

The main title "Park City Parcel Evaluation" is centered on the page in a large, white, sans-serif font. The background of the page is a solid blue color with white geometric lines forming a grid-like pattern.

Potential Environmental Liability

November 7, 2016

CONFIDENTIAL

Prepared for:

Jim Blankenau
Environmental Regulatory Program Manager

Park City Municipal Corporation
445 Marsac
P.O. Box 1480
Park City, UT 84060

Prepared by:

Tammi Messersmith
Project Manager

AECOM
756 E. Winchester St.
Salt Lake City
UT, 84107
USA
aecom.com

Copyright © 2016 by AECOM

All rights reserved. No part of this copyrighted work may be reproduced, distributed, or transmitted in any form or by any means without the prior written permission of AECOM.

Table of Contents

1. Introduction

Figures

Overview Map

Tables

Summary Table

Attachments

100 Marsac Parcels Evaluation (Including Figures and Cost Estimate)

Mine Bench Parcels Evaluation (Including Figures and Cost Estimate)

Clark Ranch Parcels Evaluation (Including Figure and Cost Estimate)

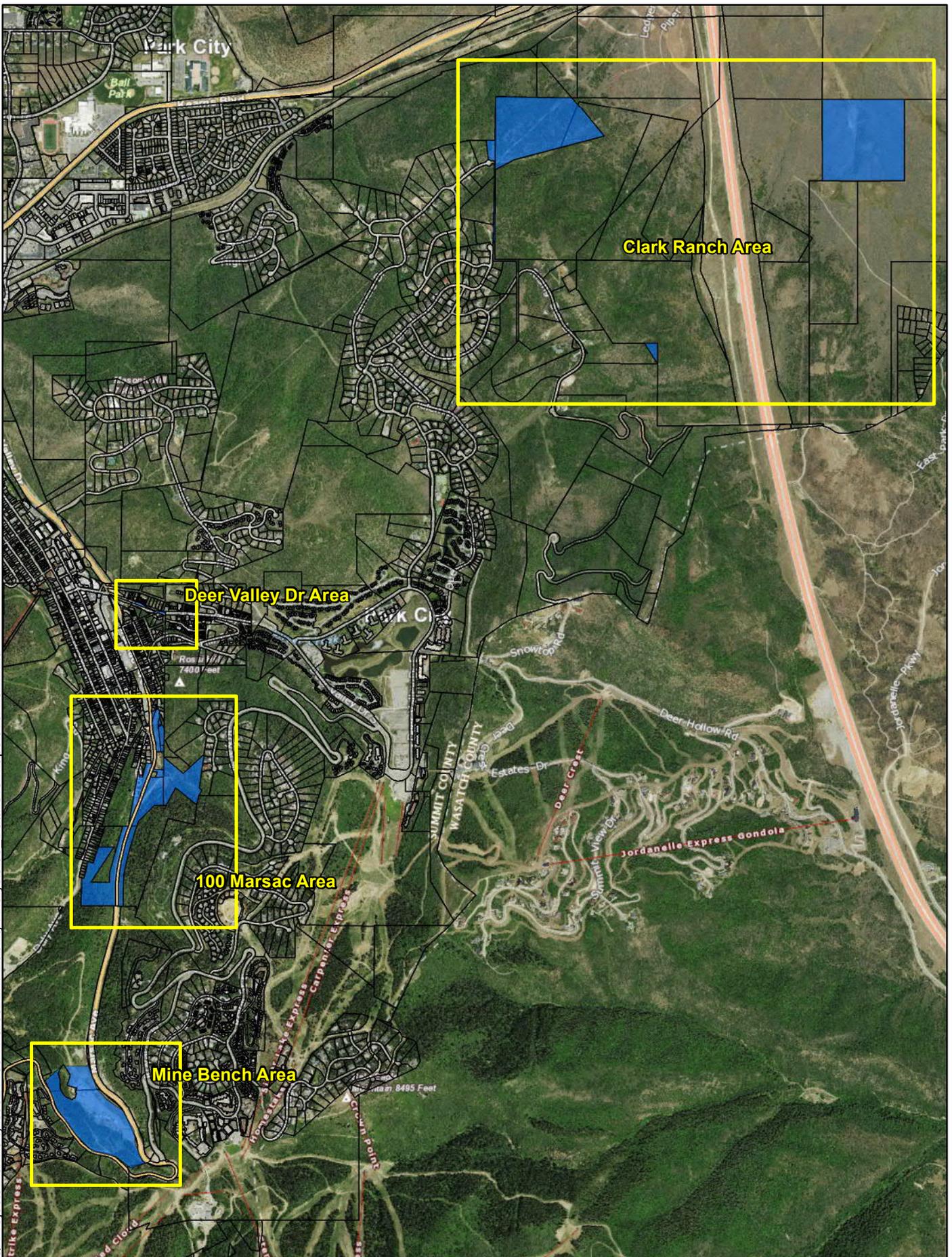
Deer Valley Drive Parcel Evaluation (Including Figure and Cost Estimate)

1. Introduction

AECOM was contracted by Park City Municipal Corporation (Park City) to evaluate the potential environmental liability associated with several parcels of property that the city has the opportunity to acquire. The potential acquisition of these parcels is confidential, as is the work performed herein. There are four different groupings of parcels to be evaluated: 100 Marsac Area, Mine Bench Area, Clark Ranch Area, and Deer Valley Dr. Area, as shown on the Overview Map. The evaluations of each group of parcels are included as attachments to this document; each attachment includes the evaluation, as well as detailed figures and associated cost estimates. Both low and high costs were estimated to provide a range. The low cost assumes disposal of contaminated soil at the Richardson Flat repository and a 6-inch clean soil cover, where appropriate; the high cost assumes disposal at Clean Harbors and a 12-inch soil cover where appropriate. A summary of the estimated environmental liability costs, low and high, are shown on the Summary Cost Table.

The evaluations performed are high level assessments of the potential environmental liability associated with the parcels and are based on limited existing data available from EPA, as well as communication with Park City. Due to the difficulty in quantifying potential liabilities associated with migration of contaminants off the parcel boundaries, the analyses only address on-site soil impacts and do not take into consideration the potential liability associated with contaminant migration. Additionally, it is assumed that there are no groundwater impacts associated with any of the parcels from past or present uses.

Q:\Projects\Park City\60521438 - Parcel Env Liability Analysis\09 - Data\GIS\Mapsoverview.mxd



Aerial Imagery: AGRC 2016

- Site Area
- Summit County Parcels

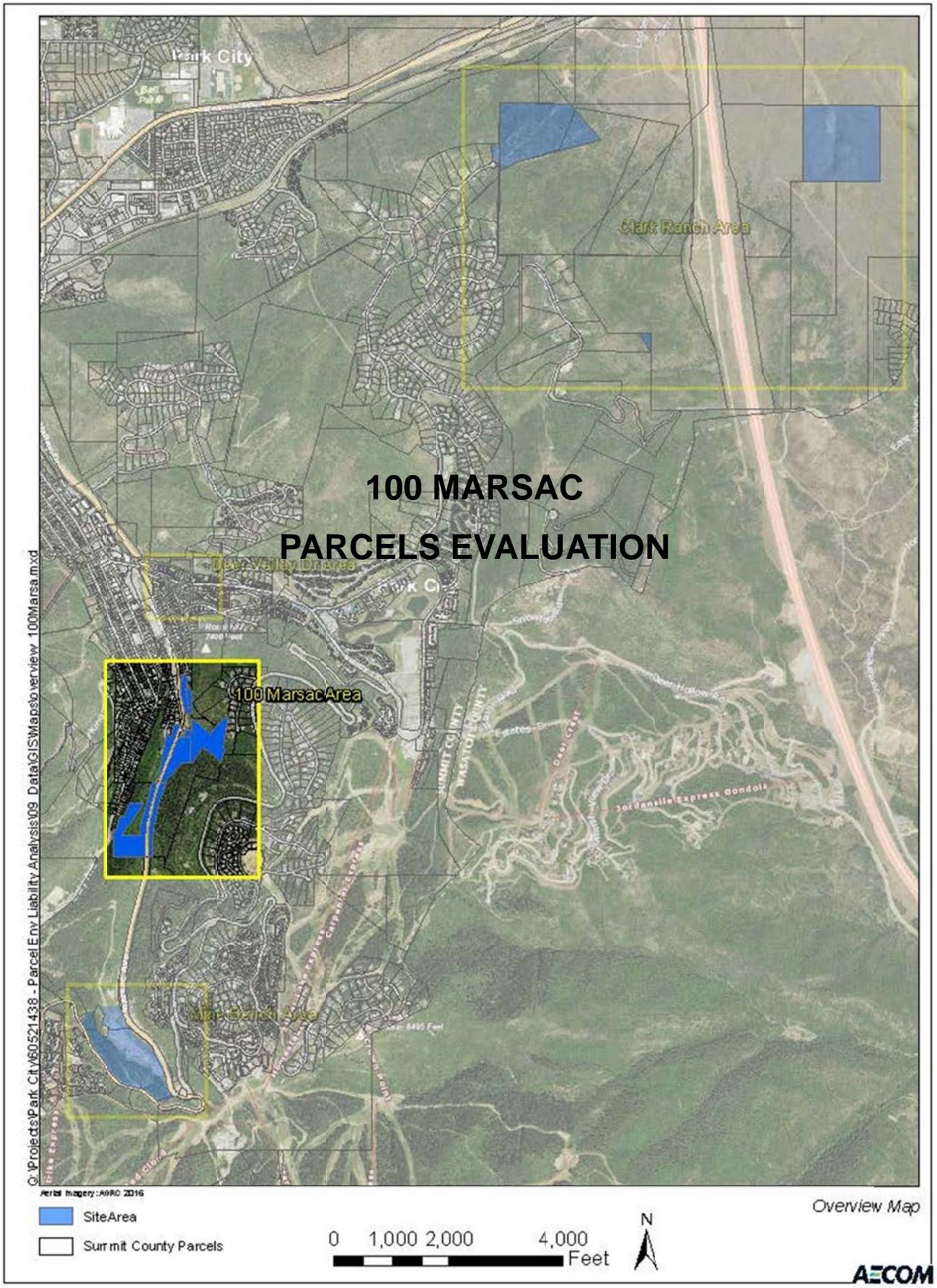


Overview Map



Summary Cost Table		
Parcel Group	Low Environmental Liability Cost	High Environmental Liability Cost
100 Marsac Group	\$428,613	\$1,202,179
Mine Bench Group	\$500,082	\$1,894,245
Clark Ranch Group	\$400,691	\$1,136,609
Deer Valley Dr.	\$33,357	\$59,802

ATTACHMENTS



Parcel Group Name: 100 Marsac (see attached Figure)

<u>Included Parcels / Size:</u>	PC-730 / 33,877 sq.ft (0.778 acres)
	PC-430-R / 58,778.44 sq.ft. (1.349 acres)
	PC-S-46-B / 279,882.22 sq.ft. (6.425 acres)
	PC-S-46-C / 513,048.40 sq.ft. (11.778 acres)
	PC-S-46-D / 317,873.01 (7.297 acres)
	PC-850-1 / 16,416.16 sq.ft. (0.377 acres)

Current Landuse and Description: With the exception of the truck ramp on parcel PC-S-46-B, subarea I on the attached figure, and the paved Prospector Ave that cuts through the adjacent subarea J of the same parcel, all of the areas are undeveloped, relatively steeply sloped, and covered in scrub oak and other native vegetation.

Proposed Landuse: It is our understanding that the desired future land use for subareas A, B, C, E, and F (parcels PC-730, PC-430-R, and PC-S-46-B) would be affordable/attainable housing. For costing purposes, it is assumed that the entire acreage of these subareas would be required for that purpose. It is assumed that landuse on the remaining parcels would remain unchanged.

Known Contamination: A substantial amount of surface soil lead data exists for the area encompassed by subareas A, B, C, E, and F, as shown on the attached Ontario Tunnel/Ontario Mill results figure (excerpted from *Action Memorandum. Request for a Removal Action at the Uintah Mining District Site in Summit County, Utah*. Emergency Response and Preparedness Program, EPA. September 10, 2015). In general, the existing data indicates that surface soil lead concentrations on these subareas ranges from 200-10,000 ppm. The attached figure also presents data on subarea H (parcel PC-850-1) that indicates that surface lead contamination on this subarea is less than 1,000 ppm. There is no data on contamination at depth. There is also no data available for the remaining parcels within this group.

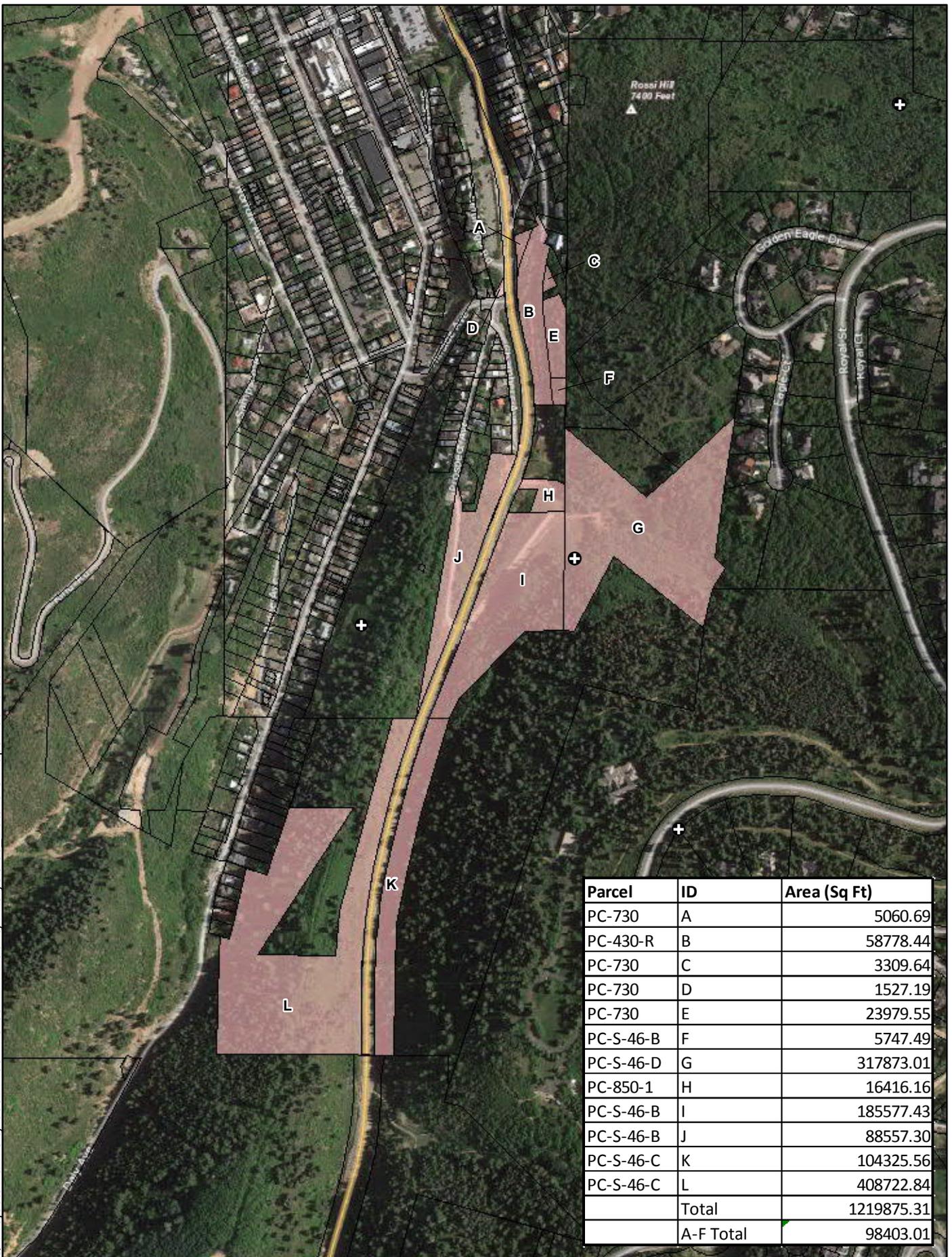
Assumptions: Soil lead contamination is the driver for environmental liability and concentrations greater than 200 mg/kg in residential areas and 1,000 mg/kg in unoccupied areas will need to be addressed. There is no associated groundwater contamination. Legal protections exist that would limit Park City's liability to only the contamination existing on-site, therefore, no evaluation of migration of contamination is included. Contamination in subareas A, B, C, E, and F extends to an average depth of two feet below ground surface. Approximately 10% of the areas without available contaminant data will have surface soil lead in excess of 1,000 mg/kg (the unoccupied soil lead standard set forth in the Park City Soils Ordinance).

Anticipated Environmental Remedial Action: It is anticipated that the subareas A, B, C, E, and F on the attached figure will require excavation and disposal of contaminated soil in order to construct the desired affordable/attainable housing. Although there is not available data, it is assumed that a small percentage (10%) of the remaining area will exceed 1,000 mg/kg lead and will require a cover of clean soil, with subsequent revegetation. For costing purposes, both a 6-inch soil cover (in accordance with the Park City Soils Ordinance) and a 12-inch soil cover (in accordance with the Alice Load protocol) were evaluated. It will be necessary to maintain the existing remedy on-site, which will consist of cleaning the detention basin as needed. For

costing purposes, the frequency of cleaning is assumed to be every 3 years for a duration of 30 years (present worth cost is included in the costing).

Estimated Environmental Liability: As shown on the attached spreadsheets, the environmental liability associated with the 100 Marsac group of parcels is estimated to range from **\$428,613** to **\$1,163,911**. The anticipated amount of liability is controlled by the disposal location used, the depth of contamination assumed, and on the assumed percentage of area that will exceed 1,000 mg/kg and require clean soil cover. For disposal, low-cost (Richardson Flat Repository) and high-cost (Clean Harbors) disposal options are provided.

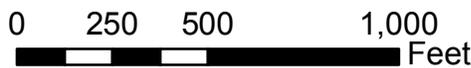
Q:\Projects\Park City\60521438 - Parcel Env Liability Analysis\09 Data\GIS\Maps\100marsac.mxd



Parcel	ID	Area (Sq Ft)
PC-730	A	5060.69
PC-430-R	B	58778.44
PC-730	C	3309.64
PC-730	D	1527.19
PC-730	E	23979.55
PC-S-46-B	F	5747.49
PC-S-46-D	G	317873.01
PC-850-1	H	16416.16
PC-S-46-B	I	185577.43
PC-S-46-B	J	88557.30
PC-S-46-C	K	104325.56
PC-S-46-C	L	408722.84
	Total	1219875.31
	A-F Total	98403.01

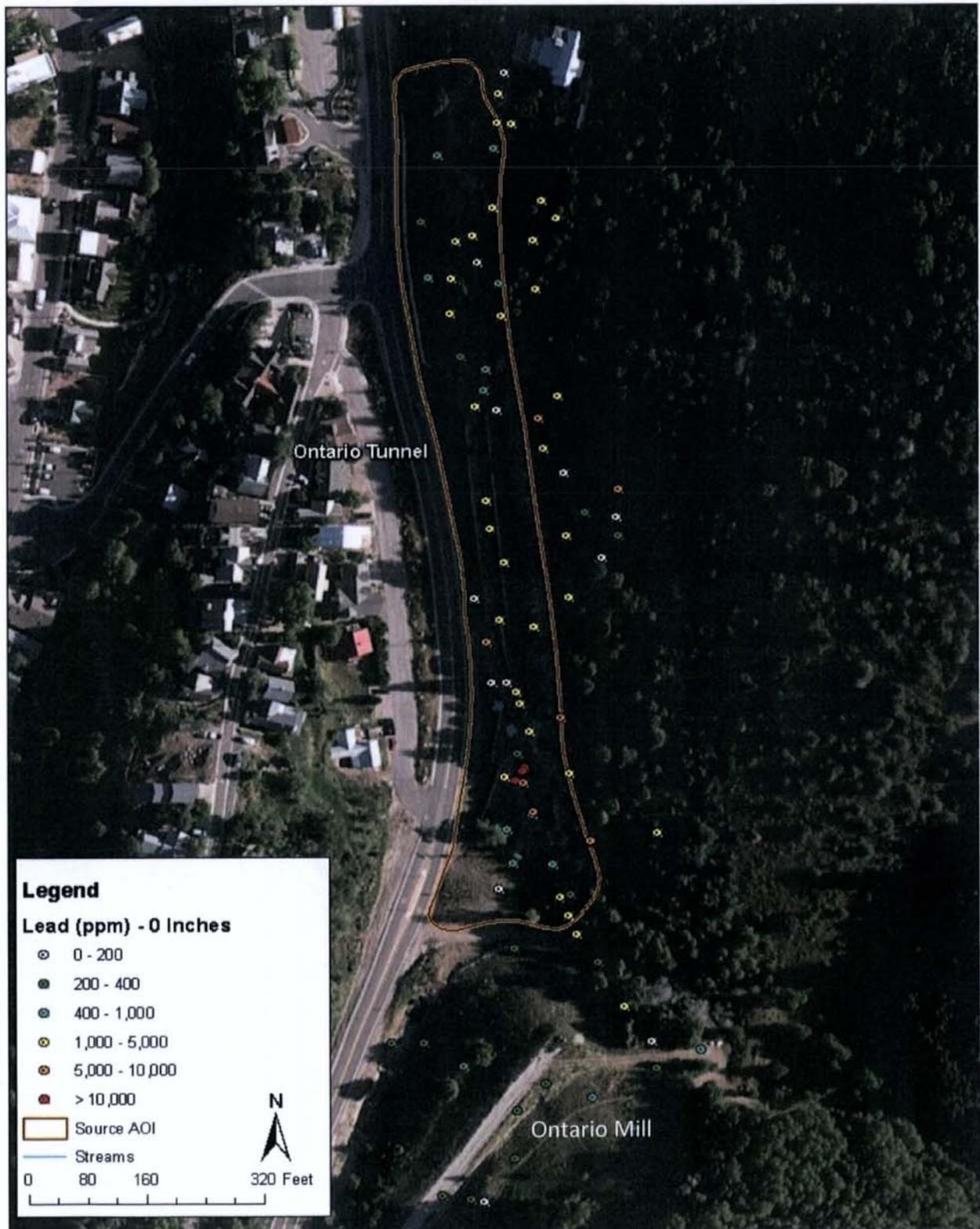
Aerial Imagery: AGRC 2016

- Site Area
- Summit County Parcels
- Mine Features, Adits, Prospects, Shafts



100 Marsac

Soil lead concentrations at the surface in the Judge Loading Station, Ontario Tunnel and Ontario Mill Areas of Interest (Ontario Canyon)



Parcel Group Name: **Mine Bench** (see attached Figure)

Included Parcels / Size: No parcel ID's available / 1,211,451 sq.ft. (27.811 acres)

Current Landuse and Description: This property is the historic access to the Ontario mine. The mine adit still exists here, but is located on the parcel that is not included with this property. The property consists of a paved bench cut into the side of a steep slope that is vegetated (scrub oak and sage brush) above the bench and consists of a tailings slope below the bench.

Proposed Landuse: It is our understanding that the desired future land use for the flat bench area would be affordable/attainable housing. It is assumed that landuse on the remaining portion of the parcels would remain unchanged.

Known Contamination: Limited existing data at the bottom of tailing slope (see attached figure, excerpted from *Action Memorandum. Request for a Removal Action at the Uintah Mining District Site in Summit County, Utah*. Emergency Response and Preparedness Program, EPA. September 10, 2015) indicates that there is surface lead ranging from the 0-200 ppm range to the 5,000-10,000 ppm range. No data was available for contamination at depth.

Assumptions: Soil lead contamination is the driver for environmental liability and concentrations greater than 200 mg/kg in residential areas and 1,000 mg/kg in unoccupied areas will need to be addressed. There is no associated groundwater contamination. Any windblown or erosion related contamination existing in the surrounding area is not attributable to this piece of property. Contamination exceeding the residential lead limit exists in the bench area to a depth consistent with the foundation requirements for the proposed housing development. The proposed housing development will require 20% of the bench area shown on the attached figure to be excavated.

Anticipated Environmental Remedial Action: It is anticipated that 20% of the bench area shown on the attached figure will require excavation and disposal of contaminated soil in order to construct the desired affordable/attainable housing. Although there is not available data, it is assumed that a small percentage (10%) of the upslope area will exceed 1,000 mg/kg lead and will require a cover of clean soil, with subsequent revegetation. For costing purposes, both a 6-inch soil cover (in accordance with the Park City Soils Ordinance) and a 12-inch soil cover (in accordance with the Alice Load protocol) were evaluated. Due to the steepness of the slope in the vicinity of the downslope tailings, the existing surrounding contamination, and the level of contaminants identified at the site, it is possible that EPA would not require a remedial action. Therefore, the low-end cost in the attached cost analysis does not include slope stabilization. However, lead contamination does exist at the site that could pose both a human health risk and a risk of contaminant migration due to slope instability. Therefore, slope stabilization is included in the high-end cost in the attached cost analysis.

Estimated Environmental Liability: As shown on the attached spreadsheets, the environmental liability associated with Mine Bench group of parcels is estimated to range from **\$500,082** to **\$1,837,755**. The anticipated amount of liability is controlled by the disposal location used, the depth of contamination assumed, the assumed percentage of area that will exceed 1,000 mg/kg and require clean soil cover, and the need for slope stabilization. For disposal, low-cost (Richardson Flat Repository) and high-cost (Clean Harbors) disposal options are provided.

Q:\Projects\Park City\60521438 - Parcel Env Liability Analysis\09 Data\GIS\Maps\MineBench.mxd



Aerial Imagery: AGRC 2016

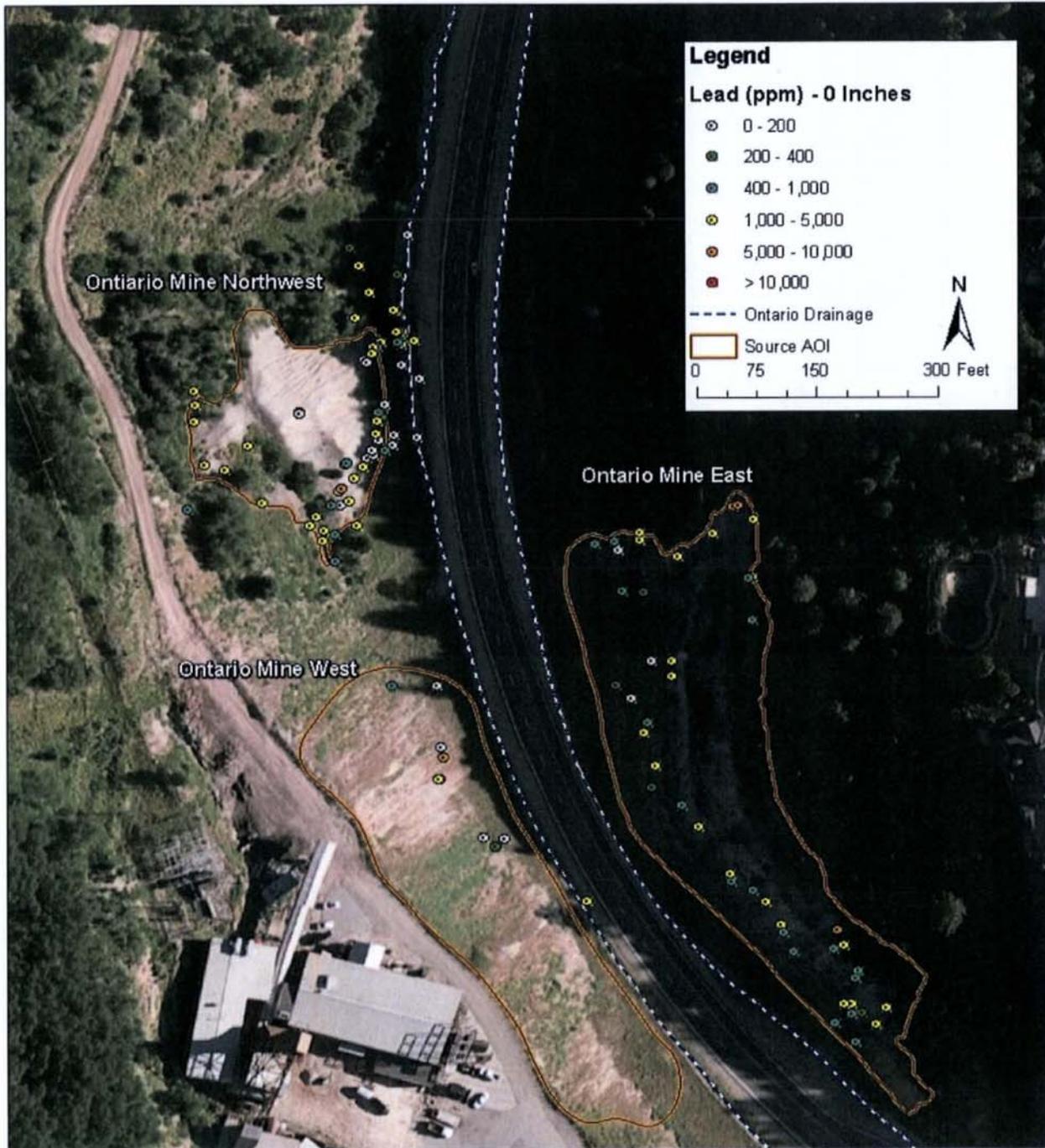
- Site Area
- Summit County Parcels
- + Mine Features, Adits, Prospects, Shafts

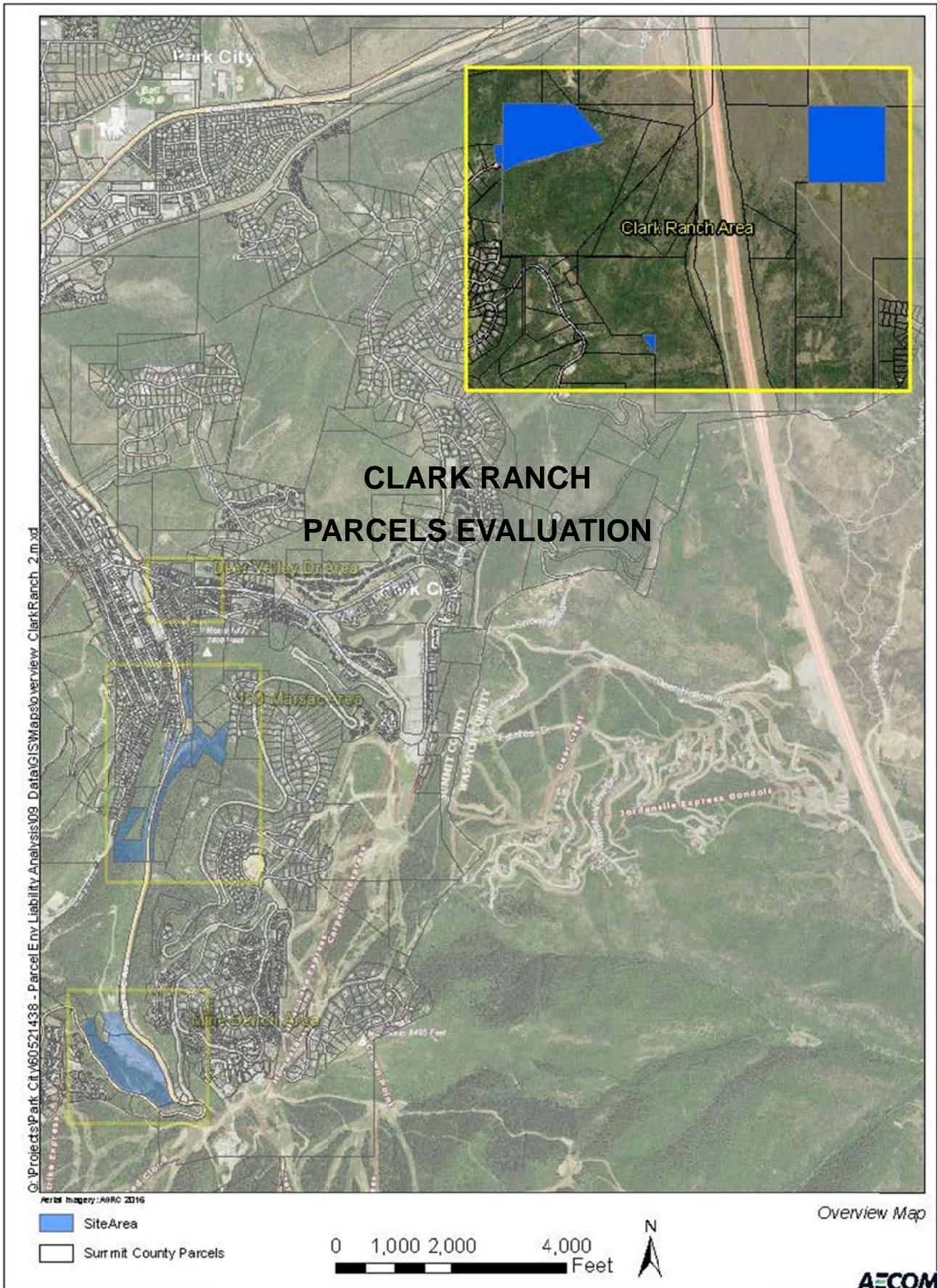


Parcel	Area (Sq Ft)
Mine Bench	1211450.64
Bench Area Currently Capped	290521.331
Potential Slope Stabilization Area	98625.2602

Mine Bench

Soil lead concentrations at the surface in the Ontario Mine Area of Interest (Ontario Canyon)





Parcel Group Name: **Clark Ranch Parcels** (see attached Figure)

Included Parcels / Size: pca-s-98 & pca-s-98-sec-11 / 1,452,077 sq.ft. (33.335 acres)
 pp-s-46 / 34,492 sq.ft. (0.792 acres)
 pp-28-A / 1,785,091 (40.980 acres)

Current Landuse and Description: Currently these parcels are open space and are not developed. They consist of native ground cover (sage brush and grasses). Parcels pca-s-98 & pca-s-98-sec-11 have topographic relief and contain a portion of a gentle ridgeline, parcel pp-28-A is flat land in a topographic low and is in close proximity to OU1 of Richardson Flat Tailings site (the repository), and parcel pp-s-46 is on the side slope of a small hill.

Proposed Landuse: No change in landuse is anticipated.

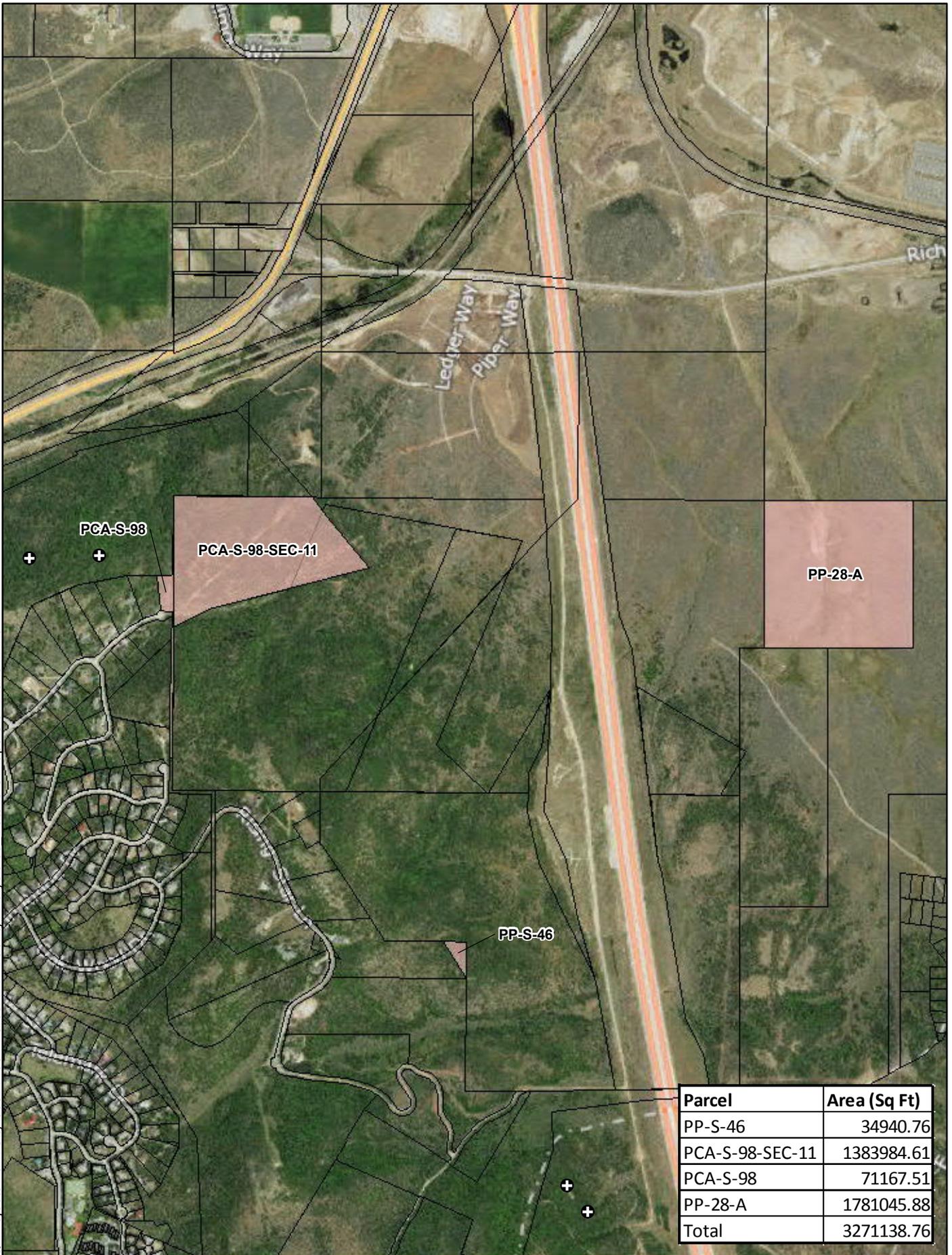
Known Contamination: No parcel-specific data was available. However, per communications with Park City, Phase 1 and Phase 2 work performed on the parcels adjacent and to the south of parcel pp-28-A indicated sporadic surface soil lead contamination. Based on USGS maps, there were no historic mining operations on parcels pca-s-98, pca-s-98-SEC-11, or pp-s-46.

Assumptions: Soil lead contamination is the driver for environmental liability and concentrations greater than 200 mg/kg in residential areas and 1,000 mg/kg in unoccupied areas will need to be addressed. There is no associated groundwater contamination. Any windblown or erosion related contamination existing in the surrounding area is not attributable to these parcels. Based on conversations with Park City and on their location relative to known contamination, parcels pca-s-98, pca-s-98-sec-11, and pp-s-46 will not have contaminant concentrations requiring active remediation. However, parcel pp-28-A, is likely to contain surficial (0-6 inches) contamination on 25% of its area.

Anticipated Environmental Remedial Action: No action will be required for parcels pca-s-98, pca-s-98-sec-11, and pp-s-46. For costing purposes, it is assumed that parcel pp-s-28A will require excavation and disposal of the top 6 inches of soil from 25% of its area. See the attached spreadsheet for volumes and costing.

Estimated Environmental Liability: There is no estimated environmental liability associated with parcels pca-s-98, pca-s-98-sec-11, and pp-s-46 of the Clark Ranch group and, therefore, no costing was performed. As shown on the attached spreadsheets, the environmental liability associated with parcel pp-28-A of the Clark Ranch group is estimated to range from **\$400,691** to **\$1,093,320**. The anticipated amount of liability is controlled by the disposal location used, the depth of contamination assumed, and the assumed percentage of area that will require excavation. For disposal, low-cost (Richardson Flat Repository) and high-cost (Clean Harbors) disposal options are provided.

Q:\Projects\Park City\60521438 - Parcel Env Liability Analysis\09 Data\GIS\Maps\ClarkRanch.mxd



Parcel	Area (Sq Ft)
PP-S-46	34940.76
PCA-S-98-SEC-11	1383984.61
PCA-S-98	71167.51
PP-28-A	1781045.88
Total	3271138.76

Aerial Imagery: AGRC Hybrid 2016

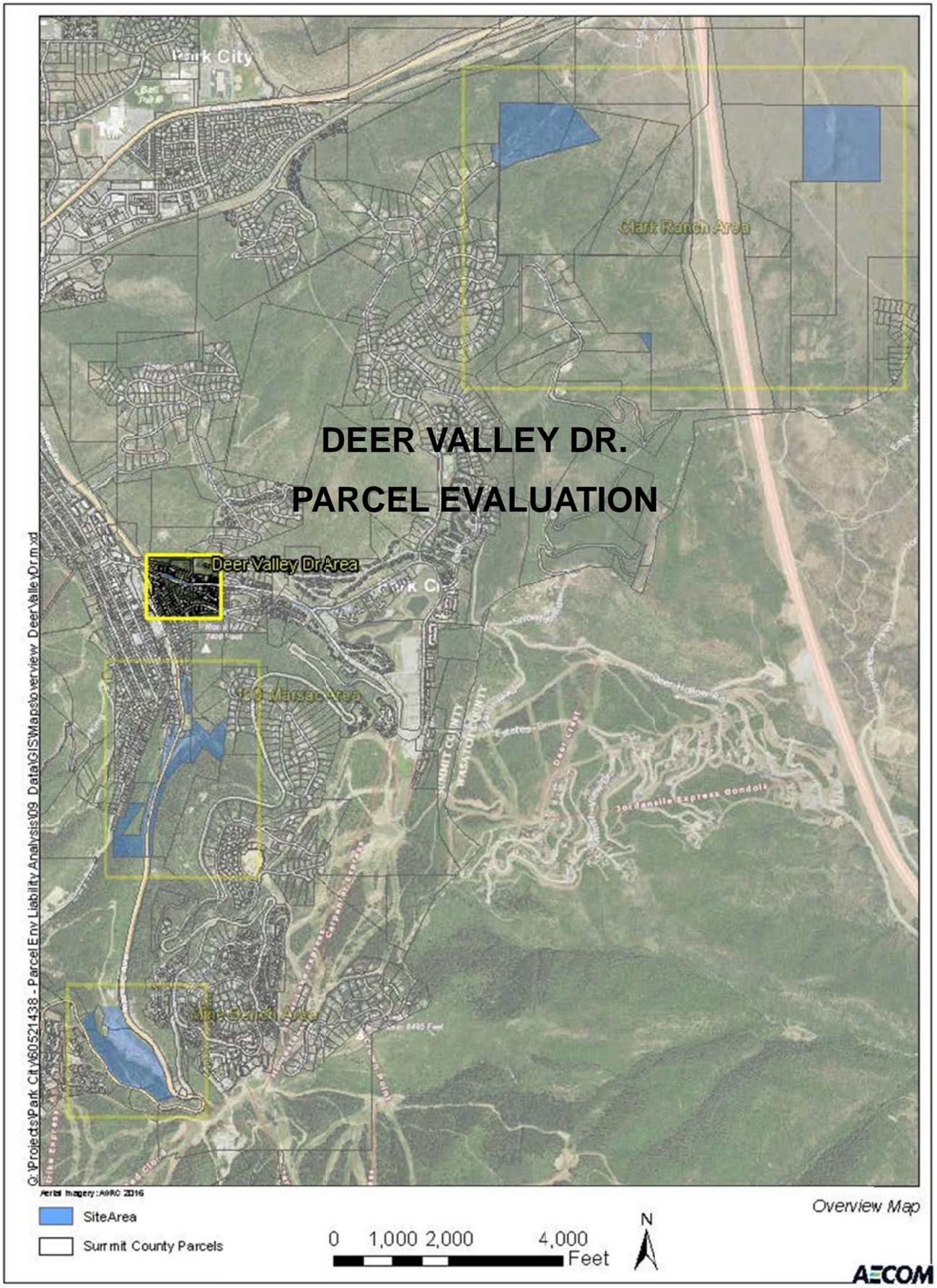
- Site Area
- Summit County Parcels
- + Mine Features, Adits, Prospects, Shafts

0 500 1,000 2,000 Feet



Clark Ranch





Parcel Group Name: **Deer Valley Drive Parcel** (see attached Figure)

Included Parcels / Size: pc-519-R / 16,700 sq.ft. (0.383 acres)

Current Landuse and Description: Approximately half of the parcel is currently paved (Deer Valley Dr.), with the other half consisting of landscaped front yards and driveway approaches to residential properties.

Proposed Landuse: No change

Known Contamination: No information available

Assumptions: Clean imported material was used for landscaping; therefore, no surface contamination exists. There is no associated groundwater contamination.

Anticipated Environmental Remedial Action: It is possible that contamination exists in the subsurface that may require appropriate handling and disposal should any future utility work be performed at depth. Therefore, for costing purposes, a fictional utility corridor was assumed, running the length of the parcel (500 feet), which would require a 4 foot wide excavation to a depth of 4 feet. All of the excavated material would exceed soil lead limits and would require disposal.

Estimated Environmental Liability: If contamination exists beneath the hardscaping and landscaping, there is not an exposure route that would require remediation at this time and, therefore, no environmental liability currently exists. However, to be conservative and as described above, a fictitious utility project was assumed for costing purposes. As shown on the attached spreadsheets, the environmental liability associated with potential future utility work on the Deer Valley Dr. parcel is estimated to range from **\$33,357** to **\$58,247**. The anticipated amount of liability is controlled by the disposal location used and the size of the utility trench required. For disposal, low-cost (Richardson Flat Repository) and high-cost (Clean Harbors) disposal options are provided.

Q:\Projects\Park City\60521438 - Parcel Env Liability Analysis\09 - Data\GIS\Maps\DeerValleyDr.mxd



PC-519-R

Parcel	Area (Sq Ft)
PC-519-R	16090.78

Aerial Imagery: AGRC Hybrid 2016

- Site Area
- Summit County Parcels



Deer Valley Drive

