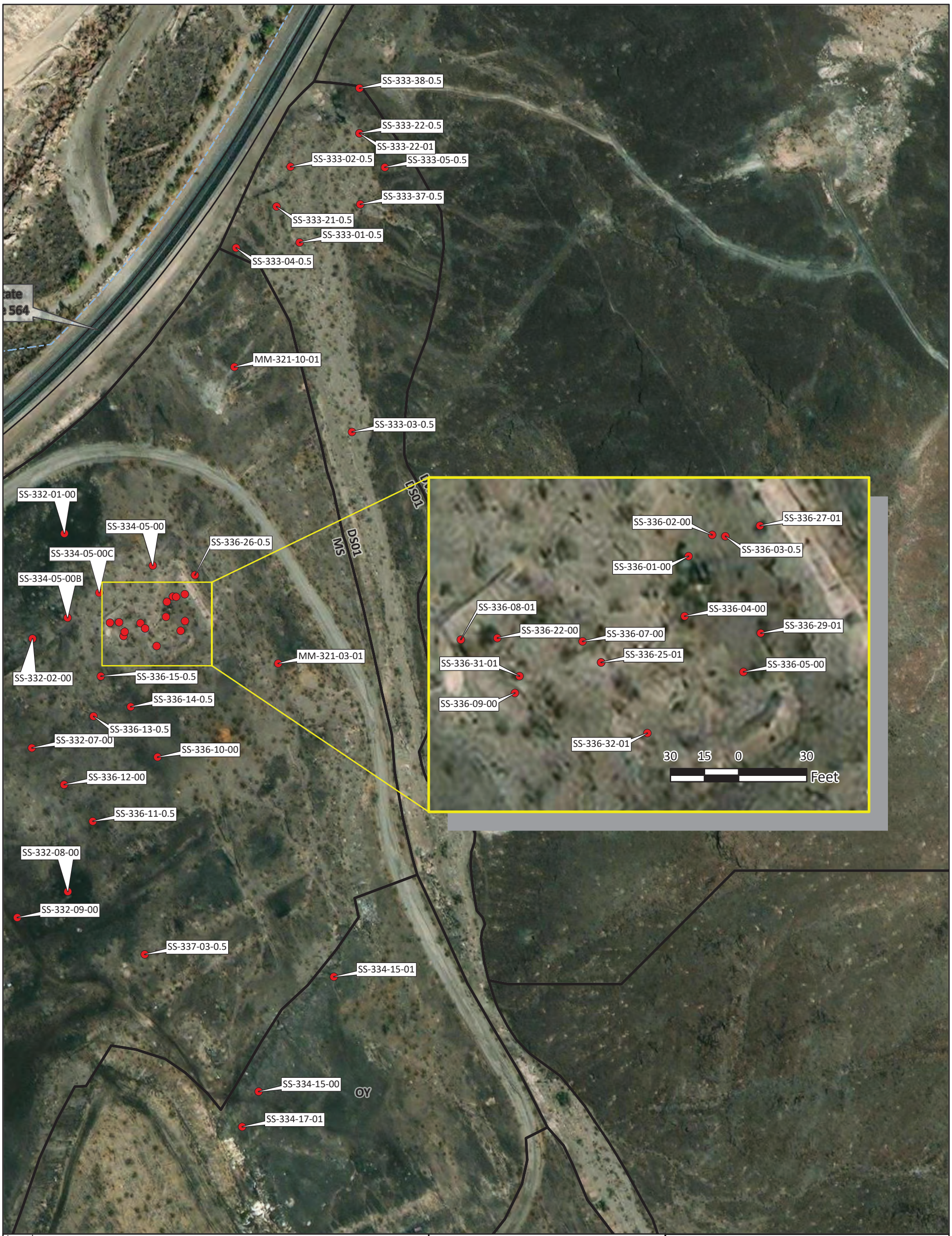
BROADBENT

8 West Pacific Avenue
Henderson, NV, 89015
(702) 563-0600 (P) * (702) 563-0610 (F)

Job # 14-01-156 Date: 6/17/2022

Notes:

1. Imagery Source: Esri World Imagery (Maxar, Microsoft)
2. Datum: NAD 1983 StatePlane Nevada East FIPS 2701 Feet
3. Not a survey.
4. Investigative Units are abbreviated as: A-B Pit = A-B Pit, CA01 = Compacted Area 01, DS## = Disturbed Soils ##, DWSU = Downwind sedimentary units, DWV = Downwind volcanics, Hulin Pit = Hulin Pit, Hydro Pit = Hydro Pit, MS = Mill Site, OY = Ore Yard, PR = Laker Plaza and Lake Mead Boat Storage, TDM01 = Scale house, TP # = Tailings Pond #, TS = Tailings Stockpile, WR## = Overburden ##.



Legend:

- Sample location
- Investigative Unit
- Project Area

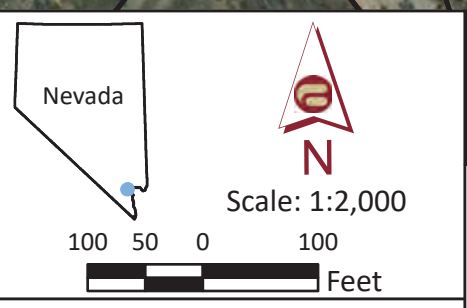


Figure 5 - A4

Surface Soil Sampling Locations

Three Kids Mine

BROADBENT

8 West Pacific Avenue
Henderson, NV, 89015
(702) 563-0600 (P) * (702) 563-0610 (F)

Job # 14-01-156 Date: 6/17/2022

Notes:
1. Imagery Source: Esri World Imagery (Maxar, Microsoft)
2. Datum: NAD 1983 StatePlane Nevada East FIPS 2701 Feet
3. Not a survey.
4. Investigative Units are abbreviated as: A-B Pit = A-B Pit, CA01 = Compacted Area 01, DS## = Disturbed Soils ##, DWSU = Downwind sedimentary units, DWV = Downwind volcanics, Hulin Pit = Hulin Pit, Hydro Pit = Hydro Pit, MS = Mill Site, OY = Ore Yard, PR = Laker Plaza and Lake Mead Boat Storage, TDM01 = Scale house, TP # = Tailings Pond #, TS = Tailings Stockpile, WR## = Overburden ##.

Designed	
Drawn	JCM
Approved	

Legend:

- Sample location
- Investigative Unit
- Project Area

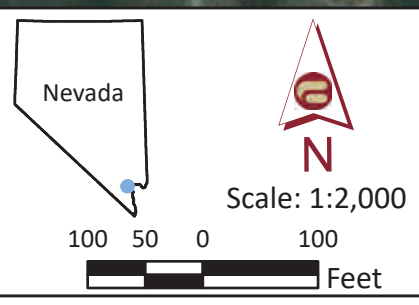


Figure 5 - B1

Surface Soil Sampling Locations

Three Kids Mine

BROADBENT

8 West Pacific Avenue
Henderson, NV, 89015
(702) 563-0600 (P) * (702) 563-0610 (F)

Job # 14-01-156 Date: 6/17/2022

Notes:

1. Imagery Source: Esri World Imagery (Maxar, Microsoft)
2. Datum: NAD 1983 StatePlane Nevada East FIPS 2701 Feet
3. Not a survey.
4. Investigative Units are abbreviated as: A-B Pit = A-B Pit, CA01 = Compacted Area 01, DS## = Disturbed Soils ##, DWSU = Downwind sedimentary units, DWV = Downwind volcanics, Hulin Pit = Hulin Pit, Hydro Pit = Hydro Pit, MS = Mill Site, OY = Ore Yard, PR = Laker Plaza and Lake Mead Boat Storage, TDM01 = Scale house, TP # = Tailings Pond #, TS = Tailings Stockpile, WR## = Overburden ##.

Designed	
Drawn	JCM
Approved	

Legend:

- Sample location
- Investigative Unit
- Project Area

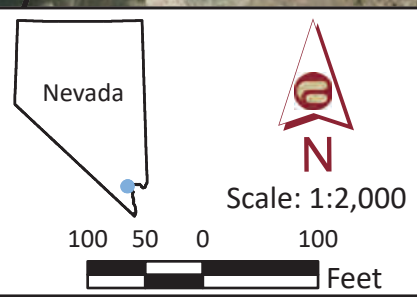


Figure 5 - B2

Surface Soil Sampling Locations

Three Kids Mine

BROADBENT
8 West Pacific Avenue
Henderson, NV, 89015
(702) 563-0600 (P) * (702) 563-0610 (F)

Job # 14-01-156 Date: 6/17/2022

Notes:
1. Imagery Source: Esri World Imagery (Maxar, Microsoft)
2. Datum: NAD 1983 StatePlane Nevada East FIPS 2701 Feet
3. Not a survey.
4. Investigative Units are abbreviated as: A-B Pit = A-B Pit, CA01 = Compacted Area 01, DS## = Disturbed Soils ##, DWSU = Downwind sedimentary units, DWV = Downwind volcanics, Hulin Pit = Hulin Pit, Hydro Pit = Hydro Pit, MS = Mill Site, OY = Ore Yard, PR = Laker Plaza and Lake Mead Boat Storage, TDM01 = Scale house, TP # = Tailings Pond #, TS = Tailings Stockpile, WR## = Overburden ##.

Designed	
Drawn	JCM
Approved	

Legend:

- Sample location
- Investigative Unit
- Project Area

Nevada

N

Scale: 1:2,000

100 50 0 100

Feet

Figure 5 - B3

Surface Soil Sampling Locations

Three Kids Mine

Designed	
Drawn	JCM
Approved	

BROADBENT

8 West Pacific Avenue
Henderson, NV, 89015
(702) 563-0600 (P) * (702) 563-0610 (F)

Job # 14-01-156 Date: 6/17/2022

Notes:

1. Imagery Source: Esri World Imagery (Maxar, Microsoft)
2. Datum: NAD 1983 StatePlane Nevada East FIPS 2701 Feet
3. Not a survey.
4. Investigative Units are abbreviated as: A-B Pit = A-B Pit, CA01 = Compacted Area 01, DS## = Disturbed Soils ##, DWSU = Downwind sedimentary units, DWV = Downwind volcanics, Hulin Pit = Hulin Pit, Hydro Pit = Hydro Pit, MS = Mill Site, OY = Ore Yard, PR = Laker Plaza and Lake Mead Boat Storage, TDM01 = Scale house, TP # = Tailings Pond #, TS = Tailings Stockpile, WR## = Overburden ##.

Legend:

- Sample location
- Investigative Unit
- Project Area

Nevada

N

Scale: 1:2,000

100 50 0 100

Feet

Figure 5 - B4

Surface Soil Sampling Locations

Three Kids Mine

BROADBENT

8 West Pacific Avenue
Henderson, NV, 89015
(702) 563-0600 (P) * (702) 563-0610 (F)

Job # 14-01-156 Date: 6/17/2022

Notes:

1. Imagery Source: Esri World Imagery (Maxar, Microsoft)
2. Datum: NAD 1983 StatePlane Nevada East FIPS 2701 Feet
3. Not a survey.
4. Investigative Units are abbreviated as: A-B Pit = A-B Pit, CA01 = Compacted Area 01, DS## = Disturbed Soils ##, DWSU = Downwind sedimentary units, DWV = Downwind volcanics, Hulin Pit = Hulin Pit, Hydro Pit = Hydro Pit, MS = Mill Site, OY = Ore Yard, PR = Laker Plaza and Lake Mead Boat Storage, TDM01 = Scale house, TP # = Tailings Pond #, TS = Tailings Stockpile, WR## = Overburden ##.

Designed	
Drawn	JCM
Approved	

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Tables

Table 1. Sensitive Species with Potential to Occur at the Site

Species Common Name	Scientific Name	Designation/Ranking by Agencies	Rationale
Birds			
Burrowing owl (includes western burrowing owl)	*Athene cunicularia (A. c. hypugaea* Western Burrowing Owl*)*	FWS BoCC	Natural burrows may be present for use by the species. Cavities under foundations and discarded construction debris (e.g., plastic or concrete pipe) potentially present could be used for shelter and nesting.
Costa's hummingbird	*Calypte costae*	FWS BoCC	Uses broad range of habitats, including those found within the Site.
Gray vireo	*Vireo vicinior*	FWS BoCC	Uses broad range of habitats, including those found within the Site.
Golden eagle	*Aquila chrysaetos*	BLM Sensitive Species	One canyon with cliffs potentially suitable for nesting is present along the southeastern corner of the Site, though no known nests have been reported.
Great horned owl	*Bubo virginianus*	MBTA	Uses broad range of habitats, including those found within the Site.
Loggerhead shrike	*Lanius ludovicianus*	NDOW Sensitive Bird; FWS BoCC	Uses a variety of habitat for foraging and nesting.
Peregrine falcon	*Falco peregrinus*	NDOW (EB); BLM Sensitive Species	One canyon with cliffs potentially suitable for nesting is present along the southeastern corner of the Site, though no known nests have been reported.
Prairie falcon	*Falco mexicanus*	MBTA	Uses broad range of habitats, including those found within the Site.
Red-tailed hawk	*Buteo jamaicensis*	MBTA	Uses broad range of habitats, including those found within the Site.
Mammals			
Desert bighorn sheep)	*Ovis canadensis* spp.	BLM Sensitive Species; NDOW Game Mammal	Southern edge of Site is within area mapped as occupied habitat for the bighorn sheep.
Fringed myotis	*Myotis thysanodes*	NDOW Protected Mammal; BLM Sensitive Species	Observed roosting in rock crevices in cliff faces, which may be present in the walls of the small canyon along the southeastern boundary of the Site.
Long-legged myotis	*Myotis volans*	BLM Sensitive Species	Only occasionally found in low deserts; may roost in rock crevices which may be present in the southeastern portion of the Site.
Spotted bat	*Euderma maculatum*	NDOW Threatened Mammal; BLM Sensitive Species	Roosting habitat of crevices in cliff faces may be present in the walls of the small canyon along the southeastern boundary of the Site.
Yuma myotis	*Myotis yumanensis*	BLM Sensitive Species	Roosting habitat of crevices in cliff faces may be present in the walls of the small canyon along the southeastern boundary of the Site.
Reptiles			
Banded Gila monster	*Heloderma suspectum cinctum*	BLM Sensitive; NDOW Protected Reptile	Unlikely in the degraded portions of the area, but possible in the large washes and slopes on eastern and southern portions of the Site.
Common chuckwalla	*Sauromalus ater*	BLM Sensitive	Unlikely in the degraded portions of the area, but possible in the rocky outcrops and slopes on eastern and southern portions of the Site.
Desert glossy snake	*Arizona elegans eburnata (* desert glossy*) and A. e. candida (* Mojave glossy*)*	BLM Sensitive	Found in variety of shrub habitats.
Desert horned lizard (including northern and southern subspecies)	*Phrynosoma platyrhinos (* includes *P.p. platyrhinos* - northern desert horned lizard and *P.p. calidiarum* - southern horned lizard)	BLM Sensitive	Found in variety of habitats, though prefers some sandy soils which are not present in the Site.
Desert iguana	*Dipsosaurus dorsalis*	BLM Sensitive	Suitable habitat present.
Desert rosy boa	*Lichanura trivirgata*	BLM Sensitive	Suitable habitat present.

Table 1. Sensitive Species with Potential to Occur at the Site

Species Common Name	Scientific Name	Designation/Ranking by Agencies	Rationale
Great Basin collared lizard	*Crotaphytus bicinctores*	BLM Sensitive	Suitable habitat present.
Long-nosed leopard lizard	*Gambelia wislizenii*	BLM Sensitive	Suitable habitat present.
Mojave desert tortoise	*Gopherus agassizii*	FWS Threatened; NDOW Threatened Reptile; BLM Sensitive	Suitable habitat present.
Insects			
Mojave gypsum bee	*Andrena balsamorhizae*	BLM Sensitive	Host plant (sunray) may be present at the Site based
Mojave poppy bee	*Perdita meconis*	BLM Sensitive	Host plant (bearpoppy) may be present at the Site based on soils in the area, therefore species may be present.
Northern Mojave	*Euphilotes mojave virginensis*	BLM Sensitive	Host plant potentially present.
Plants			
Sticky ringstem	*Anulocaulis leiosolenus var. leiosolenus*	BLM Sensitive	Areas with high gypsum content are present. Blooms July-August.
Las Vegas bearpoppy	*Arctomecon californica*	**Nevada Critically Endangered Plant**	Areas with high gypsum content are present. Blooms February-July.
Halfring milkvetch	*Astragalus mohavensis var. hemigyrus*	BLM Sensitive	Carbonate soils present. Blooms April-June.
Blue Diamond cholla	*Cylindropuntia multigeniculata (Opuntia whipplei* var. *multigeniculata)*	**Nevada Critically Endangered Plant**	Slightly below known elevation range; Associated with gypsum so potentially present in protected northern exposures. Blooms early summer.
Silverleaf sunray	*Enceliopsis argophylla*	BLM Sensitive	Previously observed on the site associated with the gypsum outcrops. Blooms spring/summer.
Las Vegas buckwheat	*Eriogonum corymbosum var nilesii*	BLM Sensitive	Areas with high gypsum content are present. Blooms September-November.
Rosy twotone beardtongue	*Penstemon bicolor* ssp. *roseus*	BLM Sensitive	Broadly distributed plant in a variety of habitats. Blooms Spring-early Summer

Notes:
BLM = Bureau of Land Management
BoCC = Birds of Conservation Concern
FWS = Fish and Wildlife Service
MBTA = Migratory Bird Treaty Act
NDOW = Nevada Department of Wildlife

Table 2. Summary Statistics of SLERA Dataset

Analyte	Number Detects	Total Number of Samples	Detection Frequency	Range of Non-Detect	Minimum Detect	P25 Detect	Median Detect	P75 Detect	Maximum Detect	Mean Detect	Standard Deviation
Disturbed Soils, Sediments, and Other Materials											
METALS											
Antimony	84	105	80%	3.01 - 15.3	0.178	0.275	0.5605	1.22	10.6	1.16	1.68
Arsenic	105	105	100%	-	6.44	39.9	104	607	7090	606.91	1225.59
Cadmium	97	105	92%	1.01 - 1.15	0.0908	0.16	0.357	1.18	16.1	1.25	2.33
Chromium	105	105	100%	-	0.344	4.73	8.99	11.6	80.1	10.06	9.57
Chromium VI	2	5	40%	1 - 1.01	0.757	0.757	0.8085	0.86	0.86	0.81	0.07
Copper	105	105	100%	-	2.95	18.3	39.4	118	1220	110.99	190.68
Lead	105	105	100%	-	3.15	150	906	3570	82100	6003.78	14097.75
Manganese	105	105	100%	-	99.2	2780	10000	38000	309000	33565.17	56677.26
Selenium	94	105	90%	2.51 - 12.7	0.188	0.286	0.377	0.55	0.986	0.43	0.18
Zinc	105	105	100%	-	14	91.3	146	328	1900	259.48	272.47
Percent Solids (%)	119	119	100%	-	80.2	96.2	98.1	98.8	99.8	96.59	3.97
PCB AROCLORS											
Aroclor 1016	0	9	0%	0.0344 - 0.0361							
Aroclor 1221	0	9	0%	0.0344 - 0.0361							
Aroclor 1232	0	9	0%	0.0344 - 0.0361							
Aroclor 1242	0	9	0%	0.0344 - 0.0361							
Aroclor 1248	0	9	0%	0.0172 - 0.018							
Aroclor 1254	0	9	0%	0.0172 - 0.018							
Aroclor 1260	1	9	11%	0.0172 - 0.018	0.155	0.155	0.155	0.155	0.155	0.155	
SVOCS											
Benzo[a]anthracene	54	105	51%	0.00604 - 0.0624	0.00188	0.0126	0.0715	0.382	140	7.12	26.42
Benzo[a]pyrene	52	105	50%	0.00602 - 0.0624	0.00182	0.008465	0.03965	0.2445	103	4.84	17.83
Benzo[b]fluoranthene	71	105	68%	0.00604 - 0.00748	0.00199	0.008	0.0633	0.477	45.5	1.95	7.21
Benzo[g,h,i]perylene	63	105	60%	0.00604 - 0.00748	0.00201	0.00972	0.0606	0.384	37.5	2.05	7.15
Chrysene	62	105	59%	0.00604 - 0.00748	0.00287	0.0174	0.137	0.987	211	10.35	38.26
Dibenzo[a,h]anthracene	49	105	47%	0.00604 - 0.0624	0.0026	0.00729	0.0488	0.17	10.1	0.78	2.23
Indeno[1,2,3-cd]pyrene	60	105	57%	0.00604 - 0.0624	0.00187	0.010365	0.0506	0.237	17.2	0.91	3.02
Phenanthrene	53	105	50%	0.00604 - 0.00748	0.00245	0.0243	0.124	0.524	455	18.99	83.00
Pyrene	63	105	60%	0.00604 - 0.00748	0.0023	0.00672	0.088	0.693	397	16.34	70.46
TPH DRO											
TPH-DRO (C10-C28)	72	110	65%	4.02 - 4.83	1.8	5.595	14.1	175	241000	8686.75	37814.16
TPH-GRO (C6-C10)	84	110	76%	0.101 - 14.8	0.0298	0.0431	0.05715	0.0712	5.17E-01	0.07	0.06
TPH-ORO (C28-C40)	101	110	92%	4.05 - 4.41	0.374	2.49	7.65	85.4	480000	11304.49	57547.83

Table 2. Summary Statistics of SLERA Dataset

Analyte	Number Detects	Total Number of Samples	Detection Frequency	Range of Non-Detect	Minimum Detect	P25 Detect	Median Detect	P75 Detect	Maximum Detect	Mean Detect	Standard Deviation
VOCS											
1,2,4-Trimethylbenzene	9	110	8%	0.00503 - 0.204	0.00187	0.00542	0.0335	0.0518	0.658	0.10	0.21
1,3,5-Trimethylbenzene	6	110	5%	0.00503 - 0.204	0.00534	0.0111	0.0135	0.024	0.216	0.05	0.08
Acetone	5	110	5%	0.0503 - 2.04	0.0706	0.13	0.391	2.81	8.49	2.38	3.60
Benzene	7	110	6%	0.00101 - 0.00149	0.000765	0.00215	0.00607	0.0182	0.0856	0.02	0.03
Dichloromethane [Methylene chloride]	20	110	18%	0.0251 - 1.02	0.00896	0.01155	0.0124	0.01525	9.68E-02	0.02	0.02
Ethylbenzene	6	110	5%	0.00251 - 0.102	0.000782	0.00395	0.006675	0.0104	0.0311	0.01	0.01
Naphthalene	12	110	11%	0.0126 - 0.51	0.00532	0.00773	0.02315	0.12525	3.85E-01	0.09	0.14
Toluene	14	110	13%	0.00503 - 0.204	0.00141	0.00163	0.002875	0.0163	0.0353	0.01	0.01
Xylenes [total]	22	110	20%	0.00654 - 0.265	0.000938	0.00129	0.001785	0.0179	1.18E-01	0.02	0.03
n-Propylbenzene	5	110	5%	0.00503 - 0.204	0.00341	0.00677	0.0074	0.0116	0.0885	0.02	0.04
Dioxins/Furans											
WHO BIRD TEQ (ND=0)	5	5	100%	-	0.000000013	5.415E-06	2.912E-05	5.047E-05	8.79E-04	1.93E-04	3.84E-04
WHO MAMMAL TEQ (ND=0)	5	5	100%	-	1.013E-07	1.57E-06	7.116E-06	1.422E-05	0.00028	5.98203E-05	0.000121
General Mill Site Soils											
METALS											
Antimony	8	11	73%	3.02 - 3.26	0.349	0.3665	0.561	0.9135	1.95	0.7	0.5
Arsenic	11	11	100%	-	10.4	23.2	70	260	1200	211	346
Cadmium	10	11	91%	1.02 - 1.02	0.114	0.172	0.363	0.603	0.853	0.4	0.2
Chromium	11	11	100%	-	6.31	7.62	11.2	18.3	102	24	31
Copper	11	11	100%	-	7.57	15.6	27.1	118	329	75	97
Lead	11	11	100%	-	40.8	89	468	2560	10900	1903	3218
Manganese	11	11	100%	-	541	1700	6020	27800	168000	25245	48662
Selenium	11	11	100%	-	0.301	0.353	0.48	0.553	1.07	1	0
Zinc	11	11	100%	-	28.3	87.3	165	216	535	195	155
Percent Solids (%)	11	11	100%	-	92	97.1	98.2	98.8	99.3	98	2
SVOCS											
Benzo[a]anthracene	4	11	36%	0.00605 - 0.00652	0.004	0.00845	0.02205	0.0516	0.072	3.00E-02	3.02E-02
Benzo[a]pyrene	4	11	36%	0.00605 - 0.00652	0.00321	0.003995	0.01084	0.0297	0.0425	1.68E-02	1.82E-02
Benzo[b]fluoranthene	7	11	64%	0.00605 - 0.00626	0.00183	0.00209	0.0269	0.0573	1.90E-01	4.61E-02	6.70E-02
Benzo[g,h,i]perylene	5	11	45%	0.00605 - 0.00626	0.00205	0.0195	0.0328	0.0374	0.124	4.32E-02	4.72E-02
Chrysene	5	11	45%	0.00605 - 0.00652	0.003	0.0166	0.0361	0.0888	0.199	6.87E-02	7.98E-02
Dibenzo[a,h]anthracene	4	11	36%	0.00605 - 0.00652	0.00298	0.00598	0.01224	0.02345	0.0314	1.47E-02	1.22E-02
Indeno[1,2,3-cd]pyrene	4	11	36%	0.00605 - 0.00652	0.0172	0.0175	0.02715	0.07775	0.119	4.76E-02	4.84E-02
Phenanthrene	4	11	36%	0.00605 - 0.00652	0.00404	0.00927	0.01675	0.0382	0.0574	2.37E-02	2.33E-02

Table 2. Summary Statistics of SLERA Dataset

Analyte	Number Detects	Total Number of Samples	Detection Frequency	Range of Non-Detect	Minimum Detect	P25 Detect	Median Detect	P75 Detect	Maximum Detect	Mean Detect	Standard Deviation
Pyrene	5	11	45%	0.00605 - 0.00626	0.00256	0.0105	0.0292	0.0414	0.158	4.83E-02	6.32E-02
TPH DRO											
TPH-DRO (C10-C28)	5	11	45%	4.03 - 4.35	2.04	2.69	4.04	4.07	6.61	4	2
TPH-GRO (C6-C10)	5	11	45%	0.101 - 0.104	0.0324	0.0518	0.0735	0.0803	0.0848	6.46E-02	2.20E-02
TPH-ORO (C28-C40)	10	11	91%	4.35 - 4.35	0.355	1.47	5.355	16.6	52	12	17
VOCS											
1,2,4-Trimethylbenzene	0	11	0%	0.00507 - 0.00587							
1,3,5-Trimethylbenzene	0	11	0%	0.00507 - 0.00587							
Acetone	0	11	0%	0.0507 - 0.0587							
Benzene	0	11	0%	0.00101 - 0.00117							
Dichloromethane [Methylene chloride]	0	11	0%	0.0253 - 0.0293							
Ethylbenzene	0	11	0%	0.00253 - 0.00293							
Naphthalene	0	11	0%	0.0127 - 0.0147							
Toluene	3	11	27%	0.00508 - 0.00587	0.00146	0.00146	0.00156	0.00172	0.00172	1.58E-03	1.31E-04
Xylenes [total]	6	11	55%	0.00668 - 0.00705	0.00108	0.00119	0.001485	0.00183	1.94E-03	1.50E-03	3.61E-04
n-Propylbenzene	0	11	0%	0.00507 - 0.00587							
Overburden Affected by Tailings											
METALS											
Antimony	9	9	100%	-	0.249	1.1	1.32	1.61	5.56	2	2
Arsenic	9	9	100%	-	26.8	275	438	549	7690	1159	2457
Cadmium	9	9	100%	-	0.151	0.256	0.439	0.603	16	2	5
Chromium	9	9	100%	-	3.98	5.67	6.45	8.64	9.91	7	2
Copper	9	9	100%	-	24.1	72.2	111	168	233	117	79
Lead	9	9	100%	-	292	2420	2870	4620	4990	3032	1823
Manganese	9	9	100%	-	3470	34200	63700	67000	81500	48208	28135
Selenium	9	9	100%	-	0.196	0.23	0.281	0.457	2.08	1	1
Zinc	9	9	100%	-	131	202	317	333	2210	478	654
Percent Solids (%)	9	9	100%	-	91.4	96.2	97.1	97.3	98.5	96	2
SVOCS											
Benzo[a]anthracene	0	9	0%	0.00609 - 0.00656							
Benzo[a]pyrene	0	9	0%	0.00609 - 0.00656							
Benzo[b]fluoranthene	7	9	78%	0.00622 - 0.00656	0.00283	0.00294	0.00386	0.00791	1.27E-02	5.66E-03	3.67E-03
Benzo[g,h,i]perylene	4	9	44%	0.00617 - 0.00656	0.00185	0.00219	0.00405	0.00609	0.00661	4.14E-03	2.31E-03
Chrysene	3	9	33%	0.00617 - 0.00656	0.00432	0.00432	0.00455	0.0054	5.40E-03	4.76E-03	5.69E-04
Dibenzo[a,h]anthracene	0	9	0%	0.00609 - 0.00656							

Table 2. Summary Statistics of SLERA Dataset

Analyte	Number Detects	Total Number of Samples	Detection Frequency	Range of Non-Detect	Minimum Detect	P25 Detect	Median Detect	P75 Detect	Maximum Detect	Mean Detect	Standard Deviation
Indeno[1,2,3-cd]pyrene	3	9	33%	0.00617 - 0.00656	0.00226	0.00226	0.00518	0.00801	0.00801	5.15E-03	2.88E-03
Phenanthrene	2	9	22%	0.00609 - 0.00656	0.00289	0.00289	0.00344	0.00399	0.00399	3.44E-03	7.78E-04
Pyrene	3	9	33%	0.00617 - 0.00656	0.00235	0.00235	0.00254	0.00339	0.00339	2.76E-03	5.54E-04
TPH DRO											
TPH-DRO (C10-C28)	6	9	67%	4.1 - 4.38	1.87	2.33	7.625	9.29	11.3	7	4
TPH-GRO (C6-C10)	7	9	78%	0.104 - 0.109	0.0359	0.0408	0.0453	0.0654	1.39E-01	6.11E-02	3.59E-02
TPH-ORO (C28-C40)	9	9	100%	-	1.18	2.11	2.75	3.92	5.92	3	2
VOCS											
1,2,4-Trimethylbenzene	1	9	11%	0.00516 - 0.00594	0.00751	0.00751	0.00751	0.00751	0.00751	0.008	
1,3,5-Trimethylbenzene	0	9	0%	0.00516 - 0.00594							
Acetone	1	9	11%	0.0516 - 0.0594	0.0692	0.0692	0.0692	0.0692	0.0692	0.069	
Benzene	0	9	0%	0.00103 - 0.00119							
Dichloromethane [Methylene chloride]	0	9	0%	0.0258 - 0.0297							
Ethylbenzene	0	9	0%	0.00258 - 0.00297							
Naphthalene	1	9	11%	0.0129 - 0.0149	0.00549	0.00549	0.00549	0.00549	0.00549	0.005	
Toluene	1	9	11%	0.00516 - 0.00594	0.00198	0.00198	0.00198	0.00198	0.00198	0.002	
Xylenes [total]	1	9	11%	0.0067 - 0.00772	0.00214	0.00214	0.00214	0.00214	0.00214	0.002	
n-Propylbenzene	1	9	11%	0.00516 - 0.00594	0.00197	0.00197	0.00197	0.00197	0.00197	0.002	
Overburden Strata											
METALS											
Antimony	5	8	63%	3.97 - 3.97	0.416	0.852	0.902	0.948	1.03	1	0.2
Arsenic	8	8	100%	-	38.1	71.75	144	201.5	294	146	86
Barium	3	3	100%	-	87.6	87.6	105	119	119	104	16
Cadmium	7	8	88%	1.03 - 1.03	0.179	0.361	1.6	3.5	3.6	2	1
Chromium	8	8	100%	-	5.59	8.88	12.55	16.75	25	13	6
Copper	8	8	100%	-	10	12	22.8	93	188	57	69
Lead	8	8	100%	-	68	190.5	335	865.5	4590	930	1523
Manganese	8	8	100%	-	1350	2545	6715	18850	47100	13084	15866
Selenium	5	8	63%	4.05 - 4.05	0.19	0.377	0.523	0.57	0.745	0.48	0.21
Silver	1	3	33%	1.04 - 1.04	20	20	20	20	20	20	
Zinc	8	8	100%	-	53.3	148	353	446	531	310	177
Percent Solids (%)	5	5	100%	-	90.9	96.8	97.3	97.6	98.6	96	3
SVOCS											
Benzo[a]anthracene	0	1	0%	0.0066 - 0.0066							
Benzo[a]pyrene	0	1	0%	0.0066 - 0.0066							

Table 2. Summary Statistics of SLERA Dataset

Analyte	Number Detects	Total Number of Samples	Detection Frequency	Range of Non-Detect	Minimum Detect	P25 Detect	Median Detect	P75 Detect	Maximum Detect	Mean Detect	Standard Deviation
Benzo[b]fluoranthene	1	1	100%	-	0.00256	0.00256	0.00256	0.00256	0.00256	0.00256	
Benzo[g,h,i]perylene	0	1	0%	0.0066 - 0.0066							
Chrysene	0	1	0%	0.0066 - 0.0066							
Dibenzo[a,h]anthracene	0	1	0%	0.0066 - 0.0066							
Indeno[1,2,3-cd]pyrene	0	1	0%	0.0066 - 0.0066							
Phenanthrene	0	1	0%	0.0066 - 0.0066							
Pyrene	0	1	0%	0.0066 - 0.0066							
TPH DRO											
TPH-DRO (C10-C28)	1	1	100%	-	3.27	3.27	3.27	3.27	3.27	3	
TPH-GRO (C6-C10)	0	1	0%	0.11 - 0.11							
TPH-ORO (C28-C40)	1	1	100%	-	6.89	6.89	6.89	6.89	6.89	7	
VOCS											
1,2,4-Trimethylbenzene	0	1	0%	0.006 - 0.006							
1,3,5-Trimethylbenzene	0	1	0%	0.006 - 0.006							
Acetone	0	1	0%	0.06 - 0.06							
Benzene	0	1	0%	0.0012 - 0.0012							
Dichloromethane [Methylene chloride]	1	1	100%	-	0.00918	0.00918	0.00918	0.00918	0.00918	0.00918	
Ethylbenzene	0	1	0%	0.003 - 0.003							
Naphthalene	0	1	0%	0.015 - 0.015							
Toluene	1	1	100%	-	0.0019	0.0019	0.0019	0.0019	0.0019	0.0019	
Xylenes [total]	0	1	0%	0.0078 - 0.0078							
n-Propylbenzene	0	1	0%	0.006 - 0.006							

Notes:

All units are milligrams per kilogram except percent solids.

Table 3. Ecological Soil Screening Levels

Chemical	Screening Level (mg/kg)	Ref.	Receptor	Plants	Ref.	Soil Invertebrates	Ref.	Mammalian	Ref.	Avian	Ref.
Inorganic Compounds											
Metals											
Antimony	0.27	a	All	5	b	78	a	0.27	a		
Arsenic	18	a	All	18	a	6.8	c	46	a	43	a
Cadmium	0.36	a	All	32	a	140	a	0.36	a	0.77	a
Chromium - Total	23	c	M, A					63	c	23	c
Chromium III	26	a	M, A					34	a	26	a
Chromium VI	0.34	c	All	0.35	c	0.34	c	130	a	140	c
Copper	28	a	All	70	a	80	a	49	a	28	a
Lead	11	a	All	120	a	1,700	a	56	a	11	a
Manganese	220	a	All	220	a	450	a	4,000	a	4,300	a
Mercury (total)	0.013	c	All	0.3	b	0.05	c	1.7	c	0.013	c
Nickel	38	a	All	38	a	280	a	130	a	210	a
Selenium	0.52	a	All	0.52	a	4.1	a	0.63	a	1.2	a
Silver	4.2	a	All	560	a			14	a	4.2	a
Vanadium	7.8	a	All	60	c			280	a	7.8	a
Zinc	46	a	All	160	a	120	a	79	a	46	a
Volatile Organic Compounds (VOCs)											
Dichloromethane (Methylene chloride)	0.21	d	All	1,600	c	0.21	d	2.6	c		
1,2,4-Trimethylbenzene	0.09	d	All			0.09	d				
1,3,5-Trimethylbenzene	0.16	d	All			0.16	d				
Benzene	0.12	d	All			0.12	d	24	c		
Ethylbenzene	0.27	d	All			0.27	d	5.16	g		
Isopropylbenzene (Cumene)	0.04	d	All			0.04	d				
Styrene (Vinyl benzene)	1.2	c	All	3.2	c	1.2	c				
Toluene	0.15	d	All	200	c	0.15	d	23	c		
Xylenes (total)	0.1	d	All	100	c	0.1	d	1.4	c	41	c
Acetone	1.2	c	M, A			0.04	d	1.2	c	7.5	c
Semivolatile Organic Compounds (SVOCs)											
Low Molecular Weight PAHs											
Acenaphthene	See Total			0.25	c	0.38	d	130	c		

Table 3. Ecological Soil Screening Levels

Chemical	Screening Level (mg/kg)	Ref.	Receptor	Plants	Ref.	Soil Invertebrates	Ref.	Mammalian	Ref.	Avian	Ref.
Acenaphthylene	See Total					0.34	d	120	c		
Anthracene	See Total			6.8	c	0.0015	d	210	c		
Fluorene	See Total					3.7	c	250	c		
1-Methylnaphthalene	See Total					0.14	d				
2-Methylnaphthalene	See Total					0.11	d	16	c		
2,6-Dimethyl naphthalene	See Total					0.44	d				
2,3,5-Trimethylnaphthalene	See Total					0.13	d				
Naphthalene	See Total			1.0	c	0.16	d	9.6	c	3.4	c
1-Methyl phenanthrene	See Total					0.5	d				
Phenanthrene	See Total					5.5	c	11	c		
Total LMWPAHs	**29**	a	All			29	a	100	a		
High Molecular Weight PAHs											
Benzo(a)anthracene	See Total			18	c	4.69	d	3.4	c	0.73	c
Benzo(b)fluoranthene	See Total			18	c	2.7	d	44	c		
Benzo(k)fluoranthene	See Total					0.13	d	71	c		
Benzo(ghi)perylene	See Total					0.07	d	25	c		
Benzo(a)pyrene	See Total					0.13	d	62	c		
Benzo(e)pyrene	See Total					0.25	d				
Chrysene	See Total					5.18	d	3.1	c		
Dibenzo(a,h)anthracene	See Total					0.06	d	14	c		
Fluoranthene	See Total					10	c	22	c		
Indeno(1,2,3-cd)pyrene	See Total					0.08	d	71	c		
Perylene	See Total					0.17	d				
Pyrene	See Total					10	c	23	c	33	c
Total HMWPAHs	**1.1**	a	M			18	a	1.1	a		
Other											
PCDDs, PCDFs (ΣTEQ)	0.00000315	f	All			5	c	0.00000315	f	0.000016	f
PCBs (total)	0.041	c	All	40	b	0.33	d	0.371	f	0.041	c

Notes:

Screening values in mg/kg.

All - ESV for protection of all receptors

A - ESV for protection of Avians

Table 3. Ecological Soil Screening Levels

Chemical	Screening Level (mg/kg)	Ref.	Receptor	Plants	Ref.	Soil Invertebrates	Ref.	Mammalian	Ref.	Avian	Ref.

M - ESV for protection of Mammals

P - ESV for protection of Plants

SI - ESV for protection of soil invertebrates

LMWPAHs have less than 4 rings

HMWPAHs have 4 or more rings

Table 3 Sources:

a - USEPA (2007): Ecological Soil Screening Levels. http://www.epa.gov/ecotox/ecossl/

b - Efroymson, R.A., M.E. Will, G.W. Suter, and A.C. Wooten. 1997a. Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Terrestrial Plants: 1997 Revision. Oak Ridge National Laboratory, Oak Ridge, TN. ES/ER/TM-95/R4.

c - Los Alamos National Laboratory (LANL). 2017. ECORISK Database Release 4.1. September 2017. http://www.lanl.gov/environment/protection/eco-risk-assessment.php (µg/kg dw)

d - ECOSAR & Region 4 soil model. See text Section 6.3.

e - Efroymson, R.A., M.E. Will, and G.W. Suter. 1997b. Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Process: 1997 Revision. Oak Ridge National Laboratory, Oak Ridge, TN. ES/ER/TM-126/R2. https://rais.ornl.gov/documents/tm126r21.pdf

f - Efroymson, R.A., M.E. Will, and G.W. Suter. 1997b. Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Process: 1997 Revision. Oak Ridge National Laboratory, Oak Ridge, TN. ES/ER/TM-126/R2.

g - EPA Region 5 RCRA Ecological Screening Levels (2003).

Table 4. Background Threshold Values

Lithology	Parameter	No. Samples	No. Detects	No. Non-Detects	Max Detect (mg/kg)	Distribution of Detected Data	BTV [(a)] (mg/kg)
Muddy Creek Formation (111)	Antimony	18	14	4	0.456	Normal	0.443
	Arsenic	18	18	0	16.4	Lognormal	20.85
	Cadmium	18	12	6	0.203	Normal	0.188
	Chromium	18	18	0	12.8	Normal	16.2
	Copper	18	18	0	16.1	Normal	17.65
	Lead	18	18	0	41.9	Normal	48.4
	Manganese	18	18	0	981	Normal	1069
	Selenium	18	15	3	0.486	Normal	0.571
	Zinc	18	18	0	81.5	Normal	99.11
River Mountain Background (121)	Antimony	22	8	14	0.624	Normal	0.627
	Arsenic	22	22	0	14.2	Normal	15.24
	Cadmium	22	7	15	0.184	Normal	0.171
	Chromium	22	22	0	9.13	Gamma (WH)	9.727
	Copper	22	22	0	22	Gamma (WH)	23.24
	Lead	21	21	0	30.9	Lognormal	29.83
	Manganese	20	20	0	474	Normal	481
	Selenium	22	22	0	0.877	Normal	0.962
	Zinc	22	22	0	48.8	Normal	52.96

Notes:
(a) For parametric distributions, the Background Threshold Value (BTV) is the 95% Upper Tolerance Limit (UTL) with 95% coverage.
UTLs computed using ProUCL (version 5.1) with Kaplan-Meier estimation for data sets with non-detect results.
mg/kg = Milligram(s) per kilogram

Table 5. Maximum Concentration Data Screen

Analyte	Number Detect	Number of Samples	Detection Frequency	Max Detect	EcoSSL (plants)	Plant HQ	EcoSSL (invertebrates)	Invertebrate HQ	EcoSSL (mammals)	Mammal HQ	EcoSSL (birds)	Bird HQ	Inhalation Screening Level
Disturbed Soils Sediments and Other Materials													
METALS													
Antimony	84	105	80%	10.6	5	2	78		0.27	39	NA		
Arsenic	105	105	100%	7090	18	394	6.8	1043	46	154	43	165	
Cadmium	97	105	92%	16.1	32		140		0.36	45	0.77	21	
Chromium	105	105	100%	80.1	NA		NA		63	1	23	3	
Chromium VI	2	5	40%	0.86	0.35	2	0.34	3	130		140		
Copper	105	105	100%	1220	70	17	80	15	49	25	28	44	
Lead	105	105	100%	82100	120	684	1700	48	56	1466	11	7464	
Manganese	105	105	100%	309000	220	1405	450	687	4000	77	4300	72	
Selenium	94	105	90%	0.986	0.52	2	4.1		0.63	2	1.2		
Zinc	105	105	100%	1900	160	12	120	16	79	24	46	41	
PCB AROCLORS													
Aroclor 1260	1	9	11%	0.155	40		0.33		0.371		0.041	4	
SVOCS													
Benzo[a]anthracene	54	105	51%	140	18	8	4.69	30	3.4	41	0.73	192	
Benzo[a]pyrene	52	105	50%	103	NA		0.13	792	62	2	NA		
Benzo[b]fluoranthene	71	105	68%	45.5	18	3	2.7	17	44	1	NA		
Benzo[g,h,i]perylene	63	105	60%	37.5	NA		0.07	536	25	2	NA		
Chrysene	62	105	59%	211	NA		5.18	41	3.1	68	NA		
Dibenzo[a,h]anthracene	49	105	47%	10.1	NA		0.06	168	14		NA		
Indeno[1,2,3-cd]pyrene	60	105	57%	17.2	NA		0.08	215	71		NA		
Phenanthrene	53	105	50%	455	NA		29	16	100	5	NA		
Pyrene	63	105	60%	397	NA		10	40	23	17	33	12	
TPH DRO													
TPH-DRO (C10-C28)	72	110	65%	241000	NA		NA		NA		NA		
TPH-GRO (C6-C10)	84	110	76%	5.17E-01	NA		NA		NA		NA		
TPH-ORO (C28-C40)	101	110	92%	480000	NA		NA		NA		NA		
VOCS													
1,2,4-Trimethylbenzene	9	110	8%	0.658	NA		0.09	7	NA		NA		
1,3,5-Trimethylbenzene	6	110	5%	0.216	NA		0.16	1	NA		NA		
Acetone	5	110	5%	8.49	NA		0.04	212	1.2	7	7.5	1	223
Benzene	7	110	6%	0.0856	NA		0.12		24		NA		7.83
Dichloromethane [Methylene chloride]	20	110	18%	9.68E-02	1600		0.21		2.6		NA		170
Ethylbenzene	6	110	5%	0.0311	NA		0.27		5.16		NA		NA
Naphthalene	12	110	11%	3.85E-01	1		0.16	2	9.6		3.4		NA
Toluene	14	110	13%	0.0353	200		0.15		23		NA		16
Xylenes [total]	22	110	20%	1.18E-01	100		0.1	1	1.4		41		6.7
n-Propylbenzene	5	110	5%	0.0885	NA		NA		NA		NA		NA
DIOXINS/FURANS													
WHO BIRD TEQ (ND=0)	5	5	100%	0.0008785	NA		5		NA		1.6E-05	55	
WHO MAMMAL TEQ (ND=0)	5	5	100%	0.0002761	NA		5		0.00000315	88	NA		

Table 5. Maximum Concentration Data Screen

Analyte	Number Detect	Number of Samples	Detection Frequency	Max Detect	EcoSSL (plants)	Plant HQ	EcoSSL (invertebrates)	Invertebrate HQ	EcoSSL (mammals)	Mammal HQ	EcoSSL (birds)	Bird HQ	Inhalation Screening Level
General Mill Site Soils													
METALS													
Antimony	8	11	73%	1.95	5		78		0.27	7	NA		
Arsenic	11	11	100%	1200	18	67	6.8	176	46	26	43	28	
Cadmium	10	11	91%	0.853	32		140		0.36	2	0.77	1	
Chromium	11	11	100%	102	NA		NA		63	2	23	4	
Copper	11	11	100%	329	70	5	80	4	49	7	28	12	
Lead	11	11	100%	10900	120	91	1700	6	56	195	11	991	
Manganese	11	11	100%	168000	220	764	450	373	4000	42	4300	39	
Selenium	11	11	100%	1.07	0.52	2	4.1		0.63	2	1.2		
Zinc	11	11	100%	535	160	3	120	4	79	7	46	12	
SVOCS													
Benzo[a]anthracene	4	11	36%	0.072	18		4.69		3.4		0.73		
Benzo[a]pyrene	4	11	36%	0.0425	NA		0.13		62		NA		
Benzo[b]fluoranthene	7	11	64%	1.90E-01	18		2.7		44		NA		
Benzo[g,h,i]perylene	5	11	45%	0.124	NA		0.07	2	25		NA		
Chrysene	5	11	45%	0.199	NA		5.18		3.1		NA		
Dibenzo[a,h]anthracene	4	11	36%	0.0314	NA		0.06		14		NA		
Indeno[1,2,3-cd]pyrene	4	11	36%	0.119	NA		0.08	1	71		NA		
Phenanthrene	4	11	36%	0.0574	NA		29		100		NA		
Pyrene	5	11	45%	0.158	NA		10		23		33		
TPH DRO													
TPH-DRO (C10-C28)	5	11	45%	6.61	NA		NA		NA		NA		
TPH-GRO (C6-C10)	5	11	45%	0.0848	NA		NA		NA		NA		
TPH-ORO (C28-C40)	10	11	91%	52	NA		NA		NA		NA		
VOCS													
Toluene	3	11	27%	0.00172	200		0.15		23		NA		16
Xylenes [total]	6	11	55%	1.94E-03	100		0.1		1.4		41		6.7

Table 5. Maximum Concentration Data Screen

Analyte	Number Detect	Number of Samples	Detection Frequency	Max Detect	EcoSSL (plants)	Plant HQ	EcoSSL (invertebrates)	Invertebrate HQ	EcoSSL (mammals)	Mammal HQ	EcoSSL (birds)	Bird HQ	Inhalation Screening Level
Overburden Affected by Tailings													
METALS													
Antimony	9	9	100%	5.56	5	1	78		0.27	21	NA		
Arsenic	9	9	100%	7690	18	427	6.8	1131	46	167	43	179	
Cadmium	9	9	100%	16	32		140		0.36	44	0.77	21	
Chromium	9	9	100%	9.91	NA		NA		63		23		
Copper	9	9	100%	233	70	3	80	3	49	5	28	8	
Lead	9	9	100%	4990	120	42	1700	3	56	89	11	454	
Manganese	9	9	100%	81500	220	370	450	181	4000	20	4300	19	
Selenium	9	9	100%	2.08	0.52	4	4.1		0.63	3	1.2	2	
Zinc	9	9	100%	2210	160	14	120	18	79	28	46	48	
SVOCS													
Benzo[b]fluoranthene	7	9	78%	1.27E-02	18		2.7		44		NA		
Benzo[g,h,i]perylene	4	9	44%	0.00661	NA		0.07		25		NA		
Chrysene	3	9	33%	5.40E-03	NA		5.18		3.1		NA		
Indeno[1,2,3-cd]pyrene	3	9	33%	0.00801	NA		0.08		71		NA		
Phenanthrene	2	9	22%	0.00399	NA		29		100		NA		
Pyrene	3	9	33%	0.00339	NA		10		23		33		
TPH DRO													
TPH-DRO (C10-C28)	6	9	67%	11.3	NA		NA		NA		NA		
TPH-GRO (C6-C10)	7	9	78%	1.39E-01	NA		NA		NA		NA		
TPH-ORO (C28-C40)	9	9	100%	5.92	NA		NA		NA		NA		
VOCS													
1,2,4-Trimethylbenzene	1	9	11%	0.00751	NA		0.09		NA		NA		NA
Acetone	1	9	11%	0.0692	NA		0.04	2	1.2		7.5		223
Naphthalene	1	9	11%	0.00549	1		0.16		9.6		3.4		NA
Toluene	1	9	11%	0.00198	200		0.15		23		NA		16
Xylenes [total]	1	9	11%	0.00214	100		0.1		1.4		41		6.7
n-Propylbenzene	1	9	11%	0.00197	NA		NA		NA		NA		NA

Table 5. Maximum Concentration Data Screen

Analyte	Number Detect	Number of Samples	Detection Frequency	Max Detect	EcoSSL (plants)	Plant HQ	EcoSSL (invertebrates)	Invertebrate HQ	EcoSSL (mammals)	Mammal HQ	EcoSSL (birds)	Bird HQ	Inhalation Screening Level
Overburden Strata													
METALS													
Antimony	5	8	63%	1.03	5		78		0.27	4	NA		
Arsenic	8	8	100%	294	18	16	6.8	43	46	6	43	7	
Barium	3	3	100%	119	110	1	330		2000		820		
Cadmium	7	8	88%	3.6	32		140		0.36	10	0.77	5	
Chromium	8	8	100%	25	NA		NA		63		23	1	
Copper	8	8	100%	188	70	3	80	2	49	4	28	7	
Lead	8	8	100%	4590	120	38	1700	3	56	82	11	417	
Manganese	8	8	100%	47100	220	214	450	105	4000	12	4300	11	
Selenium	5	8	63%	0.745	0.52	1	4.1		0.63	1	1.2		
Silver	1	3	33%	20	560		NA		14	1	4.2	5	
Zinc	8	8	100%	531	160	3	120	4	79	7	46	12	
SVOCS													
Benzo[b]fluoranthene	1	1	100%	0.00256	18		2.7		44		NA		
TPH DRO													
TPH-DRO (C10-C28)	1	1	100%	3.27	NA		NA		NA		NA		
TPH-ORO (C28-C40)	1	1	100%	6.89	NA		NA		NA		NA		
VOCS													
Dichloromethane [Methylene chloride]	1	1	100%	0.00918	1600		0.21		2.6		NA		170
Toluene	1	1	100%	0.0019	200		0.15		23		NA		16

Notes:

All units are milligrams per kilogram.

Eco-SSL = Ecological Soil Screening Level

HQ = Hazard Quotient

NA = Not available

Red font and shading indicates exceedence of the EcoSSL

Table 6. Average Concentration Data Screen

Analyte	Number Detects	Number of Samples	Detection Frequency	Mean Detect	EcoSSL (plants)	Plant HQ	EcoSSL (invertebrates)	Invertebrate HQ	EcoSSL (mammals)	Mammal HQ	EcoSSL (birds)	Bird HQ	Inhalation SL
Disturbed Soils Sediments and Other Materials													
METALS													
Antimony	84	105	80%	1.16	5		78		0.27	4	NA		
Arsenic	105	105	100%	607	18	34	6.8	89	46	13	43	14	
Cadmium	97	105	92%	1.25	32		140		0.36	3	0.77	2	
Chromium	105	105	100%	10.06	NA		NA		63		23		
Chromium VI	2	5	40%	0.81	0.35	2	0.34	2	130		140		
Copper	105	105	100%	110.99	70	2	80	1	49	2	28	4	
Lead	105	105	100%	6004	120	50	1700	4	56	107	11	546	
Manganese	105	105	100%	33565	220	153	450	75	4000	8	4300	8	
Selenium	94	105	90%	0.43	0.52		4.1		0.63		1.2		
Zinc	105	105	100%	259	160	2	120	2	79	3	46	6	
PCB AROCLORS													
Aroclor 1260	1	9	11%	0.16	40		0.33		0.371		0.041	4	
SVOCS													
Benzo[a]anthracene	54	105	51%	7.12	18		4.69	2	3.4	2	0.73	10	
Benzo[a]pyrene	52	105	50%	4.84	NA		0.13	37	62		NA		
Benzo[b]fluoranthene	71	105	68%	1.95	18		2.7		44		NA		
Benzo[g,h,i]perylene	63	105	60%	2.05	NA		0.07	29	25		NA		
Chrysene	62	105	59%	10.35	NA		5.18	2	3.1	3	NA		
Dibenzo[a,h]anthracene	49	105	47%	0.78	NA		0.06	13	14		NA		
Indeno[1,2,3-cd]pyrene	60	105	57%	0.91	NA		0.08	11	71		NA		
Phenanthrene	53	105	50%	18.99	NA		29		100		NA		
Pyrene	63	105	60%	16.34	NA		10	2	23		33		
VOCS													
1,2,4-Trimethylbenzene	9	110	8%	0.10	NA		0.09	1	NA		NA		NA
1,3,5-Trimethylbenzene	6	110	5%	0.05	NA		0.16		NA		NA		NA
Acetone	5	110	5%	2.38	NA		0.04	59	1.2	2	7.5		223
Naphthalene	12	110	11%	0.09	1		0.16		9.6		3.4		NA
Xylenes [total]	22	110	20%	0.02	100		0.1		1.4		41		6.7
n-Propylbenzene	5	110	5%	0.02	NA		NA		NA		NA		NA
DIOXINS/FURANS													
WHO BIRD TEQ (ND=0)	5	5	100%	0.00019271	NA		5		NA		0.000016	12	
WHO MAMMAL TEQ (ND=0)	5	5	100%	5.982E-05	NA		5		0.00000315	19	NA		

Table 6. Average Concentration Data Screen

Analyte	Number Detects	Number of Samples	Detection Frequency	Mean Detect	EcoSSL (plants)	Plant HQ	EcoSSL (invertebrates)	Invertebrate HQ	EcoSSL (mammals)	Mammal HQ	EcoSSL (birds)	Bird HQ	Inhalation SL
General Mill Site Soils													
METALS													
Antimony	8	11	73%	0.75	5		78		0.27	3	NA		
Arsenic	11	11	100%	211	18	12	6.8	31	46	5	43	5	
Cadmium	10	11	91%	0.41	32		140		0.36	1	0.77		
Chromium	11	11	100%	24.32	NA		NA		63		23	1	
Copper	11	11	100%	74.54	70	1	80		49	2	28	3	
Lead	11	11	100%	1903	120	16	1700	1	56	34	11	173	
Manganese	11	11	100%	25245	220	115	450	56	4000	6	4300	6	
Selenium	11	11	100%	0.52	0.52		4.1		0.63		1.2		
Zinc	11	11	100%	195	160	1	120	2	79	2	46	4	
SVOCS													
Benzo[g,h,i]perylene	5	11	45%	0.04	NA		0.07		25		NA		
Indeno[1,2,3-cd]pyrene	4	11	36%	0.05	NA		0.08		71		NA		
Overburden Affected by Tailings													
METALS													
Antimony	9	9	100%	1.62	5		78		0.27	6	NA		
Arsenic	9	9	100%	1159	18	64	6.8	170	46	25	43	27	
Cadmium	9	9	100%	2.13	32		140		0.36	6	0.77	3	
Copper	9	9	100%	117	70	2	80	1	49	2	28	4	
Lead	9	9	100%	3032	120	25	1700	2	56	54	11	276	
Manganese	9	9	100%	48208	220	219	450	107	4000	12	4300	11	
Selenium	9	9	100%	0.51	0.52		4.1		0.63		1.2		
Zinc	9	9	100%	478	160	3	120	4	79	6	46	10	
VOCs													
Acetone	1	9	11%	0.07	NA		0.04	2	1.2		7.5		223
Overburden Strata													
METALS													
Antimony	5	8	63%	0.83	5		78		0.27	3	NA		
Arsenic	8	8	100%	145.83	18	8	6.8	21	46	3	43	3	
Barium	3	3	100%	103.87	110		330		2000		820		
Cadmium	7	8	88%	1.71	32		140		0.36	5	0.77	2	
Copper	8	8	100%	56.70	70		80		49	1	28	2	
Lead	8	8	100%	930.00	120	8	1700		56	17	11	85	
Manganese	8	8	100%	13083.75	220	59	450	29	4000	3	4300	3	
Selenium	5	8	63%	0.48	0.52		4.1		0.63		1.2		
Silver	1	3	33%	20	560		NA		14	1	4.2	5	
Zinc	8	8	100%	309.79	160	2	120	3	79	4	46	7	

Notes:

All units are milligram per kilogram.

Eco-SSL = Ecological Soil Screening Level

HQ = Hazard Quotient

NA = Not available

Red font and shading indicates exceedence of the EcoSSL

Table 7. Summary of HQs Based on Maximum Concentrations

	Plants	Soil Invertebrates	Mammals	Birds
Disturbed Soils Sediments and Other Materials				
Arsenic	394	1043	154	165
Lead	684	48	1466	7464
Manganese	1405	687	77	72
General Mill Site Soils				
Arsenic	67	176	26	28
Lead	91	6	195	991
Manganese	764	373	42	39
Overburden Affected by Tailings				
Arsenic	427	1131	167	179
Lead	42	3	89	454
Manganese	370	181	20	19
Overburden Strata				
Arsenic	16	43	6	7
Lead	38	3	82	417
Manganese	214	105	12	11

Notes:
HQ = Hazard quotient

Table 8. Summary of HQs Based on Average Concentrations

	Plants	Soil Invertebrates	Mammals	Birds
Disturbed Soils Sediments and Other Materials				
Arsenic	34	89	13	14
Lead	50	4	107	546
Manganese	153	75	8	8
General Mill Site Soils				
Arsenic	12	31	5	5
Lead	16	1	34	173
Manganese	115	56	6	6
Overburden Affected by Tailings				
Arsenic	64	170	25	27
Lead	25	2	54	276
Manganese	219	107	12	11
Overburden Strata				
Arsenic	8	21	3	3
Lead	8	<1	17	85
Manganese	59	29	3	3

Notes:
HQ = Hazard quotient

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Appendix A

Site Photograph Log

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Project No.	Description:	Sparse distribution of Creosote bush *(Larrea tridentata)* facing west in the drainage area	Photo 1
1612501	Site Name:	Three Kids Mine	Photo Date 5/19/2022
	Client:	Lakemoor Ventures, LLC	

Project No.	Description:	Creosote bush *(Larrea tridentata)* in the original Three Kids Mine Pit	Photo 2
1612501	Site Name:	Three Kids Mine	Photo Date 5/19/2022
	Client:	Lakemoor Ventures, LLC	

Project No.	Description:	Honey Mesquite *(Prosopis glandulosa)* in the original Three Kids Mine Pit	Photo 3
1612501	Site Name:	Three Kids Mine	Photo Date 5/19/2022
	Client:	Lakemoor Ventures, LLC	

Project No.	Description:	Brittlebrush *(Encelia farinose)* in the original Three Kids Mine Pit	Photo 4
1612501	Site Name:	Three Kids Mine	Photo Date 5/19/2022
	Client:	Lakemoor Ventures, LLC	

Project No.	Description:	Desert Globemallow *(Sphaeralcea ambigua)* in the original Three Kids Mine Pit	Photo 5
1612501	Site Name:	Three Kids Mine	Photo Date 5/19/2022
	Client:	Lakemoor Ventures, LLC	

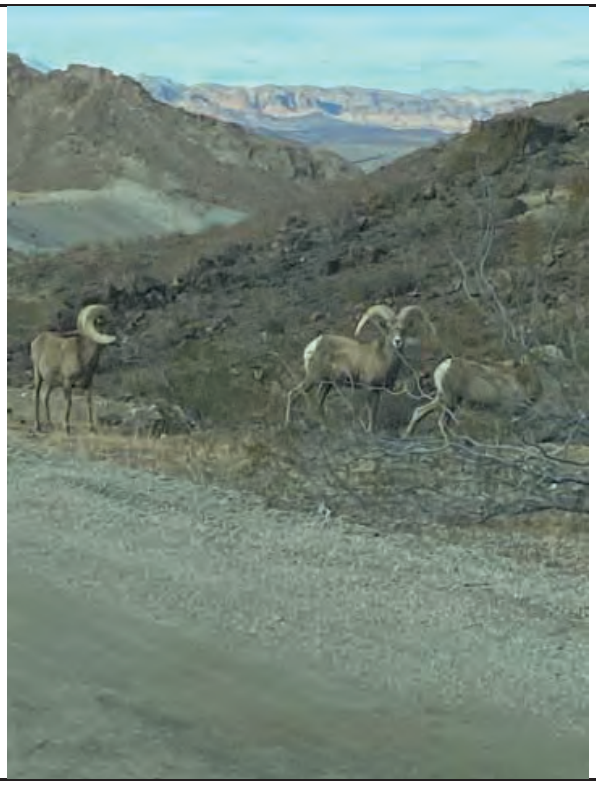
Project No.	Description:	View of tailings pond	Photo 6
1612501	Site Name:	Three Kids Mine	Photo Date 5/19/2022
	Client:	Lakemoor Ventures, LLC	

Project No.	Description:	Long-nosed Leopard lizard (*Gambelia wislizenii*) in the original Three Kids Mine Pit	Photo 7
1612501	Site Name:	Three Kids Mine	Photo Date 5/19/2022
	Client:	Lakemoor Ventures, LLC	

Project No.	Description:	Desert horned lizard *(Phrynosoma platyrhinos)*	Photo 8
1612501	Site Name:	Three Kids Mine	Photo Date 5/19/2022
	Client:	Lakemoor Ventures, LLC	

Project No.	Description:	Bighorn sheep *(Ovis canadensis)* scat	Photo 9
1612501	Site Name:	Three Kids Mine	Photo Date 5/19/2022
	Client:	Lakemoor Ventures, LLC	

Project No.	Description:	Northern rough-winged swallows *(Stelgidopteryx serripennis)* and nests in Hulin Pit	Photo 10
1612501	Site Name:	Three Kids Mine	Photo Date 5/19/2022
	Client:	Lakemoor Ventures, LLC	



Project No.	Description:	Bighorn sheep *(Ovis canadensis)* on site	Photo 11
1612501	Site Name:	Three Kids Mine	Photo Date 5/19/2022
	Client:	Lakemoor Ventures, LLC	

Project No.	Description:	Various small mammal and reptile holes	Photo 12
1612501	Site Name:	Three Kids Mine	Photo Date 5/19/2022
	Client:	Lakemoor Ventures, LLC	

Project No.	Description:	Coyote scat	Photo 13
1612501	Site Name:	Three Kids Mine	Photo Date 5/19/2022
	Client:	Lakemoor Ventures, LLC	

Project No.	Description:	Shallow animal burrows	Photo 14
1612501	Site Name:	Three Kids Mine	Photo Date 5/19/2022
	Client:	Lakemoor Ventures, LLC	

Appendix B

SLERA Dataset

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	Area	Ore Yard	Scale House	Scale House	Scale House	Mill Soil	Mill Soil	Mill Soil	Mill Soil	Mill Soil	Mill Soil	Mill Soil	Mill Soil	Mill Soil
	Location	MM-311-15	MM-313-01	MM-313-02	MM-313-03	MM-321-01	MM-321-02	MM-321-03	MM-321-04	MM-321-05	MM-321-06	MM-321-07	MM-321-08	MM-321-09
	Sample Name	MM-311-15-01	MM-313-01-01	MM-313-02-01	MM-313-03-01	MM-321-01-01	MM-321-02-01	MM-321-03-01	MM-321-04-01	MM-321-05-01	MM-321-06-01	MM-321-07-01	MM-321-08-01	MM-321-09-01
	Sample Date	9/20/2021	9/16/2021	9/16/2021	9/17/2021	9/15/2021	9/15/2021	9/15/2021	9/16/2021	9/17/2021	9/17/2021	9/16/2021	9/16/2021	9/21/2021
	Sample Depth	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Metals (SW6020A)														
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	mg/kg	**0.416 J-**	**0.852 J**	**0.902 J**	**1.03 J**	3.26 U	3.02 U	**0.707 J**	**0.415 J**	**1.02 J**	**0.349 J**	**0.356 J**	**1.95 J**	3.05 U
Arsenic	mg/kg	**48.5**	**197 J+**	**294 J+**	**38.1**	**28.9**	**70**	**327**	**23.2**	**228**	**113**	**18.1**	**1200**	**10.4**
Barium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	1.03 U	**0.361 J**	**3.6**	**0.179 J**	**0.168 J**	**0.114 J**	**0.853 J**	**0.41 J**	**0.603 J**	**0.241 J**	**0.316 J**	**0.675 J**	1.02 U
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	**5.59**	**10.4**	**7.36**	**14.1**	**6.68**	**11.2**	**10.8**	**102**	**12.7**	**13.3**	**69.7**	**8.86**	**6.31**
Chromium [VI]	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	**22**	**45**	**188**	**141**	**15.6**	**21.6**	**79.8**	**26.6**	**118**	**34.7**	**7.57**	**329**	**9 J-**
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	**157**	**1240 J+**	**4590 J+**	**291**	**153**	**187**	**3320**	**89**	**2560**	**656**	**49.3**	**10900**	**40.8**
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	**1740 J**	**25500 J+**	**47100 J+**	**12200 J+**	**1700 J+**	**6020 J+**	**27800 J+**	**3760 J+**	**25900 J+**	**8170 J+**	**672 J+**	**168000 J+**	**541 J**
Mercury	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	**0.57 J**	**0.523 J**	**0.377 J**	**0.19 J**	**0.374 J**	**0.48 J**	**0.498 J**	**1.07 J**	**0.553 J**	**0.37 J**	**0.843 J**	**0.526 J**	**0.301 J**
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	**53.3**	**276**	**430**	**154**	**87.3**	**150**	**416**	**197**	**205**	**165**	**28.3 J+**	**535**	**39.1**
TPH (SW8015M)														
TPH-GRO (C6-C10)	mg/kg	NA	NA	NA	NA	**0.0518 J**	0.101 U	**0.0803 J**	0.102 U	0.102 U	0.101 U	0.102 U	**0.0848 J**	**0.0324 J+**
TPH-DRO (C10-C28)	mg/kg	NA	NA	NA	NA	4.35 UJ	4.03 UJ	**6.61 J-**	**2.69 J-**	4.08 UJ	4.05 UJ	**4.07 J-**	**2.04 J**	4.07 UJ
TPH-ORO (C28-C40)	mg/kg	NA	NA	NA	NA	4.35 U	**1.85 J+**	**28.6 J+**	**8.36 J+**	**2.35 J**	**1.47 J**	**52 J+**	**8.68**	**0.355 J+**
VOCs (SW8260D)														
1,2,4-Trimethylbenzene	mg/kg	NA	NA	NA	NA	0.00587 U	0.00508 U	0.00512 U	0.00523 U	0.00521 U	0.00514 U	0.00516 U	0.0053 U	0.00518 U
1,3,5-Trimethylbenzene	mg/kg	NA	NA	NA	NA	0.00587 U	0.00508 U	0.00512 U	0.00523 U	0.00521 U	0.00514 U	0.00516 U	0.0053 U	0.00518 U
Acetone	mg/kg	NA	NA	NA	NA	0.0587 U	0.0508 U	0.0512 U	0.0523 U	0.0521 UJ	0.0514 UJ	0.0516 U	0.053 U	0.0518 UJ
Benzene	mg/kg	NA	NA	NA	NA	0.00117 U	0.00102 U	0.00102 U	0.00105 U	0.00104 U	0.00103 U	0.00103 U	0.00106 U	0.00104 U
Dichloromethane [Methylene chloride]	mg/kg	NA	NA	NA	NA	0.0293 U	0.0254 U	0.0256 U	0.0262 U	0.0261 U	0.0257 U	0.0258 U	0.0265 U	0.0259 U
Ethylbenzene	mg/kg	NA	NA	NA	NA	0.00293 U	0.00254 U	0.00256 U	0.00262 U	0.00261 U	0.00257 U	0.00258 U	0.00265 U	0.00259 U
Naphthalene	mg/kg	NA	NA	NA	NA	0.0147 UJ	0.0127 UJ	0.0128 UJ	0.0131 UJ	0.013 UJ	0.0128 UJ	0.0129 UJ	0.0133 UJ	0.013 UJ
n-Propylbenzene	mg/kg	NA	NA	NA	NA	0.00587 U	0.00508 U	0.00512 U	0.00523 U	0.00521 U	0.00514 U	0.00516 U	0.0053 U	0.00518 U
Toluene	mg/kg	NA	NA	NA	NA	0.00587 U	0.00508 U	**0.00146 J**	0.00523 U	0.00521 U	0.00514 U	0.00516 U	**0.00156 J**	0.00518 U
Xylenes [total]	mg/kg	NA	NA	NA	NA	**0.00168 J**	**0.00119 J**	**0.00194 J**	0.0068 U	0.00677 U	0.00668 U	**0.00129 J**	**0.00183 J**	0.00674 U
PAHS (SW8270E SIM)														
Benzo[a]anthracene	mg/kg	NA	NA	NA	NA	0.00652 U	0.00605 U	**0.072**	0.00614 U	**0.0129**	**0.004 J**	0.0061 U	0.00618 U	0.00611 U
Benzo[a]pyrene	mg/kg	NA	NA	NA	NA	0.00652 U	0.00605 U	**0.0425**	0.00614 U	**0.00478 J**	**0.00321 J**	0.0061 U	0.00618 U	0.00611 UJ
Benzo[b]fluoranthene	mg/kg	NA	NA	NA	NA	**0.0031 J**	0.00605 U	**0.19**	0.00614 U	**0.0573**	**0.0269**	**0.00209 J**	**0.00183 J**	0.00611 U
Benzo[g,h,i]perylene	mg/kg	NA	NA	NA	NA	**0.00205 J**	0.00605 U	**0.124**	0.00614 U	**0.0374**	**0.0195**	0.0061 U	0.00618 U	0.00611 UJ
Chrysene	mg/kg	NA	NA	NA	NA	0.00652 U	0.00605 U	**0.199**	0.00614 U	**0.0361**	**0.0166**	0.0061 U	**0.003 J**	0.00611 U
Dibenzo[a,h]anthracene	mg/kg	NA	NA	NA	NA	0.00652 U	0.00605 U	**0.0314**	0.00614 U	**0.00898**	**0.00298 J**	0.0061 U	0.00618 U	0.00611 UJ
Indeno[1,2,3-cd]pyrene	mg/kg	NA	NA	NA	NA	0.00652 U	0.00605 U	**0.119**	0.00614 U	**0.0365**	**0.0178**	0.0061 U	0.00618 U	0.00611 UJ

	Location	MM-311-15	MM-313-01	MM-313-02	MM-313-03	MM-321-01	MM-321-02	MM-321-03	MM-321-04	MM-321-05	MM-321-06	MM-321-07	MM-321-08	MM-321-09
	Sample Name	MM-311-15-01	MM-313-01-01	MM-313-02-01	MM-313-03-01	MM-321-01-01	MM-321-02-01	MM-321-03-01	MM-321-04-01	MM-321-05-01	MM-321-06-01	MM-321-07-01	MM-321-08-01	MM-321-09-01
	Sample Date	9/20/2021	9/16/2021	9/16/2021	9/17/2021	9/15/2021	9/15/2021	9/15/2021	9/16/2021	9/17/2021	9/17/2021	9/16/2021	9/16/2021	9/21/2021
	Sample Depth	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Phenanthrene	mg/kg	NA	NA	NA	NA	0.00652 U	0.00605 U	**0.0574**	0.00614 U	**0.019**	**0.00404 J**	0.0061 U	0.00618 U	0.00611 U
Pyrene	mg/kg	NA	NA	NA	NA	**0.00256 J**	0.00605 U	**0.158**	0.00614 U	**0.0414**	**0.0105**	0.0061 U	0.00618 U	0.00611 U
Aroclors (SW8082)														
Aroclor 1016	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1221	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1232	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dioxins (SW8290A)														
WHO BIRD TEQ (ND=0)	ng/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
WHO TEQ (ND=0)	ng/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids (SM2530G)														
Percent Solids	%	**97.3**	**97.6**	**96.8**	**98.6**	**92**	**99.2**	**98.8**	**97.7**	**97.9**	**98.7**	**98.4**	**97.1**	**98.2**
Sulfur	%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Bolded values represent
% = percent
-- = not analyzed
ft bgs = feet below ground surface
J = Estimated value.
J+ = Estimated value, biased high.
mg/kg = milligram(s) per kilogram
NA = Not analyzed.
PAH = polycyclic aromatic hydrocarbons
U = Analyte not detected.

	Area	Mill Soil	Mill Soil	Compacted Roadways	Chemical Process	Chemical Process	Chemical Process	Chemical Process	Chemical Process	Chemical Process	Chemical Process	Chemical Process
	Location	MM-321-10	MM-321-11	SS-312-04	SS-331-01	SS-331-02	SS-331-03	SS-331-04	SS-331-07	SS-331-08	SS-331-09	SS-331-10
	Sample Name	MM-321-10-01	MM-321-11-01	SS-312-04-0_5	SS-331-01-01	SS-331-02-01	SS-331-03-01	SS-331-04-01	SS-331-07-00	SS-331-08-00	SS-331-09-00	SS-331-10-00
	Sample Date	9/15/2021	9/16/2021	9/24/2021	9/20/2021	9/20/2021	9/16/2021	9/16/2021	9/13/2021	9/13/2021	9/13/2021	9/13/2021
	Sample Depth	1 ft bgs	1 ft bgs	0.5 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Metals (SW6020A)												
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	mg/kg	**0.807 J**	**0.377 J**	**0.948 J-**	**0.213 J**	**1.26 J**	**0.484 J**	**0.244 J**	3.05 UJ	3.54 UJ	**1.43 J**	**0.618 J**
Arsenic	mg/kg	**260**	**37.3 J**	**206**	**173**	**1890 J+**	**292**	**175**	**11.3 J+**	**44.4 J+**	**2150**	**228 J+**
Barium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	**0.508 J**	**0.172 J**	**2.11**	**0.351 J**	**2.27**	**0.513 J**	**0.189 J**	**0.135 J**	**0.136 J**	**1.52**	**0.286 J**
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	**18.3**	**7.62**	**17.5**	**4.73 J**	**3.32 J+**	**4.11 J**	**2.2 J**	**11.4**	**5.58 J**	**8.06**	**6.8**
Chromium [VI]	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	**151**	**27.1 J**	**23.6**	**68**	**129 J+**	**44.8**	**31.1**	**13.9**	**11.6**	**122**	**75.4**
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	**2510**	**468 J**	**491 J**	**1370**	**25800 J+**	**3570 J+**	**2010**	**35.7 J**	**376 J**	**22200 J+**	**2570 J**
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	**29500 J+**	**5630 J**	**8680 J**	**12500 J**	**53500 J**	**14300 J+**	**10000 J+**	**561 J**	**1050 J**	**38000**	**27500 J**
Mercury	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	**0.353 J**	**0.309 J**	**0.745 J**	**0.286 J**	**0.453 J**	**0.898 J+**	**0.265 J**	**0.337 J**	**0.232 J**	**0.617 J**	**0.268 J**
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	**216**	**105 J**	**460 J-**	**142**	**193**	**79.9**	**46.1**	**72.7 J**	**68.4 J**	**251**	**130 J**
TPH (SW8015M)												
TPH-GRO (C6-C10)	mg/kg	**0.0735 J**	0.104 U	0.11 U	**0.0606 J+**	**0.0613 J+**	**0.0758 J+**	**0.0622 J+**	**0.0348 J+**	0.118 UJ	0.112 UJ	**0.0326 J-**
TPH-DRO (C10-C28)	mg/kg	**4.04 J-**	4.17 U	**3.27 J-**	**7.11 J-**	**5.62 J-**	**14.1**	**1460**	4.07 U	4.72 U	**4.4 J**	**9.47**
TPH-ORO (C28-C40)	mg/kg	**16.6 J+**	**1.34 J**	**6.89**	**14.4**	**6.11**	**44.3 J+**	**3180 J+**	**2.78 J+**	**2.61 J+**	**1.46 J+**	**14.4 J+**
VOCs (SW8260D)												
1,2,4-Trimethylbenzene	mg/kg	0.00507 U	0.00543 U	0.006 U	0.00517 U	0.00521 U	0.00512 U	**0.00525**	0.00518 U	0.00681 U	0.0062 U	0.00521 U
1,3,5-Trimethylbenzene	mg/kg	0.00507 U	0.00543 U	0.006 U	0.00517 U	0.00521 U	0.00512 U	**0.00534**	0.00518 U	0.00681 U	0.0062 U	0.00521 U
Acetone	mg/kg	0.0507 U	0.0543 U	0.06 UJ	0.0517 UJ	0.0521 UJ	0.0512 U	0.051 U	0.0518 UJ	0.0681 UJ	0.062 U	0.0521 UJ
Benzene	mg/kg	0.00101 U	0.00109 U	0.0012 U	0.00103 U	0.00104 U	0.00102 U	**0.000765 J**	0.00104 U	0.00136 U	0.00124 U	0.00104 U
Dichloromethane [Methylene chloride]	mg/kg	0.0253 U	0.0271 U	**0.00918 J**	0.0259 U	0.026 U	0.0256 U	0.0255 U	0.0259 U	0.0341 U	0.031 U	0.026 U
Ethylbenzene	mg/kg	0.00253 U	0.00271 U	0.003 U	0.00259 U	0.0026 U	0.00256 U	0.00255 U	0.00259 U	0.00341 U	0.0031 U	0.0026 U
Naphthalene	mg/kg	0.0127 UJ	0.0136 UJ	0.015 U	0.0129 UJ	0.013 UJ	0.0128 UJ	**0.0099 J-**	0.013 U	0.017 U	0.0155 UJ	0.013 U
n-Propylbenzene	mg/kg	0.00507 U	0.00543 U	0.006 U	0.00517 U	0.00521 U	0.00512 U	0.0051 U	0.00518 U	0.00681 U	0.0062 U	0.00521 U
Toluene	mg/kg	**0.00172 J**	0.00543 U	**0.0019 J**	0.00517 U	0.00521 U	0.00512 U	**0.00818**	0.00518 U	**0.00341 J**	0.0062 U	0.00521 U
Xylenes [total]	mg/kg	**0.00108 J**	0.00705 U	0.0078 U	0.00673 U	0.00677 U	**0.000938 J**	**0.0179**	0.00674 U	**0.00183 J**	0.00805 U	0.00677 U
PAHS (SW8270E SIM)												
Benzo[a]anthracene	mg/kg	**0.0312**	0.00626 U	0.0066 U	**0.0219**	**0.0549**	**0.0167**	**20**	0.00611 U	0.00708 U	0.00672 U	**0.0193**
Benzo[a]pyrene	mg/kg	**0.0169**	0.00626 U	0.0066 U	**0.0106 J-**	**0.0105 J-**	**0.0122**	**10.7**	0.00611 U	0.00708 U	0.00672 U	**0.0194**
Benzo[b]fluoranthene	mg/kg	**0.0416**	0.00626 U	**0.00256 J**	**0.054**	**0.123**	**0.0899**	**9.33**	0.00611 U	0.00708 U	**0.0251**	**0.0459**
Benzo[g,h,i]perylene	mg/kg	**0.0328**	0.00626 U	0.0066 U	**0.0254 J-**	**0.0497 J-**	**0.0693**	**7.07**	0.00611 U	0.00708 U	**0.00331 J**	**0.0249**
Chrysene	mg/kg	**0.0888**	0.00626 U	0.0066 U	**0.0346**	**0.0919**	**0.0413**	**40.5**	0.00611 U	0.00708 U	0.00672 U	**0.0512**
Dibenzo[a,h]anthracene	mg/kg	**0.0155**	0.00626 U	0.0066 U	**0.00568 J-**	**0.0193 J-**	**0.0172**	**4.81**	0.00611 U	0.00708 U	0.00672 U	**0.00729**
Indeno[1,2,3-cd]pyrene	mg/kg	**0.0172**	0.00626 U	0.0066 U	**0.0293 J-**	**0.0497 J-**	**0.0716**	**2.53**	0.00611 U	0.00708 U	**0.00247 J**	**0.0192**

	Location	MM-321-10	MM-321-11	SS-312-04	SS-331-01	SS-331-02	SS-331-03	SS-331-04	SS-331-07	SS-331-08	SS-331-09	SS-331-10
	Sample Name	MM-321-10-01	MM-321-11-01	SS-312-04-0_5	SS-331-01-01	SS-331-02-01	SS-331-03-01	SS-331-04-01	SS-331-07-00	SS-331-08-00	SS-331-09-00	SS-331-10-00
	Sample Date	9/15/2021	9/16/2021	9/24/2021	9/20/2021	9/20/2021	9/16/2021	9/16/2021	9/13/2021	9/13/2021	9/13/2021	9/13/2021
	Sample Depth	1 ft bgs	1 ft bgs	0.5 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Phenanthrene	mg/kg	**0.0145**	0.00626 U	0.0066 U	**0.0222**	**0.0277**	**0.0179**	**9.18**	0.00611 U	0.00708 U	**0.0264**	**0.0166**
Pyrene	mg/kg	**0.0292**	0.00626 U	0.0066 U	**0.0547**	**0.0629**	**0.0449**	**13.4 J**	0.00611 U	0.00708 U	**0.00429 J**	**0.0339**
Aroclors (SW8082)												
Aroclor 1016	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1221	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1232	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dioxins (SW8290A)												
WHO BIRD TEQ (ND=0)	ng/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
WHO TEQ (ND=0)	ng/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids (SM2530G)												
Percent Solids	%	**99.3**	**95.9**	**90.9**	**98.3**	**98**	**98.8**	**99**	**98.2**	**84.7**	**89.3**	**98**
Sulfur	%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Bolded values represent
% = percent
-- = not analyzed
ft bgs = feet below ground surface
J = Estimated value.
J+ = Estimated value, biased high.
mg/kg = milligram(s) per kilogram
NA = Not analyzed.
PAH = polycyclic aromatic hydrocarbons
U = Analyte not detected.

	Area	Chemical Process	Chemical Process	Thermal Process	Thermal Process	Thermal Process	Thermal Process	Thermal Process	Thermal Process	Thermal Process	Thermal Process	Thermal Process
	Location	SS-331-11	SS-331-12	SS-332-01	SS-332-02	SS-332-03	SS-332-04	SS-332-05	SS-332-06	SS-332-07	SS-332-08	SS-332-09
	Sample Name	SS-331-11-00	SS-331-12-00	SS-332-01-00	SS-332-02-00	SS-332-03-00	SS-332-04-00	SS-332-05-00	SS-332-06-00	SS-332-07-00	SS-332-08-00	SS-332-09-00
	Sample Date	9/23/2021	9/23/2021	9/27/2021	9/27/2021	9/28/2021	9/28/2021	9/28/2021	9/28/2021	9/28/2021	9/28/2021	9/28/2021
	Sample Depth	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Metals (SW6020A)												
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	mg/kg	**0.249 J**	**0.842 J**	**4.66**	**1.69 J**	**10.6**	**7.3**	**1.18 J**	**4.72**	**6.09**	**0.625 J**	**0.816 J**
Arsenic	mg/kg	**49.5**	**204**	**2240**	**1660 J+**	**7020**	**4320**	**894**	**4030**	**7090**	**158**	**604**
Barium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	**0.149 J**	**0.355 J**	**1.07**	**3.17**	**9.98**	**6.16**	**1.34**	**9.5**	**16.1**	**0.205 J**	**1.07**
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	**4.69 J**	**9.77**	**10.5**	**14.1**	**7.98**	**48.2**	**9.51**	**7.2**	**14**	**8.08**	**3.33 J**
Chromium [VI]	mg/kg	NA	NA	1 U	NA	1.01 U	NA	1.01 U	NA	**0.86 J**	NA	**0.757 J**
Copper	mg/kg	**22.9**	**67.1**	**673**	**238**	**705**	**923**	**125**	**291**	**465**	**79.7**	**186**
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	**432 J-**	**1670 J-**	**15300**	**20300 J+**	**78700**	**56600**	**12600**	**55800**	**82100**	**1790**	**4930 J+**
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	**5130**	**21900**	**289000 J+**	**111000 J+**	**309000 J+**	**248000 J+**	**48200 J+**	**136000 J+**	**168000 J+**	**88400 J+**	**36400 J+**
Mercury	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	**0.321 J+**	**0.396 J+**	**0.307 J**	**0.55 J**	**0.986 J**	**0.885 J**	**0.374 J**	**0.848 J**	**0.795 J**	**0.276 J**	**0.366 J**
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	**86.9**	**230**	**716**	**422 J+**	**758**	**828**	**259**	**392**	**851**	**146**	**306**
TPH (SW8015M)												
TPH-GRO (C6-C10)	mg/kg	**0.156 J+**	**0.0596 J+**	**0.0525 J+**	**0.517**	**0.0779 J+**	**0.072 J+**	**0.13 J+**	**0.0451 J+**	**0.0612 J+**	**0.0634 J+**	**0.0665 J+**
TPH-DRO (C10-C28)	mg/kg	**5.89 J-**	**3.74 J**	**9.45**	**3460 J+**	**23.5**	**126**	**2590**	**17.5**	**10.6**	**111**	**61.5 J**
TPH-ORO (C28-C40)	mg/kg	**6.47 J-**	**12.5**	**19**	**1390**	**38.4**	**598**	**4180**	**47.8**	**25.4**	**83.2**	**84.8**
VOCs (SW8260D)												
1,2,4-Trimethylbenzene	mg/kg	0.00505 U	0.00511 U	0.00503 U	0.204 U	0.00512 U	0.00504 U	0.00507 U	0.00523 U	0.00516 U	0.00537 U	0.00534 U
1,3,5-Trimethylbenzene	mg/kg	0.00505 U	0.00511 U	0.00503 U	0.204 U	0.00512 U	0.00504 U	0.00507 U	0.00523 U	0.00516 U	0.00537 U	0.00534 U
Acetone	mg/kg	0.0505 U	0.0511 U	0.0503 U	2.04 U	0.0512 UJ	0.0504 UJ	0.0507 UJ	0.0523 UJ	0.0516 UJ	0.0537 UJ	0.0534 UJ
Benzene	mg/kg	0.00101 U	0.00102 U	0.00101 U	**0.0856**	0.00102 U	0.00101 U	0.00101 U	0.00105 U	0.00103 U	0.00107 U	0.00107 U
Dichloromethane [Methylene chloride]	mg/kg	**0.0147 J**	**0.0156 J**	0.0251 U	1.02 U	0.0256 U	0.0252 U	0.0253 U	0.0262 U	0.0258 U	0.0268 U	0.0267 U
Ethylbenzene	mg/kg	0.00253 U	0.00255 U	0.00251 U	0.102 U	0.00256 U	0.00252 U	0.00253 U	0.00262 U	0.00258 U	0.00268 U	0.00267 U
Naphthalene	mg/kg	0.0126 UJ	0.0128 U	0.0126 UJ	0.51 UJ	0.0128 U	**0.00541 J**	**0.0138**	0.0131 U	0.0129 U	0.0134 U	0.0133 U
n-Propylbenzene	mg/kg	0.00505 U	0.00511 U	0.00503 U	0.204 U	0.00512 U	0.00504 U	0.00507 U	0.00523 U	0.00516 U	0.00537 U	0.00534 U
Toluene	mg/kg	0.00505 U	0.00511 U	0.00503 U	0.204 U	0.00512 U	0.00504 U	0.00507 U	0.00523 U	0.00516 U	0.00537 U	0.00534 U
Xylenes [total]	mg/kg	0.00657 U	0.00664 U	0.00654 U	0.265 U	0.00666 U	0.00655 U	0.00659 U	0.00681 U	0.00671 U	0.00698 U	0.00694 U
PAHS (SW8270E SIM)												
Benzo[a]anthracene	mg/kg	**0.00732 J-**	**0.0169 J-**	**0.0424**	**0.189**	**0.153**	**0.382**	**0.364**	**0.111**	**0.0691**	**0.132**	**0.358**
Benzo[a]pyrene	mg/kg	**0.00452 J-**	**0.00528 J-**	**0.00807**	**0.2**	**0.0399**	**0.275**	**0.211**	**0.0126**	**0.0146**	**0.0476**	**0.12**
Benzo[b]fluoranthene	mg/kg	**0.0158**	**0.0441**	**0.0569**	**1.41**	**0.182**	**0.682**	**0.855**	**0.151**	**0.127**	**0.943**	**0.586**
Benzo[g,h,i]perylene	mg/kg	**0.01**	**0.0234**	**0.033**	**0.384**	**0.115**	**0.267**	**0.476**	**0.0714**	**0.0806**	**0.183**	**0.247**
Chrysene	mg/kg	**0.0172**	**0.0378**	**0.112**	**2.44**	**0.418**	**1.12**	**1.06**	**0.324**	**0.186**	**1.09**	**0.987**
Dibenzo[a,h]anthracene	mg/kg	**0.00295 J-**	**0.00408 J-**	**0.0207**	**0.103**	**0.0695**	**0.146**	**0.168**	**0.0488**	**0.0342**	**0.0914**	**0.148**
Indeno[1,2,3-cd]pyrene	mg/kg	**0.00727 J-**	**0.0212 J-**	**0.0174**	**0.293**	**0.0585**	**0.179**	**0.315**	**0.0429**	**0.0602**	**0.377**	**0.126**

	Location	SS-331-11	SS-331-12	SS-332-01	SS-332-02	SS-332-03	SS-332-04	SS-332-05	SS-332-06	SS-332-07	SS-332-08	SS-332-09
	Sample Name	SS-331-11-00	SS-331-12-00	SS-332-01-00	SS-332-02-00	SS-332-03-00	SS-332-04-00	SS-332-05-00	SS-332-06-00	SS-332-07-00	SS-332-08-00	SS-332-09-00
	Sample Date	9/23/2021	9/23/2021	9/27/2021	9/27/2021	9/28/2021	9/28/2021	9/28/2021	9/28/2021	9/28/2021	9/28/2021	9/28/2021
	Sample Depth	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Phenanthrene	mg/kg	**0.011**	**0.0321**	**0.0294**	**12.3**	**0.217**	**0.368**	**2.23**	**0.158**	**0.124**	**0.998**	**0.478**
Pyrene	mg/kg	**0.0222**	**0.0818**	**0.0398**	**1.15**	**0.123**	**0.303**	**2.34**	**0.089**	**0.116**	**0.496**	**0.272**
Aroclors (SW8082)												
Aroclor 1016	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1221	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1232	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dioxins (SW8290A)												
WHO BIRD TEQ (ND=0)	ng/kg	NA	NA	0.013	NA	879	NA	5.41	NA	50.5	NA	29.1
WHO TEQ (ND=0)	ng/kg	NA	NA	0.101	NA	276	NA	1.57	NA	14.2	NA	7.12
Percent Solids (SM2530G)												
Percent Solids	%	**99.5**	**98.9**	**99.7**	**99**	**98.8**	**99.6**	**99.3**	**97.7**	**98.4**	**96.4**	**96.8**
Sulfur	%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Bolded values represent
% = percent
-- = not analyzed
ft bgs = feet below ground surface
J = Estimated value.
J+ = Estimated value, biased high.
mg/kg = milligram(s) per kilogram
NA = Not analyzed.
PAH = polycyclic aromatic hydrocarbons
U = Analyte not detected.

	Area	Thermal Process	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils
	Location	SS-332-10	SS-333-01	SS-333-02	SS-333-03	SS-333-04	SS-333-05	SS-333-06	SS-333-07
	Sample Name	SS-332-10-00	SS-333-01-0_5	SS-333-02-0_5	SS-333-03-0_5	SS-333-04-0_5	SS-333-05-0_5	SS-333-06-0_5	SS-333-07-0_5
	Sample Date	9/28/2021	9/23/2021	9/23/2021	9/23/2021	9/23/2021	9/23/2021	9/21/2021	9/21/2021
	Sample Depth	0 - 2 in bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Metals (SW6020A)									
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	mg/kg	**1.49 J**	3.05 U	**0.518 J-**	15.3 UJ	**0.29 J**	**0.181 J**	**0.232 J-**	**0.238 J-**
Arsenic	mg/kg	**863**	**20.9**	**223**	**86.1**	**18.6**	**19.6**	**95.7**	**36.7**
Barium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	**1.71**	**0.248 J**	**1.17**	**0.469 J**	**0.0926 J**	**0.121 J**	**0.357 J**	**0.113 J**
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	**4.39 J**	**14.5**	**13.4**	**10.4 J**	**11**	**11.5**	**11.4**	**13.6**
Chromium [VI]	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	**243**	**25.7**	**63.7**	**34**	**21.3**	**28.3**	**30.3**	**17.8**
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	**11300 J+**	**57.6**	**1290 J**	**357 J**	**68.3 J-**	**129 J+**	**643**	**216**
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	**67200 J+**	**2370 J+**	**18600 J**	**6980 J**	**1030**	**1400 J+**	**7750 J**	**2620 J**
Mercury	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	**0.684 J**	**0.36 J+**	**0.343 J**	12.7 U	**0.447 J**	**0.606 J**	**0.285 J**	**0.372 J**
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	**329**	**144**	**350 J-**	**226 J-**	**138**	**113**	**169**	**81.2**
TPH (SW8015M)									
TPH-GRO (C6-C10)	mg/kg	**0.0538 J-**	**0.037 J**	**0.055 J**	**0.0492 J**	**0.0426 J+**	**0.0366 J+**	0.101 UJ	**0.0327 J+**
TPH-DRO (C10-C28)	mg/kg	**343**	4.07 UJ	**3.17 J**	4.08 UJ	4.06 U	4.09 UJ	4.04 UJ	4.14 UJ
TPH-ORO (C28-C40)	mg/kg	**2350**	**2.53 J-**	**9.42**	**4.16**	4.06 U	**2.01 J-**	**1.75 J**	**0.433 J**
VOCs (SW8260D)									
1,2,4-Trimethylbenzene	mg/kg	0.00512 U	0.00517 U	0.00536 U	0.00519 U	0.00515 U	0.00522 U	0.00509 U	0.00534 U
1,3,5-Trimethylbenzene	mg/kg	0.00512 U	0.00517 U	0.00536 U	0.00519 U	0.00515 U	0.00522 U	0.00509 U	0.00534 U
Acetone	mg/kg	0.0512 UJ	0.0517 UJ	0.0536 U	0.0519 UJ	0.0515 U	0.0522 U	0.0509 U	0.0534 U
Benzene	mg/kg	0.00102 U	0.00103 U	0.00107 U	0.00104 U	0.00103 U	0.00104 U	0.00102 U	0.00107 U
Dichloromethane [Methylene chloride]	mg/kg	0.0256 U	**0.00987 J**	0.0268 U	**0.0106 J**	**0.0169 J**	**0.0175 J**	0.0255 U	0.0267 U
Ethylbenzene	mg/kg	0.00256 U	0.00258 U	0.00268 U	0.00259 U	0.00258 U	0.00261 U	0.00255 U	0.00267 U
Naphthalene	mg/kg	0.0128 U	0.0129 U	0.0134 U	0.013 U	**0.019 J-**	0.013 U	0.0127 UJ	0.0134 UJ
n-Propylbenzene	mg/kg	0.00512 U	0.00517 U	0.00536 U	0.00519 U	0.00515 U	0.00522 U	0.00509 U	0.00534 U
Toluene	mg/kg	0.00512 U	0.00517 U	0.00536 U	0.00519 U	0.00515 U	0.00522 U	0.00509 U	0.00534 U
Xylenes [total]	mg/kg	0.00665 U	0.00672 U	0.00696 U	0.00675 U	0.0067 U	0.00678 U	0.00662 U	0.00694 U
PAHS (SW8270E SIM)									
Benzo[a]anthracene	mg/kg	**0.575**	0.0061 U	**0.00869**	0.00611 U	**0.00239 J-**	0.00613 U	0.00605 U	0.0062 U
Benzo[a]pyrene	mg/kg	**0.193**	0.0061 U	**0.00619 J-**	0.00611 U	**0.002 J-**	0.00613 UJ	0.00605 UJ	0.0062 UJ
Benzo[b]fluoranthene	mg/kg	**0.663**	0.0061 U	**0.0106 J-**	0.00611 U	**0.00352 J**	0.00613 UJ	**0.00362 J**	**0.0109**
Benzo[g,h,i]perylene	mg/kg	**0.447**	0.0061 U	**0.00888 J-**	0.00611 U	**0.00313 J**	0.00613 UJ	**0.00216 J**	**0.00715**
Chrysene	mg/kg	**1.52**	0.0061 U	**0.0174**	0.00611 U	**0.00769**	0.00613 U	**0.00354 J**	**0.00506 J**
Dibenzo[a,h]anthracene	mg/kg	**0.212**	0.0061 U	**0.00322 J-**	0.00611 U	0.00609 UJ	0.00613 UJ	0.00605 U	0.0062 U
Indeno[1,2,3-cd]pyrene	mg/kg	**0.28**	0.0061 U	**0.00745 J-**	0.00611 U	0.00609 UJ	0.00613 UJ	**0.00187 J**	**0.00685**

	Location	SS-332-10	SS-333-01	SS-333-02	SS-333-03	SS-333-04	SS-333-05	SS-333-06	SS-333-07
	Sample Name	SS-332-10-00	SS-333-01-0_5	SS-333-02-0_5	SS-333-03-0_5	SS-333-04-0_5	SS-333-05-0_5	SS-333-06-0_5	SS-333-07-0_5
	Sample Date	9/28/2021	9/23/2021	9/23/2021	9/23/2021	9/23/2021	9/23/2021	9/21/2021	9/21/2021
	Sample Depth	0 - 2 in bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Phenanthrene	mg/kg	**0.825**	0.0061 U	**0.00485 J**	0.00611 U	0.00609 U	0.00613 U	0.00605 U	0.0062 U
Pyrene	mg/kg	**0.717**	0.0061 U	**0.00811**	0.00611 U	**0.00293 J**	0.00613 U	**0.00292 J**	**0.0067**
Aroclors (SW8082)									
Aroclor 1016	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1221	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1232	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA
Dioxins (SW8290A)									
WHO BIRD TEQ (ND=0)	ng/kg	NA	NA	NA	NA	NA	NA	NA	NA
WHO TEQ (ND=0)	ng/kg	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids (SM2530G)									
Percent Solids	%	**98.9**	**98.4**	**96.6**	**98.1**	**98.5**	**97.9**	**99.1**	**96.7**
Sulfur	%	NA	NA	NA	NA	NA	NA	NA	NA

Bolded values represent
% = percent
-- = not analyzed
ft bgs = feet below ground surface
J = Estimated value.
J+ = Estimated value, biased high.
mg/kg = milligram(s) per kilogram
NA = Not analyzed.
PAH = polycyclic aromatic hydrocarbons
U = Analyte not detected.

	Area	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils
	Location	SS-333-08	SS-333-09	SS-333-10	SS-333-11	SS-333-12	SS-333-13	SS-333-14
	Sample Name	SS-333-08-0_5	SS-333-09-0_5	SS-333-10-0_5	SS-333-11-0_5	SS-333-12-01	SS-333-13-0_5	SS-333-14-0_5
	Sample Date	9/21/2021	9/21/2021	9/21/2021	9/21/2021	9/21/2021	9/22/2021	9/22/2021
	Sample Depth	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	1 ft bgs	0.5 ft bgs	0.5 ft bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Metals (SW6020A)								
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA
Antimony	mg/kg	**0.178 J-**	**0.26 J**	**0.234 J**	**0.315 J**	**0.353 J**	**0.237 J-**	**0.723 J-**
Arsenic	mg/kg	**59.5**	**15.6 J-**	**56.4 J-**	**97.8 J-**	**23.7 J-**	**65.1**	**150**
Barium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	**0.141 J**	**0.448 J**	**0.0908 J**	**0.189 J**	**0.184 J**	1.15 U	**0.235 J**
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	**9.09**	**10.1**	**11.6**	**10.4**	**12.7**	**6.48**	**6.48**
Chromium [VI]	mg/kg	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	**24.3**	**10.9**	**68.8**	**33.3**	**20.7**	**4.58 J**	**47.5**
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	**395**	**66.2**	**72**	**890**	**71.6**	**14.8 J**	**1420 J**
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	**5240 J**	**997 J+**	**9870 J+**	**6590 J+**	**2970 J+**	**434 J**	**21500 J**
Mercury	mg/kg	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	**0.385 J**	**0.407 J**	**0.378 J**	**0.416 J**	**0.492 J**	**0.32 J**	**0.212 J**
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Thallium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	**128**	**96.2**	**156**	**137**	**108**	**16.4 J-**	**134 J-**
TPH (SW8015M)								
TPH-GRO (C6-C10)	mg/kg	0.102 U	0.104 U	0.102 U	0.103 U	0.102 U	0.115 U	0.104 U
TPH-DRO (C10-C28)	mg/kg	**2.02 J-**	4.14 UJ	4.08 UJ	**3.93 J-**	**2.32 J-**	4.59 U	**9.58**
TPH-ORO (C28-C40)	mg/kg	**1.6 J**	**1.88 J**	**0.791 J**	**4.93**	**6.22**	**2.11 J**	**31.3**
VOCs (SW8260D)								
1,2,4-Trimethylbenzene	mg/kg	0.00518 U	0.00536 U	0.00519 U	0.00531 U	0.00522 U	0.00648 U	0.00544 U
1,3,5-Trimethylbenzene	mg/kg	0.00518 U	0.00536 U	0.00519 U	0.00531 U	0.00522 U	0.00648 U	0.00544 U
Acetone	mg/kg	0.0518 U	0.0536 U	0.0519 U	0.0531 U	0.0522 U	0.0648 U	0.0544 UJ
Benzene	mg/kg	0.00104 U	0.00107 U	0.00104 U	0.00106 U	0.00104 U	0.0013 U	0.00109 U
Dichloromethane [Methylene chloride]	mg/kg	0.0259 U	0.0268 U	0.026 U	0.0266 U	0.0261 U	0.0324 U	0.0272 U
Ethylbenzene	mg/kg	0.00259 U	0.00268 U	0.0026 U	0.00266 U	0.00261 U	0.00324 U	0.00272 U
Naphthalene	mg/kg	0.013 UJ	0.0134 UJ	0.013 UJ	0.0133 UJ	0.0131 UJ	0.0162 U	0.0136 U
n-Propylbenzene	mg/kg	0.00518 U	0.00536 U	0.00519 U	0.00531 U	0.00522 U	0.00648 U	0.00544 U
Toluene	mg/kg	0.00518 U	0.00536 U	0.00519 U	0.00531 U	0.00522 U	0.00648 U	0.00544 U
Xylenes [total]	mg/kg	0.00674 U	0.00696 U	0.00675 U	0.00691 U	0.00679 U	0.00842 U	0.00707 U
PAHS (SW8270E SIM)								
Benzo[a]anthracene	mg/kg	**0.0126**	0.00621 U	0.00611 U	**0.0051 J**	**0.00188 J**	0.00689 U	**0.00462 J**
Benzo[a]pyrene	mg/kg	**0.00602 J-**	0.00621 U	0.00611 U	**0.00518 J-**	0.00613 U	0.00689 UJ	**0.00886**
Benzo[b]fluoranthene	mg/kg	**0.105**	0.00621 U	0.00611 U	**0.01**	**0.00331 J**	0.00689 UJ	**0.011**
Benzo[g,h,i]perylene	mg/kg	**0.0606**	0.00621 U	0.00611 U	**0.00736**	**0.00206 J**	0.00689 UJ	**0.00972**
Chrysene	mg/kg	**0.0485**	0.00621 U	0.00611 U	**0.0134**	**0.00449 J**	0.00689 U	**0.00524 J**
Dibenzo[a,h]anthracene	mg/kg	**0.0102**	0.00621 U	0.00611 U	**0.00308 J**	0.00613 U	0.00689 UJ	0.00626 U
Indeno[1,2,3-cd]pyrene	mg/kg	**0.0644**	0.00621 U	0.00611 U	**0.00629**	0.00613 U	0.00689 UJ	**0.00903**

	Location	SS-333-08	SS-333-09	SS-333-10	SS-333-11	SS-333-12	SS-333-13	SS-333-14
	Sample Name	SS-333-08-0_5	SS-333-09-0_5	SS-333-10-0_5	SS-333-11-0_5	SS-333-12-01	SS-333-13-0_5	SS-333-14-0_5
	Sample Date	9/21/2021	9/21/2021	9/21/2021	9/21/2021	9/21/2021	9/22/2021	9/22/2021
	Sample Depth	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	1 ft bgs	0.5 ft bgs	0.5 ft bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Phenanthrene	mg/kg	**0.0129**	0.00621 U	0.00611 U	0.00619 U	0.00613 U	0.00689 U	0.00626 U
Pyrene	mg/kg	**0.0393**	0.00621 U	0.00611 U	**0.0057 J**	**0.0023 J**	0.00689 U	**0.00612 J**
Aroclors (SW8082)								
Aroclor 1016	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1221	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1232	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	mg/kg	NA	NA	NA	NA	NA	NA	NA
Dioxins (SW8290A)								
WHO BIRD TEQ (ND=0)	ng/kg	NA	NA	NA	NA	NA	NA	NA
WHO TEQ (ND=0)	ng/kg	NA	NA	NA	NA	NA	NA	NA
Percent Solids (SM2530G)								
Percent Solids	%	**98.2**	**96.6**	**98.1**	**97**	**97.8**	**87.1**	**95.8**
Sulfur	%	NA	NA	NA	NA	NA	NA	NA

Bolded values represent
% = percent
-- = not analyzed
ft bgs = feet below ground surface
J = Estimated value.
J+ = Estimated value, biased high.
mg/kg = milligram(s) per kilogram
NA = Not analyzed.
PAH = polycyclic aromatic hydrocarbons
U = Analyte not detected.

	Area	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils
	Location	SS-333-15	SS-333-16	SS-333-17	SS-333-18	SS-333-19	SS-333-20	SS-333-21
	Sample Name	SS-333-15-0_5	SS-333-16-0_5	SS-333-17-0_5	SS-333-18-0_5	SS-333-19-0_5	SS-333-20-0_5	SS-333-21-0_5
	Sample Date	9/22/2021	9/22/2021	9/22/2021	9/22/2021	9/22/2021	9/22/2021	9/23/2021
	Sample Depth	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Metals (SW6020A)								
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA
Antimony	mg/kg	3.07 UJ	3.04 U	**0.185 J**	**0.815 J**	3.31 U	**0.878 J-**	**0.256 J**
Arsenic	mg/kg	**10.7**	**7.12**	**38.9**	**260**	**10.3**	**171**	**46.6**
Barium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	1.02 U	1.01 U	**0.101 J**	**0.237 J**	1.1 U	**0.286 J**	**0.321 J**
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	**7.83**	**2.44 J**	**10.2**	**6.31**	**9.18**	**7.77**	**11**
Chromium [VI]	mg/kg	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	**5.39**	**4.97 J**	**14**	**38**	**5.65**	**40.9**	**35.4**
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	**10.8 J**	**36.9 J-**	**153 J-**	**1200 J-**	**3.15 J-**	**1500 J**	**382**
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	**191 J**	**713**	**2020**	**20000**	**99.2**	**26900 J**	**5200 J+**
Mercury	mg/kg	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	**0.243 J**	**0.192 J**	**0.347 J**	**0.335 J**	**0.231 J**	**0.237 J**	**0.382 J+**
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Thallium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	**24.7 J-**	**27.9**	**47.8**	**146**	**21 J**	**140 J-**	**180**
TPH (SW8015M)								
TPH-GRO (C6-C10)	mg/kg	0.102 U	**0.0481 J+**	**0.0423 J+**	**0.0447 J+**	**0.0382 J+**	0.107 U	**0.0474 J**
TPH-DRO (C10-C28)	mg/kg	4.1 U	4.05 U	4.2 U	**7.32**	4.41 U	**5.57 J-**	**2.13 J-**
TPH-ORO (C28-C40)	mg/kg	4.1 U	4.05 U	**1.96 J**	4.23 U	4.41 U	**2.49 J-**	**7.55**
VOCs (SW8260D)								
1,2,4-Trimethylbenzene	mg/kg	0.00525 U	0.00514 U	0.00549 U	0.00557 U	0.00603 U	0.00569 U	0.00512 U
1,3,5-Trimethylbenzene	mg/kg	0.00525 U	0.00514 U	0.00549 U	0.00557 U	0.00603 U	0.00569 U	0.00512 U
Acetone	mg/kg	0.0525 U	0.0514 U	0.0549 U	0.0557 U	0.0603 U	0.0569 UJ	0.0512 UJ
Benzene	mg/kg	0.00105 U	0.00103 U	0.0011 U	0.00111 U	0.00121 U	0.00114 U	0.00102 U
Dichloromethane [Methylene chloride]	mg/kg	0.0262 U	**0.0124 J**	**0.012 J**	**0.0131 J**	**0.0149 J**	0.0284 U	**0.00896 J**
Ethylbenzene	mg/kg	0.00262 U	0.00257 U	0.00274 U	0.00278 U	0.00301 U	0.00284 U	0.00256 U
Naphthalene	mg/kg	0.0131 U	0.0128 U	0.0137 U	0.0139 U	0.0151 U	0.0142 U	0.0128 U
n-Propylbenzene	mg/kg	0.00525 U	0.00514 U	0.00549 U	0.00557 U	0.00603 U	0.00569 U	0.00512 U
Toluene	mg/kg	0.00525 U	0.00514 U	0.00549 U	0.00557 U	0.00603 U	0.00569 U	0.00512 U
Xylenes [total]	mg/kg	0.00682 U	0.00668 U	0.00713 U	0.00724 U	0.00783 U	0.00739 U	0.00666 U
PAHS (SW8270E SIM)								
Benzo[a]anthracene	mg/kg	0.00615 U	0.00608 UJ	0.00629 U	0.00634 UJ	0.00661 UJ	0.00641 U	**0.00234 J**
Benzo[a]pyrene	mg/kg	0.00615 UJ	0.00608 UJ	0.00629 U	0.00634 UJ	0.00661 UJ	0.00641 U	**0.00182 J**
Benzo[b]fluoranthene	mg/kg	0.00615 UJ	0.00608 U	0.00629 U	**0.0299**	0.00661 U	**0.00774**	**0.008**
Benzo[g,h,i]perylene	mg/kg	0.00615 UJ	0.00608 U	0.00629 U	**0.0278**	0.00661 U	**0.00426 J**	**0.00473 J**
Chrysene	mg/kg	0.00615 U	0.00608 U	0.00629 U	**0.00895**	0.00661 U	**0.00298 J**	**0.00697**
Dibenzo[a,h]anthracene	mg/kg	0.00615 UJ	0.00608 UJ	0.00629 U	**0.00358 J-**	0.00661 UJ	0.00641 U	0.00607 U
Indeno[1,2,3-cd]pyrene	mg/kg	0.00615 UJ	0.00608 UJ	0.00629 U	**0.0262 J-**	0.00661 UJ	**0.00453 J**	**0.00438 J**

	Location	SS-333-15	SS-333-16	SS-333-17	SS-333-18	SS-333-19	SS-333-20	SS-333-21
	Sample Name	SS-333-15-0_5	SS-333-16-0_5	SS-333-17-0_5	SS-333-18-0_5	SS-333-19-0_5	SS-333-20-0_5	SS-333-21-0_5
	Sample Date	9/22/2021	9/22/2021	9/22/2021	9/22/2021	9/22/2021	9/22/2021	9/23/2021
	Sample Depth	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Phenanthrene	mg/kg	0.00615 U	0.00608 U	0.00629 U	0.00634 U	0.00661 U	0.00641 U	0.00607 U
Pyrene	mg/kg	0.00615 U	0.00608 U	0.00629 U	**0.00366 J**	0.00661 U	0.00641 U	**0.00449 J**
Aroclors (SW8082)								
Aroclor 1016	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1221	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1232	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	mg/kg	NA	NA	NA	NA	NA	NA	NA
Dioxins (SW8290A)								
WHO BIRD TEQ (ND=0)	ng/kg	NA	NA	NA	NA	NA	NA	NA
WHO TEQ (ND=0)	ng/kg	NA	NA	NA	NA	NA	NA	NA
Percent Solids (SM2530G)								
Percent Solids	%	**97.6**	**98.7**	**95.3**	**94.6**	**90.7**	**93.6**	**98.8**
Sulfur	%	NA	NA	NA	NA	NA	NA	NA

Bolded values represent
% = percent
-- = not analyzed
ft bgs = feet below ground surface
J = Estimated value.
J+ = Estimated value, biased high.
mg/kg = milligram(s) per kilogram
NA = Not analyzed.
PAH = polycyclic aromatic hydrocarbons
U = Analyte not detected.

	Area	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils
	Location	SS-333-22	SS-333-22	SS-333-23	SS-333-23	SS-333-24	SS-333-24	SS-333-25
	Sample Name	SS-333-22-0_5	SS-333-22-01	SS-333-23-0_5	SS-333-23-01	SS-333-24-0_5	SS-333-24-01	SS-333-25-0_5
	Sample Date	9/23/2021	9/23/2021	9/21/2021	9/21/2021	9/21/2021	9/21/2021	9/21/2021
	Sample Depth	0.5 ft bgs	1 ft bgs	0.5 ft bgs	1 ft bgs	0.5 ft bgs	1 ft bgs	0.5 ft bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Metals (SW6020A)								
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA
Antimony	mg/kg	**0.187 J-**	**3.95 J+**	**0.251 J-**	**0.431 J-**	**1.56 J-**	**1.14 J-**	**0.994 J-**
Arsenic	mg/kg	**31.9**	**4440**	**44.9**	**152**	**1010**	**597**	**561**
Barium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	**0.143 J**	**5.44**	**0.101 J**	**0.293 J**	**2.81**	**2.83**	**0.782 J**
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	**7.99**	**9.81**	**4.83 J**	**8.21**	**13.5**	**12.8**	**7.71**
Chromium [VI]	mg/kg	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	**23.3**	**575 J**	**34.1**	**75.8**	**116**	**78.7**	**64.6**
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	**150 J**	**20900 J+**	**429 J**	**1640 J**	**2450 J**	**1650 J**	**1450 J**
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	**1930 J**	**210000 J+**	**6550 J**	**23800 J**	**48900 J**	**31900 J**	**29300 J**
Mercury	mg/kg	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	**0.388 J**	**0.743 J**	**0.474 J+**	**0.376 J+**	**0.397 J+**	**0.482 J+**	**0.28 J+**
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Thallium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	**126 J-**	**842**	**82.3**	**196**	**811**	**655**	**305**
TPH (SW8015M)								
TPH-GRO (C6-C10)	mg/kg	**0.0409 J-**	**0.0544 J+**	**0.0782 J+**	**0.0419 J+**	**0.0643 J+**	**0.0478 J+**	**0.103 J+**
TPH-DRO (C10-C28)	mg/kg	4.06 U	**96.3**	**2.12 J-**	**2.31 J-**	**14.1 J-**	**9.01 J-**	**12.2 J-**
TPH-ORO (C28-C40)	mg/kg	**2.1 J**	**250**	**3.1 J+**	**2.24 J+**	**14 J+**	**10.7 J**	**3.93 J**
VOCs (SW8260D)								
1,2,4-Trimethylbenzene	mg/kg	0.00515 U	0.00731 U	0.0051 U	0.00532 U	0.0056 U	0.00545 U	0.00747 U
1,3,5-Trimethylbenzene	mg/kg	0.00515 U	0.00731 U	0.0051 U	0.00532 U	0.0056 U	0.00545 U	0.00747 U
Acetone	mg/kg	0.0515 U	0.0731 U	0.051 UJ	0.0532 U	0.056 U	0.0545 U	0.0747 U
Benzene	mg/kg	0.00103 U	0.00146 U	0.00102 U	0.00106 U	0.00112 U	0.00109 U	0.00149 U
Dichloromethane [Methylene chloride]	mg/kg	0.0258 U	**0.0262 J**	0.0255 U	0.0266 U	0.028 U	0.0273 U	0.0374 U
Ethylbenzene	mg/kg	0.00258 U	0.00365 U	0.00255 U	0.00266 U	0.0028 U	0.00273 U	0.00374 U
Naphthalene	mg/kg	0.0129 U	0.0183 U	0.0128 U	0.0133 U	0.014 U	0.0136 U	0.0187 U
n-Propylbenzene	mg/kg	0.00515 U	0.00731 U	0.0051 U	0.00532 U	0.0056 U	0.00545 U	0.00747 U
Toluene	mg/kg	0.00515 U	0.00731 U	0.0051 U	0.00532 U	0.0056 U	0.00545 U	**0.00251 J**
Xylenes [total]	mg/kg	0.0067 U	0.0095 U	**0.00156 J**	**0.000985 J**	**0.00175 J**	**0.00153 J**	**0.00321 J**
PAHS (SW8270E SIM)								
Benzo[a]anthracene	mg/kg	0.00609 U	**0.303**	0.00606 U	0.00619 U	0.00636 U	0.00627 U	0.00748 U
Benzo[a]pyrene	mg/kg	0.00609 UJ	**0.279 J-**	0.00606 UJ	0.00619 UJ	0.00636 UJ	0.00627 UJ	0.00748 UJ
Benzo[b]fluoranthene	mg/kg	0.00609 UJ	**0.442 J-**	0.00606 U	0.00619 U	**0.00531 J**	**0.00291 J**	0.00748 U
Benzo[g,h,i]perylene	mg/kg	0.00609 UJ	**0.803 J-**	0.00606 UJ	0.00619 U	**0.00308 J**	**0.00201 J**	0.00748 U
Chrysene	mg/kg	0.00609 U	**0.534**	0.00606 U	0.00619 U	0.00636 U	0.00627 U	0.00748 U
Dibenzo[a,h]anthracene	mg/kg	0.00609 UJ	**0.171 J-**	0.00606 UJ	0.00619 U	0.00636 U	0.00627 U	0.00748 U
Indeno[1,2,3-cd]pyrene	mg/kg	0.00609 UJ	**0.59 J-**	0.00606 UJ	0.00619 U	**0.00285 J**	0.00627 U	0.00748 U

	Location	SS-333-22	SS-333-22	SS-333-23	SS-333-23	SS-333-24	SS-333-24	SS-333-25
	Sample Name	SS-333-22-0_5	SS-333-22-01	SS-333-23-0_5	SS-333-23-01	SS-333-24-0_5	SS-333-24-01	SS-333-25-0_5
	Sample Date	9/23/2021	9/23/2021	9/21/2021	9/21/2021	9/21/2021	9/21/2021	9/21/2021
	Sample Depth	0.5 ft bgs	1 ft bgs	0.5 ft bgs	1 ft bgs	0.5 ft bgs	1 ft bgs	0.5 ft bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Phenanthrene	mg/kg	0.00609 U	**0.156**	0.00606 U	0.00619 U	0.00636 U	0.00627 U	0.00748 U
Pyrene	mg/kg	0.00609 U	**0.304**	0.00606 U	0.00619 U	0.00636 U	0.00627 U	0.00748 U
Aroclors (SW8082)								
Aroclor 1016	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1221	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1232	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	mg/kg	NA	NA	NA	NA	NA	NA	NA
Dioxins (SW8290A)								
WHO BIRD TEQ (ND=0)	ng/kg	NA	NA	NA	NA	NA	NA	NA
WHO TEQ (ND=0)	ng/kg	NA	NA	NA	NA	NA	NA	NA
Percent Solids (SM2530G)								
Percent Solids	%	**98.5**	**81.2**	**99**	**96.9**	**94.4**	**95.7**	**80.2**
Sulfur	%	NA	NA	NA	NA	NA	NA	NA

Bolded values represent
% = percent
-- = not analyzed
ft bgs = feet below ground surface
J = Estimated value.
J+ = Estimated value, biased high.
mg/kg = milligram(s) per kilogram
NA = Not analyzed.
PAH = polycyclic aromatic hydrocarbons
U = Analyte not detected.

	Area	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils
	Location	SS-333-25	SS-333-26	SS-333-26	SS-333-27	SS-333-27	SS-333-28	SS-333-28
	Sample Name	SS-333-25-01	SS-333-26-0_5	SS-333-26-01	SS-333-27-0_5	SS-333-27-01	SS-333-28-0_5	SS-333-28-01
	Sample Date	9/21/2021	9/21/2021	9/21/2021	9/21/2021	9/21/2021	9/21/2021	9/21/2021
	Sample Depth	1 ft bgs	0.5 ft bgs	1 ft bgs	0.5 ft bgs	1 ft bgs	0.5 ft bgs	1 ft bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Metals (SW6020A)								
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA
Antimony	mg/kg	**0.845 J-**	**1.36 J-**	**1.04 J-**	3.03 U	3.04 U	**0.51 J**	**0.994 J**
Arsenic	mg/kg	**525**	**740**	**575**	**122**	**97**	**998**	**797**
Barium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	**0.649 J**	**0.451 J**	**0.393 J**	**0.158 J**	**0.152 J**	**0.613 J**	**0.735 J**
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	**7.06**	**8.99**	**6.59**	**3.34 J**	**2.29 J**	**3.92 J**	**4.47 J**
Chromium [VI]	mg/kg	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	**60.7**	**95.3**	**76.2**	**22.8**	**19.4**	**118**	**126**
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	**1240 J**	**2240 J**	**1810 J**	**254**	**193**	**1050**	**1950**
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	**26300 J**	**42900 J**	**35600 J**	**4810 J**	**3350 J**	**29900 J**	**45400 J**
Mercury	mg/kg	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	2.54 U	**0.297 J+**	2.6 U	**0.23 J**	**0.188 J**	**0.238 J**	**0.292 J**
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Thallium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	**282**	**379**	**286**	**102**	**77.9**	**342**	**292**
TPH (SW8015M)								
TPH-GRO (C6-C10)	mg/kg	**0.0906 J+**	**0.0439 J+**	**0.0399 J+**	**0.0507 J+**	**0.0611 J+**	**0.105 J+**	**0.0577 J**
TPH-DRO (C10-C28)	mg/kg	**7.04 J-**	**6.11 J-**	**7.73 J-**	4.05 UJ	4.05 UJ	**10.5 J-**	**9.52 J-**
TPH-ORO (C28-C40)	mg/kg	**5.82 J+**	**4.29 J+**	**5.11 J+**	**1.66 J+**	**1.76 J+**	**9.08 J**	**5.9 J+**
VOCs (SW8260D)								
1,2,4-Trimethylbenzene	mg/kg	0.00517 U	0.00564 U	0.00541 U	0.00512 U	0.00513 U	0.00537 U	0.00539 U
1,3,5-Trimethylbenzene	mg/kg	0.00517 U	0.00564 U	0.00541 U	0.00512 U	0.00513 U	0.00537 U	0.00539 U
Acetone	mg/kg	0.0517 U	0.0564 U	0.0541 U	0.0512 UJ	0.0513 UJ	0.0537 UJ	0.0539 UJ
Benzene	mg/kg	0.00103 U	0.00113 U	0.00108 U	0.00102 U	0.00103 U	0.00107 U	0.00108 U
Dichloromethane [Methylene chloride]	mg/kg	0.0259 U	0.0282 U	0.027 U	0.0256 U	0.0256 U	0.0269 U	0.027 U
Ethylbenzene	mg/kg	0.00259 U	0.00282 U	0.0027 U	0.00256 U	0.00256 U	0.00269 U	0.0027 U
Naphthalene	mg/kg	0.0129 U	0.0141 U	0.0135 U	0.0128 UJ	0.0128 UJ	0.0134 UJ	0.0135 UJ
n-Propylbenzene	mg/kg	0.00517 U	0.00564 U	0.00541 U	0.00512 U	0.00513 U	0.00537 U	0.00539 U
Toluene	mg/kg	0.00517 U	0.00564 U	0.00541 U	0.00512 U	0.00513 U	0.00537 U	0.00539 U
Xylenes [total]	mg/kg	**0.00129 J**	**0.00106 J**	0.00703 U	0.00665 U	0.00667 U	0.00698 U	0.00701 U
PAHS (SW8270E SIM)								
Benzo[a]anthracene	mg/kg	0.0061 U	0.00638 U	0.00624 U	0.00607 U	0.00608 U	0.00622 U	0.00623 U
Benzo[a]pyrene	mg/kg	0.0061 UJ	0.00638 UJ	0.00624 UJ	0.00607 UJ	0.00608 UJ	0.00622 UJ	0.00623 UJ
Benzo[b]fluoranthene	mg/kg	**0.00199 J**	0.00638 U	**0.00417 J**	0.00607 U	0.00608 U	**0.00314 J**	**0.00214 J**
Benzo[g,h,i]perylene	mg/kg	0.0061 U	0.00638 U	0.00624 U	0.00607 UJ	0.00608 UJ	0.00622 UJ	0.00623 UJ
Chrysene	mg/kg	0.0061 U	0.00638 U	0.00624 U	0.00607 U	0.00608 U	0.00622 U	0.00623 U
Dibenzo[a,h]anthracene	mg/kg	0.0061 U	0.00638 U	0.00624 U	0.00607 UJ	0.00608 UJ	0.00622 UJ	0.00623 UJ
Indeno[1,2,3-cd]pyrene	mg/kg	0.0061 U	0.00638 U	0.00624 U	0.00607 UJ	0.00608 UJ	**0.00188 J-**	0.00623 UJ

	Location	SS-333-25	SS-333-26	SS-333-26	SS-333-27	SS-333-27	SS-333-28	SS-333-28
	Sample Name	SS-333-25-01	SS-333-26-0_5	SS-333-26-01	SS-333-27-0_5	SS-333-27-01	SS-333-28-0_5	SS-333-28-01
	Sample Date	9/21/2021	9/21/2021	9/21/2021	9/21/2021	9/21/2021	9/21/2021	9/21/2021
	Sample Depth	1 ft bgs	0.5 ft bgs	1 ft bgs	0.5 ft bgs	1 ft bgs	0.5 ft bgs	1 ft bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Phenanthrene	mg/kg	0.0061 U	0.00638 U	0.00624 U	0.00607 U	0.00608 U	0.00622 U	0.00623 U
Pyrene	mg/kg	0.0061 U	0.00638 U	0.00624 U	0.00607 U	0.00608 U	0.00622 U	0.00623 U
Aroclors (SW8082)								
Aroclor 1016	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1221	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1232	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	mg/kg	NA	NA	NA	NA	NA	NA	NA
Dioxins (SW8290A)								
WHO BIRD TEQ (ND=0)	ng/kg	NA	NA	NA	NA	NA	NA	NA
WHO TEQ (ND=0)	ng/kg	NA	NA	NA	NA	NA	NA	NA
Percent Solids (SM2530G)								
Percent Solids	%	**98.3**	**94**	**96.1**	**98.8**	**98.7**	**96.4**	**96.2**
Sulfur	%	NA	NA	NA	NA	NA	NA	NA

Bolded values represent
% = percent
-- = not analyzed
ft bgs = feet below ground surface
J = Estimated value.
J+ = Estimated value, biased high.
mg/kg = milligram(s) per kilogram
NA = Not analyzed.
PAH = polycyclic aromatic hydrocarbons
U = Analyte not detected.

	Area	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils
	Location	SS-333-29	SS-333-29	SS-333-30	SS-333-30	SS-333-31	SS-333-31	SS-333-32
	Sample Name	SS-333-29-0_5	SS-333-29-01	SS-333-30-0_5	SS-333-30-01	SS-333-31-0_5	SS-333-31-01	SS-333-32-0_5
	Sample Date	9/21/2021	9/21/2021	9/21/2021	9/21/2021	9/21/2021	9/21/2021	9/21/2021
	Sample Depth	0.5 ft bgs	1 ft bgs	0.5 ft bgs	1 ft bgs	0.5 ft bgs	1 ft bgs	0.5 ft bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Metals (SW6020A)								
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA
Antimony	mg/kg	3.03 U	3.03 U	**0.352 J**	**0.327 J**	3.04 U	3.07 U	**0.343 J**
Arsenic	mg/kg	**64.2**	**42.9**	**52.3**	**60.3**	**39.9**	**13.1**	**71.4**
Barium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	**0.122 J**	**0.0919 J**	**0.583 J**	**0.646 J**	**0.113 J**	1.02 U	**0.189 J**
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	**2.59 J**	**4.53 J**	**3.46 J**	**3.32 J**	**3.79 J**	**4.85 J**	**10.9**
Chromium [VI]	mg/kg	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	**14.3**	**11.9**	**6.12 J-**	**4.12 J-**	**12.2**	**6.86 J-**	**26.3**
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	**188**	**129**	**90.1**	**54**	**210**	**52.1**	**536**
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	**3230 J**	**2000 J**	**1410 J**	**820 J**	**2780 J**	**852 J**	**7920 J+**
Mercury	mg/kg	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	2.53 U	**0.191 J**	2.62 U	2.68 U	**0.194 J**	2.56 U	**0.257 J+**
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Thallium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	**62.7**	**91.3**	**68**	**91.6**	**43.5**	**21.4 J**	**85.6**
TPH (SW8015M)								
TPH-GRO (C6-C10)	mg/kg	**0.057 J+**	**0.0704 J+**	**0.0461 J+**	**0.0415 J+**	**0.0688 J+**	**0.0587 J+**	0.101 U
TPH-DRO (C10-C28)	mg/kg	4.04 UJ	4.05 UJ	4.2 UJ	4.29 UJ	4.06 UJ	4.09 UJ	4.06 U
TPH-ORO (C28-C40)	mg/kg	**3.03 J+**	**1.75 J+**	**3.77 J+**	**6.64 J**	**2.01 J+**	**1.38 J**	**1.13 J**
VOCs (SW8260D)								
1,2,4-Trimethylbenzene	mg/kg	0.0051 U	0.00512 U	0.0055 U	0.00572 U	0.00514 U	0.00523 U	0.00515 U
1,3,5-Trimethylbenzene	mg/kg	0.0051 U	0.00512 U	0.0055 U	0.00572 U	0.00514 U	0.00523 U	0.00515 U
Acetone	mg/kg	0.051 UJ	0.0512 UJ	0.055 UJ	0.0572 UJ	0.0514 UJ	0.0523 UJ	0.0515 U
Benzene	mg/kg	0.00102 U	0.00102 U	0.0011 U	0.00114 U	0.00103 U	0.00105 U	0.00103 U
Dichloromethane [Methylene chloride]	mg/kg	0.0255 U	0.0256 U	0.0275 U	0.0286 U	0.0257 U	0.0261 U	0.0257 U
Ethylbenzene	mg/kg	0.00255 U	0.00256 U	0.00275 U	0.00286 U	0.00257 U	0.00261 U	0.00257 U
Naphthalene	mg/kg	0.0128 UJ	0.0128 UJ	0.0137 UJ	0.0143 UJ	0.0129 UJ	0.0131 UJ	0.0129 UJ
n-Propylbenzene	mg/kg	0.0051 U	0.00512 U	0.0055 U	0.00572 U	0.00514 U	0.00523 U	0.00515 U
Toluene	mg/kg	0.0051 U	0.00512 U	0.0055 U	0.00572 U	**0.00152 J**	0.00523 U	0.00515 U
Xylenes [total]	mg/kg	0.00664 U	0.00665 U	0.00715 U	0.00744 U	0.00669 U	0.00679 U	0.00669 U
PAHS (SW8270E SIM)								
Benzo[a]anthracene	mg/kg	0.00606 U	0.00607 U	0.0063 U	0.00643 U	0.00609 U	0.00614 U	0.00609 U
Benzo[a]pyrene	mg/kg	0.00606 UJ	0.00607 UJ	0.0063 UJ	0.00643 UJ	0.00609 UJ	0.00614 UJ	0.00609 U
Benzo[b]fluoranthene	mg/kg	0.00606 U	0.00607 U	0.0063 U	0.00643 U	0.00609 U	0.00614 U	**0.00218 J**
Benzo[g,h,i]perylene	mg/kg	0.00606 UJ	0.00607 UJ	0.0063 UJ	0.00643 UJ	0.00609 UJ	0.00614 UJ	0.00609 U
Chrysene	mg/kg	0.00606 U	0.00607 U	0.0063 U	0.00643 U	0.00609 U	0.00614 U	0.00609 U
Dibenzo[a,h]anthracene	mg/kg	0.00606 UJ	0.00607 UJ	0.0063 UJ	0.00643 UJ	0.00609 UJ	0.00614 UJ	0.00609 U
Indeno[1,2,3-cd]pyrene	mg/kg	0.00606 UJ	0.00607 UJ	0.0063 UJ	0.00643 UJ	0.00609 UJ	0.00614 UJ	0.00609 U

	Location	SS-333-29	SS-333-29	SS-333-30	SS-333-30	SS-333-31	SS-333-31	SS-333-32
	Sample Name	SS-333-29-0_5	SS-333-29-01	SS-333-30-0_5	SS-333-30-01	SS-333-31-0_5	SS-333-31-01	SS-333-32-0_5
	Sample Date	9/21/2021	9/21/2021	9/21/2021	9/21/2021	9/21/2021	9/21/2021	9/21/2021
	Sample Depth	0.5 ft bgs	1 ft bgs	0.5 ft bgs	1 ft bgs	0.5 ft bgs	1 ft bgs	0.5 ft bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Phenanthrene	mg/kg	0.00606 U	0.00607 U	0.0063 U	0.00643 U	0.00609 U	0.00614 U	0.00609 U
Pyrene	mg/kg	0.00606 U	0.00607 U	0.0063 U	0.00643 U	0.00609 U	0.00614 U	0.00609 U
Aroclors (SW8082)								
Aroclor 1016	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1221	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1232	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	mg/kg	NA	NA	NA	NA	NA	NA	NA
Dioxins (SW8290A)								
WHO BIRD TEQ (ND=0)	ng/kg	NA	NA	NA	NA	NA	NA	NA
WHO TEQ (ND=0)	ng/kg	NA	NA	NA	NA	NA	NA	NA
Percent Solids (SM2530G)								
Percent Solids	%	**99**	**98.9**	**95.3**	**93.3**	**98.6**	**97.8**	**98.6**
Sulfur	%	NA	NA	NA	NA	NA	NA	NA

Bolded values represent
% = percent
-- = not analyzed
ft bgs = feet below ground surface
J = Estimated value.
J+ = Estimated value, biased high.
mg/kg = milligram(s) per kilogram
NA = Not analyzed.
PAH = polycyclic aromatic hydrocarbons
U = Analyte not detected.

	Area	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils	Drainage Dowstream Soils	Mill Site Dumps	Mill Site Dumps	Mill Site Dumps	Mill Site Dumps	Mill Site Dumps
	Location	SS-333-32	SS-333-34	SS-333-37	SS-333-38	SS-334-05	SS-334-05B	SS-334-05C	SS-334-06	SS-334-08
	Sample Name	SS-333-32-01	SS-333-34-0_5	SS-333-37-0_5	SS-333-38-0_5	SS-334-05-00	SS-334-05-00B	SS-334-05-00C	SS-334-06-00	SS-334-08-00
	Sample Date	9/21/2021	9/22/2021	9/23/2021	9/23/2021	9/20/2021	9/21/2021	9/21/2021	9/15/2021	9/15/2021
	Sample Depth	1 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Metals (SW6020A)										
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	mg/kg	**0.369 J**	**0.215 J**	3.12 U	**0.349 J**	**0.309 J-**	**0.192 J-**	**0.181 J-**	3.08 U	**0.341 J**
Arsenic	mg/kg	**59.6**	**12.8**	**17.6**	**76.6**	**12.8**	**23.3**	**10.4**	**6.44**	**104 J**
Barium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	**0.172 J**	**0.103 J**	**0.402 J**	**0.215 J**	**0.142 J**	**0.0996 J**	**0.181 J**	**0.112 J**	**0.357 J**
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	**14.1**	**7.53**	**8.91**	**12.2**	**10.9**	**10.2**	**6.9**	**13.2**	**4.48 J**
Chromium [VI]	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	**25.6**	**8.41**	**19**	**41.7**	**16.9**	**18.3**	**14.2**	**14.3**	**23.9**
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	**459**	**80.1 J-**	**140 J-**	**750**	**63.7 J**	**179 J**	**51.6**	**25.6**	**675 J**
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	**6800 J+**	**1000**	**1470**	**6560 J-**	**6100 J**	**1940 J**	**3160 J**	**419 J+**	**10200 J**
Mercury	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	**0.277 J+**	**0.265 J**	**0.345 J+**	**0.726 J**	**0.295 J+**	**0.217 J+**	**0.45 J**	**0.591 J+**	2.91 U
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	**89.6**	**52**	**120**	**130**	**96.2**	**123**	**104**	**63.3**	**151 J**
TPH (SW8015M)										
TPH-GRO (C6-C10)	mg/kg	0.102 U	**0.0382 J+**	**0.034 J+**	**0.0298 J+**	**0.0436 J+**	**0.0338 J+**	**0.0333 J+**	0.103 U	0.116 U
TPH-DRO (C10-C28)	mg/kg	4.06 U	4.06 U	4.16 U	4.06 U	4.08 UJ	**5.32 J-**	**2.4 J-**	4.11 UJ	**3.3 J-**
TPH-ORO (C28-C40)	mg/kg	**0.689 J**	4.06 U	4.16 U	**2.81 J**	**0.797 J**	**5.59 J+**	4.09 U	**5.92 J+**	**7.65 J+**
VOCs (SW8260D)										
1,2,4-Trimethylbenzene	mg/kg	0.00516 U	0.00515 U	0.0054 U	0.00514 U	0.00519 U	0.00554 U	0.00521 U	0.00528 U	0.00663 U
1,3,5-Trimethylbenzene	mg/kg	0.00516 U	0.00515 U	0.0054 U	0.00514 U	0.00519 U	0.00554 U	0.00521 U	0.00528 U	0.00663 U
Acetone	mg/kg	0.0516 U	0.0515 U	0.054 U	0.0514 U	0.0519 U	0.0554 U	0.0521 U	0.0528 U	0.0663 U
Benzene	mg/kg	0.00103 U	0.00103 U	0.00108 U	0.00103 U	0.00104 U	0.00111 U	0.00104 U	0.00106 U	0.00133 U
Dichloromethane [Methylene chloride]	mg/kg	0.0258 U	**0.0114 J**	**0.0139 J**	**0.012 J**	0.0259 U	0.0277 U	0.0261 U	0.0264 U	0.0331 U
Ethylbenzene	mg/kg	0.00258 U	0.00258 U	0.0027 U	0.00257 U	0.00259 U	0.00277 U	0.00261 U	0.00264 U	0.00331 U
Naphthalene	mg/kg	0.0129 UJ	0.0129 U	0.0135 U	0.0129 UJ	0.013 U	0.0139 U	0.013 U	0.0132 UJ	0.0166 UJ
n-Propylbenzene	mg/kg	0.00516 U	0.00515 U	0.0054 U	0.00514 U	0.00519 U	0.00554 U	0.00521 U	0.00528 U	0.00663 U
Toluene	mg/kg	0.00516 U	0.00515 U	0.0054 U	0.00514 U	0.00519 U	0.00554 U	0.00521 U	0.00528 U	0.00663 U
Xylenes [total]	mg/kg	0.0067 U	0.0067 U	0.00702 U	0.00669 U	0.00675 U	0.00721 U	0.00678 U	0.00686 U	0.00862 U
PAHS (SW8270E SIM)										
Benzo[a]anthracene	mg/kg	0.00609 U	0.00609 UJ	0.00624 UJ	**0.003 J**	0.00611 U	**0.00238 J**	0.00613 U	0.00617 U	0.00698 U
Benzo[a]pyrene	mg/kg	0.00609 U	0.00609 UJ	0.00624 UJ	**0.00218 J**	0.00611 UJ	**0.00208 J-**	0.00613 UJ	0.00617 U	0.00698 U
Benzo[b]fluoranthene	mg/kg	0.00609 U	0.00609 U	0.00624 U	**0.00354 J**	**0.00316 J**	**0.00346 J**	0.00613 U	0.00617 U	0.00698 U
Benzo[g,h,i]perylene	mg/kg	0.00609 U	0.00609 U	0.00624 U	**0.00372 J**	0.00611 U	**0.0026 J**	0.00613 U	0.00617 U	0.00698 U
Chrysene	mg/kg	0.00609 U	0.00609 U	0.00624 U	**0.00714**	**0.00287 J**	**0.00662**	0.00613 U	0.00617 U	0.00698 U
Dibenzo[a,h]anthracene	mg/kg	0.00609 U	0.00609 UJ	0.00624 UJ	0.00609 U	0.00611 U	0.00632 U	0.00613 U	0.00617 U	0.00698 U
Indeno[1,2,3-cd]pyrene	mg/kg	0.00609 U	0.00609 UJ	0.00624 UJ	**0.00212 J**	0.00611 U	0.00632 U	0.00613 U	0.00617 U	0.00698 U

	Location	SS-333-32	SS-333-34	SS-333-37	SS-333-38	SS-334-05	SS-334-05B	SS-334-05C	SS-334-06	SS-334-08
	Sample Name	SS-333-32-01	SS-333-34-0_5	SS-333-37-0_5	SS-333-38-0_5	SS-334-05-00	SS-334-05-00B	SS-334-05-00C	SS-334-06-00	SS-334-08-00
	Sample Date	9/21/2021	9/22/2021	9/23/2021	9/23/2021	9/20/2021	9/21/2021	9/21/2021	9/15/2021	9/15/2021
	Sample Depth	1 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Phenanthrene	mg/kg	0.00609 U	0.00609 U	0.00624 U	**0.00245 J**	**0.00253 J**	**0.00287 J**	0.00613 U	0.00617 U	0.00698 U
Pyrene	mg/kg	0.00609 U	0.00609 U	0.00624 U	**0.00366 J**	**0.00413 J**	**0.00284 J**	0.00613 U	0.00617 U	0.00698 U
Aroclors (SW8082)										
Aroclor 1016	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1221	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1232	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dioxins (SW8290A)										
WHO BIRD TEQ (ND=0)	ng/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
WHO TEQ (ND=0)	ng/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids (SM2530G)										
Percent Solids	%	**98.5**	**98.5**	**96.2**	**98.6**	**98.1**	**94.9**	**97.9**	**97.3**	**86**
Sulfur	%	NA	NA	NA	NA	NA	NA	NA	NA	NA

Bolded values represent
% = percent
-- = not analyzed
ft bgs = feet below ground surface
J = Estimated value.
J+ = Estimated value, biased high.
mg/kg = milligram(s) per kilogram
NA = Not analyzed.
PAH = polycyclic aromatic hydrocarbons
U = Analyte not detected.

Area		Mill Site Dumps	Mill Site Dumps	Mill Site Dumps	Mill Site Dumps	Mill Site Dumps	Mill Site Dumps	Pit Dumps	Pit Dumps	Pit Dumps	Pit Dumps	Pit Dumps	Fuel Farm	Fuel Farm
Location		SS-334-09	SS-334-10	SS-334-10	SS-334-15	SS-334-15	SS-334-17	SS-335-01	SS-335-02	SS-335-03	SS-335-04	SS-335-05	SS-336-01	SS-336-02
Sample Name		SS-334-09-00	SS-334-10-00	SS-334-10-00B	SS-334-15-00	SS-334-15-01	SS-334-17-01	SS-335-01-00	SS-335-02-00	SS-335-03-00	SS-335-04-00	SS-335-05-00	SS-336-01-00	SS-336-02-00
Sample Date		9/15/2021	9/14/2021	9/17/2021	9/23/2021	9/22/2021	9/23/2021	9/27/2021	9/27/2021	9/27/2021	9/27/2021	9/27/2021	9/26/2021	9/26/2021
Sample Depth		0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	1 ft bgs	1 ft bgs	0 -2 in bgs	0 -2 in bgs	0 -2 in bgs	0 -2 in bgs	0 -2 in bgs	0 - 2 in bgs	0 - 2 in bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Metals (SW6020A)														
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	mg/kg	**0.195 J**	**1.16 J**	**0.325 J**	**2.32 J**	**2.07 J**	**3.31 J-**	NA	NA	NA	NA	NA	3.01 U	**1.08 J**
Arsenic	mg/kg	**9.04**	**494 J+**	**76.5**	**858**	**1010 J+**	**1490 J+**	NA	NA	NA	NA	NA	**60.7**	**607**
Barium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	**0.0946 J**	**0.265 J**	**1.16**	**0.806 J**	**0.696 J**	**1.9**	NA	NA	NA	NA	NA	**0.16 J**	**2.4**
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	**15.3**	**10.1**	**14.6**	**8.29**	**9.64**	**9.05**	NA	NA	NA	NA	NA	**2.12 J**	**13.1**
Chromium [VI]	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	**15.8**	**1220**	**47.6**	**73.2**	**63.5**	**238**	NA	NA	NA	NA	NA	**14.1**	**119**
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	**25.1**	**21200 J**	**430**	**8340**	**7710**	**12400 J**	NA	NA	NA	NA	NA	**462**	**3910 J+**
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	**489 J+**	**64000 J**	**4640 J**	**106000 J+**	**97300 J+**	**142000 J**	NA	NA	NA	NA	NA	**4990**	**40700 J+**
Mercury	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	**0.422 J**	**0.523 J**	**0.282 J**	**0.213 J+**	**0.291 J+**	**0.459 J**	NA	NA	NA	NA	NA	2.51 U	**0.729 J**
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	**77.3**	**184 J**	**272**	**642**	**698**	**597 J-**	NA	NA	NA	NA	NA	**63.2**	**718**
TPH (SW8015M)														
TPH-GRO (C6-C10)	mg/kg	0.103 U	**0.0381 J+**	**0.052 J+**	0.105 U	0.118 U	**0.0489 J**	**0.038 J+**	**0.0445 J+**	**0.0604 J+**	**0.0401 J+**	**0.0461 J+**	12.5 U	**0.0481 J**
TPH-DRO (C10-C28)	mg/kg	4.1 UJ	**27**	**2.68 J-**	**1.8 J-**	**2.21 J**	**38.3 J-**	4.26 U	4.09 UJ	4.02 U	4.83 UJ	4.11 U	**24000**	**1760**
TPH-ORO (C28-C40)	mg/kg	**3.96 J+**	**74.6 J+**	**2.07 J**	**4.28 J-**	**4.3 J**	**12 J-**	**1.59 J**	4.09 UJ	**0.374 J**	**1.1 J-**	**1.07 J**	**104000 J+**	**6060**
VOCs (SW8260D)														
1,2,4-Trimethylbenzene	mg/kg	0.00525 U	0.00538 U	**0.00831**	0.00554 U	0.0068 U	0.00592 U	0.00565 U	0.00522 U	0.00504 U	0.00709 U	0.00528 U	**0.0335**	0.00515 U
1,3,5-Trimethylbenzene	mg/kg	0.00525 U	0.00538 U	0.0063 U	0.00554 U	0.0068 U	0.00592 U	0.00565 U	0.00522 U	0.00504 U	0.00709 U	0.00528 U	**0.0111 J**	0.00515 U
Acetone	mg/kg	0.0525 U	0.0538 UJ	0.063 UJ	0.0554 UJ	0.068 U	0.0592 UJ	0.0565 U	0.0522 U	0.0504 UJ	0.0709 UJ	0.0528 UJ	0.251 UJ	**0.391**
Benzene	mg/kg	0.00105 U	0.00108 U	0.00126 U	0.00111 U	0.00136 U	0.00118 U	0.00113 U	0.00104 U	0.00101 U	0.00142 U	**0.00215**	**0.00314 J**	0.00103 U
Dichloromethane [Methylene chloride]	mg/kg	0.0263 U	0.0269 U	0.0315 U	0.0277 U	0.034 U	0.0296 U	0.0282 U	0.0261 U	0.0252 U	0.0354 U	0.0264 U	0.125 U	0.0258 U
Ethylbenzene	mg/kg	0.00263 U	0.00269 U	0.00315 U	0.00277 U	0.0034 U	0.00296 U	0.00282 U	0.00261 U	0.00252 U	0.00354 U	0.00264 U	**0.00564 J**	0.00258 U
Naphthalene	mg/kg	0.0131 UJ	0.0134 U	**0.0965 J-**	0.0138 U	0.017 UJ	0.0148 U	0.0141 UJ	0.013 UJ	0.0126 U	0.0177 U	0.0132 U	0.0627 U	0.0129 U
n-Propylbenzene	mg/kg	0.00525 U	0.00538 U	0.0063 U	0.00554 U	0.0068 U	0.00592 U	0.00565 U	0.00522 U	0.00504 U	0.00709 U	0.00528 U	**0.00677 J**	0.00515 U
Toluene	mg/kg	0.00525 U	**0.00186 J**	0.0063 U	0.00554 U	0.0068 U	0.00592 U	0.00565 U	**0.00163 J**	0.00504 U	0.00709 U	0.00528 U	**0.0163 J**	0.00515 U
Xylenes [total]	mg/kg	0.00683 U	**0.00158 J**	**0.00312 J**	0.0072 U	0.00883 U	0.0077 U	0.00734 U	0.00678 U	0.00656 U	0.00921 U	0.00687 U	**0.0327**	**0.0016 J**
PAHS (SW8270E SIM)														
Benzo[a]anthracene	mg/kg	0.00615 U	**0.0304**	0.00678 U	0.00632 U	0.00708 U	**0.021**	NA	NA	NA	NA	NA	**27.2**	**0.535**
Benzo[a]pyrene	mg/kg	0.00615 U	**0.0118**	0.00678 U	0.00632 U	0.00708 U	**0.0213**	NA	NA	NA	NA	NA	**24.6 J-**	**0.46 J-**
Benzo[b]fluoranthene	mg/kg	0.00615 U	**0.0611**	**0.00289 J**	0.00632 U	**0.00592 J**	**0.0636**	NA	NA	NA	NA	NA	**20.4**	**0.463**
Benzo[g,h,i]perylene	mg/kg	0.00615 U	**0.0114**	0.00678 U	0.00632 U	**0.00303 J**	**0.023**	NA	NA	NA	NA	NA	**21.4**	**0.532**
Chrysene	mg/kg	0.00615 U	**0.0592**	**0.00301 J**	0.00632 U	**0.00414 J**	**0.0502**	NA	NA	NA	NA	NA	**87.8**	**0.979**
Dibenzo[a,h]anthracene	mg/kg	0.00615 U	**0.0029 J**	0.00678 U	0.00632 U	0.00708 U	**0.00599 J**	NA	NA	NA	NA	NA	**5.36 J-**	**0.138 J-**
Indeno[1,2,3-cd]pyrene	mg/kg	0.00615 U	**0.0308**	**0.00225 J**	0.00632 U	**0.00301 J**	**0.0277**	NA	NA	NA	NA	NA	**8.27**	**0.215**

	Location	SS-334-09	SS-334-10	SS-334-10	SS-334-15	SS-334-15	SS-334-17	SS-335-01	SS-335-02	SS-335-03	SS-335-04	SS-335-05	SS-336-01	SS-336-02
	Sample Name	SS-334-09-00	SS-334-10-00	SS-334-10-00B	SS-334-15-00	SS-334-15-01	SS-334-17-01	SS-335-01-00	SS-335-02-00	SS-335-03-00	SS-335-04-00	SS-335-05-00	SS-336-01-00	SS-336-02-00
	Sample Date	9/15/2021	9/14/2021	9/17/2021	9/23/2021	9/22/2021	9/23/2021	9/27/2021	9/27/2021	9/27/2021	9/27/2021	9/27/2021	9/26/2021	9/26/2021
	Sample Depth	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	1 ft bgs	1 ft bgs	0 -2 in bgs	0 -2 in bgs	0 -2 in bgs	0 -2 in bgs	0 -2 in bgs	0 - 2 in bgs	0 - 2 in bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Phenanthrene	mg/kg	0.00615 U	**0.0567**	0.00678 U	0.00632 U	0.00708 U	**0.0907**	NA	NA	NA	NA	NA	**1.19 J**	**0.338**
Pyrene	mg/kg	0.00615 U	**0.141**	**0.00278 J**	0.00632 U	**0.0054 J**	**0.088**	NA	NA	NA	NA	NA	**60.2**	**0.917**
Aroclors (SW8082)														
Aroclor 1016	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1221	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1232	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dioxins (SW8290A)														
WHO BIRD TEQ (ND=0)	ng/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
WHO TEQ (ND=0)	ng/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids (SM2530G)														
Percent Solids	%	**97.5**	**96.4**	**88.5**	**94.9**	**84.8**	**91.6**	**93.9**	**97.9**	**99.6**	**82.7**	**97.3**	**99.8**	**98.5**
Sulfur	%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Bolded values represent
% = percent
-- = not analyzed
ft bgs = feet below ground surface
J = Estimated value.
J+ = Estimated value, biased high.
mg/kg = milligram(s) per kilogram
NA = Not analyzed.
PAH = polycyclic aromatic hydrocarbons
U = Analyte not detected.

Area		Fuel Farm	Fuel Farm	Fuel Farm	Fuel Farm	Fuel Farm	Fuel Farm	Fuel Farm	Fuel Farm	Fuel Farm	Fuel Farm	Fuel Farm	Fuel Farm	Fuel Farm	Fuel Farm
Location		SS-336-03	SS-336-04	SS-336-05	SS-336-06	SS-336-07	SS-336-08	SS-336-09	SS-336-10	SS-336-11	SS-336-12	SS-336-13	SS-336-14	SS-336-15	SS-336-16
Sample Name		SS-336-03-0_5	SS-336-04-00	SS-336-05-00	SS-336-06-00	SS-336-07-00	SS-336-08-01	SS-336-09-00	SS-336-10-00	SS-336-11-0_5	SS-336-12-00	SS-336-13-0_5	SS-336-14-0_5	SS-336-15-0_5	SS-336-16-0_5
Sample Date		9/26/2021	9/26/2021	9/26/2021	9/26/2021	9/24/2021	9/24/2021	9/24/2021	9/24/2021	9/27/2021	9/27/2021	9/26/2021	9/24/2021	9/24/2021	9/24/2021
Sample Depth		0.5 ft bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	1 ft bgs	0 - 2 in bgs	0 - 2 in bgs	0.5 ft bgs	0 - 2 in bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Metals (SW6020A)															
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	mg/kg	**0.89 J**	3.46 U	**1.34 J+**	**0.185 J**	3.06 U	3.08 U	3.02 U	**0.542 J**	**0.673 J**	**1.06 J**	**0.21 J+**	**0.339 J**	**0.814 J**	**1.62 J**
Arsenic	mg/kg	**482**	**21.5**	**649**	**7.33 J+**	**14.2**	**39.8 J+**	**8.72**	**376**	**255**	**614**	**42.7**	**202**	**646**	**1980**
Barium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	**1.56**	1.15 U	**2.17**	1.01 U	1.02 U	**0.204 J**	**0.107 J**	**1.66**	**0.369 J**	**1.18**	**0.155 J**	**0.934 J**	**1.52**	**3.12**
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	**9.73**	**0.558 J**	**21**	**0.569 J+**	**0.344 J**	**3.53 J**	**3.54 J**	**7.11**	**17.3**	**40.1**	**9.66**	**8.01**	**17.9**	**3.37 J**
Chromium [VI]	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	**101**	**3.95 J**	**127**	**2.95 J+**	**3.1 J**	**18.5 J+**	**12**	**123**	**93.5**	**161**	**29.8**	**63.4**	**146**	**334**
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	**3540 J+**	**143**	**3900**	**69.4 J+**	**119 J+**	**321 J+**	**47.5 J+**	**2560 J+**	**2490**	**5780**	**327**	**1660 J+**	**6610 J+**	**28500 J+**
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	**36200 J+**	**1310 J+**	**44300**	**630 J+**	**1070 J+**	**2820 J+**	**508 J+**	**26400 J+**	**32700 J+**	**53800 J+**	**4120 J+**	**15100 J+**	**41300 J+**	**56400 J+**
Mercury	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	**0.556 J**	2.88 U	**0.55 J**	**0.212 J**	2.55 U	**0.374 J**	**0.596 J**	**0.594 J**	**0.297 J**	**0.519 J**	**0.307 J**	**0.527 J**	**0.462 J**	**0.677 J**
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	**521**	**17.9 J**	**795**	**14.2 J+**	**14 J**	**108 J+**	**104**	**523**	**213**	**446**	**146**	**327**	**460**	**260**
TPH (SW8015M)															
TPH-GRO (C6-C10)	mg/kg	**0.212**	14.8 U	0.101 U	12.6 U	12.8 U	**0.0642 J**	**0.037 J**	**0.0895 J**	**0.0703 J+**	**0.117 J+**	0.101 U	**0.0659 J**	0.101 U	**0.0622 J**
TPH-DRO (C10-C28)	mg/kg	**23400**	**241000**	**38 J-**	**144000 J+**	**164000 J+**	**801 J+**	4.02 U	**4.76**	**30.9**	**44.2**	**4 J**	**31.1**	**23.7**	**54**
TPH-ORO (C28-C40)	mg/kg	**44200**	**480000 J+**	**85.4 J**	**221000**	**227000**	**1540**	**0.972 J**	**14**	**63.6**	**76.3**	**19 J+**	**51.8**	**88.2**	**110**
VOCs (SW8260D)															
1,2,4-Trimethylbenzene	mg/kg	**0.0408**	**0.0518**	0.00511 U	**0.0688**	**0.658**	0.00528 U	0.00506 U	0.00504 U	0.00515 U	0.0051 U	0.00512 U	0.0051 U	0.00512 U	0.0051 U
1,3,5-Trimethylbenzene	mg/kg	**0.0128**	**0.0142 J**	0.00511 U	**0.024 J**	**0.216**	0.00528 U	0.00506 U	0.00504 U	0.00515 U	0.0051 U	0.00512 U	0.0051 U	0.00512 U	0.0051 U
Acetone	mg/kg	**0.13**	0.296 UJ	**0.0706 J**	**2.81 J**	**8.49 J**	0.0528 UJ	0.0506 U	0.0504 UJ	0.0515 UJ	0.051 UJ	0.0512 U	0.051 U	0.0512 U	0.051 UJ
Benzene	mg/kg	0.00102 U	**0.00607**	0.00102 UJ	**0.00909**	**0.0182**	0.00106 U	0.00101 U	0.00101 U	0.00103 U	0.00102 U	0.00102 U	0.00102 U	0.00102 U	0.00102 U
Dichloromethane [Methylene chloride]	mg/kg	0.0254 U	0.148 U	0.0256 U	0.126 U	**0.0968 J**	0.0264 U	0.0253 U	0.0252 U	0.0258 U	0.0255 U	0.0256 U	0.0255 U	0.0256 U	0.0255 U
Ethylbenzene	mg/kg	**0.00395**	**0.0104 J**	0.00256 UJ	**0.00771 J**	**0.0311**	0.00264 U	0.00253 U	0.00252 U	0.00258 U	0.00255 U	0.00256 U	0.00255 U	0.00256 U	0.00255 U
Naphthalene	mg/kg	**0.154**	**0.385**	0.0128 UJ	**0.0333 J**	**0.356**	0.0132 U	0.0127 U	0.0126 U	0.0129 U	0.0127 U	0.0128 U	0.0128 U	0.0128 U	0.0128 U
n-Propylbenzene	mg/kg	**0.00341 J**	**0.0074 J**	0.00511 UJ	**0.0116 J**	**0.0885**	0.00528 U	0.00506 U	0.00504 U	0.00515 U	0.0051 U	0.00512 U	0.0051 U	0.00512 U	0.0051 U
Toluene	mg/kg	**0.00324 J**	**0.0293 J**	**0.00141 J**	**0.0226 J**	**0.0353**	0.00528 U	0.00506 U	0.00504 U	0.00515 U	0.0051 U	0.00512 U	0.0051 U	0.00512 U	0.0051 U
Xylenes [total]	mg/kg	**0.0295**	**0.0697**	**0.00123 J**	**0.0353**	**0.118**	0.00686 U	0.00658 U	0.00655 U	0.0067 U	0.00662 U	0.00666 U	0.00663 U	0.00665 U	0.00664 U
PAHS (SW8270E SIM)															
Benzo[a]anthracene	mg/kg	**8.84**	**130**	**0.0644**	**44.6**	**140**	**0.477**	0.00604 U	**0.00706**	**0.189**	**0.0735**	**0.00482 J**	**0.00964**	**0.0659**	**0.441**
Benzo[a]pyrene	mg/kg	**5.56 J-**	**72.5 J-**	**0.0101 J-**	**28.5 J-**	**103**	**0.26**	0.00604 UJ	0.00602 U	**0.0703**	**0.0396**	**0.00498 J-**	**0.00468 J-**	**0.0303 J-**	**0.209**
Benzo[b]fluoranthene	mg/kg	**3.54**	**34.4**	**0.119**	**11.3**	**45.5**	**0.297**	0.00604 U	**0.0205**	**1.34**	**0.574**	**0.019**	**0.0345**	**0.0962**	**0.477**
Benzo[g,h,i]perylene	mg/kg	**3.45**	**37.5**	**0.0606**	**13.2**	**36.4**	**0.263**	0.00604 U	**0.00413 J**	**0.992**	**0.815**	**0.0149**	**0.0171**	**0.0691**	**0.283**
Chrysene	mg/kg	**16.1**	**194**	**0.21**	**63.9**	**211**	**0.732**	0.00604 U	**0.0242**	**0.566**	**0.162**	**0.0182**	**0.0446**	**0.225**	**1.23**
Dibenzo[a,h]anthracene	mg/kg	**1.01 J-**	**10.1 J-**	**0.0214 J-**	**3.65 J-**	**10**	**0.076**	0.00604 UJ	**0.00541 J**	**0.188**	**0.138**	**0.0026 J-**	**0.0048 J-**	**0.0269 J-**	**0.17**
Indeno[1,2,3-cd]pyrene	mg/kg	**1.33**	**13.9**	**0.0515**	**4.51 J+**	**17.2**	**0.131 J+**	0.00604 U	**0.00564 J**	**0.953**	**0.868**	**0.0117**	**0.014**	**0.0406**	**0.126**

	Location	SS-336-03	SS-336-04	SS-336-05	SS-336-06	SS-336-07	SS-336-08	SS-336-09	SS-336-10	SS-336-11	SS-336-12	SS-336-13	SS-336-14	SS-336-15	SS-336-16
	Sample Name	SS-336-03-0_5	SS-336-04-00	SS-336-05-00	SS-336-06-00	SS-336-07-00	SS-336-08-01	SS-336-09-00	SS-336-10-00	SS-336-11-0_5	SS-336-12-00	SS-336-13-0_5	SS-336-14-0_5	SS-336-15-0_5	SS-336-16-0_5
	Sample Date	9/26/2021	9/26/2021	9/26/2021	9/26/2021	9/24/2021	9/24/2021	9/24/2021	9/24/2021	9/27/2021	9/27/2021	9/26/2021	9/24/2021	9/24/2021	9/24/2021
	Sample Depth	0.5 ft bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	0 - 2 in bgs	1 ft bgs	0 - 2 in bgs	0 - 2 in bgs	0.5 ft bgs	0 - 2 in bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Phenanthrene	mg/kg	**14.7**	**402**	**0.132**	**90.2**	**455**	**0.524**	0.00604 U	**0.0159**	**0.351**	**0.0984**	**0.0108**	**0.0559**	**0.133**	**0.413**
Pyrene	mg/kg	**25.2**	**385**	**0.149**	**119**	**397**	**1.77**	0.00604 U	**0.00672**	**0.693**	**0.291**	**0.0167**	**0.0292**	**0.0858**	**0.297**
Aroclors (SW8082)															
Aroclor 1016	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1221	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1232	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dioxins (SW8290A)															
WHO BIRD TEQ (ND=0)	ng/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
WHO TEQ (ND=0)	ng/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids (SM2530G)															
Percent Solids	%	**99.1**	**86.7**	**98.9**	**99.2**	**98**	**97.3**	**99.4**	**99.6**	**98.5**	**99.1**	**98.8**	**99**	**98.8**	**99**
Sulfur	%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Bolded values represent
% = percent
-- = not analyzed
ft bgs = feet below ground surface
J = Estimated value.
J+ = Estimated value, biased high.
mg/kg = milligram(s) per kilogram
NA = Not analyzed.
PAH = polycyclic aromatic hydrocarbons
U = Analyte not detected.

	Area	Fuel Farm	Fuel Farm	Fuel Farm	Fuel Farm	Fuel Farm	Fuel Farm	Fuel Farm	Fuel Farm	Fuel Farm	Fuel Farm	Fuel Farm	Fuel Farm	Transformer Stands
	Location	SS-336-17	SS-336-18	SS-336-19	SS-336-20	SS-336-21	SS-336-22	SS-336-25	SS-336-26	SS-336-27	SS-336-29	SS-336-31	SS-336-32	SS-337-01
	Sample Name	SS-336-17-0_5	SS-336-18-0_5	SS-336-19-0_5	SS-336-20-00	SS-336-21-0_5	SS-336-22-00	SS-336-25-01	SS-336-26-0_5	SS-336-27-01	SS-336-29-01	SS-336-31-01	SS-336-32-01	SS-337-01-01
	Sample Date	9/24/2021	9/24/2021	9/24/2021	9/24/2021	9/24/2021	9/24/2021	9/26/2021	9/26/2021	9/28/2021	9/28/2021	9/28/2021	9/28/2021	9/17/2021
	Sample Depth	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0 - 2 in bgs	0.5 ft bgs	0 - 2 in bgs	1 ft bgs	0.5 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Metals (SW6020A)														
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	mg/kg	**2.72 J**	**1.73 J**	**1.54 J**	**3.76**	**0.305 J**	**0.579 J**	**0.33 J**	3.03 U	**0.424 J+**	**0.964 J+**	**0.232 J+**	**0.297 J+**	NA
Arsenic	mg/kg	**1660**	**1550**	**844**	**1020**	**518**	**429**	**98.1**	**15.1**	**83.2 J**	**433 J**	**86.1 J**	**77.7 J**	NA
Barium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	**3.36**	**3.96**	**3.33**	**5.67**	**0.878 J**	**1.85**	**0.316 J**	**0.139 J**	**0.253 J**	**0.869 J**	**0.251 J**	**0.246 J**	NA
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	**18.2**	**19.7**	**18**	**80.1**	**3.45 J**	**12.8**	**7.02**	**3.14 J**	**11.2**	**13.6**	**9.82**	**15.3**	NA
Chromium [VI]	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	**440**	**310**	**222**	**386**	**85.1**	**126**	**27.4**	**12.2**	**32.2 J**	**96.3**	**27**	**39.4**	NA
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	**17000 J+**	**19400 J+**	**8530 J+**	**10800 J+**	**3470 J+**	**3250 J+**	**906 J+**	**118 J+**	**918 J**	**4340 J**	**712 J**	**890 J**	NA
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	**48100 J+**	**56100 J+**	**34300 J+**	**55600 J+**	**22900 J+**	**33000 J+**	**7560 J+**	**12300 J+**	**7220 J**	**32100 J**	**5670 J**	**6300 J**	NA
Mercury	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	**0.7 J**	**0.612 J**	**0.563 J**	**0.579 J**	**0.342 J**	**0.765 J**	**0.344 J**	**0.334 J**	**0.411 J+**	**0.539 J+**	**0.554 J+**	**0.613 J+**	NA
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	**366**	**330**	**322**	**1900**	**283**	**588**	**128**	**96.8**	**148 J**	**328 J**	**192 J**	**300 J**	NA
TPH (SW8015M)														
TPH-GRO (C6-C10)	mg/kg	**0.152**	**0.175**	**0.147**	**0.0889 J**	**0.065 J**	**0.0599 J**	**0.0818 J**	**0.0876 J**	**0.0448 J+**	**0.132 J+**	**0.0731 J+**	**0.0573 J+**	NA
TPH-DRO (C10-C28)	mg/kg	**90**	**224**	**1240**	**63.1**	**18 J-**	**5.64 J-**	**2650**	**317**	**721**	**3960**	**8400**	**6.72**	NA
TPH-ORO (C28-C40)	mg/kg	**290**	**312**	**6660**	**245**	**86.6 J-**	**15.5 J-**	**4930**	**679**	**4360**	**11400**	**15800**	**14.8**	NA
VOCs (SW8260D)														
1,2,4-Trimethylbenzene	mg/kg	**0.00542**	**0.00187 J**	0.00508 U	0.00507 U	0.00535 U	0.00509 U	0.00527 U	0.0051 U	0.0054 U	0.00516 U	0.00512 U	0.00544 U	NA
1,3,5-Trimethylbenzene	mg/kg	0.00504 U	0.00505 U	0.00508 U	0.00507 U	0.00535 U	0.00509 U	0.00527 U	0.0051 U	0.0054 U	0.00516 U	0.00512 U	0.00544 U	NA
Acetone	mg/kg	0.0504 U	0.0505 UJ	0.0508 UJ	0.0507 UJ	0.0535 U	0.0509 U	0.0527 U	0.051 U	0.054 UJ	0.0516 UJ	0.0512 UJ	0.0544 UJ	NA
Benzene	mg/kg	0.00101 U	0.00101 U	0.00102 U	0.00101 U	0.00107 U	0.00102 U	0.00105 U	0.00102 U	0.00108 U	0.00103 U	0.00102 U	0.00109 U	NA
Dichloromethane [Methylene chloride]	mg/kg	0.0252 U	0.0253 U	0.0254 U	0.0253 U	0.0267 U	0.0255 U	0.0264 U	0.0255 U	**0.0117 J**	**0.0124 J**	**0.00932 J**	**0.0123 J**	NA
Ethylbenzene	mg/kg	**0.000782 J**	0.00253 U	0.00254 U	0.00253 U	0.00267 U	0.00255 U	0.00264 U	0.00255 U	0.0027 U	0.00258 U	0.00256 U	0.00272 U	NA
Naphthalene	mg/kg	**0.00532 J**	**0.00556 J**	0.0127 UJ	0.0127 U	0.0134 U	0.0127 U	0.0132 U	**0.0273**	0.0135 UJ	0.0129 UJ	0.0128 UJ	0.0136 UJ	NA
n-Propylbenzene	mg/kg	0.00504 U	0.00505 U	0.00508 U	0.00507 U	0.00535 U	0.00509 U	0.00527 U	0.0051 U	0.0054 U	0.00516 U	0.00512 U	0.00544 U	NA
Toluene	mg/kg	**0.0019 J**	0.00505 U	0.00508 U	0.00507 U	0.00535 U	**0.00158 J**	0.00527 U	0.0051 U	0.0054 U	0.00516 U	0.00512 U	0.00544 U	NA
Xylenes [total]	mg/kg	**0.00892**	**0.00182 J**	0.0066 U	0.00659 U	0.00695 U	**0.00125 J**	0.00685 U	0.00664 U	0.00703 U	0.00671 U	0.00666 U	0.00707 U	NA
PAHS (SW8270E SIM)														
Benzo[a]anthracene	mg/kg	**0.179**	**1.33**	**0.078**	**0.0995**	**0.0695**	**0.0234**	**1.53**	0.00606 U	0.0624 U	**0.338**	**5.21**	**0.0124**	NA
Benzo[a]pyrene	mg/kg	**0.125 J-**	**0.648 J-**	**0.0602 J-**	**0.0517 J-**	**0.0397 J-**	**0.00583 J-**	**0.981 J-**	0.00606 UJ	0.0624 U	**0.229**	**2.07**	**0.0105**	NA
Benzo[b]fluoranthene	mg/kg	**0.135**	**0.739**	**0.111**	**0.158**	**0.177**	**0.0633**	**0.548**	**0.00764**	**0.0261 J**	**0.289**	**1.34**	**0.0236**	NA
Benzo[g,h,i]perylene	mg/kg	**0.122**	**0.589**	**0.0971**	**0.105**	**0.124**	**0.0336**	**0.789**	0.00606 U	**0.0409 J**	**0.278**	**1.66**	**0.0162**	NA
Chrysene	mg/kg	**0.495**	**3.28**	**0.271**	**0.35**	**0.235**	**0.0811**	**2.3**	0.00606 U	**0.0244 J**	**0.583**	**6.24**	**0.0346**	NA
Dibenzo[a,h]anthracene	mg/kg	**0.0659 J-**	**0.368 J-**	**0.0355 J-**	**0.0389 J-**	**0.0327 J-**	**0.0117 J-**	**0.191 J-**	0.00606 UJ	0.0624 U	**0.082**	**0.402**	**0.00512 J**	NA
Indeno[1,2,3-cd]pyrene	mg/kg	**0.0465**	**0.206**	**0.0538**	**0.0652**	**0.103**	**0.0286**	**0.259 J**	0.00606 U	0.0624 U	**0.172**	**0.569**	**0.0134**	NA

	Location	SS-336-17	SS-336-18	SS-336-19	SS-336-20	SS-336-21	SS-336-22	SS-336-25	SS-336-26	SS-336-27	SS-336-29	SS-336-31	SS-336-32	SS-337-01
	Sample Name	SS-336-17-0_5	SS-336-18-0_5	SS-336-19-0_5	SS-336-20-00	SS-336-21-0_5	SS-336-22-00	SS-336-25-01	SS-336-26-0_5	SS-336-27-01	SS-336-29-01	SS-336-31-01	SS-336-32-01	SS-337-01-01
	Sample Date	9/24/2021	9/24/2021	9/24/2021	9/24/2021	9/24/2021	9/24/2021	9/26/2021	9/26/2021	9/28/2021	9/28/2021	9/28/2021	9/28/2021	9/17/2021
	Sample Depth	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0 - 2 in bgs	0.5 ft bgs	0 - 2 in bgs	1 ft bgs	0.5 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Phenanthrene	mg/kg	**0.204**	**1.49**	**0.0991**	**0.12**	**0.0673**	**0.0556**	**2.21**	**0.00326 J**	**0.0243 J**	**0.356**	**9.26**	**0.0128**	NA
Pyrene	mg/kg	**0.141**	**0.868**	**0.0901**	**0.128**	**0.127**	**0.0511**	**4.21**	**0.00499 J**	**0.0257 J**	**0.82**	**12.6**	**0.0197**	NA
Aroclors (SW8082)														
Aroclor 1016	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0361 U
Aroclor 1221	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0361 U
Aroclor 1232	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0361 U
Aroclor 1242	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0361 U
Aroclor 1248	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.018 U
Aroclor 1254	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.018 U
Aroclor 1260	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.018 U
Dioxins (SW8290A)														
WHO BIRD TEQ (ND=0)	ng/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
WHO TEQ (ND=0)	ng/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids (SM2530G)														
Percent Solids	%	**99.6**	**99.5**	**99.2**	**99.3**	**96.7**	**99.1**	**97.4**	**99**	**96.1**	**98.4**	**98.8**	**95.8**	**94.3**
Sulfur	%	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Bolded values represent
% = percent
-- = not analyzed
ft bgs = feet below ground surface
J = Estimated value.
J+ = Estimated value, biased high.
mg/kg = milligram(s) per kilogram
NA = Not analyzed.
PAH = polycyclic aromatic hydrocarbons
U = Analyte not detected.

	Area	Transformer Stands	Transformer Stands	Transformer Stands	Transformer Stands	Transformer Stands	Transformer Stands	Transformer Stands	Transformer Stands	Overburden Affected-Tail
	Location	SS-337-02	SS-337-03	SS-337-04	SS-337-05	SS-337-06	SS-337-07	SS-337-08	SS-337-09	TA-22-03
	Sample Name	SS-337-02-01	SS-337-03-0_5	SS-337-04-0_5	SS-337-05-0_5	SS-337-06-0_5	SS-337-07-0_5	SS-337-08-0_5	SS-337-09-0_5	TA-22-03-00
	Sample Date	9/15/2021	9/24/2021	9/24/2021	9/24/2021	9/24/2021	9/24/2021	9/24/2021	9/24/2021	9/20/2021
	Sample Depth	1 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0 - 2 in bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Metals (SW6020A)										
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	**5.56**
Arsenic	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	**7690 J**
Barium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	**16**
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	**8.64**
Chromium [VI]	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	**228**
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	**2870**
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	**81500 J+**
Mercury	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	**2.08 J**
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	**2210**
TPH (SW8015M)										
TPH-GRO (C6-C10)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	0.109 U
TPH-DRO (C10-C28)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	4.38 UJ
TPH-ORO (C28-C40)	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	**2.12 J**
VOCs (SW8260D)										
1,2,4-Trimethylbenzene	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	0.00594 U
1,3,5-Trimethylbenzene	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	0.00594 U
Acetone	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	0.0594 U
Benzene	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	0.00119 U
Dichloromethane [Methylene chloride]	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	0.0297 U
Ethylbenzene	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	0.00297 U
Naphthalene	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	0.0149 UJ
n-Propylbenzene	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	0.00594 U
Toluene	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	0.00594 U
Xylenes [total]	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	0.00772 U
PAHS (SW8270E SIM)										
Benzo[a]anthracene	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	0.00656 U
Benzo[a]pyrene	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	0.00656 UJ
Benzo[b]fluoranthene	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	0.00656 UJ
Benzo[g,h,i]perylene	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	0.00656 UJ
Chrysene	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	0.00656 U
Dibenzo[a,h]anthracene	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	0.00656 UJ
Indeno[1,2,3-cd]pyrene	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	0.00656 UJ

	Location	SS-337-02	SS-337-03	SS-337-04	SS-337-05	SS-337-06	SS-337-07	SS-337-08	SS-337-09	TA-22-03
	Sample Name	SS-337-02-01	SS-337-03-0_5	SS-337-04-0_5	SS-337-05-0_5	SS-337-06-0_5	SS-337-07-0_5	SS-337-08-0_5	SS-337-09-0_5	TA-22-03-00
	Sample Date	9/15/2021	9/24/2021	9/24/2021	9/24/2021	9/24/2021	9/24/2021	9/24/2021	9/24/2021	9/20/2021
	Sample Depth	1 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0.5 ft bgs	0 - 2 in bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Phenanthrene	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	0.00656 U
Pyrene	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	0.00656 U
Aroclors (SW8082)										
Aroclor 1016	mg/kg	0.0345 UJ	0.0344 U	0.0346 U	0.0347 U	0.0348 U	0.0345 U	0.0349 U	0.0361 U	NA
Aroclor 1221	mg/kg	0.0345 UJ	0.0344 U	0.0346 U	0.0347 U	0.0348 U	0.0345 U	0.0349 U	0.0361 U	NA
Aroclor 1232	mg/kg	0.0345 UJ	0.0344 U	0.0346 U	0.0347 U	0.0348 U	0.0345 U	0.0349 U	0.0361 U	NA
Aroclor 1242	mg/kg	0.0345 UJ	0.0344 U	0.0346 U	0.0347 U	0.0348 U	0.0345 U	0.0349 U	0.0361 U	NA
Aroclor 1248	mg/kg	0.0172 UJ	0.0172 UJ	0.0173 UJ	0.0173 UJ	0.0174 UJ	0.0172 UJ	0.0175 UJ	0.018 UJ	NA
Aroclor 1254	mg/kg	0.0172 UJ	0.0172 UJ	0.0173 UJ	0.0173 UJ	0.0174 UJ	0.0172 UJ	0.0175 UJ	0.018 UJ	NA
Aroclor 1260	mg/kg	0.0172 UJ	0.0172 UJ	0.0173 UJ	**0.155 J-**	0.0174 UJ	0.0172 UJ	0.0175 UJ	0.018 UJ	NA
Dioxins (SW8290A)										
WHO BIRD TEQ (ND=0)	ng/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
WHO TEQ (ND=0)	ng/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Solids (SM2530G)										
Percent Solids	%	**98.6**	**98.9**	**98.2**	**98.1**	**97.6**	**98.6**	**97.4**	**94.3**	**91.4**
Sulfur	%	NA	NA	NA	NA	NA	NA	NA	NA	NA

Bolded values represent
% = percent
-- = not analyzed
ft bgs = feet below ground surface
J = Estimated value.
J+ = Estimated value, biased high.
mg/kg = milligram(s) per kilogram
NA = Not analyzed.
PAH = polycyclic aromatic hydrocarbons
U = Analyte not detected.

	Area	Overburden Affected-Tail	Overburden Affected-Tail	Overburden Affected-Tail	Overburden Affected-Tail	Overburden Affected-Tail	Overburden Affected-Tail	Overburden Affected-Tail
	Location	TA-22-03	TA-22-04	TA-22-05	TA-22-06	TA-22-07	TA-22-08	TA-22-09
	Sample Name	TA-22-03-01	TA-22-04-01	TA-22-05-01	TA-22-06-01	TA-22-07-01	TA-22-08-01	TA-22-09-01
	Sample Date	9/20/2021	9/20/2021	9/20/2021	9/20/2021	9/20/2021	9/20/2021	9/20/2021
	Sample Depth	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Metals (SW6020A)								
Aluminum	mg/kg	NA	NA	NA	NA	NA	NA	NA
Antimony	mg/kg	**0.319 J**	**1.28 J-**	**1.1 J-**	**1.61 J-**	**1.39 J-**	**1.78 J-**	**1.32 J-**
Arsenic	mg/kg	**26.8 J-**	**579**	**438**	**549**	**275**	**466**	**358**
Barium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Beryllium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Cadmium	mg/kg	**0.256 J**	**0.529 J**	**0.625 J**	**0.603 J**	**0.151 J**	**0.439 J**	**0.357 J**
Calcium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Chromium	mg/kg	**9.91**	**6.46**	**6.45**	**6.05**	**3.98 J**	**5.67**	**5.23**
Chromium [VI]	mg/kg	NA	NA	NA	NA	NA	NA	NA
Copper	mg/kg	**25.4**	**72.2**	**72.4**	**168**	**233**	**111**	**116**
Iron	mg/kg	NA	NA	NA	NA	NA	NA	NA
Lead	mg/kg	**292**	**2580**	**2420**	**4620**	**4990**	**4930**	**4220**
Magnesium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Manganese	mg/kg	**3470 J+**	**36300 J**	**34200 J**	**66000 J**	**67000 J**	**71400 J**	**63700 J**
Mercury	mg/kg	NA	NA	NA	NA	NA	NA	NA
Potassium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Selenium	mg/kg	**0.522 J**	**0.281 J**	**0.306 J**	**0.216 J**	**0.196 J**	**0.23 J**	**0.263 J**
Silver	mg/kg	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Thallium	mg/kg	NA	NA	NA	NA	NA	NA	NA
Zinc	mg/kg	**202**	**333**	**338**	**317**	**174**	**317**	**284**
TPH (SW8015M)								
TPH-GRO (C6-C10)	mg/kg	0.104 U	**0.0654 J+**	**0.139 J+**	**0.0582 J+**	**0.0359 J+**	**0.0453 J+**	**0.0428 J+**
TPH-DRO (C10-C28)	mg/kg	4.15 UJ	**1.87 J-**	**2.33 J-**	**7.6 J-**	**7.65 J-**	**9.29 J-**	**11.3 J-**
TPH-ORO (C28-C40)	mg/kg	**3.92 J**	**1.32 J**	**2.11 J**	**5.92**	**5.38**	**3.81 J**	**2.75 J**
VOCs (SW8260D)								
1,2,4-Trimethylbenzene	mg/kg	0.00537 U	0.00539 U	0.00555 U	0.00516 U	0.00528 U	0.0053 U	0.00529 U
1,3,5-Trimethylbenzene	mg/kg	0.00537 U	0.00539 U	0.00555 U	0.00516 U	0.00528 U	0.0053 U	0.00529 U
Acetone	mg/kg	0.0537 U	0.0539 U	**0.0692**	0.0516 U	0.0528 U	0.053 U	0.0529 U
Benzene	mg/kg	0.00107 U	0.00108 U	0.00111 U	0.00103 U	0.00106 U	0.00106 U	0.00106 U
Dichloromethane [Methylene chloride]	mg/kg	0.0269 U	0.027 U	0.0278 U	0.0258 U	0.0264 U	0.0265 U	0.0265 U
Ethylbenzene	mg/kg	0.00269 U	0.0027 U	0.00278 U	0.00258 U	0.00264 U	0.00265 U	0.00265 U
Naphthalene	mg/kg	0.0134 UJ	0.0135 U	0.0139 U	0.0129 U	0.0132 U	0.0133 U	0.0132 U
n-Propylbenzene	mg/kg	0.00537 U	0.00539 U	0.00555 U	0.00516 U	0.00528 U	0.0053 U	0.00529 U
Toluene	mg/kg	0.00537 U	0.00539 U	**0.00198 J**	0.00516 U	0.00528 U	0.0053 U	0.00529 U
Xylenes [total]	mg/kg	0.00699 U	0.00701 U	**0.00214 J**	0.0067 U	0.00686 U	0.0069 U	0.00688 U
PAHS (SW8270E SIM)								
Benzo[a]anthracene	mg/kg	0.00622 U	0.00624 U	0.00633 U	0.00609 U	0.00617 U	0.00618 U	0.00618 U
Benzo[a]pyrene	mg/kg	0.00622 U	0.00624 UJ	0.00633 UJ	0.00609 UJ	0.00617 UJ	0.00618 UJ	0.00618 UJ
Benzo[b]fluoranthene	mg/kg	0.00622 U	**0.00299 J**	**0.00386 J**	**0.0127**	**0.00294 J**	**0.00791**	**0.00283 J**
Benzo[g,h,i]perylene	mg/kg	0.00622 U	0.00624 U	0.00633 U	**0.00661**	0.00617 U	**0.00557 J**	**0.00185 J**
Chrysene	mg/kg	0.00622 U	0.00624 U	0.00633 U	**0.00455 J**	0.00617 U	**0.0054 J**	0.00618 U
Dibenzo[a,h]anthracene	mg/kg	0.00622 U	0.00624 U	0.00633 U	0.00609 U	0.00617 U	0.00618 U	0.00618 U
Indeno[1,2,3-cd]pyrene	mg/kg	0.00622 U	0.00624 U	0.00633 U	**0.00801**	0.00617 U	**0.00518 J**	0.00618 U

	Location	TA-22-03	TA-22-04	TA-22-05	TA-22-06	TA-22-07	TA-22-08	TA-22-09
	Sample Name	TA-22-03-01	TA-22-04-01	TA-22-05-01	TA-22-06-01	TA-22-07-01	TA-22-08-01	TA-22-09-01
	Sample Date	9/20/2021	9/20/2021	9/20/2021	9/20/2021	9/20/2021	9/20/2021	9/20/2021
	Sample Depth	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs	1 ft bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**	**Result**
Phenanthrene	mg/kg	0.00622 U	0.00624 U	0.00633 U	0.00609 U	0.00617 U	**0.00399 J**	0.00618 U
Pyrene	mg/kg	0.00622 U	0.00624 U	0.00633 U	**0.00235 J**	0.00617 U	**0.00254 J**	0.00618 U
Aroclors (SW8082)								
Aroclor 1016	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1221	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1232	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1242	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1254	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aroclor 1260	mg/kg	NA	NA	NA	NA	NA	NA	NA
Dioxins (SW8290A)								
WHO BIRD TEQ (ND=0)	ng/kg	NA	NA	NA	NA	NA	NA	NA
WHO TEQ (ND=0)	ng/kg	NA	NA	NA	NA	NA	NA	NA
Percent Solids (SM2530G)								
Percent Solids	%	**96.4**	**96.2**	**94.8**	**98.5**	**97.3**	**97.1**	**97.2**
Sulfur	%	NA	NA	NA	NA	NA	NA	NA

Bolded values represent
% = percent
-- = not analyzed
ft bgs = feet below ground surface
J = Estimated value.
J+ = Estimated value, biased high.
mg/kg = milligram(s) per kilogram
NA = Not analyzed.
PAH = polycyclic aromatic hydrocarbons
U = Analyte not detected.

	Area	Overburden Affected-Tail	Waste Rock	Waste Rock	Waste Rock
	Location	TA-22-11	WR02N-TSP09	WR05-TSP11	WR06-TSP12
	Sample Name	TA-22-11-01	WR02N-TSP09-12	WR05-TSP11-12	WR06-TSP12-12
	Sample Date	9/20/2021	1/18/2021	1/18/2021	1/18/2021
	Sample Depth	1 ft bgs	12 in bgs	12 in bgs	12 in bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**
Metals (SW6020A)					
Aluminum	mg/kg	NA	**13500**	**21000**	**8240**
Antimony	mg/kg	**0.249 J-**	3.97 U	3.97 U	3.97 U
Arsenic	mg/kg	**50.4**	**95**	**148**	**140**
Barium	mg/kg	NA	**119**	**105**	**87.6**
Beryllium	mg/kg	NA	0.0274 U	0.0274 U	0.0274 U
Cadmium	mg/kg	**0.202 J**	**1.6**	**0.6**	**3.5**
Calcium	mg/kg	NA	**154000**	**129000**	**176000**
Chromium	mg/kg	**8.75**	**16**	**25**	**11**
Chromium [VI]	mg/kg	NA	NA	NA	NA
Copper	mg/kg	**24.1**	**11**	**13**	**10**
Iron	mg/kg	NA	**9720**	**18900**	**6840**
Lead	mg/kg	**365**	**224**	**68**	**379**
Magnesium	mg/kg	NA	**11600**	**20500**	**10800**
Manganese	mg/kg	**10300 J**	**3350**	**1350**	**4750**
Mercury	mg/kg	NA	0.0147 UJ	0.0147 UJ	0.0147 UJ
Potassium	mg/kg	NA	**8620**	**12700**	**5750**
Selenium	mg/kg	**0.457 J**	4.05 U	4.05 U	4.05 U
Silver	mg/kg	NA	1.04 UJ	**20 J**	1.04 UJ
Sodium	mg/kg	NA	**2690**	**1990**	**990**
Thallium	mg/kg	NA	2.29 U	2.29 U	2.29 U
Zinc	mg/kg	**131**	**432**	**142**	**531**
TPH (SW8015M)					
TPH-GRO (C6-C10)	mg/kg	**0.0408 J+**	NA	NA	NA
TPH-DRO (C10-C28)	mg/kg	4.1 UJ	NA	NA	NA
TPH-ORO (C28-C40)	mg/kg	**1.18 J**	NA	NA	NA
VOCs (SW8260D)					
1,2,4-Trimethylbenzene	mg/kg	**0.00751**	NA	NA	NA
1,3,5-Trimethylbenzene	mg/kg	0.00525 U	NA	NA	NA
Acetone	mg/kg	0.0525 U	NA	NA	NA
Benzene	mg/kg	0.00105 U	NA	NA	NA
Dichloromethane [Methylene chloride]	mg/kg	0.0263 U	NA	NA	NA
Ethylbenzene	mg/kg	0.00263 U	NA	NA	NA
Naphthalene	mg/kg	**0.00549 J-**	NA	NA	NA
n-Propylbenzene	mg/kg	**0.00197 J**	NA	NA	NA
Toluene	mg/kg	0.00525 U	NA	NA	NA
Xylenes [total]	mg/kg	0.00683 U	NA	NA	NA
PAHS (SW8270E SIM)					
Benzo[a]anthracene	mg/kg	0.00615 U	NA	NA	NA
Benzo[a]pyrene	mg/kg	0.00615 UJ	NA	NA	NA
Benzo[b]fluoranthene	mg/kg	**0.0064**	NA	NA	NA
Benzo[g,h,i]perylene	mg/kg	**0.00253 J**	NA	NA	NA
Chrysene	mg/kg	**0.00432 J**	NA	NA	NA
Dibenzo[a,h]anthracene	mg/kg	0.00615 U	NA	NA	NA
Indeno[1,2,3-cd]pyrene	mg/kg	**0.00226 J**	NA	NA	NA

	Location	TA-22-11	WR02N-TSP09	WR05-TSP11	WR06-TSP12
	Sample Name	TA-22-11-01	WR02N-TSP09-12	WR05-TSP11-12	WR06-TSP12-12
	Sample Date	9/20/2021	1/18/2021	1/18/2021	1/18/2021
	Sample Depth	1 ft bgs	12 in bgs	12 in bgs	12 in bgs
Analyte	**Unit**	**Result**	**Result**	**Result**	**Result**
Phenanthrene	mg/kg	**0.00289 J**	NA	NA	NA
Pyrene	mg/kg	**0.00339 J**	NA	NA	NA
Aroclors (SW8082)					
Aroclor 1016	mg/kg	NA	NA	NA	NA
Aroclor 1221	mg/kg	NA	NA	NA	NA
Aroclor 1232	mg/kg	NA	NA	NA	NA
Aroclor 1242	mg/kg	NA	NA	NA	NA
Aroclor 1248	mg/kg	NA	NA	NA	NA
Aroclor 1254	mg/kg	NA	NA	NA	NA
Aroclor 1260	mg/kg	NA	NA	NA	NA
Dioxins (SW8290A)					
WHO BIRD TEQ (ND=0)	ng/kg	NA	NA	NA	NA
WHO TEQ (ND=0)	ng/kg	NA	NA	NA	NA
Percent Solids (SM2530G)					
Percent Solids	%	**97.5**	NA	NA	NA
Sulfur	%	NA	**9.3**	**6.76**	**11.3**

Bolded values represent
% = percent
-- = not analyzed
ft bgs = feet below ground surface
J = Estimated value.
J+ = Estimated value, biased high.
mg/kg = milligram(s) per kilogram
NA = Not analyzed.
PAH = polycyclic aromatic hydrocarbons
U = Analyte not detected.