



the BEMS Tumbler

February
2009

The monthly newsletter of the **Boeing Employees' Mineralogical Society, Inc.** Seattle, Washington

Next Meeting:
February 12, 2009
7:30 p.m.

**Boeing Recreation
Activity Center**

Room B at
22649 83rd Avenue S.

Just off the Valley
Freeway (Highway 167) North
edge of Kent

The Program was not known at
press time



*This month remember
to wish a*

Happy Birthday to

Donita Voss on February 5,
Ronald Green on February 7,
Esther McKain on February 9,
Delbert Oxborrow on February 11,
Dave Van Dvine on February 13,
George Boucek on February 16,
Peter Williams on February 18,
Ronald Houser on February 19,
Carolyn Speer on February 22,
Marcia Wollam on February 23,
James Speer on February 23,
Mike Brimmage on February 24,
Julianne DeLeo on February 25,
Sharon Berosik on February 28,
Leonard Olsen on February 28,

*and also remember
to wish a*

Happy Anniversary to
Wendy Woldenberg & Bob Anderton
on February 5,
Ronald & Shirley Houser
on February 11 (53 years),
William & Renee Farrow
on February 20 (30 years)



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Tips, suggestions, recipes and experiments printed in this newsletter are the experiences and/or opinions of the individuals submitting them. We are not responsible for their authenticity, safety, or reliability. Caution and safety should always be practiced when trying out any new idea.

When on field trips this organization uses CB Channel 7.

Keith Alan Morgan, Editor

Postal, or Email, Exchange
Bulletins are welcome.
Email preferred.

morgangraphix@yahoo.com

Officers & Directors 2009

President Bob Pattie
Vice President Scott Burch
Treasurer Richard Russell
Secretary Pete Williams
Director Bill Cook
Director Dick Morgan
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Federation Representative Michael Blanton
Federation Representative Jerry K.F. Chilson
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Mineral Council Bob Pattie
Refreshment Esther McKain
Membership Keith & Dick Morgan
Health & Welfare Carolyn Sealfon
Library Stephanie Jurado-Smith
Video Library Sandy Chilson
Raffle/Display Keith & Dick Morgan
Field Trip Eric Chilson
Field Trip Bill Cook
Tumbler Editor Keith Alan Morgan
Webmaster Keith Alan Morgan
Shop Operations Cheryl Edgar
Shop Instructors:
 Casting Joe Poston
 Faceting Cliff Frome
 Jewelry Carolyn Sealfon
 Lapidary Dick Morgan

Club eMail address is
morgangraphix@yahoo.com

2009 BEMS Dues are \$15 flat rate Individual, Family, or Retired.

Send or deliver dues to:
Richard Russell

(or pay him at the meeting)

The object of the Society shall be to stimulate interest in the study of the earth sciences, lapidary arts and related subjects.

This Society is affiliated with the *Boeing Company*; the *American Federation of Mineralogical Societies*; the *Northwest Federation of Mineralogical Societies*; and the *Washington State Mineral Council*.

Every member of the club should be receiving a copy of the Northwest Newsletter. If you are not receiving a copy contact Dick Morgan

To get information to the Tumbler via the Internet send it to **morgangraphix@yahoo.com** Please put Tumbler and subject in the Subject Line. The deadline is the 20th of each month, (except December which varies).

The BEMS external website is **<http://www.bemsonline.com>**

Slow Down That Tarnish!

Tarnish is caused by sulfur gases in the air. Chalk naturally absorbs sulfur. Place sticks of ordinary chalk in your cases, and jewelry boxes. Put it in your tool chest, too, since it also absorbs moisture.

To make labels that glow in the dark for fluorescent rocks, mix quinine and water to use for ink. It glows a bright bluish-white under black light.

from Breccia, 1/09



February



SUN	MON	TUE	WED	THUR	FRI	SAT
1	2 Board Meeting 	3 Lapidary Casting Jewelry	4 South Sound Show Meeting	5	6 Faceting Class	7
8	9 Lapidary Shop	10 Lapidary Casting Jewelry	11 Jewelry Class	12 General Meeting 	13 Faceting Class	14 Whidby Island Show
15 Whidby Island Show	16 Lapidary Shop	17 Lapidary Casting Jewelry	18 Jewelry Class	19	20 Faceting Class	21 Everett Show
22 Everett Show	23 Lapidary Shop	24 Lapidary Casting Jewelry	25 Jewelry Class	26	27 Faceting Class	28

More Show info can be found on Page 10

Lapidary Class Hours:.....Monday.....7:00 pm to 9:00 pm

Lapidary Shop Hours:.....Tuesday.....9:00 am to 6:00 pm

Jewelry Shop Hours:.....Tuesday.....9:00 am to 6:30 pm

Jewelry Casting Hours:.....Tuesday.....9:00 am to 6:30 pm (Casting Information All Day)

Jewelry Class Hours:.....Wednesday.....10:00 am to 5:00 pm

Faceting Class Hours:.....Friday.....4:30 pm to 8:00 pm

South sound Show Committee Meeting...1st Wednesday.....11 am to 12 pm

BEMS Board Meeting:.....Monday (10 days prior to General Meeting).....7:00 pm to 8:00 pm

BEMS General Meeting:.....2nd Thursday.....7:30 pm to 10:00 pm

Mr. and Mrs. Rockhound

by KAM



BEMS Board Meeting Minutes January 6, 2009



by Keith Morgan

Members attending

- President Bob Pattie* *Editor Keith Morgan*
- Shop Operations Cheryl Edgar* *Shop Dick Morgan*
- Field Trips Bill Cook* *Health & Welfare Carolyn Sealton*
- Mineral Council Brian Waters* *Refreshments Esther McKain*
- Guest Jackie Pattie*

Meetings: Decided to move the meeting night to Monday, ten days before the regular meeting, hoping that would encourage more people to show up. The next board meeting was moved to February 2nd.

Shop: The 14" saw has been bent. Some extra saw blades have been ordered.

Print out some basic instruction on how to use the equipment to hand out.

Adding another lapidary shop class was discussed. Carolyn Sealton is teaching jewelry classes Wednesday's from 10 am to 5 pm.

Got tumbling stuff.

Shop cleanup this Saturday.

Need to organize the jewelry shop. Need a larger pickle pot with acid. One of the acetylene tanks needs to be repaired & refilled.

Tumbler: Move Brian Waters to main representative to the Mineral Council with Bob Pattie as alternate.

Health & Welfare: Pete Williams had his shoulder operated on. Additional fractures were found in Karin Wheeler's foot. Orlie Runyon lost his mother on December 27th.

Refreshments: Esther needs a new stepstool so she can reach the top shelf of the cabinet. Maybe remove the two extra coffee pots we don't need.

New Business: Let Boeing know about the good things the club does.

Push for new members.

Add a note to membership form to identify members as Employee, Retiree, Associate, Vender, etc., as Boeing needs this information for insurance.

Board Meeting Dates... Update

Well, after figuring out what the Board meetings would be for the next year & printing it in the last Tumbler it was decided at the last Board Meeting to change the meeting date to Mondays, 10 days before the regularly scheduled meeting. So the next Board meeting will be February 2 & the next two will be March 2 & March 30, unless they get changed again.

The Great Rock Adventure by Zachary Noble (8 yrs old)

On March 27th 2008 during my school spring break I went with my family to Arkansas U.S.A. We looked for quartz crystals, diamonds and arrowheads; we also took a tour of a really awesome cave.

Our adventure began in Mt. Ida Arkansas at the Arrowhead Mine. We spent two days digging in muddy clay, pouring down rain and thunder storms. We found several nice crystal clusters and a lot of nice points. We found three crystals that have points at both ends these are called "Double Terminated Crystals". They are very clear, you can see right through them. It was a lot of fun.

The third day we went to Bear Mountain Mine to see if we could find more crystals. We mostly looked among the tailing piles. We found a couple nice small clusters and several points. Not as good as what we found at the Arrowhead mine. It was fun and there was no rain!

During our stay in Mt. Ida I met a lot of really nice people. There were thunder storms nearly everyday and a lot of lightning, purple lightning and Tornado warnings throughout the state. There was a lot of red clay and rolling hills with lots of oak trees. We went to several rock shops looking at all the beautiful rocks they had.

After our crystal digs in Mt. Ida we went south to a town called Murfreesboro. This town has the only Diamond Mine in the United States open to the public for digging. We went to the Crater of Diamond State Park and tried our luck at finding a diamond. There were 37 acres of mud to look through. My dad had to pull me out of the mud several times. I didn't have any luck finding any diamonds but I did have fun playing in the mud!

After spending a day at the Crater of Diamonds State Park we moved on to look for Arrowheads. There was an Indian store and small museum to tour. They say they plow the field often and that arrowheads from the Cado Indian Tribe are found every once in awhile. We didn't have any luck it was a real bust and a disappointment for us.

On our last day of our trip we headed north to the Ozark Mountains. On our way to Blanchard Springs Cavern we saw many homes that had been damaged from a Tornado a couple days earlier. The Blanchard Springs Cavern was very interesting. We took an elevator 225 feet down into the earth. There were stalactites and stalagmites. There were pools of water and columns of limestone over 6 stories high.

My Great Rock Adventure ended in Little Rock Arkansas. It was a great family vacation. It was fun and I learned a lot.

BEMS General Meeting Minutes January 8, 2009



by Pete Williams, 2009 Secretary

Meeting called to order at 7:33

There were 2 guests in attendance.

Minutes were approved as written.

Tumbler Editor's Report: Tumbler can use more articles from members. Members were asked to check the listing Keith has to ensure names, addresses, birthdays, and other contact information is still correct.

Webmaster's Report: Reminder that members can list items up for sale on the club web site.

Treasurer's Report: Rich is still collecting 2009 dues. It is still only \$15 per year. Federation and Mineral Council dues will be paid this month.

Shop Reports: Faceting classes have been closed for the last 3 weeks. The 14 inch saw in the lapidary show was bent. We are looking for a place to take it to get straightened. There will be a shop cleanup party this coming Saturday beginning at 9:00. Members are requested to sign up to help out. Also, a reminder was given to members to cleanup after using the shops as a courtesy to other members. Check that the equipment and water is turned off prior to leaving. Carolyn has started a jewelry class on Wednesdays from 10:00-5:00. This consists of fabrication and casting. Please see her to get on a waiting list.

Library: Several books were donated by Margaret Squires including one on Ellensburg blue agate.

Health & Welfare: Cards were provided to 3 members.

Federation Report: The Federation is still taking donations for used stamps.

Field Trip Report: No report.

Mineral Council: The Wagonmasters will hold a meeting on January 17 at the club meeting room to plan field trips for 2009.

South Sound Show: BEMS and the Puyallup club received checks for \$2900 and \$5100 was left in the account to startup this year's show. The next board meeting will be on February 4 in the club meeting room. Members are needed to assume leadership roles for this year's show. Please volunteer if you can. The 2009 show will be Nov. 13-15. This schedule will require the club's November meeting to be moved up one week.

Old Business: None.

New Business: It was pointed out that members who want to chat while the meeting is going on that there is a hallway they can use.

A suggestion was made for a new location for the club's annual August picnic. Members preferred to remain at the Renton site. Cheryl asked for members to see her about tumbling rocks to be used to give away or sell at the upcoming show. There is a large amount of petrified wood as well as some agate and jasper available for tumbling. Please see her if you are able to tumble some rocks.

Mike requested that members seriously consider putting a display case for this years show. Any items related to the lapidary field can be displayed.

Program: The program was a video on Idaho the Gem State.

Meeting adjourned at 8:45.

Dick Morgan will be presenting a display on rocks & minerals at the Puget Sound Science Fair again this year in March.

Jewelry Classes by Carolyn Sealfon

Jewelry classes in fabrication and casting are in progress at the BEMS' workshop. We meet on Wednesdays, 10:00 AM - 5:00 PM. Anyone interested in receiving instructions in either of these jewelry-making disciplines may add their names to the waiting list.

Would anyone have a small to medium-sized anvil that they would be willing to donate for use in these classes? If you would like to be placed on the waiting list for the jewelry classes, or, if you could donate an anvil, please call Carolyn Sealfon, 253-850-7515.

From Atop The Rock Pile



By Bob Pattie, 2009 BEMS President

With each new year, new goals are usually set to improve or continue the success of past years. This year the BEMS will be looking to continue the success of the last two years under the guidance of Malcolm and expand our services/opportunities for our members. I believe the last two years have shown what a good leader and many volunteers can accomplish and as the new leader for this year I am hoping that the many volunteers will continue to serve the club and that some of the new members will join in the volunteering. As President I will support the club's efforts in providing the best opportunities to enjoy our hobby to its fullest. If you have questions/concerns or improvements you would like to see, please feel free to contact any of officers. I hope to see you at our meetings and also your work on display.

Young Richard's Almanac by Dick Morgan

Cabbing hearts is like life. It looks more difficult than it is.

**Land Usage Rights - RockHounds - Time To Act Is Now!** by John Donahue

As I and others in this group have pointed out, our rights to use our BLM lands are about to be severely restricted. The Senate already passed SR.22 Omnibus land Use Act. over 1200 pages of pork. I mean almost no access and no rock collecting in vast areas many of which we collect in now. Heck the politicians don't even write the bills they have other people including the special interest groups write the bills for them. How many politicians are even smart enough to write legislation and are doing it for their constituents?

In the Files Section I uploaded a PDF file of the complete 1200 page bill The Senate passed. Link follows on the next line it is a shortened version of the long URL (internet address).

<http://tinyurl.com/84e2mm>

For example here is an excerpt from the WILDERNESS ACT.

PROHIBITION OF CERTAIN USES

(c) Except as specifically provided for in this Act, and subject to existing private rights, there shall be no commercial enterprise and no permanent road within any wilderness area designated by this Act and, except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act (including measures required in emergencies involving the health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area.

UNLESS YOU ARE WILLING TO WALK VAST DISTANCES TO COLLECT YOUR ROCKS (Sure there will still be some places to collect)

My Grand parents were hardcore rockhounds going out to collect and enjoy the desert at least a couple times a month in the cooler months close to thirty five years. I grew up in this environment and love the freedom to responsibly explore and collect in the Desert. Now my wife and two boys 11 & 8 also have developed a love for the desert. Besides collecting rocks we like to responsibly offroad and explore on existing roads following BLM & Forestry regulations. We also metal detect, pan/sluice, and dry-wash for gold.

It looks like quite a few misguided groups are out to SAVE THE LAND.

By misguided I mean this, what are they saving the designated areas from? BLM and other agencies have closed off access to the really sensitive areas quite some time ago. Very rarely have I seen people vandalizing and destroying desert areas. Sure it happens and BLM and related agencies do not have the funding to go after these guys as it is now. **THEY WILL NEVER KEEP THE VANDALS OUT**, only us, the people who respect the desert and follow the rules.

Sure you can take groups of fit, well-meaning, Sierra Clubber-leaning people out on nature hikes to enjoy the desert. Many who go probably are young and its their first experience. Then they probably tell them that they must act now to SAVE the land from destruction.

NOBODY IS DESTROYING THE DESERT WHO CAN BE STOPPED

Rockhounds used to have quite a collective voice, but now the hobby has faded considerably and many people already got their fill 'so to speak' of the collecting part and are now content to just go to the club meetings. That's fine, times have changed people have different priorities, like earning a living.

Times Have Changed, now it is the Jeep and Off-Road clubs I see sometimes collecting the geodes, the pretty agates, and jaspers out in the desert. Offroad groups, and Gold Prospecting Clubs are very well informed about land use rights and actively address their representatives continuing our rights to use to our public lands.

These groups actively and frequently organize events to clean trash from the lands we use. People who use the desert are for the most part responsible, sure there are those who ruin it for the rest of us. I guess my point about this upcoming new land use legislation s that it can only make things worse

PLEASE HELP FIGHT FOR OUR RIGHTS AND OF THOSE OF OUR FUTURE GENERATIONS TO ACCESS OUR PUBLIC LANDS. Go to (address on next line)

<http://www.sharetrails.org/>

and click on The BlueRibbon Coalition on the top of the page, sign up for their email list and help out with their email telephone campaign.

I am sure others could have a difference of opinion with my personal ideas here. Please take no offense with any of my personal statements.

White vinegar can get that epoxy off your cab. Just soak the cab in a little bowl of vinegar. It takes anywhere from a few minutes to overnight. I've tried this and it works.

from Breccia, 1/09

Homer's Corner by Homer C. Whitlock

These are some of the different kinds of polish compounds that are available to help get a good polish on your cab, or metal backing, as you are learning to make rings and other jewelry. You should have some good buffing wheels and there are quite a few different kinds of them. There are hard felt wheels, for use with stones that will stand a lot of heat; they are usually made of wool. Then there is the yellow muslin wheel, and it is tightly woven to help the coarser bobbing compound stay where it should be, so it will cut better. It is ventilated in the folds to help keep the material that you are working on cooler, so that it does not get too hot and chip. There is the loose weave muslin buff that throws threads all over, but does a really nice job for you. It will give you a beautiful finish, if you use red rouge or Zam on it. You will have a flannel buff with no stitching that will give you a nice finish on the softer materials and it will work well with most of the polishes.

The black rouge is for gold, silver, and German Silver. It will give a very high polish. Do not press too hard, as it will heat and cause some of the colors on the wonder stones to actually run or blend together. This is true with most all of your polishes on this kind of material.

Green rouge is for polishing platinum, chrome, stainless steel, and hard materials. I have found that it will give a high polish to most of the jade materials that will stand a lot of heat. Try it on a piece of waste first, as it sometimes has a tendency to stain the cab. It is really good on green jade or other green-like material.

Red rouge is for gold, silver, and soft metals and materials. It works well on soft buff wheels for a final finish. Try not to put it on too heavily, and you will get a better finish. Use a light touch, and I do not recommend the use of red rouge on soft materials, as it has a tendency to discolor the material, but it is fine for most of the metals.

Yellow rouge is more of roughing in, as it cuts faster. It usually has a base of beeswax to hold the polish in. It is for hard materials such as chrome and stainless steel. It will produce a bright polish after you have used the polish wheel.

White rouge is for the harder metals; platinum, chrome, stainless steel, or some of the harder material. Then, there is the good old Zam. It is good for your softer material, like turquoise and variscite. It is also good for a nice polish on silver, brass, copper, etc.

There are many kinds of polishes and different ways to do it, but these are some of the ways that I have tried and had satisfactory results.

After you have polished your cab to what you believe is a good polish, try and buy a good, dry polish and a pre-polish. Then, put it in a tumbler and try running it for as long as the instructions call for. You will be surprised at the shine it has. Be sure and have the dry polish in your tumbler, enough to completely cover the cab or metal if it is a ring, or pendant without the chain, so that it does not have a chance to scratch the other ones. It is a lot quicker to use a small vibrator tumbler to do your final polish on. There will not be any fingerprints on it if you do it correctly. To do this, pick it up with a clean white cloth or have a pair of white gloves on.

One more thing you should remember when you are polishing, is that you should hold your material at just a little below center, or right at the center, as your wheel will grab your piece and send it across the room. Be sure and wear safety glasses, as this rouge can fly off, and it is so fine that you might not notice it, but a few days, when your eyes start to water, you will know it.

If you are using a polish that is mixed with water to a thick paste, as many of those powders are now available, try to keep your speed down to around 800 rpm. Then it will not have a tendency to throw your polish off. This is why I like to use the bobbing compounds, as it is hard to get a motor that goes that slow. You can use these compounds that are listed above at most any speed, even as fast as 3000 rpm.

via West Seattle Petroglyphs, 2/07; via The Glacial Drifter, 9/06; via Strata Gem, 3/06; from News & Views, 4/03

Bureau of Land Management Land and Mineral Records - LR2000 System by John Martin, PLAC South

The bureau of Land Management is pleased to announce that the public reports for the Land and Mineral Records - LR2000 system is now available for use from 4:00 AM to 11 PM Mountain time.

The Bureau of Land Management manages more land - 261 million surface acres - more than any other Federal agency. Most of this public land is located in the 12 Western states, including Alaska. The BLM, an agency of the US Department of the Interior, also administers 700 million acres of on-shore minerals throughout the nation.

Congress created the General Land Office (GLO) in 1812 to handle the increasing land business from the rapid westward expansion. The GLO was given the responsibility for maintaining the land and mineral records.

These and other land and mineral records are now maintained by the BLM, which is entrusted with keeping what today amounts to more than two billion records. Many of these records are now available through this site.

Who would benefit from using the Website? This Website was designed for those who work in the oil and gas industry, title companies, utilities, state and local governments, ROCKHOUNDS, etc., that require access to BLM Land and mineral records. Previously, the only way a person could access this information was to visit one of the BLM Information Access Centers. This website enables users to access the same information over the Internet. We have provided a tutorial to guide you through the reporting system. If you need assistance, please visit or call the BLM Information Access Center nearest you.

What Information does this system provide access to? Case recordation contains information on leases, permits, contracts, grants, agreements, mineral patents, etc., issued by the BLM on federal actions affecting public lands of the United States. Authorizations are issued for the following activities: oil and gas, coal and other minerals, sand, gravel right-of-ways, land exchanges

and acquisitions, land use withdrawals, mineral patents, land classification, land claims, land sales, etc. Information on the use authorization includes customer data, location, date of issuance, the actions that have taken place, and other applicable information.

Legal Land Description contains cadastral survey data including meridian, township, range, section, survey type (aliquot part, lots, homestead survey, mineral survey, tracts, parcels, etc.), acreage, and geopolitical information including the geographic state, county, field office, and surface management agency (BLM, Forest Service, etc.). The surface management agency is LLD coded as BLM, even when the land is privately owned, unless the land is located within a National Park, National Forest, etc.

Mining Claims Recordation contains information on un-patented mining claims located on federal lands including claimant name, approximate location, and other applicable information. Mineral patents are not contained in Mining Claim Recordation.

Status contains information on title transfer documents, such as land patents and warranty deeds, to and from the United States Government. Status also contains withdrawal information which is used to determine surface and subsurface segregations on a parcels of land.

To find out more about the Bureau of Land Management land and Mineral Records-LR2000 system, go to <http://www.blm.gov/lr2000/>

Want to view, search, and access your land and mineral records using a map viewer? Go to <http://www.geocommunicator.gov/GeoComm/index.shtm>

These Sites are user-friendly and are interactive. They contain a wealth of information of interest to rock hounds, Pebble Pups, and BLM Land Users.

via Breccia, 11/06; from Napa Gems, 9/06

Distinguishing Cubic Zirconia From Diamond by Thomas A. Nupp, member of Grant County Rolling Stones, and a gemologist

Here are a few ways to differentiate unmounted faceted cubic zirconia (CZ) from diamond:

Read through: A line can be seen through an upside CZ, whereas this is not possible with a diamond. The easiest thing is to place the stone upside down over news print. It is easily “read through” a CZ, however this is not always proof positive. I have seen large emerald cut diamonds that can be “read through.” Read through is a property of the critical angle of the stone, type of cut, and the method of faceting.

Cleavage: If it can be observed, CZ has no cleavage, whereas diamond is perfect in four directions.

Fracture: If you can find fracture, CZ will be conchoidal versus diamond’s step-like fracture. The most likely place to find a fracture is on the girdle.

Hardness: CZ’s hardness is 8.5 versus diamond’s 10. If the stone has numerous surface scratches, chances are it is a CZ. (Yes, a diamond could have numerous scratches and a new CZ can be unscratched, but scratching is far more common in CZ)

Inclusions: Under 10X magnification (a good quality hand held loupe is sufficient) CZ often shows included bubbles or solid high relief particles of unmelted zirconium oxide. Diamond will have all kinds of characteristic inclusions, often erroneously called “carbon spots”, however I have yet to see a CZ with these black inclusions. But just as sure as I write this, someone will manufacture one and sell to the unwary.

Luster: CZ has a sub adamantine luster versus diamond’s adamantine, however this takes a whole lot of experience to tell the difference.

Pavilion flash: If a microscope with dark field illumination is available, CZ has a very distinct orange brown pavilion flash. Diamond will exhibit a rainbow flash.

Thermal: Thermal testers will show whether the stone is a diamond or CZ, however they will not separate Moissanite from diamond, so be careful. Also, I have heard of (but never seen) diamond CZ doublets and diamond garnet doublets wherein a very thin layer of diamond is bonded to the table of stone. If the thermal tester is only tried on the table, this doublet will register diamond.

Ultra Violet: UV fluorescence varies with the color of the stone, with colorless CZ showing greenish yellow to yellowish orange under LW UV and yellow under SW UV. I have seen the exact same colors from a diamond, however I have never seen a CZ show the very strong blue that sometimes is displayed by a diamond. I would not suggest using UV as a definitive test, only as another bit of evidence.

Cut and Polish: Probably the most common separation of diamond from CZ is by visual inspection of the girdle of the stone under 10X magnification. I have heard so many different ways of describing this that I won’t try to be specific, however I have heard the diamond girdles described as “waxy” or “melted wax” and the CZ girdle described as “shiny, metallic looking, or granular.” Take your pick, but experience is the best teacher. Here again, there is no hard and fast single rule. I one time saw a CZ that had been cut with a variable thickness girdle that had been faceted and polished. The facet junctions of the upper girdle and crown facets also did not align. The stone had been cut that way intentionally for one purpose only: to deceive; one poor jeweler was so used to seeing perfectly cut CZ’s that he bought it.

Weight: CZ has a specific gravity of 5.80 (+/.20) vs. diamond 3.52 (+/.01). CZ will feel unusually heavy when hefted in the hand. Even very small stones will feel this way.

Other: there are other methods of sorting CZ from diamond, absorption spectrometer, dispersion, etc., but they require specialized equipment and are seldom diagnostic by themselves.

There is no one foolproof way to separate diamond from CZ. That's why it (cubic zirconia) is such a good imitation, however using a 10X loupe and making careful observations, an experienced individual can be fairly confident they have properly identified the stone. Unless you are one hundred percent sure of your experience and abilities, get some expert help before you buy. As always, if the deal sounds too good to be true, it usually is!

via Breccia, 12/06-1/07; via The Rockytier, 9/05, from Beacon, 3/04

Zeolites, The Sharing Minerals by Lloyd L. Brown

Zeolites are hydrated silicates of aluminum, calcium, sodium, and potassium. An interesting group of minerals, they provide fine specimens for the collector. The word zeolite means "boil stone", referring to the water expelled when zeolites are heated. The approximately 50 minerals of this group have unique physicochemical properties. When heated, the water of hydration is lost gradually and continuously, rather than at a specific temperature. Zeolites also easily exchange their original alkali ions for other minerals. These two properties make them very useful in industry and in the home.

Zeolites have alumino-silicate framework structures containing channels filled with water and exchangeable ions. The general formula is $(\text{LiNaK})_a(\text{MgCaSrBa})_d[\text{Al}(a+2d)\text{Si}(a+2d)\text{O}_2]_n \cdot m\text{H}_2\text{O}$. The ratio of aluminum and silicon to oxygen is always one to two. This formula allows a great amount of variability both within the zeolite family and within a species. The ion exchange at low temperature is the basis of the water softening process.

When dehydrated, zeolites may absorb not just water, but vapors, gases, and fluids. At 250°C water is lost and can be reabsorbed at room temperature. Therefore, zeolites are excellent desiccants. Synthetic zeolites are the compositions used extensively in industry and the home for water softening and purification. Natural zeolites could do the job if a low cost source was available. Permutit is the synthetic zeolite used in water softening and in the sugar industry. Its composition is similar to natrolite. After Permutit has been saturated with foreign metal ions, it can be regenerated by treatment with a strong solution of sodium chloride (ordinary salt).

Structurally natural zeolites may be classified into six groups. These groups are fibrous, with singly connected 4-ring chains, with doubly connected 4-ring chains, with 6-rings, the mordentite group, and the huelandite group. The TO_4 tetrahedra constitute the basic building unit with "T" primarily silicon. The major zeolite cations are sodium and calcium. Less common cations are barium, beryllium, lithium, potassium, magnesium, and strontium.

Zeolites have low specific gravities of 2 to 2.4 and are relatively soft, with a range from 3.5 to 5.5. Good crystals are common. Usually they are colorless and transparent or translucent, but impurities may impart light color to them. Zeolites occur in cracks, vugs, and crevices in basic igneous rocks such as basalt and diabase. They are also found in granite and mica schist and as microcrystalline masses in sedimentary rock, but these occurrences are far less frequent. Zeolites are secondary minerals resulting from the decomposition of feldspars: feldspathoids. Usual associated minerals are calcite, datolite, pectolite, prehnite, apophyllite, and epidote.

A list of minerals generally considered to be zeolites includes amicitite, analcime, barrierite, bikitaite, boggsite, brewsterite, chabazite, clinoptilolite, cowlesite, dachiardite, edingtonite, epistilbite, erionite, faujasite, ferrierite, garronite, gismondine, gmelinite, gobbinsite, gonnardite, goosecreekite, harmotome, herschelite, laumontite, levyne, maricopaite, mazzite, merlinoite, mesolite, mordenite, natrolite, offretite, parantrolite, paulingite, perialite, phillipsite, pollucite, scolecite, sodium dachiardite, stellerite, stilbite, tetranatrolite, thomsonite, wairakite, wellsite, willhendersonite, and yugawaralite.

On some lists (1) partheite and roggianite are listed as zeolites, and on other lists (3) as related minerals. New zeolite minerals have been discovered and added to the list in recent years.

References:

1 Gottardi G., Galli, E. (1985), *Natural Zeolites*, pp. 1-5

2 Kraus, E.H., Hunt, W.F., and Ramsdell, L.S. (1959), *Mineralogy, an Introduction to the study of minerals and crystals*, pp. 418-419.

3 Fleischer, M., Mandarino, J.A. (1991), *Glossary of Mineral Species*, p. 248.

via Breccia, 12/06-1/07; via Grant County Beacon, 7/04; via The Rock Collector, 12/00; via Stoney Statement, 11/00; from The Trilobite, 3/96

Afghanistan looks barren and desolate on the evening news of either warfare or earthquake, both of which are endemic. The steep treeless hills are riddled with caves. Caves and mines have much in common, and these hills have historically been well known for their lapis lazuli deposits. Recently the embattled nation has also yielded significant amounts of fine emerald, tourmaline, kunzite, and some rubies. Emeralds come primarily from the Panjsher Valley, northeast of Kabul. East of Panjsher, pegmatites of the Nuristan region carry large amounts of green, blue, and pink tourmaline, as well as considerable quantities of kunzite and some aquamarine. Smaller quantities of fine ruby have been found in the Sorobi region, between Jalalabad and Kabul. Lesser amounts of garnet, amethyst, spinel, and morganite have also been located. The prospects for future production of emeralds and the pegmatite gems, in particular, are excellent.

Ref: Bowersox, Gem Industries, Inc. Honolulu, Hawaii - The Gem Hunter, www.gems-afghan.com

from Golden Spike News, 10/08



Shows

February 13 - 15: 10 am - 5 pm

Oregon Agate & Mineral Society, Annual Show
Oregon Museum of Science & Industry Auditorium
1945 SE Water Ave.
Portland, Oregon

February 14 & 15: Saturday 9 am - 5 pm; Sunday 9 am - 4 pm

Whidby Island Gem Club, Sweetheart Of Gems Show
Oak Harbor Senior Center
51 SE Jerome St.
Oak Harbor WA

February 21 & 22: Saturday 10 am - 6 pm; Sunday 10 am - 5 pm

Everett Rock & Gem Club, 56th Annual Gem Show
Washington National Guard Armory
2730 Fall Oakes
Everett WA

February 28 - March 1: Saturday 10 am - 7 pm; Sunday 10 am - 5 pm

Idaho Gem Club, Annual Gem, Mineral, Jewelry & Fossil Show
Expo Idaho
Glenwood & Chinden
Boise, Idaho



Internet Addresses



Revere Academy of Jewelry Arts
<http://www.revereacademy.com/>



The Earth Store (GPS stuff for use with Google Earth)
<http://www.gearthstore.com/>



Rockpick Legend Co.
<http://www.rocks4u.com/>



Searching For Loot
<http://www.searchingforloot.com/>

D & B Rockwerks
<http://dbrockwerks.com/index.html>



Black Cat Mining
<http://www.blackcatmining.com/>



Delta One Lapidary
<http://www.deltaonelapidary.com/>

Wyoming Fossils
<http://www.wyomingfossils.com/>

Amateur Geologist Inc
<http://www.amateurgeologist.com/>

