Analysis of Brownfield Cleanup Alternatives (ABCA)

Bonanza Park Property
1665 Bonanza Drive
Park City, Utah

August 15, 2024 | Terracon Project No. 61247147

Prepared for:
Park City Municipal Corporation
Park City, Utah

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August 15, 2024

Park City Municipal Corporation
PO Box 1480
445 Marsac Avenue
Park City, UT 84060

Attn: Mr. Ryan Blair
P: (385) 290-7703
E: ryan.blair@parkcity.org

Re: Analysis of Brownfields Cleanup Alternatives (ABCA)
Bonanza Park Property
1665 Bonanza Drive
Park City, Summit County, Utah
Terracon Project No. 61247147

Dear Mr. Blair:

Terracon Consultants, Inc. (Terracon) presents to Park City Municipal Corporation this Analysis of Brownfield Cleanup Alternatives (ABCA) as part of cleanup design for the above-referenced Site. This cleanup design activity was performed following assessment of the site under a Brownfields Assessment Grant (EPA Cooperative Agreement #95815230).

In the event a Brownfields Cleanup Grant is sought to assist with cleanup of the site, funding guidance requires the applicant to provide the community with notice of its intent to apply for an EPA Brownfields Cleanup Grant and allow the community an opportunity to comment on the draft proposal. In addition, the EPA Brownfields Cleanup funding proposal must include, as an attachment, a draft ABCA that summarizes information about the Site and contamination issues, cleanup standards, applicable laws, cleanup alternatives considered, and the proposed cleanup.

The ABCA must include information on the effectiveness, the ability of the grantee to implement each alternative, the cost of each proposed cleanup alternative and an analysis of the reasonableness of the various cleanup alternatives considered, including the one chosen. The ABCA is intended as a brief preliminary document summarizing the larger and more detailed technical and financial evaluations performed in addressing each of these areas. The ABCA may be modified technically and financially or in more depth relative to each of these areas upon award of funding and in response to community interaction.

Cleanup alternatives were evaluated in accordance with EPA protocols and general guidance required prior to implementation of a cleanup design using EPA Brownfields Grant funding.

More specifically, this ABCA summarizes viable cleanup alternatives based on Site-specific conditions, technical feasibility, and preliminary cost/benefit analyses. Specific cleanup alternatives and associated recommendations are presented in the applicable sections of this report.

Terracon appreciates this opportunity to continue to provide environmental consulting services for Park City Municipal Corporation in support of Brownfields redevelopment. Should you have any questions or require additional information, please do not hesitate to contact our office at (801) 545-8500.

Sincerely,
Terracon Consultants, Inc.

Andy King
Senior Project Manager

Amy Austin
Authorized Project Reviewer

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1.0 Introduction and Background

Terracon Consultants, Inc. (Terracon) has prepared this Analysis of Brownfield Cleanup Alternatives (ABCA) on behalf of Park City Municipal Corporation (PCMC) for the Bonanza Park property. The site includes 5.43 acres on nine parcels located at 1665 Bonanza Drive in Park City, Utah (Exhibits 1 and 2, Appendix A). The site is currently vacant. Several environmental investigations were previously conducted on the site, including assessment under an EPA Brownfields Assessment Grant following EPA approval by a Site Eligibility Determination Outline (EPA Region 8, August 17, 2023).

This ABCA has been prepared in the event PCMC would like the option to pursue Brownfields funding to support redevelopment of the Site.

1.1 Previous Investigations

Multiple environmental investigations were previously conducted at the site. These investigations included a Phase I Environmental Site Assessment (ESA) and Limited Site Investigation (LSI) conducted at the site by Terracon in September 2017 (Terracon 2017a and 2017b, respectively), and an underground storage tank (UST) closure (Maverik 2020). Exhibit 2 displays previous investigation sample locations. These investigations identified the presence of metals-impacted fill soils, localized petroleum impacts to groundwater, and the potential for historical releases from a former automotive service and repair facility. Based on the historical review, the site appeared to be vacant until approximately 1967. One building was developed on present-day 1401 Kearns Blvd by 1976. Three additional buildings were developed on present-day 1420 and 1490 Munchkin Road from 1978–1983. Four additional buildings were developed on the eastern and northern portion of the site from 1993–2009. Silver King Coffee was present in the northern parking area by 2011. All buildings on the site except for the former Maverik building were demolished between September 2020 and August 2021.

Under an EPA Brownfields Community-Wide Assessment Grant (awarded to the Utah Department of Environmental Quality/Division of Environmental Response & Remediation, EPA Cooperative Agreement #95815230), Terracon conducted a Phase II ESA in 2024 (Terracon, 2024) to further assess soil and groundwater impacts at the site. With the cumulative data sets from the Phase II ESA and prior investigations, the nature and overall extent of impacts to soil and groundwater were defined.

1.2 Summary of Identified Impacts

Previous investigations identified the presence of fill materials throughout the site, with observed thicknesses ranging from less than 1 foot to approximately 8.5 feet below ground surface (bgs). The site's underlying native soils generally consist of gravelly sands and silts

with localized zones of clays and gravels at depth. The depth to groundwater, where encountered, was observed to range from approximately 33 to 35 feet bgs. Groundwater flow direction was estimated to be toward the northwest (Exhibit 3, Appendix A), based on relative groundwater elevations measured from temporary piezometers that were installed during the Phase II ESA.

1.2.1 Soil Impacts

Metals - Several metals including arsenic, cadmium, lead, and mercury have been identified at concentrations exceeding EPA Industrial and/or Residential Regional Screening Levels (RSLs) in the fill materials. The maximum concentrations of these metals were identified in fill material collected from a depth of 4 feet bgs at one boring (B-9). The mercury exceedances were identified in fill samples from two boring locations (B-1 and B-9, both in the northeastern portion of the site) while the arsenic, cadmium, and lead exceedances were widely distributed across the site.

Analytical results from native soils underlying the fill material indicate that native soils have not been impacted by metals leaching from overlying contaminated fill materials. With limited exceptions, metals concentrations in native soils were below Residential RSLs. Native soils exceeded the Industrial RSL for lead at boring B-1, and slightly exceeded the Residential RSL for cadmium at borings B-1, B-3, B-5, and B-9. It is possible that the native soil samples from these borings were impacted by sluffing of overlying contaminated fill material. All samples from native soils exceeded the Industrial RSL for arsenic, but the concentrations present are indicative of natural background concentrations.

Metals exceedances in soil are presented in Exhibit 4, and the approximate depth of metals-contaminated fill soils throughout the site is presented in Exhibit 5 (Appendix A). Per the data presented in Exhibit 5, the volume of metals-contaminated fill soils is estimated to be approximately 28,178 cubic yards.

Petroleum Hydrocarbons - No petroleum hydrocarbons were detected in soils at concentrations above regulatory screening levels. There were detections of petroleum hydrocarbons in each of the samples that were analyzed for petroleum hydrocarbons, but all were at concentrations below regulatory screening levels.

Volatile Organic Compounds (VOCs) - No VOCs were detected in soils at concentrations above laboratory reporting limits.

1.2.2 Groundwater Impacts

Groundwater impacts with concentrations of petroleum hydrocarbons (diesel range and gasoline range) above screening levels were previously identified at the former gasoline filling station during Terracon's 2017 Limited Site Investigation (Terracon, 2017b), but the 2024 Phase II ESA did not identify similar petroleum impacts above screening levels. At the

former automobile service and repair shop location, two VOCs (chloroform and trichloroethene) were identified in groundwater at concentrations well below drinking water standards but moderately above Residential Vapor Intrusion Screening Levels (VISLs). Soil gas sampling would be required to confirm whether or not vapor intrusion is a potential issue at the site. Previous groundwater sampling for arsenic and lead (sample locations TER-10 and TER-11, Exhibit 2) did not identify elevated concentrations of these metals.

1.3 Project Goal

The site was previously investigated under an EPA community-wide assessment grant to inventory, characterize, assess, and conduct cleanup planning along with public outreach activities for eligible Brownfield sites located within the State of Utah.

This ABCA has been prepared to support redevelopment of the site by prospective developers by providing preliminary cleanup planning information. It is Terracon's understanding that PCMC wishes to remediate the site to allow for redevelopment.

2.0 Applicable Regulations and Cleanup Standards

2.1 Cleanup Oversight Responsibility

If PCMC requires regulatory oversight and documentation by a regulatory agency of completion of a remedial action, the two most appropriate regulatory programs to oversee remediation of the Site are the Utah Department of Environmental Quality (DEQ), Division of Environmental Response and Remediation (DERR), Voluntary Cleanup Program (VCP) or the Utah DEQ, Division of Waste Management and Radiation Control (DWMRC), Environmental Cleanup Program (ECP). A successful VCP cleanup results in the issuance of a Certificate of Completion, which provides a limited release of liability to qualified applicants as specified in the statute. The liability release is transferable to subsequent property owners. A successful DWMRC ECP cleanup results in a No Further Action designation. Either program may be appropriate if regulatory oversight is required, but the VCP will likely be required if Brownfield funds are used.

The goal of both regulatory programs is to promote the investigation and cleanup of contaminated sites under a cooperative, regulatory-friendly framework. The purpose of the programs is to encourage the investigation and cleanup of sites where there has been a suspected or confirmed contaminant release threatening public health and the environment.

This proposal assumes all work plans, including sampling and analysis plans and quality assurance project plans, and reports related to environmental investigations and

remediation activities conducted at the site will be submitted to the VCP as required for the use of Brownfields funds.

2.2 Cleanup Standards

Terracon understands that the property will be redeveloped for residential and/or commercial uses. With these anticipated exposure scenarios, Terracon anticipates the following screening levels will be used as the Cleanup Standards for the Site.

- Soil: EPA's most recent RSLs for residential and commercial soil with a target cancer risk of $1x10^{-6}$ and a hazard quotient of 1. For petroleum products (if encountered), Utah DEQ's Initial Screening Levels (ISLs) in accordance with the DERR - LUST program. These cleanup standards will be used as screening levels and applied in a manner that is consistent with existing controls in the Park City area (e.g., applicable City ordinances requiring physical barriers and cover materials over metals-impacted soils).

- Groundwater: Groundwater remediation is not anticipated, as groundwater beneath the site is not used as a drinking water source and there is no indication of impacts at concentrations at or above drinking water standards.

  VOCs were detected in groundwater at concentrations below drinking water standards but above VISLs at one location (boring B-5). In this area, sampling and analysis of soil gas will be conducted to allow comparison of soil gas concentrations with residential and commercial VISLs. If VISLs are exceeded in soil gas, design of redevelopment features will incorporate appropriate engineering controls to ensure that indoor air quality standards are met for buildings in areas with potential for vapor intrusion.

2.3 Laws & Regulations Applicable to Cleanup Activities

Laws and regulations that are applicable to cleanup activities include:

- Occupational Safety and Health Act, Hazardous Waste Operations and Emergency Response Standard (40CFR1910.120) and applicable Safety and Health Regulations for Construction (29CFR1926).

- National Emissions Standards for Hazardous Air Pollutants (NESHAP) (40CFR61—Subpart M: National Emission Standard for Asbestos).

- Department of Transportation, Hazardous Materials Regulations (49CFR Subtitle B, Chapter 1, Subchapter C).

- Resource Conservation and Recovery Act (42 U.S.C. § 6901, et. seq.).
- National Historic Preservation Act of 1966, Section 106.
- Utah Code Ann. 19-6-401 et. seq. (Underground Storage Tank Act and rules promulgated there under [Utah Admin Code, R311]) and the Corrective Action Cleanup Standards Policy Per UST and CERCLA Acts, Utah Admin. Code, R311-211.
- Utah Code Ann. 19-6-101 et. seq. (Solid and Hazardous Waste Act and rules promulgated there under [Utah Admin Code, R315]).
- Utah Code Ann. 19-5-101 et. seq. (Water Quality Act and rules promulgated there under [Utah Admin Code, R317]).
- Utah Code Ann. 19-2-101 et. seq. (Air Conservation Act and rules promulgated there under [Utah Admin Code, R307]).
- Utah Code Ann. 57-25-101 et. seq. (Uniform Environmental Covenants Act).
- Park City, Summit County, and State of Utah building codes and construction requirements.
- Park City Municipal Code Section 11-15-1 (Park City Landscaping and Maintenance of Soil Cover [“The Soil Ordinance”].
- Utah Code Ann. Title 19, Chapter 6, Part 3 et seq. (Hazardous Substances Mitigation Act).
- Utah Code Ann. Title 19, Chapter 8 et seq. (Voluntary Cleanup Program).
- Federal Small Business Liability Relief and Brownfields Revitalization Act, if Brownfields or other Federal funding is used.
- Federal Davis-Bacon Act if Brownfields or other Federal funding is used.

In addition, all appropriate permits and notifications (e.g., Blue Stakes of Utah Utility Notification Center, soil disposal acceptance notification, soil transport/disposal manifests, etc.) will be obtained as appropriate for the type of cleanup activities implemented.

2.4 Climate Change Considerations

Executive Order 13514, Federal Leadership in Environmental, Energy, and Economic Performance, establishes an integrated strategy for sustainability within the Federal Government. Under the Executive Order, each agency is required to evaluate their climate change risks and vulnerabilities to manage the effects of climate change on the agency's

mission and operations in both the short and long-term as part of the formal Strategic Sustainability Performance Planning process.

Effective with Fiscal Year 2013, EPA's Brownfields Program initiated a change to cooperative agreements for Cleanup and Revolving Loan Fund awards. It requires cooperative agreement recipients to evaluate the resilience of remedial options funded by the award in light of reasonably foreseeable changing climate conditions. As directed under EPA's Climate Change Adaptation Plan, the ABCA must include a discussion of observed and forecasted climate change conditions for the area of the project and the associated site-specific risk factors. Specifically, this is to be presented as part of the ABCA. As the possibility exists that Cleanup grant funds or Revolving Loan Fund grand funds may be utilized for cleanup actions at the Site, climate change has been considered in this ABCA.

2.4.1 General Considerations

In considering remedy resiliency Terracon consulted the following resources as authoritative sources:

- Climate Resources on Data.gov
- U.S. Global Change Research Program (USGCRP)
- EPA Climate Change on EPA.gov

2.4.2 Site-Specific Considerations

The Site and Utah are located in EPA's climate designation of Southwest (Reference 2016 in Section 4.0). The Southwest is the hottest and driest region in the nation (Reference 2014a in Section 4.0). Extending from the Pacific Ocean east to the Rocky Mountains and south to the Mexican border, this region is home to about 56 million people, about 90% of whom live in cities, including Albuquerque, Phoenix, Las Vegas, Salt Lake City, Denver, San Diego, Los Angeles, Sacramento, and San Francisco. The population of the Southwest is expected to increase by nearly 70% by mid-century (Reference 2014a in Section 4.0). The Southwest encompasses a wide range in elevations, spanning valleys that are below sea level to mountain ranges that contain some of the highest peaks in the contiguous United States. The region's southern portion includes deserts, like the Mojave. In contrast, northern California, the Rocky Mountains, and the Sierra Nevada mountain range tend to get more precipitation and snow. The Central Valley in California is one of the most productive agricultural regions in the country.

Climate change is affecting the Southwest. Temperatures have increased by almost 2°F in the last century, with the 2001-2010 decade being the warmest since records began 110 years ago (Reference 2014a in Section 4.0). The length of the frost-free season has increased by 19 days in recent decades (Reference 2014b in Section 4.0). Average annual

temperatures are projected to rise an additional 3.5°F to 9.5°F by the end of this century, with the greatest temperature increases expected in the summer and fall (Reference 2014a in Section 4.0). Drought conditions are already common in the Southwest and drought periods are expected to become more frequent, intense, and longer. Drought will affect important water sources, including the Colorado River Basin (Reference 2014a in Section 4.0). Combined with expected population growth, climate change will exacerbate existing stresses.

Higher temperatures lead to greater evaporation and surface water losses, more heat stress, and increased energy demand for cooling. Over the last 50 years, there has been less precipitation falling as snow late in the winter and snow melt has occurred earlier (Reference 2014a in Section 4.0). Maximum streamflow has also occurred earlier in the year and total yearly streamflow has decreased in the last decade. Increasing temperatures will also increase evaporation, causing river-flow reductions and dwindling reservoirs.

These considerations did not identify property-specific risks in considering resiliency of remedy at this property as part of feasibility and implementability.

3.0 Remedial Alternatives Evaluation

A discussion of the cleanup objectives and an evaluation of remedial alternatives for the Site are provided below.

3.1 Cleanup Objectives

- Elevated concentrations of arsenic, cadmium, lead, and mercury have been identified at concentrations exceeding Industrial and/or Residential RSLs in the fill materials. A remedial goal would be to manage, reduce, or eliminate exposure potential to these metals in materials.
- At one portion of the site, two VOCs (chloroform and trichloroethene) have been detected in groundwater at concentrations above residential VISLs. A remedial goal would be to assess whether a potential vapor intrusion condition actually exists and if so, manage, reduce, or eliminate exposure potential to the VOCs in soil gas.

The primary conditions driving a need for cleanup are metals impacts in fill materials.

3.2 Cleanup Alternatives Considered

Each of the following cleanup alternatives is compared with respect to: effectiveness, long-term reliability, implementability, and general cost implications, within Table 1 (Appendix

B). More detailed comparison of potential costs to implement is provided in Table 2 (Appendix B).

3.2.1 Alternative 1: No Action

The No Action alternative is included as a baseline comparison to other remedial alternatives and assumes no action is taken.

3.2.2 Alternative 2: Complete Soil Removal

Alternative 2 includes complete removal and disposal of all contaminated fill materials with metals concentrations above residential RSLs, which would involve the following:

- obtaining appropriate access and work permits to conduct excavation and loading activities
- excavation and removal of all the contaminated fill materials down to the native soil surface
- waste profile and confirmation soil sampling as needed during and at the end of the removal and disposal process to document removal of the impacted soils
- proper disposal of the impacted fill materials as non-hazardous soil

For the purpose of this ABCA, it is assumed that the contaminated fill materials are Bevill-exempt and can be disposed of as a non-hazardous waste. Disposal of soil as a hazardous waste is not included in this evaluation as Terracon cannot estimate a potential quantity of soils that may be characterized as hazardous waste. Hazardous waste profiling was not included in the Phase II ESA. As the site is currently vacant and undeveloped with an unknown future use, backfilling and compaction of the excavated areas is not included. A cleanup completion report will be prepared to document the cleanup activities, the final condition of the site, and that the Project Goal and Cleanup Standards were met.

This alternative would involve removal of an estimated volume of approximately 28,178 cubic yards of metals-contaminated fill soils. This alternative is an effective but costly way to remediate the site. Site redevelopment can proceed immediately after completion of the remedial event.

As part of this alternative, the potential for vapor intrusion would be assessed in the area of the former automobile service and repair shop by sampling and analysis of soil gas and comparison of results to VISLs. If VISLs are exceeded in soil gas, design of redevelopment features will incorporate appropriate engineering controls to ensure that indoor air quality standards are met for buildings in areas with potential for vapor intrusion.

3.2.3 Alternative 3: Partial Excavation and Removal of Impacted Soils

Alternative 3 includes partial removal of the contaminated fill materials based on screening against residential RSLs and against site-specific background threshold values (BTVs), which for some metals are typically higher than RSLs in the Park City area. This approach may require development of site-specific BTVs. Under this approach, contaminated fill materials with metals concentrations above screening levels and also above BTVs would be removed for offsite disposal as Bevill-exempt non-hazardous waste. Contaminated fill materials with metals concentrations above screening levels but below BTVs would remain at the site, with risk managed through engineering and institutional controls (e.g., via the existing Park City Soils Ordinance – Park City Municipal Code Section 11-15 and/or an Environmental Covenant and Site Management Plan as required by the VCP). This approach is currently in use on a nearby remediation project with oversight by the Utah DEQ/DWMRC. For the purposes of this ABCA, it is assumed that comparable site-specific BTVs that were determined for the nearby remediation project would be adopted for the Bonanza Park property remediation. Partial removal of impacted soils and would involve the following:

- evaluation of whether the VCP will accept adoption of BTVs developed for a nearby site or whether site-specific BTVs will be required to established
- obtaining appropriate access and work permits to conduct excavation and loading activities
- excavation and removal of contaminated fill materials down to the native soil surface in the areas surrounding each of 10 sampling locations from the Phase II ESA where metals concentrations in fill materials exceeded RSLs and site-specific BTVs (sampling locations B-1, B-7, B-9, B-10, B-11, B-13, B-14, B-15, B-16, and B-17)
- at the above locations, assume removal of contaminated fill materials from areas ranging from approximately 5,625 square feet (75’ by 75’) to 10,000 square feet (100 feet by 100 feet), with use of field XRF instrumentation to guide the extent of excavation
- waste profile and confirmation soil sampling as needed during and at the end of the removal and disposal process to document removal of the impacted soils
- proper disposal of the impacted fill materials as non-hazardous soil

For the purpose of this ABCA, it is assumed that the contaminated fill materials are Bevill-exempt and can be disposed of as a non-hazardous waste. Disposal of soil as a hazardous waste is not included in this evaluation as Terracon cannot estimate a potential quantity of soils that may be characterized as hazardous waste. Hazardous waste profiling was not included in the Phase II ESA. As the site is currently vacant and undeveloped with an

unknown future use, backfilling and compaction of the excavated areas is not included. A cleanup completion report will be prepared to document the cleanup activities, the final condition of the site, and that the Project Goal and Cleanup Standards were met.

This alternative would involve removal of an estimated volume range of approximately 12,395 to 21,670 cubic yards of metals-contaminated fill soils. Exposure to metals-contaminated fill soils remaining on site (above RSLs but below BTVs) would be controlled by engineering and institutional controls. Under the VCP, an Environmental Covenant would be required to be recorded on the property deed with development of a Site Management Plan to detail proper maintenance and inspection to ensure preventative exposure measures remain in place.

As part of this alternative, the potential for vapor intrusion would be assessed in the area of the former automobile service and repair shop by sampling and analysis of soil gas and comparison of results to VISLs. If VISLs are exceeded in soil gas, design of redevelopment features will incorporate appropriate engineering controls to ensure that indoor air quality standards are met for buildings in areas with potential for vapor intrusion.

3.2.4 Alternative 4: Soil Cover following Park City Soils Ordinance

Alternative 4 assumes sitewide placement of a minimum 6” soil cover and reliance on the existing Park City Soils Ordinance. This approach does not address exposure to impacted soils during development of the site and would not be considered a remedial option under the VCP as it does not address exposure risk. Under this approach, the existing contaminated fill materials would remain at the site, with risk managed through institutional controls via the Park City Soils Ordinance – Park City Municipal Code Section 11-15. This alternative would involve the following:

- obtaining appropriate access and work permits to import approved clean topsoil or other approved materials
- sitewide placement and compaction of clean topsoil or other approved materials

For the purpose of cost comparisons for this ABCA, this alternative assumes that topsoil or other approved clean cover material is placed over the entire 5.43-acre site. This simplistic assumption does not account for the fact that actual site redevelopment will likely include placement of buildings, walkways, roadways, parking areas, and other hardscape that would replace the use of some of the topsoil as cover.

As part of this alternative, the potential for vapor intrusion would be assessed in the area of the former automobile service and repair shop by sampling and analysis of soil gas and comparison of results to VISLs. If VISLs are exceeded in soil gas, design of redevelopment features will incorporate appropriate engineering controls to ensure that indoor air quality standards are met for buildings in areas with potential for vapor intrusion.

3.3 Recommended Cleanup Alternative

The most cost-effective option is Alternative 3: Partial Excavation and Removal of Impacted Soils, which reduces the overall amount of soil removed for disposal by removing only the most highly contaminated soils that are above local background levels. Because of the range of potential quantities of fill soils that would need to be removed based on concentrations, the estimated range of costs is relatively wide. Although contaminated soils within local background levels would remain on site, exposure to these soils would be managed by engineering and institutional controls, consistent with existing controls that are used throughout the area via the Park City Soils Ordinance. This is the preferred method as it provides a balance between remediation costs and a level of protectiveness that is consistent with surrounding areas.

While Alternative 2: Complete Soil Removal eliminates the need for ongoing engineering and institutional controls, it is the most costly option. Alternative 4: Soil Cover following Park City Soils Ordinance provides a low-cost means of controlling exposure to soil contaminants through engineering and institutional controls, requires permanent maintenance, does not reduce the level of contamination at the site, and would not be a viable option under the VCP. The Alternative 1: No Action option is not considered a viable option since it does not meet the redevelopment objectives or protect from future exposure to site contaminants.

4.0 References

Maverik, Inc. (Maverik) 2020. Closure Notice and UST Closure Sample Analysis Results, Former Maverik Store #317, 1635 Bonanza Drive, Park City, Utah 84060, Facility Identification No. 7000065. June 15, 2020.

Terracon, 2024. Phase II Environmental Site Assessment, Bonanza Park, 1665 Bonanza Drive, Park City, Summit County, Utah, EPA Cooperative Agreement #95815230. April 23,2024.

Terracon 2023a. Sampling and Analysis Plan, Bonanza Park, 1665 Bonanza Drive, Park City, Summit County, Utah, EPA Cooperative Agreement #95815230. November 27, 2023.

Terracon 2023b. Community-Wide Quality Assurance Project Plan, Utah Department of Environmental Quality/Division of Environmental Response and Remediation Community Wide Assessment Grant for States and Tribes, EPA Cooperative Agreement No. 95815230, Salt Lake City, Utah. July 21, 2023.

Terracon 2017a. Phase I Environmental Site Assessment, Proposed Arts & Culture Center Property, 1635, 1665, 1685, and 1705 Bonanza Drive, 1401, 1409, and 1415 Kearns

Boulevard, 1420 and 1490 Munchkin Road, Park City, Summit County, Utah. September 22, 2017.

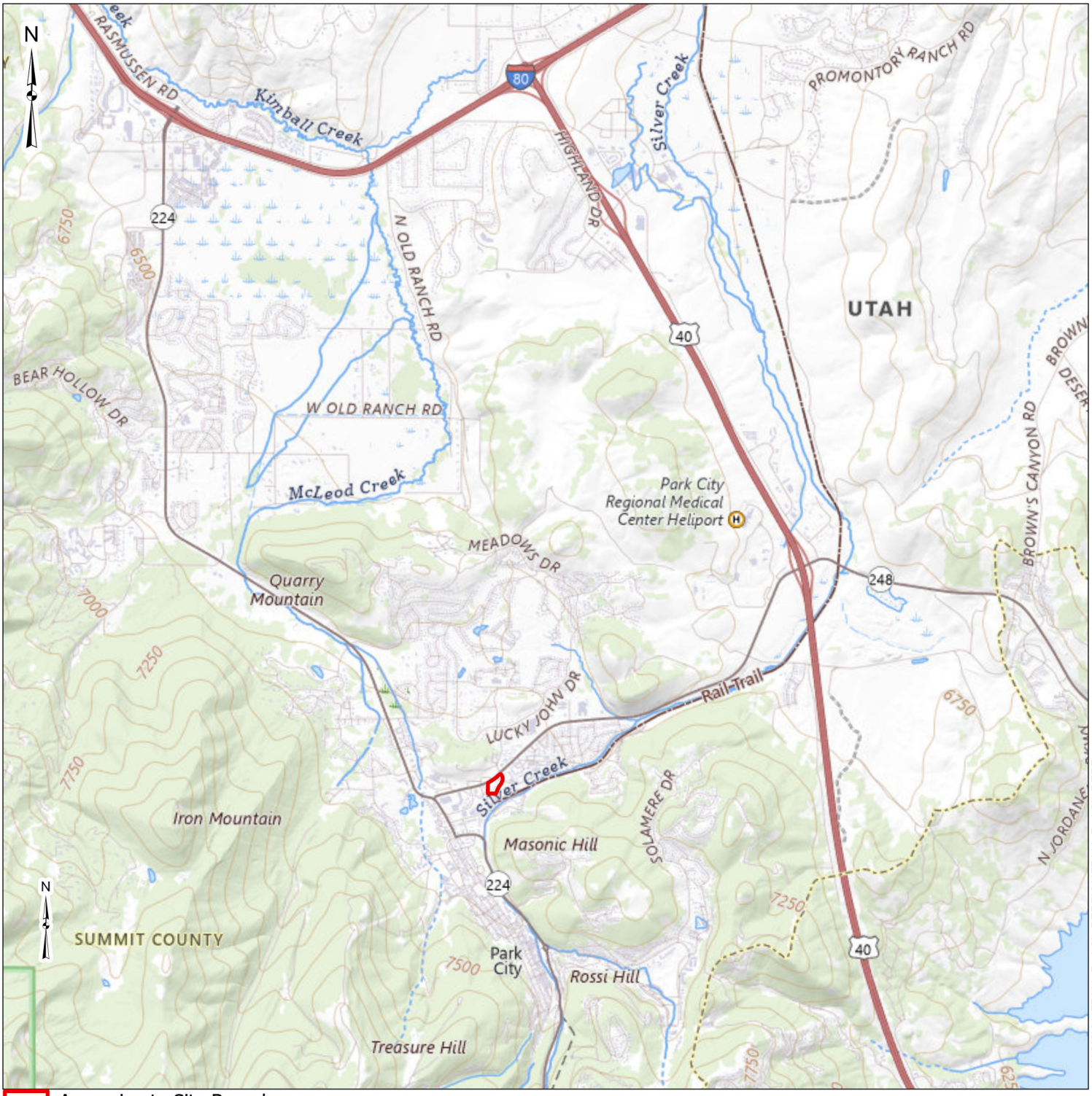
Terracon 2017b. Limited Site Investigation, Proposed Arts & Culture Center Property, 1635, 1665, 1685, and 1705 Bonanza Drive, 1401, 1409, and 1415 Kearns Boulevard, 1420 and 1490 Munchkin Road, Park City, Summit County, Utah. September 21, 2017.

2016 Climate Change Indicators, A Closer Look: Temperature and Drought in the Southwest (Web update: August 2016). https://www.epa.gov/climate-indicators/southwest.

2014a Garfin, G., G. Franco, H. Blanco, A. Comrie, P. Gonzalez, T. Piechota, R. Smyth, and R. Waskom, 2014: Ch. 20: *Southwest. Climate Change Impacts in the United States: The Third National Climate Assessment*, J. M. Melillo, Terese (T.C.) Richmond, and G. W. Yohe, Eds., U.S. Global Change Research Program, 462-486. doi:10.7930/J08G8HMN.

2014b Walsh, J., D. Wuebbles, K. Hayhoe, J. Kossin, K. Kunkel, G. Stephens, P. Thorne, R. Vose, M. Wehner, J. Willis, D. Anderson, S. Doney, R. Feely, P. Hennon, V. Kharin, T. Knutson, F. Landerer, T. Lenton, J. Kennedy, and R. Somerville, 2014: *Ch. 2: Our Changing Climate. Climate Change Impacts in the United States: The Third National Climate Assessment*, J. M. Melillo, Terese (T.C.) Richmond, and G. W. Yohe, Eds., U.S. Global Change Research Program, 19-67. doi:10.7930/J0KW5CXT.

Appendix A
Exhibits



Approximate Site Boundary

Miles

0 0.5 1 2

DATA SOURCES:
ESRI - Basemaps

N:\GIS\61177441_ParkCityDERR\61177441_ParkCityDERR.aprx

Project No.:	61247147
Date:	Jul 2024
Drawn By:	AST
Reviewed By:	ABA

terracon

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Midvale, UT

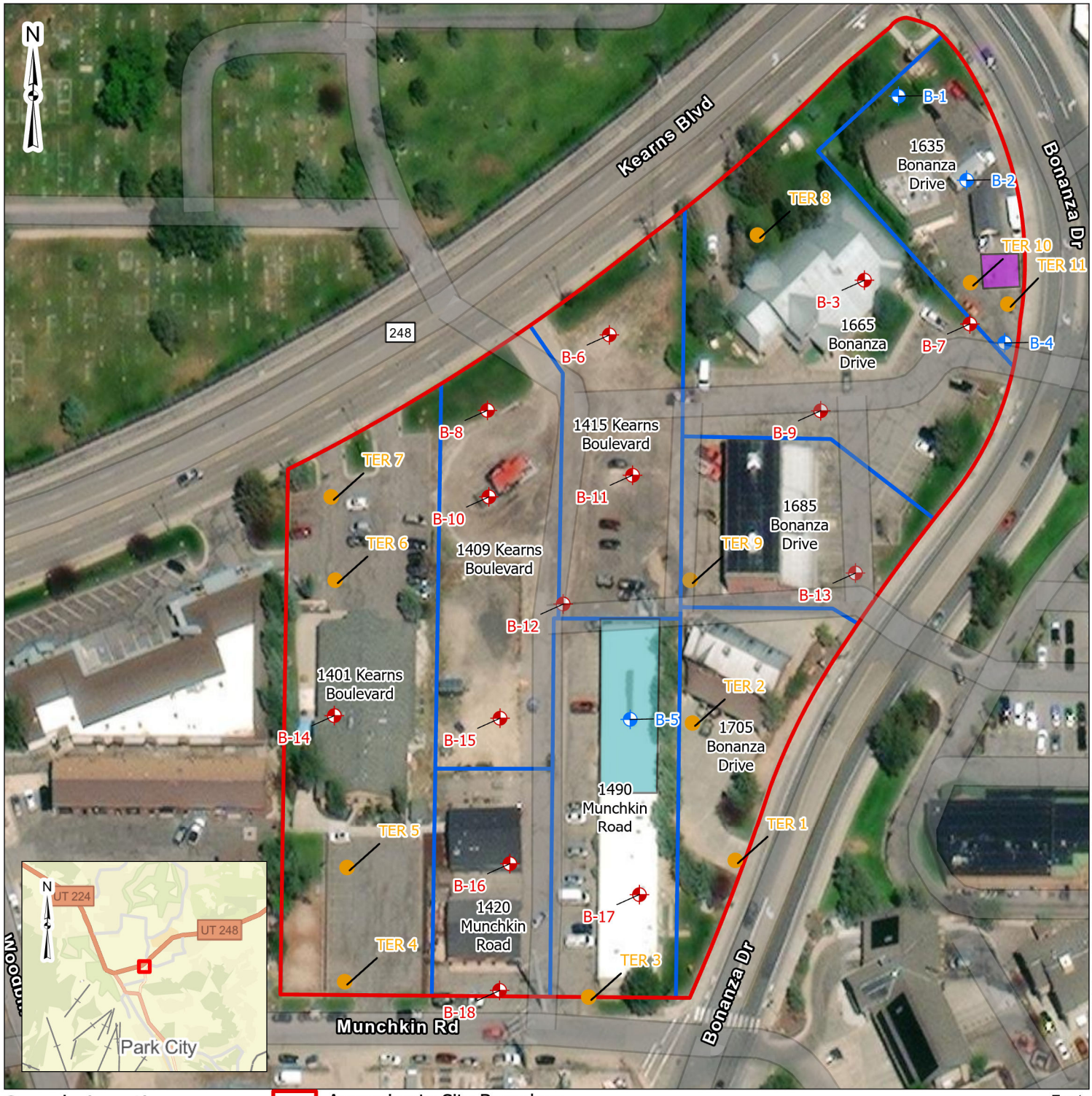
PH. 801-545-8500 terracon.com

Topographic Site Overview

Bonanza Park
1665 Bonanza Drive
Park City, Utah

Exhibit

1



Sample Location

- Soil and Groundwater
- Soil
- Previous

- Approximate Site Boundary
- Parcel Location
- Former USTs
- Former Auto Repair Facility

Feet
0 50 100 200

DATA SOURCES:
ESRI - Basemaps

N:\GIS\61177441_ParkCityDERR\61177441_ParkCityDERR.aprx

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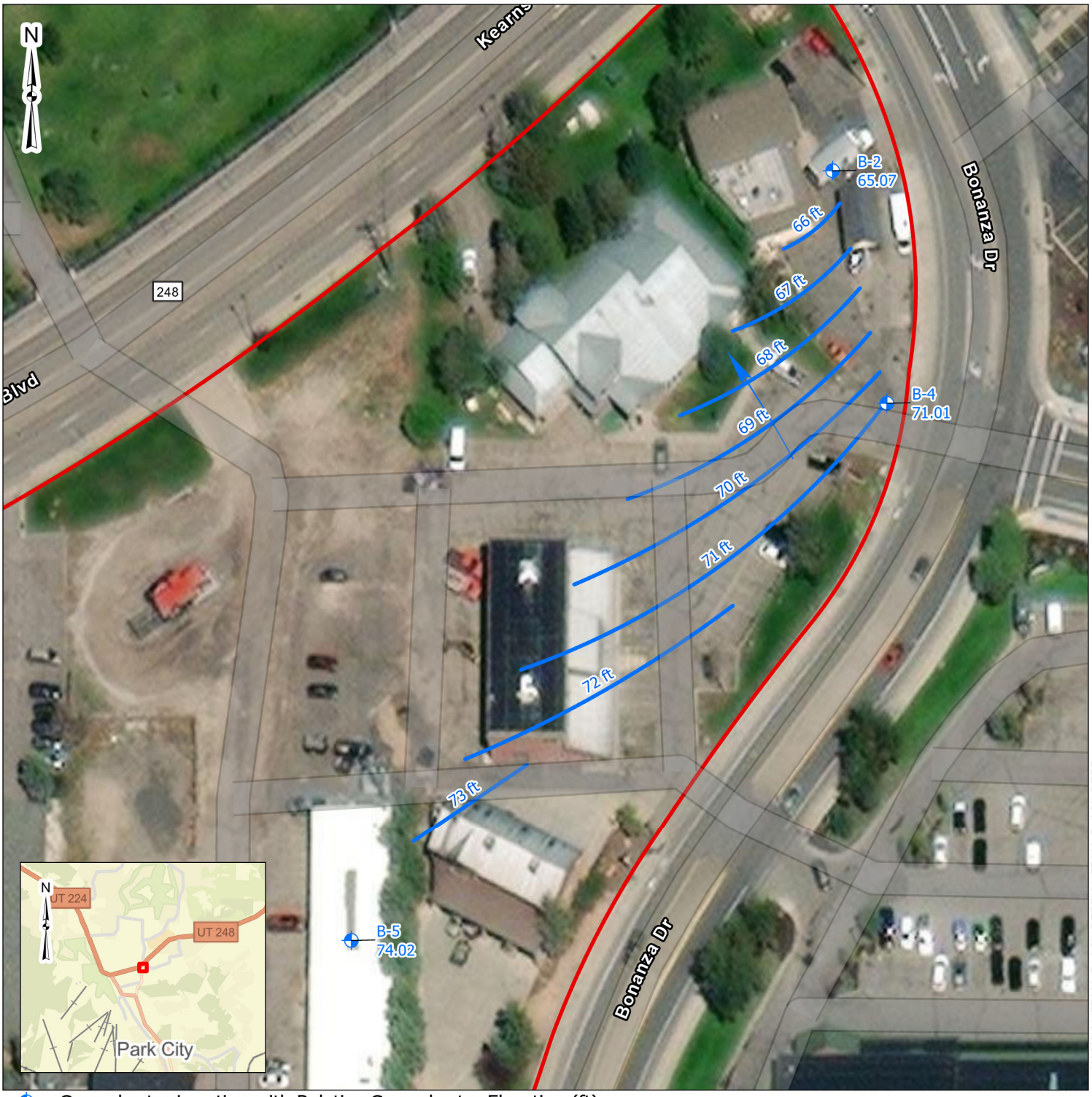
Previous Investigations Sample Locations

Bonanza Park
1665 Bonanza Drive
Park City, Utah

Exhibit

2



Groundwater Location with Relative Groundwater Elevation (ft)

Groundwater Contour

Groundwater Flow Direction

Approximate Site Boundary

Feet

0 40 80 160

DATA SOURCES:
ESRI - Basemaps

N:\GIS\61177441_ParkCityDERR\61177441_ParkCityDERR.aprx

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Date:	Jul 2024
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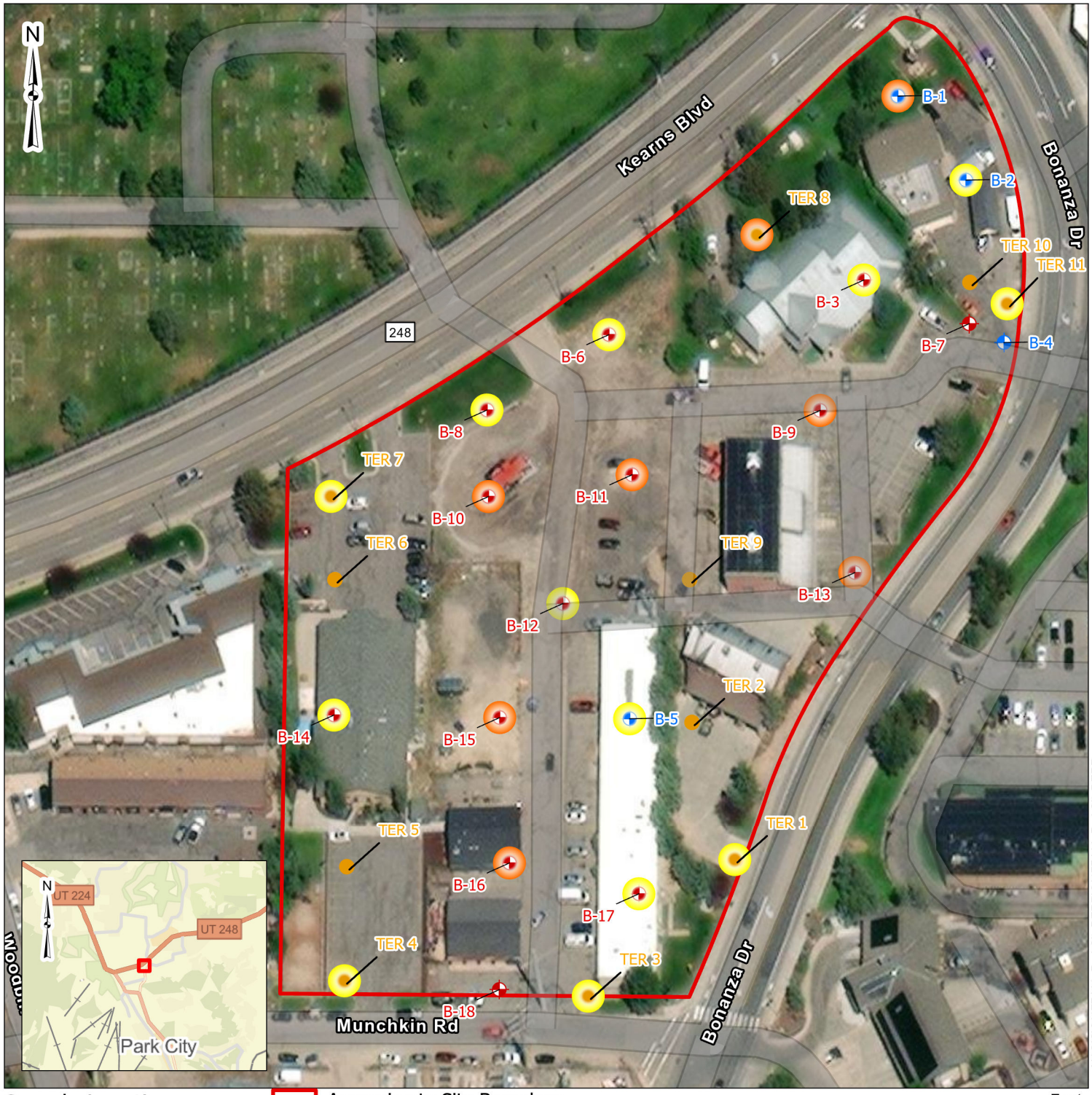
Groundwater Potentiometric Surface Map

Bonanza Park
1665 Bonanza Drive
Park City, Utah

Exhibit

3



Sample Location

- Soil and Groundwater
- Soil
- Previous

Approximate Site Boundary

Metals Exceedances in Soil

- Exceeds Residential RSL
- Exceeds Industrial RSL

Feet
0 50 100 200

DATA SOURCES:
ESRI - Basemaps

Project No.:	61247147
Date:	Jul 2024
Drawn By:	AST
Reviewed By:	ABA

terracon
6952 S High Tech Dr, Ste B
Midvale, UT
PH. 801-545-8500 terracon.com

Metals Exceedance in Soil

Bonanza Park
1665 Bonanza Drive
Park City, Utah

Exhibit

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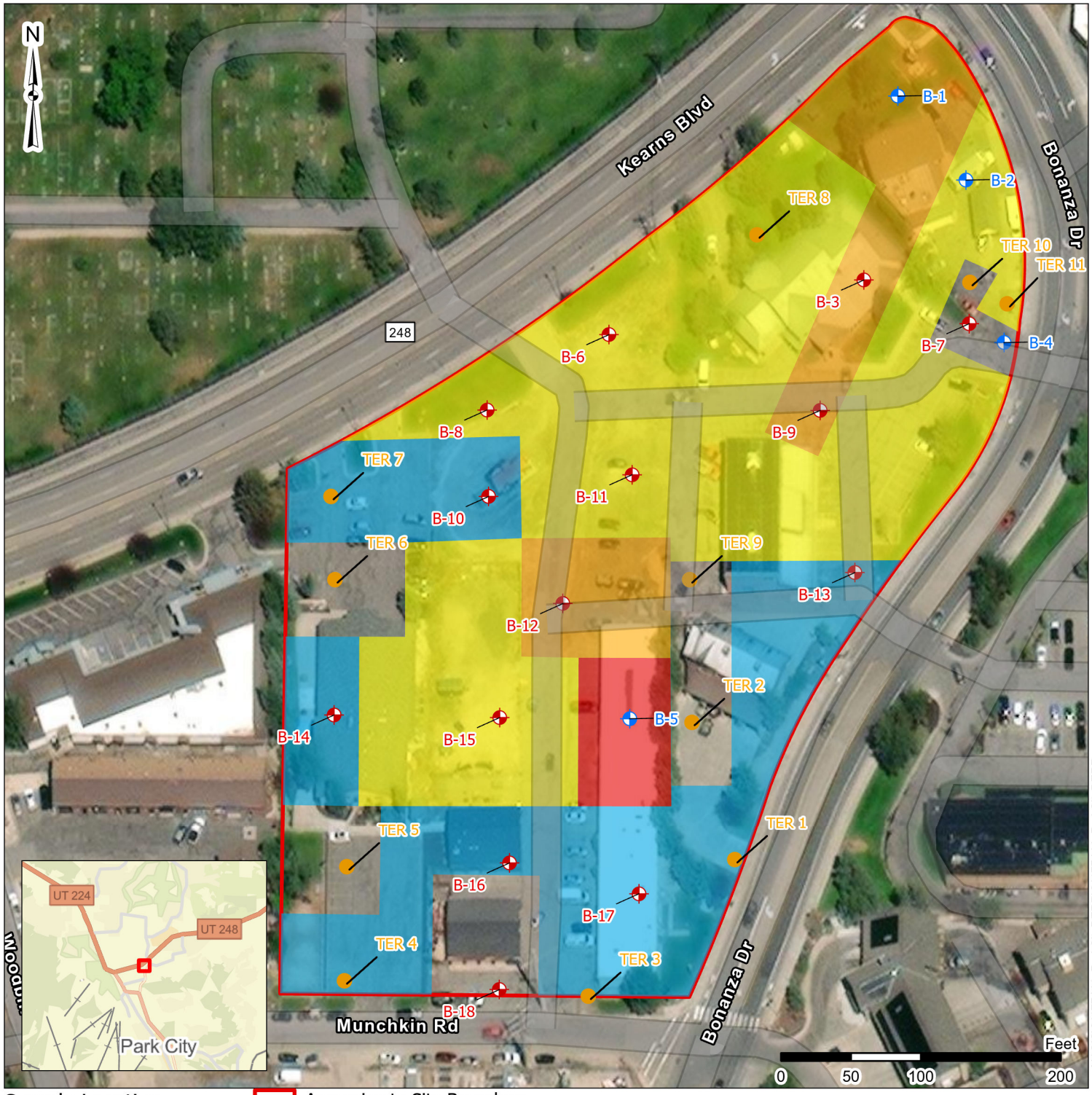

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Sample Location

- Soil and Groundwater
- Soil
- Previous

Approximate Site Boundary

Approximate Depth of Contaminated Fill/Soil

- 0-2 ft
- 2-4 ft
- 4-6 ft
- 6-8 ft

DATA SOURCES:
ESRI - Basemaps

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Approximate Contaminated Fill Depth

Bonanza Park
1665 Bonanza Drive
Park City, Utah

Exhibit

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Appendix B
Tables

Table 1 Brownfield Cleanup Alternatives Balancing Factor Evaluation

Remedial Alternative	Effectiveness	Long-term reliability	Implementability	Cost Implications
1. No Action	Does not address potential risks.	Does not address potential risks.	Not applicable for No Action.	No cost to implement. Potential cost implications on property value and future liabilities associated with contaminant exposure.
2. Complete Soil Removal and Disposal	Effectively eliminates future exposure.	Reliable long-term strategy to address on-site exposures. Essentially eliminates the risk associated with future exposure to contaminated soils at the site.	Minor implementation risks associated with excavation and transportation to appropriate disposal facility. Minor risk to community due to transportation. Fast to implement site work.	Relatively higher costs for excavation, transportation, and disposal fees.
3. Partial Removal and Disposal of Soil	Leaves a portion of the contaminated soils in-place, which require	Generally reliable at reducing or eliminating risk of exposure with proper site maintenance. Site inspections required to verify engineering	Minor implementation risks associated with excavation and transportation to appropriate disposal facility. Minor risk to community due to transportation.	Moderate costs for excavation, transportation, and disposal fees. Moderate costs associated with draft of Environmental Covenant, Site Management Plan if required.

	ongoing management.	controls have not been breached. Potential liability with leaving impacted soils on a site.	Fast to implement site work.	High costs for on-going/long-term site inspection requirements. Requires site inspections in perpetuity and Environmental Covenant recorded on the property.
Soil Cover following Park City Soils Ordinance	Leaves the contaminated soils in-place, which require ongoing management. Not a viable option for oversight under a regulatory program.	Not generally reliable at reducing or eliminating risk of exposure. Site inspections required to verify engineering controls have not been breached. Potential liability with leaving impacted soils on a site and exposure to site workers during redevelopment. Not a viable option for oversight under a regulatory program.	Minor implementation risk to community associated with transportation of import materials. Fast to implement site work.	Moderate costs for soil import. High costs for on-going/long-term site inspection requirements. Requires site inspections in perpetuity.

Table 2 Estimated Comparative Costs for Cleanup Alternatives

Cleanup Alternative	Estimated Costs	Notes	
1. No Action	$0	Not a viable option, does not address exposure risk during site redevelopment.	
2. Complete Soil Removal	$3,100,600–$3,500,000	Removal of all contaminated fill soils above RSLs (estimated 28,178 cubic yards)	
		$2,975,600-$3,330,000	Estimated cost to remove, transport and dispose of contaminated fill soils Summit County-3 Mile Canyon Landfill as cover material. Assumes landfill acceptance of all soils for non-hazardous waste disposal.
		Oversight and Reporting	
		$20,000–$30,000	Regulatory oversight by the VCP. Cost varies based upon size of site and extent and nature of impacts.
		$75,000–$100,000	Terracon oversight during remediation. Includes confirmation soil sample collection, soil vapor sampling, and laboratory analyses.
		$30,000–$40,000	Cleanup planning document preparation; meetings with the selected regulatory agency; public notification of proposed cleanup; and cleanup completion report

Cleanup Alternative	Estimated Costs	Notes	
3. Partial Soil Berm Removal in Impacted with Environmental Covenant and Site Management Plan	$1,500,000–$2,500,000	Partial removal (only soils that exceed RSLs and site-specific background levels) (estimated 12,396 to 21,667 cubic yards)	
		$1,309,000-$2,288,000	Estimated cost to remove, transport and dispose of contaminated fill soils Summit County-3 Mile Canyon Landfill as cover material. Assumes landfill acceptance of all soils for non-hazardous waste disposal.
		Oversight and Reporting:	
		$30,000–$40,000	Regulatory oversight by the VCP. Cost varies based upon size of site and extent and nature of impacts
		$100,000-$105,000	Site-specific BTV calculation (if required) and Terracon oversight during remediation. Includes confirmation soil sample collection and laboratory analyses.
		$61,000-$67,000	Cleanup planning document preparation; meetings with the selected regulatory agency; public notification of proposed cleanup; cleanup completion report; and draft of Environmental Covenant and Site Management Plan. Legal counsel should review the Environmental Covenant.

Cleanup Alternative	Estimated Costs	Notes	
		*Site Inspection and Reporting: (Per Inspection Event. Not included in Estimated Costs. Inspection Frequency to be determined).	
		$3,000–$5,000	Annual Site Inspection per Site Management Plan

Cleanup Alternative	Estimated Costs	Notes
4. Soil Cover following Park City Soils Ordinance	$199,000 - $210,000	Sitewide (5.43 acres) cover with 6 inches of topsoil or other approved clean cover

Estimated Cost Range for Cleanup Alternatives: $199,000 to $3,500,000