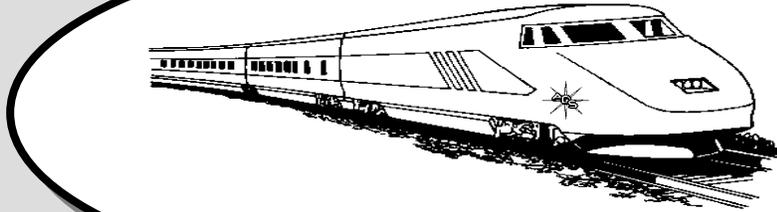


# The Opal Express

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## Fourth AOS Live Auction on June 11th

The AOS will hold its fourth AOS live auction, on Thursday, June 11 at our general meeting at 7:00. The auction will be fun, and "fund-raising," so come and snag a bargain while supporting your club!! **There were many great bargains to be had at the event last year!**

Don't miss a chance to buy or sell opal rough, cabs, books, tools, display cases, and other neat gem stuff when members may bring up to 5 items each for sale, as long as they are gem-related, and are approved by the AOS Board of Directors. You must be an AOS member to sell at the auction, and you must sign a vendor agreement, printed here for preview. Vendors must donate 10 percent of the final price to the AOS, and will be paid after the refreshment break prior to close of meeting. We will arrive at 6:30 to help vendors prepare their items. If you have items for sale, please come early, and allow us to assign a Lot Number, any minimum "Reserve" price you may request, and log your items into our computer for easy checkout later!

Bidders may be members, or visitors, provided they have a photo ID like a driver's license, and are willing to abide by Bidder rules. You must have an official bid paddle to bid, so sign up early when you first get to the mtg. Copies of the Vendor Rules and Bidder Rules will be made available at the signup table when you arrive.

If you want to bid, you must sign in to get a paddle, and agree to the Bidder rules, which state that all items must be paid for prior to close of meeting, the highest bid wins, all sales are final, no returns or refunds. The AOS auctioneer has final authority to determine the high bid, and can accept or reject any bid at AOS discretion. Bidders cannot bid for another person, and must pay for and remove their auction items prior to the end of the meeting. Bidders are not permitted to loan their paddles to others.

Proceeds from the live auction will go toward AOS activities like our workshop, and our annual show preparation and advertising. Please be generous with your bids, and get a bargain at the same time!

## Bidder Agreement

### TERMS AND CONDITIONS

By signing Bidder Agreement Sign-Up form, and accepting bid paddle, bidder agrees to the terms and conditions of the American Opal Society's auction rules and regulations, as described herein, and any laws of the State of California that may pertain. Bidder agrees that auction bid constitutes a legally binding contract and that s/he is obligated legally to pay the total amount of his bid(s) in full to the American Opal Society, henceforth to be known as the AOS, at auction close, in cash or check (with photo ID), prior to taking possession of any auction item(s). Bidder agrees NOT to bid on his own items, nor act in the capacity of a shill or confederate with regard to any other auction vendor, bidder, or item presented. Bidder agrees that s/he is at least 18 years of age, and enters into this agreement willingly, and has read this agreement in full, that he has carefully examined all auction items, and that all items are sold "AS IS, WHERE IS," with no warranty implied or expressed, CAVEAT EMPTOR. Bidder further agrees that by his signature, s/he agrees to indemnify and hold harmless the AOS from any claim resulting from auction or auction item(s). S/he also agrees that any claim at all shall be arbitrated by an ombudsman mutually agreeable to both parties, and who conducts business in the County of Orange, California.

## AOS Live Auction Rules

1. Winning bid is final, and all sales are final, no returns or refunds.
2. High bidder awarded possession of auction item(s) at the sole discretion of the AOS designated auctioneer and the AOS Board of Directors.
3. Winning bidder to take possession of any and all items s/he wins immediately after payment in full, and prior to auction close, at his expense, and remove said items from the auction area and the building prior to the end of the scheduled meeting.
4. The AOS reserves the right to accept or reject any or all bids made.
5. Bidder will not transfer or loan or assign his bid paddle and rights to any other party.
6. Auctioneer may, at the discretion of the AOS Board of Directors, bid as any bidder would, and agrees to abide by same terms, conditions, and rules stipulated herein.

## Members Only Website Password

To log onto the website's members only area at: [http://opalsociety.org/aos\\_members\\_only\\_area.htm](http://opalsociety.org/aos_members_only_area.htm) type: Name: "member" and Password: "america".

# Opal & Agate in Wyoming

By W. Dan Hausel, Geological Consultant Gilbert, Arizona (USA) <http://GeologicalConsultant.webs.com>

I began reconnaissance at Cedar Rim in the Sand Draw oil field of central Wyoming. Based on a clue from a local rockhound, it was apparent that geologists and prospectors again overlooked another major mineral deposit. A later literature search showed that the US Geological Survey had identified opal in the area, but paid no attention to the gem other than to mention it existed.

It became apparent that one of the larger opal fields in North America lay along State Highway 135 between Sweetwater Station and Riverton. Graded roads constructed to the field exposed thousands of cobbles and boulders of opal in road cuts. The opal had remained overlooked for a century even though millions of carats lay exposed! I kid you not, I found boulders of opal in these road cuts that were gigantic and some weighed more than a few hundred pounds - all untouched and unexplored!



Location map of the Cedar Rim opal field, central Wyoming.

The Cedar Rim deposit, based on size and extent, is one of the largest in North America - and possibly is the largest. As with any colored gem, success will require serious exploration, marketing, an understanding of geology, and cooperation from government regulators. However, as soon as the discovery was announced, regulators marked their territory. The BLM later claimed protection over an endangered flower that may not even be indigenous to the area and reportedly only found where cattle drop their waste, and the Wyoming Geological Survey curtailed all meaningful research on this and other discoveries, confiscating field vehicles and budgets to keep me from continuing my work. It was a time that would make any bureaucrat proud (and there were many standing knee deep in cow waste). I even had the BLM



Precious opal from Cedar Mountain. Note that it occurs as secondary vein deposits mixed in common opal.

call me demanding to know the location of the deposit so they could withdraw the area before it was announced. I refused to cooperate. I knew that the deposit would have ended up in the hands of some BLMer's cousin, nephew, or uncle. Even with the bureaucrats working their magic, many mining claims were staked on this giant deposit.

The geology of Colorado-Montana-Wyoming is very favorable for discovery of additional opal deposits. During the geological past, silica-rich volcanic ash erupted from the Yellowstone caldera and blanketed this region several times providing an excellent source for soluble silica for opal.

Opal ( $\text{SiO}_2 \cdot n\text{H}_2\text{O}$ ) is a precious to semi-precious stone classified as an amorphous mineraloid containing 6 to 10% water. A mineraloid is a mineral-like substance that does not yield an exact chemical formula; and like volcanic glass, shows no sign of crystallinity. Opal has a hardness of 5.5 to 6.5 and is fragile to relatively durable semi-precious gemstone. In general, the higher the water content, the less stable the opal.

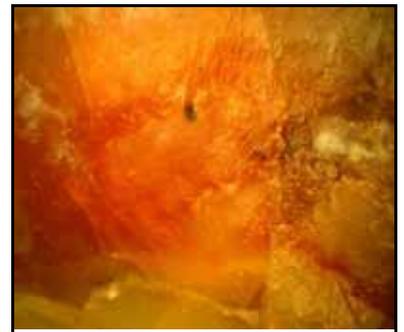
Three general categories of opal include: (1) common, (2) fire, and (3) precious. Precious opal is the most valuable. Precious black opal is considered to be the most valuable by gemologists because of an internal color play that is enhanced against the dark matrix. Precious white opal is considered to be less valuable as the internal color play is less distinctive against the white opaline matrix. Even so, this preference is based on taste.

Fire opal, which may or may not have color play, can be translucent to transparent red, orange-red, orange and/or yellow. Fire opal may be faceted: Opaque to translucent fire opal is usually cut into cabochons. Translucent to opaque milky white common opal may contain streaks of blue, red, brown, or yellow, and is also cut into cabochons. Hyalite, a colorless to transparent opal found as globules that resemble drops of water, is most often cut into cabochons. All varieties have been observed at Cedar Rim either as massive material or in trace amounts. Cedar Rim is extensive, covering hundreds of acres of land, thus the potential for significant discoveries of high-quality precious opal is high, especially since little surface and no subsurface exploration has occurred.

Most primary opal deposits are found in sedimentary or volcanic (rhyolitic) rocks. It is less common in basalt and metamorphic rocks. The majority of the world's precious



All boulders and cobbles in this photo are opal in the White River Formation. Note the large boulder next to the hammer. These are all exposed in a road cut.



I discovered a whole hill side filled with fire opal like this.

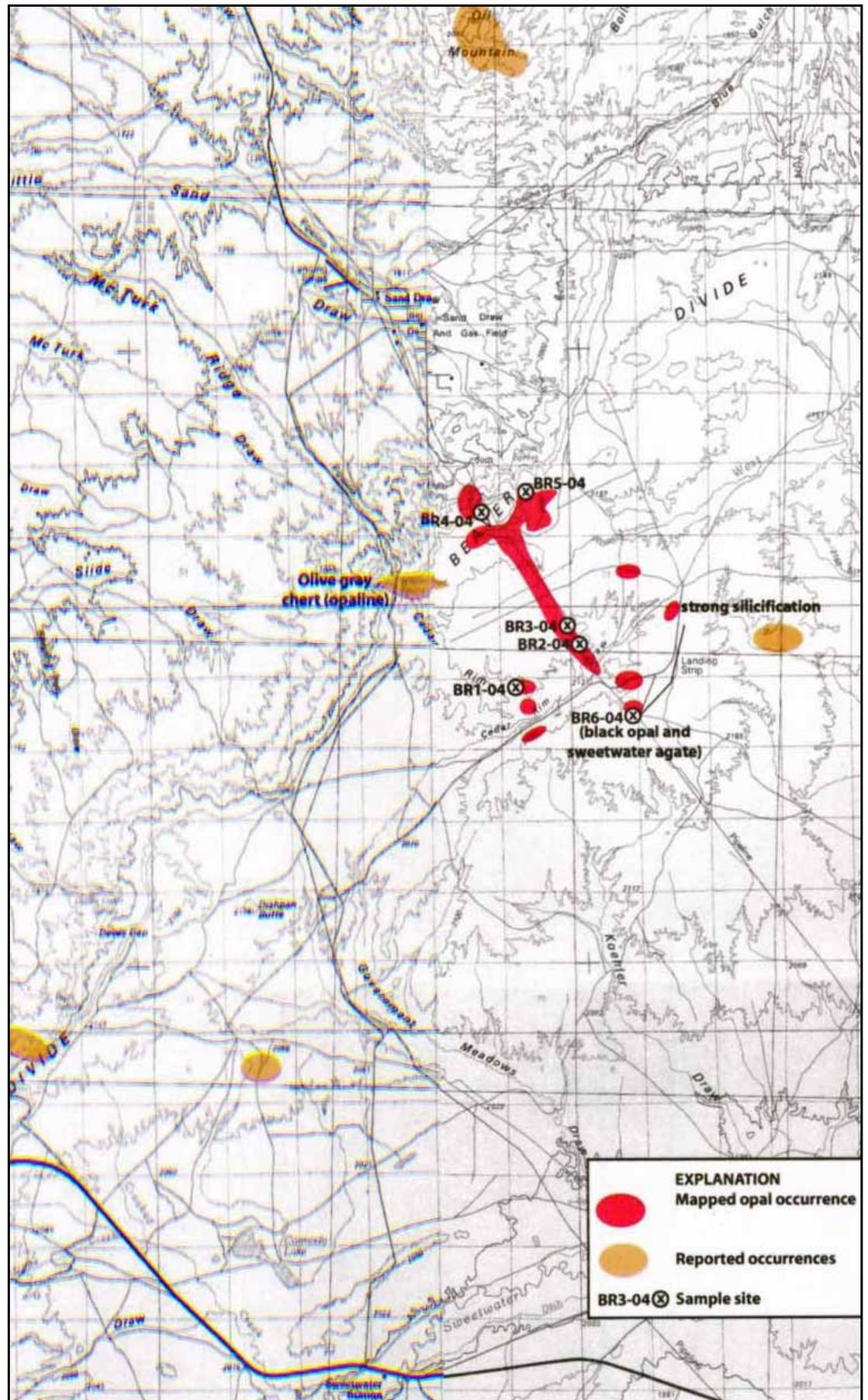
opal is mined in Australia where it occurs in Cretaceous marine sedimentary rock of the Great Artesian Basin of New South Wales, Queensland, and South Australia.

Opal has a low specific gravity, conchoidal fracture, and tends to craze (lose water and fracture). As a result, placer opal is unheard of. Opal preservation is unfavorable where surface weathering has been intense over long periods of time. Alluvial opal deposits are rare and restricted in size and extent.

Exposure to dry environments and heat, causes opal to lose water, which results in opaque, chalky-white fractured crusts and masses of caliche that replace the opal. Opal cannot survive deep burial nor structural adjustments (movement along faults). Because of durability limitations, opal, whether sedimentary- or volcanic-hosted, is geologically young.

The Cedar Rim deposit consists of vast amounts of white to light-blue opaque common opal, with lesser amounts of translucent to opaque yellow, yellow-orange to orange fire opal and some clear, transparent hyalite. Only trace precious opal has been identified in samples collected by the author. In that all varieties of opal have been identified in the deposit and much of the field remains unexplored, the potential for discovery of valuable seams of opal must be considered. During my study, I identified opal within 12 different sections (approximately 1 square-mile per section) covering hundreds of acres. Large amounts of agate were also identified including the source beds of the popular Sweetwater dendritic agate. In places opal beds are a few feet to greater than 50 feet thick. Since there has been no subsurface exploration, the true thickness remains unknown.

**Location.** Cedar Rim occurs along Cedar Rim Draw near the NW margin of Beaver Rim. Beaver Rim is a topographic ridge that marks the northwestern edge of the Granite Mountains uplift. The nearest towns are Riverton (25 miles to the northwest), Lander further west, and Jeffrey City to the southeast. Much of the deposit is located on the US Geological Survey Lander



Sketch map of Cedar Rim opal field showing location of opal. Areas between the outcrops and reported occurrences of opal are likely underlain by hidden opal beds under shallow sediments and soil. Each square on the map is a section representing 1 square mile.

1:100,000 topographic sheet and on the Rattlesnake Hills 1:100,000 sheet.

Opal and chalcedony were observed replacing tuffaceous limestone at the top of the Oligocene sediments that cap Beaver Rim as well as in several buttes to the south. In places, the limestone has layers of massive white chalcedony and nodules of opal enclosed in calcareous crusts. The presence of cylindrical pipes of silica cutting through some limy layers was noted.

The source of the silica for the opal and chalcedony was interpreted to have come from underlying (silica-rich) volcanic ash beds. The silica was mobilized by percolating water which surfaced in springs. Opal with chert and chalcedony occurs in the Wagon Bed Formation (now known as the Wiggins Formation), the White River Formation, and the Split Rock Formation suggesting that the opal is widespread and potentially very thick.

Numerous chert nodules and silicified zones are found in both the White River and Split Rock Formations. Locally, opal and yellowish-brown to light olive gray chert are found in masses up to 3 feet in diameter in mudstone of the Wagon Bed Formation in the vicinity of Wagon Bed Spring and northeastward to the Rogers Mountain Anticline. Irregular opal and chert masses up to 15 feet long are found in the Kirby Draw syncline (which runs northwest from NE section 31, T33N, R94W to section 14, T33N, R95W).

At Green Cove (section 35, T31N, R96W) it was noted that the uppermost 20 feet of the lower part of the Wagon Bed Formation contained altered yellowish- to light-gray, distinctly bedded tuff with abundant siliceous nodules. These were accompanied by 6- to 12-inch thick chert beds and rock formed of quartz, dolomite and opal.

Within this area, sandy limestone lenses up to 5 feet thick have been partly replaced by irregular fibrous chalcedonic chert and massive gray opal with irregular tubes and pores: many of which are filled with calcareous montmorillonite clay.

Irregular domal structures occur that are several feet in diameter and formed of sand adhering to an opaline skeletal structure that resembles tuffa or algal mats in the Split Rock Formation. These occur in well-sorted calcareous sandstone southeast of Devils Gap



Some of the many sweetwater agates found in the Cedar Rim field.



Photos show Sweetwater agate, precious opal, cobbles of opal in oil field adjacent to road. Below are fire and common opal

calcareous tuffaceous sandstone.

Based on reconnaissance investigations, the Cedar Rim deposit is one of the largest in North America. If such a large deposit can remain hidden right in front of everyone's eyes for such a long time, it makes one wonder what else is out there to be found. The geology of Wyoming, in particular, is favorable for opal due to the abundance of silica-rich volcanic ash deposited from past Yellowstone and Absaroka eruptions. In addition to sedimentary-hosted opal at Cedar Rim, precious opal was described in volcanic rocks in the Absaroka Mountains in northwestern Wyoming (J.D. Love, personal communication, 1989) and reported in the Yellowstone caldera.

Opal samples collected by me from the Cedar Rim field were from White River (Oligocene) and Split Rock Formation (Miocene) marlstone, limestone, claystone, siltstone, sandstone, conglomerate and boulder facies. Opal was found in sections 25, 26, 35 and 36, T32N, R95W, sections 31 and 32, T32N, R94W, sections 5, 6, 7 and 8, T31N, R94W, and sections 1 and 12, T31N, R 95W. These included giant opals of 25,850 carats (11.4 lbs), 57,100 carats (25.18 lbs) and 77,100 carats (34 lbs). For the prospector, I recommend getting maps of this area, following up on this work as only a small part of this deposit was investigated. Thus the potential for discoveries all around this area and at shallow depth is considered to be very high.

This vast field at Cedar Rim potentially includes extensive deposits hidden at shallow depth. The known opals range from small cobble size nodules to large boulders encased in caliche. Several varieties of opal and agate were identified:

- (1) Opaque milky white, tawny to translucent common opal with localized fracture fillings of transparent clear opal. Some have light blue opal with black dendritic inclusions. Some are perfectly transparent. Many are fractured but include large consolidated unfractured pieces of several carats.
- (2) Translucent light-blue opal enclosed by milky opal which in turn is enclosed by narrow perfectly transparent and banded opal crusts that exhibit a pleasant color play (bands of blue-yellow-violet red) in natural light. Some are enclosed in a thin rim of tan

to pink quartz. With further exploration, it is likely that more precious opal will be found.

- (3) Opal with milky quartz breccia and light gray to light blue translucent to transparent opal clasts and veins set in black opal to black chalcedony matrix. The black opal rarely exhibits color play.
- (4) Gray black to black translucent opal and agate. Some agates are similar to the Sweetwater agates and represent the source beds for the agates. Some material was collected in place in section 7, T31N, R94W.
- (5) At one location in section 25, T32N, R94W, a hill was discovered capped by fractured, varicolored fire opal. This opal occurs as replacements and fracture fillings in silicified arkose (sandstone). The material is translucent to opaque yellow, orange and red similar to Mexican fire opal. What this means for the prospector is simply that there is a lot of possible discoveries to be made at Cedar Rim. Even though only minor precious opal was found in this deposit I suspect that with some serious exploration and trenching, excellent veins of the precious opal will be found. Precious opal usually is found at shallow depth in narrow bands, seams and veins. If you would like to find a deposit of your own - search the old geological literature on stratigraphy of Tertiary rocks in Montana, Wyoming and Nebraska. Many of the esoteric geologists of the past didn't have much of a grasp of gem deposits. Often such deposits are described in passing.

For example, Cedar Ridge lies along a highway and is cut by numerous roads and no one had recognized that this place had one of the largest opal deposits on earth! A few old geological reports from 50 years ago briefly mentioned opal, so one would have to be shocked to find opal scattered over 14 square miles, opal masses greater than 79,000 cts along the edge of the road and common, fire and precious opal with scattered Sweetwater agate and some of the nicest decorative stone on earth.

This gave me a clue - nearly all of Wyoming was blanketed by volcanic ash (as was Nebraska and South Dakota). Guess what? There are other giant opal fields waiting to be discovered. So I found millions of carats of common and fire opal and traces of precious opal (including black opal) that suggest as soon as someone digs, valuable veins of precious opal will be found as depth!

From <http://gemhunter.webs.com/opal.htm>

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## The Discovery of Precious Opal at Whelan, Washington

*By Daniel E Russell*

The first significant discovery of precious opal in the United States occurred in 1890, when a deposit was accidentally discovered on a small farm in Whelan, Whitman County, Washington.

In the summer of the year, William Leasure had a shallow well dug on his farm. At a depth of only 22 feet, the well-diggers struck a layer of clay and decomposed basalt that graduated into solid basalt. A New York jeweler named James Allen happened to examine some of the rock thrown out of the excavation, and was surprised to find that many of the cavities in the basalt were filled with precious opal. Gemologist George F Kunz, reporting on the discovery in 1892, describes James Allen as a "jeweler, of Yonkers, New York" (Kunz, 1892), while the New York Times, in a brief notice on the opal discovery, calls him a "jeweler of Moscow," Idaho (NY Times, 1890a). The New York Times makes reference to a James Allen, jeweler, doing business on South Broadway in Yonkers in January 1890 (NY Times, 1890b); whether or not this is the same Allen is not certain.

Closer examination revealed that the opals occurred in the last 4 feet in the excavation. Kunz stated that the "good opals are often found embedded in so-called 'soap holes,' in a greasy, fine-grained, and very tenacious clay. Kernels of opal, all of good quality, are found in hollow amygdules in the rock, the cavities being generally

larger than the opal." The opal masses varied from the size of a pea to a walnut, and while Kunz described the material as "plentiful," (Kunz 1892a) most of the gem-quality opals which were recovered were quite small. As Kunz noted, "the smaller nodules are very rich in color, but though larger ones often have little or no play of colors." (Kunz, 1892b)

The opal was white with a rich play of red and green colors. "...If properly worked," Kunz pronounced, "it is likely to be one of the most promising of our precious stones, from a financial point of view." (Kunz 1893). The cut stones compared favorably with the best of the precious opals that had been produced by the mines of Hungary (which throughout most of the 18th and 19th centuries were considered to be the finest opals in the world) and with the newly-discovered Australian opals.

The announcement touched off a small-scale "opal rush" to eastern Washington. Soon, a mining camp called Gem City had sprung up. By June of 1891 a company named the North American Gem Opal Mining Company was organized with \$250,000 in capital to mine the opals (Smythe, 1911; Beckworth, 1972, states that the name of the company was the North American Gem and Opal Mining Company). They began work in July of 1891, and by October had recovered about \$3,500 worth of opal, with an expenditure of only \$280 in supplies and mining costs. Some of the opals which they sold commanded prices of \$30 to \$55 a carat. A 3.5 carat opal succeeded in fetching the remarkable price of \$500, while a 2 ounce mass of rough opal was sold for \$1,200. Kunz stated "The work is carried on by about 20 men, and is much in the nature of an open quarry. As it progresses into the hill the top soil becomes deeper, but the layer of black basaltic rock next to it and overlying the softer opal-bearing rock remains of about the same thickness... This spring, owing to the unusual weather, about three weeks' time was lost, and work was interrupted by water and snow three times; still, with an expenditure of about \$1,200 up to date, the results have more than doubled in both quantity and quality." (Kunz, 1892a).

The production of the opal deposit in the Whelan area was comparatively short lived, and by about 1904 work was largely abandoned. By 1911, it was noted that the stock of the North American Gem Opal Mining Company was essentially valueless.

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 Last Updated: 10th Jan 2009

From <http://www.mindat.org/article.php/513/Precious+Opal+At+Whelan,+Washingt+on>

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## Report on Claims Seminar

*By Dick Pankey*



Every rockhound that has collected on BLM or Forest Service land has come upon claim markers and wondered "what should I do now?" Are they old or new? Is the claim active? May I/should I enter? May I collect? Well we got the answers at the "What Rockhounds Need to Know About Claims" seminar given by Dr Gregg

Wilkerson from the Bakersfield BLM District Office. This seminar was hosted by the Contra Costa M&GS on Saturday, March 21, 2009 in Pittsburg, CA. We had a good turnout of forty five rockhounds from northern California that attended this very informative seminar. The cost of the seminar was \$5.00 which includes coffee and sweet goods, and a lunch of hot dogs with all of the trimmings, chips and a beverage. Eleven CCM&GS members attended and a Big Thank You to those that helped with set-up, clean-up and in the kitchen.

Gregg Wilkerson is a geologist in the Bakersfield Field Office. He performs geologic and hydrologic research and investigations for resource management as Program Team Leader and BLM Certified Mineral Examiner. His duties involve mineral appraisals, land exchanges, conveyances, mineral sales and leases, wilderness withdrawals, mining claim occupancy trespass, surface use determinations, CERCLA removal or remediation, water quality remediation, and hazardous abandoned mine closures. Gregg is technical advisor to the Buena Vista Museum of Natural History in and has mapped and described fossil deposits throughout California. He also leads the BLM Geologic Field Trips throughout California in association with the Buena Vista Museum.

Gregg gave broad, detailed coverage of claim processes and procedures. What we learned:

A claim is a property right granted by Mining Homestead Act of 1872 that was amended by Mineral Leasing Acts (1920), by Federal Land Policy and Management Act (FLPMA) and by Appropriations Bills since 1984 (no patents). There is an excellent article on claims and the Mining Law of 1872 in the August 2008 Rock and Gem magazine starting on page 64. This outstanding article covers the history, purpose, updates/changes over the years, and current status of the Mining Law.

There are 4 types of claims: Lode claims, placer claims, mill site claims and tunnel sites.

The validity of a claim is dependent on the mineral being "locatable" which is determined by the Prudent Man Rule and the Marketability Test. Which means "do you think it is worth the effort" and "can you sell what you found?" All claims are assumed valid by the BLM until challenged or you apply for a "use permit." To establish validity a Validity Exam is conducted by a Certified Mineral Examiner.

Minerals are locatable; rocks are not, they are "salable."

To stake a claim the material (mineral) must be locatable, be on Federal Land (not private or state land) and the Federal Land must be open to "mineral entry" (not in a Wilderness, a National Park, or the like.)

To stake a claim, you must construct a Discovery Marker including a statement of claim, post corner markers, file with County Recorder, send exact copy to BLM and pay the fees.

The fees are: Notice of Location -\$15; Amendment of Location - \$10; Transfer of mining claim/site - \$10; Recording of annual FLPMA filing - \$10 and Deferment of assessment work ("holding fee") - \$100.

Geodes and unique agate (Horse Canyon) are claimable; obsidian and common agate is not claimable.

To find out if a claim is current or valid it is best to check with the BLM or County Recorder. You will need the location of the claim in question in map terms of Township, Range and Section. Claim locations can also be found on <http://www.geocommunicator.gov> web site. If you are out on BLM land and come upon a claim locate the Discovery Marker to see if the paper work in it is current. To be current the paper work must list the name of the claimant, the material claimed, the location of the claim (Township, Range and Section) and filing date/update in the current year (September 1 to August 31.) If not current you are free to collect.

Gregg recommends that filing and maintaining claims on our significant rockhounding sites is a good way to establish and preserve our right for access and use. Some CFMS societies already have done this and it is recommended that more societies do it.

Gregg also recommends that we attend meeting and be involved in the BLM and Forest Service Management Use planning.

So what's next? Gregg has already been contacted by some Southern California societies to present a similar seminar. Hopefully, one can be schedule in the near future. Next we need to get more info about club claims. There are proposals in Congress for major revisions to the Mining Act that could eliminate the claim process as soon as 2010. We need to act now. I would like to hear from all societies who have or had a society claim: Who has one? Contact info for the person responsible for the claim? What has been your experience? This needs to be done sooner than later. If your society has or had a claim, please e-mail or send me this information. Within the year (the sooner, the better) we need to have a seminar/meeting with societies that have a claim and those societies that want or might want to have a claim. We will also identify suitable sites and identify insurance and liability issues.

Dick writes a monthly report: *Field Trips-North for the CFMS Newsletter*.

From <http://www.cfmsinc.org/newsletter/news2009/006jun09/newsjun09.htm>  
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## A Silver Primer

*By June Culp Zeitner*

Easily worked with a variety of finishes and adaptable to many styles, silver is a favorite jewelry metal.

Silver is one of the three most popular jewelry metals, the others being gold and platinum. Among amateurs who enjoy making jewelry, silver isn't just among the top three, it's the metal of choice.

Silversmiths have developed many ways of working this precious metal, from the ancient hand techniques of forging and raising to the high-tech process of electroforming. Contemporary silversmiths seem to favor channelwork, etching, engraving, filigree, scrollwork, casting, appliqué, and stone mounting. Silver is also a frequent component in the multi-metal techniques of married metals and mokume gane.

Just what is silver and why is it so versatile? Silver is an element and a mineral species. Its chemical symbol is Ag, from the Latin word for silver, argentum. Mineralogically, it belongs to the isometric crystal system, is 2-1/2 to 3 in hardness on the Mohs scale, has a specific gravity of 10.5, and leaves a white streak. In nature, silver often occurs with gold, copper, nickel, or other metals; silver ores include the minerals argentite, acanthite, pyrargyrite, polybasite, stephanite, and proustite. Gold that occurs with a natural silver content of about 30% is called electrum; copper-silver combinations are called halfbreeds. Major silver deposits have been found in Mexico, Canada, Norway, Chile, Australia (in New South Wales), and in the U.S. in Montana, Idaho, Colorado, Arizona, Nevada, and Michigan.

Of course, while mineral collectors are interested in the natural forms of silver specimens, silver's trademark metallic qualities of being malleable (shaped by being beaten or rolled), sectile (cut smoothly), and ductile (drawn or hammered) and its gleaming luster are what have made silver a favorite medium among metalsmiths for thousands of years. Among the traditional cultures of the Middle East, India, Tibet, Burma, and North America, silver has long been the preferred jewelry metal. In addition to being readily worked, silver is also relatively abundant and much less expensive than gold. Even with gold's currently low prices (at a little over \$250 an ounce in late summer), at a little over \$5 an ounce for the same timeframe, silver is still quite a bargain.

Jewelry makers can buy silver as wire, sheet, bullion, ingots, or casting grains. These variations also come in multiple choices; for example, the kinds of wire include round, flat, triangular, square, half round, and bezel.

The silver used for jewelry is generally either fine (pure) silver or sterling, which is 925/1000 pure silver. Coin silver is .900 parts silver. Mexican silver has varied from between .900 to .980, and is now mostly .925. Silver jewelry is usually stamped with the metal purity and the registered hallmark of the manufacturer making the

claim. Different countries have different requirements about stamping, however. England and France are very strict; laws in the United States are frequently revised; some countries simply have no regulations at all. Fine silver, like gold, is sold by the troy ounce. There are 14.58 troy ounces to a pound (instead of the 16 avoirdupois ounces that are more commonly used to divide the pound), and there are 155.54 carats in a troy ounce.

Sterling silver is alloyed with copper and tarnishes easily, although pure silver is also blackened by natural oxidation. In some countries, zinc is used instead of copper to make sterling silver, but the result has a tinny appearance.

Some "silvers" contain no silver at all. German silver and nickel silver are names for alloys that look like silver but have no silver content. Other metals that may resemble silver are pewter, aluminum, and Monel metal. Recently, plastics manufacturers have come up with silver and gold look-alikes. Trade names that suggest silver, such as Morton Silver, Silverine, and Silvertone, do not contain silver as a rule, but Black Hills Silver is silver from the Black Hills. Silver-plated items generally do not have much silver, though the best quality silver-plated flatware is an exception, and very thin layers of silver, called silver leaf, are used on picture frames and other objects.

Metal items that are supposed to be silver may be tested first with a magnet. If the magnet is attracted, the item is not silver. To test a piece for silver content, place a drop of silver reagent on a notch in the metal. Pure silver will then turn bright red, while sterling will turn much darker red. Silver that is .800 will test brown, and an object that is only .500 silver will turn green.

Although silver is known as a white metal, it can also appear green, blue-green, red-brown, or purple through the application of sulfides, carbonates, chlorides, and other chemical solutions. The color of silver can also be changed by the application of thin layers of glass, as when fine silver is used in enameling, enamel being basically glass.

Sometimes, silver is intentionally blackened with potassium sulfide for an antique look.

Color is also used to determine the heat during soldering. The melting point of fine silver is 1761°F; sterling silver, 1640°F; and coin silver, 1615°F. As silvers heat up, they change color, and the jewelry maker can "read" the temperature by the color. The metal will be faint red between 700°F and 900°F; dark red at 900°F-1200°F; bright red at 1280°F-1590°F; cherry red at 1600°F-1750°F; and red-orange at 1800°F-1850°F.

Silver needs to be annealed when working it, and when to anneal can also be gauged by color. The annealing temperature is reached with a faint dull red glow, between 900°F and 1200°F.

Silver solders are easy flow, medium flow, and hard flow, with hard flow having the highest melting temperature. Paste solders have flux already added.

The biggest problem jewelers face with silver is the formation of firescale, a discoloration caused by oxidation. To prevent firescale, silversmiths learn to use an adequate flame, plenty of flux, and to heat the piece quickly and withdraw the flame at the moment of flow, then pickle at once.

If firescale does occur, vigorous buffing and hot pickle may help. If results are still unsatisfactory, a process called bright dipping may be used. In this, the silver piece is attached to a wire and quickly dipped into a solution of 50% cold water and 50% nitric acid. After a dip of several seconds, the piece is rinsed and the acid neutralized with soda. (A respirator and rubber gloves are recommended for this process.) Deep firescale can also be removed with emery or pumice.

Silver is used in photography, medicine, mirrors, coinage, utensils, and other products in addition to jewelry. There have been times in the past when silver was valued more highly than gold: silver was the most valuable metal in some periods of ancient Egypt, and in 18th century France, the finest diamond jewelry was set in silver. The uses of silver for jewelry have flourished in the last few

years, and while fashions come and go, silver jewelry will always be with us.

June Culp Zeitner is the author of nine gem and mineral books, the most recent of which is *Gem and Lapidary Materials*, and an avid artisan and collector.

From <http://www.jewelryartistmagazine.com>

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## June 2009 Gem & Mineral Shows

5-6--PRICE, UT: Show; Castle Country Rock, Fossil & Mineral Club; J. Leavitt Student Center - C.E.U, 526 North 300 East; Fri. 12-7, Sat. 10-7; free admission; rocks, fossils, minerals, jewelry, metal detectors, equipment, displays, demonstrations, door prizes; contact Patrick Braun, P.O. Box 236, Ferron, UT 84523, (435) 384-2211; e-mail: pbraun@etv.net

5-7--PUYALLUP, WA: Annual show; Puyallup Valley Rock & Mineral Club; Fruitland Grange, 112th St. and 86th Ave. E; Fri. 12-6, Sat. 10-6, Sun. 11-4; contact Brett Lawrence, 10413 Delwood Dr. SW, Lakewood, WA 98498; e-mail: bandslawrence@comcast.net

5-7--RENO, NV: Retail and wholesale show; Bead Renaissance Shows; Holiday Inn, 1000 E. Sixth St.; Fri. 10-6, Sat. 10-6, Sun. 10-5; free admission; bead artists, dealers, ancient, vintage, contemporary and designer beads, jewelry, tools, books; contact J&J Promotions LLC, P.O. Box 420, Williamsburg, NM 87942, (575) 894-1293; e-mail: beadshow@aol.com; Web site: www.beadshow.com

5-7--WOODLAND HILLS, CA: Show, "Rockatomics Rockhound Roundup"; The Foundation of Pierce College, Rockatomics Gem & Mineral Society; Pierce College, Victory Blvd. and Mason St.; Fri. 10-5, Sat. 10-5, Sun. 10-5; free admission; gems, jewelry, tailgate selling, dealers; contact Linda Ralph, (818) 887-9791; e-mail: show@Rockatomics.org; Web site: www.Rockatomics.org

6-7--LA HABRA, CA: Show, "Jubilee of Gems"; North Orange County Gem & Mineral Society, City of La Habra; La Habra Community Center, 101 W. La Habra Blvd.; Sat. 10-5, Sun. 10-5; free admission; dealers, demonstrators, exhibits, youth activities, gold panning, geode cutting; contact Richard Schirer, 14602 Calpella St., La Mirada, CA 90638, (562) 944-9445; e-mail: rich477@ca.rr.com

6-7--SAN FRANCISCO, CA: Show, "The Great San Francisco Crystal Fair"; Pacific Crystal Guild; Fort Mason Center, Bldg. A, Laguna and Marina Blvd.; Sat. 10-6, Sun. 10-4; adults \$6, children under 12 free; gems, jewelry, crystals, beads, psychics; contact Jerry Tomlinson, (415) 383-7837; e-mail: sfxtl@earthlink.net; Web site: www.crystalfair.com

12-14--EUGENE, OR: Retail and wholesale show; Bead Renaissance Shows; Hilton Eugene & Conference Center, 66 E. 6th Ave.; free admission; bead artists, dealers, ancient, vintage, contemporary and designer beads, jewelry, tools, books; contact J&J Promotions LLC, P.O. Box 420, Williamsburg, NM 87942, (575) 894-1293; e-mail: beadshow@aol.com; Web site: www.beadshow.com

13-14--BUTTE, MT: Show; Butte Mineral & Gem Club; Civic Center Annex, 1340 Harrison Ave.; Sat. 10-6, Sun. 10-5; contact Pete Knudsen, (406) 496-4395

13-14--CAYUCOS, CA: Show; San Luis Obispo Gem & Mineral Club; Cayucos Veterans Memorial Hall, 10 Cayucos Dr.; Sat. 9-5, Sun. 9-5; free admission; gems, minerals, fossils, lapidary rough, jade, meteorites, moldavite, beads, cabochons, jewelry, carvings, crystals, micro-mounts; contact Michael Lyons, 1200 Camino Del Roble, Atascadero, CA 93422, (805) 610-0757; e-mail: jadestar@charter.net

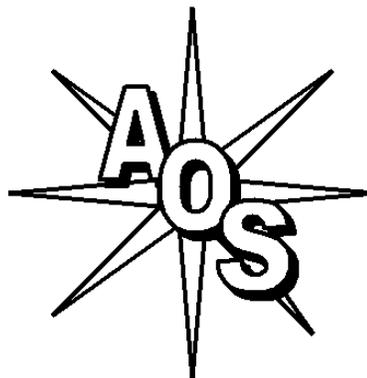
19-21--NEWPORT, OR: 46th annual show; OR Coast Agate Club; Lincoln County Fairgrounds, 633 NE 3rd St.; adults \$2, youth \$1, children under 6 free; Fri. 10-6, Sat. 10-6, Sun. 10-4:30; display cases, dealers, equipment, rough rock, lapidary demonstrations, children's activities, silent auction, raffle, door prizes; contact Guy DiTorrice, (541) 961-1762; e-mail: guy@orcoast.com

19-21--SAN DIEGO, CA: Show; Gem Faire Inc.; Scottish Rite Center, 1895 Camino del Rio S.; Fri. 12-7, Sat. 10-7, Sun. 10-5; \$5 weekend pass; contact Yooy Nelson, (503) 252-8300; e-mail: info@gemfaire.com; Web site: www.gemfaire.com

20-21--RIVERTON, WY: Show, "WY, A River of Gems"; Riverton Mineral & Gem Society; Fremont County Fairgrounds, Armory, 900 S. Federal Blvd.; Sat. 9-8, Sun. 9-4; adults \$1, children under 12 free; dealers, gems, fossils, jewelry, rocks, beads, spheres, lectures, kids' games, wheel games, mineral identification, display cases, silent auctions, raffles; contact Rex Rogers, 1010 Mary Anne, Riverton, WY 82501, (307) 856-9544; e-mail: rogerspg@msn.com; Web site: www.rivertongemclub.com

25-28--PRINEVILLE, OR: 64th annual show, "Prineville Rock Hound Pow Wow"; Prineville Rockhound Pow Wow Association; Crook County Fairgrounds; Thu. 9-5, Fri. 9-5, Sat. 9-5, Sun. 9-4; free admission; dealers,

field trips, displays, auction, obsidian, jade, petrified wood, agate, jasper, thunder eggs, faceting rough; contact Rebecca Buss, (541) 546-9473; e-mail: rebecca@rebeccasrecreations.com; Web site: www.prinevillerockhoundpowwow.org  
 26-28--CLACKAMAS, OR: Faceting conference; Columbia Willamette Faceters Guild; Monarch Hotel, 12566 SE 93rd Ave.; Fri., 5-9, Sat. 9-5, Sun. 9-5; contact Terry Olson or Haden Olson, (503) 631-3132; e-mail: mangriff@ccwebster.net; Web site: www.facetersguild.com



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<b>TOTAL PAID DUES, less Senior Discount plus Badge plus Initiation Fee (if Applicable)</b>			

Please make check or money order payable to "**American Opal Society**". Mail payment and application to:  
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 An optional, quicker method of payment is via the **Internet**. To pay, just visit the membership page on our website at [http://opalsociety.org/aos\\_application\\_by\\_web.htm](http://opalsociety.org/aos_application_by_web.htm) and complete the form. You June pay with a **Credit Card** or via **PayPal** account. The transaction is completely secure and the AOS never sees your credit card number. The AOS PayPal account is [membership@opalsociety.org](mailto:membership@opalsociety.org).

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**MEMBERSHIP ROSTER and NEWSLETTER MAILING:** The AOS publishes a membership directory once per year in its Newsletter, the *Opal Express*. Your name will be included. Please check what additional personal information that you want listed for other members. If it is different from the information above, please note that on the application.

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**Are Your Dues Due Now?**  
**PLEASE CHECK YOUR ADDRESS LABEL.** If your label shows the current month/year your dues are DUE NOW. If the date is older, your dues are overdue.  
**A Renewal Grace Period** of two months will be provided. If your dues are due now you will receive two additional issues of the newsletter. Please note, however, that as the system is now set up, if your renewal is not received you will be AUTOMATICALLY dropped from membership thereafter. It is your responsibility to assure your dues are current.  
 Thank you,  
*The Editor*



# The Opal Express

American Opal Society  
P.O. Box 4875  
Garden Grove, CA 92842-4875

**Volume #42 Issue #6  
June 2009**

TO:

### Some Topics In This Issue:

- Fourth AOS Live Auction on June 11
- Opal & Agate in Wyoming
- Precious Opal at Whelan, Washington
- Report on Claims Seminar
- A Silver Primer

### Important Dates:

June 8 - Board Meeting

June 11 - General Meeting

### Fourth AOS Live Auction!!!

- Bring your gems, rough, tools, jewelry, etc. to AUCTION!
- Bring cash to buy good DEALS!

# June 11

# AOS Live Auction!

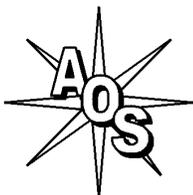
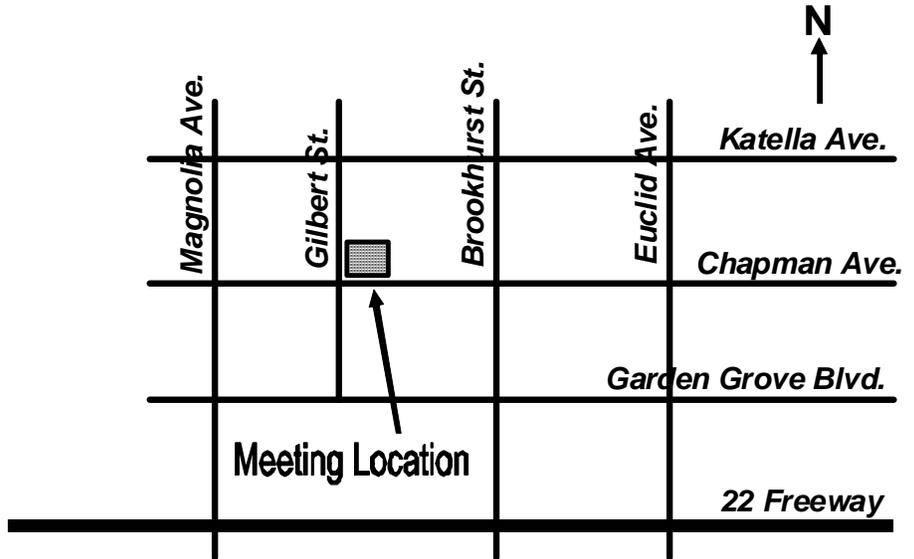
### — GENERAL MEETINGS —

2nd Thursday of the Month  
7:00 pm - 9:00 PM

Garden Grove Civic Women's Club  
9501 Chapman Ave.  
Garden Grove, CA 92841  
(NE corner of Gilbert & Chapman)

### MEETING ACTIVITIES

Opal Cutting, Advice, Guest Speakers,  
Slide Shows, Videos, Other Activities



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