

# THE GOLD NUGGET

November 2015

## The Prez Sez by Jim Long



Last month, I promised to write about a little process called ‘tuning your sluice’. Now most of us who have been around for a while know about this stuff but we don’t always tell folks about it because it is kind of complicated in a very simple kind of way. Most of us learned this the hard way, by trial and error. But recently, Steven ‘Doc’ Vetter, wrote about it in the Mining Journal and actually put it in words that are easy to understand. The moment I read it, I knew exactly what he was talking about because I learned how to do it long ago the hard way and on my own. So let’s see if I can explain it as well as he did to those of you who haven’t read the September issue of the Mining Journal.

There is a fear factor involved when learning how to sluice (panning as well). You don’t want to lose any gold, so you start fooling around with everything you ever learned. And you lose gold anyway. Why..? You have to understand some really basic physics here. The general rule says you give an inch drop for every foot in length. And you run a bucket for every foot in length before you conduct a cleanup. But there is actually some leeway. Every time you hear of a General Rule, you can bet that there will be exceptions to the rule. First off, a sluice box operates with riffles of a general certain size. A high banker operates with a larger riffle in size and a more severe drop and water flow to accommodate the riffle size. Dredges have even larger riffles, yet have less drop, but run so even much faster. This is the way they are designed to be the most efficient. You don’t need to save all that black sand and you don’t need to add another 10 foot of sluice boxes to keep the black sand. This is where the ‘tuning’ comes into play. Many of you have heard me say that the gold is in only 5% of the black sand you have run. So don’t take the 95% of black sand that you have already run home with you because it probably doesn’t contain any gold. It just takes up space and isn’t needed. I will try to explain this.

You will always lose gold, no matter how hard you try not to. Please, for gosh sakes, just get over it and just accept it. The secret is to minimize that loss. It starts with testing your unit. Set it up and run it where you know you will be getting good gold or with a known controlled amount. Capture your tailings and pan it. If there is a lot of gold, you need to ‘tune’ the box by adjusting the drop and the water flow until you recover the least amount of gold. Forget about adding long toms, extra boxes, and all that stuff. Sounds simple doesn’t it. Well, it really is, if you just understand the physics involved. The riffle is the key. As you run your unit, watch it very closely. You will notice that the heavies, the black sands and gold, will begin to drop out behind the riffles. As you continue to feed the unit with added material, it reaches a point where the first riffle becomes saturated with material and will not hold any more. So the material moves down stream to the next riffle and the process continues until every riffle is maxed out. At that point, you must do a cleanup. That is why the general rule of a bucket of material for every foot in length of your unit comes into play, give or take a bucket or so. Thousands of tests have concluded that to be a general rule. That will result in less gold loss and more in your vial.

Because a lot of the gold that we all pursue is really small, this means that ‘tuning’ your unit is very important to your success. A big key is to focus on the proper exchange, meaning let all the non-gold bearing light material flow out over the riffles, or exchange zones, and let the gold stay in the box. Gosh, that sounds so simple, until you factor in another 15 or 20 things that can cause everything to go wrong. Such as, for one example, flat gold moves easier than rounded gold. Same principle applies to other materials. It pays to know what kind of material and gold you are going to be dealing with. In physics there is a process known as **hydraulic equivalence**, or **HE**. HE is very important..! I never knew there was a term for it until ‘Doc’ Vetter explained it. I knew what was happening, just didn’t know it was a known and definable physics process that had a name or how to explain it in scientific terms. This HE process dictates the movement and capture of gold. Larger gold will be found closer to the front, medium gold in the middle and smaller trace gold at the end. Gold in beach sands is a classic example of this and one that I experienced some 10 years ago in Alaska and again with several friends just this last summer, again in Alaska. This hydrodynamic profile explains why something as dense as gold can move more easily than a piece of hematite which is three times less dense. HE is a major factor in gold mining. In running beach sands, it is very difficult to capture fine gold specifically because of HE. HE is a large factor in commercial mining operations as well and is why you see hydraulic riffles in some of these operations. It is also why dredges have such a problem capturing fine gold. The water moves so fast that the fine gold just blows through. But if you slow down too much, your riffles will load up and the things that are HE will all battle to find the same place to drop out or hold up. And then you start losing gold, lots of gold.

The mistake that most miners make is not losing their fear of losing gold. So they start at the rule of one inch drop per foot length. They see gold in their tailings so they think it needs to slow down. The reality is that the gold may not have a place to settle out. So the first step to losing that fear factor is to lose the fear of fast water and high velocity exchange.



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So what to do...? Run it fast and lose all your gold. Yeah, I know, gasp....but if you are well tuned, your heavy gold is near the front, medium gold in the middle and trace gold at the end, and yes, even some trace gold in the tailings. Because of HE, you should now realize that running too slow is really bad. So run it too fast. If you skip this step, which so many of you actually do because of that fear factor thing, you will never really begin to understand how all this works. Run it steep and fast. Then start tuning your angle and flow speed down until your retention is good and your loss are negligible. Remember, you will lose some. It is the law of physics and HE. I have often been overheard to call this just giving a little back to grow for the next time.

'Doc' Vetter states that a common myth out there is that commercial ops know their equipment is tuned. But not true. He says that some are and some aren't. An operation that runs multiple plants, has an on-site geologist, daily testing, 12 hour rotating clean ups and such, would be an example of an ops that is probably properly fine tuned. But even they know that there is no 100% recovery when moving large amounts of material. The more you move, the more you will lose. Again, there is no 100% but I know all you guys would like it to be 100%. It is time to get over that thinking. However, you can fine tune your equipment to an acceptable 97 or 98%. This equates to running 5000 pieces of fine gold and losing 2%, or the equivalent of 100 pieces. Trust me, this is an acceptable loss and you are highly unlikely to do better than that.

Nobody else really does any better, no matter what they say. Today, it is estimated that if a miner can make a pennyweight of gold a day (that is about 1.5 grams), then they are having a great day. Most only average half a pennyweight or less. The data that 'Doc' used to determine this loss ratio was as follows: Carefully counted out 100 mesh gold in 1/2 grain = 769 pieces,  $769 \times 2 = 1538$  pieces in one full Grain of gold,  $1538 \times 15.43 = 23,731$  pieces of gold in one gram. And yet you want to cry over 100 lost tiny pieces? Seriously?!!!

This year at the Leadville Outing, Mike and Linda and I ran over 60 buckets of material and I found only 16 specks of gold in the lower stage of my 3 stage high banker, meaning there was darn little in the tailings. I am guessing my high banker is running at about 98% efficient. Just sayin!!!

By losing your fear through testing and experimentation, you will learn a lot about mining and how your equipment really works. I know that when I made these discoveries on my own some years back, it was pretty cool to realize I had figured something out that nobody had ever told me about and the realization of what had occurred and what it meant was very revealing and instrumental in my becoming confident as a sluicer and high banker as well as a panner. And that confidence made me lose all of that 'fear factor' stuff. Those of you who have seen me operate my pan, high banker or sluice box know that I don't worry too much about any of that small stuff. Just got too much dirt to dig and too much gold to get...and I'll get nearly all of it because I am very confident, have no fear, and I know what I am doing...!!! With practice and true understanding of the basic physics involving HE, you can too!

Anyway, that is the view from here and I wish you all Good Luck in your search...!. And until we meet again, keep your sunny sides up and may the bottoms of your pans turn bright with that treasured 'Yaller Gold'!

You may contact me at 303-452-6087 or at [jnslong945@msn.com](mailto:jnslong945@msn.com). Happy and safe prospecting to all!!

## The V.P. Corner by "Klondike" Mike



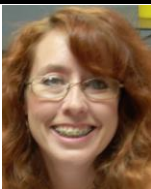
Well folks it's that time of year and we will have to deal with cabin fever. As for me, well I already have it. Hopefully you all got enough material to last for the winter. We had a lot of outings this last summer and we have one more on Nov. 7<sup>th</sup> at Majestic Park, bring your metal detectors. I hope everyone gets the chance to attend the Christmas party. We always have a great dinner and lots of fun.

On a different note I would like to let you know that this is my next to last column and I would like to thank everyone for reading my columns and all the stories I have brought to you.

Again I will be part of GPOR for a long time and if you need or have any questions just call me.

Thank you ALL! (KLONDIKE) Mike- 720-443-9545

## From the Treasurer/Secretary Ledger by Linda Luchtenburg



The November Meeting will feature a nine nugget give away totaling 10.3 grams of gold with the largest nugget being a beauty of 2.8 grams. We will also be selling tickets, as always, for the 'special nugget'. Don't miss your opportunity to purchase tickets for this nuggets in which your chances of winning are far



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better than the Colorado Lottery. We sell tickets each month for the regular gold nugget drawing which features 9 spectacular gold nuggets as well.

### Planned GPR Meeting Programs:

**Nov 18** The Club will conduct an extended break and have a “Members’ used/new equipment trade/swap/sale.” So be sure and bring any of the stuff you don’t want anymore and put it out. Be sure to bring a table covering as we do not want to scar/mar the table tops.

**Dec 16** This will be the “Members Only Christmas Dinner/Potluck”. Plan to arrive by 6pm and we will plan on eating about 6:15 to 6:30 and the evening program will commence at about 7pm.

### Where is ‘Prospector Pete’, the GPR Gold Miner?

“Pete” didn’t make it out in October as he was busy getting everything winterized, raking leaves and getting ready for the upcoming winter. But he does plan to make the next outing and see what he can find in the metal detecting hunt. Pete is going to borrow a Gold Bug II for the adventure and hopes to win a prize. See you there!



### Board Meeting Minutes From Oct 2015

X	James Long	X	Joe Shubert	X	Joe Fortunato		John Johnson
X	Mike Hurtado	X	Joe Johnston	X	Terry Weatherly	X	Brandon Luchtenburg
X	Linda Luchtenburg	X	Bobby Manning	X	Andy Doll		

**Quorum present?** Yes

**Call to Order:** By Pres. Long at 6:00 pm

**Reading and Approval of Minutes:** Yes Corrections: none.

Approved as read/corrected: Yes

**Treasurer’s Report:** Questions: None Approved: yes

**Correspondence:** 4 phone calls, 8 e-mails, 7 mailings

**Webmaster:** Total Hits 142351 Hits for last month 456.

**Committee Reports:** Elections nomination will be tonight. There are 2 Ken Barker Award nominations. No other reports due.

**Unfinished business:** Web site has shown no problems. LLC process still pending.

**New Business:** Tina and Tim Fleming must step down from store until April due to her new job which will be nights in the Everett Mine.

**Planned Outings for 2015:**

- Nov. 7 – Metal Detecting Outing, Majestic View Park, west of 80<sup>th</sup> & Wadsworth. 10a til 1p. Prizes to be awarded.
- Dec. 16 – Christmas Pot luck Dinner, no formal meeting. Dinner at 6p, program at 7p.

**From the Board:**

- Pres. Long discussed the recent Panning Demo at Arapaho County which went well.
- BM Bobby M. asked about Gold Mile Site on Ralston Creek as possible outing site. Will check it out.
- Tom Hill has a new source for gold, very cheap.
- BM Andy D. reported that the new web site has an analysis button which is very interesting and shows where people are from regionally, who check our site out.
- None of the other Board members had any items to discuss at this time.

**Announcements:** Next Board Meeting Nov. 18, 2015 at 6:00pm. Next General Meeting Nov. 18, 2015 at 7:00pm

**Tonight’s general meeting program:** We will be showing a video from the National Geographic Channel titled “America’s Money Vault”.

### QUESTION OF THE MONTH

What country is the largest market for gold jewelry in the world, using 746 tonnes of gold in 2010??

### 2015 GPR Board of Directors Members

#### President

James Long

#### Vice President

Mike Hurtado

#### Secretary/Treasurer

Linda Luchtenburg

#### 2 Year Board Members

Joe Johnston (2013)

Joe Shubert (2011)

#### 1 Year Board Members

Joe Fortunato

Terry Weatherly

Andy Doll

Brandon Luchtenburg

John Johnson

Bobby Manning



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**Adjournment:** Meeting stands adjourned at 6:27 pm.

### **General Meeting Minutes From Oct 2015**

1. Meeting was opened at 7:01 pm by **Pres. Long** with the Pledge of Allegiance.
2. **Pres. Long** then announced the evening program which will be a video presentation by the National Geographic Channel titled “America’s Money Vault”.
3. **Pres. Long** gave the Metals Report with gold at \$1166.70 an ounce, silver at \$15.68, platinum at \$1004.00 and palladium at \$675.00.
4. Web hits for last month were 456.
5. **Treasurer Linda Luchtenburg** reported that the Club remains very comfortable in the black. Report is available for review for anyone who wishes to see it. Also, be sure to buy tickets for the new ‘Special Nugget’ drawing that is now available. This is a solid piece of gold that weighs in at a half an ounce.
6. **Dan and Becki McConnell** who oversee the Membership Table reported that we had 77 members in attendance. There were also 4 guests also present. The meeting attendance was 81.
7. **Sue Clover** read the ‘Question of the Month’, which was **“What is the second largest gold mine in the world??”**
8. **Pres. Long** advised that there was time to enter items at the break for the ‘Finds of the Month’ table and everyone was encouraged to check them out and vote accordingly during the break. Remember, only one entry per person per category. Winners of the Finds of the Month for tonight will need to be saved for competition in November.
9. **John Johnson** announced the new Cache Clue #2. John has successfully hidden the new Cache and it is out there for you to find if you can decipher the clues. So put on your thinking caps and lets go find it.
10. **Tim and Tina Fleming** advised that they had lots of stuff in the **Club Store** for sale. We have introduced some bags of sand containing gold for members to buy. Members were encouraged to support the Club by buying Store products. Due to taking a new job, Tina and Tim will be unable to operate the Store until next April so we are looking for a volunteer to take over until then.
11. **Pres. Long** informed the membership of the upcoming Outings.
  - Nov. 7 – Metal detecting Hunt, Majestic Park west of 80<sup>th</sup> and Wadsworth, 10a til 1pm, prizes to be awarded.
  - Dec 16 – Christmas Pot Luck, NO General Meeting and no nuggets drawing. Dinner at 6p and program at 7p.
12. **Pres. Long** also informed the membership:
  - That the Panning Demos at the Arapaho County Fall Festival went very well. We greatly appreciate our volunteers who make these events possible.
  - Attendees were reminded to check the front table for new handouts and to vote for the finds of the month during the break.
  - There have been no issues with the new web site.
  - Pres. Long announced the new DVD titled “Ghosts of the West” was in for the 15 or so people who ordered them.
  - A reminder of the Pumpkin Carving Contest tonight and to cast votes at the break.
  - Also that Club elections are up.
  - **Wayne Schumacher** was nominated and agreed to run for Secretary/Treasurer.
  - **Kris Kafka** was nominated and agreed to run for the Board.
  - There were no nominations as yet for Vice President at this time. Pres. Long will run again for one more year.
  - We still will need 2 volunteers to lead the Panning Demos and the Prospecting Outings. If we don’t get that help, we may not have too many Outings for the next year.





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- The Board has nominated **Bill Chapman** and **Joe Fortunato** for consideration for the Ken Barker Award. Final voting will be conducted at the November Meeting.
  - President Long then spoke briefly of the MMAC organizing of officers in Oregon and Washington. The mining community continues to fight to protect our interests and right to prospect public property. There was nothing further from the floor.
13. **Pres. Long** announced the break at 8:18 pm. Meeting was called back to order at 8:37 pm.
  14. **Pres. Long** announced that there were no winners of the 'Question of the Month'. The answer was "**The Yanacocha Mine in Peru, owned and operated by Newmont Mining, a Colorado based company**"...!! This is the first time that we had no winners.
  15. **Pres. Long** announced the winners for the 'Finds of the Month'. Those were:
    - **Best Jewelry** – **Dan Cheer** with 3 silver rings that he found in S. Colorado near a local high school.
    - **Best Coin** – **Brian Henry** with a 1944 silver mercury dime that he found.
    - **Best Artifact** – **Joe Johnston** with an old 14k gold tea set he found in Eaton, Colo.
  16. **Pres. Long** concluded the evening with drawings for the numerous door prizes donated by the **GPR, and Pres. Long**, followed by drawings for the 9 gold nuggets. A reminder that holders of drawing tickets for the regular gold drawings who did not win and want to redeem those tickets may present them at the end of the Meeting and they will be reimbursed at .01 cents on the dollar, or they can choose to donate the tickets back to the Club. Those assisting in the drawings were **Chuck Cown** and **Linda Luchtenburg**.
  17. **Pres. Long** reminds the members that sometimes during the meetings, The President's time is overwhelmingly taken up by the many who wish to speak to him and he apologizes if anyone ever feels like he is unavailable. It is not his intent to be inaccessible and he encourages anyone with questions to contact him by e-mail or phone at any time. His e-mail and phone number are on the web site.
  18. **Pres. Long** thanked **Chris and Joe Kafka** and all those who contributed to the Refreshment Table. Any member is encouraged to chip in and add to the spread each month. This really helps the folks who run the table and those who volunteer up front each month. The Club appreciates the efforts that each and every one of you to make the refreshment table enjoyable.
  19. The scheduled **Program for November** will be a change and is a 'Used/new equipment sale/buy/swap/trade' event and folks with equipment need to bring a covering to protect the tables. There will also be a short video titled 'Mining in the West', produced by the Western museum of Mining and industry.
  20. Until next time, remember to prospect safely, live long and be grateful for that golden bounty from the stars, that gleaming magical miracle, called 'gold'!
  21. The Meeting was adjourned at 9:00 pm.

## Schedule of 2015 Planned Outings:

We are no longer printing the schedule in the newsletter. A copy is emailed each month to all so new members get an initial copy. From then on check the email copy, any changes from the last copy will be highlighted in yellow. No yellow no changes. So print it out and hang it up.

## Finds of the Month

October winners were as follows:

**Best Artifact** – **Joe Johnston** with an old 22k tea set he found in Eaton, Colo.

**Best Jewelry** – **Dan Cheer** with a silver and garnet band he found at a local high school.

**Best Coin** – **Brian Henry** with a 1944 mercury silver dime that he found.





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Great job guys and gals!!!!

Be sure and bring your treasures and finds in to share with the rest of the Club. Winners each month will have their name published each month in the Newsletter. There are six (6) categories to choose from when entering. Thanks to all who also submitted additional finds that were not judged to be winners. **In November, we will vote for the Find of the Year in each category, so be sure and bring your monthly wins for the final vote!!**

## Pumpkin Carving Contest

Congratulations to the three pumpkin carving winners. First place went to Rob Deschambault who submitted a carving depicting the Gold King Mine EPA spill, complete with an orange river running out of the mouth of the mine. Second place went to John Johnson who submitted a carving of a goblin. Third place went to Sue Lemieux who submitted a carving depicting prospector Pete in an aquarium. Also ran was Linda Luchtenburg with a pumpkin throwing up gold nugget candy. Well done to all our contributors. The top three received gold nuggets for their entries. Unfortunately, nobody got any photos that I am aware of.

## A Miner's Laugh

Prospector Pete decided his injuries from the accident were serious enough to take the trucking company (responsible for the accident) to court. In court the trucking company's fancy lawyer was questioning Prospector Pete. "Didn't you say, at the scene of the accident, 'I'm fine'?" said the lawyer.

Prospector Pete responded, "Well, I'll tell you what happened. I had just loaded my favorite mule Bessie into the....." "I didn't ask for any details," the lawyer interrupted, "just answer the question. Did you not say, at the scene of the accident, 'I'm fine!'" Prospector Pete said, "Well, I had just got Bessie into the trailer and I was driving down the road..." The lawyer interrupted again and said, "Judge, I am trying to establish the fact that, at the scene of the accident, this man told the Highway Patrolman on the scene that he was just fine. Now several weeks after the accident he is trying to sue my client. I believe he is a fraud. Please tell him to simply answer the question."

By this time the Judge was fairly interested in Prospector Pete's answer and said to the lawyer, "I'd like to hear what he has to say about his favorite mule Bessie."

Pete thanked the Judge and proceeded, "Well, as I was saying, I had just loaded Bessie, my favorite mule, into the trailer and was driving her down the highway to my mine when this huge semi-truck and trailer ran the stop sign and smacked my truck right in the side. I was thrown into one ditch and Bessie was thrown into the other. I was hurting real bad and didn't want to move. However, I could hear ole Bessie moaning and groaning. I knew she was in terrible shape just by her groans. Shortly after the accident a Highway Patrolman came on the scene. He could hear Bessie moaning and groaning so he went over to her. After he looked at her he took out his gun and shot her between the eyes. Then the Patrolman came across the road with his gun in his hand and looked at me. He said, "Your mule was in such bad shape I had to shoot her - how are you feeling? I told that Patrolman that I felt just fine, thank you!!!" *(Taken from the internet and revised just for all us 'old miners.')*11/15



**Saturday, November 28<sup>th</sup>, 2015, 10am and 1pm:** (Western Museum of Mining and Industry)

### *The Gold Assay Process: Magic or Chemistry?*

*Gold Assay Seminar!* Gold does not come out of the ground ready to wear. Join us to discover how ore is processed to extract gold. Hands-on learners of all ages will crush and classify ore as they learn the basics of gold ore assaying--determining the value of gold in the rock. This fast moving, interactive assay demonstration will overview the math, mechanics, and chemistry of this exciting process; in addition this event has become a detailed educational program with the support of experts from the museum and Pilot Mining. Explore Colorado's rich mining heritage from the gold rush days to the 21<sup>st</sup> century. Find out what's happening in mining today! Included in regular museum admission.



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### **Prospecting/Mining Notes:** (mostly from the Denver Post, Internet and other wire services)

**10-2-15 Arch Coal Expected to Make Payment:** Arch Coal Inc., which operates Colorado's West Elk Mine near Paonia and is in a fight with its senior lenders, plans to make an \$18.1 million interest payment owed to junior bondholders. The notes are due in 2020 and this payment represents is on the company's 7.25% notes that will be coming due.

**10-9-15 EPA Crew Triggers Spill:** The EPA announced that its work crews had triggered another spill above Crested Butte at the old Standard Mine, a current Superfund site. US Sen. Scott Tipton said the spill, which is reported to be several thousands of gallons, certainly raises questions about EPA procedures. After the Gold King incident, they told us things were going to be different, but apparently not. We have a challenge with the EPA in regard to their accountability, responsibility and ability to handle these matters responsibly. (*I would say the Senator hit it on the head...JJ*).

**10-10-15 EPA Now Says Crested Butte Spill Smaller:** The EPA now says that 500 to 600 gallons of sediment bearing water was released from a pond at a western Colorado Superfund site, not 2000 gallons as stated earlier. The agency was using a vacuum truck to transfer treated water when it picked up some sediment as well. The pond contains water from the inactive Standard Mine, a Superfund cleanup site above Crested Butte.

**10-12-15 Molycorp Selling Assets outside US:** Greenwood Village based Molycorp Inc., the bankrupt rare earth miner, has started selling assets outside the US as creditors press the company to increase its valuation. The company has been distributing 'pitch' books to companies in Asia and the US. A formal sale process may start as early as late October.

**10-29-15 Newmont Exceeds Estimates:** Greenwood Village based Newmont Mining Corp. reported earnings that beat analysts' estimates after the biggest US gold producer's output was higher than expected and costs were lower amid a global bullion rout.

### **What is Mining?**

**Waste:** Ore mills generate large amounts of waste, called tailings. For example, 99 tons of waste are generated per ton of copper, with even higher ratios in gold mining - because only 5.3 g of gold is extracted per ton of ore, a ton of gold produces 200,000 tons of tailings. These tailings can be toxic. Tailings, which are usually produced as a slurry, are most commonly dumped into ponds made from naturally existing valleys. These ponds are secured by impoundments (dams or embankment dams). In 2000 it was estimated that 3,500 tailings impoundments existed, and that every year, 2 to 5 major failures and 35 minor failures occurred; for example, in the Marcopper mining disaster, at least 2 million tons of tailings were released into a local river. Subaqueous tailings disposal is another option. The mining industry has argued that submarine tailings disposal (STD), which disposes of tailings in the sea, is ideal because it avoids the risks of tailings ponds; although the practice is illegal in the United States and Canada, it is used in the developing world.

The waste is classified as either sterile or mineralized, with acid generating potential, and the movement and storage of this material forms a major part of the mine planning process. When the mineralized package is determined by an economic cut-off, the near-grade mineralized waste is usually dumped separately with view to later treatment should market conditions change and it becomes economically viable. Civil engineering design parameters are used in the design of the waste dumps, and special conditions apply to high-rainfall areas and to seismically active areas. Waste dump designs must meet all regulatory requirements of the country in whose jurisdiction the mine is located. It is also common practice to rehabilitate dumps to an internationally acceptable standard, which in some cases means that higher standards than the local regulatory standard are applied.

**Renewable energy and mining:** Many mining sites are remote and not connected to the grid. Electricity is typically generated with diesel generators. Due to high transportation cost and theft during transportation the cost for generating electricity is normally high. Renewable energy applications are becoming an alternative or amendment. Both solar and wind power plants can contribute in saving diesel costs at mining sites. Renewable energy applications have been built at mining sites. Cost savings can reach up to 70%.

**Mining industry:** Mining exists in many countries. London is known as the capital of global "mining houses" such as the Rio Tinto Group, BHP Billiton, and Anglo American PLC. The US mining industry is also large, but it is dominated by the coal and other nonmetal minerals (e.g., rock and sand), and various regulations have worked to reduce the significance of mining in the United States. In 2007 the total market capitalization of mining companies was reported at US\$962 billion, which compares to a total global market cap of publicly traded companies of about US\$50 trillion in 2007. In 2002, Chile and Peru were reportedly the major mining



**The Bingham Canyon Mine, Kennecott Utah Copper**



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countries of South America. The mineral industry of Africa includes the mining of various minerals; it produces relatively little of the industrial metals copper, lead, and zinc, but according to one estimate has as a percent of world reserves 40% of gold, 60% of cobalt, and 90% of the world's platinum group metals. Mining in India is a significant part of that country's economy. In the developed world, mining in Australia, with BHP Billiton founded and headquartered in the country, and mining in Canada are particularly significant. For rare earth minerals mining, China reportedly controlled 95% of production in 2013. While exploration and mining can be conducted by individual entrepreneurs or small businesses, most modern-day mines are large enterprises requiring large amounts of capital to establish. Consequently, the mining sector of the industry is dominated by large, often multinational, companies, most of them publicly listed. It can be argued that what is referred to as the 'mining industry' is actually two sectors, one specializing in exploration for new resources and the other in mining those resources. The exploration sector is typically made up of individuals and small mineral resource companies, called "juniors", which are dependent on venture capital. The mining sector is made up of large multinational companies that are sustained by production from their mining operations. Various other industries such as equipment manufacture, environmental testing, and metallurgy analysis rely on, and support, the mining industry throughout the world. Canadian stock exchanges have a particular focus on mining companies, particularly junior exploration companies through Toronto's TSX Venture Exchange, Canadian companies raise capital on these exchanges and then invest the money in exploration globally. Some have argued that below juniors there exists a substantial sector of illegitimate companies primarily focused on manipulating stock prices. Mining operations can be grouped into five major categories in terms of their respective resources. These are oil and gas extraction, coal mining, metal ore mining, nonmetallic mineral mining and quarrying, and mining support activities. Of all of these categories, oil and gas extraction remains one of the largest in terms of its global economic importance. Prospecting potential mining sites, a vital area of concern for the mining industry, is now done using sophisticated new technologies such as seismic prospecting and remote-sensing satellites. Mining is heavily affected by the prices of the commodity minerals, which are often volatile. The 2000's commodities boom ("commodities super-cycle") increased the prices of commodities, driving aggressive mining. In addition, the price of gold increased dramatically in the 2000s, which increased gold mining; for example, one study found that conversion of forest in the Amazon increased six-fold from the period 2003–2006 (292 ha/yr) to the period 2006–2009 (1,915 ha/yr), largely due to artisanal mining.. *More to follow next month*

## Panning Demo at Arapaho County Fall Festival

On Oct. 17, the Club performed its last panning demo of the year at the 17 Mile House in Arapaho County. The Festival is growing each year and plays host to quite a few people who enjoy all the vendors and events that take place there. The 17 Mile House is located 17 miles from the corner of Colfax and Broadway in downtown Denver. In 1860, there were stop overs and Inns located at 4, 7 9 12, 17, and 20 miles out of Denver on the Cherokee Trail for travelers to rest, get a meal, and freighters to rest and feed their oxen and mules. The 17 Mile House was one such location. Today, the Cherokee Trail has been replaced by Speer Blvd., then Leetsdale drive, and finally, Parker Road. Folks familiar with Denver note that these three routes are not common to the general layout of Denver's streets as they are angled across rather than north south and east west. That is because they follow the course of Cherry Creek and Denver added its streets later. The property is part of Colorado history and was lived in continuously from 1860 until 1976 and is now on the National Registry of Historical Places. The Club conducted a gold panning demo for everyone to enjoy and many thanks go to Jack Meineke and Mike Hurtado, who managed to get things done.







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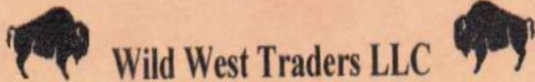
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**Contact the GPR President**

*(Layout Design Subject To Additional Cost)*



**Coming Announcements and Special Events for Dec 2015**

(WMMI - Western Museum of Mining & Industry, 225 North Gate Blvd. Colorado Springs, CO 80921 ([www.wmmi.org](http://www.wmmi.org)))

SUN	MON	TUE	WED	THU	FRI	SAT
		1	2	3	4 Newsletter Advert/Article Copy Deadline	5
6	7 Pearl Harbor Day	8	9	10	11	12
13	14	15	16 GPR Club Meeting Annual Potluck Dinner	17	18	19
20	21	22 Winter Begins	23	24	25 CHRISTMAS	26
27	28 WMMI Gold Assay Seminar	29	30	31 Official End of WWII New Year's Eve		