



GEOLOGICAL SOCIETY OF NEVADA NEWSLETTER

Geological Society of Nevada, 2175 Raggio Parkway, Room 107, Reno, NV 89512
(775) 323-3500 - Hours Tuesday -- Friday, 8 a.m. to 3 p.m. Monday by appointment.

Website: www.gsnv.org • E-mail: gsn@gsnv.org



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Consulting Geologist
nevadageo@hotmail.com

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Kinross Gold
Kelly.cluer@kinross.com

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siraweiss@outlook.com

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bob_kastelic@yahoo.com

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CALENDAR OF GSN EVENTS

March 2, 2017 THURSDAY **SO. NEVADA CHAPTER MEMBERSHIP MEETING (1st Thursdays)**
The monthly meeting will be held at the Las Vegas Natural History Museum at 900 N. Las Vegas Blvd. Pizza/drinks at 5:30 pm, Talk at ~6:15 pm. **Speaker: Steve Craig, Independent Consultant. Title: "Current Lithium Exploration in Nevada and an Overview of Future Gold, Silver and Copper production in the Great Basin". Food & Drinks Sponsored by: THE WINTERS COMPANY.** Contact Paul Dockweiler for more information: paul.dockweiler@mma1.com. Details on page 6.

March 8, 2017 WEDNESDAY **WINNEMUCCA CHAPTER MEMBERSHIP MEETING (2nd Wednesdays)**
The meeting will be held at the Martin Hotel, 94 W. Railroad St., Winnemucca, NV. Refreshments/appetizers at 6 p.m. Talk at 7:00 pm. **Speaker: Bryan Kellie, NuLegacy Gold. Title: "Iceberg and Avocado Gold Deposits—Carlin-Type Gold Deposits in the Cortez Trend, Eureka County, Nevada". Food & Drinks Sponsored by: GEOTEMPS, INC.** For more info please contact Jim Carver @ jcarver@silverstandard.com. Details & abstract on page 7.

Mar. 16, 2017 THURSDAY **ELKO CHAPTER MEMBERSHIP MEETING (3rd Thursdays)**
The monthly meeting will be held at the Western Folklife Center, 501 Railroad St., Elko, NV. Refreshments begin at 6 p.m. **Talk begins at 7 p.m. Speaker: Terry Jennings, Round Mountain Gold Corp. Title: "Round Mountain Gold Corporation's Round Mountain – Gold Hill Mines, Nye County Nevada". Food & Drinks Sponsored by: TONATEC EXPLORATION, LLC.** For more info please contact Mark Travis at: mark.william.travis@gmail.com. Details on page 8.

Mar. 17, 2017 FRIDAY **GSN MEMBERSHIP MEETING (3rd Fridays)**
The monthly meeting will be held at the Reno Elks Lodge, 597 Kumle Ln., Reno, Nevada. Drinks @ 6 p.m., Dinner @ 7 p.m., Talk at 7:45 p.m. **Speaker: Gianni Kovacevic, Title: "My Electrician Drives a Porsche?"*. Drinks Sponsored by: EM STRATEGIES.** Cost for Dinner—\$25. GSN Students are free. Please make reservations for dinner with Laura Ruud, by emailing gsn@gsnv.org or calling 775-323-3500. Details on page 3.

***All attendees at this meeting will receive a FREE copy of Gianni's book! He will be available for book-signing too!**

G.S.N. MARCH MEETING SPONSOR!



FROM THE PRESIDENT
Alan R. Coyner, GSN President 2016-2017
MARCH 2017



Greetings to all our GSN members wherever you may be! Last month I informed you that our membership total was nearly 1,200 and this month I am happy to report that we have exceeded that number. I also mentioned that we will mark our **60th anniversary on December 6th** of this year! We do not track either the age or longevity of our membership, but knowing our anniversary is near, I would like to know the age of our **oldest member** and the **member that has belonged to the GSN for the greatest number of years**. If you think you might qualify for either of these notable distinctions please email me at nevadageo@hotmail.com.

We experienced one of the largest crowds ever at the February GSN meeting in Reno! Over 160 attendees turned out to hear **Jeff Hedenquist's** talk "Discovery vs. Dogma: Lateral Thinking During Successful Exploration of Porphyry-Epithermal Systems". Jeff reminded us that preconceived notions often get in the way of exploration success and he gave several examples of exploration programs that missed the discovery of an ore deposit due to exploration directed at where the deposit "ought to be". While he was in Reno Jeff also delivered the **Ralph J. Roberts Lecture** on the University of Nevada campus. It was well-attended by students and GSN members as well. Many thanks to the Center for Research in Economic Geology (CREG) and John Muntean for helping co-sponsor Jeff's visit.

We continue to be very appreciative of our **sponsors** at our monthly meetings. There are too many to mention here so I will just say "thank you" for helping us promote friendship and information sharing among our members. I do want to give a special thank you to **Mine Development Associates** since they sponsored the bar for the record crowd at the February GSN Reno meeting. Our society continues to be the largest state-based geological society in the United States and the support of our sponsors is vital to our continued growth and stability.

By the time you read this, your **2017 GSN Membership Directory** will be in the mail. Many thanks to those who advertised in the **Gold Pages** as it helps offset the cost of printing the directory! If you do not receive your directory in the next 10 days, please contact Laura Ruud in the GSN office and she will get one coming to you ASAP.

I happened to be in the NBMG's **Great Basin Science Sample and Records Library** (aka The Gold Building) recently and I asked the staff about the status of the **Mining District Files**. I was informed there are currently about 27,000 files that have been scanned and entered into the searchable database. The files consist of historical and current maps, reports, articles, photographs, correspondence, assays, production reports, and reserve information on all aspects of mining in Nevada. Imagine my surprise when I learned there are approximately 10,000 files that have been donated to the Bureau that have yet to be entered in the database due to a lack of funding! This represents a tremendous amount of information that is not currently available to the exploration community and **a problem in need of a solution**.

The March Reno meeting is on the 17th (St. Patrick's Day!) and will feature **Gianni Kovacevic**, a renowned investor, author, and sought-after public speaker. Gianni is the Executive Chairman of CopperBank and a leading expert on the role of copper in the modern energy mix. All attendees will receive a complimentary copy of Gianni's book "**My Electrician Drives a Porsche?**" and he will be signing copies of the book during the social hour at the meeting! Please join us for some corned beef and cabbage at what promises to be a very exciting meeting. Our annual **student poster meeting** follows in April and we will wrap up the year in May with a presentation by **NuLegacy Gold** on their work at the **Iceberg and Avocado gold deposits** on the Cortez trend.

So, be sure to make it to one of our upcoming meetings in Reno, Winnemucca, Elko, or Las Vegas!

***The G.S.N. wishes to thank MINE DEVELOPMENT ASSOCIATES
for sponsoring
the FEBRUARY 17, 2017 MEETING SOCIAL HOUR in RENO!!***

GSN MONTHLY MEETING, MARCH 17, 2017

SPEAKER: GIANNI KOVACEVIC, Copperbank Resources

TITLE: “My Electrician Drives a Porsche?”

Social Hour begins @ 6:00 pm; Dinner @ 7:00 pm; Talk @ 7:45 pm

Location: Reno Elks Lodge, 597 Kumle Lane, Reno NV (across from the Convention Center)

DINNER COST—\$25.00 per person.

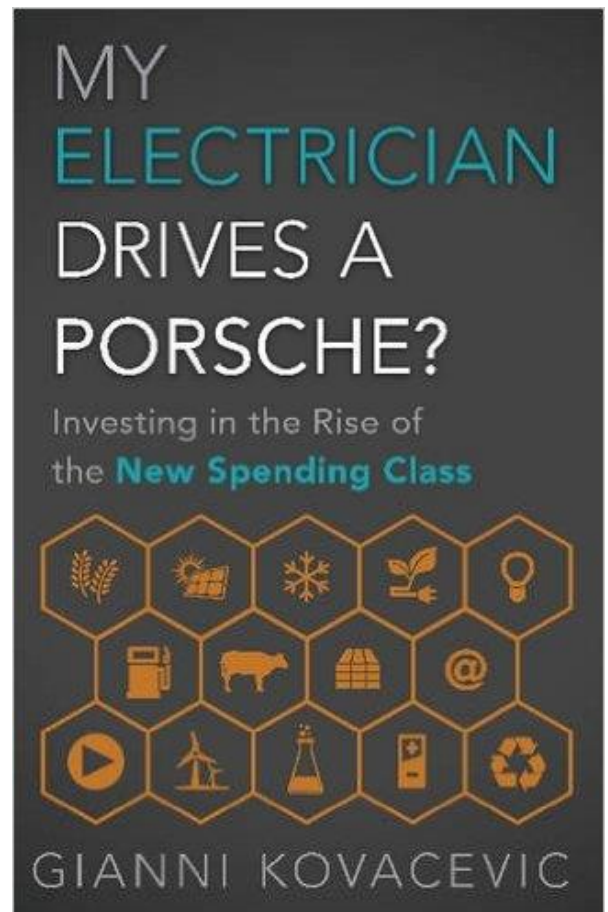
Reservations due by 5:00 p.m. on WEDNESDAY, MARCH 15, 2017

For dinner reservations, please e-mail gsn@gsnv.org or call 775-323-3500

(Please remember you will be invoiced \$25 if you do not cancel your reservation by Mar. 16th)

Gianni Kovacevic Biography:

Gianni has enlightened audiences around the world with his unique insights into wide ranging topics such as modern energy, the rise of the new spending class and how the environment and investment often go hand-in-hand. With over 20,000 hours of combined research, he is a sought-after commentator related to these themes and an established expert on copper and its applications. An avid proponent of realistic environmentalism, he is frequently interviewed by the media with his unique way of applying the algebraic way of thinking to solving global problems. His new book, *My Electrician Drives a Porsche?* – a journey of personal enlightenment into appreciating the rise of the new spending class – was published by [Greenleaf Book Group](#) and is now available at booksellers everywhere. Fluent in English, German, Italian, and Croatian, Gianni is a founding member of the CO2 Master Solutions Partnership and makes his home in Vancouver, Canada.



“FACES OF GSN”

ALAN COYNER

I was born in 1948 in La Porte, Texas, which makes me a bona fide “Baby Boomer”. Dad met Mom while he was stationed in Texas during WWII as a flight engineer on B-29’s for the USAAF. After the war he worked as maintenance supervisor for DuPont, first in Baytown, Texas and then in Cleveland, Ohio, which is where I spent my formative years. I am the oldest of six children (five boys and a girl) and on my Dad’s side I am the seventh generation in America.

Like most of you my road to “geologist” was not predetermined, and like you I experienced pivotal moments when “The Road Not Taken” (think Robert Frost) made all the difference. One of my forks in the road came in tenth grade. My earth science teacher, James Pike, proved to be the mentor that “made all the difference”. A field trip to the cement quarries near Sylvania, Ohio and the collection of my first Phacops Rana trilobite turned on the light! Gradually I became intrigued by the idea that an exploration geologist could discover an economic mineral deposit and create new wealth where none was known to exist. Then I found out that if you were good in math, there was something called geological engineering and they made more money than geologists. Creating new wealth for me became the focus!

A recommendation from a chemical engineer at DuPont to attend his alma mater put me on the road to Michigan Technological University. I had summer jobs at Kennecott’s Chino mine in New Mexico and with Midwest Oil at the Ima mine in Idaho. I also participated in the SME Student Chapter field trip that toured mines in Wyoming (Lucky Mac), Utah (Mayflower, Bingham), Nevada (Carlin, Ruth), and Colorado (Climax). “Go West Young Man” became my mantra. Little did I know that I would have to do penance in the swamps of the upper Midwest before I could reach that destination.

We all know that the minerals business is cyclic. When I graduated from MTU in 1971 my job offer suffered a fatal blow at the hands of a decline in copper prices followed by a hiring freeze. So I enrolled in graduate school at the University of Minnesota, Duluth. During those years a series of temporary positions with Texasgulf, Noranda, and Exxon landed me in the swamps chasing Precambrian massive sulfide deposits. But the lure of the West continued to beckon so I headed out for Tucson and the wide-open spaces. I landed a job with Quintana working with the development crew on the Copper Flat project in Hillsboro, New Mexico (with a side assignment on a drilling project at Radersburg, Montana). I was happy and free, but I missed my girlfriend Christine back in Duluth. This time it was not so much a fork in the road as a fork in the swamp.

I managed to find a temporary position with Kerr-McGee in Marquette, Michigan in 1978 (back to the UP!) looking for high grade Precambrian uranium. The Canadians had been successful with sampling the bottom mud of glacial lakes, so this time I was flying high over the swamps in a helicopter. Whoo-hoo! Later that year I decided to marry Christine. Uh-oh! No more happy-go-lucky lifestyle for me. Got to get a real job! Fortunately, the Kerr- McGee position became permanent. Then along came something called Three Mile Island and suddenly the rush to uranium became the retreat from Moscow. But have no fear! Geochemical sampling can be used for all types of metals, so off came the uranium hat and on went the massive sulfide/gold hat. And with that I began my career as an armchair geophysicist (more slogging through the swamps carrying magnetometers and horizontal loop EM systems ensued). I really began to embrace the winter since you could stay out of the water (mostly) when you were on snowshoes. Eventually K-M closed the Marquette office and moved everyone to Duluth so we could be even closer to the swamps.

Then came that time when the oil companies deserted the metal exploration game like lemmings over a cliff. K-M closed the Duluth office and opened Custer’s Last Gold Stand in 1988 in Reno, Nevada. Finally, after nearly 20 years of wandering in the swamps the road led to the Golden West! But by then the good ship K-M was taking on water and it sank soon thereafter. What to do? Some were retreading themselves as environmental-types. Not me! I was determined to go back to the Mackay School of Mines for a mining engineering degree so I could get that job in a mine that had eluded me so long ago. But then came yet another fork in the road.

I had a friend in Reno that owned a pumice mine near Tulelake, California. And so it was that I made my next career move to pumice peddler. I went from science to sales. Now I think everyone should be a salesperson at some time in their life, if nothing else to learn how to deal with rejection. But working for (cont. on page 5)

(Coyner, cont. from page 4)

a small family-owned company after a multi-billion dollar oil company took some, shall we say “adjustments”. However, it did afford me the opportunity to go to night school at the University of Nevada and five years later I received a newly minted Master’s in Business Administration.

I began looking for “other career opportunities” and one Sunday in the Reno paper I spotted a small want ad headlined “Administrator of the Nevada Division of Minerals”. I eventually got the job and ultimately found out it is the best job in Nevada. I was a state employee, but my bosses (the Nevada Commission on Mineral Resources) were all members of the minerals industry. My responsibilities ranged from abandoned mine lands, to oil and gas production, to geothermal development, and the state reclamation bond pool. I got to know many of the mine managers in Nevada. I interacted with legislators and regulators at the state and federal level. I attended meetings of the Western Governors Association and the National Governors Association. I worked with the USACE and I represented Nevada on the IOGCC and the IMCC. I initiated the NDOM AML student intern program that provided valuable work experience and financial help to many of our Mackay undergraduates. It was a wonderful 15 years but at 65 it was time to make more room for personal interests.

I continue to do some consulting to the minerals industry, serve on the Executive Board of the Mackay School of Earth Sciences and Engineering, and participate in the Miner’s Academy at Bishop Manogue HS. I have formed a partnership with my brother and we own some private property near Winnemucca that is prospective for placer gold so I can hone my metal detecting skills. I am this year’s (2016-17) President of the GSN and I truly value the many friendships that membership in GSN has brought me over the years.

Christine and I are especially proud of our two children, Rachel (civil engineer) and David (music educator), and we believe the only truly lasting legacy we can leave is their success.



GSN SO. NEVADA CHAPTER MONTHLY MEETING

THURSDAY, MARCH 2, 2017

**Location: Las Vegas Natural History Museum
900 Las Vegas Blvd. North**

**Time: Food, Drinks begin @ 5:30 p.m.
Talk begins about 6:15 p.m.**

Speaker: Steve Craig, Independent Consultant

**Title: “Current Lithium Exploration in Nevada and an Overview of
Future Gold, Silver and Copper production in the Great Basin”**

Food and Drinks Sponsored by:

The Winters Company
Mining Industry Consultants
Dr. Harry J. Winters, Jr., P. Eng.
President

Abstract:

“Current Lithium Exploration in Nevada and an Overview of Future Gold, Silver and
Copper production in the Great Basin”

Steve Craig, Independent Consultant

Nevada currently has one lithium producer, but due to huge increases in battery demand, a very active exploration effort in Nevada is underway to change that. This presentation will look at the global demands, geology of lithium deposits, the Clayton Valley region, and approaches to actually finding an economic deposit.

A second part of this presentation will be to update some current gold exploration successes in the Great Basin. Nevada is in the middle of this mineral rich province and has been a major producer of gold, silver and copper for over 160 years. This trend will continue for many decades into the future and an overview will be presented to show where this future production will come from.

GSN WINNEMUCCA CHAPTER MONTHLY MEETING

WEDNESDAY, MARCH 8, 2017

Location: THE MARTIN HOTEL

94 W. Railroad Street, Winnemucca, Nevada

Time: 6:00 p.m.—Appetizers/Drinks; 7:00 p.m.—Talk begins

Speaker: Bryan Kellie, NuLegacy Gold

Title: “Iceberg and Avocado Gold Deposits—Carlin-Type Gold Deposits in the Cortez Trend, Eureka County, Nevada”

Food and Drinks Sponsored by:



Abstract:

“ICEBERG AND AVOCADO GOLD DEPOSITS—CARLIN-TYPE GOLD DEPOSITS IN THE CORTEZ TREND, EUREKA COUNTY, NEVADA”

Roger C. Steininger, Tom Roman, Derick Unger, Garrett J. Frey, and Bryan Kellie

NuLegacy Gold Corporation’s exploration program at Red Hill, Nevada, has discovered two Carlin-type gold deposits, the Iceberg and Avocado deposits. Iceberg is a near-surface oxidized gold system and the newly discovered Avocado deposit is a sulfide-bearing gold system that shows evidence of hypogene oxidization below 400 m. Through detailed outcrop mapping, geophysical surveys, and rock and soil sampling programs, NuLegacy has identified several other promising gold targets on its 98.5 km² property in the Cortez Trend.

The surface at Iceberg is primarily alluvium and Tertiary volcanics overlain by Miocene Northern Nevada Rift basalts. Drilling has encountered a stratigraphic sequence underlying the Rift basalts consisting of an apparent Eocene accumulation of tuffaceous sediments, ash and volcanoclastic rocks.

Stratigraphically below the volcanics are the Devonian Horse Canyon and Wenban formations. The Horse Canyon Formation is a Cortez-area unit consisting of interlayered mudstone, calcareous siltstone, debris flows and minor limestone. The Wenban Formation is a sequence of limestones, turbidites and silty limestone to siltstone/mudstone. All the Devonian units are intruded by felsic dikes of unknown age.

Gold mineralization at Iceberg has been traced along a north-northwest–trending corridor at least 3 km long, several hundred meters wide and several tens of meters thick in at least three horizons: in the Tertiary volcanics, at the Horse Canyon–Wenban contact zone and deeper in the Wenban. Gold in the upper two horizons is oxidized, whereas some of the deeper mineralization is associated with pyrite.

NuLegacy has an extensive 2017 exploration program planned to expand the Iceberg and Avocado deposits, and test new exploration targets.

GSN ELKO CHAPTER MEMBERSHIP MEETING

THURSDAY, MARCH 16, 2017

**Location: The WESTERN FOLKLIFE CENTER
501 Railroad Street, Elko, Nevada**

Time: Refreshments @ 6:00 p.m., Dinner @ 7:00 p.m.

Speaker: Terry Jennings, Round Mountain Gold Corporation

Topic: “Round Mountain Gold Corporation’s Round Mountain – Gold Hill Mines, Nye County Nevada”

Food and Drinks Sponsored by:



Abstract:

By Terry L. Jennings

The Round Mountain gold deposit is located in northern Nye County, centered between Tonopah and Austin. The deposit is located on the western slope of the Toquima Range in the Big Smoky Valley of the Basin and Range province (fig. 1). The Basin and Range physiographic province is characterized by generally north-south trending block faulted mountain ranges, separated by alluvium-filled valleys. The Great Basin sub-province is specifically characterized by internal drainage. Topographic relief varies across the Basin and Range, from 1,500 feet to in excess of 6,000 vertical feet.

Gold at Round Mountain was first discovered in 1904; however, claims were not staked until 1906, when John Stebbins and Frank Dixon staked the Sunnyside 1, 2 and 3 claims on the Los Gazabo vein, on the southwest side of Round Mountain. The Round Mountain Mining Company was formed in April 1906 and underground mining commenced. Mining was continuous from 1906 through 1942 and sporadically from 1943 until 1969. The ore was produced from high-grade underground veins and placer mining. Approximately 350,000 ounces of gold and 360,000 ounces of silver were produced from 1906 to 1969. Open pit mining was continuous since it began in 1977. The peak gold production was 785,300 ounces in 2003 and since 1977 has produced over 14 million ounces.

The Round Mountain Gold Mine currently operates as a conventional open pit that is approximately 10,700 feet long in the north-west, south-east direction and 8,800 feet wide in the north-east to south-west direction. The Mine consists of three pits; Round Mountain pit, Fairview pit and the South Fairview pit. The Fairview pits are eastern satellites to the Round Mountain pit. Mining is conducted on 35-foot benches by two electric and hydraulic shovels and front-end loaders paired with 150, 190 and 250 ton capacity haul trucks.

Gold Mineralization at Gold Hill was discovered in 1910 and 34,000 oz of gold produced from 1930-1933 via a JV between Tonopah Mining Co. and Tonopah Belmont Development Co. An additional 10,500 ounces of gold was produced by a series of small operations. Exploration resumed in 1980 with several companies completing drill programs; Cordex, Noranda, Homestake Mining Co., Nevada Star Resources and Round Mountain Gold Corp.

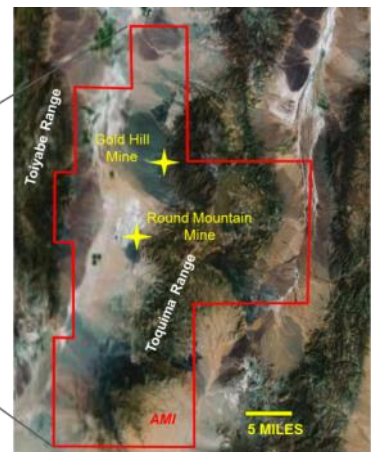


Figure 1: Round Mountain – Gold Hill

Thank you to our generous sponsor for the So. Nevada Chapter meeting in FEBRUARY

MAJOR

Drilling America, Inc.

Thank you to our generous sponsor for the Winnemucca Chapter meeting in FEBRUARY



Thank you to our generous sponsors for the Elko Chapter meeting in FEBRUARY



Thank you to our generous donors in FEBRUARY!!

G.S.N. FOUNDATION

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Mae Gustin
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Thank You!!

Thank you to the GSN members and companies that bought me dinners and a cab ride during the Roundup in Vancouver last month. Your kindness helps to save the GSN some bucks!

Al Frank and Darrell Tweidt—Boart Longyear

Anthony Taylor—Selex Resources Ltd.

Caleb Stroup—Kinross Gold USA Inc.

Ron Parratt—Renaissance Gold Inc.

SAVE THE DATE!!

SATURDAY, JUNE 17, 2017

GSN'S ANNUAL GOLF TOURNAMENT

WASHOE GOLF COURSE, RENO, NV

TITLE SPONSOR:



A QUARTER CENTURY OF MINING ADVOCACY!

Please join the Women's Mining Coalition for the 25th annual Fly-In to Washington D.C. on April 30 – May 4, 2017! This is a great opportunity for the members of WMC to introduce ourselves and our organization to the members of Congress and their staff: who we are, what we do, and a chance to make new contacts.

Goals:

- Raise awareness of the WMC, its mission, and its members;
 - Discuss issues of importance to the mining industry with members of Congress and their staff;
 - Showcase how women benefit from working in and supporting a robust domestic mining industry; and
- Network with other women in all facets of the mining industry.

Tentative Itinerary:

Sunday, April 30: Early evening informal get-together for weekend arrivals

Morning of Monday, May 1: Orientation & strategy briefing at National Mining Association, 101 Constitution Ave NW Ste 500e

Afternoon of Monday, May 1: Lunch at NMA, then meetings on the Hill

Tuesday, May 2 - Thursday, May 4: Meetings on the Hill

Tuesday evening, May 2: Participant Reception

Wednesday noon, May 3: *tentative* Western Caucus staff briefing and pizza lunch

Wednesday evening, May 3: *tentative* no-host theater event for those interested

Thursday evening, May 4: *tentative* no-host dinner at a DC restaurant

Friday, May 5: Delivery of information packets to offices not visited (for those who can stay through Friday)

Accommodations:

One Washington Circle Hotel: Each participant must make their own reservations. The cutoff date for guests to call and make a reservation at the group rate is March 31, 2017.

Reservations are open M-F 8:30am to 6:30pm. EST. Reservations Line: 1-800-424-9671; Fax: 202-785-6603; Email: reservations@thecirclehotel.com. The following block number is the quickest way to access WMC's group: WMCAPR3017.

Guests can also book online using the below booking link:

[https://gc.synxis.com/rez.aspx?](https://gc.synxis.com/rez.aspx?Hotel=21484&Chain=7505&start=availresults&arrive=4/29/2017&depart=5/5/2017&adult=1&child=0&group=WMCAPR3017)

[Hotel=21484&Chain=7505&start=availresults&arrive=4/29/2017&depart=5/5/2017&adult=1&child=0&group=WMCAPR3017](https://gc.synxis.com/rez.aspx?Hotel=21484&Chain=7505&start=availresults&arrive=4/29/2017&depart=5/5/2017&adult=1&child=0&group=WMCAPR3017)

How to Register as a Participant:

If you plan to attend, please contact Lynne Volpi at lvolpi@frontiernet.net. Registration forms are due no later than April 15th.



Next up on the Foundation's schedule is the Field Camp Scholarships awarded to Mackay students. Scholarships are available for Mackay students enrolled in 6 credits of UNR Geology Field Camp, Geology 451 for spring/summer 2017, or another accredited field camp. Applicants need to fill out the application (found on the GSN website under Foundation), provide a letter of recommendation from their major advisor, include a statement of financial need and career goals, and supply their current transcript. They must also be members of GSN, which is underwritten by Geotemps/Geopros. **The deadline for applications is March 17, 2017.**

Here is a link to the application on the GSN website:

<http://www.gsnv.org/gsn-foundation/Field%20Camp%20Application%202017.pdf>

The UNR Field Camp Scholarship program was started in the 2008/09 fiscal year and \$5,000 was awarded that first year. Funding remained at that level or slightly less until 2013 when Goldcorp generously provided \$5,000 specifically targeted to the UNR Field Camp program. The Foundation augmented that donation with another \$7,000 that year and contributed funds each year of Goldcorp's generosity. Goldcorp continued to fund that program until 2015 and since that time, the Foundation has funded 100% of the UNR Field Camp Scholarship program from funds raised within the Foundation.

The Foundation considers this program to be one that clearly fulfills the goals of GSN and the Foundation: primarily to promote the advancement of the geological sciences, especially as they relate to Nevada as the Foundation provides funding for the GSN's earth science related charitable programs. We're refreshing the coffers of professionals as these students eventually join us in the industry. This year we're accepting a memorial donation in Bruce Miller's name from his sister, Jeannette Miller, to contribute to this program. We're very grateful for this. Thank you!

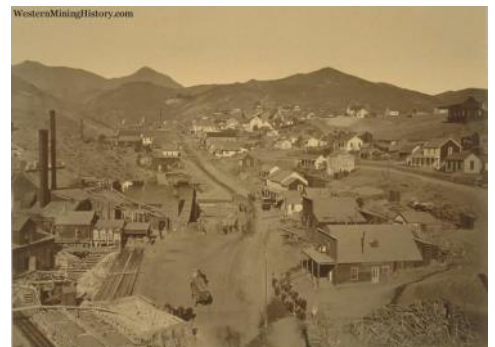
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GSN SPRING FIELD TRIP!

May 6 – 7, 2017

GSN SPRING FIELD TRIP: Highlights of the Silver City Lode and Subsidiary, Historically Productive, Epithermal Gold-Silver Veins in the Silver City District, Nevada

The 2017 GSN Spring Field Trip will examine highlights of the Silver City Lode and examples of nearby, historically productive gold-silver veins mined between 1860 and 1940 in the Silver City District, Virginia Range, Nevada. Trip leaders will be Steve Weiss, Steve Russell and Kiersten Briggs. Details to be announced shortly.



Activity Update

Mike Brady, JANUARY 2017

www.activityupdate.com

NEVADA

Columbus Gold Corp. announced that it acquired the Castle Property from Seabridge Gold Corp. for 1,750,000 shares and \$25,000/year lease payments. (resource = 10,160,000 tonnes @ 0.82 gpt Au inferred) *Press Release:* January 20

Gold Standard Ventures Corp. announced that recent drill results at the North Dark Star Project include 0.3-73.2 meters @ 1.02 gpt Au (DS16-18); 187.2-225.3 meters @ 0.73 gpt Au (DS16-26); 118.0-135.7 meters @ 0.40 gpt Au (DS16-31) and 164.3-197.4 meters @ 0.62 gpt Au (DS16-33). (resource @ Dark Star = 23,110,000 tonnes @ 0.51 gpt Au inferred) *Press Release:* January 19

Southern Lithium Corp. announced that it acquired an option to earn a 100% interest in the East Fault Property (Li) from TY and Son's Exploration Inc. for \$50,000 cash and 3,000,000 shares over 1 month. *Press Release:* January 17

Canamex Resources Corp. announced that recent drill results at the Bruner Project include 41.2-48.8 meters @ 0.75 gpt Au, 4.0 gpt Ag (B1617); 36.6-59.5 meters @ 0.43 gpt Au, 2.7 gpt Ag (B1618); 27.4-57.9 meters @ 0.37 gpt Au, 1.5 gpt Ag (B1619) and 27.4-44.2 meters @ 0.65 gpt Au, 4.1 gpt Ag (B1620). (resource = 10,300,000 tonnes @ 0.72 gpt Au indicated) *Press Release:* January 17

Silver One Resources Inc. announced that it acquired an option to earn a 100% interest in the Candelaria Property from Silver Standard Resources Inc. for \$4,000,000 in shares over 3 years. (resource = 12,384,000 tonnes @ 110.2 gpt Ag, 0.10 gpt Au measured+indicated) *Press Release:* January 17

TriMetals Mining Inc. announced that recent drill results at the Gold Springs Project include 24.4-42.7 meters @ 3.46 gpt Au, 23.4 gpt Ag (E16-05) and 15.2-24.4 meters @ 0.65 gpt Au, 6.7 gpt Ag (E16-06). (resource = 19,003,000 tonnes @ 0.57 gpt Au, 11.4 gpt Ag measured+indicated) *Press Release:* January 11

Gold Resource Corp. announced that it acquired the East Douglas Property from Diversified Inholdings LLC. for \$1,000,000 cash and \$1,000,000 in shares. *Press Release:* January 18

Nevada Zinc Corp. announced that recent drill results at the Lone Mountain Project include 228.6-237.74 meters @ 5.21% Zn, 0.89% Pb (NLM16-63); 207.26-237.74 meters @ 5.99% Zn, 0.06% Pb (NLM16-64); 198.12-213.36 meters @ 3.56% Zn, 0.01% Pb (NLM16-65) and 71.63-80.77 meters @ 6.94% Zn, 3.56% Pb (NLM16-69). *Press Release:* January 11

Waseco Resources Inc. announced that recent drill results at the Battle Mountain Ridge (BMR) Project include 122-125 meters @ 1.84 gpt Au (16-1); 152.4-155.5 meters @ 3.10 gpt Au (16-2); 103.7-106.7 meters @ 6.70 gpt Au (16-4) and 182.9-186.0 meters @ 1.20 gpt Au (16-6). (resource = 2,636,000 tonnes @ 0.95 gpt Au inferred) *Press Release:* January 26



LONG CANYON MINE TOUR, MAY 10, 2017

Newmont Mining Company will once again be offering a mine tour to both NWRA members and non-members. This year the tour will visit Newmont's Long Canyon mine. This is a great opportunity to see firsthand, a world class mining operation and one of the more interesting active gold mines in Nevada.

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(By April 21, 2017)
Members \$150
Non-Member \$200

Late Registration
(After April 21, 2017)
Member \$200
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Visit the Long Canyon Mine Tour [PAGE!](#)

For more information contact:

Tina Triplett
NWRA, Executive Director
775-473-5473
creativerno@charter.net
www.nwra.org

[New USGS Professional Paper 1832 Co-Authored by GSN Member Chris Henry](#)

Eruptive History, Geochronology, and Post-Eruption Structural Evolution of the Late Eocene Hall Creek Caldera, Toiyabe Range, Nevada

Authors: [Joseph P. Colgan\[usgs.gov\]](#) (USGS) and [Christopher D. Henry](#) (NBMG)

Year: 2017

Series: U.S. Geological Survey (USGS) Professional Paper 1832

Format: Report: viii, 43 p.; figure; data release

ISSN: 2330-7102 (online)

View/download here: <https://pubs.er.usgs.gov/publication/pp1832>[pubs.er.usgs.gov]

<http://pubs.nbmg.unr.edu/Eruptive-Hall-Creek-caldera-p/usgs-pp1832.htm>

Abstract: The magmatic, tectonic, and topographic evolution of what is now the northern Great Basin remains controversial, notably the temporal and spatial relation between magmatism and extensional faulting. This controversy is exemplified in the northern Toiyabe Range of central Nevada, where previous geologic mapping suggested the presence of a caldera that sourced the late Eocene (34.0 megannum [Ma]) tuff of Hall Creek. This region was also inferred to be the locus of large-magnitude middle Tertiary extension (more than 100 percent strain) localized along the Bernd Canyon detachment fault, and to be the approximate location of a middle Tertiary paleodivide that separated east and west-draining paleovalleys. Geologic mapping, $^{40}\text{Ar}/^{39}\text{Ar}$ dating, and geochemical analyses document the geologic history and extent of the Hall Creek caldera, define the regional paleotopography at the time it formed, and clarify the timing and kinematics of post-caldera extensional faulting. During and after late Eocene volcanism, the northern Toiyabe Range was characterized by an east-west trending ridge in the area of present-day Mount Callaghan, probably localized along a Mesozoic anticline. Andesite lava flows erupted around 35–34 Ma ponded hundreds of meters thick in the erosional low areas surrounding this structural high, particularly in the Simpson Park Mountains. The Hall Creek caldera formed ca. 34.0 Ma during eruption of the approximately 400 cubic kilometers (km^3) tuff of Hall Creek, a moderately crystal-rich rhyolite (71–77 percent SiO_2) ash-flow tuff. Caldera collapse was piston-like with an intact floor block, and the caldera filled with thick (approximately 2,600 meters) intracaldera tuff and interbedded breccia lenses shed from the caldera walls. The most extensive exposed megabreccia deposits are concentrated on or close to the caldera floor in the southwestern part of the caldera. Both silicic and intermediate post-caldera lavas were locally erupted within 400 thousand years of the main eruption, and for the next approximately 10 million years sedimentary rocks and distal tuffs sourced from calderas farther west ponded in the caldera basin surrounding low areas nearby. Patterns of tuff deposition indicate that the area was characterized by east-west trending paleovalleys and ridges in the late Eocene and Oligocene, which permitted tuffs to disperse east-west but limited their north-south extent. Although a low-angle fault contact of limited extent separates Cambrian and Ordovician strata in the southwestern part of the study area, there is no evidence that this fault cuts overlying Tertiary rocks. Total extensional strain across the caldera is on the order of 15 percent, and there is no evidence for progressive tilting of 34–25 Ma rocks that would indicate protracted Eocene–Oligocene extension. The caldera appears to have been tilted as an intact block after 25 Ma, probably during the middle Miocene extensional faulting well documented to the north and south of the study area.

This publication was prepared in cooperation with the Nevada Bureau of Mines and Geology.

ROCK TALK

NEW from the NBMG! Nevada Active Mines and Energy Producers

Authors: [John L. Muntean](#) and [David A. Davis](#)

Year: 2017 Series: Open-File Report 2017-01

Version: supersedes Open-File Report 2014-01 (second edition)

Format: 31 x 34.5 inches, color Scale: compilation at 1:1,000,000

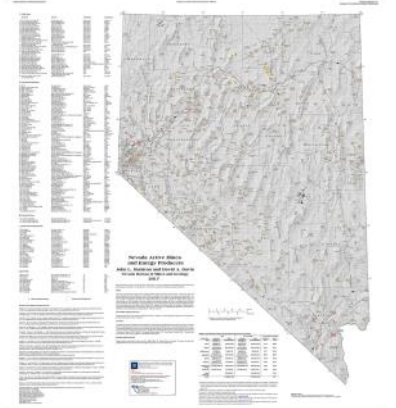
View/download/order here:

<http://pubs.nbmng.unr.edu/NV-active-mines-and-energy-2017-p/of2017-01.htm>

Site locations and information on this map were obtained from a variety of published and non-published sources with the last updates made in January 2017. All sites shown on this map have had some form of production activity during 2016.

The map includes the names of the mining districts shown with a symbol marking the center of the district polygon—which does not necessarily represent the center of mining activity in that district. Mining district locations are taken from NBMG Report 47, *Mining Districts of Nevada*.

This map was prepared in cooperation with the Nevada Division of Minerals.



You might also be interested in this new NBMG Publication. Special Publication MI-2015. Title: “The Nevada mineral industry 2015”

Author: John L. Muntean, David A. Davis, and Bridget Ayling

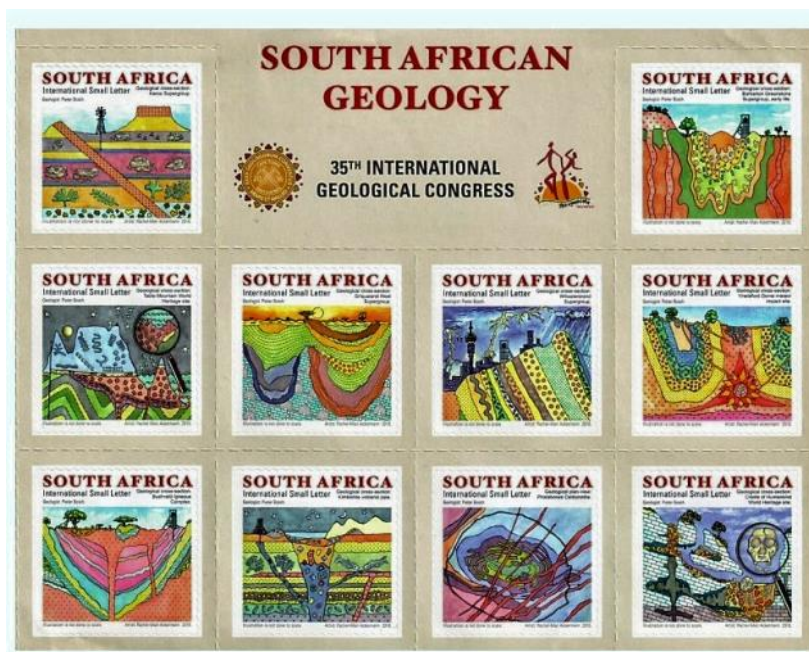
Year: 2017; Series: Mineral Industry MI-2015; Format: 190 pages, includes color, comb-bound report

View/download/order here: <http://pubs.nbmng.unr.edu/The-NV-mineral-industry-2015-p/mi2015.htm>

Thank you to **GSN Member Dave Emmons** (retired Kinross geologist who now resides in Leander, TX!) who sent me this photo of a new set of stamps available in South Africa for mailing International letters. Maybe our U.S. Post Office could follow their lead!

This is from the SA post office website: *A set of ten stamps were issued on occasion of the 35th International Geological Congress, held in Cape Town. The stamps are for the normal letter (small letter) international airmail rate of R8.40. The stamps are self-adhesive. The stamps depict spectacular geological formations and have keys to the geological cross sections shown, printed on the back of the stamps.*

The stamps depict the following—Karoo Supergroup; Barberton Greenstone Supergroup; Table Mountain World Heritage Site; Griqualand West Supergroup; Witwatersrand Supergroup; Vredefort Dome meteor impact site (World Heritage Site); Bushveld Igneous Complex; Kimberlite volcanic pipe; Phalaborwa Carbonatite; Cradle of Mankind World Heritage Site; Two commemorative covers were prepared. Click here to view a larger image and read about each one: <https://www.postoffice.co.za/Philately/2016/geology.html>



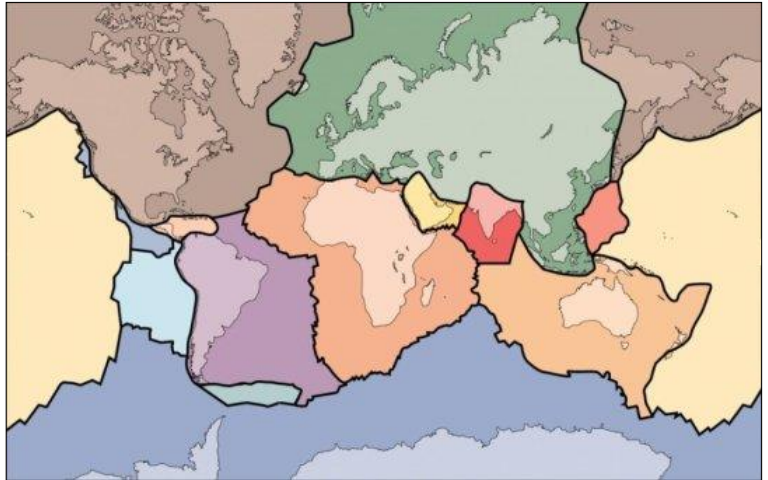
Researchers confirm the existence of a 'lost continent' under Mauritius

Reprinted from ScienceDaily.com - January 31, 2017

Source: University of the Witwatersrand

Summary: Scientists have confirmed the existence of a 'lost continent' under the Indian Ocean island of Mauritius that was left-over by the break-up of the supercontinent, Gondwana, which started about 200 million years ago.

Scientists have confirmed the existence of a "lost continent" under the Indian Ocean island of Mauritius that was left-over by the break-up of the supercontinent, Gondwana, which started about 200 million years ago. The piece of crust, which was subsequently covered by young lava during volcanic eruptions on the island, seems to be a tiny piece of ancient continent, which broke off from the island of Madagascar, when Africa, India, Australia and Antarctica split up and formed the Indian Ocean. "We are studying the break-up process of the continents, in order to understand the geological history of the planet," says Wits geologist, Professor Lewis Ashwal, lead author on the paper "Archaean zircons in Miocene oceanic hotspot rocks establish ancient continental crust beneath Mauritius," published in the journal *Nature Communications*.



The outer layer of modern Earth is a collection of interlocking rigid plates, as seen in this illustration. These plates grind together, sliding past or dipping beneath one another, giving rise to earthquakes and volcanoes. But new research suggest that plate tectonics did not begin until much later in Earth's history. Credit: USGS

By studying the mineral, zircon, found in rocks spewed up by lava during volcanic eruptions, Ashwal and his colleagues Michael Wiedenbeck from the German Research Centre for Geosciences (GFZ) and Trond Torsvik from the University of Oslo, guest scientist at GFZ, have found that remnants of this mineral were far too old to belong on the island of Mauritius.

"Earth is made up of two parts -- continents, which are old, and oceans, which are "young." On the continents you find rocks that are over four billion years old, but you find nothing like that in the oceans, as this is where new rocks are formed," explains Ashwal. "Mauritius is an island, and there is no rock older than 9 million years old on the island. However, by studying the rocks on the island, we have found zircons that are as old as 3 billion years."

Zircons are minerals that occur mainly in granites from the continents. They contain trace amounts of uranium, thorium and lead, and due to the fact that they survive geological process very well, they contain a rich record of geological processes and can be dated extremely accurately.

"The fact that we have found zircons of this age proves that there are much older crustal materials under Mauritius that could only have originated from a continent," says Ashwal.

This is not the first time that zircons that are billions of years old have been found on the island. A study done in 2013 has found traces of the mineral in beach sand. However, this study received some criticism, including that the mineral could have been either blown in by the wind, or carried in on vehicle tyres or scientists' shoes.

"The fact that we found the ancient zircons in rock (6-million-year-old trachyte), corroborates the previous study and refutes any suggestion of wind-blown, wave-transported or pumice-rafted zircons for explaining the earlier results," says Ashwal.

Ashwal suggests that there are many pieces of various sizes of "undiscovered continent," collectively called "Mauritia," spread over the Indian Ocean, left over by the breakup of Gondwanaland.

"According to the new results, this break-up did not involve a simple splitting of the ancient super-continent of Gondwana, but rather, a complex splintering took place with fragments of continental crust of variable sizes left adrift within the evolving Indian Ocean basin."

OTHER UPCOMING EVENTS

2 March 2017 Nevada Petroleum & Geothermal Society, Reno, Nevada monthly meeting. Cocktails at 6:30 PM, Dinner at 7:00 PM, Ramada Reno Hotel; 1000 East 6th St., Reno NV 89512. **Speaker:** Gregg Linville, EV Down Hole Camera Services, Western Regional Manager. Title : Down-hole Camera Technology and Applications
Please make reservations by Tuesday, February 28, 2017 by using the following link:
https://docs.google.com/forms/d/e/1FAIpQLSf3C_rYIIC0RiaBp-XdvLibbLpN9C_Rkeyk5eCd7V5iC9CJXg/viewform

5-8 March 2017 Prospector's and Developer's Association of Canada (PDAC) Convention. Toronto, Ontario. Please visit the GSN reps at **Booth #6417N** (north exhibit hall). Peruse our GSN publications, meet up with NV colleagues and rest your feet if you like. We are listed under "Nevada Geological Society" not GSN. For more information or to register please click on this link: <http://www.pdac.ca/convention>

6 March 2017 UNR's DGSE Colloquium Speaker Series. Dr. Wes Thelen (USGS-Vancouver). Title: "Tracking magma and volatile pathways under Kilauea Volcano". This talk is at the usual location at UNR in the Davidson Math & Science Building, Room 102 at 4 p.m. If you have questions, you can contact Philipp Ruprecht, Assistant Professor, Geological Sciences, at 775-682-6048. Email: pruprecht@unr.edu

7 March 2017 Arizona Geological Society meeting, Speaker: Derek J. Thorkelson presents The Precambrian Tectonic Connection between Yukon and Arizona". 6 p.m. to 9 p.m. at the Sheraton, 5151 E Grant Rd. (& Rosemont), Tucson, AZ Click on the link for more info and online registration: [Derek J. Thorkelson presents The Precambrian Tectonic Connection between Yukon and Arizona](#)

11 March 2017 DREGS (Denver Region Exploration Geologists), Speaker & Topic to be announced. Social 6 p.m., Presentation 7 p.m. at Berthoud Hall, Room 241, CO School of Mines, Golden. For more info. contact James Piper at geopros@q.com

13 March 2017 SME Northern Nevada Section Monthly Meeting. Circus-Circus Mandalay Room, Reno NV. Speaker and Topic To Be Announced. Happy Hour @ 6 pm, Dinner @ 7 pm. Please contact Sarah Lightner for more information at 775-746-7147 or NNEvSME@gmail.com

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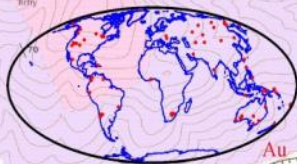


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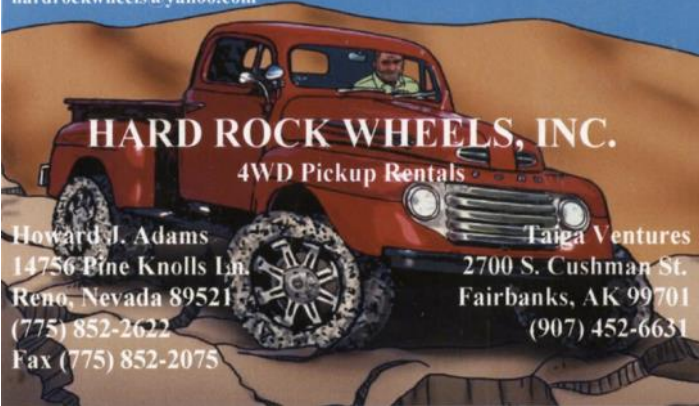
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