Place: **Union Hall**
Meyers Street
Next to Campus Life
In Kettle Falls

THE PANORAMA GEM & MINERAL CLUB

Time: 7:00 PM
Third Tuesday
Each Month
(Jan.-Nov.)

The Panorama Prospector

May 2005

Meeting Minutes

April 19, 2005
Luci Bristow

President Johnie Pitman called the meeting to order at 7:00 PM. We discussed our Rock Show. We had two dealers sign up that were unable to attend. We fortunately were able to fill one of the spaces. The second dealer could not attend due to illness. It was moved by Chuck Prentice and seconded by Bob Bristow to refund the $192.00 Show Fee. The motion passed. Everyone who attended felt it was a really good rock show!

We were reminded of Rock Shows coming up. North Idaho – June 4 and 5, 2005. One- half of the proceeds from this show will go to Meals on Wheels. They have 23 dealers signed up. The show will be open from 9 AM – 6 PM on June 4th and 10AM – 4 PM on June 5th. There is also a show in Madras, OR – June 29, 2005.

President Johnie reminded us that it was again time for Scholarships. He will be collecting the applications by May 1. We need to have the Trustees look them over and pick a candidate by May 18, 2005.

Bev Bockman introduced Deb Ellis who gave a presentation on silver metal clay and a talk on making silver leaves. The talk was very informative and fun. Several of us would like to try this technique. Thank you Deb!

Rex and Dianne presented some ideas for Field Trips. They were: Cleveland Mine; Jim McGraff Quarry (trip was set for April 23, 2005); Fruitland; Adams Mountain; Deer Trail Monitor

We welcomed the following new members: George Diamantif, Mike Latapie, Frank Long, Mike Clay, and Jerry (Jaroslav) and Vanita Novak. We are glad to have you with us!

Joyce Dawson and Bob Adams will provide cookies for next time!

See you there!

Rock Show

Joe Barreca

The club held its annual rock show on April 1st and 2nd at the Fort Colville Grange. It was well-organized and successful, if you judge by the number of vendors who want to return next year. We sold out of the 375 rock grab bags and gave away a lot of other prizes. Grand prize was a rock salt lamp created by Bill and Sylvia Allen of Sago Naturals.

We had some help setting up from students at Colville High School. We even had the school marching band playing while we unloaded the display cases provided graciously by the Rock Rollers Club in Spokane.

The club had displays in the basement, and the vendors took over the main floor. Club members provided parts of their collections for the displays. We had about 20 of them and they were wonderful. We got some press coverage in the Statesman Examiner, and people learned gold panning from Dave Paquette out front.

Joyce Dawson and her displays

Rex Barrans put up his map of 44 rock and mineral collecting sites in the Tri-Counties area. It included samples of all the rocks. I promise to do more with that information later. Rex ran the wheel of fortune too.

Amethyst and Malachite from Keith and Ann Berger

A Real Gold Mine
Part 5 – Drilling Into Richer Pockets

Bob Bristow

My brother first noticed the direction of the grains in the rock in the vicinity of the deposit. A few feet beyond where I was core drilling was a dome in the granite. East of that point the rock foliations

Figure 1. Drilling for the Adit Entrance

curved up to the west and on the other side they curved up to the east. He wondered if the uplift had occurred when the sulfides were being injected and if so, if the source was at the center of the anticline. That center was about 12 to 15 feet below the surface of the logging road. We climbed down below the road but couldn't see anything without undermining the road.

I decided to core-drill directly down into the center of the arch. I poured a concrete pad, set up the drill, and went to work. The first 10 feet or so went smoothly. (Smooth is a relative term. Core-drilling never really goes smoothly!) Chalcopyrite was scattered all through it. Enough to make mining pay, but not enough to get rich. The drill then speeded up and plenty of sulfides came out with the wash water. The drill punched through this very rich zone for three or four feet before I shut it down to see what was in the core barrel. I anxiously pulled the rod out and found there was a lot of gold-carrying chalcopyrite but again, most of the sulfides went out with the drill water. That was OK. The ground up rock coming out assayed very rich. A cubic yard contained about 1-1/2 ounces of gold and 1000 pounds of copper!

I now wanted to see how far the rich zone would continue. However, when I reinserted the rod, it only went down about 10 feet. I thought a rock must have moved into the hole and I could simply drill on through it. I did drill about a foot, but the water turned clear and the drill stopped advancing. This meant that the drill bit had centered over a small rock and it was spinning on the end of the bit. I tried to pull the offending rock out with a core-puller but to no avail. This was bad but the core-drilling textbook had told how to handle it. I headed down the mountain and purchased some five-minute concrete. I rolled up an old notebook back into a tube about one inch in diameter and wrapped tape around it. I then rolled a piece of aluminum foil and slid it inside the tube. After sealing one end, I poured cement in the other end and dropped the "bomb" down the drill hole. I then used a drill rod to smash the cement into the surrounding rocks.

After 30 minutes, I set up the drill and tried to go through the loose rock. I got about two inches further. I then tried dropping two bombs down at once. Still about two inches. I soon ran out of the five-pounds of five-minute cement and decided there must be a better way. The next weekend, I used the pneumatic drill with a large sheet of plastic to catch the cuttings. It only took about 15 minutes to drill down to the 12-foot limit of my drill rod ("drill steel," as the miners call them). This hole was about four feet from the core-drill hole and was in solid granite. The hole was very clean and I could lift the 12-foot drill rod out with one hand. When I moved over near the core-drill hole, it was another story. The two, four, and six-foot rods came out OK but the eight-footer had to be jacked out using the rod-puller I had built. The twelve-foot rod was much worse. The loose rocks fell onto the flared drill head and refused to let it go up. It had taken about 20-minutes to go down and an hour and a half to pull up!

The drill cuttings assayed very well and I wanted to see what was really down there. Since it was only about 12 feet to the beginning of the very rich zone, why not blast out an adit and simply walk

down? This meant another POO (Plan of Operation) to be approved by the Forest Service. This should have been very simple. It wasn't. It was 15 months before I finally got it signed. The adit couldn't be steeper than 45 degrees so someone wouldn't be hurt falling in. There had to be a re-bar gate at the entrance so that people could see in but not enter. (They might hit their heads!) I had to explain what I would do with the tailings. (It was good ore and would go on the ore pile.) The adit was to be drilled in a road cut, but an antiquities expert had to visit the site to make sure no Indians were buried in the solid rock. A $500 bond was required in case the Forest Service had to make repairs. In addition, a full environmental impact statement was required.

A year and three months later, I was ready to drill the adit. I could only get one week off from work, but thought that should be enough time. It would take two days to move all equipment into place and another two days to tear it down. That left five days to drill the adit. I rented a powder magazine so that I wouldn't have to get a new batch of powder each morning and destroy what was left at the end of the day. (You can't keep powder overnight without a licensed magazine.) This was almost a disaster. The trailer I rented squatted down to within one inch of the axle when the magazine was dropped on it. I drove very, very slowly from Snohomish to the mine!

A friend, Mark Needlemann, went with me to help. Since we were drilling down at about 45 degrees, I thought my pneumatic drill would bite right in. Wrong! We had to drill smaller holes in the rock above the drill and anchor a pulley and ropes to help hold the heavy drill in line and place enough load on the drill bit that it would chatter and not just blow air. Figure 1 shows Mark pulling on the rope while I push. The 12 four-foot deep holes should have taken about two hours. They took two days. Two sticks of 40% gelatin dynamite were placed in each hole. In addition to the adit holes, I drilled one through the core drill pad and placed a single stick in there. The primers were arranged in parallel so that if one went, they all would. Or so I was taught! I used the battery in my Chevy pickup to fire the primers. A "Chevy battery" has steel instead of lead over the terminals. This can severely limit the voltage. In this case, only five of the eight primers fired. This still made a reasonable hole, but the unfired primers and six sticks of dynamite were now scattered all through the muck. (In this case, muck is the proper term. People use "muck" for all sorts of things, but it really means the debris dislodged in a mine by a dynamite blast.) Figure 2 shows the blast. (If you look closely, you can see the center of the old drill pad just below the tops of the trees.)

After locating the unfired primers and setting them aside to be destroyed later, I gathered up all of

Figure 2. Blasting the Adit Entrance

the dynamite gelatin I could find and stuffed it in a crack at the back of the new adit. After inserting a new primer in it, I detonated it and prepared to move the muck. Figure 3 is a picture of the adit before mucking. Mucking consisted of hand loading the rocks scattered in the road into the back of the pickup. The first load got a little too heavy! After throwing rocks in for about a half hour, I glanced at the rear tires. Even with 90-psi air pressure, they were about half flat. Luckily, the ore storage pile was only about 200 yards up the road.

I now had just two days to repeat the drill and muck operation at least two more times. I got up well before dawn the next morning to start another round of drilling. Just before reaching the mine, one of the brakes started squealing. I pulled off one wheel and found that the lining was almost completely worn off.

Figure 3. The Start of the Adit

There was a device to warn the driver when the linings were getting worn down, but it hadn't made a peep. Since I had a two-ton powder magazine and a large compressor to move down a very steep mountain, I couldn't afford anything but near perfect brakes. I rushed into the city of Everett and found a shop that said, "Sure, we can get right to it!" I left with my friend to do more work at the mine and returned in

mid-afternoon. The shop informed me that since the pickup was not a standard 3/4-ton, they had been forced to order the shoes but they were now ready to install them. Since the installation should take only a few minutes, we returned in about an hour. Sorry, a regular customer had a problem and they had put the brake job aside. I finally got the pickup just before quitting time. By the time we got back to camp, it was getting dark. I now had to make a decision. The next round would require fewer holes, but they would take longer to drill. The drill would be inside the adit and could only be supported by resting it on a plank as shown in Figure 1. There simply was no way to finish the adit in the time allowed. I was disappointed to, once again, decide to give up on getting down to the rich ore.

While the adit was a disappointment, the overall result was great. I had a good start on the adit and there was always next year. But more important, I had discovered very rich ore and proven that the whole area could be profitably mined. The next step was to make plans for a two-man crew to mine and process enough ore for at least one 100-ton shipment of concentrate per summer.

Next time: The adventure of starting a small mine.

The Jim McGraff Quarry Field Trip

By Joe Barreca

On Saturday, April 23rd, the club held it's first field trip of the year. Rex and Mable Barrans arranged permission for us to visit the Jim McGraff Quarry near Waitts Lake. Famous for it's translucent green serpentine in various colors, the Jim McGraff offers a wide variety of collectable rocks in a small area. Most of them are some form of magnesium and silica. The most common rock available is the serpentine, (shown in the picture on the right as an exposed vein.)

Sara shows off green serpentine.

A turquoise-colored blue stain in the rock above this green vein of serpentine caused a lot of excitement for the more ambitious collectors. The pickers, found plenty of interesting specimens in the tailings. The quarry also contained tremolite, an ingredient in talc. It contains actinolite, a variety of asbestos. The unique long thin crystals (also a mineral containing magnesium, $Ca_2(Mg, Fe)_5Si_8O_{22}(OH)_2$) form in metamorphic rocks (such as schists) and in altered igneous rocks. There is an outcrop of igneous rock here, perhaps a far northern extent of the Columbia basalt flows, that contributed to the formation of these minerals in the silica-rich faults of the quartzite belt.

Perhaps the most interesting rock found in the quarry is ophiolite. We only found a couple small boulders of it in the quarry. Ophiolite (o'-phi-o-lite') refers to a group of igneous rocks ranging from spilite and basalt to gabbro and peridotite, including rocks rich in serpentine, chlorite, epidote, and albite derived from them by later metamorphism, whose origin is associated with an early phase of the development of a geosyncline, (a large downward movement of the tectonic crust.) This area was once the western coast of what is today North America. The serpentine forms small green octahedral crystals less than a quarter inch wide. They are like two tiny green pyramids joined on their bases. The insides of the crystals are a darker green. It is not as hard as agate, but can be cut and polished to some extent.

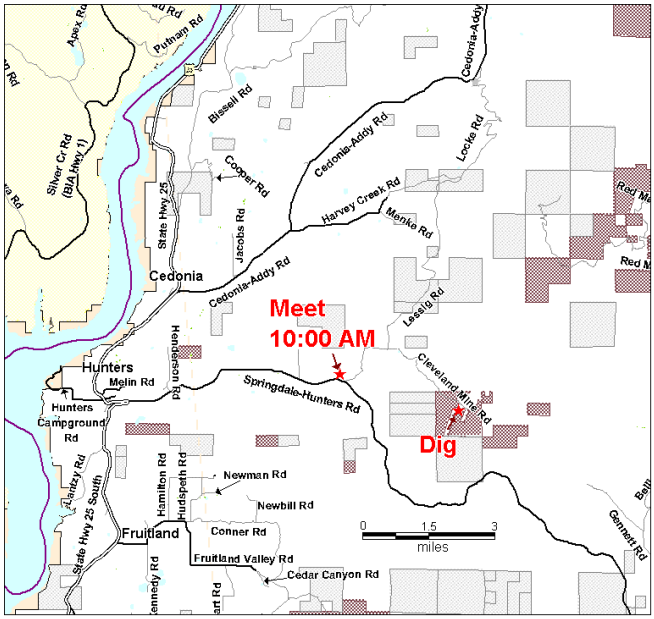
Ophiolite: green crystals in a brown matrix.

About 30 people went on this trip. We brought home buckets of rocks, made friends and generally had a great time. So we want everyone to know about the next planned field trip, the Cleveland Mine.

Serpentine

Our Next Field Trip: The Cleveland Mine

The next scheduled field trip for the club will be to the Cleveland Mine. This is actually a group of copper mines east of Hunters Washington. The trip will be on Sunday May 15th. We want to gather at Lessig Road, where it joins the Springdale Hunters road at 10:00 AM.



This is an interesting mineral-rich area. But there are some things to be aware of. Due to the ARSENIC in the mine none of the water in the area of the mine is safe to drink! That includes the creek . For this reason please do not bring your pets or children. Also bring water for drinking and washing your hands before eating your lunch.

Rex says this may be going to extremes but there are warning signs along the creek and he has no idea how toxic it is.

There is also some equipment at one of the mines and we will not be going into that area.

SAPPHIRES and TSAVORITES

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