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2026 Symposium Abstracts

Great Basin Mines and Minerals

Program committee: **Markus Raschke, University of Colorado, Boulder**

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2026

Distribution and regional assessment of granitic pegmatites in Nevada

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The Basin and Range Province in Nevada is host to a wide array of granitic pegmatites, with some containing gem- and collectable-quality mineral specimens. With a few exceptions, little is known about Nevada pegmatites, and while some pegmatites were previously mined for beryl, chrysoberyl, and sheet mica, most Nevada pegmatites remain poorly studied. Pegmatites are scattered throughout the state with most occurring in a roughly NW-SE trending belt extending from western Pershing County to southern Nye County along the Nevada- California border, and in southern and northeastern Clark County near the Nevada-Arizona border. The majority of pegmatites are distributed largely within and near the margins of Precambrian- to Tertiary-age granitic plutons which range in composition from granite to granodiorite to quartz monzonite.

The pegmatites of Nevada vary from bodies containing primarily quartz, microcline, albite and muscovite to modestly mineralized types hosting Be, Ta and REE-minerals. Rare-element mineralization throughout the Basin and Range Pegmatite Province is characterized mostly by beryl which is widespread compared to chrysoberyl which occurs less frequently. Schorl occurs as the main tourmaline species, and columbite-tantalite is the dominant Nb-Ta mineral reported from pegmatites although neither are common in most pegmatite areas. Phosphate minerals are notably absent except for the rare occurrence of monazite reported from the Gold Butte pegmatites. Lithium-rich pegmatites are notably absent in Nevada although lepidolite has been reported from a few localities. Fluorine mineralization is defined by primary topaz and fluorite, however, a unique assemblage of secondary aluminofluorides (e.g., cryolite, pachnolite, elpasoite) is known only from the amazonite-bearing Zapot pegmatite in Mineral County. Local calcium enrichment is noteworthy in some pegmatites of the Searchlight district in southern Clark County as evidenced by the crystallization of primary epidote and calcite. Additional accessory minerals reported from Nevada pegmatites includes minor to rare zircon, spessartine, magnetite, titanite, scheelite, pyrite and molybdenite. Overall, the mineralogy of pegmatites within the Basin and Range indicates primitive (barren) to modestly evolved, peraluminous compositions that display largely NYF-like geochemical signatures. The accessory mineral assemblage of Nevada pegmatites is consistent with those found worldwide that are associated with I- and A-type granitoids that are emplaced in subduction and rift-related geologic settings like those found in Nevada's Basin and Range Province.

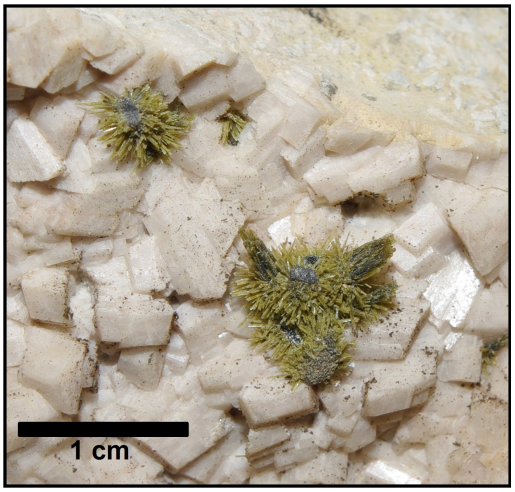

Fig. 1. Epidote on microcline, southern Clark County, Nevada.

Table1. Mineralogy of Nevada Pegmatites.

Aegirine	Columbite-(Mn)	Microcline	Schorl
Albite	Cryolite	Molybdenite	Sillimanite
Allanite-(Ce)	Cryolithionite	Monazite	Simmonsite (T)
Almandine	Dumortierite	Mottramite	Spessartine
Andalusite	Elbaite	Muscovite	Stibiotantalite (?)
Apatite	Elpasolite	Orthoclase	Stilbite
Aragonite	Epidote	Pachnolite	Tantalite-(Mn)
Autunite (?)	Euxenite-(Y)	Phenakite	Thomsenolite
Beidellite	Fluorite	Phlogopite	Thorite
Beryl	Goethite	Plumbobetafite	Titanite
Betafite	Grayite	Plumbopyrochlore	Topaz
Biotite	Hambergite	Prosopite	Torbernite
Brookite	Helvite	Pyrite	Uraninite
Chevkinite-(Ce)	Hematite	Quartz	Weberite
Chrysoberyl	Ilmenite	Ralstonite	Xenotime-(Y)
Chrysocolla	Lepidolite	Rutile	Zinnwaldite
Clinochlore	Magnetite	Samarskite-(Y)	Zircon
Columbite-(Fe)	Meta-autunite	Scheelite	

Michael Wise is a mineralogist in the Department of Mineral Sciences at the National Museum of Natural History, Smithsonian Institution in Washington, D.C. His research focuses on the mineralogy, petrology, and geochemistry of granitic pegmatites to better understand the geological processes responsible for the genesis and evolution of granitic pegmatite melts. Mike has several decades of field-based experience studying pegmatites and has long been active in projects related to the classification of pegmatite types, the regional mineralogical and geochemical patterns of large pegmatite populations and the exploration of critical minerals associated with pegmatite deposits. In addition to his research program on pegmatites, Mike is also highly active in education and outreach activities and is heavily involved in the management of the Smithsonian's Mineral and Gem Collections.

Minerals and Active Mining in the Thomas Range, Juab County, Utah

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The Thomas Range of Juab County, Utah, is internationally recognized for its remarkable diversity of rare and collectible minerals, including red beryl, topaz, bixbyite, pseudobrookite, hematite, garnet, and other unusual mineral species. While the region has a long history of mineral exploration and collecting, several of its historic localities continue to be actively explored and mined today. This presentation will provide an overview of current mineral collecting and mining activities at several privately operated localities within the Thomas Range, with particular emphasis on the geology, mineral assemblages, and characteristics that make these deposits significant to both researchers and mineral collectors.

The presentation will highlight ongoing work at the Searle Canyon Red Beryl and Topaz Mine and the Solar Wind Bixbyite and Pink Topaz Mine, along with other mineral-producing areas associated with the Thomas Range. Particular attention will be given to the occurrence and quality of red beryl, topaz, bixbyite, pseudobrookite, and other associated minerals, as well as observations from recent mining and excavation. Examples of newly recovered specimens will be used to illustrate variations in mineralization and the continued potential for significant discoveries.

Fig. 1. Red Beryl with Bixbyite and Topaz, Searle Canyon Red Beryl Mine Owner: Jeremy Fuller Photo: Laszlo Kupi

Beyond the minerals themselves, this presentation will discuss the practical challenges and opportunities involved in maintaining active mineral mines in a historically important collecting district. Modern exploration, extraction methods, specimen recovery, and responsible access to private mineral localities are helping to preserve the Thomas Range as an active source of exceptional Utah minerals. The goal is to provide an update on what is currently being found in the district and offer insight into the continuing mineralogical potential of one of Utah's most famous mineral-producing regions.

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Jeremy F. Fuller Since 1997, Jeremy has dedicated his entire adult life to the rigorous exploration, mining, and scientific study of the diverse mineralogy and mining prospects throughout the Thomas Range in Juab County, Utah. As the primary owner and operator of several premier active mining claims—including Maynard's Topaz Mine (the iconic type locality for both red beryl and bixbyite), the Solar Wind Bixbyite and Pink Topaz Mine, and the Searle Canyon Red Beryl & Topaz Mine—he maintains a hands-on approach to specimen extraction and geological research. Continuously actively mining, prospecting, and staking new claims across the region, Jeremy remains a central figure in Utah's mineral community. Through Utah Mineral Mining, he also facilitates public access to these world-class locations by hosting guided gem hunting and fee-dig mineral collecting experiences by reservation at TheGemTours.com.

If the specimens could talk

Graham Sutton

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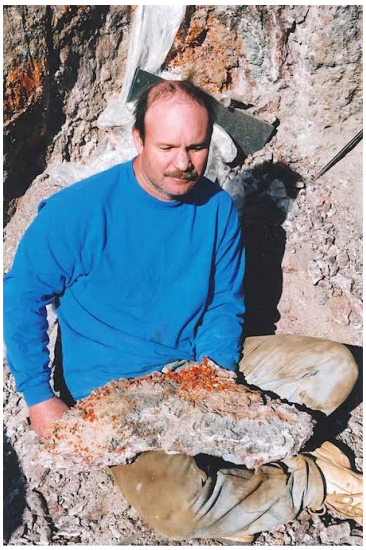

All specimens have a history some of that history is well documented the location who collected it who's collection it was in first or last. What seldom gets saved are the things that happened on the way to that collection shelf. In the 35 years I actively field collected minerals I didn't take anywhere near enough pictures but the stories of those days for the time being are still available in my head. These are some of the stories from those collecting a dventures digging minerals whenever and wherever I could. Cue the Gilligan's Island theme music and sit right back and enjoy the tales of those adventures

Graham Sutton: I began working part-time as a commercial specimen miner in 1983, but by 1985 it had become a full-time job. My first Tucson show as a mineral dealer came in 1984, when he shared a room with Bill Hawes at the Travelodge. In subsequent years I shared rooms in Tucson with whomever was willing to have me. I made my first visit to the Denver show in 1988. From 1983 to 1998 I was on my own as a mineral dealer, under the name "Graham Sutton Minerals." I enjoyed collecting any minerals that would sell, of which Arizona had no shortage, and partnered with many other field collectors, always splitting whatever we found. I still have a small collection of self-collected miniatures and thumbnail specimens, but most of what was found eventually sold to support my business. In 1998 I was hired by Bryan Lees' of Collector's Edge Minerals, and thereafter gave up my personal mineral business.

I made many collecting trips to the Red Cloud mine during the 1980s and early 1990s. In 1996 I dug the first open pit project there for Wayne Thomson and was there for the "Big Pocket" that year. I then made the big open cut at the Red Cloud mine for Collectors Edge in 2004; the year the Red Gem pocket was discovered. My collecting career in Arizona has covered most of the state's more famous mineral localities, as well as some more obscur e ones. Working with George Godas, I reopened the North Geronimo mine, installing a new shaft in 1994. I later expanded the workings there for Collector's Edge in 2004. I also mined at the Veta Grande mine near Quartzsite for hematite and faden quartz, the Iron Cap mine for sphalerite and galena; the Finch mine for drusy quartz-coated wulfenite; Stanley Butte for garnets; the Grand reef mine for linarite, cerussite, laurelite and aravaipaite; and the Silver Hill mine for rosasite-aurichalcite-malachite. At the Bagdad mine, Bruce Barlow and I collected close to 100 tons of blue drusy quartz with chrysocolla. I also collected (though less successfully) at the Blue ball mine in Globe for azurite nodules, the Hull mine near Yuma for wulfenite and cerussite, the Hamburg mine for vanadinite, the Morenci

mine for azurite, the Cohen mine for scheelite, the Melissa mine for wulfenite, the Rowley mine for wulfenite, the J. C. Holmes mine for vanadinite, the Hardshell mine for pyromorphite, the Helvetia area for aurichalcite and malachite, and m any many others.

My collecting exploits also include numerous foreign localities, I have collected crocoite at the Red Lead mine in Tasmania, dioptase at Altyn Tyube in Kazakhstan, fluorite at the Xianghualing mine in China, and red grossular and vesuvianite at Sierra de las Cruces in Mexico. At the Nevada lode in La Salle, Utah, Bob Lane and I collected 125,000 azurite specimens. At the San Francisco mine in Mexico I helped mine over 2000 *flats* of wulfenite. I also opened the Sweet Home mine for Bryan Lees in 1991 and then left, but returned again in 1998 to mine rhodochrosite specimens until the mine closed in 2004. Working for Collector's Edge, I mined benitoite specimens in California for three years, then took on the Twin Creeks Orpiment project in Nevada in 2000. I also worked at the 29 mine in Missouri, bringing out 20,000 pounds of calcite crystals. Dug for topaz at the Maynard claims in the Thomas Mountains of Utah; Barite in the Book Cliffs of Colorado; and collected calcite, fluorite, and associated minerals at the Elmwood mine in Tennessee. It is safe to say I have collected over half a million mineral specimens in my career

My career in the mineral business has also included numerous specimen-buying trips world for Collector's Edge. I have been to China over 100 times, and have also purchased specimens in Colombia, Vietnam, Kazakhstan, Portugal, Mexico, Thailand, Bulgaria, Zambia and Namibia.

In 2014 I started a mineral show case company, "Its West Display",

In 2019 Created a brand-new venue in Tucson, the "Mineral City Show"

In 2023 purchased Denver Box company

In 2019 after many years of digging minerals was officially recognized when I was awarded the American Mineral Heritage Award, for field-collecting achievements contributing to the Heritage of American mineral specimens.

Gold from the Round Mountain Mine, Nye County, Nevada

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The Round Mountain Mine began its modern history in the mid 1970's. The mine was one of the early discoveries of what was to become a major gold rush in the Great Basin of Western America. While numerous high-grade deposits were discovered and put into production, the Round Mountain mine was remarkable in that it was an extremely low-grade deposit, and nearly devoid of visible gold. This changed in March 1992 when a blast-hole encountered significant amounts of coarse gold along a narrow (10cm) vein structure. Since that time, the mine has produced an impressive amount (more than 10 metric tonnes) of crystalline gold with a surprisingly diverse array of crystal habits. This paper will present information on the gold occurrences and habits.

Scott Werschky: Upon completing undergraduate and graduate studies at the University of Colorado, Scott worked as an exploration geologist for 16 years. During this time he explored for gold in the Western Hemisphere from Northern Alaska to Chile. He has worked in grass-roots exploration as well as resource development of a multimillion ounce gold deposit. In the mid-1990's, a downturn in the mining industry allowed Scott to change focus and pursue his hobby of mineral collecting. What was once avocation, became vocation. Scott created Miner's Lunchbox, Inc., a company specializing in investment quality mineral specimens.

Scott's home base of Reno, Nevada places him in the center of the gold producing regions of California and Nevada. This fortunate geographic location combined with previous scientific interest prompted a focus on gold specimens. Scott is now one of the leading gold specimen dealers in the world.

Exotic sulfosalt mineralization at the Pedro breccia pipe, Washington

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Sulfosalts constitute a group of minerals with a general formula of la $A_mB_nX_p$, where A sites are occupied by metal cations, B sites by semi-metals, and X sites by sulfur. The crystal lattice of sulfosalts comprises relatively simple structural domains which, stacked and slightly rotated produce increasingly complicated structures. Their formation is typically associated with low to medium temperature hydrothermal activity.

The Pedro breccia pipe, along with several other breccia pipes associated with porphyry Cu mineralization, forms part of the Middle Fork area in the Snoqualmie mining district, Washington. It is known amongst mineral collectors for its iridescent chalcopyrite crystals and Japan law quartz twins which form in open spaces within the breccia. Rather inconspicuous stalactitic aggregates, measuring to 4 cm in length associated with chalcopyrite, were previously identified as galena. Recent investigations using high-resolution scanning electron microscopy and electron probe microanalysis revealed that these stalactites comprise an outer rim of galena-matildite. The core of the stalactites is composed of a complex assemblage of sulfosalts of the gustavite-lillianite, and aikinite-bismuthinite series. Identified phases include aikinite, berryite, bismuthinite. eskimonite, friedrichite, gladite, gustavite. krupkaite, lillianite, tarutinoite, and vikingite. Some of these minerals are reported for the first time in Washington and in fact the USA. Native gold forms isolated grains within the sulfosalts. Bismuth occurs as fine-grained inclusions and along fractures in altered Bi sulfosalts.

Acknowledgement: The authors gratefully acknowledge support from John Lindell, James Zigras, Ed Molsee, Lew Landers, and Sal Noeldner.

Simon Kocher: Simon is a research associate in the School of Minerals and Subsurface Energy at the Colorado School of Mines. His research focuses on the mineralogy and geochemistry of ore deposits, and on the processes and resulting textures of mineral precipitation. Simon holds an MSc degree in economic geology from the University of Tuebingen, and a PhD in geochemistry from Imperial College London. He has worked as near mine exploration geologist in Sweden, and as a curator and researcher at the Natural History Museum London.

Tellurobismuthite and the gold metallogenesis of the Lone Jack Mine, Washington

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The Lone Jack Mine, located in the Mount Baker Mining District of northwestern Washington, is among the most significant documented gold-telluride occurrences in the North Cascades. The deposit is situated within the Northwest Cascades crystalline terrane, where Early Cretaceous metamorphic rocks, including schists and phyllitic schists, have been affected by prolonged deformation, uplift, and hydrothermal activity. Mineralization is localized within a system of steeply dipping quartz fissure veins developed along fractures and shear zones, with the principal Lone Jack, Lulu, and Whist veins exhibiting characteristic pinch-and-swell geometries and high-grade ore shoots.

The Lone Jack Mine comprises a structurally controlled gold-bearing quartz vein system hosted by metamorphic rocks of the North Cascades crystalline terrane. Mineralization occurs in steeply dipping quartz fissure veins with pinch-and-swell geometries and is characterized by a distinctive Au-Bi-Te assemblage. Although the deposit shares features with both mesothermal (orogenic-style) quartz-vein systems and intrusion-related gold mineralization, its precise genetic classification remains uncertain, and it is most conservatively described as a Au-Ag-Bi-Te quartz-vein deposit. The occurrence of gold associated with telluride and bismuth minerals places the Lone Jack deposit within a broader class of Te-enriched hydrothermal gold systems, whose characteristics and ore-forming processes have been reviewed by Cook et al. (2009), while acknowledging that its structural setting also shares some similarities with mesothermal gold-quartz vein deposits discussed by Goldfarb et al. (2010).

Ore formation is interpreted to have resulted from the ascent of hydrothermal fluids through structurally prepared conduits, transporting gold together with bismuth, tellurium, and subordinate base metals. Precipitation of the ore assemblage was likely driven by cooling, pressure changes, and fluid-rock interaction within the vein system. The resulting mineralization includes native gold, pyrrhotite, chalcopyrite, and Bi-Te minerals.

Of particular mineralogical interest is tellurobismuthite (Bi_2Te_3), a member of the tetradymite group and one of the principal telluride minerals identified from the Lone Jack and Lulu veins. Occurring in association with native gold tellurobismuthite records elevated tellurium and bismuth activities during ore formation and provides evidence for a chemically evolved hydrothermal system. The Au-Bi-Te mineral assemblage preserved at the Lone Jack Mine offers important insights into telluride mineralization processes and represents one of the most notable examples of tellurium-enriched gold mineralization presently known in Washington State.

Acknowledgement: The authors gratefully acknowledge the generous support from the mine owner Jason Gaber, and the late Ed Molsee and Lane Griffin for their inspirations for this work.

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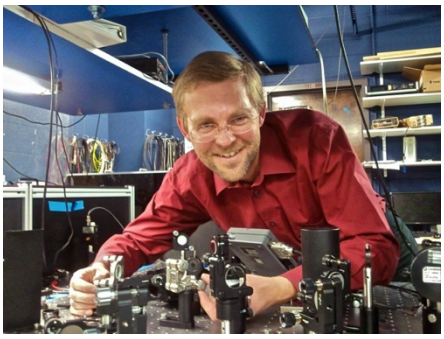
Markus Raschke is professor at the Department of Physics at the University of Colorado at Boulder. His research is on the development of novel nano-optical spectroscopy and microscopy techniques with applications to single molecules, quantum materials, and fundamental control of light matter interaction. Based on a long personal interest in field collecting minerals his research also ventured into geology and mineralogy, with projects in Washington, Colorado, and the Sichuan Mountains in Tibet/China. He received his PhD in 2000 from the Max-Planck Institute of Quantum Optics and the Technical University in Munich, Germany. Following research positions at the University of California at Berkeley, and the Max-Born-Institute in Berlin, he became faculty member at the University of Washington, followed by his appointment in Boulder in 2010. He is fellow of the Optical Society of America, the American Physical Society, the American Association for the Advancement of Science, and The Explorers Club.



Opal from Virgin Valley, Nevada

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The finest opals ever found in the United States come from a region in the Sheldon Natural Area, a high desert wetland called Virgin Valley in far northwestern Nevada. Since their discovery in the early 1900's, the entire region has been prospected and mined for precious opals.

The opal occurs as replacement of petrified wood. In addition to the petrified wood, there are numerous other fossils including, but not limited to: Camels, Rhinoceros, Horses, and other diverse mid Miocene flora and fauna. There were four caldera forming eruptions between 16.5 and 15.5 million years ago that caused the depressions that later became lakes and highly forested areas. Subsequent eruptions buried the trees in the lake beds and shores. Over time, groundwater percolated through the porous volcanic ash, dissolving silica that replaced the cellular structure of the wood. Not all of the wood was replaced, and not all of the opal is precious (Has play of color). In fact, even at these mines, a large majority of the opal is common opal with no play of color, and there is plenty of petrified wood that has only partially (or not at all) been replaced by opal.

Fig. 1. Entry gate to the Rainbow Ridge Opal Mine, Photo: Rick Kennedy.

There are a number of mines in Virgin Valley, three of them have options for the public. The Royal Peacock, Bonanza and Rainbow Ridge are the mines open to the public. All of them have a tailings dig option, Royal Peacock has a virgin bank dig and Rainbow Ridge has a virgin load option where the owner delivers a full front loader bucket full of virgin untouched material.

In this talk I will do a brief geological explanation, talk about the history of the deposit and about the Sheldon Natural Area where all of the mines are. The term "High Desert Wetland" will be explained! Then I will discuss the many trips my friends and I have made to the mines, discuss how we mine and show off the many different types of opal, petrified wood and other fossils that can be found in the area.

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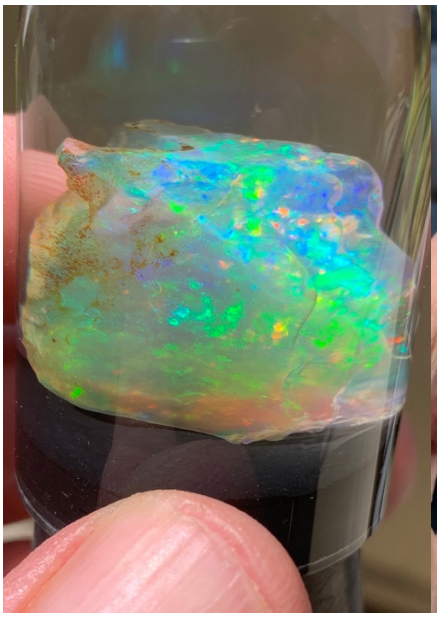
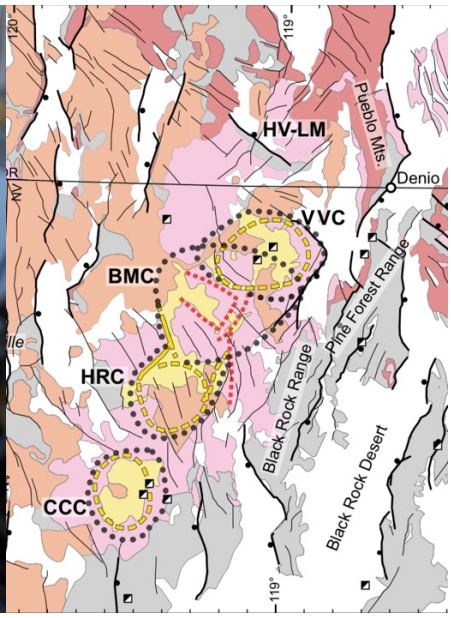
[1] Matthew A. Coble; Gail A. Mahood, Geology of the High Rock Caldera complex, northwest Nevada, and implications for intense rhyolitic volcanism associated with flood basalt magmatism and the initiation of the Snake River Plain- Yellowstone trend.

[2] Glen Hodson, personal communication.





Rick Kennedy is a professional miner, mineral prepper and mineral dealer out of Reno, Nevada. He has a BS in Earth Sciences from the University of California, Santa Cruz in 1994 and has been an active field collector and miner for most of his life. He is a partner at Hallelujah Partners, mining Quartz scepter from the location known as Petersen Mountain or also referred to as Hallelujah Junction. He is also a partner at the Jackson's Crossroads Amethyst Mine in Wilkes County, Georgia.

Culver Antimony Mine, Pershing County, Nevada

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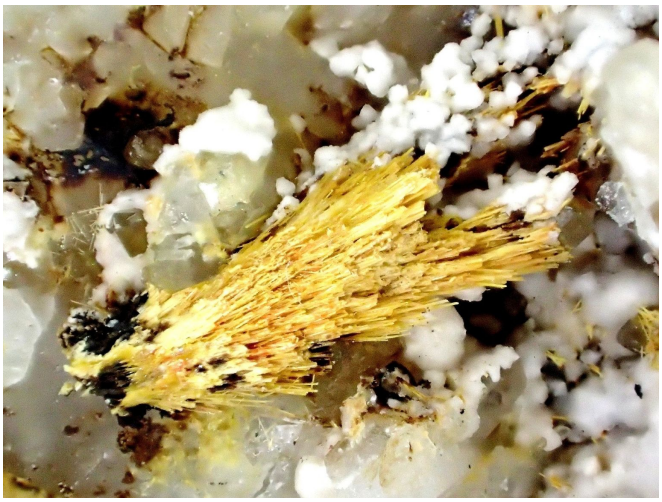
In 2009 author DE with members of Bay Area Mineralogists (BAM) conducted a mineral collecting field trip to Pershing County, Nevada, to investigate the mineralogy of several defunct mining localities located in this region of typical Basin and Range public BLM lands. The Redbird mine and Hollywood mine were two of the well-known localities for scheduled visits. While exploring some of the many desert roads in route to the Hollywood mine, we noticed three mounds of rock material oddly piled near an intersection of one of these roads leading up to the top of an uplifted ridgeline. At the time, we speculated that the only reason this material might have been consolidated at this point was for high-grade ore pickup to be loaded and sent for processing of antimony and mercury. Historic research pointed to this site as the Culver Antimony Mine first prospected sometime before 1950. We collected several specimen samples from the site showing a fibrous yellow mineral filling open cavities and fractures lined with quartz and calcite in silicified rock. In 2019, we sent the first of several samples to University of Arizona for XRD and SEM/EDS analysis. The results showed that the mineral was oxy-plumboroméite (formerly bindheimite), an antimonate secondary mineral that frequently forms in oxidation and weathering zones of primary occurring antimony-bearing lead deposits.



Sheaf like yellow oxyplumboroméite with aragonite and quartz. 1.2cm fov.

Over the course of several return visits to further study the mineralogy of the site, a wider variety of colorful micro-crystalline specimens were collected and sent for subsequent analysis. We expected to see additional antimony oxide species and there were several confirmed. In addition, samples from a massive quartz vein included tetrahedrite, malachite, native gold, and a relatively rare complex hydrous copper chloro-sulfate mineral, connellite. Examples of these minerals with their descriptions are provided here along with a brief description of the geologic conditions in the region.

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Daniel Evanich is an independent mineralogy researcher and active field collector of rare mineral specimens. Since 1998 he has been an integral part in the coordination of many Bay Area Mineralogists (http://www.baymin.org/) field collecting trips throughout the Western U.S. including the states of California, Nevada, Arizona, New Mexico, Colorado, Utah, and Idaho. The main focus of his personal mineral collection is on Western U.S. minerals, specifically from Butte, Montana, along with several other classic localities including Tiger and Bisbee, Arizona, San Benito County, California, and Pershing County, Nevada. In addition to BAM, he is an active member of Northern California Mineralogical Association (NCMA), Mineralogical Society of Southern California (MSSC), and Crystal Gazers of San Francisco.

North Star Mine, Mammoth, Tintic Mining District, Juab County, Utah

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Geology: The ore deposits were contained in the Fish Haven Dolomite and Ajax Dolomite - Opohonga and Ajax limestones where they were metamorphosed, and the contact is also close to the shaft. The crystallized areas of the contact contained quartz, garnet, and wollastonite. The limestone is intersected by fissures, with principal ones trending north, and north 25° east, along with many easterly cross fissures. Associated rocks include Oligocene-Late Ordovician monzonite of the Silver City Stock. The tunnel intersects the main monzonite contact not far from the portal. A porphyry dike 100 feet wide is intersected 400 feet west of the shaft. On the surface an ore bearing fissure was traced for 1,500 feet and it begins at the gulch above the shaft, and continues south to the crest of a nearby ridge. It trends southwest toward the contact and is vertical. The same fissure was discovered on the 300 and 400 foot levels, but no valuable ore bodies were discovered along it. Local alteration includes argillization and contact metasomatism.

Ore: Principal ore bodies extended east of the shaft for 1,000 feet continually, and followed steep north-northeasterly fissures with local offsets on easterly breaks. The ore bodies were irregular, and varied in width from being a small seam, up to 30 feet wide. The stoped ore bodies did not extend very far below the 300 foot level, or more than 500 feet south-southwest, and north-northeast of the shaft.

The ore contained gangue minerals of quartz and baryte, with the ore minerals being galena, cerussite, and enargite along with its alteration products. The ore contained silver and unusually large quantities of gold, more than most other mines in the district. The lower levels contained greater amounts of lead and silver with less baryte than the upper levels. The gold was mainly associated with fine grained baryte. On the upper levels the baryte is coarse and crystallized. The ore shoots dipped west and pitched north. Three of these ore shoots were distinctly gold rich, with one of them carrying lead and silver. Copper ore was also found at the south end of the vein.

Workings: The workings include surface and underground openings with a length of 457.2 meters and an overall depth of 152.4 meters, and are comprised of a shaft and adit and a large open stope tending NE that is visible above the dump. The mine was worked on the southernmost extension of the Godiva ore channel, within 500 feet of a nearby limestone-monzonite contact where it ends. The mine was worked on 6 levels developed at 100 foot intervals. A 900 foot tunnel opens the mine around the 200 foot level (level 2) from a gulch west of the shaft, the tunnel being at 6,745 feet in altitude. The workings extend 500 feet north-northeast, and 700 feet south-southwest. On the 300 foot level a crosscut extended east under the veins worked by the nearby Dragon Mine, and drifts extend far north and south. On the 600 foot level there was a lot of prospecting with large crosscuts running east and west.

Brent Thorne: I am a retired Clinical Pharmacist. I worked for 30 years with IHC. I was able to take two years of geology at the University of Utah. I am currently interested in tellurium minerals which the North Star Mine has an abundance of.