PRELIMINARY REPORT

Geologic Description of Antimony (Stibnite) Deposits in the Bernice Canyon Area, Churchill County, Nevada

And

Recommendations for Ongoing Exploration

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1.0 Summary

Between August 11 thru 20, 2024, several days were spent mapping and sampling over the American Antimony project claim block (Figure 1). Upon early inspection of the peripheral prospects, the Bernice Canyon zone was deemed to be the most prospective area. The Bernice Canyon area is almost entirely composed of finely laminated, strongly fractured Triassic siltstone and mudstone and hosts a NW- to north-trending felsite dike complex which has been traced for about 2.5 kilometers. Overall, the finely laminated clastic host rocks are not amenable to large replacement-type deposits nor extensive stockwork deposits. The information to date suggests a very tightly constrained, and perhaps high-grade, antimony occurrence may be hosted within the felsite dike complex.

The felsite, a fine-grained weakly porphyritic felsic rock, dips sub-vertically and ranges up to about 10 meters in width. The rock has been widely altered to quartz-sericite-pyrite (QSP) and invaded by stibnite as spheroidal disseminations, sulfide veinlets and quartz-stibnite-(ankerite) veinlets. The pervasive and continuous nature of the QSP alteration, along with the visible absence of other metals (i.e. Cu-Pb-Zn), suggest a strong system related to a magmatic-hydrothermal event. Bernice Canyon does not appear to be a low-temperature, distal occurrence.

Limited sampling (21 samples) confirms the widespread presence of antimony (mostly as stibnite) in the mineral styles noted above. Spheroidal stibnite hosted in the QSP altered felsite contained Sb values between 0.24 to 2.45% and is volumetrically more important than the higher grade, vein-type occurrences. Dump samples containing stibnite-rich veins from the felsite dike, siltstone and limestone (marble) ranged from 5.69% to 12.03% Sb. A 0.5m chip across sub-horizontal veins in the felsite dike of the Antimony King mine contained 5.69% Sb. The highest grade sample (#969124) contained 30.89% Sb in a mixture of stibnite, milky quartz and ankerite/iron oxides.

This initial mapping is viewed as a preliminary glimpse into the geology and mineral potential of the Bernice Creek area. The close spatial relation between the felsite dikes and stibnite mineralization is clear and presents an important target for ongoing exploration. The remoteness of the project and limited access to good, mineralized exposures presents a challenge to the sampling of the target zone. Regardless, once access into the area is improved, additional mapping of the dike complex (between the No Name adit and Arrance mines) should be done and sampling where practical.

The need for quality samples along the strike of the felsite dike complex is likely best addressed by a Reverse Circulation (RC) drilling program once vehicular access is re-established into the canyon. To achieve this access, the permitting process should begin immediately. The opportunity to obtain a Notice of Intent (NOI) with the Bureau of Land Management (BLM) will allow for drilling in the near-term provided that cumulative disturbances do not exceed 5 acres. Once permitted, a work program for this is presented within and can be completed in a period of 10 days at an estimated cost US$25,000. All of the important antimony (stibnite) mines are located along the flanks of Bernice Canyon creek and are easily accessed by the historic road. Initial drill testing

can be done with holes less than 200 m depth with most in the 50 to 100 m range. Expediting the drilling program considers that surface sampling, i.e. trenches, across the dikes will encounter partially oxidized, and potentially leached, material and not representative of mineral below the creek level. Sampling of the mine workings will require mine rehabilitation which will be costly, slow and less definitive than drilling.

Figure 1. Location of the American Antimony Project, Churchill Co., Nevada (from Howard, 2024).

2.0 Methodology

Mapping was conducted by the Author, along with Brent Bingham, geologist/mining contractor, from August 11 to 20, 2024. During this period, 5 days were spent in Bernice Canyon, 2 days in Hoyt Canyon and 1 days in the Lofthouse mine area. Daily travel was from Fallon and required about 2.5 hours to the parking area in Bernice Creek, a point beyond which the truck could not enter.

The mapping procedure was based on the Maxar and ESRI World Imagery base which was georeferenced (WGS 1984 – UTM Zone 11N). Mapping was conducted at a scale of 1:1,000 (1cm = 10m) on mylar covering the 8.5” x 11” map sheet (Figure 2). Topographic contour intervals are also provided at 5-meter vertical intervals. Observations and data are directly placed onto the map sheet. Owing to the high-resolution satellite imagery, geologic and geomorphic features can be directly identified on the sheets.

The resulting map, shown in Figure 6, was generated from a composite mosaic consisting of 83 field sheets covering the Bernice Canyon target area. This map is considered to be a preliminary map owing to time and logistical constraints; additional detail may be warranted prior to drilling. This methodology facilitates on going and more detailed mapping as the original map sheets can be utilized multiple times in the field as the projects requires more detail.

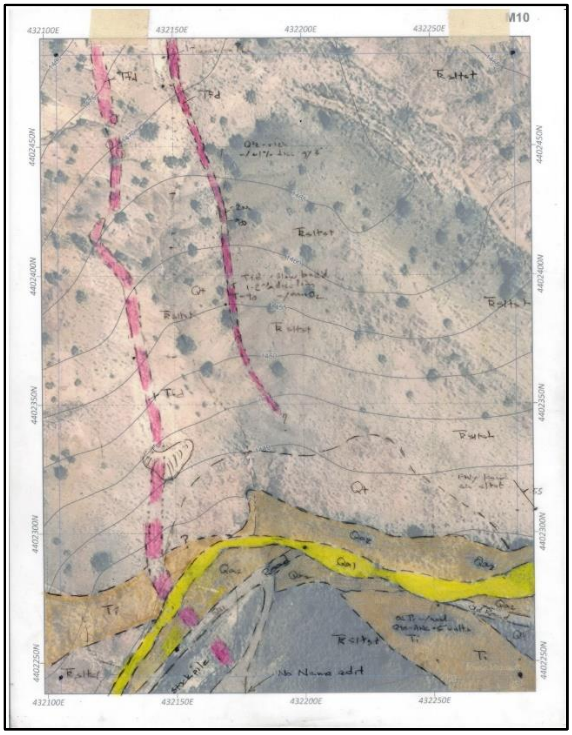

Figure 2. Sheet M10 (NW dike complex/No Name adit) showing mapping methodology employed in mapping program.

3.0 General Geology

The geology of the American Antimony project area has been summarized by Howard (2024). The rocks hosting the project, including all of the areas visited in August, are composed of Triassic sediments with a thick siltstone/shale unit underlying most of the project area. The total thickness of the shale and siltstone unit is not certain because the base is not exposed; rocks older than Upper Triassic have not been observed. The siltstone unit is progressively younger toward the north, and the stratigraphic thickness is estimated to be at least 6,100 m (20,000 ft). The highest beds are massive dolomite, north of Hoyt Creek, but lack any age-indicative fossils; they could be Jurassic but are included in the Triassic unit owing to their lithic similarity to nearby Triassic rocks.

Local folding is present along the NW-trending Bernice Creek which likely coincides with movement along NW-trending faults and dikes. Tight folds were not documented but the entire sedimentary package strikes NW and dips steeply (>50^o) to the NE; locally the beds are vertical in proximity to dikes and faults. The siltstone exhibits one or more cleavages at most places (Figure 3). In general, one of the cleavages is an axial-plane cleavage sufficiently penetrative to be called a slaty cleavage. The siltstone is recrystallized near the felsic intrusive rocks and widely resemble phyllites and hornfels.

Figure 3. Photo of strongly jointed Triassic siltstone. Fabrics include bedding (NW), a penetrative pattern with associated weak foliation and a sub-horizontal fabric at ~20 degrees.

An extensive area covered by andesitic flows and tuff breccia was observed to the east and south of the Lofthouse mine; the andesites were not altered.

Two intrusive units have been identified during the mapping: 1. Sills and dikes of a equigranular, fine- to medium grained unit which resembles a monzonite (Ti; Figure 4). Several exposures of this unit were identified in the lower elevations of Bernice Canyon where sills are up to 15 m thick, This intrusive is generally weakly altered but strongly altered where cut by the felsite dike (Figure 5).

Figure 4. Photo of medium-grained, equigranular monzonite occurring as sills and dikes emplaced into the Triassic siltstone within Bernice Canyon.

Figure 5. Photo of the felsite dike (white) cutting the monzonite (Ti) sill on the north side of Bernice Creek in front of the No Name adit.

The monotonous sequence of fine-grained clastic sediments is traversed, over a distance of at least 2.5 km, by several parallel, NW- to north-trending felsite dikes up to about 8 meters in width (Figure 6). Owing to the close spatial correlation with the historical antimony mines and stibnite occurrences in Bernice Canyon, this unit was assigned a high priority in the mapping program.

Felsite refers to a fine-grained igneous rock of acid (silicic) composition. They are principally composed feldspar and quartz and individual crystals (phenocrysts) may be difficult to discern. Many felsites contain phenocrysts of quartz (commonly resorbed), feldspar, and occasionally biotite.

The felsite mapped along the floor of Bernice Canyon can be traced for at least 2.5 km and trends N40^{o}W in the SE extent (Antimony King to Arrance mines) and bends clockwise to about N-S in its northern extent (Figure 6). The dike dips steeply ranging between 70 and 90 degrees. In Bernice Canyon, the dike's contacts with the surrounding siltstone are commonly flow banded and frequently faulted.

Over much of its strike, the dike is composite and may consist of up to 3 parallel splays (Figure 6). Along the SE extent of the dike complex, antimony mining has occurred along 2 splays: the Arrance and Antimony King mines along the SW splay and the IXH and King Solomon mines along the NE splay. It is strongly suspected that changes in orientation of the dike and/or cross cutting structures may be important in the focusing of antimony-bearing fluids.

Examples of the felsite are shown in Figures 8 and 9 while its distribution is given in Figure 6. A few samples should be sent for thin section and petrographic analyses. This will allow for a more complete description of the unit closely associated with stibnite mineralization. Closer inspection of the felsite reveals a fine-grained, nearly equi-granular mixture of quartz and feldspar with occasional plagioclase and mica phenocrysts up to 0.5cm. In the samples observed, the phenocrysts have been replaced by sericite and the fine-grained groundmass has been replaced by quartz-sericite-pyrite. Examples of mineralization provided below suggest that the felsite provided the required permeability for the mineralizing fluids to migrate upward and across the highly impermeable Triassic siltstone units; stibnite has not been observed in the absence of the dike except at the Hoyt and Lofthouse mines where mineralization appears to be considerably weaker.

Figure 6. Preliminary geologic map of the Bernice Canyon area showing the distribution of antimony mines and stibnite occurrences along the extent of the felsite dike complex.

4.0 Project Geology

Mapping focused on the historic stibnite deposits and occurrences identified along the lower elevations of the Bernice Canyon drainage and, hence, the geologic framework is restricted to this area (Figure 6). Regardless, mapping in the Triassic terrain, dominated by finely laminated clastic sediments, reveals little evidence of a mineralizing event away from Bernice Creek and the felsite dikes.

Within the scope of this mapping program, several features are geologically significant including:

- The dominant rock type is a finely laminated siltstone which is not conducive to open space development (Figure 3).
- These rocks generally strike northwest and dip steeply to the northeast (Figure 6).
- Along Bernice Canyon, the siltstone-mudstone-shale sequence reveals a pronounced structural fabric consisting of bedding, a transverse joint pattern and a sub-vertical joint pattern (<20^{o}). In some place, the jointing is so pervasive that bedding cannot be determined (Figure 3).
- This fine-grained clastic sequence is everywhere a slope forming unit unless hosting fine-grained sandstone ledges or intrusive dikes (felsite) and a light-colored, quartz-poor unit (monzonite; Figure 4) that pre-dates the felsite (Figure 5) and is generally concordant to the strata (sill; Ti).
- Faults have been mapped from both field exposures and lineaments in the drainages and distribution of iron oxides. Elevated iron oxides roughly correspond to the felsite dike complex and NW-trending faults which follow the Bernice Creek drainage (see Figure 6). It is likely that strong iron oxide development is a reflection of the hydrothermal fluids following the dike-related conduit but may also reflect faulting of the sediments and oxidation of the contained syngenetic pyrite. The geologic map (Figure 6) and Figure 7 suggest that moderate to strong iron oxides reflect pyrite addition during hydrothermal alteration.

Figure 7. Looking northwest along a segment of the northeast-dipping felsite dike (lite colored rock) with strong iron oxides developed in both the footwall and hanging wall, NW Zone.

- Mapping of the felsite dikes in the vicinity of the King Solomon and Antimony King mines suggests that the dikes were emplaced into a network of right lateral strike-slip faults where en echelon-oriented dike segments and right releasing bends suggest more extensional environments where the dikes rotate into a N-S plane, i.e. Antimony King and Arrance mines. This observation should be given consideration in the design of drilling programs.

- Over the extent of the felsite exposures along Bernice Creek and further to the north, the dike is characteristically altered to a fine mixture of quartz-sericite-pyrite (Figure 8) rendering the rock to white or shades of light green (Figure 9). Where unoxidized, finely disseminated pyrite is widely associated with minute clots or grains of stibnite. Although subtle, the QSP altered rock may be traversed by a few quartz-sericite veinlets imparting various shades of green and gray (Figure 9). A weakly porphyritic texture can be observed where plagioclase laths are selectively altered (Figure 8). Relict textures are mostly obscured where the rock is strongly veined or replaced by stibnite.

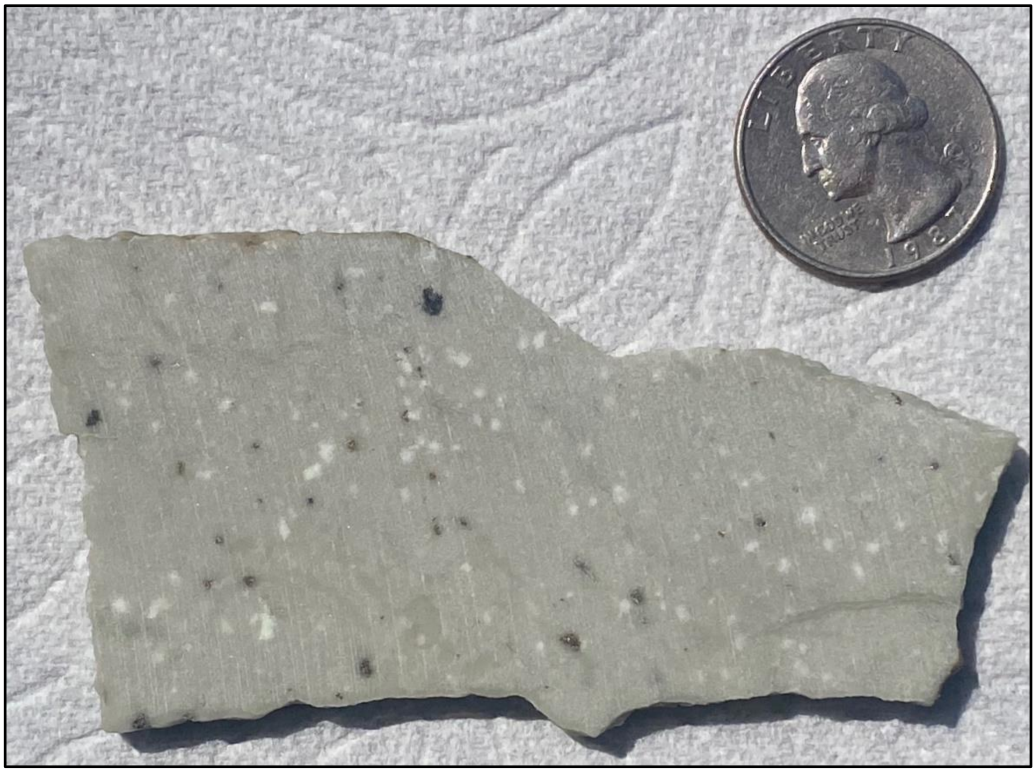

Figure 8. Photo of the pervasively sericitized felsite with relict fine-grained, plagioclase phenocrysts and disseminated pyrite-stibnite clots. Location: 4,401,738N; 432,590E.

Figure 9. Photo of the pervasively sericitized felsite with relict fine-grained, plagioclase phenocrysts and disseminated pyrite-stibnite clots. Note several crosscutting stages of quartz-sericite, quartz and quartz + sulfide micro-veinlets, King Solomon mine.

The persistence of QSP or phyllic alteration, with variable but widespread stibnite over the 2.5 km strike of the felsite dike complex, suggests a level of homogeneity related to a major magma-driven hydrothermal event. Aside from stibnite + pyrite, no other sulfides have been observed to suggest a variation in the system's geochemistry such as zoning. This, along with the scale of the QSP alteration, support vertical continuity of the antimony event to depths beyond the normally restricted depths of epithermal antimony deposits.

Figure 10. Looking northwest along the felsite dike hosting the upper workings of the Arrance mine. All mine openings are developed on the felsite dike.

5.0 Mineralization Types

Mapping within and along the Bernice Canyon Felsite Dike Complex has identified at least 3 styles of stibnite mineralization. All types occur within or adjacent to the felsite dikes.

Type 1: Spheroidal

The most widespread, and obvious in the field, is a disseminated style of stibnite which occurs as small spheres, < 0.5cm in diameter, dispersed throughout the felsite. As indicated in Figure 6, this style of mineralization has been observed along the entire extent of the felsite although it varies widely in percentage of the rock; it is generally less than 10% of the felsite (Figure 11).

The sulfide-rich 'spheres' appear to develop around earlier formed pyrite crystals as part of the QSP alteration. As shown in Figure 12, several of the stibnite-rich spheres appear to have nucleated upon the pre-existing pyrite. Additionally, the spheres appear to be concentrated closer to the massive stibnite veins cutting the felsite suggesting avenues of ingress for the fluids (Figure 15). The stibnite spheroids appear to be replacing the felsite groundmass.

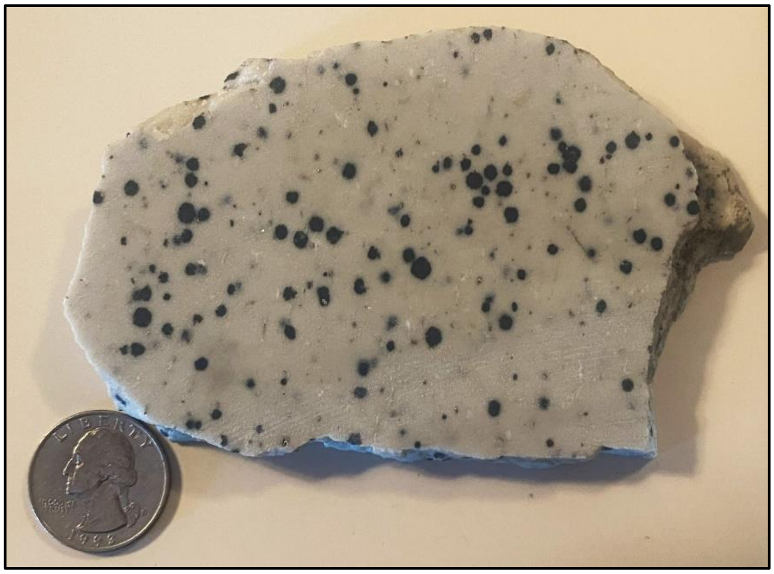

Figure 11. Photo of disseminated, stibnite-rich spheres in strongly QSP altered felsite, Arrance mine dump. Sample #969113 contained 1.69% Sb.

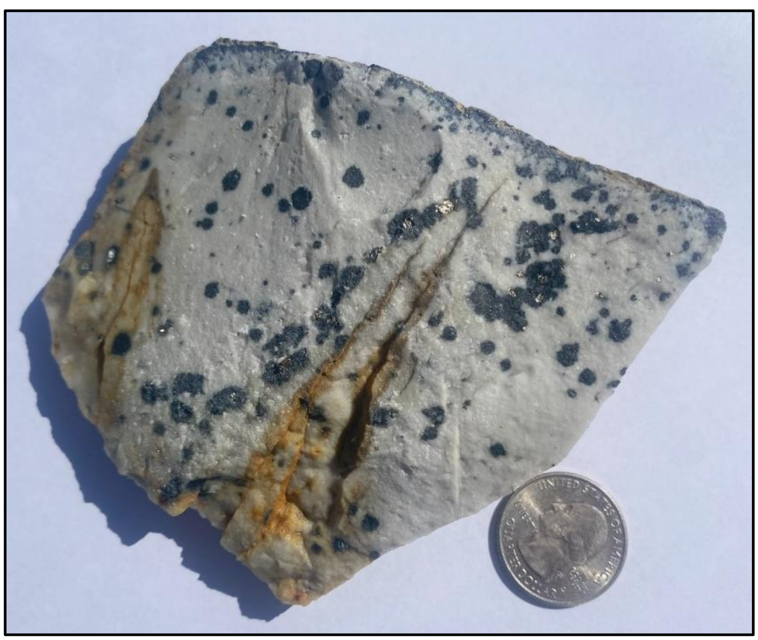

Figure 12. Fine-grained, QSP altered felsite with disseminated pyrite enveloped by stibnite spheres and clots, Arrance mine dump. Sample #969121 contained 2.45% Sb.

Type 2: Massive Veins

Massive stibnite veins, up to 5 cm thick, were only locally observed in surface outcrops. This form of stibnite appears to have been the primary target in the historical mine workings. At most of the mines, hand sorted stockpiles contained pieces of massive stibnite. Inspection of the Antimony King adit reveals variable densities of these veins in the felsite forming sub-horizontal, sheeted complexes (Figure 16).

Figure 13. Photo of massive stibnite veins cutting QSP-altered felsite; minor stibnite stringers and clots present in the felsite, Antimony King mine (see Figure 5).

Type 3: Quartz-Ankerite(?)-Stibnite

This style of stibnite mineralization was identified on a few stockpiles at the Antimony King mine and clearly contain high antimony values (Sample #969124; Figure 14). Inspection of the lower adit suggests that this type of mineralization developed along the faulted dike contact with the siltstone. Recurring movement along the fault likely generated the sheared appearance of this vein-type mineralization.

Figure 15 is a sample from the Arrance mine which texturally suggests that stibnite Types 1 and 2 formed at the same time. The photo suggests a spatial relation between the sub-horizontal, massive stibnite veinlets and spheres formed within the felsite. In this case, stibnite appears to invade the felsite immediately adjacent to the veinlets.

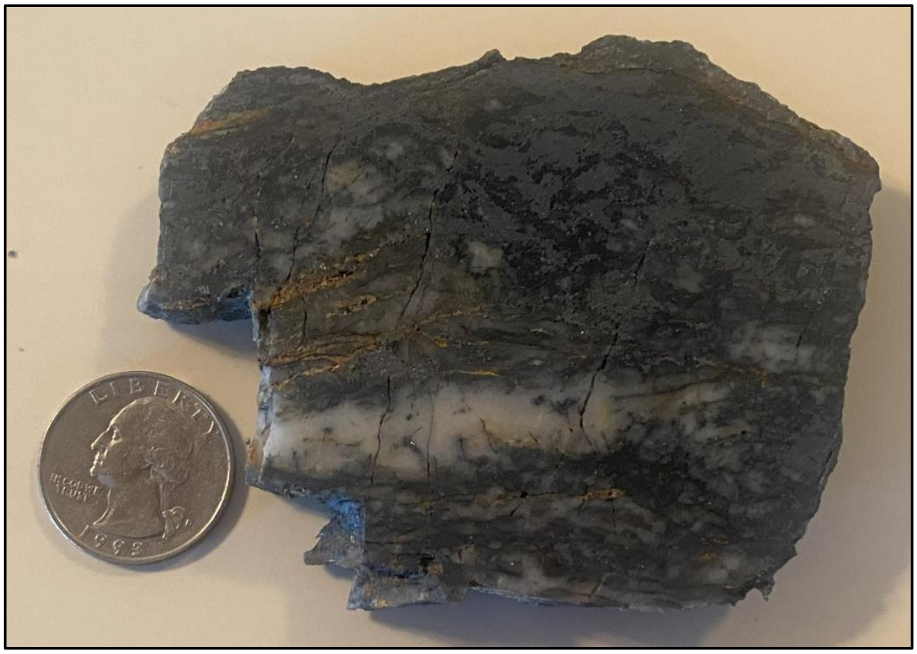

Figure 14. Photo of vein-like stibnite occurrence developed along the sheared felsite-siltstone contact; gray = massive stibnite, black = carbonaceous, sheared rock; white = milky quartz; orange = iron oxides/ankerite veinlets, Antimony King mine (see Figure 6). Sample # 969124 contained 30.89% Sb, 8.3 ppm Ag and 0.24% Zn.

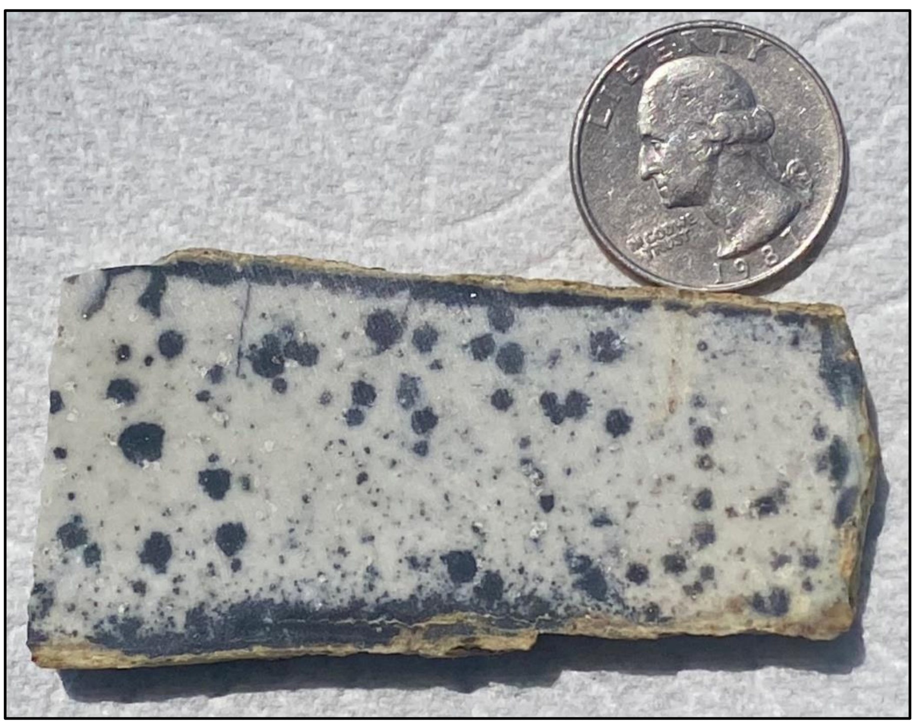

Figure 15. Altered felsite with parallel, stibnite-rich veinlets (sub-horizontal) with stibnite ‘bleeding’ or replacing into the felsite, IXH dump. Sample #969114 contained 0.77% Sb.

Figure 16. Photo of the strongly altered felsite dike cut by numerous sub-horizontal, sub-parallel stibnite veins with minor quartz, Antimony King mine (face in lower adit; photo by Brent Bingham). A 0.5 meter wide sample (#969125) across this zone contained 5.69% Sb, 21.9 ppm Ag and 0.85% Zn).

Figure 17. View of stibnite mineralization as low angle veins and replacement in both the felsite (white) and siltstone (brown), Antimony King mine,

6.0 Geochemical Sampling

A total of 21 rock samples were collected during the initial mapping stage (Table 1). Sampling was not systematic but, instead, more opportunistic as mineralized exposures or mine workings were visited. Most samples, however, are from the several small dumps scattered along the floor of Bernice Canyon including stockpiles which were likely hand sorted and reflect shipping vs mining grades. Several exposures of the felsite dike complex and hosting siltstone were sampled and contain variable amounts of stibnite and secondary antimony oxides (Figure 18).

The analytical results (Table 1) are summarized below and display elements, in addition to antimony, that reveal variability and may assist in the geochemical definition of the hydrothermal system. All samples, excluding those from the Lofthouse and Hoyt mines, are from antimony occurrences spatially related to the felsite dike complex (Figure 18).

Antimony (Sb) values range between 98 ppm to 30.9%; in general, the Sb values correlate with visible stibnite in the sample. Some comments related to the results include:

- Five samples of the disseminated, spheroidal stibnite hosted in the QSP altered felsite contained Sb values between 0.24 to 2.45%. This style of antimony mineralization appears to be volumetrically more important than the higher grade, vein-type occurrences.
- Four samples were collected, mostly from dumps (Table 1), of stibnite-rich veins from the felsite dike and ranged from 5.69% to 12.03% Sb.
- Sample #969128 (5.69% Sb) is a 0.5m chip across sub-horizontal veins in the felsite dike of the Antimony King mine (Figure 16).
- Sample #929125 (12.03% Sb) is from a stockpile at the Arrance mine. It is noteworthy that this sample consisted of strongly recrystallized limestone (now marble) with coarse clots of crystalline stibnite.
- Sample #969124 contained 30.89% Sb (Figure 14) and is a mixture of stibnite, milky quartz and ankerite/iron oxides from a stockpile hosting mostly vein-type mineralization.
- Sample #969109 was collected from a felsite dike outcrop at the northwest end of the dike complex (Figure 6) and contained 1.69% Sb and 9.2 ppm Ag from narrow, sub-horizontal quartz-stibnite veinlets in the QSP altered felsite.
- Samples #969122 and -123 were from Triassic siltstone in the immediate hanging wall of the felsite dike at the King Solomon mine; values were 1,343 and 824 ppm Sb, respectively. The open pit at the King Solomon mine appeared to exploit only the siltstone and not the felsite dike. These samples reveal strongly anomalous Sb values in the siltstone without visible stibnite or quartz veins.

The results reported here establish the presence of high antimony values, up to 30.89%, over 2 kilometers of strike along the felsite dike complex (Figure 18). The distribution of the spheroidal, disseminated stibnite is widespread whereas the higher-grade vein-style stibnite is more restricted and possibly due to bends, releases and splays along the dike's controlling structures. Silver is only locally enriched (<21.9 ppm), zinc is strongly anomalous where stibnite occurs as veinlets (higher grades) and arsenic is widely anomalous (<1,606 ppm As) throughout the study area.

Table 1. Sample locations and descriptions.

Sample No.	Area	Date	Location		Sample Type	Sample Length (m)	Weight (kg)	Ag (ppm)	Sb (ppm)	As (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Sample Description
			N (UTM)	E (UTM)										
969109	NW felsite dike	8/13/24	4,402,517	432,121	Chip	1.2	1.79	9.2	16,874	978	31	247	117	NW end of dike; altered felsite dike w/ qtz & stibnite veinlets
969110	NW felsite dike	8/13/24	4,402,880	432,050	Chip	1	1.48	2.4	377	847	7	66	705	White chalcedony vnlts in felsite dike; wk to mod alteration
969111	NW felsite dike	8/13/24	4,402,883	432,037	Chip	0.3	1.65	-0.3	93	53	7	22	66	Qtz-chalcedony-calcite-FeOx vein in sltst; on NW trending fault
969112	Arrance mine	8/14/24	4,401,764	432,548	Grab		1.83	-0.3	2,368	369	3	10	30	Stockpile; <2"
969113	Arrance mine	8/14/24	4,401,765	432,547	Grab		1.89	1.8	16,872	326	12	54	33	Select from above stockpile
969114	IXH mine	8/14/24	4,401,348	432,993	Grab		1.16	0.9	7,694	70	6	20	19	Stockpile; <2"; strly ser'd Tfd w/ 5% SbS as spots, rosettes; photo
969115	Felsite between IXH & KS mine	8/14/24	4,401,322	433,069	Chip	1	1.2	1.6	5,225	59	6	15	47	Tfd; 3-4m; flowbnd; M-S QSP; <5% diss SbS; wk oxid
969116	Lofthouse	8/17/24	4,397,052	431,793	Chip	1	1.28	0.4	1,105	89	10	16	11	N10W, <55SW flt zone; bxd'd sltst/ss/Tr; var silic'd w/ py; loc str FeOx
969117	Lofthouse	8/17/24	4,197,038	431,804	Chip	2	1.13	1	1,354	259	9	10	20	Upper bench; qtz-py repl'd gy ss/qtzite; this was mined
969118	King Solomon mine	8/18/24	4,401,243	433,101	Grab		1.25	184	100,127	1,606	246	7,562	10,536	Pile: blk sh &/or stibnite w/ euhedral py; minor QV
969119	King Solomon mine	8/18/24	4,401,195	433,144	Chip	1	1.43	1	519	1,582	5	25	73	Sltst at ctc w/ Tfd
969120	King Solomon mine	8/18/24	4,401,213	433,124	Chip	1	1.09	2.6	198	195	12	14	54	Gy, fissile sltst ~10m SW of Tfd
969121	King Solomon mine	8/18/24	4,401,152	433,188	Grab		1.69	3.5	24,495	71	15	82	70	Tfd; vy fn gn; QSP alt'd; w/ ~5% SbS clots around py; w/ stib vnlts
969122	King Solomon mine	8/18/24	4,401,153	433,185	Chip	1	1.29	1.3	1,343	615	22	30	241	Dk brn stltst adj to dike
969123	King Solomon mine	8/18/24	4,401,152	433,184	Chip	2	1.3	-0.3	824	68	24	13	116	Crumbly sltst; mod wh sulfate on surface
969124	Antimony King	8/18/24	4,400,963	433,222	Grab		1.45	8.3	308,875	678	180	816	2,414	High-grade stockpile; abund stibnite
969125	Antimony King	8/19/24	4,400,997	433,223	Chip	0.5	1.18	21.9	120,291	316	54	562	8,478	Tfd; altered; w/ ~10% sub-horiz stib vnlts (<2cm)
969126	Antimony King	8/19/24	4,401,069	433,173	Grab		1.76	6.6	80,735	324	49	245	1,974	Dump; mix of sltst-Tfd-stibnite
969127	Antimony King	8/19/24	4,401,069	433,168	Grab		1.67	3.9	3,820	459	22	35	349	2m channel in dump
969128	Arrance mine	8/19/24	4,401,745	432,546	Grab		1.47	1.9	56,946	81	5	14	20	Stockpile; stibnite vns and clots in marble
969129	Hoyt mine	8/20/24	4,402,704	434,415	Grab		1.89	616	1,476	>10000	876	3,445	2,144	Dump; high grade pile; milky xlln qtz w/ minor stib + py

7.0 Exploration Model

Mapping along the numerous felsite exposures and mine inspections in Bernice Canyon have identified several components that should constitute an exploration model for stibnite mineralization. These include:

- The project area is dominantly composed of fine-grained clastic sediments including siltstone, mudstone, shale and local sandstone. These rocks are poor hosts for epigenetic deposits as they are non-reactive and tend to fold vs fracture.
- A felsite dike complex has been mapped over a strike length of about 2.5 km. All antimony mines and prospects are spatially associated with the dike, both adjacent to and within the felsite.
- Antimony mineralization, as stibnite and its secondary derivatives, is widely distributed along the dike complex and is associated with quartz-sericite-pyrite (QSP) alteration. Stibnite occurs as disseminations, sulfide veins/veinlets and mixed with quartz as vein-like bodies along the dike/siltstone contact.
- Both the QSP alteration and the milky white, crystalline quartz are not consistent with an epithermal-type (high-level) position but more akin to a conduit emanating from an intrusive related system.
- Owing to this close coincidence between Sb and the dike provide a broad target beneath and adjacent to the historic workings. Assuming that the distribution of Sb is highly variable, numerous short holes (RC) are advisable.
- The identification of 3 stibnite styles along the target area (disseminated, sub-horizontal and sub-vertical) suggest that careful consideration must be given to any drill results and angles of intersection with the stibnite-bearing zones (see Figures 19 and 20).

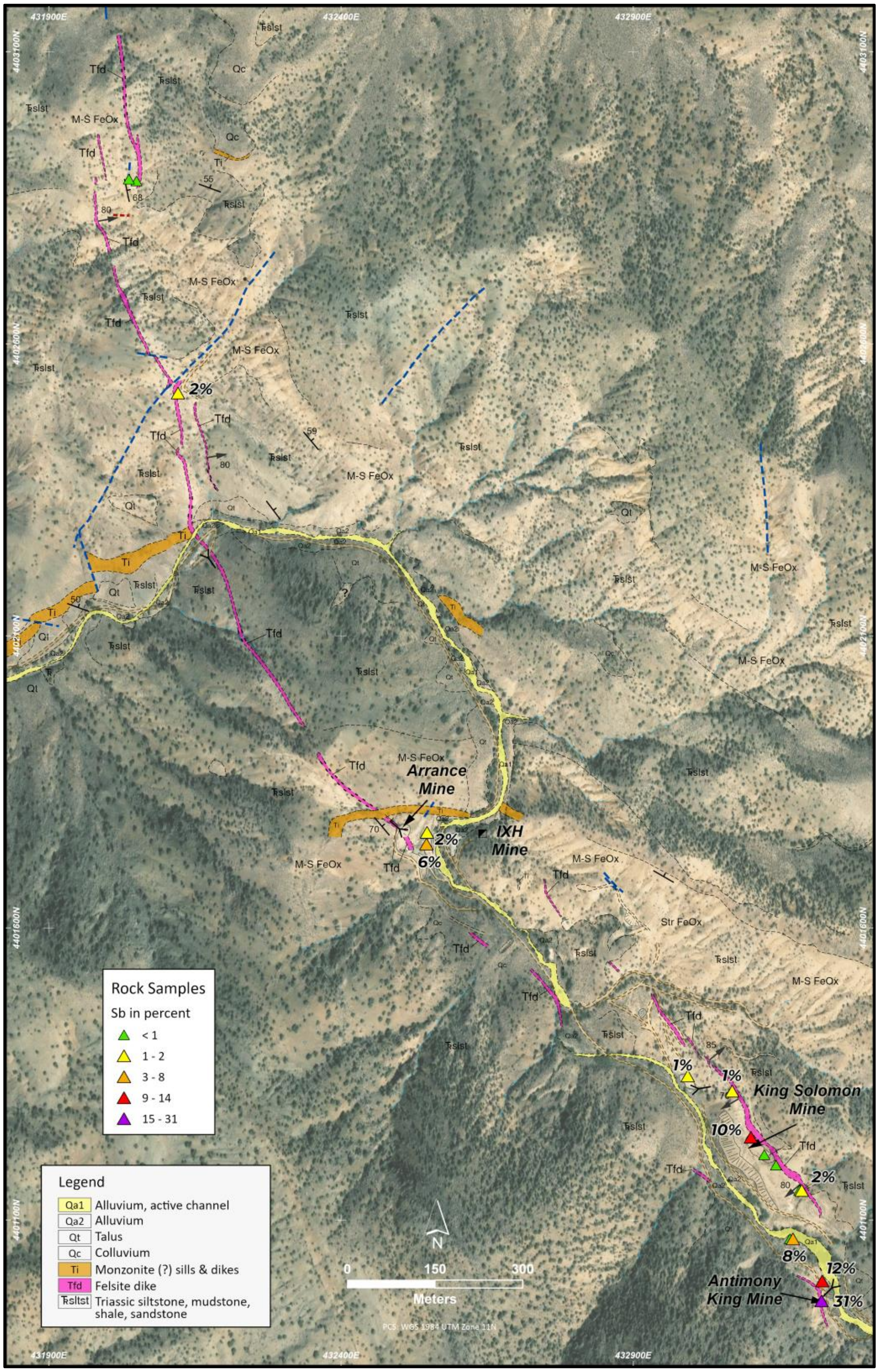

Figure 18. Geologic map of the Bernice Canyon project area showing sample sites and antimony (Sb) values.

Consideration of the analytical results is critical in assigning importance to the above model. Examination of the several surface stockpiles suggest that the highest Sb grades are associated with the sub-horizontal and -vertical veinlets composed of massive stibnite. However, the disseminated mineral style is widespread along the dike complex and volumetrically may be significant as samples contain up to 2.45% Sb. The stockpiles are generally composed of this material suggesting that historical mining focused on the vein-type stibnite.

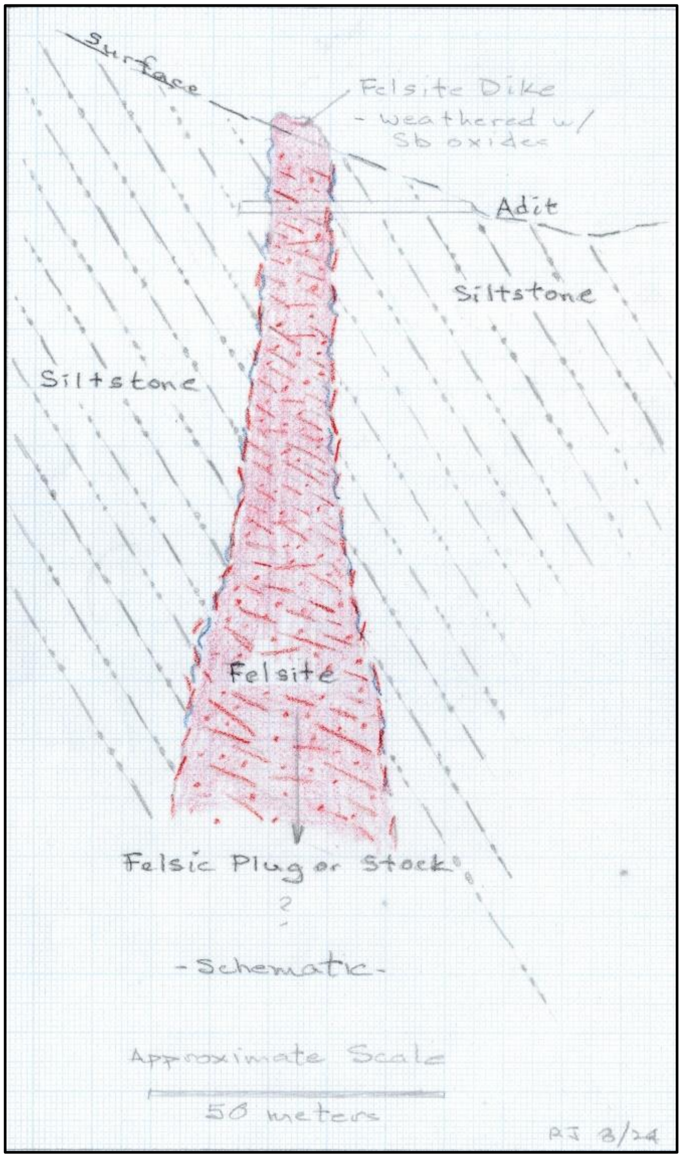

Figure 19. Schematic diagram of a felsite dike intruding siltstone and hosting the 3 styles of stibnite mineralization.

8.0 Target(s)

The stibnite-bearing felsite dikes trend N40ºW (SE end) to N-S (NW end) over a distance of about 2.5 km. Owing to the composite nature of the dikes, there are probably up to 4 km of felsite dike strike that may host antimony mineralization in all types described above. Between the Arrance and Antimony King mines, Sb-bearing felsite dikes are present on both sides of Bernice Canyon providing multiple targets from drill sites within the canyon. Northwest of the Arrance mine, access to the dike complex is currently possible where Bernice Creek crosses the dike complex north of the No Name adit.

The historic road's location currently allows for the drill testing of more than half of the dike's strike length and beneath the most important stibnite occurrences/mines. Other target areas, shown in Figure 6, can be tested following the initial drilling along the more accessible segments of the dike. Figure 20 provides a schematic view of potential drilling along Bernice Creek where both felsite dikes can be tested with short holes (<150 meters).

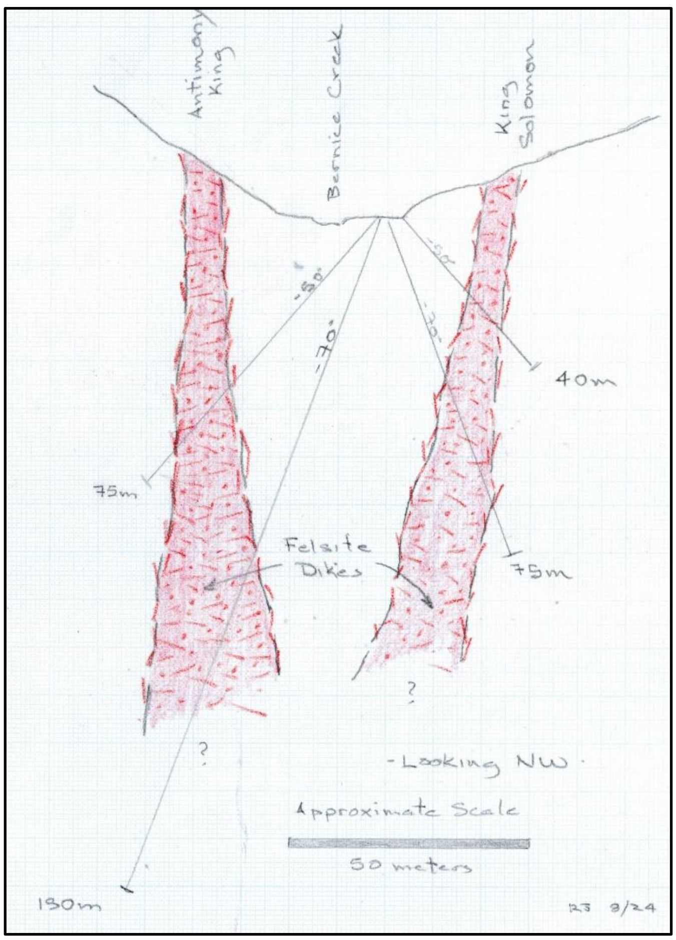

Figure 20. Generalized geologic section across the felsite dikes in the general area of the King Solomon and Antimony King mines showing potential drill angles and depths.

9.0 Access

Access into the Bernice Canyon stibnite deposits will be required to effectively and efficiently explore the area. In the absence of an off- or near-site camp, travel times from the nearest accommodations (Fallon) are up to 2.5 hours. Travel within Bernice Creek via conventional vehicles is limited by greater that 6 washouts of the historical mine access resulting hikes of about 45 minutes to the King Solomon mine. The historical road (prior to recent floods) is shown in Figure 6 without the washouts; the current condition of the road is presented in Figure 21. Table 2 provides a description of the road, including the washouts, and estimated time and manner to mitigate the washouts.

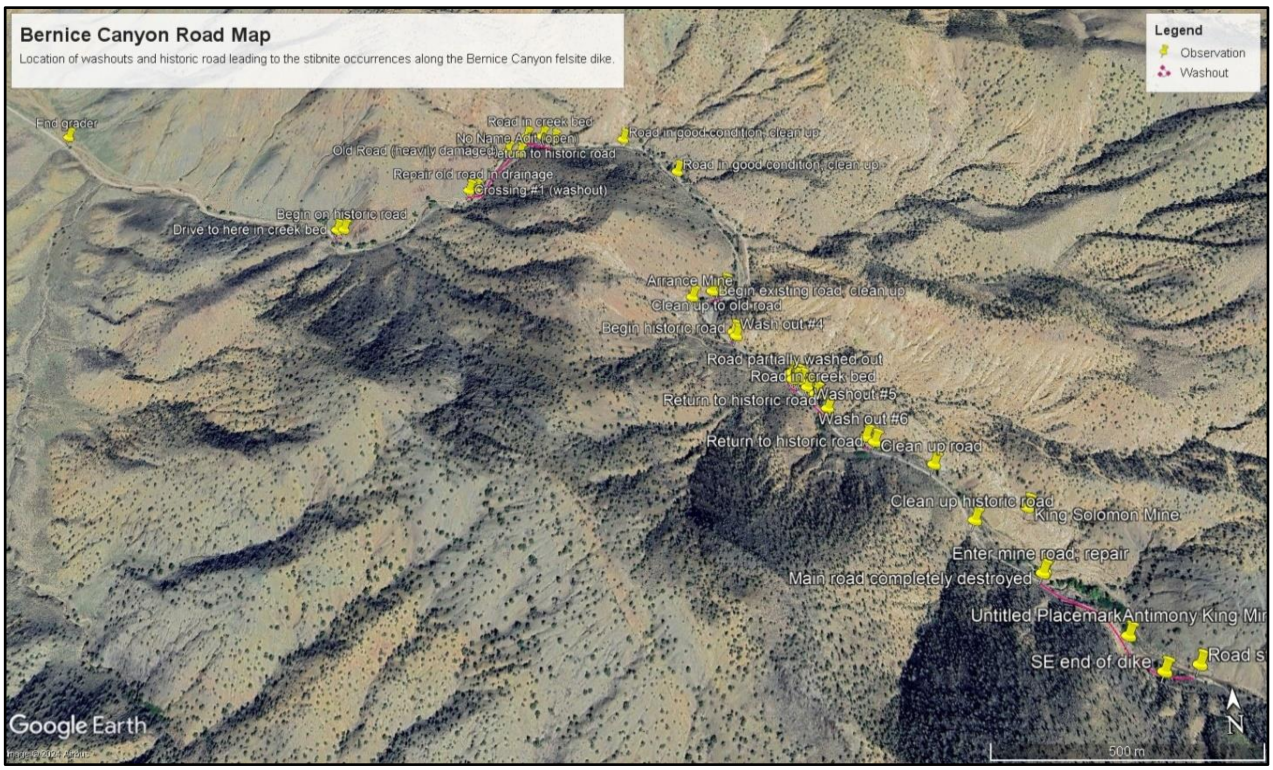

Figure 21. Aerial view of Bernice Canyon showing the trace of the historic road into the antimony mines. Washouts (#1 - #6) are show in red and the description of the proposed work to rehabilitate the road is provided in Table 2.

The remoteness of the project and limited access to mineralized exposures presents a challenge to sampling of the target zone. The need for quality samples along the strike of the felsite dike complex is likely best addressed by a Reverse Circulation (RC) drilling program once vehicular access is re-established into the canyon. To achieve this, the process to obtain a drilling permit via a Notice of Intent (NOI) with the Bureau of Land Management (BLM) should commence immediately. This effort will essentially focus on the reparation of the historic road into the canyon, drill pad construction and access linking the pads to the historic road. Once permitted, a work program for this is presented in Table 2 and can be completed in a period of 10 days at an estimated cost US$25,000. All of the important antimony (stibnite) mines are located along the flanks of Bernice Canyon creek and are easily accessible to the historic road. Initial drill testing can be done with holes less than 200 m depth with most in the 50 to 100 m range. The Author has concluded that the only manner to adequately sample the numerous target zones is by drilling. Both surface trenching and the rehabilitation of the mine workings will be costly, slow and less definitive than drilling.

Table 2. Description of proposed road work to and within Bernice Canyon to establish vehicular access for proposed exploration. Mitigation of the several washouts will involve approximately 0.77 acres while the existing, historical mine road will only require minor clean-up activities.

Segment No.	Segment	From		To		Distance (m)	Description	Mitigation	Estimated Duration (hrs)
		N (UTM)	E (UTM)	N (UTM)	E (UTM)				
1	Before Bernice Cyn.	4,396,794	416,086	4,402,437	431,055	**~18km**	County road traverses pediment; many deep ruts	Road grader (county?); say 1 day	**8**
2	Bernice Cyn. Creek bed	4,402,437	431,055	4,402,064	431,751	800	Sandy wash w/ minor rocks	Backhoe; smooth and push rocks aside	2
3	Return to historic road	4,402,064	431,751	4,402,061	431,767	20	Ramp out of creek bottom to road	Backhoe; cut 4' bank and build ramp to road	1
4	Historic road	4,402,061	431,767	4,402,144	432,059	340	Historic road to Washout #1	Clean minor rocks and brush off road	1
5	Washout #1	4,402,144	432,059	4,402,145	432,073	20	Creek is deeply incised (~4m); cross to old road	Ramp down to ck (~4m) and move rocks	2
6	Repair old road	4,402,145	432,073	4,402,295	432,198	200	Road along creek is severely damaged;	Use upper road in front of No Name adit	4
7	Washout #2	4,402,295	432,198	4,402,279	432,265	70	Clear road along wide creek	Push sand and rocks aside	1
8	Historic road	4,402,279	432,265	4,401,795	432,620	730	Clean historic road	Clean brush and a few small rock slides	2
9	Washout #3	4,401,795	432,620	4,401,786	432,618	10	Ramp down to creek (-4m); cross main channel	Cut bank into road; clear a few rocks onto old road	3
10	Road damaged by creek	4,401,786	432,618	4,401,778	432,592	30	Road invaded by creek/flood	Clean-up	1
11	Historic road (Arrance)	4,401,778	432,592	4,401,665	432,625	140	Clean historic road	Remove brush from center	1
12	Washout #4	4,401,665	432,625	4,401,655	432,629	15	Ramp down to creek (-2m); cross main channel	Cut bank into road; clear a few rocks onto old road	2
13	Historic road (Arrance mine)	4,401,655	432,629	4,401,552	432,730	140	Clean historic road	Clean-up	1
14	Bypass	4,401,552	432,730	4,401,535	432,745	25	Creek eroding into road	Move road away from creek; remove sage brush	1
15	Historic road	4,401,535	432,745	4,401,516	432,757	20	Clean historic road	Clean-up	1
16	Washout #5	4,401,516	432,757	4,401,463	432,791	60	Road washed out by flood	Establish path along edge of channel	2
17	Historic road	4,401,463	432,791	4,401,391	432,852	90	Clean historic road	Clean-up	1
18	Washout #6	4,401,391	432,852	4,401,377	432,867	20	Road removed by last flood	Ramp down to creek (-2m); cross main channel	2
19	Historic road	4,401,377	432,867	4,401,192	433,018	280	Clean historic road	Clean-up	1
20	Historic road	4,401,192	433,018	4,401,085	433,116	150	Clean historic road	Clean-up	1
21	Mine road (Antimony King)	4,401,085	433,116	4,400,893	433,338	320	Repair upper mine road to avoid creek; turn-around	Clean-up; turn-around at end of road; at creek	5
22						**3480**	**In Bernice Canyon only**		**43**

Notes: 1) This does not include any road work around the historic mines, drill pads or acess to the drill pads.
2) Segment 1 should be done by a grader; perhaps Churchill County
3) The road along Bernice Canyon to the upper side of the Antimony King mine is 3,480 meters (see kmz file)
4) Road widths set to 3 meters
5) A total of about 1,040 linear meters of road needs to be constructed to overcome the washouts. This equates to 0.77 acres which allows for >4 acres for drill acces and pads.
6) Work within Bernice Canyon can be done with a backhoe (say $100/hour) or an excavator (say $250/hour).

1 acre = 43,560 ft^2 = 4,047 m^2

(Yellow) Area utilized in 'disturbance' calculation

10.0 Other Activities

In order to provide Xtra Energy the ability to evaluate the two dumps at the Antimony King mine, Brent Bingham conducted a preliminary survey of the dumps, shown in Figure 22, and has provided an estimate of the tonnages (document submitted separately). In summary, the estimated volume of the two dumps is less than 750 m^3 or 2,100 tonnes.

Figure 22. Aerial view of the Antimony King mine area and the two dumps estimated in the volumetric study.

11.0 Recommendations

Following from the work completed in August, 2024, the Bernice Canyon antimony project merits additional work including drilling. The following activities are recommended to advance the project:

- **Petrographic Studies:** The close spatial association between the stibnite occurrences and the felsite dike suggest a genetic link. Equally important is the apparent spatial relation between stibnite and quartz-sericite-pyrite (QSP) alteration of dike. A proposal has been received from Dr. Allen Miller of Ottawa, Canada for a petrographic study of 3 rock samples of altered and mineralized felsite. The deliverables will include petrographic descriptions and photographs. The estimated cost will be about US$1,335 and will require 4 to 6 weeks to complete.

- **Permitting for Access Recovery and Drilling:** Section 9.0 provides a brief description of the activities and costs to recover the historic road to the Antimony King mine. The purpose of this recovery is to gain access to several sites within Bernice Canyon to drill test the mineralized felsite dike in the vicinity of the Arrance, King Solomon and Antimony King mines. In order to achieve these goals, a permit must be obtained from the BLM (Carson City office). Considering that the estimated physical impact will be less than 5 acres (see Table 2), a Notice of Intent (NOI) should be the desired permit and could be completed in a few weeks and approved in 30 days. To initiate this activity, maps of the road recovery project and proposed drill sites should be prepared and a visit to the BLM's Carson City office to discuss the program.

- **Access Recovery and Drill Sites:** Recent flooding has removed 6 crossings over Bernice Creek which will require a backhoe or excavator for a period 10 days and an estimated cost of $US 25,000 once the NOI is received (and bonded). A bid for this work will be required prior to its initiation.

- **Drilling:** The most effective testing of the Bernice Canyon antimony potential will be drilling. Although additional surface sampling is warranted, the results will suffer from the effects of oxidation and leaching of antimony caused by surface waters. Shallow testing by reverse circulation drilling beneath mineralized outcrops and historical mine workings will provide a high-quality sample of the targeted environment. Owing to the extensive distribution of antimony prospects and mines along Bernice Canyon, an array of holes should test as much of the strike length as possible. Shallow testing, say about 50 meters below the surface, can be easily conducted from the recovered access and proposed drill sites. This program needs to be designed in context with the recovered access.

12.0 References

Bingham, B., 2024, Volume calculations for the Antimony King dumps: prepared for Xtra Energy Corp., 3p.

Howard, A.E., 2024, American Antimony Project, Churchill County, Nevada, USA: NI43-101 Technical Report; prepared for Xtra Energy Corp.; 102p.