# GEOLOGICAL SOCIETY OF NEVADA NEWSLETTER

Geological Society of Nevada, 2175 Raggio Parkway, Room 107, Reno, NV 89512 (775) 323-3500 - Hours Monday -- Friday 8-3 Website: www.gsnv.org • E-mail: gsn@gsnv.org

#### April 2010, Vol. 25, No. 4

PRESIDENT

#### CALENDAR OF GSN EVENTS

Mike Ressel April 14 WINNEMUCCA CHAPTER (Every 2nd Wednesday of the month) Kinross Gold USA, Inc The monthly meeting will be held at the Martin Hotel, 94 West Railroad Street. Drinks mikeressel@sbcglobal.net Wednesday and appetizers at 6:30 PM, speaker at 7:00 PM. Drinks and appetizers sponsor for the VICE PRESIDENT evening will be Drift Exploration Drilling (Garth Patterson). Speaker for the evening will Peter Vikre be Richard Reid, Manager of District Exploration, Newmont Mining Corporation. His US Geological Survey talk will be titled "Buffalo Valley Gold Mine: Porphyry Copper, Gold Skarn or Dispvikre@usgs.gov tal Disseminated Precious-Metal Deposit". (see abstract on page 8). For more information contact Matt Hoffer at (775) 635-4756. SECRETARY Steve Carroll Schlumberger Water Services April 15 scarroll2@slb.com ELKO CHAPTER (Every 3rd Thursday of the month) The monthly meeting will be held at the Western Folk Life Center, 501 Railroad Street. Thursday TREASURER Refreshments at 6:00 PM, talk at 7:00 PM. Speaker for the evening to be announced. **Bob Kastelic** The sponsor for the evening to be announced. For more information contact Jim Consulting Geologist Essman at (775) 778-4374. bob\_kastelic@yahoo.com **MEMBERSHIP CHAIR** April 16 **GSN MEMBERSHIP MEETING** (Every 3rd Friday of the month, September - May) **Dave Emmons** The monthly meeting will be held at the Reno Elks Lodge, 597 Kumle Lane, Reno, NV. Friday Kinross Gold USA, Inc Drinks at 6:00 PM, dinner at 7:00 PM, and talk at 8:00 PM. Sponsor for the evening demmons@sbcglobal.net will be Geotemps, Inc. (Lance Taylor). Speaker for the evening will be Marcus Johnston, Chief Geologist, Victoria Resources US Inc. His talk will be titled "Nevada Metal-**PUBLICATION CHAIR** logeny, Mineral Belts, and Ore Deposits: Age Is More Than Just A Number" (see **Marilyn Miller** abstract on page 3). Dinner reservations must be made by 1:00 PM Wednesday, April AuEx Ventures, Inc. 14th. Contact Kathy Sestanovich at (775) 323-3500 or e-mail gsn@gsnv.org for resermarilyn.miller1@sbcglobal.net vations. OFFICE MANAGER Kathy Sestanovich April 29 gsn@gsnv.org SOUTHERN NEVADA CHAPTER (Every Last Thursday of the month) Thursday

SOUTHERN NEVADA CHAPTER (Every Last Thursday of the month) The monthly meeting will be held at the Lilly Fong Geoscience building at UNLV, Room 105. Social hour begins at 5:00 pm with the speaker starting at roughly 7:15 pm. For more information contact Josh Bonde at 702-468-2500 or Swapan Sahoo at 773-402-9347.

Published monthly except June and July

# FROM THE PRESIDENT

Mike Ressel, GSN President 2009-2010

#### The "P" Word

Spring is the mud season in northern Nevada, and oh, how the political mud has been slung this year! Hasty mining legislation, first proposed by the Governor and later metamorphosed in the form of Assembly Bill 6, which was scratched out in the 11th hour of a weekend in back rooms of the Legislative Building in Carson, is no way to run a state. There were no testimonies to hear or transcripts to read. Truth be said, there were precious few witnesses at all to this debate, or rather, debacle, which makes vilifying all who participated that much easier. The negative outcome for explorers is without doubt unfair. Equally frustrating were the lapses in communication and of due process - of taxation without representation. However, truth also be said that facts in this case are scarce, and we in the exploration community are, ourselves, **GSN APRIL MEETING SPONSOR** 



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# May 14-22, 2010 GSN Symposium, Great Basin Evolution & Metallogeny

(Continued from page 1)

in danger of expressing uniformed opinion or making decisions plorationists will to some degree be effective in having a repreas hasty as those made by the Assembly. The same logic we use in our geologic endeavors applies equally well to this debate: ask questions, collect the facts, hypothesize, test, and formulate conclusions.

Tim Crowley of NvMA has done a commendable job in telling NvMA's side of the story to explorationists at multiple venues. Trust on the part of explorationists won't be easily won, but NvMA is doing the right thing in standing up to the hard punches from the exploration community. Fact is that exploration is a new commodity for the NvMA, one that it fully admits it needs to learn more about. At the same time, exploration needs to avoid distancing itself from mining companies and operations. Exploration shouldn't be construed as an industry unto itself and run out of Canada. More than ever, the Nevada mining industry, including exploration, needs to stick together.

The good out of all of this, and there is some good, is that a formerly loosely-connected group of explorers, including prospectors, geologists, claim stakers, land men, and vendors will likely organize and become versed and more proactive in mining politics. The NvMA, which focuses on the money-making side of the industry, will become knowledgeable of the moneyspending side of the industry. That newly-formed group of ex-

sentative voice for exploration. However, that group should not be dilutive or divisive toward an industry already in the crosshairs of public scrutiny. That group will serve well and be more effective if it maintains close ties with the existing legislative muscle contained in the NvMA and NWMA.

Other good that has come about from recent outcomes has been for GSN to evaluate its role in this and future debates of the political kind. GSN has built itself as a professional geologic organization, and that mission is clearly stated in our name and our Constitution as well as expressed in our history. Recently, because of inquiries by many members, GSN has taken another look at its legal status as an organization on what it can and cannot do. For clarity to the membership, GSN is a 501(c) 6 organization. This legal designation does not preclude GSN from lobbying and other political activities, which admittedly, was news to many who currently manage GSN including myself. The question then is, does the membership want GSN to broaden its mission to include a political component, or do we leave politics out? We want you to weigh in on the matter.

Mike Ressel

# Thank you to our generous donors

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### Thanks to AMEC Mining & Metals for hosting The Reno GSN March Meeting

# STUDENT DINNER FUND

# STUDENT FIELD TRIP FUND

# GSN April 16, 2010 Membership Meeting

### **Reservations Are Required - Please Cancel if You Are Unable to Attend**

The reason we need reservations and also cancellations is because our caterer needs to know how many people to cook for.

GSN CAN NO LONGER GUARANTEE DINNER SEATING WITHOUT ADVANCE RESERVATIONS. Please call 775-323-3500, Fax 775-323-3599 or e-mail gsn@gsnv.org by 1:00 PM, Wednesday, April 14, 2010. Social Hour: 6:00 PM – Dinner: 7:00 PM – Speaker: 8:00 PM \$17.00 per person

> Location: Elks Lodge, 597 Kumle Lane, Reno, NV Directions: across (W) from the Reno-Sparks Convention Center (S. Virginia Street, behind the Les Schwab Tire Center)

Prepaid dinner reservations will only be accepted for the current monthly meeting. Cancellations must be received two days before the meeting in order for your money to be refunded.

Download the prepayment form from the GSN website: http://www.gsnv.org/membership.html

## Nevada Metallogeny, Mineral Belts, and Ore Deposits: Age Is More Than Just A Number

Marcus K. Johnston Victoria Resources US Inc.

#### Abstract

Since gold values rebounded from recent lows of around \$250 per troy ounce in 1999 and again in 2001, escalating prices resulted in hundreds of new and old companies refocusing on gold exploration in the Great Basin. Most companies publicly present their property positions relative to known mineral belts, which are simply alignments of mineral deposits. The goal of such marketing, of course, is to establish project credibility by demonstrating its strategic location relative to one or more of the belts, boosting investor confidence through association. The most widely accepted belts in Nevada are the Carlin, Battle Mountain-Eureka, Getchell, and Independence gold belts, which are commonly, but incorrectly, referred to as 'trends.' A brief tour through the multitude of websites for companies exploring in Nevada typically show the locations of many exploration properties within these belts, along with numerous other previously and newly defined belts.

The aim of this talk is neither to approve nor negate any of the proposed gold belts, but to present the spatial and temporal distribution of various deposit types in Nevada based solely on empirical data. Hypogene precious and base-metal deposits in the Great Basin can generally be grouped into six eons/periods/epochs of activity, each associated with different styles of mineralization: 1) small platinum-palladium occurrences related to Proterozoic basement rocks, 2) porphyry-related base-metal deposits formed in the Jurassic, 3) porphyry-related base-metal deposits formed in the Cretaceous, 5) temporally related gold-copper±molybdenum porphyry and/or skarn deposits, polymetallic-vein, and Carlin-like/Carlin-type deposits formed in the late Eocene, and 6) widely distributed high- and low-sulfidation gold and/or silver deposits formed in the Late Eocene through Pliocene.

Plotting temporally related deposits and igneous activity for the six groups does not define any spatially finite 'belts' for the platinumpalladium or Mesozoic base-metal systems, at least at the state-scale, but there are clear, spatially limited distributions for the Cretaceous metamorphic gold-quartz veins, and Late Eocene (Bartonian Age) to Early Miocene (Burdigalian Age) deposits. This range for Cenozoic deposits is bounded by important shifts in the tectonic forces affecting the region, beginning with a major change in the direction of movement of the Pacific plate around 43 Ma, and culminating with continental rifting and emergence of the Yellowstone Hot Spot in Northern Nevada around 17 Ma. Epithermal deposits formed after around 14 Ma, including the Comstock Lode, Bullfrog, and Hycroft, do not show consistent spatial patterns, which may indicate some other change in the tectonic regime, or may be a function of erosion levels, lack of age data, etc.

The spatial and temporal distributions of deposits from the six major groups are used to define the metallogenic provinces in Nevada, which commonly overlap in space. Cretaceous metamorphic gold-quartz deposits, and the Late Eocene through Early Miocene deposits can be grouped into belts that are not only temporally related, but structurally related, as well. The same can be said for many epithermal deposits formed between 17 and 14 Ma. Not surprisingly, the Carlin and Battle Mountain-Eureka belts are part of these temporally and structurally related systems, which enhances the prospectivity of regions between known deposits along these belts, especially under post-mineral cover. It will be left to attendees to decide which other proposed belts warrant additional consideration, and which exist only in the minds of the geologist(s) who originally defined them. Hopefully, the talk will conclude with a lively bit of discussion, as this new era of exploration will require new ideas, which are typically shaped by input from many individuals.





#### REGISTER NOW!!! GSN 2010 Symposium

MAY 14-22

Register Online:<u>www.gsnv.org/symposium</u>

Or Use the Registration Form on the Following Page



**SUPPORTERS** 

Bravada Gold Corp.—Conners Drilling—Fortune River Resource Corp.—Karl Frost—Golder Associates, Inc. Gold Summit Corp—Dieter Krewedl—Leslie Olmstead—Deborah Struhsacker—Nancy Wolverson

Join in supporting Symposium 2010: Contact: Dave Shaddrick (775) 746-2071, DShaddrick@aol.com

#### <u>REGISTRATION FORM</u> GEOLOGICAL SOCIETY OF NEVADA 2010 SYMPOSIUM Great Basin Evolution & Metallogeny

John Ascuaga's Nugget Hotel, Sparks, Nevada

May 14<sup>th</sup> - 22<sup>nd</sup>, 2010

Exhibits and Technical Sessions, May 17<sup>th</sup> -19<sup>th</sup> ; Pre- and Post-Meeting Field Trips, Short Courses

#### **CONTACT US:** GSN 2010, 2175 Raggio Parkway, Room 205, Reno, NV 89512 (775) 846-9766 Fax (775-323-3599)

**SYMPOSIUM REGISTRATION** (Registrants for Field Trips and Short Courses must register for Early, Regular, On-Site/Late or Student). All registrants receive a DVD of the Publication Volumes.

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Regula On-Site Studen	SSN must receive the registration form <b>by February 28<sup>th</sup>, 2010</b> ) r (between <b>March 1<sup>st</sup> and April 30<sup>th</sup>, 2010</b> ) e <b>and Late</b> (after <b>April 30<sup>th</sup>, 2010</b> ) t (must be able to show proof of student status) s-Only (may not attend technical sessions, allows access to Exhibit Hall	for all activities	\$275 \$325 \$375 \$150 \$50	\$ \$ \$ \$
	ncheon – William R. Dickinson (limit 650) ncheon – Jonathan G. Price (limit 650)	May 17 <sup>th</sup> May 18 <sup>th</sup>	\$45 \$45	<u>_</u> \$
Pre-Meetin	g Field Trips & Short Courses (Field Trips limited to 40, Short Cou	irse limits as indica	ated)	
FT-1	Intro to Carlin Gold Deposits for Geologists	May 14 <sup>th</sup> -16 <sup>th</sup>	\$325	¢
FT-2	Epithermal Deposits of Northern Nevada	May 14 <sup>th</sup> -16 <sup>th</sup>	\$400	\$
SC-1	SEG Workshop – Gold in 2010 (min. 35, limit 100)	May 15 <sup>th</sup> -16 <sup>th</sup>	\$395 Member	\$
001	Symposium Registration is encouraged, but not required.		\$495 Non Member	\$
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		\$95 Student Members	\$
			\$120 Student	
SC-2	Fundamentals of 43-101 (min. 25, limit 125)	May $15^{th} - 16^{th}$	\$200	<u>\$</u> \$
SC-3	Isotopes and Exploration (min. 8, limit 18)	May 15 <sup>th</sup> – 16 <sup>th</sup>	\$450	\$
SC-4	Structural Systematics (min. 20, limit 50)	May 15 <sup>th</sup> – 16 <sup>th</sup>	\$200/\$100 Student	\$
SC-5	Leapfrog Software (min. 8, limit 21)	May 15 <sup>th</sup> – 16 <sup>th</sup>	\$400	\$
Post-Meetir	ng Field Trips & Short Courses(all Field Trips limited to 40, Short	Courses limits as i	ndicated)	
FT-3	Industrial Mineral Deposits of Northern NV *Note date*	May 20 <sup>th</sup> -22 <sup>nd</sup>	\$375	\$
FT-4	Intro to Carlin Gold Deposits for Non-Geologists	May 20 <sup>th</sup> -22 <sup>nd</sup>	\$325	\$
FT-5	Advances in Carlin Deposits of Northern Nevada	May 20 <sup>th</sup> -22 <sup>nd</sup>	\$400	\$
FT-6	Epithermal Deposits of Central Nevada	May 20 <sup>th</sup> -22 <sup>nd</sup>	\$325	\$
FT-7	IOCG and Porphyry-Related Deposits of Western Nevada	May 20 <sup>th</sup> -21 <sup>st</sup>	\$250	\$
FT-8	Modern and Ancient Geothermal Systems	May 20 <sup>th</sup> -21 <sup>st</sup>	\$100	\$
SC-6	Remote Sensing and Spectral Geology (min. 10, limit 35)	May 20 <sup>th</sup> -21 <sup>st</sup>	\$275/\$100 Student	\$
SC-7	Arc View for Geoscientists (min. 8, limit 15) Held at UNR	May 20 <sup>th</sup> -21 <sup>st</sup>	\$670	\$
SC-8	Molybdenum in the New Millennium (min. 10, limit 35)	May 20 <sup>th</sup>	\$300/\$75 Student	\$
SC-9	Formation of Gold Provinces (min. 8, limit 50)	May 21 <sup>st</sup>	\$300	\$
SC-10	Rockfall Hazards & Mitigation Techniques (min 10, limit 25)	May 20 <sup>th</sup>	\$250	\$
			Total	¢

Total <u></u>\$\_\_\_\_

**Pre-publication order of the Symposium Volumes:** (*Price will be determined closer to the meeting date and all registrants will be notified. In addition, the pre-publication price will be available on site at the Symposium.*)

Please make checks payable to "GSN 2010" and mail them to GSN 2010, 2175 Raggio Parkway, Room 205, Reno, NV 89512, USA. For information, see <a href="http://www.gsnv.org/symposium">www.gsnv.org/symposium</a>, call 775-846-9766, or e-mail <a href="https://secretary@gsnv.org">secretary@gsnv.org</a>.

Credit card payments can be made by mail, fax (775-323-3599) or on the website (www.gsnv.org/symposium ).

Cancellations received by March 1<sup>st</sup> will be accepted minus 10%; from March 1<sup>st</sup> - April 30<sup>th</sup> minus 50%. No cancellations accepted after April 30<sup>th</sup>.

Guests/spouses may sign up for the exhibits-only fee, which provides access to the exhibits and to all Social Events in the Exhibit. Please complete a separate registration form for each guest. For hotel reservations at John Ascuaga's Nugget Hotel please call 1-800-648-1177 and use "Geology" as the code to get the group reservation rate. You can also go directly to the website (www.januggetsecure.com/jump/1220/) for the group reservation rate.

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# FACES OF GSN Molly Hunsaker, Geology Major Mackay School of Earth Sciences and Engineering

My name is Molly Hunsaker and I am a senior at the Mackay School of Earth Sciences and Engineering. I will graduate in May with my bachelors in geology but my geology career began long before college. My grandmother was a draftsman and my father is an exploration geologist. So you could say I was born into the business. I have been in the field as long as I can remember but started field work in the summer of 2004 and spent three summers soil sampling and claim staking.

I will admit that on the days when I fought Mormon crickets, rolled quads, climbed steep hills, suffered in the heat, and carried two packs just so I wouldn't tip over carrying soils; well then I swore I would never do this for a living. Then after a day long tour of the Carlin trend and the old Gold Bar mine plus visiting various other geologic sites with my Dad I knew that geology was my passion and it was going to be my career. I soon learned that this was what I was missing in life; and it is a perfect fit. I also learned that a geotech did not make nearly as much money as a soil sampler. My first lesson in the business-we don't do it for the money!

I have been a geology major for two and a half years and have had some amazing experiences. While at UNR I have been an officer for the Mackay Rockhounds Club and the John Mackay Club. This is my second year on the Women's Mining Team; we leave in April to compete in Australia and hopefully bring back the title. This past summer I attended UNR's field



camp (and was deathly afraid to go). I heard it was a life changing experience but didn't truly understand how it would change me. Field camp was the best life experience I have ever had. It was hard work, confusing at times, but was also the most fun I have ever had. I discovered that I really am an exploration geologist. I want to know what this rock can teach me as well as what it can provide for the world.

Lucky for me this is also my father's passion. I have the best mentor in the world-my own father. He makes sure I get great field experience and learn as much as I can and as quickly as I can. I am truly blessed to have the same passion as he and am thankful for the experiences I have had and look forward for those to come. I am excited to eventually take over the family business. I have experienced the ups and downs of the business while growing up and am excited to graduate and make this my career and life. After graduation I am going to work for a year and travel and then plan to attend graduate school in 2011, I am not sure where yet so I would love suggestions.

Upcoming Events

April 12 Northern Nevada Section SME monthly dinner meeting: Monday

Speaker: Deric Rust, his talk is titled "From Mine to Market: Precious Metal Refining at Johnson Matthey" (see abstract below)

Sponsor: AMEC Mining & Metals

Email <u>neville.rhoden@gmail.com</u> for reservation. Location: Circus-Circus (Mandalay Room in the Convention) Social Hour begins at 6:00PM Dinner starts at 6.45PM Technical Talk begins at 7:30 PM. Members \$22 Non Members \$25

As a primary gold and silver operation, Johnson Matthey (JM) refines precious metal from doré, bullion and secondary (recycled) scrap from all over North, Central and South America.

The key service provided by JM is that of material evaluation. It is for gold and silver content that each customer is paid, therefore the methods utilized to determine each lot's weight and content are of fundamental importance. The method used to determine a melt's true precious metal content is the Corrected Fire Assay but, the first and most important step for a successful assay is the sampling. The goal of sampling is to reach a state of complete homogeneity before a sample is taken. Most commonly at JM, samples are extracted directly from a melt using a vacuum tube. The contents of the sample are determined to the highest degree of accuracy possible, in a reasonable time period, and to within a tolerance agreed on between the refiner and the customer. This agreed tolerance is known as a splitting limit. Within this agreement the customer and refiner each assay one sample from the same melt. If the two results lie within this splitting limit, they are averaged together and used to calculate the precious metal content of the overall lot.

Based on the material's composition (gold, silver and base metal content) the refining route can vary. Each step shares a fundamental goal--to separate the precious metal from the other, undesirable metal.

Dore containing less than 25% gold and greater than 60% silver can be directly refined into 99.9% pure silver using the electro-refining cell devised by Moebus. The majority of gold bullion delivered to the gold refinery contains more than 1% Ag. As defined by the London Bullion Market Association, refined gold must carry a minimum assay of 99.50%. To reach this minimum level the Miller Process is employed.

Refined metal must be cast into a marketable form. Several products are cast and minted throughout the world. JM's product line includes small and large bars as well as grain. Silver is produced to either the ASTM standard or, the London Bullion Market Association (LBMA) standard. Gold is melted and cast into bars of varied weight and purity.

- June 25GSN Unplugged! No speaker, no microphone, no slide show, just mingling with members. Barbeque and beveragesFridayprovided for GSN Members organized and delivered by the GSN Board of Directors. Peavine Pavilion at Rancho San<br/>Rafael Park from 5 p.m. to 9 p.m.
- June 26 Golf Tournament:

Saturday

Place: Lakeridge Golf Course 1218 Golf Club Drive

Reno, Nevada 89519

Tee Times w/Cart: 10:16 am – 1:28 pm All golfers please be at the course by 1:00 pm to ensure a timely start. Shotgun Start: 1:30 pm Capped at 100 Golfers (Must be a GSN member or related to one.) \$35.00 fee includes golf and dinner. \$10.00 fee to be paid for dinner only (those not golfing). Dinner will be Tri-Tip; Tuscan Chicken; House Salad; Herb Roasted Red Potatoes; Baked Beans; Fresh Seasonal Vegetables; Triple Chocolate Decadence Cake; N.Y. Cheesecake, Raspberry Sauce Inspectorate will sponsor 10 students (waived for golf and dinner), Kathy Sestanovich and guest and Peg O'Malley (waived for dinner). \$10K "Hole In One" prize for Lakeridge's signature 15<sup>th</sup> Hole Island Green. Inspectorate would appreciate <u>any items</u> that companies would like to donate for the raffle. Inspectorate will sell raffle tickets for \$5.00 each or 5 for \$20.00. Buy as many as you like. Mulligans will be sold for \$5.00 each or 5 for \$20.00, no more than five Mulligan's per person. All Mulligan sales will go to the GSN Foundation. In Recognition Of Outstanding Contributions Towards Advancing Our Understanding Of The Geology of Nevada

#### Larry Garside

Is Hereby Named As An Honorary Member Of The Geological Society Of Nevada This 19th day of March 2010



I would like to nominate Larry Garside for consideration to Honorary Membership in the Geological Society of Nevada.

Larry has been involved in Nevada geology since his days in graduate school at the Mackay School of Mines in the late 1960s. He joined the faculty of the Nevada Bureau of Mines & Geology in 1968. Larry retired in July 2009 after 41 years of service to the geologic community in Nevada.

Larry has produced more than 100 geologic publications including papers and abstracts in professional journals, 3 - NBMG Bulletins, 6 - NBMG Reports, 5 – NBMG Special Publications, 15 – NBMG Geologic Maps, 11- Geothermal related publications and 17 – NBMG Open-File Reports. Some highlights of these publications include the geologic maps of the Camp Douglas and Olinghouse quadrangles, Bulletin 81, Radioactive Mineral Occurrences in Nevada, 1973 and Special Publication 19, Geologic and natural history tours of the Reno area, 2005. It is unlikely that there is a practicing field geologist in the state of Nevada that has not had numerous occasions to use the geologic maps that Larry has produced over his years of work at the Bureau.

Larry is an active member in GSN. In 1969-1970 Larry served as Secretary/Treasurer of the GSN Executive Committee and in 1973-1974 he served as Chairman. Larry has also contributed to many GSN publications including 7 articles in Symposium Proceeding and several contributions to GSN field trip guidebooks.

As impressive as Larry's publication record is, his most significant contribution to professionals in the geologic community and to the general public may be his openness and availability. Larry has always been willing to share his vast knowledge of the state's geology and familiarity with almost every part of it with anyone who calls, e-mails, or drops by to ask him anything on any topic related to Nevada geology. I believe his willingness to listen to other's ideas and share his knowledge has been his most significant contribution to the geologic community in Nevada.

For all these reasons, Larry Garside is deserving of consideration as an honorary member of GSN.

Thank you for your consideration.

Mario Desilets Assistant Geochemist Nevada Bureau of Mines and Geology

### GSN Winnemucca Chapter Meeting April 14, 2010

#### "Buffalo Valley Gold Mine: Porphyry Copper, Gold Skarn or Distal Disseminated Precious-Metal Deposit"

#### **Richard Reid**

Newmont Mining Corporation

The Buffalo Valley mine is a joint venture between Newmont Mining Corporation and Fairmile Gold Mining, Inc. Ongoing activities include feasibility studies, metallurgical testing, project permitting and development drilling.

The Buffalo Valley mine is underlain by sedimentary rocks of the Mississippian to Permian Havallah sequence. The deposit is structurally controlled along a northwesterly-striking anastomozing dike-filled structure. Most of the gold delineated to date is free and recoverable due to deep oxidation along late, steep, sheeted sericite-pyrite (± arsenopyrite) quartz veinlets and alteration that occur on margins of intermediate-composition porphyry dikes of Eocene age. Eocene granodiorite porphyry dikes and small stocks have contact metamorphosed the sediments into siliceous hornfels, biotite hornfels, calc-silicate hornfels and skarn/endoskarn.

Previous workers have classified the gold system as porphyry Cu-Mo mineralization, distal disseminated Ag-Au or gold skarn. Geophysics, deeper drilling and regional mineral zoning suggest a deep, buried porphyry Cu-Mo system. However, alteration and skarn assemblages are typical of many of the documented gold skarns. Mineralogic associations and geochemistry of the gold occurrence support classification as a distal disseminated Ag-Au system.





Activity Update

Mike Brady, February 2010 Nevada www.activityupdate.com

Kinross Gold Corp.(50%) announced that reserves at the Round Mountain Mine aggregate 157,284,000 tons @ 0.019 opt Au, 0.21 opt Ag proven+probable. (was 185,516,000 tons @ 0.018 opt Au proven+probable) 2009 Annual Report

Lincoln Mining Corp. announced that recent drill results at the Pine Grove Project include 67.1-71.7 meters @ 0.146 opt Au (64); 42.7-50.3 meters @ 0.062 opt Au (66); 36.6-42.7 meters @ 0.124 opt Au (68) and 47.3-50.3 meters @ 0.141 opt Au (85). (resource = 6,060,000 tons @ 0.053 opt Au inferred) M.J.: February 5

Atna Resources Ltd. announced that reserves at the Reward Project aggregate 7,147,700 tons @ 0.024 opt Au proven+probable. (was 6,400,000 tons @ 0.024 opt Au proven+probable) *Press Release:* February 22

Mosquito Consolidated Gold Mines Ltd. announced that it acquired an option to earn a 100% interest in the Pine Tree Property from Trans National Minerals Inc. for \$1,000,000, 5,000,000 shares and \$3,000,000 in exploration expenditures over 4 years. *Press Release:* February 27

Red Hill Energy Corp. and Prophecy Resources Ltd. announced that they would merge on a 0.92 share Red Hill/1.0 share Prophecy exchange basis. Red Hill's Red Lithium and Thor rare earth properties in Nevada will be spun-off into a new company. *N.M.:* February 1

AuEx Ventures Inc.(49%) announced that recent drill results at the Long Canyon Project include 92-115 feet @ 0.026 opt Au (LCM21); 42-61.5 feet @ 0.017 opt Au (LCM22); 167-192 feet @ 0.034 opt Au (LCM23) and 8.0-20.5 feet @ 0.152 opt Au (LCN24c). (resource = 9,680,000 tons @ 0.258 opt Au inferred) *Press Release:* February 1

Christopher James Gold Corp. announced that it acquired an option to earn a 51% interest in the Pasco Canyon Property from AuEx Ventures Inc. for \$3,000,000 in exploration expenditures over 4 years. *Press Release:* February 16

Christopher James Gold Corp. announced that it acquired an option to earn a 51% interest in the Sinter Property from AuEx Ventures Inc. for \$3,000,000 in exploration expenditures over 4 years. *Press Release:* February 23

Christopher James Gold Corp. announced that it acquired an option to earn a 51% interest in the Hayes Canyon Property from AuEx Ventures Inc. for \$3,000,000 in exploration expenditures over 5 years. *Press Release:* February 25

Bravo Alaska Inc. announced that it acquired an option to earn a 100% interest in the NSR Property from Agnico-Eagle Mines Ltd. for 300,000 shares and \$2,000,000 in exploration expenditures over 6 years. *Press Release:* February 4

Fronteer Development Group Inc. announced that recent drill results at the Northumberland Project include 148.13-156.06 meters @ 0.261 opt Au (FNU034); 122.23-126.8 meters @ 0.132 opt Au (NUG01); 182.42-183.64 meters @ 0.142 opt Au (NUG02) and 141.12-144.57 meters @ 0.254 opt Au (NUG04). (resource = 40,169,000 tons @ 0.056 opt Au, 0.23 opt Ag indicated) *Press Release:* February 18

Victoria Gold Corp. announced that based on recent drill results at the Cove/Helen Project, resources aggregate 683,400 tons @ 0.773 opt Au inferred. (no previous estimate) *Press Release:* February 4

Victoria Gold Corp. announced that recent drill results at the Santa Fe Project include 181.4-204.8 meters @ 0.059 opt Au (BH-4) and 206.3-249.9 meters @ 0.088 opt Au (BH-4). (resource = 1,718,000 tons @ 0.032 opt Au inferred) *Press Release:* February 25

Golden Phoenix Minerals Inc. announced that recent drill results at the Mineral Ridge Project include 29.38-34.44 meters @ 0.075 opt Au (MR09-031); 29.2-41.15 meters @ 0.106 opt Au (MR09-032); 37.19-44.32 meters @ 0.046 opt Au (MR09-034) and 16.76-27.74 meters @ 0.098 opt Au (MR09-035). (resource = 2,658,000 tons @ 0.079 opt Au indicated) *Press Release:* February 3

Golden Predator Royalty + Development Corp., Strategic Metals Ltd., Rockhaven Resources Ltd. and Platoro West Holdings Inc. announced that they agreed to pool various silverrich projects into a new company called Silver Predator Mines Inc. The properties include Taylor, Silver Bow and Treasure Hill in Nevada. (resource @ Taylor = 6,430,000 tons @ 2.31 opt Ag measured+indicated) *Press Release:* February 4

Sage Gold Inc. announced that it acquired an option to earn a 50% interest in the Borealis Property from Gryphon Gold Corp. for \$100,000 cash, \$1,000,000 in shares, \$9,000,000 in exploration expenditures and other financial considerations. (reserve = 16,650,000 tons @ 0.023 opt Au proven+probable) *Press Release:* February 24

Gold Summit Corp. announced that based on recent studies at the Monte Cristo Project, resources aggregate 3,829,600 tons @ 0.092 opt Au inferred. (was 2,115,700 tons @ 0.132 opt Au inferred) *Press Release:* February 3

Nevada Copper Corp. announced that recent drill results at the Pumpkin Hollow Project include 475.5-510.4 meters @ 3.2% Cu, 0.014 opt Au (NC09-05); 187-200.6 meters @ 0.44% Cu, 0.001 opt Au (NC09-08) and 178.6-183.9 meters @ 0.31% Cu, 0.001 opt Au (NC09-09). (resource = 203,000,000 tons @ 0.36% Cu inferred) *Press Release:* February 16

Rye Patch Gold Corp. announced that recent drill results at the Wilco Project include 62.5-68.6 meters @ 0.028 opt Au (WR-088); 94.5-97.5 meters @ 0.010 opt Au (WR-089); 143.3-147.8 meters @ 0.012 opt Au (WR-090) and 379.5-390.1 meters @ 0.030 opt Au (WR093). (resource @ Willard = 4,593,000 tons @ 0.023 opt Au measured) *Press Release:* February 23

# **APRIL BALLOT**

During the first or second week in April, a ballot will be sent to all GSN members that presents the proposed slate of officers for the Executive Committee for 2010/2011 and Class B directors of the Board of Directors for 2010/2013 effective June 1, 2010, which was approved by the Board during their February meeting. Those members, who receive their GSN Newsletter by email, will receive their ballot by email and those GSN members, who receive their Newsletter in the mail, will receive their ballot in the mail. The ballot must be returned to the GSN office within ten working days of the date it was distributed. Results of the election will be published in the May GSN Newsletter and announced during the GSN dinner meeting in May.



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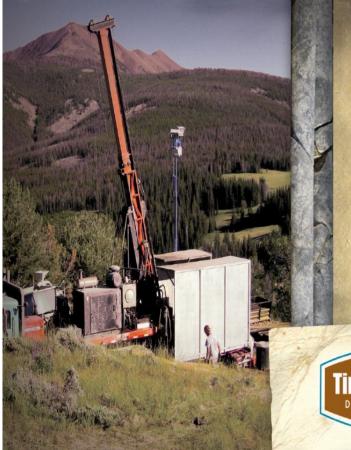
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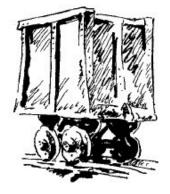


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