

2017
HAPPY NEW YEAR

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



January 2017, Vol. 33, No. 1

Published monthly except June and July

CALENDAR OF GSN EVENTS

PRESIDENT

Alan Coyner
Consulting Geologist
nevadageo@hotmail.com

VICE PRESIDENT

Kelly Cluer
Kinross Gold
Kelly.cluer@kinross.com

SECRETARY

Steven Weiss
Consultant, Geologist
siraweiss@outlook.com

TREASURER

Bob Kastelic
Consulting Geologist
bob_kastelic@yahoo.com

MEMBERSHIP CHAIR

Molly Hunsaker
Hunsaker Inc.
mollymhunsaker@aol.com

PUBLICATION CHAIR

David Boden
Truckee Meadows Community College
dboden@tmcc.edu

EXECUTIVE MANAGER

Laura Ruud
Geological Society of Nevada
gsn@gsnv.org

GSN BOARD OF DIRECTORS

Chairman

John Watson

Current GSN President:

Alan Coyner

Most Recent Past GSN President

Elizabeth Zbinden

Elko Chapter President

Mark Travis

So. Nevada Chapter President

Paul Dockweiler

Winnemucca Chapter President

James Carver

Class A, 2015-2018

Robert Thomas
John Watson—CHAIR

Class B, 2016-2019

David Caldwell
Greg French

Class C, 2014-2017

David Shaddrick
Camille Prenn

No Meeting in January

SO. NEVADA CHAPTER MEMBERSHIP MEETING (1st Thursdays)

The Southern Nevada Chapter will not have a monthly meeting in January due to the holidays. **Please plan on attending the February 2nd meeting and participate in the Silent Auction to raise money for the So. NV Chapter!** Please contact Paul Dockweiler if you'd like to donate an item for the auction at: paul.dockweiler@cardno.com.

Jan. 11, 2017 WEDNES- DAY

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: Gary Poland, GSP Consulting/Synergy Mapping. Title: "The 2016 Aerial Survey and Mapping update of the Marigold Mine located in Humboldt County, NV – 36 miles east of Winnemucca, NV and 4 miles south of Valmy, NV". Food & Drinks Sponsored by: TONATEC EXPLORATION, LLC.** For more info please contact Jim Carver @ jcarver@silverstandard.com. Details & abstract on pg. 6.

Jan. 19, 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 and Topic: To Be Announced. Food/Drinks Sponsored by: NATIONAL EWP.** For more info please contact Mark Travis at: mark.william.travis@gmail.com.

Jan. 20, 2017 FRIDAY

GSN MEMBERSHIP MEETING (3rd Fridays)

The monthly meeting will be held at the Reno Elks Lodge, 597 Kumle Lane, Reno, Nevada. Drinks @ 6 p.m., Dinner @ 7 p.m., Talk at 7:45 p.m. **Speaker: Warren Thompson, Klondex Mines Ltd. Title: "Update of Geology within the Midas Au/Ag Mining District, Elko County, Nevada". Drinks Sponsored by: RYE PATCH GOLD CORP.** Cost for Dinner—\$25. GSN Students are free. Please make reservations for dinner with Laura Ruud, by emailing gsn@gsnv.org. 775-323-3500. Details on page 3.

Feb. 2, 2017 THURSDAY

SO. NEVADA CHAPTER MEMBERSHIP MEETING & SILENT AUCTION!

The monthly meeting and SILENT AUCTION for the CHAPTER FUNDRAISER will be held at the Las Vegas Natural History Museum at 900 N. Las Vegas Blvd. Pizza/drinks at 5:30 pm, Talk at 6:30 pm. **Speaker & Topic: To Be Announced.** Contact Paul Dockweiler for more information: paul.dockweiler@cardno.com.



G.S.N. JANUARY MEETING SPONSOR!



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

Greetings to all our GSN members wherever you may be! Have you recovered from the Christmas parties and the hustle and bustle of the holidays? The **GSN Christmas parties** were a great success and fun times were had by all. In particular, I want to thank everyone that made the GSN Reno Christmas party a spectacular event again this year! Close to 300 people attended the party and a special thank you goes to **Pershing Gold** for hosting the bar. Also, a big thank you to **Catherine Hickson** for giving us a compelling account of her up close and personal experience with the explosion of Mount St. Helens. The live auction, silent auction and raffle sponsored by the **GSN Foundation** raised a record-breaking \$20,417 surpassing the old record of \$17,006 set in 2015. The proceeds are used by the foundation to provide support to Nevada college students studying field geology and to sponsor geology field trips for Nevada K-12 students. You may be interested to know that we have grown this fundraiser from \$1,634 in 2000 to the record we set this year. Thank you once again to all the **GSN members and friends** that donated and bought auction items!

I hope by the time you read this you have renewed your **Geological Society of Nevada Membership** for 2017. I believe we continue to offer a great value for your annual dues of \$50.00. If you haven't already done so, please go to the GSN website and renew your membership online or download the membership form. And why not invite a friend to attend one of our meetings and ask them to join our great organization? 2017 will present many new opportunities and challenges. I urge you to be involved and participate, not only in GSN, but also with the other earth science-related organizations that deserve your support.

I recently received my **2017 Nevada Geology Calendar** published by the **Nevada Bureau of Mines and Geology**. The calendar is full of beautiful photos highlighting Nevada's scenic wonders and features a different geologic topic each month. The calendar also includes interesting facts about Nevada and the geology of the state. Many of the photos were taken by Nevada geologists and you can enter your favorite photo of Nevada geology for the 2018 Nevada Geology Calendar. See the NBMG website for details on how you can purchase the 2017 calendar and enter the contest for the 2018 calendar.

The **2017 Nevada Historic Mining Calendar** is another must have addition to your wall space. The calendar is published by the **Northern Nevada Section of the Society for Mining, Metallurgy, and Exploration**. This year's calendar features photos and information from the historic mining camp of Tybo, Nevada. During the 1870's and again in the 1930's Tybo was a significant producer of lead, zinc and silver. Tybo is located in remote area of southeastern Nevada in Nye County about 17 miles from Warm Springs. Proceeds from the sales of the calendar are used for student scholarships at the **Mackay School of Earth Sciences and Engineering at the University of Nevada**. To order your calendar contact the Northern Nevada Section of SME by email at NNEVSME@gmail.com.

Students from the **Mackay School of Earth Sciences and Engineering** may contact you this month asking your support for attendance at technical conferences, field trips, and mining competitions. Please respond positively to their requests. They are the geology professionals of the future and the networking opportunities available at these events are invaluable to them.

To each of you I wish a Happy and Prosperous 2017!

The G.S.N. wishes to thank  *for sponsoring*

the DECEMBER CHRISTMAS MEETING SOCIAL HOUR in RENO!!

GSN MONTHLY MEETING, JANUARY 20, 2017

SPEAKER: WARREN THOMPSON, KLONDEX MINES LTD.

TITLE: "Update of Geology within the Midas Au/Ag Mining District, Elko County, Nevada"

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, JANUARY 18, 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 Jan. 19th)

**Warren Thompson, Exploration Manager—Midas
Klondex Mines Ltd.**

Update of Geology within the Midas Au/Ag Mining District, Elko County, Nevada

Abstract:

The Midas (Gold Circle) Mining District is located in Elko County, approximately 60 miles northeast of the town of Winnemucca. The Midas mine (Ken Snyder mine) occurs within the Snowstorm Mountains along the eastern edge of the Northern Nevada Rift (NNR) where it has been in production since 1998, producing 2.2 million ounces Au and 26.9 million ounces Ag. Midas mine produces Au and Ag from low-sulfidation quartz/adularia, selenide-bearing veins that are hosted in an assemblage of bimodal middle Miocene ash flow tuffs, airfall tuffs, felsic plugs, volcanoclastic sediments, basaltic flows and intrusives related to extension along the Northern Nevada Rift.

The Au/Ag veins occur as an anastomosing fabric with NS-N30°W and N50°-60°W faults of mid-Miocene time related to the NNR. Left lateral shear movement along the Midas fault created northwest-oriented dilatant openings within the Colorado Grande vein where higher grades are hosted. Fluid flow of mineralization was controlled by these dilational jogs (or cymoid loops) throughout the district.

The dominant fault structure in the district that controls most mineralization is the Midas fault, which has at least 5 miles of strike length. The Midas fault has a minimum of 1000' of down-to-the-east offset and is now determined to have been an active growth fault during most phases of middle Miocene volcanism, sediment and tuff accumulation. Growth faulting along the Midas fault has provided a graben basin which accumulated basalt flows and lacustrine sediments on the eastern hangingwall side. Geologic modelling shows thickened sediment and basalt accumulations within the graben whereas airfall and ash flow tuffs maintain relative constant thickness on both footwall and hangingwall sides of the Midas fault.

The regional fault fabric of the producing veins is broken into district domains by N65°E oriented Owyhee structures with some left-lateral deflection of the main Midas fault both north and south. These Owyhee structures are thought to be pre-, syn- and post-mineralization and form the dominant 8 ma Midas Trough landform. Three structural domains are identified separated by Owyhee faults; Elko Prince in the north, Colorado Grande in the central district and Trinity in the south area district. Veins along the Midas fault are stepped downward in elevation along these Owyhee structures where the exposed Elko Prince in the north has been largely mined out by the old-timers. The Colorado Grande in the central portion of the district is currently in production and Trinity to the south is an expanding resource with great exploration potential.

FACES OF GSN

James Carver

Discover, Define, Develop...

Upon my return home from the December AEMA conference in Reno I mentioned to my wife Anita that some of my friends in this business all appeared to have aged, surely this hasn't happened to me! That is when she gave me the look...

It will soon be thirty years that I've been dragging my family all over the west. They didn't always want to leave, but we moved with the work from Winnemucca to Boise, then Lovelock, Burley, Winnemucca, Sandy and Elko, only to return to Winnemucca for this recent tour at Marigold. Anita still will occasionally mention how Lovelock made everywhere else seem better. This is a photo of the crew when we were just coming back into Winnemucca for this most recent transplant back in aught six.



Left to right: Nicholas (attending UNR), Jacob (attending BYU-I), Jessica Anderson (children's librarian Winnemucca), Melissa Randall (Student Counselor), Anita & Jim (Grandparents x 4).

The girls and Jacob have married and are busy with their own families, Nicholas is at UNR and works at the mine as a summer student, as have all of them, Jacob at Marigold and the girls at Newmont. (Cont. on pg. 5)



Our latest two grandkids below (Wyatt Randall and Kennedy Anderson), hammer for scale.

(Faces of GSN, Carver, cont. from pg. 4)

Mining wasn't part of my formative years outside of the fact that my formal education began at the Copperview Elementary School, which sports an excellent view of the Bingham workings 15 miles to the west.

My family followed Brigham across the wilderness in the mid 1800's with my great grandfather John Carver personally directed to settle what has become Plain City, Utah. My dad worked as an agronomist and executive in the sugar industry after returning from WWII where he drove multiengine bombers and transports all over the world for the Army Air Corps. His love of flying rubbed off on myself and my brother Alan, with my brother making flying his career with the Air Force where he retired as a Lieutenant Colonel in 2012. We recently lost Alan in an accident while he was checking out a new instructor pilot at the flight school where he was working as their Chief Fixed Wing Instructor. Dad had a Luscombe that he flew out of a dirt strip in Utah, which has since been covered over in homes. I picked up my private ticket while attending Eastern Washington University studying geology. Alan got his private ticket at the BYU while he was there as an undergraduate and I was in graduate school. Alan's death came just as our family was beginning to feel a sense of relief and gratitude for my wife Anita's successful battle against cancer. I will eventually get my little aircraft back up into the sky, just not right now ...



Nick, Anita and her dog with our Kitfox V sporting a Rotac radial 7 cylinder engine.

I've been fully involved in the exploration business since signing on during graduate school to a project in central Nevada. Then with two young daughters they moved us to Boise so I could be the Project Geologist on a (too small) of a gold deposit evaluation. The final feasibility report on that project was met with the expected layoff. The next opportunity came as the Mine Geologist at the Willard gold & silver mine near Lovelock. Not much pay, but a crash course in what it takes to keep a marginal mine operating. Putting Lovelock in our rear view we joined Pegasus during the startup of the Black Pine mine in Idaho where we made our home in Burley. That experience of being involved in a startup was challenging and very rewarding. It was here at Black Pine that we were able to do some (base hit) exploration and turn discovery and development directly into the mine plan. While at Black Pine, I was able to assist down south at the Santiago, Chile office for almost a year, commuting from Burley to Santiago. This kind of duty really can strain a family as the time away can't be regained later. It is a cost that is difficult to quantify, but real. From Burley we were transferred to Winnemucca where I worked at the Florida Canyon mine with Robert Thomason. This is when our youngest, Nicholas, was born. All of our children have a different state in the west as their place of birth! Working with a proven ore finder like Robert was an exceptional experience as his team continued to build the resource and reserve of that camp. Mining continued there until recently due to that work and now with Bill Howald's team starting it back up, who knows what other treasures they will yet exploit for their shareholders? (Cont on pg 8)

GSN WINNEMUCCA CHAPTER MONTHLY MEETING

WEDNESDAY, JANUARY 11, 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: Gary Poland, GSP Consulting / Synergy Mapping

Title: The 2016 Aerial Survey and Mapping update of the Marigold Mine located in Humboldt County, NV – 36 miles east of Winnemucca, NV and 4 miles south of Valmy, NV (Basic Photogrammetric Processes)

Food and Drinks Sponsored by: TonaTec Exploration, LLC



Abstract:

In late May of 2016 GSP Consulting / Synergy flew the Marigold Mine to provide aerial mapping at a scale of 1"=200 feet with a contour interval of 5 feet. (1"=200', 5' CI) The total area covered 42.47 square miles. (27,180 acres) We updated and matched into the aerial survey which we provided last year in June of 2015. I will be discussing step by step the photogrammetric process which we use to complete this process including flight planning and acquisition, coordination with the land surveyor to provide photo control, aerial triangulation, compilation, final editing and orthophoto generation as well as the acquisition of oblique photos.

Speaker's Bio:

Gary Poland has 32 years of experience in the aerial surveying and mapping industry having worked with several large firms throughout the western United States. Since forming GSP Consulting in 2013 Mr. Poland has managed over 300 successful mapping projects ranging from mining (base mapping and update mapping), highway design, pipeline alignments, flood and environmental studies, commercial and residential development, forestry, and ALTA's to name a few. His responsibilities include project management, AutoCAD translations, flight layouts and photo acquisition, land surveyor coordination, business development, client relationships, and quality control. Having worked in both a technical and management capacity, he has extensive experience and knowledge in accuracy standards, aerial photography, aerial triangulation, digital mapping, terrain modeling, editing, digital orthophoto generation, and LiDAR.

Education:

South Dakota State University (BS 1984 Geography & Computer Science)

South Dakota School of Mines & Technology – Geology and Geological Engineering (1979-1982)

GSN ELKO CHAPTER MEMBERSHIP MEETING

THURSDAY, JANUARY 19, 2017

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

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

Speaker & Topic: To Be Announced



Food and Drinks Sponsored by: NATIONAL EWP

GSN SO. NEVADA CHAPTER NO MEETING in JANUARY

**But Please join us on FEBRUARY 2, 2017 for the Chapter meeting
and Silent Auction Fundraiser!!**

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

Time: Food, Drinks & Silent Auction begin @ 5:30 p.m., Talk begins @ 6:30 p.m.

Speaker & Topic: To Be Announced

Dinner and Drinks Sponsored by: (Contact Paul Dockweiler if you'd like to be the sponsor!)

Please let Paul know if you have a Silent Auction item to donate!! Paul.dockweiler@cardno.com

*Thank you to our generous
sponsors for the Elko Chapter
Holiday Party!*

*Thank you to our generous sponsor
for the Winnemucca Chapter
Holiday Party!*



**Envirotech
Drilling**

(Faces of GSN, Carver, cont. from pg. 5)

While at Florida I was able to work a stint in Australia in the Northern Territory at the Mount Todd operation. Market changes and several other factors found Pegasus seeking relief from the creditors in Chapter 11 where they reorganized the company and we became Apollo Gold at Florida Canyon. It was just like they say, Pegasus went bankrupt slowly and then all of a sudden! It was here that I left the industry for a couple of years to work near my aging parents in Utah for an engineering firm as their Chief Geologist. Interesting work, which had an abrupt turn when we lost our biggest client, WorldCom, when they went bankrupt shortly after the 9/11 attacks. At that point Don Harris hired me to work for Newmont on the Carlin Trend. In this shop I had the opportunity to work with some of the best ore finders and definers in the business. Professional, serious and...



L-R: Newmontonians in strategy meeting: Eric Saderholm the Viking Leader, unknown headless horseman, Kyle Andreassen (normal state), Allyn Niles as a driller? Unknown in green mask. Front left is Jeanette Hunter as our Mule Skinner with Jon Powell as a devil (tell me it isn't so...)

We did a few years there when the opportunity to work with Tim Janke opened up here at Marigold. Marigold's management has always been forward thinking and continues to be today. Early on with Glamis and then with owners Goldcorp and Barrick, Marigold has been able to continue aggressive exploration campaigns which has tied several smaller mineral centers together into a much larger reserve. This led Marigold to expand the mining effort to where we are now north of 200,000 ounces per year in gold production. Our latest owners, Silver Standard Resources has continued to support our work of discovery and development of new resources. This work has and will continue to provide Marigold with a long and favorable future.

(Cont. on page 9)

(Faces of GSN, Carver, cont. from pg. 8)



Visiting Goldcorp geologists to Marigold for (training): Perseo Anaya AKA the Arizona Kid was our Senior Geologist here at Marigold before leaving for Agnico Magpie in 2015. The other fugitives from the north are shown with their earned handles.

I've been blessed to be able to work with and for some of the best in the business, my undying gratitude goes to all of those that have taught and demonstrated how to conduct this business of discovery and development of gold mines.



At Marigold with consultants Robert Thomason and Andy Abraham.

We have been able to put together outstanding teams of geologists at Marigold which continue to amaze me at what they are able to accomplish with new discoveries and geologic insights. Our current team of "Incredibles" at Marigold include Karthik Rathnam, Andrew Smith and Matthew Fithian. Many before them have gone on to other opportunities such as Doug McGibbon and those that worked with him during the initial years of discovery and operation. Several others have moved on during the time I've been there, Perseo Anaya left to work for Agnico Eagle, Greg Brasel is now at a copper mine in Arizona, Hugh Smith is in Africa I think and Greg Eisen has retired. He probably looks younger now... (Cont. on page 10)

(Faces of GSN, Carver, cont. from pg. 9)



The Incredibles: L-R Jim, Matt Fithian, Karthik Rathnam, Andrew Smith & Angela Johnson (she's corporate...but still incredible).

Myself and Greg Eisen at the +1Moz Red Dot discovery at Marigold in 2007.



(By James Carver, GSN Winnemucca Chapter President)

G.S.N. Winnemucca and Elko Chapters Hold Successful Silent Auctions at Holiday Parties!

By Laura Ruud

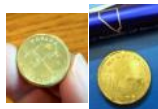
The GSN Winnemucca Chapter and the GSN Elko Chapter both had great turnouts and big successes for their respective Holiday parties in December. In Winnemucca, the speaker William Chavez, Jr. from NM School of Mines brought along a rambunctious group of Chilean Geology students. They made for a rowdy raffle drawing as they cheered with excitement each time one of them would win a prize.

In Elko there were friendly bidding wars going on throughout the evening for some really nice items that were donated. The crowd was entertained by a great band called "Muddy Boots and Porch Pounders". They also had a nice catered dinner enjoyed by everyone. Both events were very fun and best of all they raised a lot of money for their own chapters. Yours truly walked away from the Elko meeting as High Bidder on a rare gold coin prospected, smelted and hand-poured by Ken Snyder. (Ken and I share the same Alma Mater so I also have bragging rights at Western State College of CO.!) Al in all everyone had fun and the Chapters made some money. Thank you to the MANY donors of auction items and thank you to the MANY people that bid on the items! **And a big THANK YOU to the food and drink sponsors for the parties: ENVIROTECH DRILLING (Winnemucca) and BOART LONGYEAR and LEGARZA EXPLORATION (Elko).**



Chilean Geology students having a good time and cheering as they win raffle prizes at GSN Winnemucca.

Ken Snyder's hand-made gold coin



Al Frank (Boart Longyear) and Jim Carver, Winnemucca President, share a laugh at the Holiday party on Dec. 15th.



Buster Hunsaker, dons a Christmas hat at the Elko Chapter party on Dec. 16th. He's a good sport and always up for a laugh!

Thank you to our generous donors in December!!

G.S.N. FOUNDATION

PLATINUM DONORS +\$1000

“Anonymous”

GOLD DONORS \$500-\$999

SILVER DONORS \$100-\$499

Gassaway Brown

Frank Fenne

Liang Hsu

Ana & Thomas John

Richard Lorson

Scott Manske

Peter Olander

Peg O'Malley

Becky Weimer Purkey

JD “Jim” Slayton

Randall Vance

William R. Wilson

BRONZE DONORS \$1-\$99

Fred Barnard

Steve Barnwell

James Byars

Joseph Fabrizio

Virginia Gillerman

Dean Heitt

Al Kirkham

Robert Laidlaw

John Norby

Donald Pietz

Jose Portacio, Jr.

Ken Raabe

James Shannon

Donald Wagstaff

Mark Whitney

Sandra Wyld

G.S.N. Student Dinner Fund

Fred Barnard

Michael Derby

Hallet Elson

Garrett Frey

Marcus Johnston

Fleetwood Koutz

Paul Kuhn

Richard Lorson

Kristi Schaff

JD “Jim” Slayton

Tommy Thompson & Peggy Arps

Donald Wagstaff

Michael Ward

Dana Willis

G.S.N. Student Field Trip Fund

Glenn Asch

Fred Barnard

Steve Barnwell

Gassaway Brown

Richard Hipsley

David John

Fleetwood Koutz

Paul Kuhn

Robert Loranger

Larry Martin

Brooke Miller

Jack Pellegrino

John Pierson

JD “Jim” Slayton

Tommy Thompson & Peggy Arps

Chuck Thorman

Donald Wagstaff

NEWS FROM THE FOUNDATION

By Cami Prenn, GSN Foundation Chair

It's a couple of nights before Christmas and I'm drinking some excellent Bourbon Milk Punch as I write this, which contributes nicely to the holiday mood. I'm also basking in the excellent outcome of the Christmas meeting/party/raffle/auction. We raised \$20,400 this year! My goodness! I'm grateful for everyone who worked so hard to make it our biggest year yet. And for our members who bought raffle tickets and auction items and made the night festive and fun. And for our donors who gave the most incredible array of prizes! Not everyone won something but what a great choice of prizes to try for! A big thanks goes to Pershing Gold. With the biggest attendance all year we run up quite a bar tab and Pershing Gold covered all of that – thank you!

I have to single out a few folks to acknowledge for their efforts to make it a success; DD LaPointe does an incredible amount of work to bring this together. Ruth Buffa has been right by her side for many years helping organize the prizes and raffle. Miner's Lunchbox provided those two beautiful gold specimens which were nicely auctioned off by Greg French, our resident auctioneer. Newmont's gold splatter was a great prize and was much appreciated. You know, those gold splatters make lovely pieces of jewelry. A list of prize donors appears separately – it's a long list and we appreciate every one of them.

Let's look ahead now. Next on the Foundation's agenda is the K-12 Field Trip Grant Program. The teachers have submitted their requests and the trips will be awarded this month. Stay tuned for a review of those in the next newsletter.



Auctioneer Extraordinaire, Greg French working the crowd.



Cami & Neil Prenn looking festive at the GSN Foundation Fundraiser at the Nugget.



Speaker Catherine Hickson is joined by Kirk Swanson and Chris Henry as she signs her books for GSN members immediately following her amazing talk at the Christmas Party.



High bidder of the night, Mark Svoboda & his wife Julie.

A few photos of party-goers and the gold donations from the GSN Christmas meeting & Foundation Fundraiser on Dec. 14th!



Donated by Newmont Mining Corp. High Bidder—Roger Steininger



Donated by Scott Werschky, Miner's Lunchbox High Bidder—Kel Buchanan

MINER'S LUNCHBOX
www.minerslunchbox.com



Dan Kappes shows off his "win" of the night as high bidder on the Auctioneer's hat, w/Cami & Laura



Donated by Scott Werschky, Miner's Lunchbox High Bidder—Mark Svoboda



Laura & Eric Ruud still smiling at the end of the night...happy for the successful event!

**Many thanks to all of our fabulous donors:
and special thanks to our top 2016 Donors: Miner's Lunchbox,
Pershing Gold Corporation and Newmont Mining Corporation!!**



Alan Coyner
 Alfonso Bedoya
 ALS Chemex
 April Barber & Tom Callicrate
 Argonaut Gold
 Barnwell Coring Consulting LLC
 Boart-Longyear
 Bob Kastelic
 Bob Thomas
 Cami & Neil Prenn
 Catherine Clark & Dennis Bryan
 Chris Sladek
 Clancy Wendt
 Comstock Mining
 D.D. LaPointe & Tom Irwin
 Dan & Maureen Rovig
 Dan Kappes
 Dave & Denise Emmons
 Dave Fitch
 Debbie Russell
 Debra & Eric Struhsacker
 Don MacKerrow & Peg O'Malley
 Ely Gold
 Envirotech Drilling LLC
 Fleetwood Koutz
 Geotemps
 Greg French
 Howard Adams
 Jack Hursh
 JoAnn Newbury
 John Rice
 Jon & Beth Price
 Kay Tietz
 Kel Buchanan
 Ken Brook
 Ken Coleman
 Ken Cunningham

Kinross Gold
 Lane Griffin
 Larry Lackey
 Legend, Inc.
 Mac Canby
 Mack Taylor
 Mackay Student Services Center
 Major Drilling
 Marcus Johnston/Apex Minerals
 Marilyn Miller
 Mark Coolbaugh
 Mark Stock
 Mark Svoboda
 Mark Vollmer
 McClelland Labs
 Mine Development Associates
 Miner's Lunchbox
 Mountain Gold
 National Exploration Wells & Pumps
 Nevada Bureau of Mines & Geology
 Nevada Division of Minerals
 Nevada Mining Association
 Newmont Mining Corp.
 NuLegacy Gold
 Opal Adams
 Pershing Gold
 Pete Dilles
 Peter & Christine Vikre
 Richard Jeanne
 Rob Bastien
 Ruen Drilling
 Ruth Buffa
 Ruth Carraher & Paul Muto
 Scott Werschky
 Stantec
 Steve Bills, TonaTec Exploration
 Steve Peters
 The Grill





Bruce W. Miller

May 16, 1944—September 4, 2016

Bruce was the consummate prospector. For nearly 50 years he worked both as an employee of mining companies, with other geologists, and independently all across northern Nevada. He was involved with the discovery or early development of many of the present day mining districts. In addition to his geologic acumen, he was known for his honesty and good humor and was a good friend to all who knew him. His passing is a great sadness to many of us in the geologic community.

Bruce W. Miller passed away on September 4th, 2016 in Reno, Nevada, in the care of his many friends.

Bruce was born in Los Angeles on May 16, 1944 to Helen Jeannette (Freeberg) Miller and John Walker Miller. His family moved to Marin County, California in 1946 where he graduated from Sir Francis Drake High School, and College of Marin where he got an Associate of Arts degree. From there he went to the University of California at Davis, earning a BS in Geology in 1967. From 1970 to 1976 he worked on a Masters Degree in Geology at the University of Nevada-Reno, but never completed his thesis.

Bruce worked for Homestake Mining Company from 1967-1970, doing much of their initial work at Jerritt Canyon, Rawhide, and grass roots prospecting throughout northern Nevada.

After 1970 Bruce's career was that of a thorough and very observant prospector – doing exploration and staking ground on his own and taking contract and consulting jobs whenever available. He and Dan Kappes worked together developing a zinc project. He worked with Mike Brady on Manhattan, with Gary Clifton at Mill Creek Summit, and with other GSN member on projects around northern Nevada.

Bruce is survived by his older sister, Jeannette L. Miller of Dallas, Texas and his younger brother, David L. Miller (wife Femmy Miller and daughter Emma Miller) of Surabaya, Indonesia.

A Memorial Gathering to celebrate Bruce's life was held on November 9, 2016 at the Lutheran Good Shepherd Church in Reno. Many of Bruce's friends shared really great stories and memories of Bruce with the crowd that gathered that evening. Donations can be made to **Circle of Life Hospice**, 1575 Delucchi Lane, #214, Reno, NV 89502. (775) 827-2298.

Peter E. Galli
GSN Honorary Member



Peter Galli

January 13, 1926 - November 17, 2016

Peter E Galli passed away peacefully on November 17, 2016, at his home in Gilbert, Arizona, with his loving wife, Paula, by his side. He was predeceased by his parents and brothers Robert and Michael Galli. Pete was born January 13, 1926, in Elko, Nevada, to Elpedio ("Pete") Galli and Rose Modarelli Galli. He married Dorothy Bastian in September, 1953. They were blessed with three children: Craig (Lark Evans) of Salt Lake City; Reed (Mary Ann Taylor) of Fayetteville, Georgia; and Lora (Steve Gonda) of Plano, Texas. Pete and Dorothy divorced in April 1983. He married Paula Schubert on April 8, 2011. Pete and Paula enjoyed traveling the world together, including most recently a fishing trip to Alaska in July. He was an avid hunter, fisherman and licensed pilot. Pete received his B.S. in Geological Engineering in 1951 from the University of Alaska School of Mines. A highly successful exploration geologist, he and his business partner, the late John Livermore, developed the Pinson Gold Mine in Nevada, among others. Pete is survived by his three children, 11 grandchildren, 17 great grandchildren, 11 step grandchildren and 12 great step grandchildren. A graveside service took place on December 10, 2016, at Queen of Heaven Catholic Cemetery in Mesa, Arizona.

Published in Reno Gazette-Journal from Nov. 26 to Nov. 27, 2016

- See more at: <http://www.legacy.com/obituaries/rqj/obituary.aspx?pid=182675107#sthash.hEmYo2Th.dpuf>

Lawrence Tilford Larson, GSN Honorary Member

December 3, 1930 - December 5, 2016



Angels welcomed Larry into heaven just two days after his 86th birthday.

There must have been much jubilation, for he was much loved by many of the current residents.

Larry lived a blessed, beautiful life. He was born into a loving family in Waukegan, Illinois in 1930 and died a respected university professor, and a beloved husband, father, grandfather and great grandfather. His life was rich with interesting experiences and people who valued his contributions to their lives and their world.

He was a big man, who was on the high school football team, but he also did exhibition "dance" roller skating with his teenage girlfriend. After he graduated from high school in 1948, during the Korean War, he enlisted in the Air Force. He was stationed in England, where he guarded a secret installation. As he was in the process of being discharged, he was given a battery of tests, and was told that he was quite intelligent. He had enjoyed reading about archeology since 6th grade, but reconsidered when the examiner told him that geologists earned more. Archeology remained an interest in his life, but he headed toward college determined to be a geologist. He graduated from the University of Illinois, Urbana, in 1957, (with highest honors) and married his wife, Beth, the same year.

They headed to the University of Wisconsin, where he received his Masters in 1959 and his PhD in Economic Geology in 1962. He taught at the University of Tennessee until 1975, when he came to the University of Nevada, Reno to serve as the Chairman of the Mackay School of Mines. At that time, there were only 5 full time geology professors; when he left, there were 20. He also taught and considered his greatest professional accomplishment being able to "push, shove, squeeze and cajole" nearly 100 students through graduate school. He also was author or co-author of over 80 publications. He was an Honorary Member of the Geological Society; an award which has been given to only 17 persons in the almost 50 year history of the organization, for his "outstanding contributions to the advancement of the geological sciences in Nevada". Additionally, he worked for the UN, NATO, the State of Nevada, and consulted with industry extensively.

Larry received a number of other scholastic honors, including that of Fulbright Professor. His interest in archeology led him to teach in Turkey. Turkey had an extensive history of gold mining in antiquity, but it had disappeared by the 1980's. In searching for materials to help teach Geology in Turkey, he realized that there were notable similarities to gold deposits in Nevada. He contacted friends in the industry, and within a few years, gold mining was thriving again in Turkey. This led the Turks to calling him "The Father of Modern Gold Mining in Turkey". His wife and two younger children accompanied him to Turkey, which allowed for a year of living in an exotic foreign culture. A friend from that period was instrumental in arranging another year of teaching in Eastern Turkey during his next sabbatical.

Later, Larry and Beth literally traveled "around the world" to places like England, France, Germany, India, Egypt, China, Sri Lanka, Bali, Australia and other countries. They also traveled under the sea, during a period when they explored scuba diving. He also loved to fish, with his friend, Tom Nimsic.

He enjoyed his loving family: Beth, his wife of 59 years; daughter Jackie Davidek and life partner Clay; son Doug Larson and his wife Lisa; and daughter, Kathy Larson. He had 3 grandchildren: Amanda Petring and husband, Brent; Eric Larson and Daniel Larson. Amanda and Brent have given him a great grandchild, Rylie, and will soon add another. He also leaves a brother, Richard, (wife Barbra), a nephew, Eric, and a niece, Tina (husband Steve) and their family.

Larry was blessed with a family he adored, a profession he loved, colleagues and students whom he enjoyed--and who will remember him with warmth and respect-- and a talent for finding travel and personal adventures that enlarged his world and his life. His was truly a "Life well Lived".

A Celebration of Life was held on December 23, at Spanish Springs Presbyterian Church, Sparks, NV. 89436. **Instead of flowers, donations can be made to The L.T. Larson Geology Endowment Fund to assist students conducting their field work toward their theses. Contact: Keiko M. Weil, Director Donor Relations, 775-784-1587.**

Activity Update

Mike Brady, NOVEMBER 2016

www.activityupdate.com

NEVADA

Battle Mountain Gold Inc. announced that recent drill results at the Lewis Project include 116.1-118.1 meters @ 11.3 gpt Au, 7.2 gpt Ag (V16C-01) and 136.2-144.5 meters @ 2.01 gpt Au, 16.0 gpt Ag (V16C-02). *Press Release:* November 10

LiCo Energy Metals Inc. announced that it acquired an option to earn a 70% interest in the Black Rock Desert Property (Li) from Nevada Energy Metals Inc. for \$170,000 cash, 4,500,000 shares and \$1,250,000 in exploration expenditures over 3 years. *Press Release:* November 11

Newmont Mining Corp. announced that it received the first gold pour derived from the start-up of operations at the Long Canyon Mine. Capital costs for mine construction are now estimated at \$225,000,000. (reserve = 16,300,000 tonnes @ 2.28 gpt Au prov-en+probable) *Press Release:* November 11

Rye Patch Gold Corp. announced that development activities at the Florida Canyon Mine are progressing. The Phase 1 leach pad is currently 75% complete at a capital cost of \$8,000,000 and mining started at the Jasperoid Hill Pit. (resource = 76,000,000 tonnes @ 0.37 gpt Au measured+indicated) *Press Release:* November 23

Premier Gold Mines Ltd. announced that recent drill results at the McCoy-Cove Project include 599.7-611.7 meters @ 28.64 gpt Au, 7.4 gpt Ag (PG16-12); 653.9-664.8 meters @ 6.16 gpt Au, 0.9 gpt Ag (PG16-14); 551.7-584.0 meters @ 5.31 gpt Au, 1.2 gpt Ag (PG16-16) and 429.3-431.6 meters @ 9.26 gpt Au, 3.6 gpt Ag (PG16-17). (resource = 430,000 tonnes @ 10.47 gpt Au indicated) *Press Release:* November 10

Pershing Gold Corp. announced that recent drill results at the Relief Canyon Project include 192.5-208.8 meters @ 0.89 gpt Au (RC16-470); 104.8-136.9 meters @ 0.53 gpt Au (RC16-485) and 102.3-168.6 meters @ 0.45 gpt Au (RC16-486). (oxide resource = 33,561,000 tonnes @ 0.68 gpt Au measured+indicated) *Press Release:* November 9

Klondex Mines Ltd. announced that recent drill results at the Fire Creek Project include 185.3-188.4 meters @ 18.01 gpt Au, 11.4 gpt Ag (FCC-020); 255.9-258.7 meters @ 15.71 gpt Au, 30.4 gpt Ag (FCC-033); 462.7-465.1 meters @ 9.97 gpt Au, 9.9 gpt Ag (FCC-042) and 343.4-344.4 meters @ 11.37 gpt Au, 28.4 gpt Ag (FCC-053). (reserve = 218,200 tonnes @ 44.74 gpt Au, 33.2 gpt Ag prov-en+probable) *Press Release:* November 10

Bravada Gold Corp.(40%) announced that recent drill results at the Baxter Project include 51.8-56.4 meters @ 0.06 gpt Au (BAX16-17); 24.4-50.3 meters @ 0.03 gpt Au (BAX16-18); 61.0-67.1 meters @ 0.03 gpt Au (BAX16-31) and 29-32 meters @ 0.10 gpt Au (BAX16-32). *Press Release:* November 21

Discovery Harbour Resources Corp. announced that it acquired an option to earn a 100% interest in the Jersey Valley and Caldera properties from Genesis Gold Corp. for \$1,100,000 cash over 6 years. *Press Release:* November 23

OBITUARY

The G.S.N. wanted to let you know of the passing of Gary Prazen, who was the namesake of the "Prazen Living Legend of Mining" award given each year by the National Mining Hall of Fame. Our friends at the Women's Mining Coalition were the recipients this year. The award consists of a large bronze figure of a prospector made by Mr. Prazen (see photo on right). Below is a link to Mr. Prazen's obituary from the Salt Lake City Tribune.



Gary Prazen, 1936-2016



<http://www.legacy.com/obituaries/saltlaketribe/obituary.aspx?pid=182668215>

Geotemps, Inc. Honored On Floor of U.S. Senate

On Thursday, Nov. 17, 2016, Nevada based Geotemps, Inc. was recognized on the floor of the United States Senate for its historic support of Nevada's minerals industry. During his statement, Senator Dean Heller called upon his fellow Senators and Nevadans to join him in commemorating Geotemps, Inc. saying, *"I am proud to honor Geotemps' significant contributions to the mining industry in the State of Nevada, throughout our Nation, and across the globe."*

"Without the determination and persistence of [Geotemps] founders and entire staff, Nevada would not have experienced the excellent growth we see today. I ask my colleagues and all Nevadans to join me in congratulating Geotemps on its 30th anniversary. This institution has advanced Nevada's mining industry, and I am honored to recognize this important milestone."

Heller's statement was entered into the U.S. congressional record during the second session of the 114th congress.

The Geological Society of Nevada proudly recognizes this honor and wishes all the best to Geotemps for 2017.

ROCK TALK

Meeting Locations and Dates for Public Meetings on the Draft EIS and Proposed Withdrawal Amendment Published on December 30, 2016

Meeting Location	Meeting Date and Time
Great Northern Hotel, 2 S 1st Street E, Malta, MT	February 13, 2017, 2-4 p.m.
BLM West Desert District Office, 2370 S. Decker Lake Blvd., West Valley City, UT	February 14, 2017, 5-7 p.m.
BLM Rock Springs Field Office, 280 Highway 191 North, Rock Springs, WY	February 15, 2017, 5-7 p.m.
Shilo Suites, 780 Lindsay Blvd., Idaho Falls, ID	February 16, 2017, 5-7 p.m.
Nugget Casino Resort, 1100 Nugget Ave., Sparks, NV	February 21, 2017, 5-7 p.m.
BLM Lakeview District Office, 1301 S G Street, Lakeview, OR	February 22, 2017, 5-7 p.m.
Elko Convention Center, 700 Moren Way, Elko, NV	February 23, 2017, 5-7 p.m.
Best Western Vista Inn, 2645 W Airport Way, Boise, ID	February 24, 2017, 5-7 p.m.

Read more about the Proposed Withdrawal Amendment on pp 18-19 of this newsletter.

Below and on the following page 19 are the Fact Sheet and News Release from the BLM regarding the Draft EIS on Proposed Withdrawal in Crucial Sage-Grouse Habitat that were released on December 30, 2016. A schedule of public meetings appears on page 17. This isn't good news for the mineral industry in Nevada.

Fact Sheet from the Department of Interior, Bureau of Land Management Proposed Withdrawal from Mineral Entry in Sagebrush Focal Areas

Background: The U.S. Fish and Wildlife Service (FWS) identified habitat disturbance and fragmentation caused by certain hardrock mining operations as a threat to Greater Sage-Grouse habitat. As a result, the Bureau of Land Management (BLM) and U.S. Forest Service (USFS) land use plans recommend that the Secretary of the Interior exercise her authority under the Federal Land Policy and Management Act (FLPMA) to safeguard the most important landscapes identified by BLM and USFS, with advice from the FWS, within Priority Habitat Management Areas – identified as Sagebrush Focal Areas – by withdrawing them from the operation of the hardrock mining laws.

Through a public, transparent process, the Interior Department is seeking to ensure that the Sagebrush Focal Areas that anchor the range-wide conservation strategy for the Greater Sage-Grouse are protected from the threat of hardrock mining, subject to valid existing rights.

The elements of the proposed mineral withdrawal include:

Temporary segregation: Subject to valid existing rights, the Interior Department temporarily segregated approximately 10 million acres of public and National Forest System lands located in the states of Idaho, Montana, Nevada, Oregon, Utah, and Wyoming from location and entry under the United States mining laws. This segregation, which began on September 24, 2015, and lasts up to two years until the Secretary decides whether to make the withdrawal, prohibits the location of new mining claims in the designated areas.

Valid, pre-existing claims: Neither the segregation for up to two years, nor any subsequent withdrawal, would prohibit ongoing or future mining exploration or extraction operations on valid pre-existing mining claims. Neither the segregation nor the proposed withdrawal would prohibit any other authorized uses on these lands. Under FLPMA, the Secretary can withdraw these lands for a maximum of 20 years and may extend the period in the future, after additional public review.

Public Review: During the segregation period, the BLM is conducting environmental and other public review regarding the mineral potential in the area proposed for withdrawal, including rare earths, as well as the importance of these areas as Greater Sage-Grouse habitat. This public process, conducted in compliance with FLPMA and the National Environmental Policy Act, includes participation by the public, tribes, environmental groups, industry, state and local government, as well as other stakeholders.

Alternatives: To address issues identified during the public scoping period, the BLM has developed a Draft Environmental Impact Statement (EIS) that analyzes five alternatives. The BLM will identify a preferred alternative in the Final EIS. The alternatives are:

No Action: This represents the baseline that all alternatives are compared to and would continue management of locatable mineral exploration and development in accordance with existing plans, programs, policies, and regulations in the proposed withdrawal area. Most of the area remains open to mining in this alternative.

Proposed Action: Under the Proposed Action, approximately 10 million acres of federal locatable minerals in Sagebrush Focal Areas (SFAs) in six western states would be withdrawn from U.S. mining laws, subject to valid existing rights.

State of Nevada Alternative: This alternative, suggested by the State of Nevada, would refine the areas proposed for withdrawal in the State of Nevada, substituting 387,981 acres of high value habitat adjacent to SFAs for 487,756 acres of high mineral potential within the proposed withdrawal areas.

Remove Areas of High Mineral Potential: This alternative would remove 558,918 acres with high mineral potential within the SFAs in the six states from the proposed withdrawal.

State of Idaho Alternative: This alternative, suggested by the Governor of Idaho, would remove 538,742 acres of high and moderate mineral potential in Idaho, including a buffer to simplify geographic and administrative boundaries, from the proposed withdrawal.

News Release

Washington, D.C.

Date: December 29, 2016

Contact: Michelle Barret: (601) 919-4653

BLM Releases Draft EIS on Proposed Withdrawal in Crucial Sage-Grouse Habitat

Will host series of public meetings throughout West to gather input on alternatives

WASHINGTON, DC – As part of its continuing efforts to conserve habitat vital to healthy populations of the Greater Sage-Grouse in the West, the Bureau of Land Management (BLM) today announced the draft proposal to withdraw a subset of lands that are sage-grouse strongholds from future mining claims.

Based on public comments received during the scoping period over the last year, the draft Environmental Impact Statement (EIS) analyzes five alternatives, ranging from no action to the withdrawal of approximately 10 million acres of federal locatable minerals in certain areas that are particularly crucial to the Greater Sage-Grouse in six states: Idaho, Montana, Nevada, Oregon, Utah, and Wyoming.

The announcement, which will be published in the *Federal Register* tomorrow, opens a 90-day public comment period that will end March 30, 2017. The BLM will also host eight public meetings throughout the West in February to gather input on the proposal and alternatives to the proposal.

“We appreciate the input we’ve received from states, tribes, and other important stakeholders to help develop this draft analysis of the proposed mineral withdrawal,” said Kristin Bail, BLM assistant director for resources and planning. “We look forward to working closely with the public in the coming months as we finalize a proposal to protect important Greater Sage-Grouse habitat from potential future disturbance resulting from mining claims.”

Secretary of the Interior Sally Jewell first announced the proposed withdrawal in September, 2015, as part of the unprecedented, landscape-scale effort that began with BLM’s and its state and federal partners’ successful efforts to prevent the Greater Sage-Grouse from being listed under the Endangered Species Act.

To develop the proposal and its alternatives, the BLM held public meetings in November 2015 in the six states to gather information and comments about whether to withdraw these areas from the location of new mining claims for up to 20 years. The BLM also incorporated a mineral resource assessment prepared by the U.S. Geological Survey to help develop a reasonably foreseeable development scenario for the draft EIS. In addition to releasing the draft EIS today, the agency published a Notice of Amended Proposed Withdrawal that would add about 388,000 acres to the approximately 10 million acres that are already temporarily segregated under the mining laws until Sept. 24, 2017. These lands represent a proposal by the State of Nevada that are adjacent to SFAs that contain high value habitat and identified Greater Sage-Grouse populations should be withdrawn, instead of high mineral development potential areas in the SFAs. The draft EIS includes an alternative that evaluates the environmental consequences of this substitution.

Neither the segregation, nor any subsequent withdrawal, would prohibit ongoing or future mining exploration or extraction operations on valid pre-existing claims.

At one time, the Greater Sage-Grouse population likely numbered in the millions, but is estimated to have dwindled to 200,000 to 500,000 individuals range-wide. Sagebrush, the Greater Sage-Grouse’s primary habitat, also supports more than 350 other animal and plant species in the Western United States.

[A fact sheet, draft EIS and Notice of Amended Proposed Withdrawal, dates and times for public meetings and a map of the proposed withdrawals are available here.](#) You can comment by mailing written comments to Mark Mackiewicz, Bureau of Land Management (BLM) WO, C/O Price Field Office, 125 South 600 West, Price, Utah 84501 or by submitting electronically to sagebrush_withdrawals@blm.gov.

BLM

The BLM manages more than 245 million acres of public land, the most of any Federal agency. This land, known as the National System of Public Lands, is primarily located in 12 Western states, including Alaska. The BLM also administers 700 million acres of sub-surface mineral estate throughout the nation. The BLM’s mission is to sustain the health, diversity, and productivity of America’s public lands for the use and enjoyment of present and future generations. In Fiscal Year 2015, the BLM generated \$4.1 billion in receipts from activities occurring on public lands.

OTHER UPCOMING EVENTS

3 January 2017 Arizona Geological Society meeting, Speaker: David A. Sawyer presents “Dating Geologic Time in the Cretaceous: Integrating Biostratigraphy, Isotope Geochronology, and Astrochronology in Sedimentary Deposits of the Cretaceous Western Interior”. 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: [David A. Sawyer presents Dating Geologic Time in the Cretaceous: Integrating Biostratigraphy, Isotope Geochronology, and Astrochronology in Sedimentary Deposits of the Cretaceous Western Interior Seaway](#). Dinner closes on Dec 30th.

5 January 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: Fred Nilson, AKIET. Topic: Composite pipe technology for high pressure/high temperature and severe service environment. Please make reservations by Tuesday, January 3, 2017 by using the following link: https://docs.google.com/forms/d/e/1FAIpQLScZfTL4uiKGOVUuIXVW73KRHQEDj0i_5ny8Xm6YMugWVHxFOA/viewform

9 January 2017 DREGS (Denver Region Exploration Geologists), Speaker: Vertrees “Mac” Canby. Title: “Bootprints Across the Southern Balkans: Discovery of the Cukaru Peki Cu-Au Deposit, Serbia, and Other Observations on Exploration in Former Yugoslavia”. 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

16 January 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

23-26, January 2017 AME Mineral Exploration Roundup, Vancouver, BC. Registration Information click here: <http://roundup.amebc.ca/attendees/registration-info/>. The GSN will be present in the NMEC’s “NEVADA ROOM”. Please stop by to say “hi” or to purchase some of our many GSN Publications! If there is a particular book you want, please let Laura Ruud know so we can make sure we have it with us. gsn@gsnv.org

7-10, February 2017 Mining Leadership Program:

We are pleased to announce that the University of Arizona Lowell Institute for Mineral Resources and Vanto Group are jointly sponsoring a Mining Leadership Program. The inaugural offering of the four-day program “Leadership: Inventing the Future, A Breakthrough Leadership Program for the Mining Industry and Its Stakeholders,” will be February 7-10, 2017, in Tucson, Arizona, and will be led by executives of the Vanto Group. Please go to the IMR home page at <http://imr.arizona.edu>, click on the Featured Project (Mining Leadership Program), then download the Information Packet for further information and instructions regarding registration. Please contact Rocío Brambila by e-mail at: brambila@email.arizona.edu to register.

September 16-22, 2017 GSA Thompson Field Forum - Catastrophic mega-scale landslide failure of large volcanic fields, Cedar City and Bryce Canyon City, Utah. CONVENERS: Robert F. Biek—Utah Geological Survey, Salt Lake City, Utah, USA, bobbiek@utah.gov. David B. Hacker—Department of Geology, Kent State University, Kent, Ohio, USA, dhacker@kent.edu; Peter D. Rowley—Geologic Mapping Inc., New Harmony, Utah, USA, pdrowley@rushisp.com.

A 6-day field forum designed to investigate the concept of exceptionally large catastrophic collapse of volcanic fields using the distinguishing characteristics and geologic implications of the gigantic Markagunt gravity slide and Marysvale volcanic field, southwest Utah. **Applications due: January 31, 2017.** For details, go to: www.geosociety.org/fieldforums/

PAID ADVERTISEMENTS



**Carlin Trend Mining
Supplies & Service**

369 - 5th Street, Elko, Nevada 89801
775.778.0668 www.carlin-trend.com

Claim Staking - Soil Sampling - Land Research
Core Cutting - Mine Hazard Fencing - Reclamation
Project Management - Geological Consulting
Geology & Drafting Supplies - AutoCad & GIS
Temporary Employees in All Fields

Sister store located in Superior, Arizona
Copper Triangle Mining Services 520-689-5200



Fire Assay, ICP-OES/MS,
XRF, LECO, Custom Prep, BLEG

Chris Ioannakis, Managing Director, Analytical Services

Corporate Office

1500 Glendale Avenue
Sparks, NV USA 89431-5902
Telephone: (775) 356-0606
Fax: (775) 356-1413

Elko Office

2320 Last Chance Road
Elko, NV USA 89801-4852
Telephone/Fax: (775) 738-9100

E-mail: AALADMIN@aallabs.com
Website: www.aallabs.com



Right Solutions · Right Partner
www.alsglobal.com

ALS & TERRACORE INTERNATIONAL

- › Providing a one-stop shop for core services, spectral imaging and geochemistry.
- › Core Image Spectrometer™ available in ALS laboratories around the world.
- › Our facilities offer core cutting, core photography and full geochemical services.
- › Hyperspectral data interpreted via high-speed, semi-automated computer algorithms, constrained by style of mineralization or deposit type

Contact us to discuss solutions:

- ✉ clientservicesusa@alsglobal.com
- 🌐 alsglobal.com/minerals



JOSEPH R. ANZMAN

Exploration Geophysicist

- consulting
- interpretation
- project management
- geophysical surveys
- domestic & foreign

P.O. Box 370526
Denver, Colorado 80237

303-519-0658
geophjoe@gmail.com

NORTH AMERICAN EXPLORATION

GEOLOGY • CLAIM STAKING • GEOCHEM SAMPLING • LANDWORK



DAVID MORRIS

PRESIDENT • GEOLOGIST

895 N. MARSHALL WAY, SUITE A
LAYTON, UT 84041

801.546.6453
DMORRIS@NAE-EXPLORATION.COM

Drift Exploration Drilling, Inc., 6120 Pedroli Lane, Winnemucca, Nevada

FORAGE
ORBIT GARANT
DRILLING



For more information please contact Garth Patterson @403-601-4374 or garth.patterson@telus.net



Certified Reference Materials

OREAS gold CRMs are the most homogeneous available and provide unrivalled confidence in your assay data



North American Distributor:
 Analytical Solutions Ltd
www.explorationgeochem.com
 Tel: (+416) 462 9124
 Email: info@mail.explorationgeochem.com



QUIT CHASING DATA!

One Location • Easy-to-Access • User friendly
 Searchable • Accurate



www.TerraSourceSoftware.com
info@TerraSourceSoftware.com
 775.856.2913

JBA WORKS, INC.

Jo Beth Allen
 Geologist

GIS, Presentation Maps & Data Graphics

GIS / CAD
 Slide & print Graphics / Illustrator & Photoshop

1055 Joshua Drive
 Reno, Nevada 89509

jobethallen@sbcglobal.net
 Phone: 775-303-6818



Bureau Veritas Minerals

Industry Leading Solutions for the Exploration & Mining Community

- Geochemical, Metallurgical & Mineralogical Services
- Laser Ablation, Core Logging Services & XRF
- Ore & High Grade Analysis
- Industry Leading Quality Assurance
- On-Site Services



BUREAU VERITAS
 MINERALS

+1 775 359 6311 | bvmininfo@ca.bureauveritas.com | www.bureauveritas.com/um



Serving Mining in Nevada Since 1992

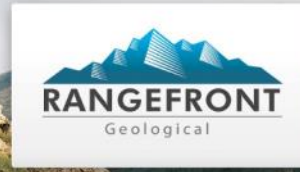
General Engineering Contractor

- Drill Pads
- Road Building
- Reclamation
- Earthwork

Office: 775-753-5832
 Mobile: 775-778-1681
 Mobile: 775-934-1837
www.legarza.com

NV License #35480
 CA License #804120

MINERAL EXPLORATION SERVICES AND CONSULTING



Providing accurate, dependable, documented results.

We specialize in a full range of services including:

- Exploration Project Management
- Contract and Consulting Geology
- Data Compilation
- GIS & Remote Sensing
- 3D Modeling
- Disturbance Surveying
- Soil and Rock Chip Sampling
- Claim Staking
- Abandoned Mine Hazard Fencing
- Core Processing
- Warehouse Management
- Temp Services

Call us at 775.340.2395 for a free estimate on your next project

For more information on our services visit our website at www.Rangefront.com



PROPERTY to DISTRICT SCALE GEOLOGIC & ALTERATION MAPPING with MINERAL DEPOSIT TARGETING

PETER A. DILLES MSc. O.P. Economic Geologist
 (775) 972-7989 pdilles@aol.com

hablo Español

TOM CARPENTER

CONSULTING GEOPHYSICIST

5445 Goldenrod Drive
 Reno NV 89511
 (O) 775.849.9707
 (e) tcarpenter@gbis.com

Big Sky Geophysics

Clark Jorgensen, M.Sc.
 Geophysicist

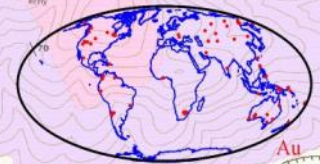
*Field Work
 Processing
 Interpretations*

P.O. Box 353 Phone/Fax +1 (406) 587-6330
 Bozeman, Montana 59771 Mobile +1 (406) 580-9718
 USA clark@bigskygeo.com

For more details, my background, and case studies, Visit my webpage at www.bigskygeo.com

NEVADA EXPLORATION GIS DATA SETS HIGHEST QUALITY

- MINERAL OCCURRENCES
- GEOCHEMISTRY
- GEOLOGY
- GEOGRAPHY
- GEOPHYSICS
- CULTURE
- POLITICAL



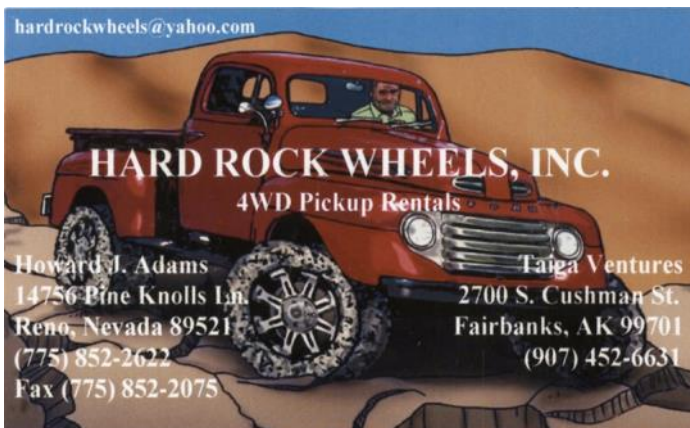
website: www.greatbasingis.com
 email: jlaravie@frontiernet.net
 phone: 775-777-8223

GEOLOGICAL SOCIETY OF NEVADA



gsn@gsnv.org ● www.gsnv.org
Telephone (775) 323-3500
Fax (775) 323-3599
2175 Raggio Parkway, Room 107
Reno, NV 89512 USA

hardrockwheels@yahoo.com



HARD ROCK WHEELS, INC.
4WD Pickup Rentals

Howard J. Adams 14756 Pine Knolls Ln. Reno, Nevada 89521 (775) 852-2622 Fax (775) 852-2075	Taiga Ventures 2700 S. Cushman St. Fairbanks, AK 99701 (907) 452-6631
--	--

