

Abbreviated Preliminary Assessment for Sundown Mine

Blaine County



**State of Idaho
Department of Environmental Quality**

June 2014



STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1410 North Hilton • Boise, ID 83706 • (208) 373-0502

C. L. "Butch" Otter, Governor
Curt Fransen, Director

June 25, 2014

Mr. Ken Marcy
U.S. Environmental Protection Agency
Region 10
12928 SW 276th Street
Vashon, WA 98070

Subject: Abbreviated Preliminary Assessment Report for the Sundown Mine, Blaine County, Idaho

Dear Mr. Marcy:

The Idaho Department of Environmental Quality (DEQ) completed the enclosed Abbreviated Preliminary Assessment (APA) for the Sundown Mine under a cooperative agreement with Region 10 of the United States Environmental Protection Agency (EPA). Under this cooperative agreement, DEQ provides technical support for completion of preliminary assessments.

The Sundown Mine is located on private property. This assessment was conducted with landowner permission. DEQ inspected the site on May 12, 2014. The landowner will receive a copy of this APA report.

At the time of the site inspection, no evidence of mining or other hazardous or deleterious materials were observed. In addition, the Sundown Mine had no active surface water sources and no identified releases or potentials for release. Potential risks to human or ecological receptors associated with this mine site are minimal.

As a result of DEQ's research and observations, a No Remedial Action Planned (NRAP) designation is recommended for the Sundown Mine. This APA report can also be found on DEQ's Preliminary Assessment web page: www.deq.idaho.gov/preliminary-assessments.

If you have any questions, please feel free to give me a call at (208) 373-0296 or email dana.swift@deq.idaho.gov.

Sincerely,

A handwritten signature in blue ink that reads "Dana Swift".

Dana Swift
Mine Waste Project Coordinator

Attachments

cc: Yoshiko Thompson
Michael Thompson

Acknowledgments

DEQ would like to thank Yoshiko Thompson and Michael Thompson for permitting access to the mine site.

Contents

Introduction..... 3

Section 1. APA Checklist 4

 Task 1—Superfund Eligibility Evaluation..... 4

 Task 2—Initial Site Evaluation 5

 Task 3—DEQ Site Assessment Decision..... 6

Section 2. Historical and Geologic Information 7

Section 3. Current Site Conditions and Photographs..... 8

Section 4. Maps..... 10

Section 5. References..... 17

 GIS Coverages..... 17

Tables

Table 1. Site assessment decision guidelines for a site..... 6

Figures

Figure 1. Topographic location of the Sundown Mine in Blaine County, Idaho..... 12

Figure 2. Aerial view of the Sundown Mine in Blaine County, Idaho. 13

Figure 3. Map of major lithology in the vicinity of the Sundown Mine..... 14

Figure 4. Domestic well and public water system locations..... 15

Figure 5. Wetland locations. 16

Photos

Photo 1. View of vegetation associated with Sundown Mine site..... 9

Photo 2. View of Sundown Mine site from top of the ridge..... 9

Photo 3. View looking up into Sundown Mine site..... 10

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Introduction

This abbreviated preliminary assessment (APA) for the Sundown Mine in the Warm Springs Mining District, Blaine County, Idaho provides the rationale for the No Remedial Action Planned (NRAP) determination that no additional assessments or site inspections are necessary at this time. Section 1 provides the APA checklist (modified from EPA, 1999) filled out by the assessor to determine that an APA was warranted. The following sections contain additional relevant information and evidence to support the APA, including historical and geologic information (Section 2); current site conditions and photographs (Section 3); maps (Section 4); and references (Section 5). During this assessment, the Idaho Department of Environmental Quality (DEQ) used references from historic reports which often have different spellings for claim names, town sites, and/or geographic features. DEQ has retained the spelling from the original source document.

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Mine Waste Program Manager
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Boise, ID 83706
208-373-0290
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Date: 5/12/2014

Site Inspector: Rob Hanson, DEQ State Office

Site Name: Sundown Mine

Previous Names (aka): N/A

Site Owner: William & Yoshiko Thompson
c/o Michael Thompson
11091 Roanoke River Ct.
Rancho Cordova, CA 95670

Site Location: The Sundown Mine is accessible by vehicle. From Hwy 75 (approximately 10 miles north of Hailey) head east on Elkhorn Road (approximately 2 miles), turn right on Morning Star Road (approximately 0.7 miles), then turn right on Parker Gulch Road. The site is located to the southeast of Parker Gulch Road.
Township 04 North, Range 18 East, Section 10

Latitude: 43.68799°N **Longitude:** -114.29933°W

Description of release (or potential release) and its probable nature:

The Sundown Mine was investigated by the DEQ on May 12, 2014 for potential releases of heavy metals or other deleterious materials (such as petroleum products and ore processing chemicals) by airborne, surface water, or ground water pathways. Limited historical information is available for this site. The only historical reference document identified by the Idaho Geological Survey (IGS) was Anderson, et al., 1950. The Sundown Mine is not specifically

mentioned in this document; therefore, an assumption of mining history can be made based on the Parker Mine. The St. Louis Mine (adjacent to the Parker Mine) is located approximately 1,800 feet to the northeast of the Sundown Mine. Production at the St. Louis Mine included zinc, lead and silver; however, production ranges were not recorded by IGS.

Section 1. APA Checklist

Task 1—Superfund Eligibility Evaluation

Assessor, if all answers are “no,” continue to task 2; otherwise, explain any “yes” answers below and then skip to task 3.

	YES	NO
1. Is the site currently in the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) or an “alias” of another site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Is the site being addressed by some other remediation program (i.e., federal, state, or tribal)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Are the hazardous substances that may be released from the site regulated under a statutory exclusion (e.g., petroleum, natural gas, natural gas liquids, synthetic gas usable for fuel, normal application of fertilizer, release located in a workplace, naturally occurring, or regulated by the Nuclear Regulatory Commission, Uranium Mill Tailings Radiation Control Act, or Occupational Safety and Health Administration)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Are the hazardous substances that may be released from the site excluded by policy considerations (i.e., deferred to Resource Conservation and Recovery Act corrective action)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Is there sufficient documentation to demonstrate that there is no potential for a release that constitutes risk to human or ecological receptors (e.g., comprehensive remedial investigation equivalent data showing no release above applicable or relevant and appropriate requirements (ARARs), completed removal action, documentation showing that no hazardous substance releases have occurred, or an EPA-approved risk assessment)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Assessor, please explain all “yes” answer(s):

Regarding question 5: A reconnaissance level preliminary assessment was conducted to determine if any potential sources or associated releases could be identified due to historical mining practices. No concerns were identified during desktop research and no evidence of mining or other hazardous or deleterious materials were observed during the May 12, 2014 site inspection.

Task 2—Initial Site Evaluation

If information is not available to make a “yes” or “no” response below, further investigation may be needed. In these cases, the assessor should determine whether an APA is appropriate.

If the answer is “no” to *any* of questions 1, 2, or 3, proceed directly to task 3.

	YES	NO
1. Does the site have a release or a potential to release?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Does the site have uncontained sources containing CERCLA-eligible substances?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Does the site have documented on-site, adjacent, or nearby targets?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

If the answers to questions 1, 2, and 3 above were *all* “yes,” then answer questions 4–7 before proceeding to task 3.

	YES	NO
4. Does documentation indicate that a target (e.g., drinking water wells, drinking surface water intakes, etc.) has been exposed to a hazardous substance released from the site?	<input type="checkbox"/>	<input type="checkbox"/>
5. Is there an apparent release at the site with no documentation of exposed targets, but targets are on site or immediately adjacent to the site?	<input type="checkbox"/>	<input type="checkbox"/>
6. Is there an apparent release and no documented on-site targets or targets immediately adjacent to the site, but targets are nearby (e.g., within 1 mile)?	<input type="checkbox"/>	<input type="checkbox"/>
7. Are there uncontained sources containing CERCLA hazardous substances, a potential to release with targets present on site or in proximity to the site, but no indication of a hazardous substance release?	<input type="checkbox"/>	<input type="checkbox"/>

Notes:

At the time of the site inspection, the Sundown Mine site had no mining related water present, no active surface water sources and no identified releases or potentials for release. The closest occupied residential dwelling is approximately ¼ mile to the southwest of the property boundary, along Parker Creek. No on-site targets were identified. Potential risks to human or ecological receptors associated with this mine site are minimal.

Table 1 parallels the questions above and should be used by the assessor to make decisions during task 3. Table 1 identifies different types of site information and provides some possible recommendations for further site assessment activities based on that information. The assessor should use Table 1 in determining the need for further action at the site, based on the answers to the questions in task 2. Assessors should use professional judgment when evaluating a site. An assessor’s individual judgment may be different from the general recommendations for a site given below.

Table 1. Site assessment decision guidelines for a site.

Suspected/Documented Site Conditions	EPA-Recommended Site Assessment Activities
1. There are no releases or potential to release.	APA
2. No uncontained sources with CERCLA-eligible substances are present on site.	APA
3. There are no on-site, adjacent, or nearby targets.	APA
4. There is documentation indicating that a target (e.g., drinking water wells, drinking surface water intakes, etc.) has been exposed to a hazardous substance released from the site.	APA → SI or PA/SI
5. There is an apparent release at the site with no documentation of exposed targets, but there are targets on site or immediately adjacent to the site.	APA → SI or PA/SI
6. There is an apparent release and no documented on-site targets and no documented targets immediately adjacent to the site, but there are nearby targets. Nearby targets are those targets that are located within 1 mile of the site and have a relatively high likelihood of exposure to a hazardous substance migration from the site.	Full PA
7. There is no indication of a hazardous substance release, and there are uncontained sources containing CERCLA hazardous substances, but there is a potential to release with targets present on site or in proximity to the site.	Full PA

Task 3—DEQ Site Assessment Decision

When completing task 3, the assessor should use task 2 and Table 1 to select the appropriate decision. For example, if the answer to question 1 in task 2 was “no,” then an APA is appropriate and the “NRAP” box below should be checked. Additionally, if the answer to question 4 in task 2 is “yes,” then two options are available (as indicated in Table 1): (1) proceed with an APA and check the “Lower Priority SI” or “Higher Priority SI” box below or (2) proceed with a combined PA/SI.

Check the box that applies based on the conclusions of the APA checklist:

- | | |
|---|--|
| <input checked="" type="checkbox"/> No Remedial Action Planned (NRAP) | <input type="checkbox"/> Defer to NRC |
| <input type="checkbox"/> Higher Priority SI | <input type="checkbox"/> Refer to Removal Program |
| <input type="checkbox"/> Lower Priority SI | <input type="checkbox"/> Site is being addressed as part of another CERCLIS site |
| <input type="checkbox"/> Defer to RCRA Subtitle C | <input type="checkbox"/> Other: _____ |

DEQ Preparer:



Rob Hanson

6/25/14
Date

Please explain the rationale for your decision:

As a result of DEQ’s research and site observations, a NRAP designation is recommended for the Sundown Mine. Desktop research and site inspection observations confirm that there are no

current releases of heavy metals or other deleterious materials by airborne, surface water, or ground water pathways.

Section 2. Historical and Geologic Information

The Quaker City Mine and adjoining Jo Orla Prospect north of Sundown Mine were assessed by DEQ and given an NRAP designation, as reported in the *Quaker City Mine Preliminary Assessment Report* (DEQ 2007); however, access has not been granted for the other sites in closer proximity to Sundown Mine. Since limited historic information is available for the Sundown Mine, the following historic and geologic information is summarized from the nearby Parker Mine, as reported in the Idaho Bureau of Mines and Geology *Detailed Geology of Certain Areas in the Mineral Hill and Warm Springs Mining District* (Anderson, et al 1950, p. 50-51). DEQ cannot improve or expand upon geologic information included in historic reports; therefore, information from these reports is included as direct quotations. The figure referenced in this quote has not been duplicated in this report.

PARKER MINE

Location and Development

The Parker mine is 6.7 miles east of Ketchum, in Parker Gulch. It comprises 7 patented and 8 unpatented mining claims covering portions of Sect. 10 and 11, T. 4 N., R. 18 E., Boise Meridian. The property is held by the Amicus Trust Company, currently under the management of Mr. Heber Comer of Ketchum, Idaho.

There are four funnels on the property that explore the Parker vein. These include the Western Reserve, Blacksmith, Montgomery, and the St. Louis (Fig. 19.) Other mine workings include the lower Parker tunnel, and the Amicus and Gondolier. The latter two explore the Amicus vein. Several smaller diggings are scattered throughout the property. All workings are in the Milligen formation.

History and Production

According to Bull. 814 the Parker deposit was discovered in 1883 by Eugene Gillenwater. During the next 15 years the property produced 1,552 tons of ore carrying 1,106,463 pounds of lead and 300,236 ounces of silver; the bulk of which was taken from one ore shoot about 75 feet long, extending from the Blacksmith level to some distance below. Bulletin 814 quotes the manager of the mine at the time of its production, who stated that the ore shoot was followed by a winze driven on the 30 degree dip of the vein for about 500 feet. At that point the vein terminated against a steeply dipping fault and no ore was found beyond.

At a later date the Montgomery tunnel was driven at a lower level to intersect the downward continuation of the Parker vein but this long tunnel and its accompanying crosscuts failed in their efforts.

The property has been worked intermittently since 1938 with the lower Parker tunnel, the Amicus tunnel, and the raise near the face of the Montgomery tunnel receiving most of the attention. It was idle during the summer of 1949.

Geology of the Parker Vein Workings

The Parker vein crops out across a small ridge between the Blacksmith and Western Reserve tunnels. It strikes N. 72° E. and dips 35° SE. The vein has been explored by numerous pits which expose it as a rust-colored quartz-bearing shear zone whose average width approaches four feet. The vein wall rock is dark carbonaceous argillite. Although the vein is oxidized on the outcrop, the quartz when broken often presents fresh sulphides. An assay taken on the outcrop went .03 ounce in gold per ton, 17.5 ounces in silver per ton, and 30 per cent lead (12). The vein may be traced up the hill beyond the Western Reserve tunnel but is soon lost beneath surface mantle.

The Western Reserve tunnel is caved 75 feet from the portal, and, in the area accessible, presents nothing but an 18-inch barren quartz vein.

During recent years the Blacksmith tunnel has been reopened for a distance of 350 feet; however, much of the tunnel is tightly lagged, making geologic observations difficult. The innermost 150 feet of tunnel follows the Parker vein, a pronounced shear zone striking almost east-west and dipping about 30° S. A 30-inch quartz and calcite vein, containing some sulphides, occupies most of the shear zone at the caved face. The country rock adjacent to the footwall of the vein is a shiny, graphitic material with abundant slickensided surfaces. It has a greasy feel when touched and readily soils the hands. The graphitic substance is probably the result of metamorphism of bituminous material that was deposited with the argillitic country rock. According to an old mine map, 110 feet beyond the caved area a 500-foot winze was driven from the Blacksmith level. Several sub-levels and stopes lead from the winze, all long since caved and now inaccessible.

The Montgomery tunnel, driven during the early 1900's, was reopened by Mr. Comer, who advanced a raise at the tunnel end to intersect the lower workings driven from the winze extending from the Blacksmith level. The tunnel and raise contain "bad air," and unless the air compressor is operating, forcing compressed air back to the raise, entry is hazardous and even then is restricted to the main tunnel. For this reason the tunnel was not mapped in detail, but a tracing of the tunnel workings was obtained from a previous map. (Fig. 19.) A small dike of andesitic composition is followed by the main tunnel, and by one short crosscut, and while it is reported to contain some gold values there is no evidence of lead-silver mineralization.

The St. Louis tunnel intersects and drifts on a flat dipping shear zone, which locally contains quartz lenses and stringers, and often good showings of sulphide ore. Where thickest, the vein dips from six to twelve degrees, elsewhere in area of steeper dip the vein pinches. Near the winze the vein is four feet thick and contains abundant exposures of galena, sphalerite, tetrahedrite, and some ruby silver. Assays from this area run as high as 114 ounces of silver per ton, and 49.8 per cent lead. The ore is somewhat oxidized in the foot-wall areas of the shear zone. Crushed and dislocated quartz fragments suggest post-mineral shearing in the plane of the vein. Intricate drag folding of the thin-bedded argillite indicates the shear zone is a reverse fault, with perhaps minor normal fault adjustment.

Across the draw from the St. Louis portal, a 60-foot adit follows a major fault, striking N. 73° E. and dipping 48° SE. This, the St. Louis fault, displaces a 90-foot quartzite member 350 feet to the right, as the fault plane is placed. (Fig. 19.) Although it cannot be provided, lithology of the faulted area suggests that the fault is normal.

Section 3. Current Site Conditions and Photographs

Sundown Mine site observations and photographs were collected during the DEQ site inspection on May 12, 2014. The weather was approximately 48°F, clear, sunny, with a wind out of the east. No evidence of mining was observed during the visit and the site is well vegetated (Photos 1-3). No active water sources were draining from the Sundown Mine site property.



Photo 1. View of vegetation associated with Sundown Mine site.



Photo 2. View of Sundown Mine site from top of the ridge.



Photo 3. View looking up into Sundown Mine site.

Section 4. Maps

The Sundown Mine site is located east of Sun Valley, Idaho (Figures 1 and 2). Specific site location details are included in the above checklist. The generalized geology of this area is shown in Figure 3 with a description included in Section 2 of this report.

The Sundown Mine is located along the Parker Gulch drainage within the Big Wood River subbasin. At the time of the site visit, no water was observed in the on-site, unnamed drainages; however, Parker Creek, a tributary to the Big Wood River, was running water. The site visit was conducted in the spring at a time of the year when water is expected to be present. For the surface water pathway, the probable point of entry (PPE) is into unnamed drainages located within the Sundown Mine property boundary. The 15-mile target distance limit (TDL) follows Parker Creek and ends just west of Hailey city limits on the Big Wood River (Figure 4). There are wetlands in the immediate vicinity of the Sundown Mine site location and downstream of the site along Parker Creek within a 2-mile radius (Figure 5). Potential ground water pathways include 26 public drinking water systems and approximately 485 domestic wells located within a 4-mile radius of the mine site location, including three domestic wells located along the Parker Gulch drainage (Figure 4).

Sensitive species can have large habitat ranges that overlap the vicinity of the Sundown Mine site. Based on the list of *Endangered, Threatened, Proposed, and Candidate Species with Associated Proposed and Critical Habitats in Idaho* (USFWS 2014), the following species are identified for Blaine County:

- Birds: Greater Sage Grouse, *Centrocercus urophasianus*, candidate species and Yellow-Billed Cuckoo, *Coccyzus americanus*, proposed species.
- Mammals: Canada Lynx, *Lynx canadensis*, threatened species and North American Wolverine, *Gulo gulo luscus*, proposed species.
- Fish: Bull Trout, *Salvelinus confluentus*, threatened species-designated critical habitat.
- Plants: Whitebark Pine, *Pinus albicaulis*, candidate species.

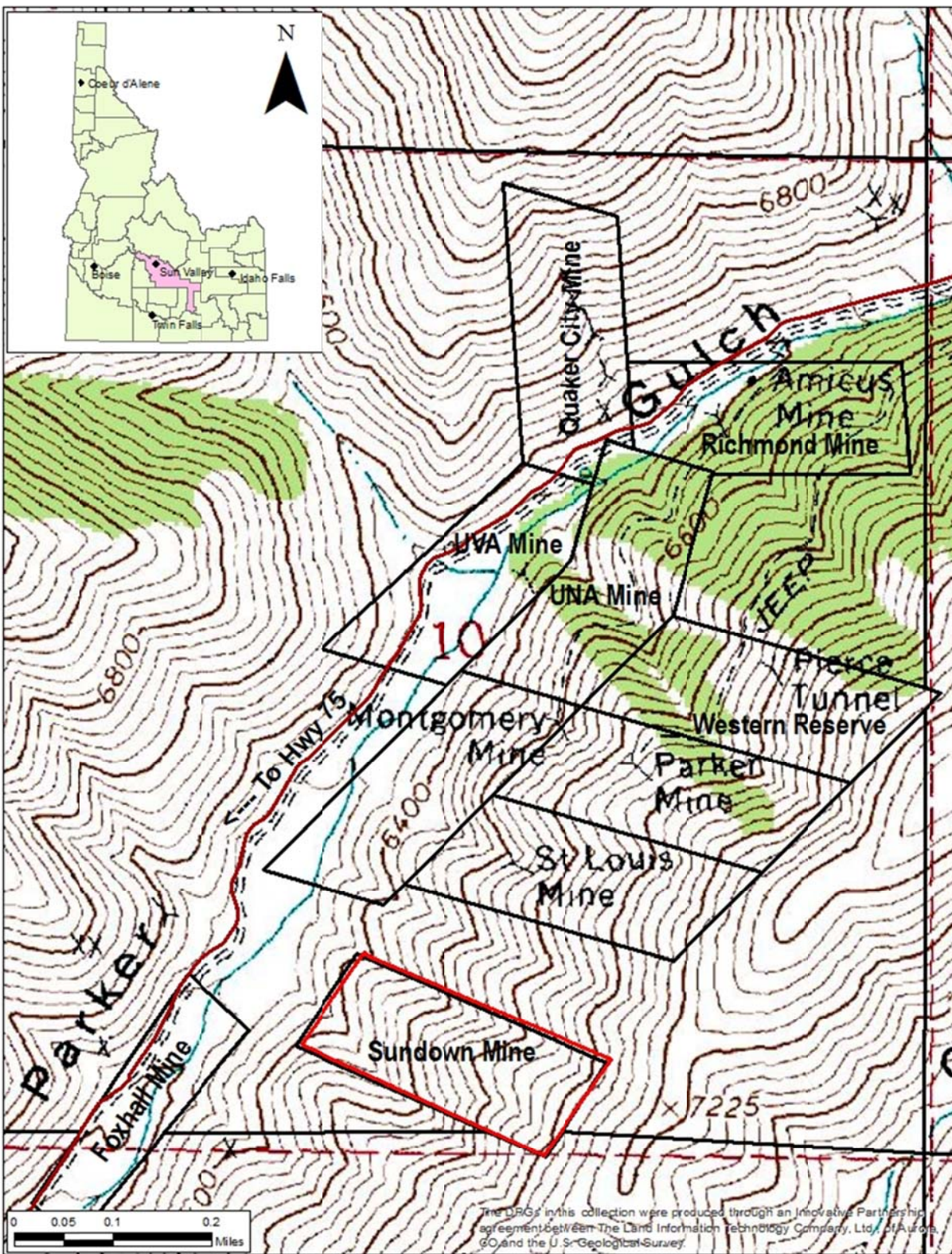


Figure 1. Topographic location of the Sundown Mine in Blaine County, Idaho.

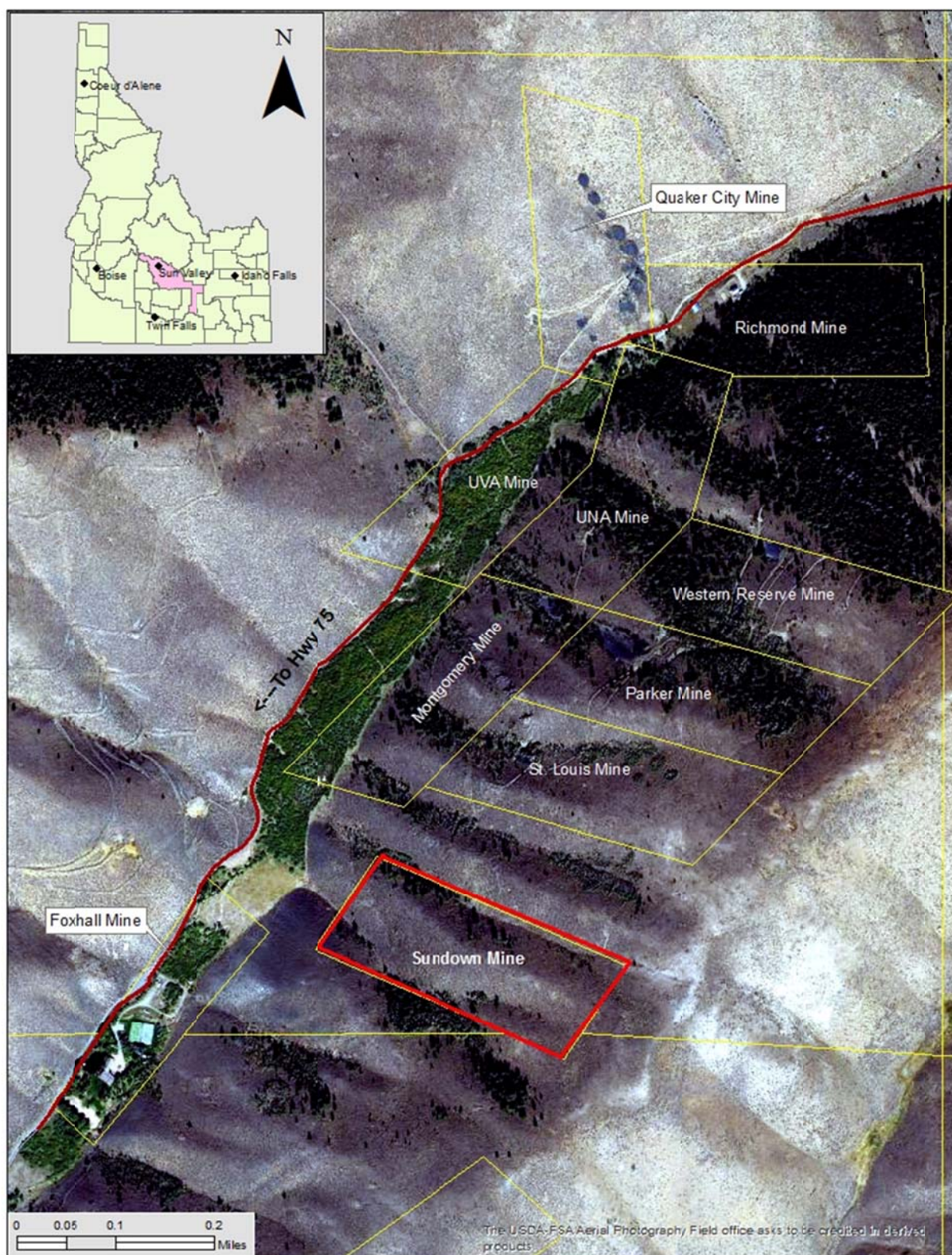


Figure 2. Aerial view of the Sundown Mine in Blaine County, Idaho.

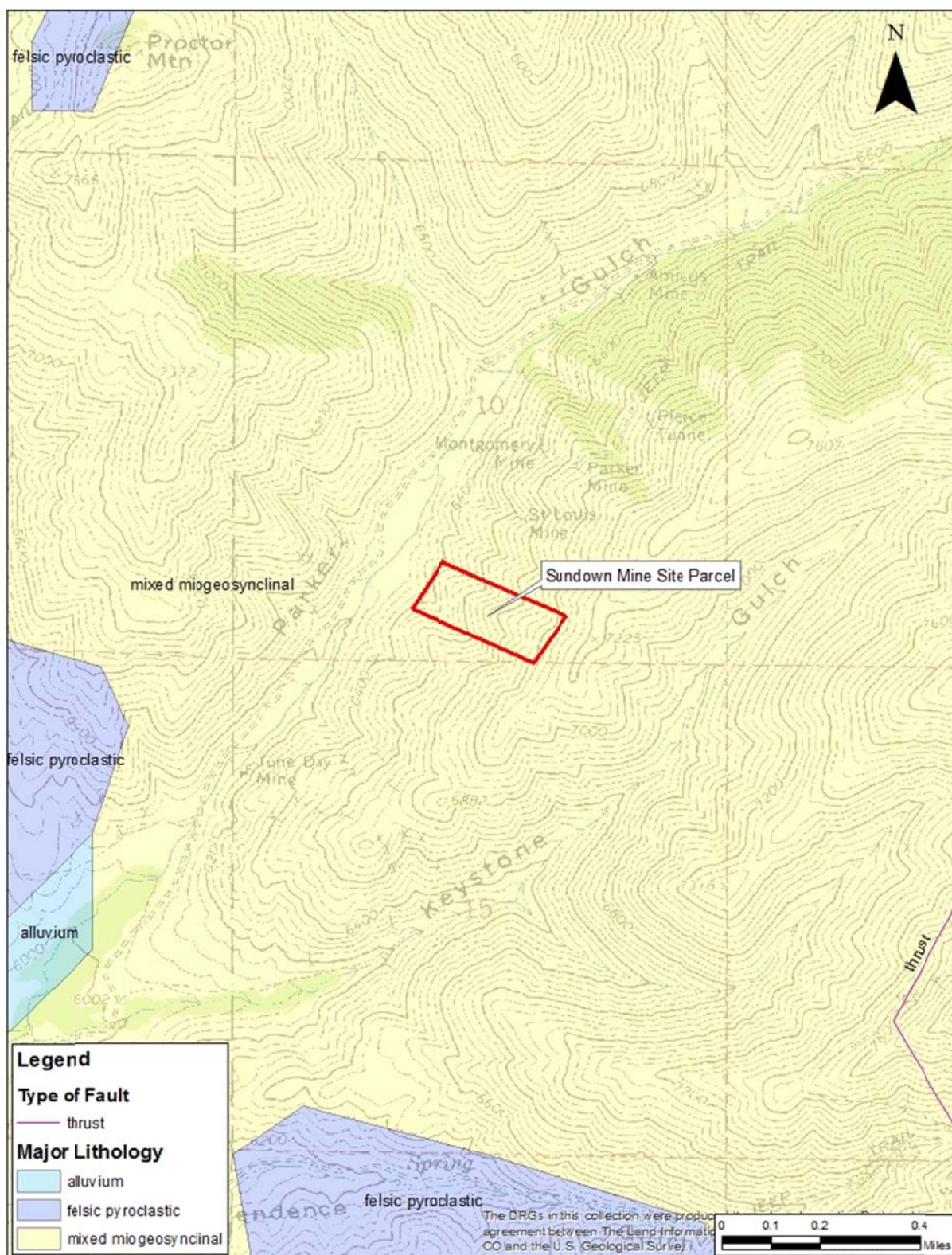


Figure 3. Map of major lithology in the vicinity of the Sundown Mine.

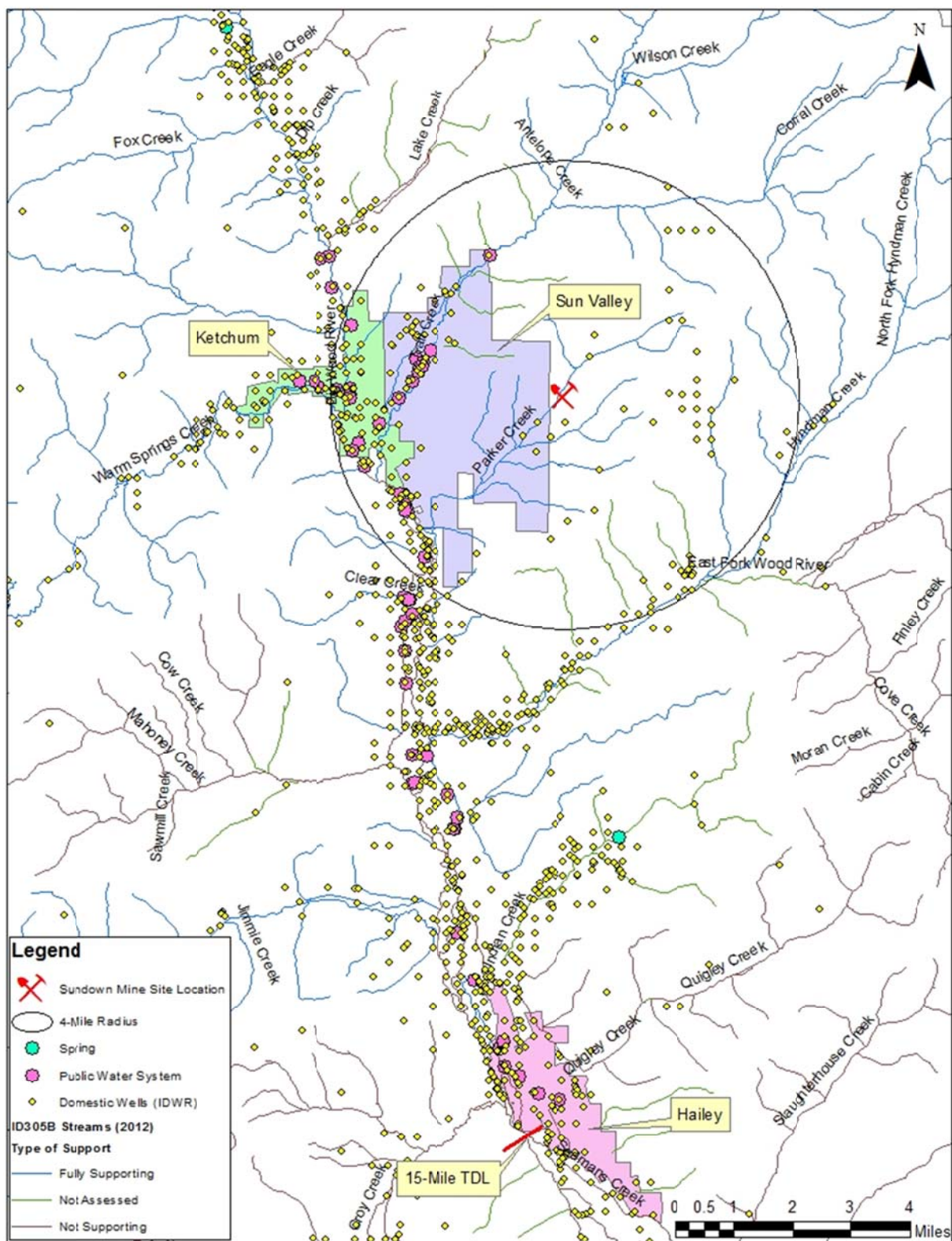


Figure 4. Domestic well and public water system locations.

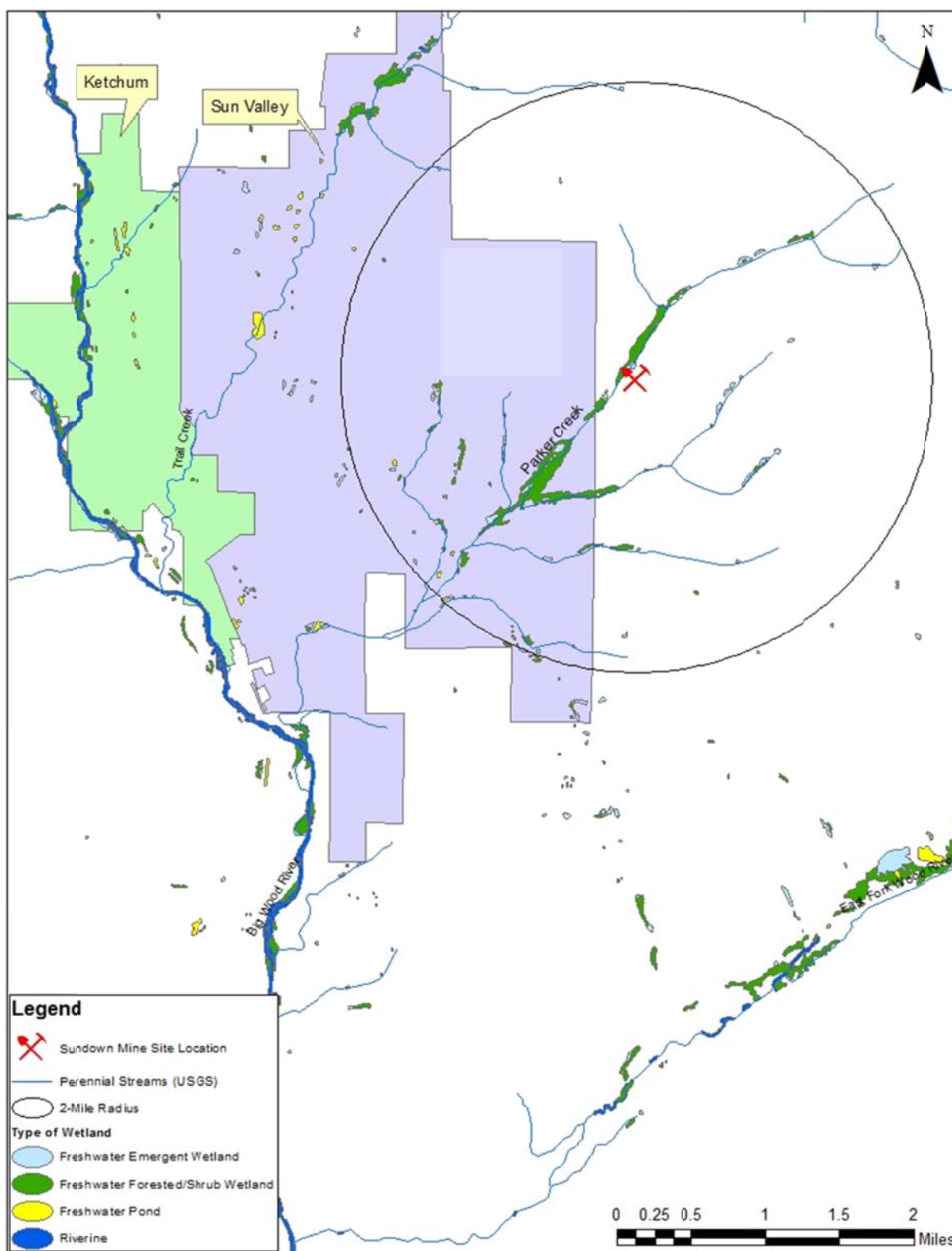


Figure 5. Wetland locations.

Section 5. References

- Anderson, A.L., T.H. Kiislgaard, and V.C. Fryklund, Jr. 1950. *Detailed Geology of Certain Areas in the Mineral Hill and Warms Springs Mining Districts, Blaine County, Idaho*; Idaho Bureau of Mines and Geology, Pamphlet No. 90, p. 50-51.
- DEQ (Idaho Department of Environmental Quality). 2007. *Quaker City Mine (aka Quaker City patented mining claim) and Jo Orla Prospect Preliminary Assessment Report, Blaine County, Idaho*. Available at: <http://www.deq.idaho.gov/waste-mgmt-remediation/remediation-activities/preliminary-assessments.aspx>
- EPA (U.S. Environmental Protection Agency). 1999. *Improving Site Assessment: Abbreviated Preliminary Assessments*. Quick Reference Guidance Series. Office of Emergency and Remedial Response Site Assessment Team. EPA-540-F-98-037. OSWER 9375.2-09FS. PB98-963308.
- IGS (Idaho Geological Survey). 2013. Mine Database. Available at: <http://www.idahogeology.org/Services/MinesAndMinerals/Search/>
- USFWS (United States Fish and Wildlife Service). 2014. *Endangered, Threatened, Proposed, and Candidate Species with Associated Proposed and Critical Habitats in Idaho*. USFWS – Idaho Fish and Wildlife Office. Species list was reviewed by the USFWS on 10/23/2013 and is valid for 90 days after 06/17/2014.

GIS Coverages

- IDWR (Idaho Department of Water Resources). Domestic Wells (deqgis83.DBO.Domestic_Wells). Using: ArcMap GIS. Version 10.2.1. Redlands, CA: Environmental Systems Research Institute, Inc., 2013.
- Major Lithology (deqgis83.DBO.Major_Lithology). Using: ArcMap GIS. Version 10.2.1. Redlands, CA: Environmental Systems Research Institute, Inc., 2013.
- Public Water Systems (deqgis83.DBO.Public_Water_Systems). Using: ArcMap GIS. Version 10.2.1. Redlands, CA: Environmental Systems Research Institute, Inc., 2013.
- Sensitive Streams (deqgis83.DBO.ID305B_2012). Using: ArcMap GIS. Version 10. Redlands, CA: Environmental Systems Research Institute, Inc., 2013.
- USGS (US Geological Survey). Perennial Streams (deqgis83.DBO.Perennial_Streams_USGS). Using ArcMap GIS. Version 10.2.1. Redlands, CA. Environmental Systems Research Institute, Inc., 2013.
- USFWS (US Fish and Wildlife Service). 2012. National Wetlands Inventory. Available at: <http://www.fws.gov/wetlands/index.html>

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