



**Denver Gem & Mineral Guild
Founded March 1964**

1420 S. Reed Street
Lakewood, Colorado, 80232

AFMS Silver Medal Club 2016



August 2022

TIPS & CHIPS

President - Joe Walkowich
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Vice President - Pete Modreski
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Secretary - Pro-tem
Marj Becker

Treasurer - Debbie Baldwin (#243)
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Field Trips - Committee

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Historian - Kathy Honda (#364)

Web Master - Bob Johnson (#274)
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Claims Manager - Fred Ceconi
(#357)
303-404-5967

**HTTP://WWW.DENVERGEM.ORG = 1ST PLACE 2022 RMFMS!!! OR
HTTP://DENVERGEM.ORG AND FACEBOOK!!!
EMAIL = MINERALGUILD@GMAIL.COM**

**AUGUST DGMG events—
Field Trip to Dotsero, August 6th**



**to find Limonite after Pyrite. Crystals up to 1 inch
clusters up to 3 inches.**

See page 5 for details

**Bob Johnson won 2022 Rocky Mountain Federation of Mineralogical
Societies Website Contest!!!!**

**Congratulations to our own
webmaster (and all things
computer), Bob Johnson, who won
the RMFMS web site contest for
2022!**

More photos on p. 6

**President Joe Walkowich presenting
the RMFMS trophy and ribbon to
Bob Johnson at the picnic**



CALENDAR SPONSORS FOR 2023

**It's time to line up sponsors for the 2023 calendar. We hope you speak up
and donate. \$100 buys a month.... Or we can split a month between two.**

Expect a request if you've sponsored previously!

And thanks totally!!!



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59 years of DGMG Kudos, Celebrations, & Events

2022 DGMG Officers & Chairmen

President:: Joe Walkowich
Vice President: Pete Modreski
Secretary: **OPEN PRO-TEM:** Marj Becker
Treasurer: Deb Baldwin;
Treasurer Ass't's Joe Walkowich, Beth Simmons
Hospitality: **EVERYONE!**
Ways & Means:
 Dave Sanchez, Gideon Breithaupt, Sandra Lucero
Membership: Joe Walkowich **Ass't:**
Claims Manager: Fred Ceconi
Editor: Beth Simmons; **Ass't:** Marj Becker
Historian/Librarian: Kathy Honda
Webmaster: Bob Johnson; **Ass't..** Joe Walkowich
Show Chairman: Beth Simmons
Dealer Chairman: Linda Burns
Field Trips: Committee
Grab Bags: Kathy Honda, Susanne Peach
Merchandise: Sandra Lucero
Council Rep: Sandra Lucero; **Alt.** Linda Burns
Denver Show Rep: Kathy Honda
Sunshine: Sandra Lucero
Party planning: Deb Baldwin, Marj Becker
RMFMS Rep: Kathy Honda
Outreach: Susanne Peach; Bob Johnson
Inventory manager: Committee

An "Assistant" is the officer's backup in case of illness or other reason they can't do their job.
 Every officer needs an "Assistant"!
 Join up! Say YES when asked!

AUGUST Sunshine Spotlight

CONTACT **SANDRA LUCERO** 303-726-3829
[gardengal001\(@\)yahoo.com](mailto:gardengal001(@)yahoo.com)

TO INFORM HER OF SUNSHINE REQUESTS

Congrats to former DGMG President George Daggett on the initiation of his personal webpage, designed by DGMG's prize-winning Bob Johnson. georgedaggettartisan.com

Congrats to Linda Cronoble on the grand opening of Rustic Relics in its new location at West Kentucky Ave, one building west of Kipling Ave. Stop by!!!!

GRAB BAG UPDATE!

In addition to the 400 grab bags she sewed, Kathy Honda dropped off a box of samples she had accumulated and bagged over the past year—amounted to almost 950!! So our total # of samples is over 43,500!

Here we are at the picnic stuffing the 400 grab bags for the September show. Thank you, Joe Walkowich, for hauling the samples and grab bags to the picnic!



Lapidary Equipment for Sale!

Contact Sue Kaberlein blulapis@comcast.net



Some pics -
 Grinding
 unit, 14"
 Saw, and
 polishing
 wheel
 +others



Quote of the month:

Your brain craves novelty.
 Do something new everyday!

Woman's World

THE DENVER GEM AND MINERAL GUILD—59 Years old!



Founded in 1964, the Denver Gem and Mineral Guild pursues exploration, experimentation, and education in the earth sciences; the discovery, development and preservation of minerals and mineral deposits; and the advancement, encouragement and utilization of the principles of art and craftsmanship as applied to gems and minerals.

The Guild meets on the second Friday of the month at 7:00 pm at the Wheat Ridge United Methodist Church, 38th & Wadsworth, Wheat Ridge, except for June, July, August, and December. Picnics, field trips, and parties replace regular meetings those months.

Deadline for article submission for the Tips & Chips is the 20th of each month. Email photos and articles to editor Beth Simmons at mineralguild@gmail.com. Exchange with other newsletters is invited, and reprinting of material from this newsletter with proper attribution is encouraged.

2022 DGMG CALENDAR OF EXCITING EVENTS

A persistent page—watch monthly for additions! PUT THIS ON YOUR FRIDGE!!!

DATES:

August 6 Field trip to Dotsero for goethite pseudomorphs after pyrite

August 11-14 Buena Vista Contin-Tail Gem, Mineral & Fossil Show, rodeo grounds
9-6 FREE

August 18-21 Woodland Park, CO Gem Show, Ute Pass Saddle Club Grounds, 9-5
FREE

August 19-21 Lake George, CO, Lake George Gem & Mineral Show, 9-5 FREE

Sept. 8-11 DGMS at the Convention Center, downtown Denver

Sept. 24-25 Grand Junction, CO Gem & Mineral Show, Mesa County Fairgrounds, 9-6: 10-4, \$5

Oct... Saturday—Wigwam Creek Claims with Lake George Club for remediation



Calendar Sponsors for 2022—August

I have failed to acknowledge the monthly calendar sponsors to date for 2022. (Red font means they are DGMG members!)

August—**Katherine Honda**—DGMG Grab Bag chairman **Kathy** has been a DGMG member since about 2008 and serves as the Colorado Representative to the Rocky Mountain Federation of Mineralogical Societies. She was the Guild's representative to the Denver Council and served at the Greater Denver Gem and Mineral Show for many years in various capacities. A serious injury from a fall on the ice didn't start her 2022 off right; she's hoping to get back "on her feet" by mid-July.

PRESIDENTIAL MESSAGE

First, congratulations to **Bob Johnson**, webmaster extraordinaire of our Denver Gem & Mineral Guild. Our web site has been awarded the 1st place trophy & ribbon in the RMFMS Webmaster/Web Site Contest! His great work and strive for excellence have been appreciated by our club for many years and he has now received recognition from the Rocky Mountain Federation of Mineralogical Societies. Great Job!

Second, it's time to update your calendar to include the Denver Gem & Mineral Show <https://www.denvermineralshow.com/>, which will once again be held in conjunction with the Hardrock Summit, at the Colorado Convention Center **September 8-11, 2023**. If you want to help at the show with grab bags, the club booth, or something else, please contact me at joewcai@yahoo.com.



Joe Walkowich

(Ed. Note—the hardest working bee at the DGMG show!)

DGMG 2022 President

Dotsero! Limonite after pyrite, August 6th.

(Ed. Note. Dotsero was the last volcano to erupt in Colorado, 3,120 years ago)

TRIP LEADERS: **Bob Pfeifer** and **Bob Johnson**

Crystals up to 1 inch, clusters up to 3 inch.

Time to meet: 9:00am

Leave at: 9:20am .

Meeting place: truck parking MM133,
east side of parking lot.

About 150 miles from Denver.

To get there: get on I-70 west, get off at **exit 133**
(Dotsero) turn left (west) go across river to rotary.

Take 2nd turn (3rd turn puts you back on I-70)

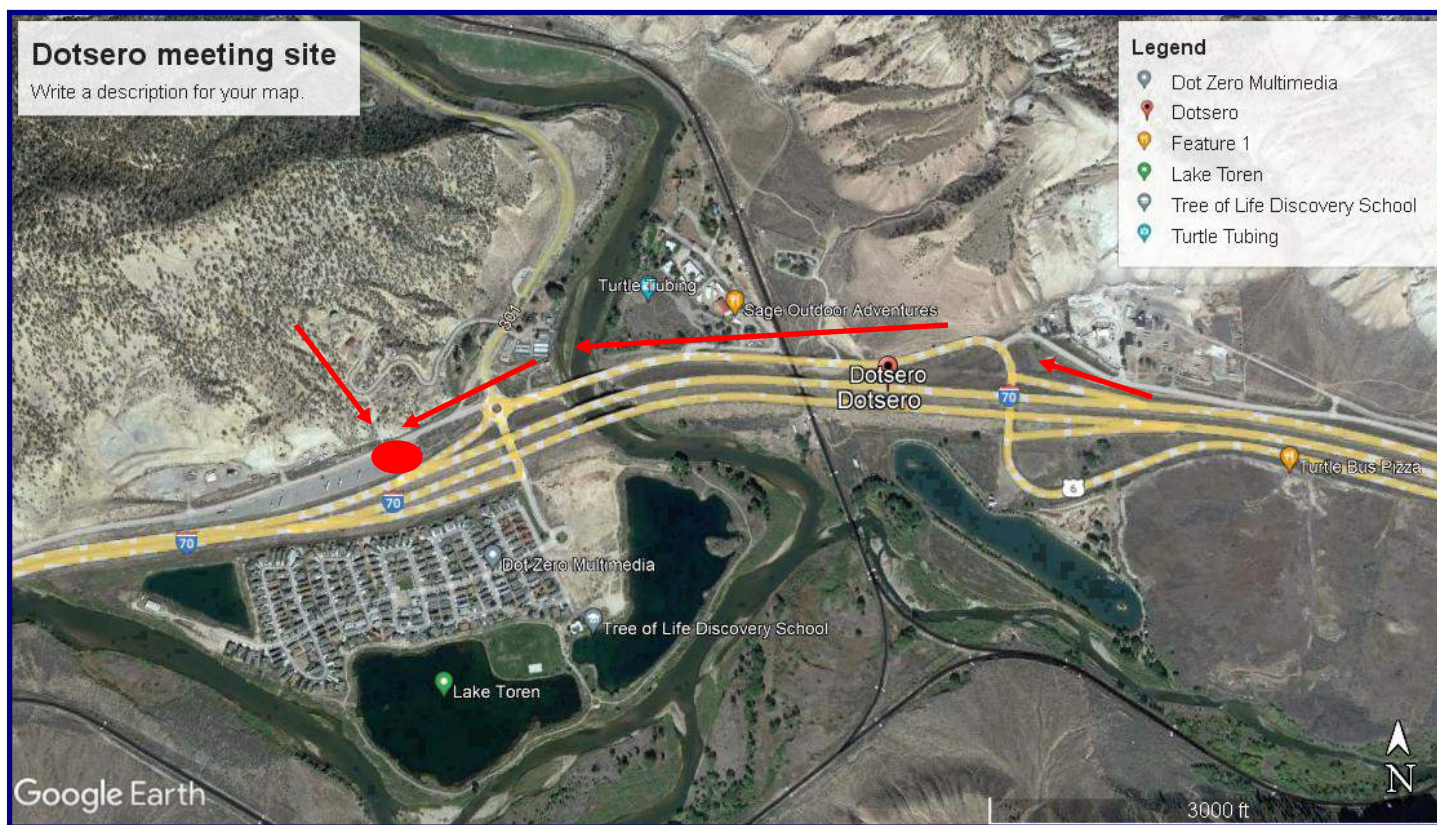
Go to truck parking, park on east side



If you want to go let me know by email: deerhound101@msn.com

As it gets closer we will give more information.

Bob Pfeifer



DGMG Picnic, July 24, 2002

About thirty members came to the picnic, a few late comers who missed out on the luscious food! We ate, stuffed grab bags and played BINGO because the water was too high in the creek to be safe for the duckies and race managers.

Photos by our award winning webmaster (and other computer things) **Bob Johnson**



**BINGO, eating, stuffing grab bags—
FUN TIME HAD BY ALL, WE HOPE!**



Which BINGO card won double????

See Deb if you didn't get reimbursed for the \$5 park fee!!



Web and Computer Resources for Rockhounds by **Bob Johnson**

Call me if you have trouble getting logged in—720-514-0266

**www.DenverGem.org WON 1st place
in the 2022 RMFMS website contest!**

**Congratulations to Bob Johnson and thanks to Bob for all his
hard work on the site**

**Bob completely built the website from scratch many years ago and
has kept adding to it and improving it. He has served as judge of
the RMFMS contest and AFMS contest a number of times, and has
made certain that our site meets all the criteria. He has also helped
Brenda with the Facebook pages and established our
mineralguild@gmail.com email.**

**If it involves computers, we call Bob. His patience with us less than
proficient computer users is amazing. He's always
smiling and so helpful and the ultimate gentleman.**

THANK YOU BOB!!!!

**The plaque and first place ribbon from the RMFMS show in
Las Vegas, 2022**



DENVER GEM AND MINERAL GUILD

Private group · 229 members



Joined

+ Invite

About Discussion Topics Members Events Media



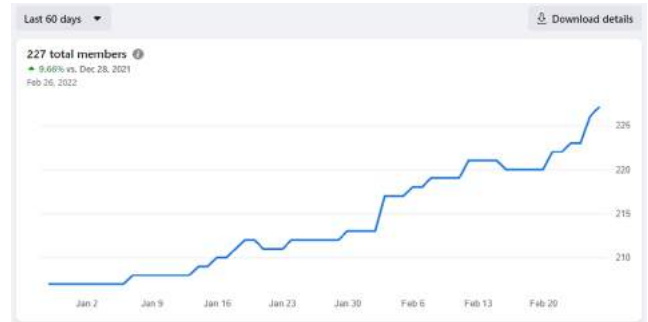


Web and Computer Resources for Rockhounds by **Bob Johnson**

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DGMG on Facebook – by **Bob Johnson**

The DGMG has two Facebook pages. The first is a “private” group that was first established by former DGMG President Brenda Smith, who has since moved to Florida - but she still checks in on us regularly. <https://www.facebook.com/groups/712900222148230/> and serves as administrator. This group is for members and “prospective members” of the DGMG. Only those who have requested to join, and have been approved by the group moderator (me or Brenda) can see the content of the page or make posts there. In accepting members of that Group, I look for existing membership in the DGMG, or friends of members, or “prospective members” who obviously have an interest in rocks and live in the area. I specifically exclude mineral dealers from other countries who are unlikely to ever be active participants in our club and are only looking for places to advertise. The group rules (which they must agree to when they apply to join) state that only dues paid members of the DGMG (and our Show dealers) are allowed to post things for sale in our Facebook group. One local dealer has recently had their ads removed from the page because they did not meet either of those requirements. Our Facebook group has been growing and now has over 220 members.



I advertise our club meetings there and hopefully someday we will see visitors/new members to our club from that group.

The second (public) group is specifically to advertise our show - but I also advertise our meetings there. <https://www.facebook.com/DGMG.Gem.Show/>

This page had a “reach” of over 2500 viewers in the month of February 2022. You are encouraged to visit and participate in these DGMG FB groups regularly!

NOTE! – Because the Private group is “Private” you can not share posts from that group to your own FB page, but you CAN share posts from the Show FB page – and most of (my) posts are on *both* pages.

(Ed. Note: And the record-breaking show attendance reflected those postings!)



REPEAT:

The Guild is now contributing to the international mineral community! At the April meeting, the members voted to “sponsor” a mineral on mindat.org. And it just so happened that the amazonite (a Colorado special) page was still unclaimed. So **someone** arranged for our name to appear in the listing! The specimen on the left is from Joe Dorris’ Smoky Hawk claim which many members have visited. Maybe you even have a specimen from there!

(Notice that the namer was August Breithaupt, who may be one of **Gideon's** ancestors!)

Bob Johnson has added the information about the sponsorship to our DGMG website and used one of **Linda Burns'** specimens from the Smoky Hawk as a prime example. **GO SEE!**

denvergem.org

mindat.org

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Exact matching result shown. To search for other matches [click here](#)

Amazonite

This page kindly sponsored by Denver Gem and Mineral Guild

Photos of Amazonite (890)

Amazonite Pikes Peak, El Paso County, Colorado, USA

Amazonite Pikes Peak batholith, Teller County, Colorado, USA

Amazonite Konso, Southern Nations Nationalities and Peoples' Region, Ethiopia

Amazonite Pikes Peak, El Paso County, Colorado, USA

Hide all sections Show all sections

About Amazonite

Formula: $K(AlSi_3O_8)$

Name: Named in 1847 by Johann Friedrich August Breithaupt for an unspecified type locality area "near" the Amazon River.

A variety of Microcline.

A green to blue-green variety of K-feldspar, usually microcline, but sometimes applied to orthoclase.

The color is usually caused by an elevated content of Pb (up to 1.2% PbO, see list of references). However, there are also indications that the green color of some microcline is caused by divalent Fe (Szukiewicz & Körber, 2010). Overenthusiastic uses of this name include giving this name to slightly gray-green hues in microcline that are often photosensitive and turn from greenish gray to light smoky gray. Sunlight can sometimes enrich the color of genuine amazonite.

Visit gemdat.org for gemological information about Amazonite.

DGMG's Bloomin' Rock Garden Display for 2023— progress

Vickie Schlepp is wire wrapping a bouquet of carved rose quartz roses. Beverly Pfeifer is creating a bouquet of barite roses. The arrangement in the case mockup is showing progress with the many “flowers” having leaves attached. Larry Jankowski donated a Peruvian carved stone hummingbird and there will be little butterflies in the arrangement along with some carved stone mushrooms. Cactus quartz, chrysanthemum stones, a dendritic scene of a pond and trees, and a pyrite sunflower are “non-rosey” specimens.

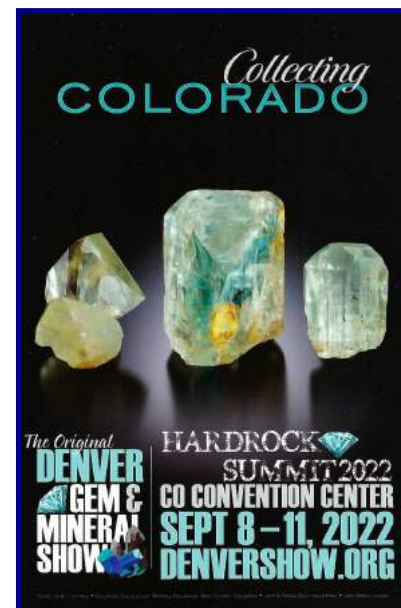


Invitation to Exhibit at the
2022 Denver Gem & Mineral Show
Dates - September 8, 9, 10 and 11, 2022

Location – The Colorado Convention Center
700 14th Street, Denver

Dear Club Member,

Your participation as a volunteer is the life's blood of a successful show. Another outlet for your support would be to enter an exhibit in the show for the enjoyment of our visitors. For over 50 years, these displays have set us apart as unique from the rest of the area shows. We hope that this year's theme will be especially appealing to club members and the general visitor.



The 2022 Theme – **COLLECTING COLORADO**

We encourage exhibits that feature Colorado minerals, fossils, agates, meteorites, notable collecting area history, mining history or ephemera like mining memorabilia, equipment, documents, etc. As always, though, you are invited to enter a case that plays to your strengths, interests and special aspects of our hobby. Exhibited material *need NOT* be self-collected.

In addition, we are offering the following **competitive exhibit** options:

Both Adult and Junior Prospector Competitions. Because of the pandemic, the collecting period for eligible specimens will extend from the end of the 2019 show to the beginning of the 2022 show.

The Species Competition – Entries are Colorado mineral specimens (one per category) in the following categories: thumbnail, toenail, miniature, cabinet, oversize cabinet, self-collected, best of Colorado and lapidary/jewelry. You may enter one, some, or all the categories.

The Best of Fossil Competition – Up to three specimens that need not be Colorado in origin.

For full information and entry forms contact Larry Havens at lwrnchavens@comcast.net or 303-757-6577. Links below for the forms and information. We will provide display cases and liners (if requested).

Larry Havens, Exhibits Chair

<https://denvergem.org/wp-content/uploads/2022/03/2022-Information-for-Non-Competitive-Exhibits-.pdf>

https://denvergem.org/wp-content/uploads/2022/03/2-26-revision-2022_COMPETITIVE_EXHIBITORS_ENTRY_FORMS_PACKET.pdf

Towns and Gulches and Mines, Oh My

A Haibun By **Marj Becker**

A day with Beth is like a six-hour lesson in geology. We drove to Nevadaville, just above Central City. The first thing I learned is that a ghost town does not have to be devoid of human habitation, with only ghosts living there. Nevadaville is a partially functioning town with some housing and a Masonic Lodge, and, maybe - just maybe, a few ghosts. All of the property is privately owned. Beth's errand was to deliver a package to someone at the Masonic Lodge. As we drove the dirt road through the town, we noticed a group of men standing in front of the lodge. One of them, a fireman, took the package and promised to deliver it to the addressee.

We started back down the dirt road, and I asked about all of the "pock marks" I saw on the steep mountains on either side of us. My geology lesson began. I learned that they are really mine dumps of materials brought out of the mines; not tailings ponds. Each mine has its own dump. And each mine has a name.

Each town has a name.

Each mine was given a name.

Who gave them a name?

Humans seem to have a deep-seated need to name everything. Trees, plants, rocks, minerals - mines, mining districts, towns - everything! Even the gulches have names. If we only think about Gilpin County where Nevadaville is located, we can narrow the field of names. So, let's talk about this small part of the State. State; county; mining districts; mines So, we have Colorado, our state. Gilpin County, the county we were driving through. Mining districts of Gilpin County Mines in the district.

Gilpin County has many mining districts. Among them are the Gregory (also known as the Gregory Diggings District); the Gold Dirt; the Front Range Uranium. The Central City District joined with the Idaho Springs District. And, of course, there are more and more and more.

Beth knows all of them.

Who named them so long ago?

Then there are the mines.

Of course, they were named. Clever names like The Bates, The Gunnell, Two Sisters, Bonanza, and at least two states - Kansas and California. Some were mines where gold was taken. Others gave up uranium, silver, lead, copper, zinc. I don't claim to be a historian, so the differing reports of where and when gold was first discovered in Colorado do perplex me.

One report says that in January of 1859, the prospector George A. Jackson found the first substantial amount of gold in Colorado where Chicago Creek empties into Clear Creek in present day Idaho Springs. And, then, another report is that this first discovery was in Englewood (in 1858) where Little Dry Creek empties into the South Platte River. And, yet, another piece of research says that this first discovery was in Arvada. From this Native and novice's point of view, it doesn't matter much where the gold was discovered - only that it was discovered and subsequently exploited, helping to build our state into the State it is today.

Osmosis could help

If you want information.

Learn about our State.

AND, DON'T FORGET ...
THERE WILL BE A TEST!



MINERALS you've never heard of— **Kernowite**

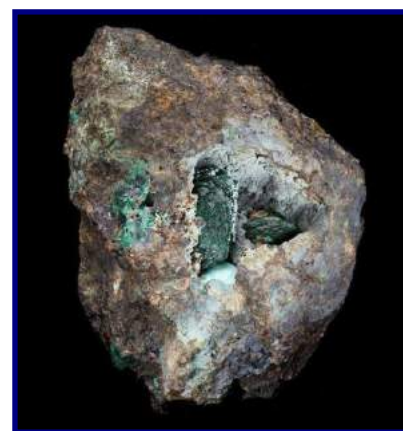
By **Beth Simmons**

Why haven't you heard of this one before? Because it was just discovered!!! In specimens in the Natural History Museum in London! Specimens were collected over 100 years ago! Kernow is the Cornish word for Cornwall.

A copper arsenate, this emerald-green mineral differs from its mine-mate, blue **lirioconite**, by having iron instead of aluminum. The only known source is the now closed Wheal Gorland site in Cornwall, England. Its formula is $\text{Cu}_2\text{Fe}(\text{AsO}_4)(\text{OH})_4 \cdot 4\text{H}_2\text{O}$ (copper arsenate), the Fe^{3+} analogue of **Lirioconite**. It is monoclinic.

The few specimens that exist were reanalyzed by Mike Rumsey at the London Museum who stated, "Considering how many geologists, prospectors and collectors have scoured the county over the centuries in search of mineral treasure, it's amazing that in the 2020s we are adding a new mineral. What we've got is a bit like a little time capsule. The fact that this sample was preserved in a museum means that we can do this kind of research because we'd never be able to go back and collect any more."

It will be officially published in 2023 in the [Mineralogical Record](#).



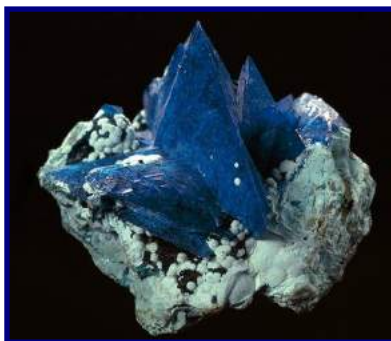
Upper right: 4: Kernowite, Wheal Gorland Mine, Cornwall, England

Left: London Museum of Natural History

Lower Left: Wheal Gorland site built over

Lower Right: Mike Rumsey, head mineral curator, London Museum

Lower center: Lirioconite, Wheal Gorland site, Cornwall, England



Other Green Minerals you never heard of—because they were just recently named

Green **Zincolivenite** crystals on **Ferrillotharmeyerite**

Tsumeb Mine, Tsumeb, Oshikoto region, Namibia

Rudolphminerals/Jeffrey Scovil; mindat photo Jordan Root

6.5 X 4 X 2.5 cm $\text{CuZn}(\text{AsO}_4)(\text{OH})$

Hardness 3.5, Orthorhombic/dipyramidal, white streak, perfect cleavage on 010, conchoidal fracture, Olivenite group (same as adamite, libethenite, et. al). Named after its composition, and its relationship to olivenite, occurs in cavities of limonite ores

Type location: Agios Konstantinos (Kamariza), Lavrion Mining District, Lavreotiki, East Attica, Attica, Greece

Structurally distinct, intermediate member of the solid solution series between Olivenite and Adamite with a Zn:Cu ratio of (ideally) 1:1; Zn and Cu atoms are ordered on two differently coordinated sites in the crystal structure. Chukanov et al. (2007) suggest the following compositional ranges for zincolivenite: $\text{Cu}_{0.5}\text{Zn}_{1.5}(\text{AsO}_4)(\text{OH})$ - $\text{Cu}_{1.5}\text{Zn}_{0.5}(\text{AsO}_4)(\text{OH})$.

Approved 2006

Ferrillotharmeyerite

$\text{CaZnFe}^{3+}(\text{AsO}_4)_2(\text{OH}) \cdot \text{H}_2\text{O}$

Brownish-yellow, yellow, streak light yellow, good cleavage on 001, irregular fracture, Hardness 3, Sp. G. 4.25, Monoclinic, 2/m-prismatic class, (short wedge-shaped to tabular crystals), Tsumcorite Group, in dolostone hosted hydrothermal polymetallic ore deposit

Named for Julius Lothar Meyer, chemist who developed early concepts for periodic table. Named by Canadian mineralogist, Gary Ansell in 1992

Ansell, H.G., Roberts, A.C., Dunn, P.J., Birch, W.D., Ansell, V.E., Grice, J.D. (1992) Ferrillotharmeyerite, a new Ca-Zn-Fe³⁺ hydroxyl arsenate from Tsumeb, Namibia. Canadian Mineralogist: 30: 225-227.

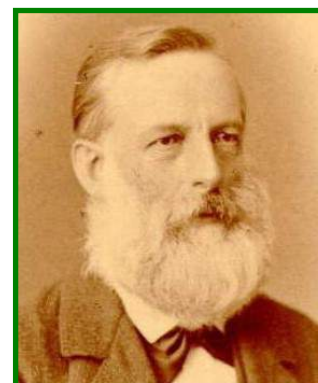
Tsumeb Mine, Tsumeb, Oshikoto Region, Namibia

Approved 1986, first published 1992

Also from Clara Mine, Obenwolfach, Ottenaukreis, Freiburg Region, Baden-Wuttemberg, Germany, the Pucher Shaft, Schneeberg District, Erzgebirge, Saxony, Germany, and from Aghbar open pit, Aghbar, Agdz Cercle, Zagora Province, Drass-Tafilalet Region, Morocco

Mindat photo Carlston Slatta, MinTreasure.com

Krause W , Belendorff K , Bernhardt H J , McCammon C A , Effenberger H , Mikenda W , European Journal of Mineralogy , 10 (1998) p.179-206, Crystal chemistry of the tsumcorite-group minerals. New data on ferrillotharmeyerite,, tsumcorite, thometzekite, mounanaite, helmutwinklerite, and a redefinition of gartrellite



Ten most deadly minerals—do you have any of these in your collection?

By GeologyIn.com

Precious minerals make the modern world go 'round—they're used in everything from circuit boards to tableware. They're also some of the most toxic materials known to science, and excavating them has proved so dangerous over the years, some have been phased out of industrial production altogether. Listed below are the 10 most deadly minerals on earth. These rocks do not need to be thrown to hurt you!!

Chalcanthite - $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$

Photo: Natural Chalcanthite from Planet Mine, Buckskin Mts, La Paz Co., Arizona, USA Photo: Tony Peterson

Chalcanthite is a hydrated water-soluble copper sulfate. The mineral is **used to ore copper**, however it's necessary to keep the environment dry as the mineral can easily dissolve and recrystallize in a wet environment. It is water soluble and will crystallize out again from solution. The copper in this mineral is very bio-available (easily absorbed) and is toxic to plants and in high quantities toxic to humans.

Stibnite - Sb_2S_3

Stibnite and Calcite From Herja Mine, Chiuzbaia (Kisbanya), Baia Mare, Maramures Co., Romania.

Photo: Quebul Fine Minerals

Stibnite is a toxic antimony sulfide mineral with an orthorhombic crystal lattice and a source of metalloid antimony. Stibnite paste has been used for thousands of years for cosmetics to darken eyebrows and lashes. The mineral was also used to make eating utensils, causing poisoning from antimony ingestion.

Asbestos - $\text{Mg}_3\text{Si}_2\text{O}_5(\text{OH})_4$

You have likely heard of the mineral asbestos and associate it with lung cancer. Asbestos is not one mineral but six defined separate minerals. Unlike the other minerals in the top 10 deadliest. This silicate mineral grows thin fibers crystals that can easily break off and form dust particles. And it was once widely used for a variety of commercial and industrial applications thanks to its strong, fire-resistant, and flexible nature—from ceiling tiles and roofing materials to flooring and thermal insulation. The fibers can cause lung cancer, mesothelioma, and asbestosis.

Torbernite - $\text{Cu}(\text{UO}_2)_2(\text{PO}_4)_2 \cdot 8 - 12 \text{H}_2\text{O}$

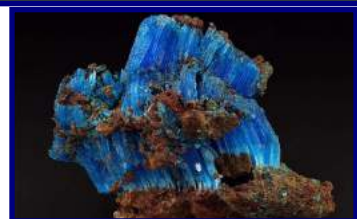
Photo: Torbernite from Musonoi Mine, Congo

Torbernite is a dangerous mineral composed of hydrated green copper, phosphate, and uranyl. The mineral is often found in granites that contain uranium and is dangerous due to its radioactive nature. The mineral releases radon naturally and can cause lung cancer if exposure is long enough. This is one mineral you do not want on your display cabinet shelf.

Cinnabar - HgS

Photo: Cinnabar from Wanshan mine, China. credit: Dakota Matrix Minerals

Cinnabar is a deep red mercury sulphide mineral that provides much of the world's elemental mercury. when oxidized, this element will produce methyl mercury and dimethyl mercury, two toxic compounds that cause irreparable harm to the nervous systems of children. It is deadly in small concentrations and can be absorbed through the respiratory tract, intestines, or skin.



Con't. next page

10 Most Deadly Minerals, con't.

Galena - PbS

Galena From Denton Mine, Hardin Co., Illinois, United States.

Photo: Dakota Matrix Minerals

Galena is one of the most abundant and widely distributed sulfide minerals. Galena is the principle ore of lead, and forms glistening silver cubes with almost unnaturally perfect shapes. Although lead is normally extremely flexible, the sulfur content of galena makes it extraordinarily brittle and reactive to chemical treatment. It's not as bad as mercury, which will kill you immediately outright, but lead doesn't get flushed out of your system. It accumulates over the years, eventually reaching toxic levels. Once that happens both you and your kids pay the price, as lead toxicity is carcinogenic to you and is teratogenic (causing severe birth defects) to your offspring.



Hutchinsonite - $(\text{Tl,Pb})_2\text{As}_5\text{S}_9$

Hutchinsonite from Quiruvilca Mine, Peru

Photo: Dakota Matrix Minerals

Hutchinsonite is a form of arsenic sulfide with thallium and lead that can be found in hydrothermal vents. Thallium salts are nearly tasteless and highly toxic and have been used in rat poison and insecticides. The thallium inclusion in this arsenic sulfide combines two extremely dangerous and deadly minerals. Exposure to this mineral can potentially lead to death.



Orpiment - As_2S_3

Orpiment from Twin Creeks mine, Humboldt Co., Nevada

Photo: Dakota Matrix Minerals

Orpiment is another arsenic sulfide mineral with a stunning orange-yellow color. The mineral is found naturally in hydrothermal vents, hot springs, and fumaroles. Strangely, this mineral was once used medicinally in China despite its toxicity and in alchemy in search for a way to create gold. The arsenic, especially if it is allowed to oxidize, will lead to arsenic poisoning if handled incorrectly.



Riebeckite - $\text{Na}_2(\text{Fe}^{2+}_3\text{Fe}^{3+}_2)\text{Si}_8\text{O}_{22}(\text{OH})_2$

Photo: Blue Asbestos (Crocidolite). Credit: Flickr/Asbestorama.

The finely fibrous variety, known as Crocidolite, usually originates from altered metamorphic rocks. It was once widely used for a variety of commercial and industrial applications thanks to its strong, fire-resistant, and flexible nature—from ceiling tiles and roofing materials to flooring and thermal insulation. The fibers can cause lung cancer, mesothelioma, and asbestosis.



Arsenopyrite - FeAsS

Arsenopyrite.

Photo: Crystal Classics

Arsenopyrite is an iron arsenic sulfide with a brilliant steel metallic color often found in hydrothermal vents and pegmatites. The arsenic leads to a number of environmental and human damages and can sometimes be associated with gold deposits. Oxidation of arsenopyrite leads to soluble arsenic in water and subsequent acid mine drainage.



Ed. Note: Remove these minerals from your home. I keep such things in an old metal milk crate outside, and hope eventually to be able to rid myself of them through a "hazardous waste" disposal.

Rainbow Mountains, Peru

Ausangate is a mountain of the Willkanuta mountain range in the Andes of Peru. Vinicunca Mountain truly shows off Peru's beauty. It's affectionately nicknamed Rainbow Mountain for its extraordinary color pattern. Rainbow Mountain is located in the Willkanuta mountain range, which is a branch of the Andes.

The region is inhabited by llama and alpaca herding communities, and constitutes one of the few remaining pastoralist societies in the world. High mountain trails are used by these herders to trade with agricultural communities at lower elevations. Currently, one of these trails, "the road of the Apu Ausangate", is one of the most renowned treks in Peru.

The area has four major geological features, the Andean uplift formed by Granite, the hanging glaciers and glacial erosional valleys, the Permian formation with its singular colors: red, ochre, blue and turquoise and the Cretaceous limestone forests.

According to the Cultural Landscape Office of the Decentralization of the City of Cusco, the seven colors of the Rainbow Mountain are due to its mineralogical composition. The mountain is made up of fourteen different, colorful minerals. The pink color is due to red clay, fangolitas (mud) and arillitas (sand). The whitish coloring comes from quartzose, sandstone, and marls, rich in calcium carbonate. The red is due to iron in Upper Tertiary claystones. The green comes from phyllites and clays rich in iron and magnesium. The earthy brown is a Quaternary fanglomerate composed of rock with magnesium. The mustard yellow color comes from calcareous sandstones rich in sulphur-bearing minerals.

Just 4 years ago the mountain was entirely covered in snow, making it impossible to fully witness the beauty of the mountain. Temperatures still drop below 0 at night – good to know for anyone visiting Rainbow Mountain on a multi-day Ausangate trek. . If you plan to go be aware that the weather can change rapidly from snow to rain to blistering sun in the space of an hour. Llamas and alpacas dot the path all along the route to Vinicunca

Sources of information:

[The Rainbow Mountains in Peru Very Amazing \(geologyin.com\);](http://www.geologyin.com/)
[Rainbow Mountain Peru - Official Information Website](http://www.rainbowmountainperu.com/)



European Salt Mines—unbelievable in size and beauty!

1. SLANIC SALT MINE (Salina Unirea), Slănic, Prahova, Romania

Slănic mine is an old salt mine, located in Slănic, Prahova County, Romania, just 100 km north of Bucharest, situated between the valley of Prahova and that of Teleajen, at about 44 km of Ploiesti, at 400 meters of altitude.

The salt mine is closed for extraction purposes, but is open for visitors, featuring a microclimate with natural air-conditioning and constant temperature and atmospheric pressure throughout the year. It is made up of two levels, named Unirea and Mihai.

The mine is composed of 14 chambers with trapezoidal profiles, having a 10 m opening to the ceiling and 32 m to the ground, a height of 54 m, and a wall inclination angle of 60 degrees. The shore difference between the surface and the mining base is 208 m.

It was transformed into a sanatorium for the treatment of pulmonary diseases in a saline air microclimate. Many of the visitors come for its supposed healing effects due to the purity of the air.

The Unirea mine chamber - notice the trapezoidal profile of the chamber and the wooden balcony at the top. According to the documents, for more than 300 years this mine represented an important salt extraction center.

2. SALINA TURDA (Hungarian: *Tordai sóbánya*) is a salt mine in the Durgău-Valea Sărată area of Turda, the second largest city in Cluj County, northwest Romania. Opened for tourists in 1992, the Salina Turda mine was visited by about 618,000 Romanian and foreign tourists in 2017. Called the “magical land in the depths of Transylvania” by its webpage. Salina Turda was ranked in 2013 by *Business Insider* as among the “25 hidden gems around the world that are worth the trek”

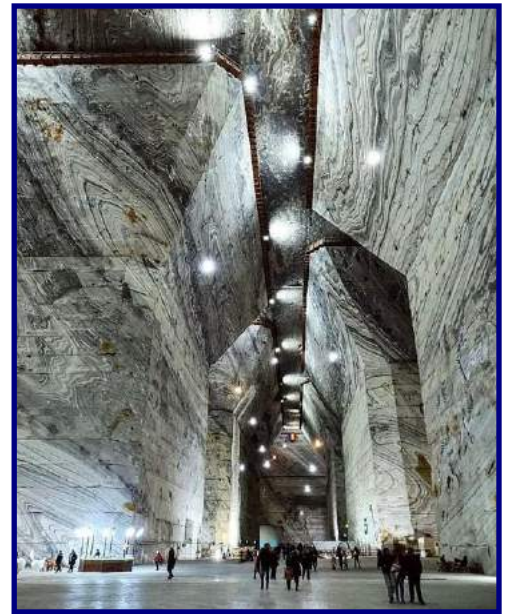
Cosmin Danila photo of Rudolf Hall, 80 m long, 50m wide and 40 m high.

Salt was first extracted here during Roman antiquity. The mine continuously produced table salt from the Middle Ages, the mine being first mentioned in 1075, to the early–20th century (1932).

The first document that speaks explicitly about the existence of a salt mine in Turda dates from 1 May 1271, being issued by the Hungarian chancellery. Documents preserved from the 13th and 14th centuries that refer to the Turda salt mines mention that salines were arranged in the Băile Sărate microdepression and on the southeastern slope of the Valea Sărată. Operating rooms were placed at the sites of current salt lakes from the areas mentioned above. In the 17th century the first salt mining works began on the north-western slope of Valea Valea Sărată, as evidenced by shafts in the dome of the *Terezia* room. Shortly after, the *Sfântul Anton* mine was opened, where mining activity continued until the first half of the 20th century.

Renovation

The Turda salt mine was renovated, and it reopened its doors in 2010 after a €5,888,000 investment. Since 1992, Salina Turda has been a halotherapy center and a popular tourist attraction. In 2008 the salt mine was modernized and improved under the program PHARE 2005 ESC large regional/local infrastructure, worth six million euros. It was reopened for tourism in January 2010.



Con't. next page

European salt mines (con't.)

IOSIF MINE

The *Iosif* Mine can be visited through the balconies carved in salt. It is next to the Franz Josef Gallery. This mine is a conical chamber 112 meters (367 ft) deep and 67 meters (220 ft) wide at the base. Because of its shape and lack of communication with the other major mining points, this mine has a powerful echo, leading to it being called the "Echoes Room". Photo by Stainu



CRIVAC ROOM

The octagonal room hosts a winch called "crivac" or "gepel", rudimentary machinery used to lift salt rocks on the surface. It dates from 1881. This machine replaced another, smaller in size, that was installed in 1864. It is the only machine of its kind, in all the salt mines in Romania and probably in Europe, that remains in its original location. Photo by Cosmin Danila



TEREZIA MINE

This is a conical mine (bell mine). Salt mining in this type of room left behind underground halls of impressive dimensions: 90 meters (300 ft) height and 87 meters (285 ft) diameter. The depth from the mouth of the shafts to the base of the mine is 112 meters (367 ft). A "cascade of salt", an underground lake, stalactites, and salt efflorescence complete the inert equilibrium of the giant bell. The underground lake is between 0.5 and 8 meters (1.6 and 26.2 ft) deep and occupies about 80 percent of the operating room hearth area. In the center of the lake there is an island formed from residual low-grade salt deposited here after 1880, the year when salt mining ended in this room.

Photo by Gabriel Tocu; photo of spiral by Cristian Bortes



RUDOLF MINE

42 meters (138 ft) deep, 50 meters (160 ft) wide, and 80 meters (260 ft) long, Rudolf mine is the last place where salt was mined in Turda. Through the compartment of access, 172 steps lead to the mine hearth. On the walls of each of the 13 "floors" is marked the year when the respective level was opened. Formed over the years on the northwestern ceiling are salt stalactites, some even 3 meters (10 ft) long. The panoramic elevator offers tourists an overview of the whole mine.

Access tunnel photo by Cristian Bortes; Rudolf mine photo by Omacu94; interior view by Ungureanu Adrian Danut



GIZELA MINE

The *Gizela* mine and technical rooms in the northeastern extremity of the salt mine are similar to those of the *Rudolf* mine but much smaller because the salt exploration stopped shortly after the opening of this mine. Currently this mine serves as a spa treatment room with natural aerosols.

The underground gallery of this mine constitutes a geological reserve, with no access allowed to tourists. It is 15 metres (49 ft) above the transport gallery (*Franz Josef* gallery). Infiltrations of water in the extraction pit determined the deposits of efflorescences and formation of stalactites, and in the lake that partially covers the hearth of the room are salt crystals. The room has received the tourist name of *Crystal Hall*.



Entrance photo by Ana Maria Catalina: all photos on Wikipedia

con't next page

European salt mines (con't.)

Wieliczka Salt Mine, a Polish historic monument and UNESCO site in Poland

One of the world's oldest continually operating mines, excavated in the 13th century (700 years ago) and worked until 1996, this salt mine exposes an underground world of 23 chambers, composed of different salt compositions and saline lakes. Lit by salt chandeliers, chapels devoted to Polish saints, include 300-year-old religious and historical statues made by miners from salt in the St. Anthony, Janowice, and Holy Cross Chapels.

Photos on Wikipedia; [Book Wieliczka Salt Mine Tickets & Tours 2022 \(wieliczka-salt-mine-tours.com\)](https://www.wieliczka-salt-mine-tours.com/)



Main hall, Wieliczka Salt Mine, Poland (Cezary photo)



A Horse mill at the Wieliczka Salt Mine, Poland. (Kriskros photo)

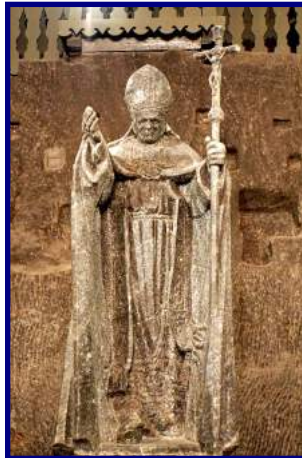


Saint Barbara statue (Bill Tyne photo)



Leonardo's "The Last Supper" carved in salt

Pope John Paul II (Dennis Jarvis photo)



One of the tallest rooms at the Wieliczka Salt Mine, held up by thick wood scaffoldings (YaBoyCloak photo)



Entrance to the Wieliczka Salt Mine (Wikipedia.org)

An old corridor in Wieliczka salt mine (Chepry photo)



Big pink diamond 170 carats, discovered in Angola, largest in 300 years

By NQOBILE NTSHANGASE, Associated Press and other sources



JOHANNESBURG (AP) — A big pink diamond of 170 carats has been discovered in Angola and is claimed to be the largest such gemstone found in 300 years. Called the “Lulo Rose,” the diamond was found at the Lulo alluvial diamond mine, the mine's owner, the Lucapa Diamond Company, announced Wednesday (July 27, 2022) on its website.

“Only one in 10,000 diamonds is colored pink. So you're certainly looking at a very rare article when you find a very large pink diamond,” Lucapa CEO Stephen Wetherall told The Associated Press.

Lulo is an alluvial mine which means the stones are recovered from a river bed. The Lucapa company is searching for the underground deposits, known as kimberlite pipes, which would be the main source of the diamonds, said Wetherall, speaking from the company's headquarters in Australia.

The pink gemstone is the fifth largest diamond found at the mine where 27 diamonds of 100 carats or more have been found, according to Lucapa. The pink diamond will be sold by international tender by the Angolan state diamond marketing company, Sodiam. Angola's mines make it one of the world's top 10 producers of diamonds.

“This record and spectacular pink diamond recovered from Lulo continues to showcase Angola as an important player on the world stage for diamond mining and demonstrates the potential and rewards for commitment and investment in our growing diamond mining industry,” Diamantino Azevedo, Angola's Minister of Mineral Resources, Petroleum and Gas said, according to the Lucapa website. The Angola government is a partner in the mine, so this find of the Type II diamond was welcomed!

The pink gemstone is expected to fetch a high value when auctioned, but Wetherall said he doesn't know what kind of premium will be paid because of its color. Natural pink diamonds are valued at up to \$2 million per carat, according to the Gemological Institute of America. Last year, the largest purple-pink diamond to ever be auctioned sold for \$29.3 million, CNBC reported. That diamond was 15.8 carats. Another 14.8-carat, purple-pink diamond sold in 2020 for \$26.6 million, according to the BBC. The “Pink Star,” which was mined in Africa by De Beers in 1999 as a raw 132.5 carat gem and cut over a two-year period, remains the most expensive diamond ever sold. The 59.6 carat “Pink Star” was sold at a Hong Kong auction in 2017 for **\$71.2 million** US dollars.

Do you think they would put this “ROSE” in our Rock Garden Case next February?

IT'S TIME TO PAY UP! New members from JeffCO, please make sure you sign and send in the liability waiver!

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Annual Dues:

○ Individual=\$15.00

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Primary member _____ Birthday _____
Name Month Year

Phone number _____ Email address _____

Spouse/Partner _____ Birthday _____
Name Month Year

Phone number _____ Email address _____

Anniversary Month _____

Junior Member _____ Birthday _____
Name Month Year

Junior Member _____ Birthday _____
Name Month Year

Junior Member _____ Birthday _____
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interests and Skills (check all that apply)

- Fossils
- Lapidary
- Faceting
- Jewelry
- Have a collection
- Display at shows
- Attend mineral shows
- Willing to volunteer at shows
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○ Mineral collector: (list favorites)

☐ Willing to share special skills with others:

Signed: _____ Date: _____

Return membership form, liability form for each person, and payment to Membership Chairman at a monthly meeting or mail to: DGMG

DGMG
Membership Chairman
1420 S. Reed Street
Lakewood, CO 80232

DENVER GEM AND MINERAL GUILD

RELEASE OF LIABILITY

By signing below, I acknowledge that all activities sponsored or conducted by the Denver Gem and Mineral Guild (DGMG), a non-profit organization, may be hazardous and may result in loss, damage, or death.

With full knowledge of these dangers, and in consideration for my acceptance as a member of the DGMG and participant in any and all field trips **and activities** sponsored by the DGMG, and the services and amenities to be provided by the DGMG in connection therewith, I confirm that I have read the foregoing and voluntarily assume all risks of such damages and hazards occurring in connection with the **activity**. I hereby agree for myself, all of my family, and heirs to **RELEASE** the DGMG and any of its trip leaders, club officers, club members, **hosting property owners** and claim owners, instructors, guides, or representatives from liability, claims, demands, or any causes of action.

I UNDERSTAND THAT THIS IS A LEGAL DOCUMENT AND BY SIGNING IT, I AM GIVING UP MY RIGHT TO SUE OR OTHERWISE MAKE ANY CLAIM against DGMG or any of its trip leaders, club officers, club members, **hosting land owners and claim owners**, instructors, guides, or representatives which may arise during my participation in any and all activities of the DGMG **or activities I conduct as an individual on DGMG owned or leased properties**.

I intend this RELEASE OF LIABILITY to be effective whether or not any loss, damage, injury, or death RESULTS FROM NEGLIGENCE of the DGMG or any of its trip leaders, club officers, club members, hosting land owners, and claim owners, instructors, guides or representatives. I understand that negligence means failure to do an act which a reasonably careful person would do, or the doing of an act which a reasonably careful person would not do, under the same or similar circumstances to protect himself, herself, or others from injury or death.

I agree to be solely responsible for my own safety and to take every precaution to provide for my own safety and well being while participating in the activities of the DGMG. Also, I understand that on DGMG trips, there may not be rescue or medical facilities or expertise, which may be necessary to deal with potential injuries to which I may be exposed. I understand that these risks exist and notwithstanding them, I wish to participate in DGMG activities.

I HAVE READ THIS RELEASE AGREEMENT AND HAVE FULLY INFORMED MYSELF OF ITS CONTENTS BEFORE I HAVE SIGNED IT. ALSO, I PLEDGE TO UPHOLD THE CODE OF ETHICS ATTACHED TO THIS RELEASE.

Printed Name (Please print legibly): _____

Signature: _____ Date: _____

IF UNDER 18 YEARS OF AGE, PARENT OR GUARDIAN MUST READ AND SIGN BELOW

I am the legal guardian of the above minor and have read the above RELEASE. I hereby consent to the terms of the RELEASE on behalf of the named minor, and give my consent to the participation of the above named minor in all activities of the DGMG on the terms stated.

Signature: _____

Date: _____

