



JOE LOMBARDO  
Governor

STATE OF NEVADA  
COMMISSION ON MINERAL RESOURCES  
**DIVISION OF MINERALS**

400 W. King Street, Suite 106  
Carson City, Nevada 89703  
(775) 684-7040 • Fax (775) 684-7052  
<http://minerals.nv.gov/>



MICHAEL VISHER  
Administrator

Las Vegas Office: 375 E. Warm Springs Rd. #205, Las Vegas, NV 89119  
Phone: (702) 486-4343; Fax: (702) 486-4345

Thursday, August 10, 2023

10:00 A.M.

Nevada Legislative Building  
401 S. Carson St.  
Room 3138  
Carson City, NV 89701

MINUTES

**CALL TO ORDER**

10:07 AM by Josh Nordquist

Commission	Staff	Public
Josh Nordquist	Mike Visher	John Spring
Art Henderson	Rebecca Tims	Sam Spearing
Stephanie Hallinan	Carol Shelton	
Bob Felder	Garrett Wake	
Randy Griffin	Robert Ghiglieri	
Nigel Bain		
Mary Korpi	Daniel Nubel, DAG (via Zoom)	

**Roll Call**

All commissioners were present.

**PLEDGE OF ALLEGIANCE**

Led by Josh Nordquist

**COMMENTS BY THE GENERAL PUBLIC**

There were no comments by the general public.

**I. AGENDA**

**A. Approval of the Agenda**

**Josh Nordquist:** There will be an agenda change. The FY23- FY25 financial agenda item (V.B.) will be moved to be heard first upon returning from the lunch recess.

**Motion to approve the modified agenda made by: Mary Korpi**

**Seconded by: Stephanie Hallinan**

**Unanimously approved.**

II. **New Business**

A. **Interview selected candidates for the Administrator position.**

Chair Nordquist invited Rob Ghiglieri to come forward for his interview and asked John Spring to wait outside of the room until called in for his interview.

**Josh Nordquist:** What are the main challenges for the State of Nevada in mineral and geothermal, and how do you see this role being involved with those in the future?

**Rob Ghiglieri:** There has been a large amount of discussion at the federal level about critical minerals and production. The permitting reform is going to affect not only the State of Nevada but the US in general for the minerals industry. Recently I read through new proposed rules for NEPA reform as I was sitting in public comment for IFC yesterday. It is a fairly large reform, but these reforms that are being proposed are going to affect the interaction with personnel, tribal liaisons, and the general public. The NEPA reform moving forward, is looking to be more of a protection category, rather than a multiple use. The role moving forward for the minerals industry is going to be the left hand saying we want to have more rules and regulations, we're going to have more public interaction with tribal groups, which is great. But the right hand saying we need more critical mineral production. So, are we going to focus on just critical minerals only and ignore the rest of the production across the US? We have still yet to see that. This role is going to be key with the Division and what it has done since I have been here. It is the ability for us to be able to communicate. Not only to communicate with the public at large, but also with state and local legislators as well as at the federal level. Having the ability to reach out to our representation within the State of Nevada and interactions with the Interstate Mining Compact Commission or IOGCC to be able to effectively communicate the need, desire, and benefit of mineral production here in Nevada, as well as the US. To add to that, just the opportunity of many events that we attend. In New Orleans at the Interstate Mining Compact Commission, it was meeting with Dr. Feldgus, who oversees the mining law reform group, and having the ability to sit down and talk with him and explain the differences. Having the state perspective is very important.

**Stephanie Hallinan:** The Division is required to work closely with the Department of Conservation and Natural Resources and interface with the Governor's office and Legislature. What skills or experience do you have to facilitate that working relationship?

**Rob Ghiglieri:** Over my last 10 plus years at the Division, constant collaboration on behalf of the AML program was important to build the program. The relationship with DCNR is strong. I was sending emails to DCNR last night to collaborate on different efforts. I was with a DCNR employee all day on Tuesday for a reclamation bond pool trip. Having an open dialogue with our partner agencies is very important. We all know there is expertise in different groups, and we are a very fortunate Division as we are not as siloed as others. But having that vision from an outside perspective of looking in helps bring those groups together. The things the Division does to create these types of relationships is like the reclamation award tour. We are pulling DCNR, Wildlife, BLM, and

the Forest Service all together saying hey let's go look at these reclamation projects and at that point when you are traveling with people you get the opportunity to communicate, discuss, and build relationships there. As for the Legislature, we have our interactions with them. One key thing with them that I have learned over the years is as much as they are trying to do what their goals and agendas are, they are people as well. Being able to approach them in just the aspect of what are you guys looking to do? What is your goal? What can we do to help educate you about this? How do we meet the common good for what we are both trying to accomplish? Partnership is vital and will be key in moving forward in the future.

**Bob Felder:** Why didn't you apply the first go around for the administrator position? What are your long-term goals for the next 5-10 years?

**Rob Ghiglieri:** I did apply after the announcement was extended. At that point, there were a lot of conversations, and this is going back to April, I had been working in our role at the Division with the Interstate Mining Compact Commission (IMCC) and the National Association of Abandoned Mine Land Programs (NAAMLPL) on the development of the National Hardrock AML Program policy. I was approached by the Office of Environmental Policy and Compliance Director to ask if I was interested in a job there. I was offered that job last week, I declined it. It was lots of lengthy conversations, it was not something I went and looked for, it came to me. It was conversations with my wife and I and a lot of internal thinking of where I want to be. In my opinion, I saw the biggest way for me to make the most impact was here at the Division. I had the goal for the last ten years to be the administrator long term. I wanted to make sure I had all my T's crossed and my I's dotted and to make sure the decision I was making was the one I wanted to stick to long-term. To follow up to your second question, the ten-year mark, in the past, I have been told that the administrator position is a minimum five-year position. I have also seen other administrators that were here for ten years or even longer. I see this as an opportunity for me to continue to develop and build the agency. There are a lot of moving parts with the Division right now and the only one I don't see growing at the moment is oil and gas just because of a lot of different aspects going on but the abandoned mines program is going to grow. We are seeing geothermal planning starting to grow, and to be able to be involved from where we have been in the past to where I think this agency is going to end up in the future is something I plan to be a part of for a long time.

**Randy Griffin:** What made you major in geology?

**Rob Ghiglieri:** I started my college education as a mechanical engineer and realized that I did not like electronics. So, I floated for a little while and I was doing secondary education of natural science. I love science and I wanted to do something in the science-related field. So, I thought I could become a teacher and figure it out long-term. I did a semester abroad in New Zealand and was fortunate enough to take a geology/geography mixed course and came back to UNR and switched. I switched the beginning of my fourth year. I kind of crammed taking two and three hundred-level classes at the same time. But the idea for me in geology is the understanding of where materials come from, was a big aspect. But also, being able to look at this history of the

earth and everything to do with outside. I am a very avid outdoors man. I am travelling tonight to Eureka for a hunt. Being outside is a big part of it. It's the general sense of understanding the history of where things come from is what got me into geology.

**Mary Korpi:** We hear in the State the difficulties of filling jobs, the Division is now going to be in a position of two open spots. Any insights how we can incentivize to bring in more staff?

**Rob Ghiglieri:** This isn't just the State or the Division, it's everywhere. Being able to incentivize is going to be difficult and it always has been for the agency. I was working in exploration, and what made me want to come to the State was family reasons. I wanted to be home with my wife, that is what drove me to work for the State. We encourage growth and development. We don't want to bring in someone who is, say for example, a reclamation bond writer who is told, here is what you're going to do, and you don't have time to go to conferences, you don't have time for training. Being able to encourage the growth and people's development, to let them explore and having the ability to look at different aspects. Having relationships with other state agencies is helpful to pull possible candidates from other states that might want to relocate.

**Josh Nordquist:** You're aware of the administrator position, what do you see as your biggest challenge in taking on this role and what would be your approach to solve it?

**Rob Ghiglieri:** Mike and I had a lot of long conversations about me applying for this position. One of the things is, would it be ideal if I had another three to five years of experience? Yes, but unless you make the step forward to the position, you will never get the true experience that you need for that position. To answer your question, the biggest thing for me is that I have a very strong grasp of the industry, I have a very strong grasp of what is going on. But I don't have two plus decades of knowledge of the personnel or the people. Being able to attend the conferences where you are interacting with people and being able to meet with commissions like this who are experts in their fields and to rely on those resources so if there is something that comes up, I have you guys. The biggest thing for me is to acknowledge that I have big shoes to fill.

**Josh Nordquist:** How would you work to solve that?

**Rob Ghiglieri:** Continue reaching out to experts in the field, to other agencies, other partners, expose myself to new situations and listen. I have been fortunate throughout my career to start with a small exploration company and got to work with an unbelievable geologist. Being able to walk around with Radu and if I could comprehend ten percent of what he was telling me that day, I would be much better off the next day. Listening to what has happened, learning from previous experiences, but as well as taking a different approach. I am a younger person who does have a different perspective on some things, and I am seeing more of the younger youth and their perspective, and I can relate to it more, but it doesn't mean one way or the other is right, but it has the ability to see multiple perspectives.

**Randy Griffin:** What would you consider if you were going to name the top highlights of your career, what projects would be the pinnacle of success for you? What would be the worst project you were associated with?

**Rob:** The best project is not an individual project itself. But it would be the presentation with our federal partners, we are getting more money every single year. They want to give us more money, they want to hand us the work. The reason why they want to do that is because we have proven success in getting the work done efficiently and effectively. Our AML program is one of the most well-developed physical safety programs in the nation. For individual projects, I still would love to talk about Virginia City. By the way, we did win the NAAMLPL award for that project, which will be received in Chicago. But that was one of those sites where it was a National Historic Landmark. If you talk to the archeologist, it's you're not going to be able to get anything done there, we got it through with a no adverse effect through SHPO on that project. The largest wildlife-compatible closure in the US, no adverse effect. So, being able to show the resources to develop the relationships to prove to other agencies that we are deserving of getting this work, and that they want to give us the money to do the additional work, I think is the biggest success for me. For the second question, the biggest failure I see is, I am struggling with that one. If you don't mind, can we go to another question?

**Nigel Bain:** Can you think back over the last 10 years and pick out a failure and explain what went wrong, what the challenges were, and what you figured out about yourself?

**Rob Ghiglieri:** I look at it in this way, this is an internal project at the Division and not so much with the partners, it's not a failure, it's a work in progress. We thought we were going to be transitioning to a new data collection format five years ago. We've kind of been limping along with the system that isn't the most ideal and we have not got to the point to pull the trigger to move forward because allocating the time and energy to properly do the research internally, myself, to where I am going to staff instead of saying well this is why we don't want to move away from it. I wasn't doing the background as much as I should have been to get us to move forward. It's easy to stay with as-is when that is just the norm. But as-is sometimes is great, but in this case, we know we need to move forward and so now we are behind the curveball in some respects to where we could have been doing more but since we haven't made that transition, we've gone a long way but there is more we could have done. There is more technology that we could have incorporated to help streamline some of these processes to reduce the errors in the program. As well as the bond pool database, Mike gave that to me and said it needs to be updated a couple years ago, and it is currently down, and I am tracking it all on paper because we need to get caught up on other aspects before we launch the new one. That should have been done two years ago, but that is something that I didn't prioritize properly, and I am now paying for it with additional hours of tracking paper instead of being able to look up a quick search.

**Stephanie Hallinan:** Now that you identified that situation, what is your plan in place?

**Rob Ghiglieri:** Yes, we met last week. Again, it's back on me. I need to go through a certain aspect of it and update the entire system. I need to work on prioritizing my schedule to make that the focus for me. Once that is done, then we will be able to launch and test. That is an aspect that comes back to I've got everything in place from everybody else and it's coming back to me. I sent an invite to myself for next week to not forget about it.

This is one of those projects where the bond pool is a big aspect of the Division but truly, it's less than a quarter of the time that I am focusing on. There are a lot of other aspects that we are dealing with.

**Bob Felder:** In my opinion, leadership and management are skills that are often born into a person, as administrator you will have more high-level direct reports. Do you have any experience in supervision, performance appraisals, things like that?

**Rob:** The way the Division is laid out is the administrator is the top person and everyone else is below on a flat system. There is always a step from the staff for the most part, if the deputy can't solve it then it goes to the administrator. My goal over the last three years is trying to avoid things having to go to Mike, if it could be resolved before it got to him that would be the ideal situation. There have been plenty of times where I went to him because I didn't feel comfortable, or I needed help with a decision, or the decision wasn't mine to make. In an official capacity, no, I am not the supervisor of all of them and I haven't done evals. I am currently taking a certified public manager course. This is exactly what this course covers, how to approach every person individually. As we know everyone is not managed the same way. It is very different by personalities, some people need congratulations, some people do not want congratulations. Some people need, here is your task, let me know if you need something, some people need to be walked through the process. I would be able to sit down with everybody individually and have a lot more frequent update. Being able to give positive feedback and the ability to walk them in the right direction would be my focus.

**Randy Griffin:** How many people are in the division, not counting interns?

**Rob Ghiglieri:** Currently 11 FTE's, hopefully 12 in October. Relatively small. I like to use Mike's phrase "small but mighty" I would like to see another agency of 11 people to get as much done as we do. Which is also a direct reflection of you guys and the way you get us going in the right direction.

**Stephanie Hallinan:** If you are granted this role, what is the one thing you would change?

**Rob Ghiglieri:** When Richard Perry was here, we had monthly staff meetings. Staff meeting overkill. When Mike came in, we reduced them drastically. I would go back to an increased number of staff meetings to make sure everybody is on the same page and to make sure we all have the same goals and objectives. There has been a decent amount of turnover for the Division recently. We have Peter (Eng) who started in May who has basically lived in the field since he started with us, and he doesn't yet fully understand what happens in the office. Dustin (Holcomb), who is also new in the fluid minerals position. Carol (Shelton) has been with us for less than a year. So, getting everyone on the same page and make sure there is clear communication. Also letting them know what my goals and objectives are. I am not going to go into this position and flip everything. What has been laid out in front of me has been fantastic and great to work off and has been a fantastic foundation.

**Nigel Bain:** Can you tell us what is the mission of the Division of Minerals?

**Rob Ghiglieri:** To promote and enhance the responsible exploration for and production of minerals, oil, gas, and geothermal energy that are economically beneficial to the State. I know I am missing part of this, as well as the

physical safety of abandoned mine programs. I know there was a slight change recently, and the reason why I remember looking at it, I am picturing it on my computer screen, we have to put it in every work program.

**Nigel Bain:** Do we need to do more to promote the production of minerals?

**Rob Ghiglieri:** Education is key. Promoting is difficult, right? Who are we promoting it to? If we are going to conferences where we are preaching to the choir, then we are not going to get the effective message out. But also, being able to go to those conferences and be able to answer the questions to the people that don't quite know what we are doing is also very effective at the same time. What Carol and others do at the Division for education and outreach is educating the youth and promoting critical minerals. There is always additional room for education and promotion, but it needs to be in the right venues, and the goals and what Mike and Rich have outlined for the Vegas field specialist position. There is always more that needs to be done. We are seeing as a nation, a better understanding of where minerals come from, which I think is a benefit, but also out of sight out of mind is a big problem that we see everywhere.

**Art Henderson:** Do you agree with the regulations in place for oil and gas in the State of Nevada, and are you comfortable to defend them as part of your duties as administrator?

**Rob Ghiglieri:** Yes, I do feel confident in the regulations we have in place. They are very strong regulations. For the production and exploration for oil and gas we have the hydraulic fracturing regulations that are very strong, but they are not restricting it to where in New York, you just can't do it. We have good regulations. One of the biggest aspects that is going to be drastically affecting Nevada is exploration and production of the current administration is the ten-fold increase of fees for leasing oil and gas on federal lands. That is going to drastically affect the number of new leases in the state. That is going to decrease activity. Let's say there is something that changes in D.C. in two years, and it goes the other direction, I think the regulations we have right now for oil and gas are strong. We are referencing those for what, in my opinion, I think may be the higher priority of looking at long term administrative code for geothermal. With newer technologies coming in in geothermal, using oil and gas technology and knowledge, I think that will be a larger focus at first, looking at what people are trying to do with oil across the US and having that ability to go to IOGCC, helps bring up the ability to where if there are changes going forward, we can review our regulations and make sure that we would be able to adapt to that, if needed.

**Art Henderson:** The US is still the number one producer of oil in the world, a lot of things that come from oil are necessary for a long period of time. In the Great Basin we have reserves that are able to be produced if the price is higher, it's too low now of course. I just don't want us to lose sight of oil and gas in the future. Thank you.

**Josh Nordquist:** Speaking of the regulations, can you describe for us your current level of knowledge and confidence in the regulations that NDOM currently oversees?

**Rob Ghiglieri:** Current regulations that NDOM oversees and the main aspects that I can read to you are Abandoned Mines (Chapter) 513 and the Commission. Over the last few years, with the change of my role to

deputy administrator, the change of oil and gas regulations and the bond pool (519A) and geothermal as well as the new dissolved minerals. Those are regulations that I am currently tracking and following, and I have a strong understanding of them. I will admit, I am not as strong as Mike, but I do have the knowledge on it. I went to the TopCorp training last year and that got me more comfortable in understanding the language in those. That is something that I have been working on over the last few years. Am I an expert in those ones? Those specific oil, gas, and geothermal? No, but am I comfortable enough to where I can talk to a legislator about them? Yes, I am. I don't consider myself an expert as somebody in the Mike Visser or Richard Perry level who did it for years. It's going to be studying and asking questions to you guys, asking questions to previous administrators, making sure that those are meeting the goals and regulations and that knowing this going into it. The oil, gas, and fluid mineral aspect of the Division is we have a new fluid minerals manager and a potential new administrator. That would be a very high focus early on in the program.

**Randy Griffin:** How would you measure progress? Do you have any ideas whether you are doing any good or not out in the field?

**Rob Ghiglieri:** For the abandoned mines program, it's not so much the number of presentations, but more of are we invited back? Did we do a good enough job? The demand of more is one way to measure, because we are wanted to come back.

**Stephanie Hallinan:** The current strategy and outreach for the political side, knowing where things are headed, is there a strategy on the approach of getting out ahead of this in the political framework?

**Rob Ghiglieri:** Creating the ability for us to be the resource for answering questions. When a legislator has a question on the minerals industry, they think of the Division of Minerals. But it's not just making ourselves known now, right? We did great presentations and Mike led them at the legislature. This is who we are, this is what we do, and if you have questions on anything about mining to come out and talk to us, and it worked. There was a bill on geothermal that was brought to Mike, and they had the ability to have the conversations and work through that process. But that was that session, we are now in an interim where we are going to be dealing with different aspects and potentially other studies. As well as the next session, and continuously reaching out. I have a great relationship with Congresswoman Lee's staffer, but he may move on and so you then have to re-develop that relationship and make sure that we want to be known as a resource for these types of questions.

**Josh Nordquist:** A few years down the road with you as the administrator, how would you measure success in your role in the department?

**Rob Ghiglieri:** Continued development and growth in the abandoned mines program, growth in geothermal, and pending oil prices, potential growth in oil. As well as growth in the ability to be known as the point of contact. Having us be that name to where we are the resource. That would be the success for the Division long term. To really continue to move forward in the progress and not take any steps back.



**Bob Felder:** The open data site that Lucia created is good, I am not sure if it is getting a lot of use in industry. Can you address that and things you might think to do to make it more widely used and accepted in the industry?

**Rob Ghiglieri:** I've had some thoughts on this, just yesterday, we were dealing with the BLM here at the Sierra Front office and the Navy FRTC boundary came up, and they said, we can't share that data outside of the BLM. Well, here is the link to our open data site that has all the data, and they were caught off guard that that was there. They didn't understand that that was there. Lucia does do multiple presentations every year showing this, but I do think there are other avenues that we can use, different venues potentially. As well as do some better advertisement.

**Mary Korpi:** There is a lot on the plate, do you see anything between the commissioners and the administrator that can lead to the continued success of the department?

**Rob Ghiglieri:** I'm a big proponent on just because that's the way it's been done doesn't mean it needs to be the way to go forward. I do see the potential for leaning on the commission, in my role I don't see if Mike is having the conversation with you or not. So, it's hard for me to say increasing or decreasing that, but I do see increase in my perspective in the ability to rely on and that is the point of the commission to be able to advise. I do see that as a potential increase in communication with the commissioners. There is also the potential to get the commissioners to help advertise the open data site, and to have the commissioners to possibly attend some of these conferences. There are opportunities out there and that is something we would have to explore together.

**Randy Griffin:** John Spring listed you as a reference, what is your relationship with Mr. Spring, and what can you tell us about his strong and weak points?

**Rob Ghiglieri:** I encouraged John to apply for this position. The reason behind that is because at that point when Mike announced his retirement, was the week after the application was due for the other position I was looking at. I met him at the mineral education workshop, he is a great geologist, very programmatic, and very diplomatic. I would be happy to work for John, he's a good person, he is very honest, he knows the industry. The one difference between us, is that he doesn't have that State experience that I have.

**Randy Griffin:** Is it because you were considering that other position?

**Rob Ghiglieri:** At that time, yes.

**Josh Nordquist:** More questions are welcome, but we are approaching an hour. Thank you for your time, Rob.

**Rob Ghiglieri:** Sounds good. Thank you.

Chair Nordquist allowed Rob to leave the room and invited John Spring forward.

**Josh Nordquist:** John, welcome. Thank you for waiting. I will kick things off. Are you aware of the agency's mission? What do you see as the role of NDOM in the State of Nevada?

**John Spring:** As far as my understanding, it comes down to one, carrying out the policies set out by yourselves, also educating the public on mineral resources for the State of Nevada, the permitting and monitoring regulation, with respect to drilling natural gas, oil, and geothermal. Finally, the abandoned mine lands. Carrying out the final reclamation of historic mining across the State of Nevada.

**Randy Griffin:** You listed a college in New Zealand, for about a year. What did you do there?

**John Spring:** One of my bachelor's degrees is in Natural Science, I thought I was going to be a science teacher my entire life and so when I first left university, I worked for a year internationally down at John McGlashan. It's a college but it's a secondary school. Then I followed up with that in a year in Wisconsin.

**Randy Griffin:** You taught natural science down there, is that right?

**John Spring:** It was a mix, I selected to do some of my student teaching internationally and got linked up with the school down there. I had some chemistry; science classes and I think biology too.

**Randy Griffin:** These were freshmen or sophomore people?

**John Spring:** Years 6-13. It was middle and high school science.

**Nigel Bain:** It was a high school just like here.

**Stephanie Hallinan:** What particular knowledge, skills, or abilities do you have that will help your success in this position?

**John Spring:** I spent the last 15 years working in the precious metals and hard rock industry, that experience has been here in Nevada and in Alaska. That obviously brings a wealth of technical experience in that aspect. I do feel that I am uniquely positioned that I have exposure to classical professional education training as well, I am quite passionate about teaching. Not to mention one of the reasons why I have been involved with mining for the last fifteen years is because I have really grown to be quite passionate about the industry and being a bit of a history nut, hooked me all in one swoop.

**Josh Nordquist:** Considering this move from private to public position, what is at the heart of this particular move?

**John Spring:** One of the drivers for me, I have always been driven to leave some kind of a lasting impact either on my geologists or fellow co-workers and the work that we do. Being a personal strong advocate for mining, I feel that coming to the public side coming to the Division will give me a larger audience and the ability to do some positive, lasting effects in the community. I feel like the Division right now is in a unique time because the global eye is really focused on the transition into renewable energies and for once, mining actually has a voice and people are more cognizant of it. I feel that effective communication gives us a rare opportunity that we can really try to change the public narrative on mining.

**Bob Felder:** It looks like you have worked for several companies, in any of those jobs did you have interactions with regulatory bodies, state and federal governments?

**John Spring:** I have worked on projects through all stages of the mine cycle. The majority of my interactions have been with MSHA, since they are the safety governing body that works directly with the mining industry. However, in one of my last assignments with Nevada Gold Mines, I was the lead geo scientist in the Cortez District. As we started to bring and move our Robertson project into a feasibility stage and you know, gain some experience with respect to the permitting aspects of it, and all the stage gates that we have to move the project through.

**Mary Korpi:** The staff within the Division is 11, you've got some experience with leadership of teams, this will be a more diversified group, how do you see yourself in that role?

**John Spring:** One thing I learned with teaching, everyone within your group brings their own unique set of experience and skill sets. When I work and interact in environments like that, I recognize that everyone has a voice and an opinion and has a right to be heard, so I spend a lot of time listening to everyone's viewpoint and then I share my internal opinion and experience as well. I couple that with a motivational approach where, I mean there are two different ways, you can either be authoritarian in nature where you are trying to mandate and controlling how things are going to go, or you can do it through inspiration and motivation, and I have noticed that with teams, if you align around the common goal or whatever the objective is that it gives something the entire team is participating in and it's just a lot more effective.

**Josh Nordquist:** Coming into the role, what do you see as your biggest challenges to adapt to it and be successful?

**John Spring:** For one, I will have to go back to my middle school and dust off my parliamentary procedure. Without a doubt, the transition to the public sector, I think one always has to be cognizant of the environment and the audience and it is important to, I shouldn't say that this is like a challenge for me, but it will definitely be front and foremost because the relationships that are built with various agencies and individuals, those relationships are critical to get the job done.

**Randy Griffin:** What made you choose geology as your occupation?

**John Spring:** I grew up in a small farming town in Wisconsin, my father never got to go to any kind of tertiary schooling, so he was adamant that all the kids got an opportunity to do so. I was a science and math nerd. I took everything I possibly could. I graduated with over 100 credits. I thought that's what I was always going to do, I went to the registrar's office to fill out my paper for graduation and was told I had a lot of geology credits. It's one of those classes that after you take, you start to fall in love with it. The amount of outdoor work that goes along with it. They said in fact, you have taken every course in the catalog. They asked if I wanted a degree in geology. So, I said what do I do? They slid a form across and said fill this out and it's \$25. One of the reasons I am passionate about geology, it is multi-faceted as it uses chemistry, physics, biology so it kind of combined everything that I individually loved anyway. Plus, being in the field is the best part. You're lucky I didn't show up in my mine reflective gear because that's generally how I go around.

**Art Henderson:** I want to know your opinion on hydraulic fracking, there is a lot of positive and negative depending on which way your persuasion is, and I would like to hear your view on hydraulic fracking.

**John Spring:** When it comes to natural gas and oil, fracking is a technology that has brought about a very bipolar opinion. Personally, I feel for the productivity of the wells, the benefits are very clear. Like any tool in the toolbox, its application needs to be evaluated on a case-by-case basis. In other words, depending on the host and what the situation is and the regional structures and things that are going on, the need may be required for those projects to move forward. In large, I am in support of it. I do feel that due to the heightened level of concern though that it is very important to have forward communication with the public.

**Art Henderson:** In the oil, gas, and geothermal exploration and production, what is the best way to protect the waters of the State of Nevada?

**John Spring:** It really comes down to a case-by-case basis. When it comes to the watershed itself as a whole, and waters and making sure that there is a good understanding in sensitive areas. That approach, fracking and those areas may be too sensitive to carry out such activities. Therefore, when it comes to that it comes down to the particular project and where it's at. That's critical, both with the mining and also with drilling like that. It is our license to operate, if you will, because we are the stewards of the environment, so therefore, we do a disservice to ourselves if we don't do an appropriate job when it comes to managing those types of activities and deciding where it's going to happen and where it's not.

**Nigel Bain:** Can you tell us about a failure that you had and how you overcame it and what you learned about how to conduct yourself from that challenge?

**John Spring:** One in particular, you get into resource estimation and the overall conversion of ounces whether it's from indicated or measured, the case may be that it's very important for some of the non-technical management to understand the true amount of time that is required when it comes to converting those ounces to make sure that the resource is ready to put in to production. I was working for a company in Alaska, as the mine life was getting shorter, there was an unrealistic expectation that in the funding for the drilling they thought it could be a little bit more piece meal and they would get the results more rapidly and so I at the time was a senior geologist and I allowed the chief to have the direct interaction with the management and I felt like it was important to follow chain of command and assume that that communication was taking place. It did lead to some hiccups in the project, and I've found from that that it comes down to those relationships. To make sure that you have those relationships that everyone can feel like that no matter what their level in the project is, that they can have a communication about it and make sure that everybody is in the loop. So that we can manage expectations because again everybody is going to have a slightly different ways that they are looking at the project.

**Josh Nordquist:** Can you describe your current knowledge of the regulations that the department oversees?

**John Spring:** Specifics wise?

**Josh Nordquist:** Just a description of where you are at with your knowledge in mining.

**John Spring:** With the respect to mining, I believe this comes down to just dissolved minerals and so not necessarily in the hard rock aspects.

**Josh Nordquist:** Maybe as a follow-up and just a description of where you are at with your knowledge of the other areas that we oversee such as oil gas and geothermal.

**John Spring:** With respect to all the drilling activities for oil and gas and geothermal, that's my understanding is the Divisions largest impact because they're responsible for granting and approval of the permits as well as the routine inspection and follow up with all of those activities to make sure that the policies are correct.

**Bob Felder:** Imagine yourself as the newly appointed administrator for the Division of Minerals, what would you hope to accomplish in the first year, and then say in the next 5 years?

**John Spring:** Reflecting back to my comment before on how it is kind of a pivotal time with the interest and all eyes being on Nevada, there needs to be a bit of effort placed and Nevada will naturally fall into the leading curve of lithium exploration for the US. It's definitely very important that we have our ducks in a row because the policies that we put into place for that exploration largely will be copied or duplicated across the US. Nevada has been the mining hub for a very long time for the US. Nevada is unique in the aspects of the lithium deposits coupled with the geothermal as well. That's more in that five year, I guess that's kind of a short term and long term projective but in that first year I think it's going to be critical to start wrapping around what our strategy and message is going to be.

**Bob Felder:** As a follow up question, your experience is in the mining side, so in the first year what would be your strategy for getting up to speed with oil, gas and geothermal?

**John:** Absolutely, and that would definitely fall within that first six-to-twelve-month period. I have worked with Ormat with respect to the Cortez Canyon for sharing data sets and helping their work along there. However though, for the oil and gas, that's definitely going to be a, I have no experience in oil and gas so there is some technical overlap with respect to the drilling aspects, however, largely that would be an area that I would have to draw off my experience.

**Stephanie Hallinan:** The Division is required to work with DCNR and the legislature, what skills do you have in the political realm?

**John Spring:** Outside of MSHA, it would be limited to our interactions with the BLM and some of our projects on the public lands, but outside of that, that would be the extent.

**Randy Griffin:** What made you give up teaching? It looks like you had about three years' worth of teaching. Was it the money or you wanted to relocate to Nevada?

**John Spring:** I always had a travel adventure bug in me, it started off with I had 2 bachelor's degrees, I felt what's the point of having one that I had no practical experience in. After teaching for a few years, I had an opportunity to join Newmont Mining and to come out West and start working as a geologist. It really revolved

around you know someone getting a degree and then they never use it and go a different path, and so I thought it would be a good move to gain some practical experience in it. Again, I found that as far as the balance of science and working with teams and that coupled with how it can take me around the globe doing work, just fascinated me and scratched that itch.

**Randy Griffin:** What is an economic geologist versus a run of the mill geologist?

**John Spring:** An economic geologist focuses on whatever the commodity may be, once it's assembled into a quantity that's actually economically viable. It just comes down to concentrations of the mineral and that assessment of what bodies are economically.

**Bob Felder:** The big companies often put people through various kinds of soft-skills training, have you had any of that in your experience?

**John Spring:** No, I have not. If you look at my progression, it's been a fairly rapid progression. Part of that, in my opinion, is due to my teaching experience and just that natural ability to interact effectively. You are correct in that the larger companies do provide that kind of training and I have some of my fellow geologists and my future leaders of tomorrow that we do roll those through programs because leadership is not an easy skill for some to pick up. So far it appears that I have been effective in leading teams and guiding them to objectives.

**Bob Felder:** Can you give us an example where you encountered a conflict or disagreement and how you managed through it?

**John Spring:** I was working for Klondex here in northern Nevada at their Fire Creek project, I worked for them approximately two years. Hecla then acquired them, so my role within the company essentially stayed the same but just a change in ownership. When there is a change in management, there is a change in philosophy and culture. Sometimes it comes from a lack of full understanding of the project. When Hecla first came into the fold, they were trying to really understand those assets. There was a little bit of, I don't know if I would necessarily say conflict, but definitely a little bit of strife and perhaps frustration as they had a little bit of buyer's remorse. They came in and they had full access to our complete data catalog. Our geologic records, everything. One of the shortcomings for Klondex was that we were starting to oxidize our ore body, it wasn't gone but it was starting to deplete and we found that some of the additional resources was a transitional ore body to moderate refractory and Hecla did not possess any processing facilities for that ore type so then the way to monetize your assets and learning to interact with the management team and move that project forward even past that point for a number of years was definitely a struggle, at first. But once they saw the site team was very competent and that a lot of it stemmed from a barrier of communication.

**Josh Nordquist:** As the administrator for the department, a few years down the road in this role, how do you measure your success in this role?

**John Spring:** Since this is a public entity, I think one always has to, hopefully the Division is here and thriving in a time of fiscal crisis I think a lot of the government starts to look for the parts that they can make redundant or

remove so, hopefully the need and requirement and the roles that the team and the projects that we oversee, if that number goes up, essentially expanding our value to the State of Nevada. That would be a measure of success, for sure. On a personal or management note, when it comes to the team, albeit it a smaller team, the tenure amongst your team and what is the attrition rate.

**Josh Nordquist:** Any other questions for John at this point? No, John thank you very much.

**John Spring:** Absolutely. Thank you, commissioners.

**B. Discussion and possible selection of a new Administrator**

The Commission discussed the merits of each candidate.

**Motion to make Robert Ghiglieri the Administrator of NDOM, and if approved, he will meet with Chairman Nordquist to come to terms with his compensation was made by:** Arthur Henderson

**Seconded by:** Nigel Bain

**Unanimously approved.**

Following a brief recess, the two candidates rejoined the meeting. The Commission thanked them both for their time and for their thoughtful responses to their questions and let them know that they had chosen Rob Ghiglieri as the new Administrator.

**III. Recess Until 1:15 PM**

**V. Old Business**

**B. Financial Update FY23 to FY25 (Taken out of order as previously approved)**

Administrator Visher presented the FY23-FY25 financial projections, see attachment.

**Josh Nordquist:** Just for clarity, we are now in FY24?

**Mike Visher:** Correct. We have not yet closed FY23. That happens in another week or so. We are waiting for some final numbers to come through that have not officially come through. But yes, we are already in FY24.

**Josh Nordquist:** Also, Mike, just to be clear, section 9 does not include any of the proposals we are hearing today?

**Mike Visher:** Correct

**Josh Nordquist:** Any other questions, commissioners? If there are none will move on to the next agenda item.

**IV. New Business Continued**

**A. Rock, Mineral, and Geology Display Proposal**

Josh Bonde, Director of the State Museum, provided a presentation for a proposal for a new rock, mineral, and geology display at the Nevada State Museum, see attached.

**Art Henderson:** Garrett did a lot of work on those other museums, will this require the division to provide the same amount of work, or will you take the full load on yourself?

**Josh Bonde:** What we are looking at doing is utilizing work that has already been done by NDOM and rebuilding another one of those stand-alone exhibits, so I think a lot of the heavy lifting has already been done. We would like to see some tweaks such as tailoring that exhibit to what we would need in that space, which I don't think would be major edits. We have some nit-picky stuff at the museum like fonts, and things like that that we would work with you guys on.

**Nigel Bain:** This is the museum just up the street?

**Josh Bonde:** Yes

**Josh Nordquist:** Maybe I'll pass the question to Garrett for a moment. Are we aware of any suppliers that we have used before, and do we have any known concerns producing the same exhibit again?

**Garrett Wake:** The builder of the last exhibit has expressed interest in doing these as they come about. We told them this was something that hopefully we could continue to do. As far as I know, I spoke to him a year ago or so and he has expressed interest. The cost of goods is increasing so it may cost a little different. But there are no issues that I know of with the builder.

**Josh Nordquist:** Have we reached out for a quote?

**Garrett Wake:** No, we have not.

**Stephanie Hallinan:** What is the time schedule?

**Josh Bonde:** There is currently no timeframe. We are hoping to have our first phase this fiscal year, or at least close to having it done this fiscal year. Within a year would be great.

**Nigel Bain:** The modern mining industry wants to cast the old mining away, and kids have to understand modern mining is full of new technology. From my point of view, we would support you, but we need to get the right message out.

**Josh Bonde:** I was on the Board of Directors for the Geological Society in Nevada for over a decade, and I am aware of all the different aspects that come to bear on the modern mining industry. I think future collaborations with NDOM would be important.

**Josh Nordquist:** I don't think we have any geothermal related exhibits at this time?

**Josh Bonde:** There is lots of space for a geothermal exhibit.

**Randy Griffin:** We have had a number of these in my tenure here, one thing that pops into my mind is when we are trying to get people interested in it that we would post the starting salaries. Why not post the salaries for mining engineer on these exhibits.

**Josh Bonde:** I agree with you. Like I said, I grew up in Fallon. I think the earning potential for these fields should be highlighted, especially in our discovery lab where the kids can come in and do their hands on activities. These are viable careers. Even in the hallway as part of the big exhibit, absolutely.



**Randy Griffin**: Mike and I went to the McCaw School of Mines, and it was a great exhibit, and I haven't seen any of these things.

**Josh Bonde**: Me and Garrett both sit on the McCaw Board so we will work on that.

**Josh Nordquist**: I recognize that the goals of the Museum align with the goals of the Division, are we asking for a specific request today?

**Mike Visser**: For clarification, there is a request letter included in your packet.

**Josh Bonde**: The request is for a stand-alone exhibit similar in model to the two others this Division has had built, and for a hands-on activity in the discovery lab. Project not to exceed \$80k.

**Josh Nordquist**: Does this \$80k align with what this exhibit project cost in the past?

**Garrett Wake**: In the past it was about \$50k but they are asking for an additional item in the discovery lab. I also want to remind the Commission that this would have to go through the contracting process again, just like we have in the past. So, if that additional portion for the same contract we would have to bid for that and apply for it just like we did the last time.

**Josh Bonde**: Just to clarify, the \$80k not to exceed amount is taking in to account the rising cost of goods over the last few years.

**Stephanie Hallinan**: If we approve this, is there any type of marketing campaign after the exhibit is completed?

**Josh Bonde**: Yes, we have a marketing team through the Department of Tourism, and they are very keen on highlighting and advertising any new exhibit. They also have contacts with all the periodicals around the State of Nevada and with the major newspapers. They would do a press release and some sort of marketing event.

**Mike Visser**: As a member, I'll also add that there is a newsletter as well. I think what we were kind of looking at is the ability to move forward to get the bids and see what the increase was from where we were before, knowing that it is going to be more than \$50k and with any additional monies that are available from the \$80k cap that we would then put together a scope of work that would meet the other two bullets which is the activity in the lab and then any seed for what might be used in the hallway.

**Rob Ghiglieri**: If this were to be approved today, when it comes to the bids, what we would be authorizing is up to \$80k. If we did not receive a bid in that range, then we would have to come back to the commission. But, if the bids did come underneath, it would be under the state contracting policies for us to select a bid. At that point you're saying for this it would be yes, we do want to move forward up to \$80k, if it's more than \$80k, then we would have to come back to the Commission and ask for additional funding or find additional partners to be able to cover the rest of that money. With that, I was the one that put that \$80k figure out there and that was because of inflation as well as this is going to be mirroring the other exhibits that were built, but we are giving a little bit more of a Nevada twist on the geology, so there is a little bit of tweaks that we want to look at.

**Art Henderson**: I would like to make a motion to approve the proposal with the cost not to exceed \$80k and to be managed by the Division.

**Josh Nordquist:** Art, can you clarify what you mean by managed by the Division?

**Art Henderson:** The Division will manage the bidding process and will report back to the commission at a later meeting to give us progress of how the bids fell within the budget.

**Seconded by: Nigel Bain**

**Unanimously Approved**

**B. Proposal to fund purchase of new equipment at the Mining Center of Excellence**

Sam Spearing provided a presentation for the proposal to fund the purchase of new equipment at the Mining Center of Excellence, see attached.

**Bob Felder:** Sam, I assume you are reaching out to other stakeholders, how is that going? Are the mining companies being supportive?

**Sam Spearing:** We have approached Nevada Gold Mines and they wanted to know what we needed to fix up the building and make it fit for purpose. We are putting in a grant for a full-time mining instructor. As it stands now, we have about twenty scholarships for the dual credits. But we haven't worked on a lot of the building because we didn't have a firm price for it. The other thing was that we didn't have the MOU between UNR and GBC which was signed again towards the end of June.

**Bob Felder:** So, the question was more about your sources of funding, are you succeeding in bringing in money or are we a major part of that, or how does that look?

**Sam Spearing:** As it stands at the moment, you are the largest one. We have got the meeting September 1 and we have had another meeting with NGM. Our president is talking to NGM, and we have the Governor visiting us on Tuesday where we will be showcasing what we are doing. Part of the problem has been moving very, very quickly. Without having, to be honest, all our ducks in a row, we've got those in a row now, so we are moving forward with that. But as it stands now, absolutely, NDOM is our biggest sponsor to date.

**Bob Felder:** One last question, with the MOU with UNR, you get 100% of the funds, is that right?

**Sam Spearing:** Yes.

**Josh Nordquist:** Sam, what is the schedule with the current items that we are funding?

**Sam Spearing:** We will have a schedule by this month because we have only just formed our steering committee with UNR and because that funding was approved for the Mining Center of Excellence but through UNR there are some hoops to go through to be transferring things and organizing that.

**Rob Ghiglieri:** To update the Commission on the previous approved items, I had a conversation with Annie Huhta just the other day and yesterday was the IFC meeting and we are good to push that funding from FY23 to FY24, so we are good to use that in FY24. The wait to purchase the items were for the many things Sam Spearing had said.

**Stephanie Hallinan:** I live in Spring Creek and work with Kinross. When you mention addressing the parents in the area, do you have a plan? What is the plan to catch some of those folks that enrollment does increase for the program. What is the plan for actually getting the word out more?

**Sam Spearing:** We have got Heather Steel on our advisory council; she looks out for dual credits for both of the high schools. We will be producing a note saying, "is your child thinking of going to college". If so, these are the options they have related to mining so they can go to the CTE trades. They can look at the dual credits for geology, mining, and metallurgy.

**Nigel Bain:** From personal experience, Barrick was supporting the Great Basin trade school in Winnemucca and giving scholarships out. When we see those notes through the school system, there is zero participation. When we went to the parents at the mine, we had a greater turnout. The kid gets the note, but it never makes it out of the lunch box.

**Sam Spearing:** Absolutely, our ATC scholarship gives them \$5k towards their education. It gives them an internship on Fridays and Saturdays or whatever else they want to work where they get paid \$20 an hour, and it allows the company over that year to see if the student has the beliefs, values, etc. and it's very popular and we are trying to grow that even more. It's been running for over 20 years. It's a very popular program and we do it through the parents as well.

**Art Henderson:** I think this is a very good program, but I would like to see more progress before we commit to more funds. I suggest you come back maybe next quarter or the quarter after that and show some progress and maybe show that your equipment that we have already given you has been ordered and then we can consider it again.

**Sam Spearing:** That makes sense. I have got no problem with that. We need to show progress. I agree to that.

**Art Henderson:** Let me ask Rob, if we delay the second batch of purchasing for this equipment, do we still have time before the building is ready to go?

**Rob Ghiglieri:** With the approved funding by the Commission, what we did is we budgeted for it in FY23, then there were quite a few surprises with the building, so it was delayed. The way the contract is written we have until December 13, 2024, for that contract before we would need to amend the contract. Right now, the authority for this funding is in FY24. So, delaying it, we have ten months until we would have to look at that again. Does that answer your question?

**Art Henderson:** I'm not talking about the equipment that we already approved, I am talking about the new proposal that he is asking for today. He is asking for the spectrometer and the VR sets. So, if we don't approve this today, they still have a lot of work to catch up with the building, the electrical, and we can revisit this in three to six months, and it probably won't cause any delays for them to implement into their excellence program.

**Rob Ghiglieri:** No, I don't see any issues with that at all.

**Josh Nordquist:** I support that approach too. We remain committed to what we've already contracted, and I agree with that approach to come back to that in a quarter or two and see what progress we have made.

**Sam Spearing:** The VR sets could be used not just for us but at McCaw and at the museums and things like that because they are the kind of thing that apart from training students, they are very appealing for the mining industry and for kids to look at them and to see wow this is an open pit mine I can navigate myself around. If it's delayed, it really doesn't affect things but I'm just saying that doesn't need a building and can be mobile and used immediately. Thank you.

**Josh Nordquist:** I will take this opportunity for a motion to be presented otherwise, we will come back to this at a later date.

**Mike Visher:** Do you want to table this to the next commission meeting?

**Josh Nordquist:** Yes, let's look at towards the next commission meeting and look towards what progress we've got at that time.

C. **Review of Division of Minerals recent education and outreach**

Carol Shelton and Garrett Wake presented a review of the recent education and outreach for the Division of Minerals, see attachments.

**Stephanie Hallinan:** I haven't looked for this on the NDOM website yet, is there a list of what schools in the towns or cities within Nevada that we are visiting? The reason I ask that is because our GM at Bald Mountain Mine his girlfriend is a teacher in Reno, and our GM was curious one day he was saying he doesn't know how we are reaching the young people through the teachers, and I mentioned how there is the education workshop and Joe was saying that they had received some misinformation and he had heard that somebody talked about coal mining at some of the schools in Reno, but it was all pretty negative and that's where he was thinking how are we reaching out and so I knew we did and I wondered if there is a list of the schools in the areas.

**Garrett Wake:** We have a very advanced database and it's an Excel spreadsheet, with the names of all the schools that we go to. We do have that information. I do think that is another area where we can improve that. Many years ago, I tried to track where we were going in terms of zip code to see where we were doing presentations across the state, and it came out well, but it really showed a lot in Reno and Las Vegas, and I thought well maybe that's not the best thing. But we do have that information and it would be good to polish it up a little bit and make it available.

**Mike Visher:** Because it's something we do internally to keep track of our performance measures, it would be easy to update and put on the website and then add in if you would like a presentation at your school, click here. A mechanism so that the public and the interested parties can see where we are doing this outreach, and

if they don't see them being represented, how can they raise their hand, and it wouldn't require any additional work on our part.

**Randy Griffin**: How do you all reach out to the schools?

**Garrett Wake**: We have tried many avenues. I have emailed superintendents across the State, of course I didn't get any emails back. The mechanisms we have found to be the most beneficial, aside from word of mouth and recurring and building a network. The few things that have worked out really well, we are part of a network called CHOLLA, they are a network of groups in Clark County aligned with companies and non-profits that support schools and so that network has a lot of Southern Nevada schools in their distribution database, so we plug them, and I send them an email blast. We got a lot of responses on that. I set up an appointment scheduling website which worked out well, but it had some challenges. If there are any ideas that anyone has, we are open to hearing them.

**V. Old Business continued**

**A. Review of Division of Minerals federal AML partner agreements**

Rob Ghiglieri presented an overview of the federal AML partner agreements for the Division of Minerals, see attachment.

**Mike Visher**: Rob, if you want to add what you have done to prepare for the contracts and the money coming in so that we are not reacting. What pro-active work has the agency done?

**Rob Ghiglieri**: Looking into the future we have a lot of contracts that do very similar work. So, working with State Purchasing, we decided to come up with a statewide contract. This will affect the county funding as well, that \$400k. What we are going to do is start a final scope of work. We will have a statewide contract that will go out for bid. The statewide contract will cover anything and everything you can imagine with the AML work. From fencing, inventory, environmental, wildlife surveys, cultural surveys and anything and everything in between. They will release this and companies will be able to bid on it to become on the list. Then there will be a contractor on the list for us to be able to use and then we go through and make the agreement with them on a specific project or for a two-year basis or a four-year basis and then be able to get that work done. So, it will open the opportunity to get work done. This will help get through the RFP process a lot faster.

**Stephanie Hallinan**: I have one quick question, when you mentioned program innovation for your final slide and there is room for improvement, did you guys go through and find out what did work well for FY23 so that you can track what went well so that we can do a little better the next time.

**Rob Ghiglieri**: Yes so, I mentioned earlier in the day that the transition in technology to have a data gathering, the technology we are using works. Also looking at what other states are doing.

**VI. Commission Business**

**A. Review of staff monthly activity reports**

**B. Set date for next commission meeting.**

**Josh Nordquist:** We will target early November, I assume. The week of the 6<sup>th</sup> or the week of the 13<sup>th</sup>.

**Rob Ghiglieri:** Normally the November meeting is in Carson, the August meeting is in a rural location, and the February meeting is in Las Vegas. We kind of got turned around this last calendar year on the locations.

**Mike Visher:** We had initially looked at doing this meeting in Eureka with a field visit of the Gibellini Mine and Ron Espell has offered to do that. I think that would be a good one because that one is coming up for a record of decision. They have some novel approaches that they have done for both permitting and land issues and mitigation that I think would be beneficial to the Commission. We can do it in Eureka. It's been a while since we have been there. I can check with Ron and see what is available, but we would be looking at a Wednesday and Thursday because Friday is a holiday so Wednesday the 8<sup>th</sup> and Thursday the 9<sup>th</sup> either a morning or afternoon tour.

**Josh Nordquist:** Can we do the meeting in Eureka as well?

**Mike Visher:** Yes

**Josh Nordquist:** We will tentatively schedule for November 8<sup>th</sup> or 9<sup>th</sup>.

**COMMENTS BY THE GENERAL PUBLIC**

**Rob Ghiglieri:** I would like to thank Mike for all he has done for the last 19 years at the agency and spent the last eleven years mentoring me and others. This is a great place to work and a great place to have a resource to go to anytime and you will be missed at the Division, and I do have your cell phone number just letting you know.

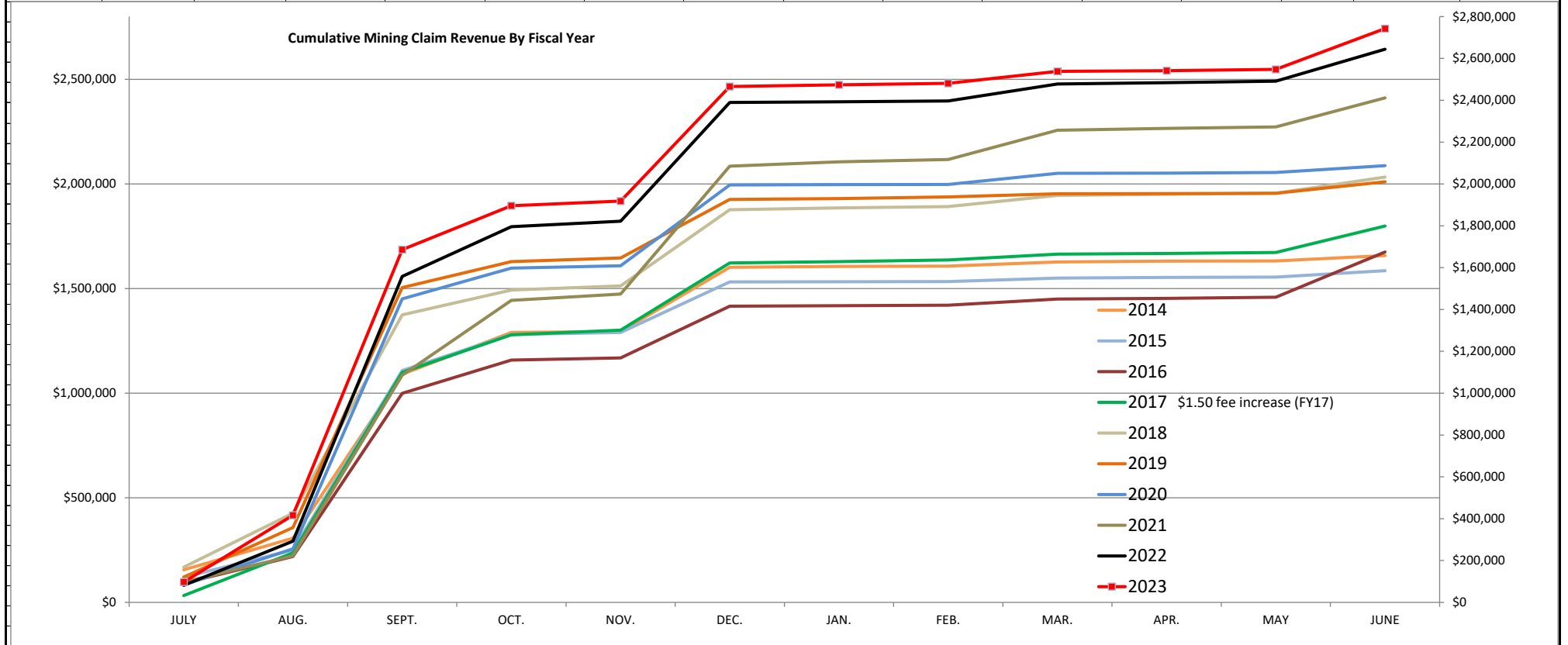
**Josh Nordquist:** I think we all would like to thank Mike as this is his last commission meeting before his retirement.

**ADJOURNMENT**

3:39 pm

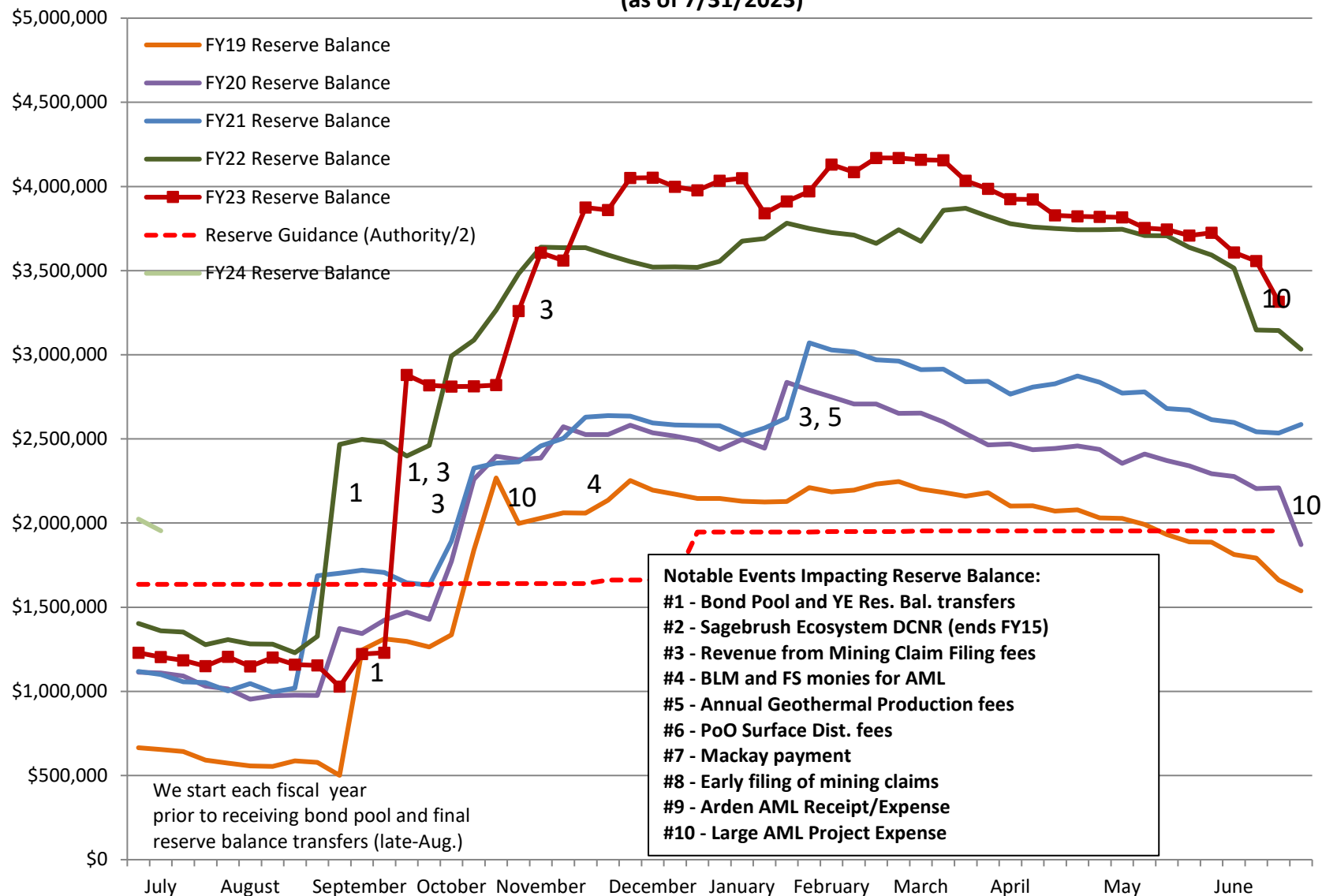
Fiscal Year Cumulative Mining Claim Revenue By Month

Fiscal Year	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	\$ YOY	Total Claim Filings
2023	\$97,420	\$416,620	\$1,686,460	\$1,895,930	\$1,917,950	\$2,465,650	\$2,474,100	\$2,481,420	\$2,538,130	\$2,541,440	\$2,547,530	\$2,742,890	3.7%	274,289
2022	\$81,700	\$292,160	\$1,557,970	\$1,796,170	\$1,821,730	\$2,389,380	\$2,392,810	\$2,396,650	\$2,477,620	\$2,483,930	\$2,491,520	\$2,644,120	9.6%	264,412
2021	\$97,190	\$222,510	\$1,085,820	\$1,443,520	\$1,474,160	\$2,085,310	\$2,105,650	\$2,116,960	\$2,257,030	\$2,265,460	\$2,273,190	\$2,411,530	15.5%	241,153
2020	\$83,720	\$256,070	\$1,450,980	\$1,597,760	\$1,609,370	\$1,995,430	\$1,997,180	\$1,997,950	\$2,050,880	\$2,051,660	\$2,054,840	\$2,087,470	3.7%	208,747
2019	\$121,080	\$357,900	\$1,504,660	\$1,628,710	\$1,646,750	\$1,926,020	\$1,930,460	\$1,937,910	\$1,953,500	\$1,954,140	\$1,955,820	\$2,010,510	-1.1%	201,051
2018	\$168,630	\$425,870	\$1,374,840	\$1,493,090	\$1,512,540	\$1,876,580	\$1,885,390	\$1,892,210	\$1,945,520	\$1,951,080	\$1,955,670	\$2,032,980	13.0%	203,298
2017	\$32,650	\$236,939	\$1,099,584	\$1,278,775	\$1,301,335	\$1,622,635	\$1,629,225	\$1,636,885	\$1,664,685	\$1,668,165	\$1,672,765	\$1,799,065	7.4%	179,935
2016	\$92,072	\$219,020	\$999,082	\$1,158,219	\$1,168,827	\$1,415,769	\$1,418,574	\$1,420,520	\$1,450,134	\$1,453,118	\$1,458,388	\$1,674,866	5.6%	197,043
2015	\$120,352	\$250,079	\$1,108,417	\$1,280,687	\$1,290,241	\$1,531,683	\$1,532,431	\$1,533,349	\$1,550,247	\$1,553,571	\$1,555,211	\$1,585,539	-4.4%	186,534
2014	\$155,703	\$306,646	\$1,090,754	\$1,290,496	\$1,294,661	\$1,602,233	\$1,606,177	\$1,607,656	\$1,627,283	\$1,631,235	\$1,632,417	\$1,657,789	-10.7%	195,034
FY23 data as of 8/3/2023; Pending:														
12 Counties pay quarterly: CC, CH, DO, ES, HU, LA, LI, LY, NY, PE, ST and WP														
*Claim payments in June 2016 are skewed due to early payments ahead of \$2 fee increase														



## NDOM Reserve Balance by Week for FY19 - FY24

(as of 7/31/2023)





**CMR-Division of Minerals - 2022-2025 Budgets and Forecasts (as of 8/2/2023)**

Revenue								
GL #	Description	FY22 Actuals	FY23 Authority	FY23 YTD	FY23 Forecast	FY24 Forecast	FY25 Forecast	Remarks
2511	Balance Forward Previous Year	2,624,665	3,031,285	3,031,285	3,031,285	3,360,239	2,811,907	
3578	BLM Grant	200,000	200,000	200,000	200,000	350,000	350,000	BLM grant funding AML work. \$200k grant awarded 9/6/21, anticipate similar amount thru FY25
3580	USFS Assistance Agreement	80,349	150,000	0	25,000	80,000	80,000	USFS assistance funding AML work
3584	NPS Grant	77,787		0	0	0	0	National Park Service funding for AML work (unknown future funding)
3654	Oil Production Fee	22,668	37,907	33,297	36,000	36,000	36,000	\$0.15 per bbl fee for oil production annually (\$0.05 from 12/20 - 10/21)
3717	Oil Permit Fees	4,400	3,300	3,000	3,000	3,000	3,000	Permit fees for new oil and gas wells
3718 & 3727	Mining Claim Fees	2,644,100	2,114,150	2,742,890	2,742,890	2,633,174	2,527,847	Mining Claim fees @ \$10/claim filing, actuals for FY23, -4% for FY24, -4% for FY25
3736	Geothermal Fees	156,550	160,800	196,550	196,550	196,550	196,550	Annual fee and permit fees for geothermal wells and permitting
3740	Dissolved Mineral Resource Fees	8,000	2,000	5,000	5,000	5,000	5,000	Permit fees for DMR (lithium brine) well permits
3770	Surface Disturbance Fee (AML)	92,080	81,740	14,380	14,380	80,000	80,000	\$20 per acre fee for new mine surface disturbance, FY23=12-year avg.
4011	Copy Machines - Sales to Public	0	27	0	0	0	0	Copying charge for Public Records Request
4027	Publication Sales (AML signs)	2,937	1,210	4,370	4,370	4,370	4,370	AML signs sold at office
4218	Credit Card Rebate	294			294	294	294	
4252	Excess Property Sales	0		26,320	26,320	0	0	Auction of excess vehicles
4311	Medallion Royalty Fee	253	1,304	188	188	253	253	Fee for minting of medallions with State seal remitted to NDOM
4326	Treasurer's Interest	24,971	40,990	61,424	92,000	80,000	80,000	Interest we receive for money deposited with Treasurer
4611	Furlough Reimbursement		13,434	13,434	13,434	0	0	One -time ARPA reimbursement for FY22 furloughs
4620	Transfer from Recl. Bond Pool	58,057	80,793	58,818	58,818	58,818	58,818	Fee from Bond Pool for NDOM Management
4669	CARES Act Reimbursement	0			0	0	0	Federal funds used to offset pandemic related expenditures
	<b>REVENUE TOTAL</b>	<b>\$5,997,111</b>	<b>\$5,918,940</b>	<b>\$6,390,956</b>	<b>\$6,449,529</b>	<b>\$6,887,698</b>	<b>\$6,234,040</b>	
Expenditures								
CAT #	Description	FY22 Actuals	FY23 Authority	FY23 YTD	FY23 Forecast	FY24 Forecast	FY25 Forecast	Remarks
01	Personnel (Sal.,WC, PERS,OT)	1,183,314	1,315,261	1,131,846	1,131,846	1,393,386	1,561,386	12% COLA in FY24, 11% COLA in FY25, FY24 +86k new GIS (9 mos.), FY25 +114k (GIS), FY24 \$40k (TL payout), FY25 \$40k (TL payout)
02	Out-of-State Travel (Staff, CMR)	16,381	28,605	27,122	27,122	33,642	38,357	FY23 as in budget, FY24/25 as budgeted
03	In-State Travel (Non-AML)	11,966	12,900	12,613	12,613	15,425	15,425	Travel, lodging and per-diem within State, as budgeted
04	Carson Operating Expenses	105,272	113,134	109,460	113,134	115,257	162,220	Rent, Operating supplies, as in budgets, one new vehicle in FY25
05	Equipment	1,210	1,706	1,306	1,706	5,216	5,268	Desks, chairs, as in budget
08	CMR Travel (In-State)	1,712	7,128	307	307	9,907	9,907	As in Budget
09	Special Projects (Mackay, NBMG)	152,016	539,207	316,523	316,523	435,650	137,839	FY23 \$97.2k (NBMG-base contract), \$27k (PDAC), \$5k (AME), \$15k (NvMA Ed), \$15k (McCaw), \$18,262 (NBMG Mining District Files Scanning), \$125,490 SOSA Marketing, \$10k YESCO billboards; FY24-\$66.5k (NBMG), \$19,970 (NBMG Scanning), \$43.2k (NBMG Soda Lake Geo), \$37.8k (NBMG-RRV), \$37.8k (NBMG-Li); \$146k MCoE; \$47k (PDAC/AME/NvMA Ed); \$10k YESCO billboards; \$27.4 (GBSSRL equipment match), FY25-\$120.8k (NBMG), \$47k (PDAC/AME/NvMA Ed)
14	Las Vegas Operating Expenses	41,420	46,442	43,086	46,442	42,182	43,041	As in budgets
17	Fluid Minerals	12,986	16,983	14,426	14,426	19,145	19,145	Field expenses for OGG and DMRE, as in budget
18	AML Support (per diem, trucks, fuel, AML supplies and travel, SOSA supplies)	134,367	239,174	238,880	239,174	263,091	220,091	Up to 8 summer interns and 4 winterns FY23-25; includes one new truck FY24
26 & 82	Computer and IT	34,411	30,429	29,343	30,429	131,899	107,887	Computer hardware/replacements; EITS services and support; ASD financial services (\$88k/yr)
30	Training	5,075	6,764	5,772	6,764	7,375	7,375	ESRI and other training
39	AML Enhancements(contracts, equip.)	1,133,857	1,076,806	1,071,378	1,076,806	1,159,800	1,158,600	\$960.5k/yr contracted AML closure and related work. \$50k/yr CL Cty revisits (thru 23), \$50k/yr geo analysis, \$100k/yr cultural surveys, \$20k/yr helicopter surveys, \$24.5k/yr wildlife surveys
42	Public Agency AML Securing		400,000	0	0	400,000	0	Any unspent funds from FY23 would be transferred to FY24
87 & 88 & 89	Cost Allocations (State, Purchasing, AG)	90,693	71,998	71,998	71,998	43,816	57,963	Purchasing assessment, AG cost allocation, State cost allocation
	<b>EXPENDITURE TOTAL</b>	<b>\$2,924,679</b>			<b>\$3,089,290</b>	<b>\$4,075,791</b>	<b>\$3,544,504</b>	
86	Reserve - Balance Forward to Next Year	\$3,072,432			\$3,360,239	\$2,811,907	\$2,689,535	
		\$1,467,809			\$1,815,594	\$774,012	\$917,283	Reserve Amount in excess of "50% of Expenditures" guidance



To: Nevada Division of Minerals  
From: Nevada State Museum

Date: July 28, 2023

Re: Collaboration on updated Geology Exhibit in existing  
Changing Earth Gallery

Background – The geology displays of the Nevada State Museum, Carson City currently occupy a 3,500 square foot gallery plus 20 linear feet of wall space along an adjacent stairwell (Fig 1 & 2). The exhibit characterizes rocks and minerals of Nevada throughout geologic time. At its entrance is a lengthy display (3 panels + a dated video) on Plate Tectonics (Fig 3). Elsewhere in the gallery is a 12 linear foot wall space covering the Rock Cycle (Fig 4).

Existing exhibits have been in place in their current form for nearly 30 years and need updating; in particular our wall on Plate Tectonics. The Nevada State Museum hosted 33,600 guests in FY2023, including numerous school tours. Guests visit us from Nevada, surrounding states, around the country, and abroad. Geology is an important story for not only the natural history of the Silver State, but also the socioeconomic history of our region. An updated telling of the geology of Nevada serves both the Mission of the Nevada State Museum as well as the Nevada Division of Minerals.



## Proposal

The Nevada State Museum (NSM) requests a collaboration with the Nevada Division of Minerals (NDOM) to update/replace the Plate Tectonics and Rock Cycle Exhibits in Nevada's Changing Earth Gallery. We propose to install a free standing exhibit along the wall currently occupied by the existing Plate Tectonics exhibit (Fig. 3). The proposed new exhibit would follow the style and content of similar exhibits NDOM has fabricated for the Terry Lee Wells Discovery Museum (Discovery Museum) and the Las Vegas Natural History Museum (LVNHM). We propose the focus of this new exhibit to be regional tectonics, which can serve as a segway to minerals, geologic history, and physiographic provinces of Nevada. We further propose an updated Rock Cycle component be included in this potential new exhibit, and some component showing common minerals used in home products. The NSM hosts demographics significantly different than the Discovery Museum, and geographically distinct from guests of the LVNHM. This new exhibit will get the Mission of NDOM out to a larger audience leading to a larger educational impact. Director Bonde worked with Garrett Wake and NDOM on the implementation and design of the first exhibit at the LVNHM. As part of this collaboration we also propose a simple rock and mineral identification activity for the NSM Discovery Lab, which would be prominently provided courtesy of NDOM.

This collaboration will help the NSM more effectively tell the important story and relevance of the geologic history of Nevada to a diverse and wide-spread audience. This helps showcase the importance of geology and the minerals industry to guests. It is our hope that this collaboration can lead to future exhibit updates, such as supplementing the historic underground mine with exhibits and information on modern mining and the need for the mining industry in modern society.

### Proposal:

- Stand Alone Exhibit Featuring Regional Plate Tectonics, Rock Cycle, Minerals in the home
- Simple Mineral/Rock Identification Activity in the Discovery Lab
- Cost not to exceed: \$80,000
- Seed for future Modern Mining Exhibits to complement Historical Mining

Respectfully,

Joshua W. Bonde Ph.D.  
Museum Director



Figure 1

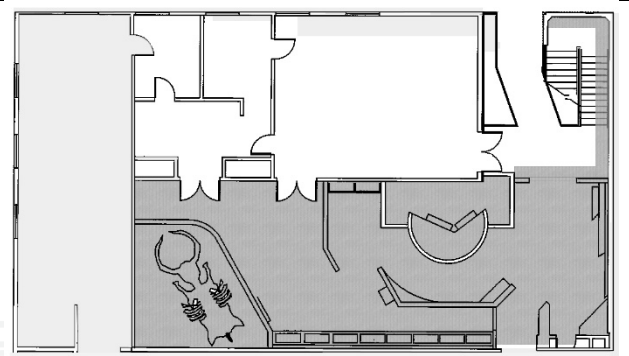


Figure 2. Geology shaded in Grey



Figure 3

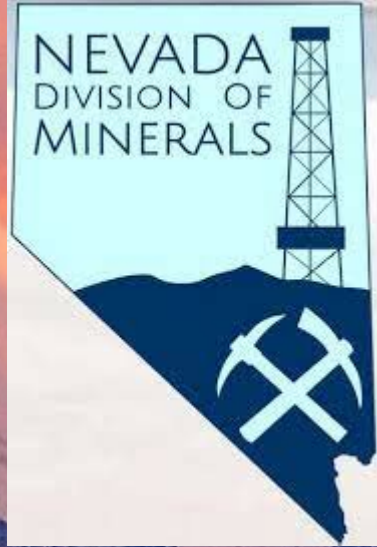


Figure 4



# Getting Minerals to the Masses

A proposed collaboration between Nevada Division of Minerals and the Nevada State Museum



# Nevada's Changing Earth



Exhibit in place since 1990's  
Entrance to Natural History  
Does not address tectonics and Nevada  
Getting dated



**FOCUS ON ROCKS  
MADE OF MINERALS AND  
CHANGED BY PLATE MOVEMENT**

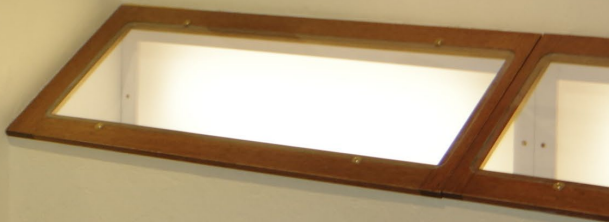


Informational text panel describing the rock samples.



Red Rock National Monument

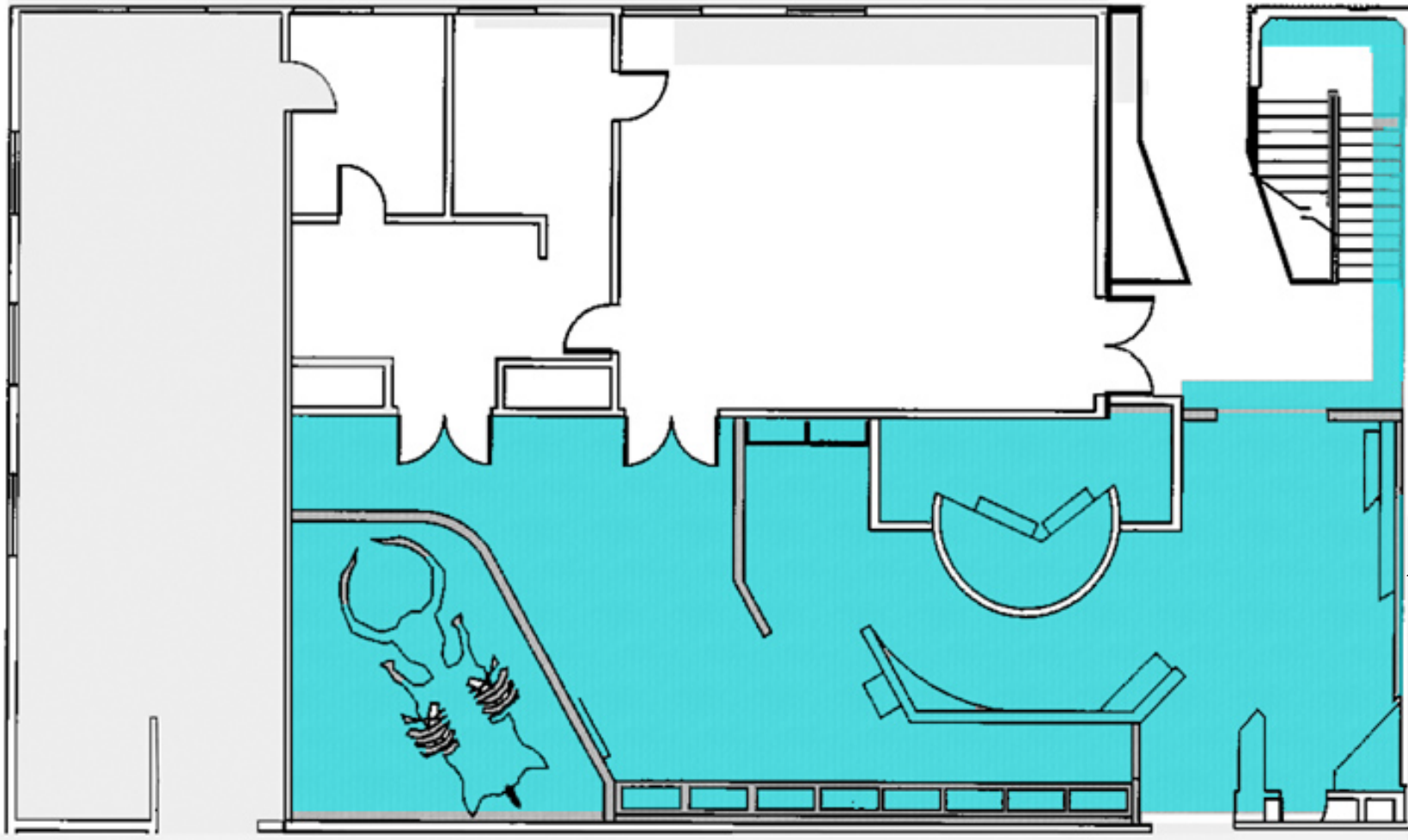
Informational text panel.



# Current Rock Cycle Exhibit

- Very topical
- Does not explain importance to Nevada
- Space filler for Nevada Mesozoic
- I might have a few other Mesozoic stories to tell

# Nevadas Changing Earth Gallery



← Proposed Exhibit Location



# Why a Tectonics and Rock Cycle Exhibit?

- The current exhibit shows a 1990's versions of global Plate Tectonics
- A more impactful display would focus on Nevada/Regional Tectonics
- The Basin and Range Tectonic Province is what makes Nevada so prolific in the minerals industry, makes Nevada the most mountainous state in the lower 48, and provides for the diverse ecosystems of the Great Basin
- A rock cycle component helps guests understand the different rock types found in the region and the formative processes
- A minerals in the household exhibit further drives home the importance of the mineral industry to day to day life and its economic importance in the state

No need to reinvent the wheel



Las Vegas Natural History Museum

# Discovery Lab



- Hands on STEM lab
- Used by School Tours
- Hope is to have it open to general public in time
- NDOM mineral/rock ID activity would work perfectly in this space
- Impact thousands of Nevada and northern CA students immediately

# Who will benefit?

- The Nevada State Museum hosted 33,600 guests in FY2023
  - These visitation numbers are higher than pre-COVID and are looking to trend upwards over the next couple of years
  - Demographics are different than the other two NDOM sponsored exhibits
- Numerous School Tours from around the state
  - 2 of our docents participated in the NMA Workshop in Winnemucca
- Guests from every county of the state
- Guests from around the country
- Guests from around the world

# Start of a inter-Division Partnership

- We look forward to the opportunity to collaborate further
- This new proposed exhibit will have a wide impact
- This partnership will be mutually beneficial
- Potential for future projects
  - Historic Mine
  - Modern Mining
  - Telling the minerals industry story





# Future Blank Slate

- Minerals
- Modern Mining
- Rocks
- Tectonics

Thank you

# The Mining Center of Excellence Update

Presentation to Nevada Division of Minerals  
Commission on Mineral Resources

By

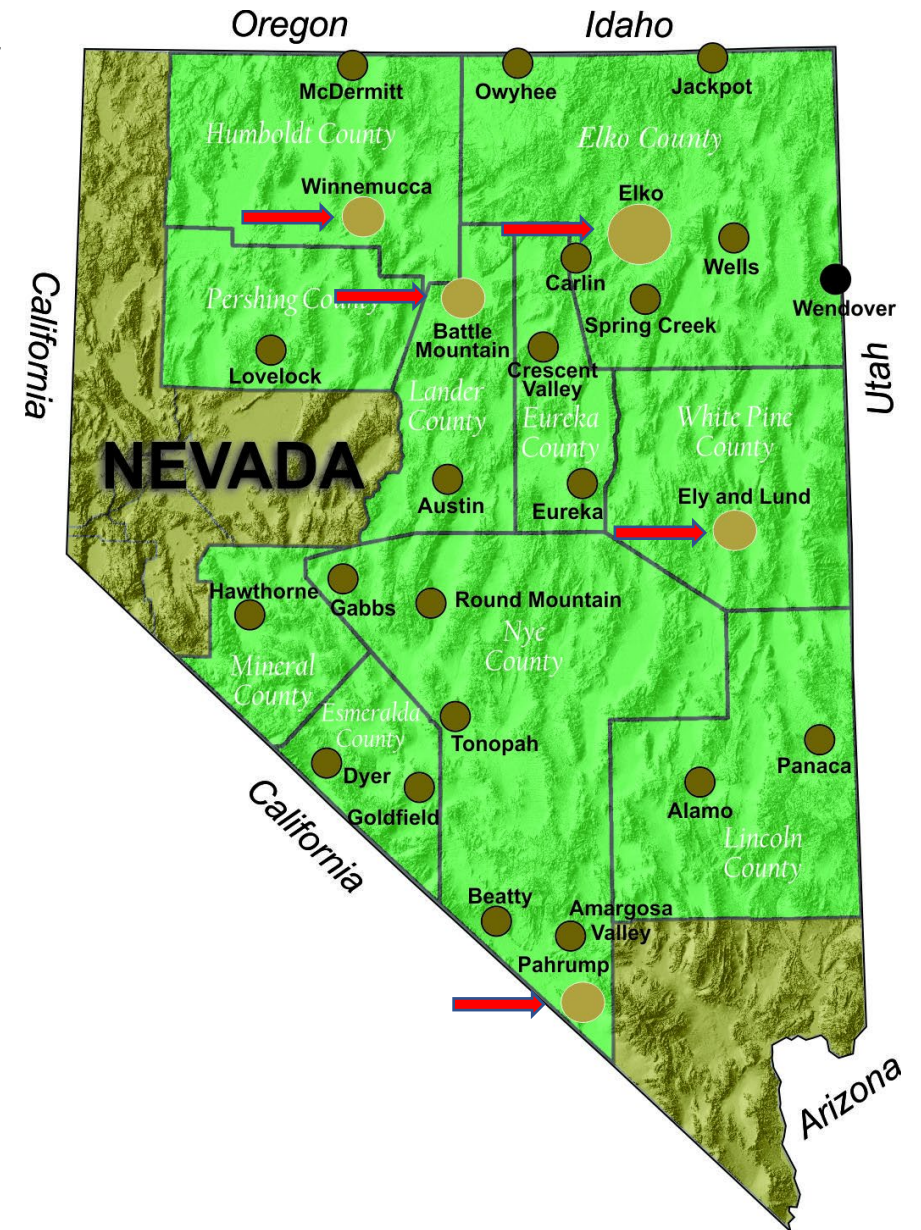
A.J.S. (Sam) Spearing-Executive Director  
Workforce Development & Mining Center of Excellence, GBC

August 10, 2023



# Great Basin College-Overview

- Over 4,000 students
- Offers Certificate, Assoc Degree & Baccalaureate Degrees
- Main campus in Elko
- Provides education for 86,000 sq. miles
- Satellite campuses in:
  - Battle Mountain
  - Winnemucca
  - Ely
  - Pahrump





# Background

- We lack trained technical (STEMM) people in general.
- We cannot attract enough people into the mining industry.
- The mining industry is important to NV and the country at large but critical for the well being of rural Nevada.
- We need to offer high school students more options and pathways for careers, especially in STEMM.
- To meet the mining industry's workforce needs, GBC and UNR have started a mining collaboration in Elko to be called the Mining Center of Excellence (MCE) to fill this gap.
- The mining industry also has a critical need for workforce expansion and development, if we are to meet the climate change goals, globally set for 2030 and 2050.

# The Mining Center of Excellence

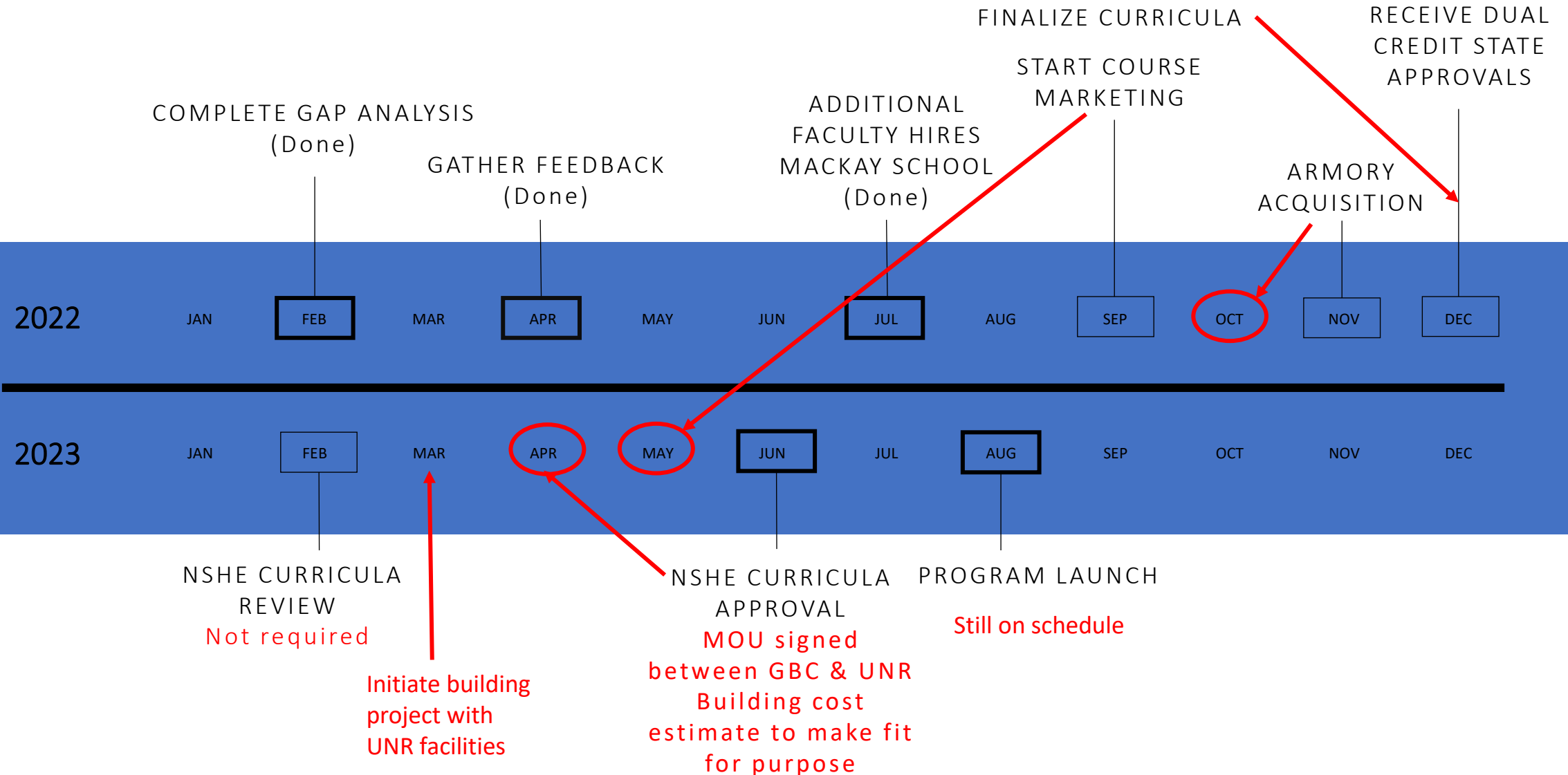
To help resolve the recruitment and training issues, GBC approached UNR and a joint facility is being established to be called the Mining Center of Excellence (if approved by NSHE).

The Center plans to do the following (with stakeholder guidance):

- Offer hybrid delivery dual credit high school certificates that will transfer to GBC and Mackay programs (geology, mining and metallurgy).
- Offer hybrid associate degrees with a focus on geology, mining or metallurgy.
- Offer continuing education (upskilling) courses for the mines as needed.
- Be a focal point and resource for mining industry related activities.

# Timeline for Mining Center of Excellence

## April 2022 plan vs August 2023 actual



# Successes and challenges

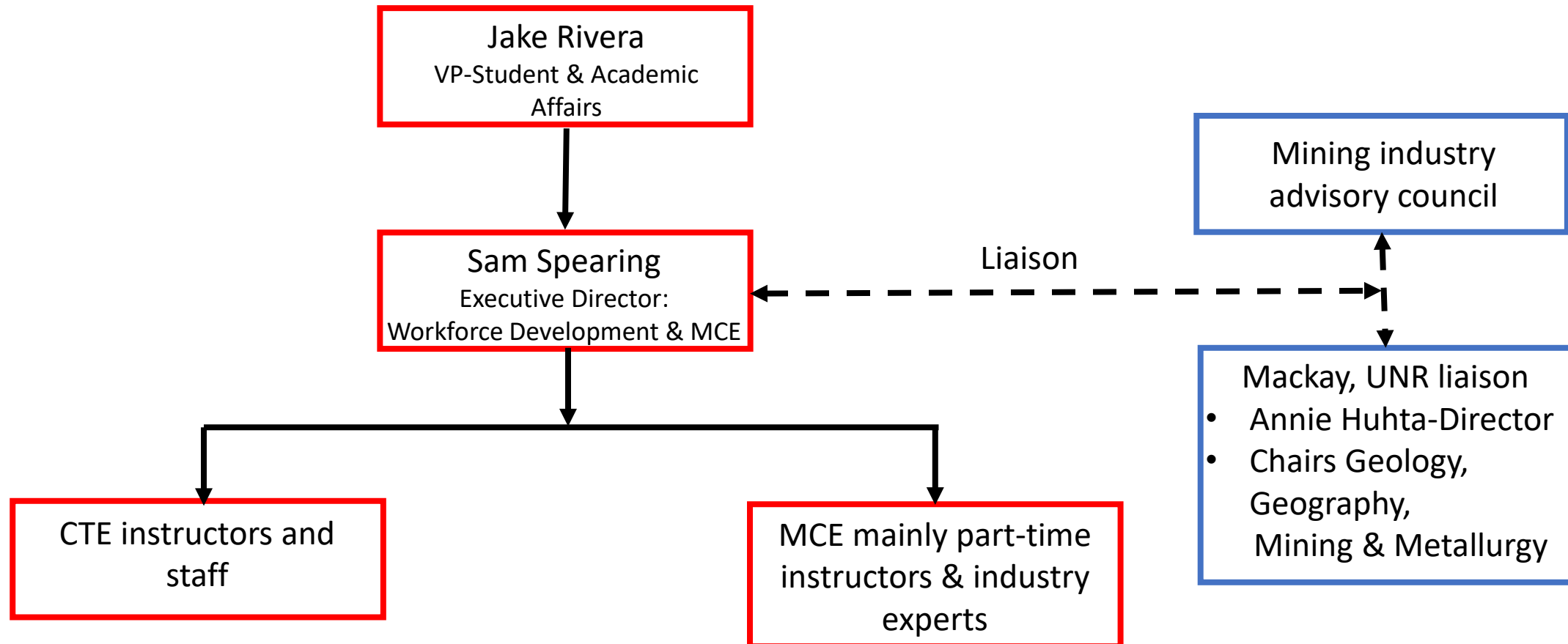
## Successes:

- Executive Director in place.
- MCE formation and dual credit certificate curricula approved.
- Very effective Industry Advisory Council formed to guide the MCE.

## Challenges:

- Until Jan 2023, the \$500k figure to make Armory fit for purpose was assumed correct.
- Courses could not be marketed until they were NSHE approved.

# Macro MCE organizational chart



# Current Mining Center of Excellence Advisory Council

- 
- Amanda Hilton – Chair
  - Dana Pray – Vice Chair (NvMA rep)
  - Sam Spearing (GBC MCE)
  - Tim Arnold (Integra)
  - Alissa Wood (NGM)
  - Melissa Schultz (NGM)
  - Allison Anderson (I80)
  - Matt Miller (Kinross)
  - Karrie Barrett (GBC Foundation)
  - Hugh Broadhurst (Lithium NV)
  - Dan Kappes (KCA)
  - Terri West (Coeur)
  - Vince Catalano (UNR)
  - Annie Huhta (Mackay Director)
  - Paula Noble (Geology Chair)
  - Adam Csank (Geography Chair)
  - Javad Sattarvand (Mining & Met Chair)
  - Mike Visher (NDOM)
  - Lisa Levine (GOWINN)
  - Zach Alexander (GOWINN)
  - Sheldon Mudd (NNRDA)
  - Heather Steel (Elko School District)

# The MCE

- GBC took over the Armory (October 2022) which is conveniently located adjacent to GBC.
- Asbestos testing was completed in March 2023.
- An estimate to make the building fit for purpose is \$????m (originally a figure of \$500k was estimated).
- Room furniture, computer related equipment etc. would add another about \$500k (\$175k for furniture).







# Equipment for the MCE being considered

## **Fixed Lab (at the Armory)**

- Equipment simulator
- Point load rock tester
- Compression & tension rock core tester (& prep equipment)
- 3D topographical table/projector
- Crushing & grinding equipment
- Metal extraction systems
- Fire/rescue tanks/equipment
- Computers and mining software

## **Mobile (trailer mounted) Lab**

- Mainly as per the fixed lab

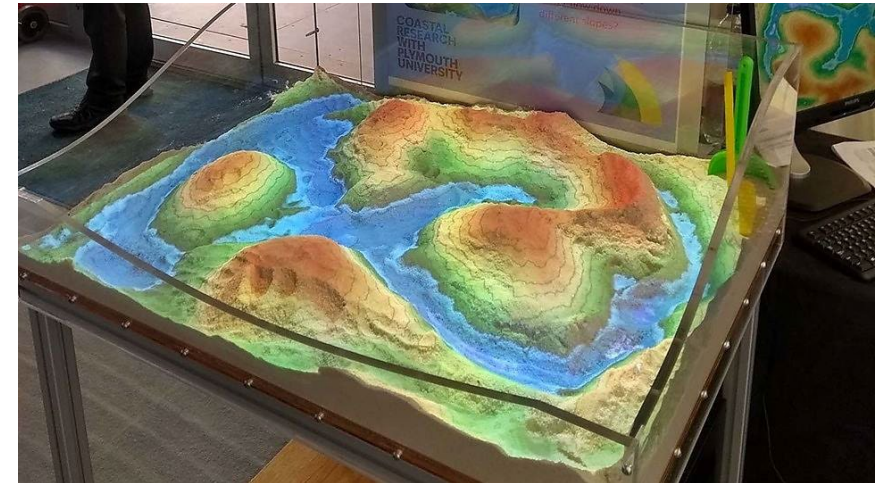
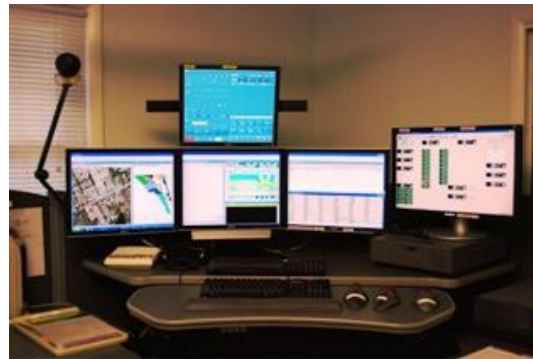
Plus:

- VR sets

**Estimated total cost for both labs:**

**\$450k**

# Examples of some of the possible equipment



# Lab equipment already funded (all by NDOM)

In August 2022, NDOM kindly agreed to fund \$146k for:

- UCS tester.
- Lab scale crushing & grinding equipment.
- 3D topographical & digital sand table.

# Lab equipment being requested from NDOM

- 4 individual complete sets of Virtual Reality hardware and software with a Mine Standard Training Module and an Underground Mine Induction and Hazard Hunt Module from Immersive Technologies (\$95,675). These would be used for introducing the public into mining, recruiting and training.
- Agilent 5800 ICP-OES Spectrometer (the same as Mackay School of Mines) to identify and quantify minerals present in rock samples (\$84,305). This would be used for student education in geology and metallurgy and could be used by mine, state and university researchers around the Elko area.

# The Immersive Technologies VR sets



Foundation fundraising first flyer sent to NvMA for member distribution in April.

Firm figures now available.



## Interested in supporting the future of mining?

Sponsorship opportunities are available now to support the proposed Mining Center of Excellence. Contact the GBC Foundation today to get involved.

Sponsorship Opportunities include:

- Building Naming Rights
- Endowed Teaching Faculty
- Research Lab Space
- Equipment
- Instructional Space
- Shared Common Space
- Scholarships

Contact Us:  
Great Basin College Foundation  
karrie.barrett@gbcnv.edu  
(775) 327-2382



# Conclusions

- The next 2 years will be crucial for the MCE.
- Stakeholder input is essential.
- Structures are basically in place now.
- The dual credit HS certificates are on track to start in August 2023, as initially targeted.
- The name recognition of GBC and the MCE needs to be greatly improved. We exhibited for the first time at the SME AGM!

# The way forward

We hope:

- That we can help attract more skilled people into STEM (for the mining and other industries), to help rural Nevada and Nevada as a whole.
- That the certificates will be well received by the Schools (and relevant staff and Boards) as it gives students more options.
- To expand these into 2-year associate hybrid degrees in the future.
- To assist our mining industry to attract more people and interest them in further relevant training (upskilling).
- To expand these certificates state-wide in 2024, after introducing them on a limited scale in 2023.
- Offer the certificates and associate degrees to people in the industry.



Any questions, suggestions or comments?

Please also liaise via:

[sam.spearing@gbcnv.edu](mailto:sam.spearing@gbcnv.edu)

865-333-1023



## Proposal to Nevada Division of Minerals

Commission on Mineral Resources

August 10, 2023

**Agenda Item:** Request for financial assistance to purchase equipment for the “Nevada Mining Center of Excellence,” a joint venture educational and research facility in Elko, Nevada.

**Organization:** Great Basin College, in collaboration with the Mackay School of Earth Sciences and Engineering, University of Nevada, Reno (UNR).

**Funding Request:** GBC-UNR request Commission on Mineral Resources funding to purchase laboratory equipment in support of the educational and community outreach goals of the Nevada Mining Center of Excellence.

**Overview:** Great Basin College (GBC) serves approximately 4,500 students online and at campuses and centers across 86,500 of Nevada’s 110,000 square miles. The main campus is located in Elko, Nevada, which is 229 miles east of Salt Lake City, Utah; 288 miles west of Reno, Nevada; and 431 miles north of Las Vegas, Nevada, with no metropolitan statistical areas in between. GBC campus centers serve the rural communities of Ely (White Pine County), Pahrump (Nye County) and Winnemucca (Humboldt County); satellite centers are located in approximately 15 communities across rural Nevada.

Most residents within GBC’s service area are associated with natural resources for their livelihoods and lifestyles. On average mining employs 24% of the workforce depending on communities’ proximity to area mines. North-central Nevada is home to three of the world’s top 10 gold mines and seven of the top 10 US sites. In addition, the Thacker Pass Lithium Mine, a lithium clay mining development project in GBC’s service area (Humboldt County) is the largest known lithium deposit in the US and one of the largest in the world. The Rhyolite Ridge lithium-boron project near Tonopah (Esmeralda County) also sits within GBC’s service area and also is expected to play a major role in the state’s lithium loop.

GBC is a vital resource for training skilled people for the mining and advanced manufacturing industries in Nevada; however, more must be done to meet the increasing workforce expansion and development demands of the state’s mining sector, especially in north-central Nevada, where the lion’s share of mining production takes place. The Nevada Mining Center of Excellence (MCE) was created to fill this need.

**Nevada Mining Center of Excellence:** The MCE has a four-fold mission: (1) Offer dual-credit and other stackable skills certificates in geology, mining and metallurgy that will easily transfer to GBC and UNR, using hybrid-mode online lectures and contact labs, fieldtrips and discussion sessions; (2) Offer hybrid associate degrees with a focus on geology, mining or metallurgy; (3) Offer continuing education courses to upskill current mining industry employees; (4) Be a focal point and resource for the mining industry.

In sum, the MCE will serve as a launch pad for entry-level students to study and ultimately transition to the workplace, and for current staff to update their skills in anticipation of increased responsibilities in the workplace. It also will function as a new STEM-focused community venue that will share mining’s story in innovative and engaging ways.

Over the past 1.5 years, GBC-UNR have completed a gap analysis; gathered feedback from state, industry and higher education leaders, and formed an Industry Advisory Council; hired additional faculty members at both GBC (including an Executive Director) and UNR; acquired the building where the MCE will be housed on the GBC campus; finalized curricula for the center’s first skills certificate offerings; initiated building

improvements with UNR facilities staff; received Nevada System of Higher Education curricula approval; and, signed an MOU between GBC and UNR. Instructional training at the center will launch on a trial basis in August 2023.

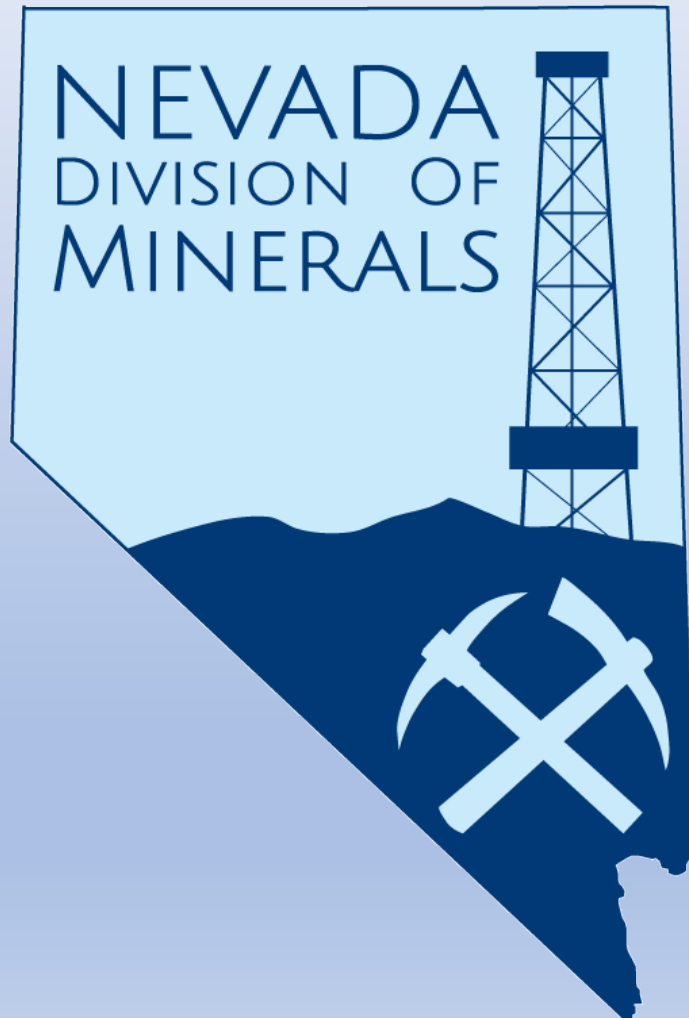
**Project Summary:** In August 2022, the Nevada Division of Minerals kindly granted \$146,000 to the MCE to purchase an Unconfirmed Compressive Strength (UCS) tester; lab scale crushing and grinding equipment; and, a 3D topographical and digital sand table. The items will be in place at the MCE by August 2023.

The current GBC-UNR request is for additional laboratory equipment to provide hands-on educational and training opportunities for high school and college students, current mining professionals, and the community during STEM-related outreach, as follows:

- **Immersive Technologies Virtual Reality Training Package with Mining Emphasis - \$95,675.** This package includes four high-powered and portable virtual reality headsets and hand controllers to provide students with a wide range of training and assessment scenarios in 3D environments, including underground mining. The package also includes the ability to test students' safety skills. Immersive Technologies will provide on-site training for up to four staff members.
- **Agilent Technologies Spectrometer Package - \$84,305.** Identifying which minerals are present in ore samples, and in what quantity, is critical to mineral analysis. This PC-based dual view spectroscopy package will help students learn how to measure ore samples quickly and accurately, while spotting sample preparation mistakes and flagging outlier results. A recirculating chiller will enable students to monitor and set water-cooling parameters, thereby avoiding unnecessary failures, while an automatic sampler will teach students how to stay productive with a high sample load. The package includes a humidifier and various other necessary supplies; an Agilent field service engineer will install and familiarize staff with the equipment over two days of training. This is the same equipment that UNR's metallurgy program uses.

**Requested Sponsorship: \$179,980**

# Education and Outreach FY 2023



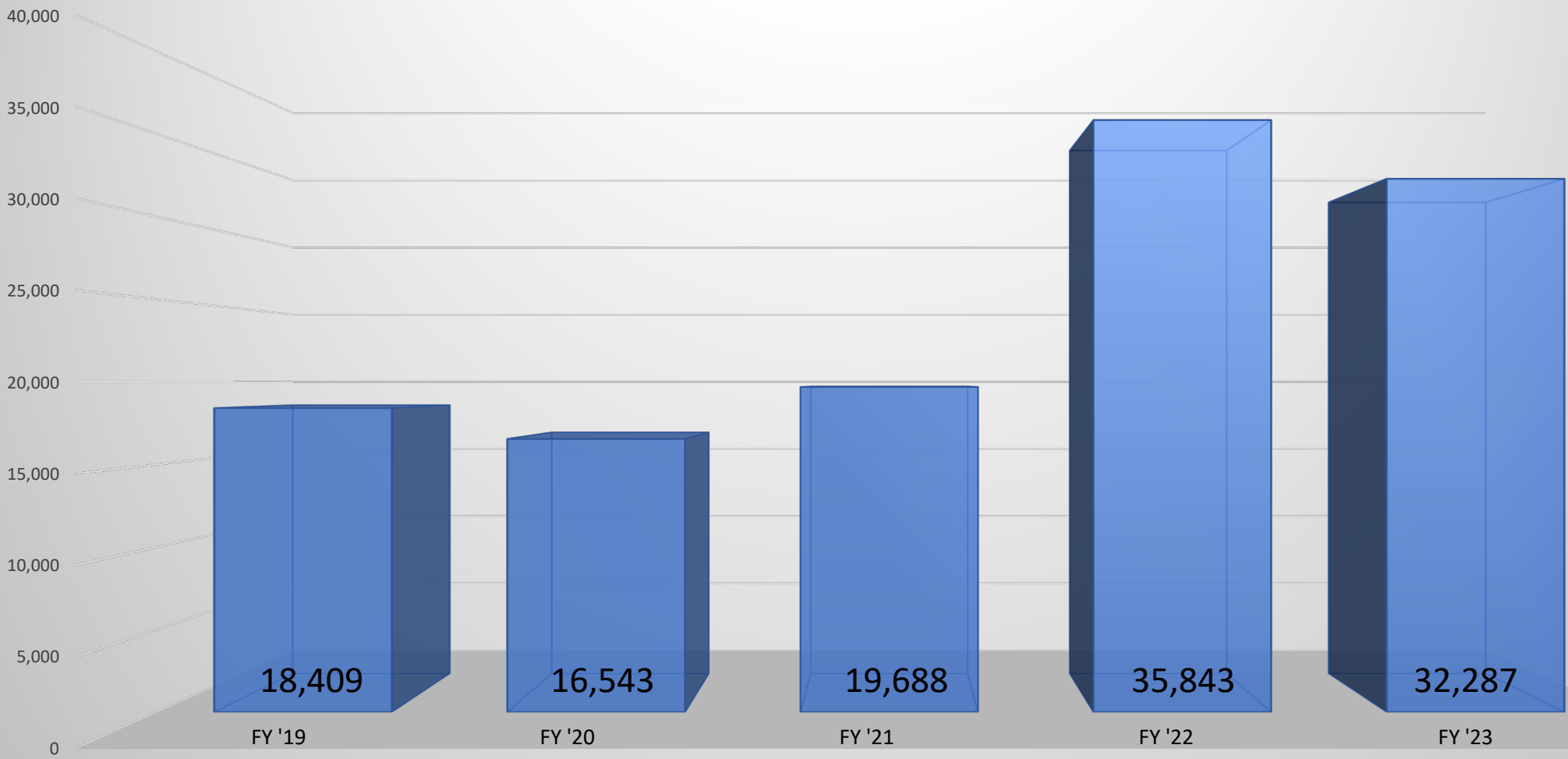
Carol A Shelton,  
Education and Outreach Specialist  
Southern Nevada Office

Nevada Commission on Mineral Resources  
10 August 2023

# Types of Presentations

- Boy Scouts/Eagle Scouts
- Science Fair Judge
- Public Event
- Career Fair
- Classroom Presentations includes Virtual
- Civic, Groups, & Clubs
- News/Media
- Web-Hosted Videos

# Education & Outreach # of Attendees By FY



# Total Number of Presentations

## In Fiscal Year 2022

- Northern Office: 101
- Southern Office: 175

## In Fiscal Year 2023

- Northern Office: 77
- Southern Office: 225



# Types of Presentations

## Fiscal Year 2022

- Eagle Scout: 1
- Science Fair: 1
- Public Event: 3
- Career Fair: 35
- Classroom Presentation: 224
- Civic: 77
- Boy Scouts of America: 3
- News/Media: 11

## Fiscal Year 2023

- Eagle Scout: 0
- Science Fair: 0
- Public Event: 11
- Career Fair: 162
- Classroom Presentation: 104
- Civic: 46
- Boy Scouts of America: 1
- News/Media: 10



# Topics of Presentations

- Minerals
- Geoscience
- Mining in Nevada
- Minerals in Nevada
- Critical Minerals
- Abandoned Mine Lands



## Science & Engineering

- Chemical Engineer
- Environmental Scientist
- Geologist
- Mechanical Engineer
- Metallurgical Engineer
- Process Engineer
- Biologist
- Safety and Health
- Physical Scientist
- Mining Engineer
- Industrial Hygienist
- Hydrologist

## Operators & Technicians

- Heavy Equipment
  - Haul Truck
  - Bulldozer
  - Shovel
  - Excavator
- Process Operators
  - Control Room
- Millwright
- Driller
- Crusher Operator

## Business

- Financial Analysts
- Accountant
- Human Resources
- Worker's Compensation
- Payroll
- Information Technology
- Security

## Skilled Trades

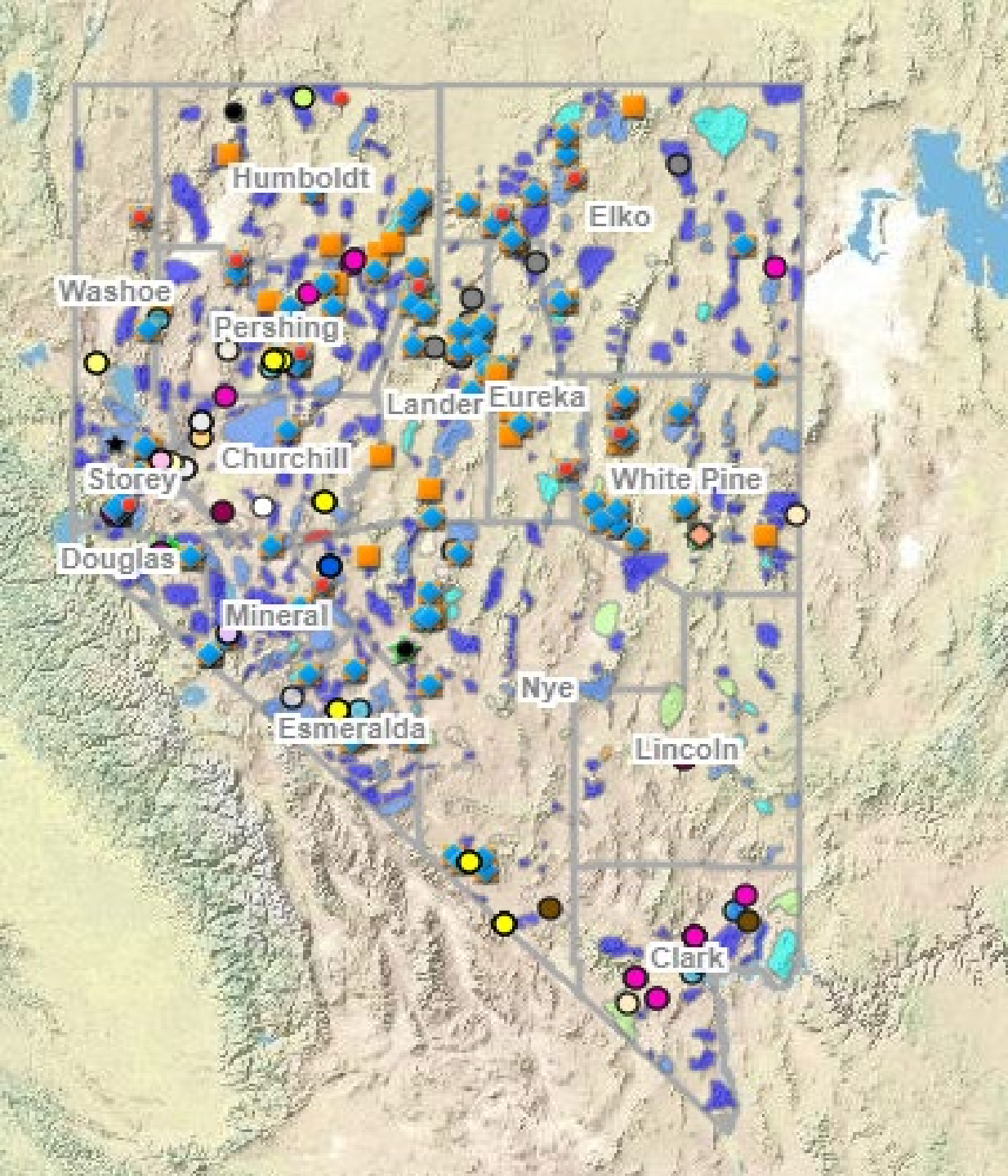
- Electrician
- Diesel Mechanic
- Small Vehicle Mechanic
- Welder
- Machinist
- Metal Fabricator
- HVAC
- Blaster
- Crane Operator

## Other

- Lawyer
  - Business
  - Environmental
  - Employment
- Quality Control
- Maintenance
- Material Handler
- Lab Technician
- Registered Nurse/Physicians Assistant
- Logistics

# Critical Minerals in Nevada

Nevada contains known occurrences or deposits of 33 of the 50 minerals identified as "Critical Minerals" by the U.S. Department of the Interior in February 2022. These Minerals are deemed "vital to the Nation's security and economic prosperity".







- ▶ Before leaving for Ford's theater on April 14, 1865, President Abraham Lincoln said in part,
  - ▶ “I have very large ideas of the mineral wealth of our Nation.”
  - ▶ “Tell the miners from me, that I shall promote their interests to the utmost of my ability; because their prosperity is the prosperity of the Nation, and we shall prove in a few years that we are indeed the treasury of the world.”



Dear Carol Shelton thank you  
for coming to Cambeiro to  
tell us all about your career  
I learned to stay out of mines  
that are abandoned you can  
save someone's life I  
really like what you said  
about mines and to stay out. 😊

Sincerely Axel Fifth Grade,

Thank You

Dear Carol Shelton, thank you for coming to Cambeiro to tell us about your career. I learned to stay out of mines that are abandoned. You can save someone's life. I really like what you said about mines and to stay out. 😊  
Sincerely, Axel, Fifth Grade



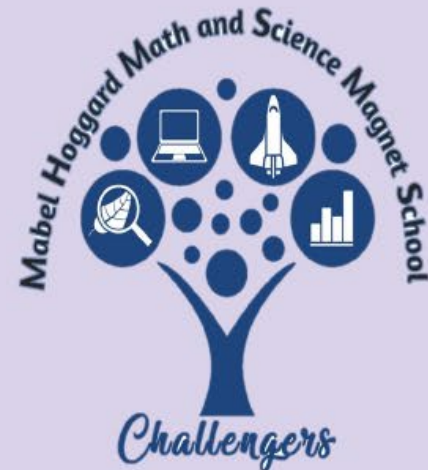
Thank you so much  
for visiting us during  
Career Week!

Ms. Shelton,

Thank you so much for talking to my first graders about mining and doing well in school. Your presentation was engaging and your preparedness was much appreciated. I love how you included each student and extended patience and grace to farfetched questions or comments. Lol You are the best! If you ever want to come teach elementary school, we would love you have you. You are a natural. Thanks again!

Xoxo,

Miss Taylor



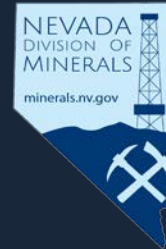


# FY 23 Education and Outreach Wrap Up

Nevada Commission on Mineral Resources Meeting

August 10, 2023 @ 9:00 AM

Nevada Legislative Building, 401 S. Carson St., Room  
3138, Carson City, NV



Garrett Wake  
Southern Nevada Programs Manager  
Nevada Division of Minerals  
702-486-4344  
gwake@minerals.nv.gov

# Presentation Outline

1. Mineral Education Workshop Attendance
2. 2023 Southern Nevada Workshop Surveys
3. 2023 Northern Nevada Workshop Surveys
4. Mining for a STEM Education (virtual) Workshop Surveys
5. All About Mining: Mining for a STEM Education Capstone Lesson Plan Examples

# **1. Mineral Education Workshop Attendance**

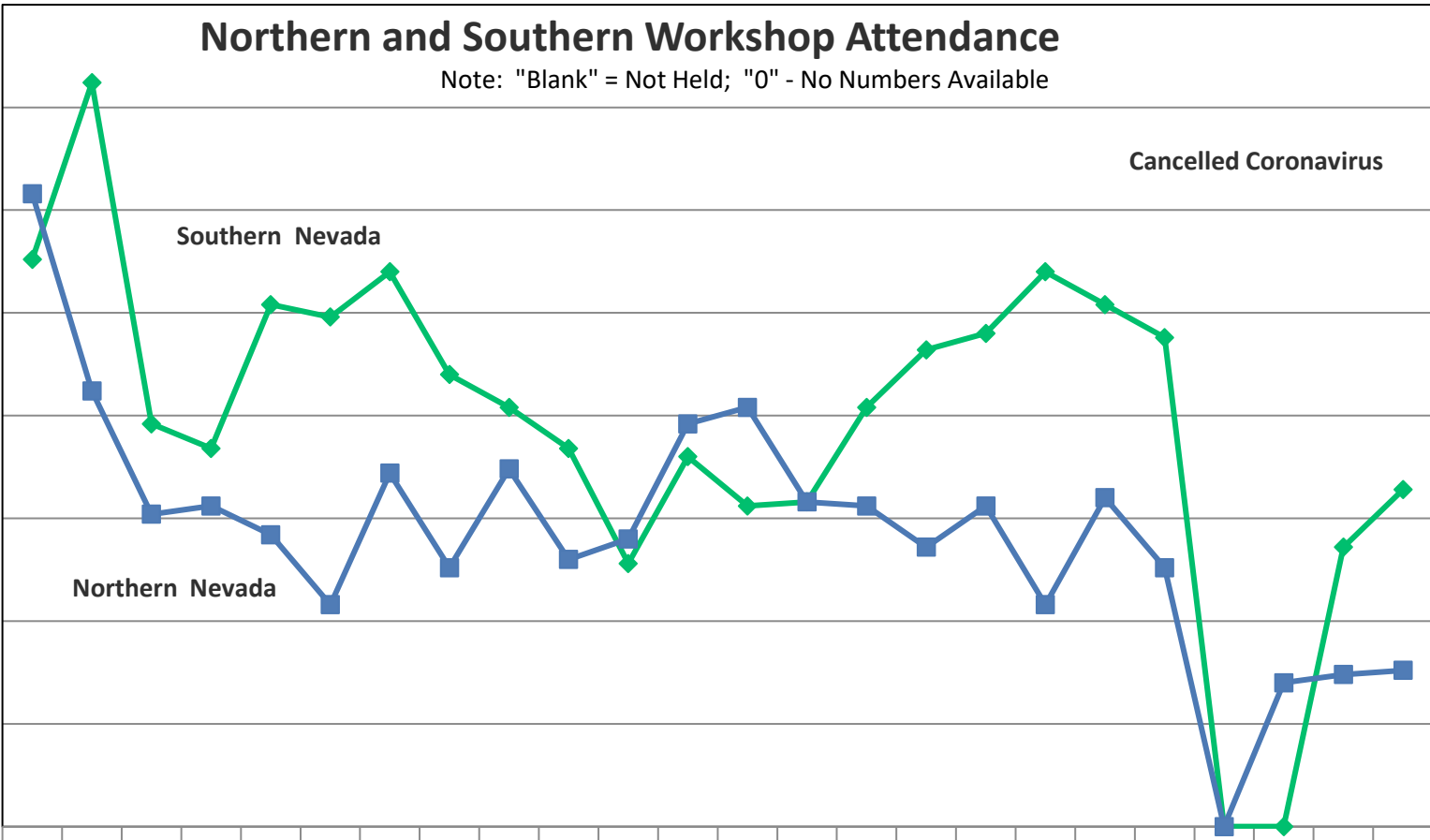
# Northern and Southern Workshop Attendance

Note: "Blank" = Not Held; "0" - No Numbers Available

Cancelled Coronavirus

A  
t  
t  
e  
n  
d  
a  
n  
c  
e

200  
175  
150  
125  
100  
75  
50  
25  
0



Southern Nevada

Northern Nevada

So Atnd	138	181	98	92	127	124	135	110	102	92	64	90	78	79	102	116	120	135	127	119	0	0	68	82
No Atnd	154	106	76	78	71	54	86	63	87	65	70	98	102	79	78	68	78	54	80	63	0	35	37	38

## **2. 2023 Southern Nevada Mineral Education Workshop Survey Results**

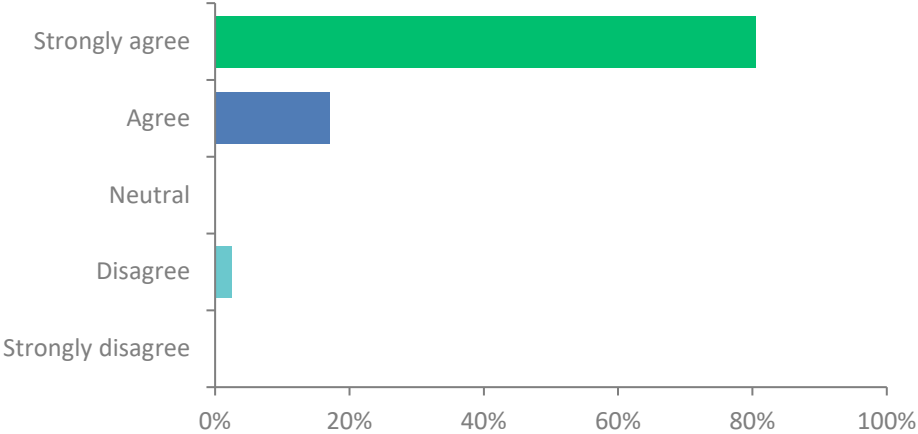
March 14-15, 2023

Faith Lutheran Middle and High School  
Las Vegas, Nevada

Enrolled: 106  
Attended: 82

# Q1: Pre-workshop information and registration is accessible and convenient.

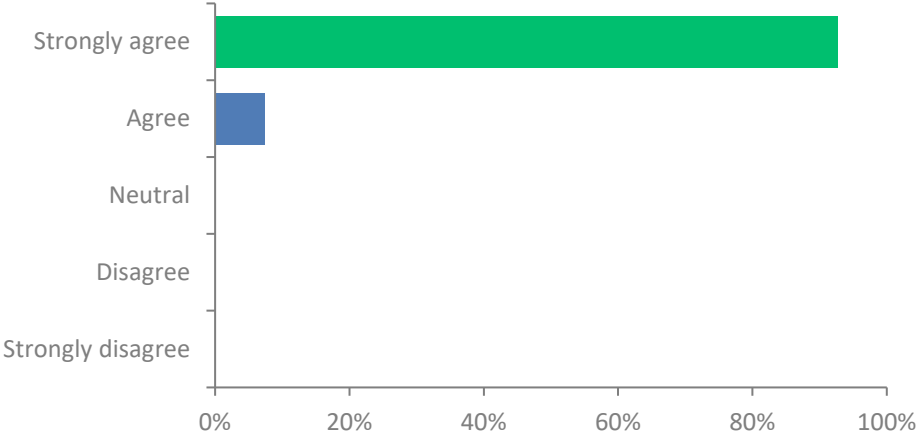
Answered: 41 Skipped: 1



ANSWER CHOICES	RESPONSES	
Strongly agree	80.49%	33
Agree	17.07%	7
Neutral	0%	0
Disagree	2.44%	1
Strongly disagree	0%	0
<b>TOTAL</b>		<b>41</b>

# Q2: The facilities are comfortable and conducive to learning.

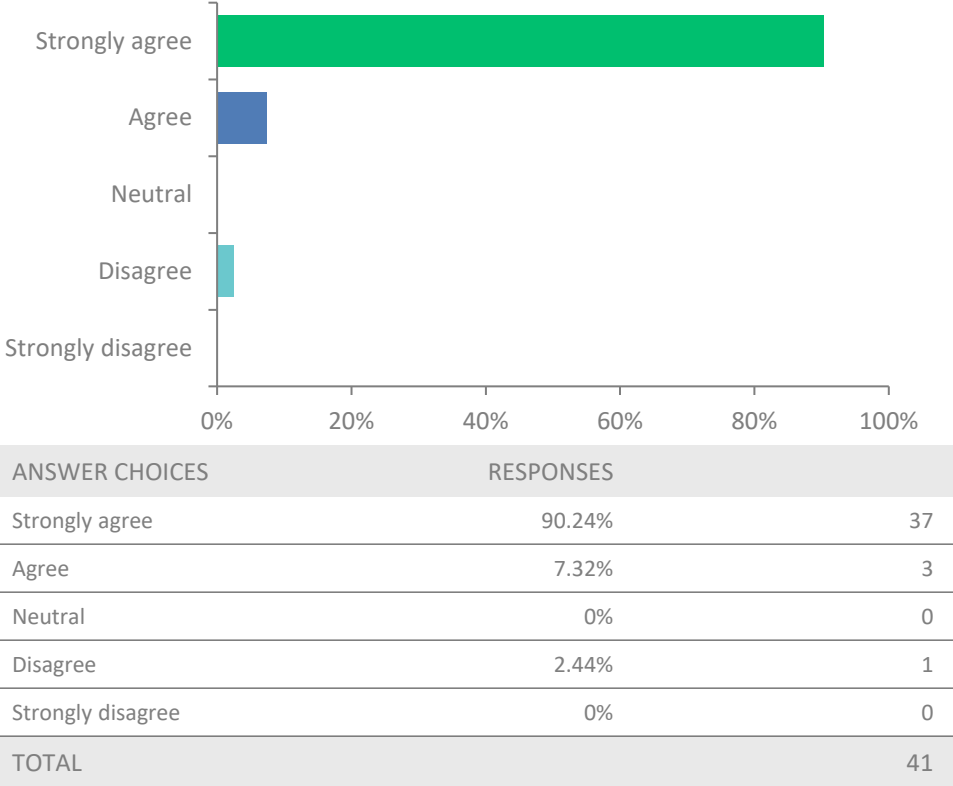
Answered: 41 Skipped: 1



ANSWER CHOICES	RESPONSES	
Strongly agree	92.68%	38
Agree	7.32%	3
Neutral	0%	0
Disagree	0%	0
Strongly disagree	0%	0
<b>TOTAL</b>		<b>41</b>

### Q3: The workshop schedule is satisfactory (e.g., session and break lengths).

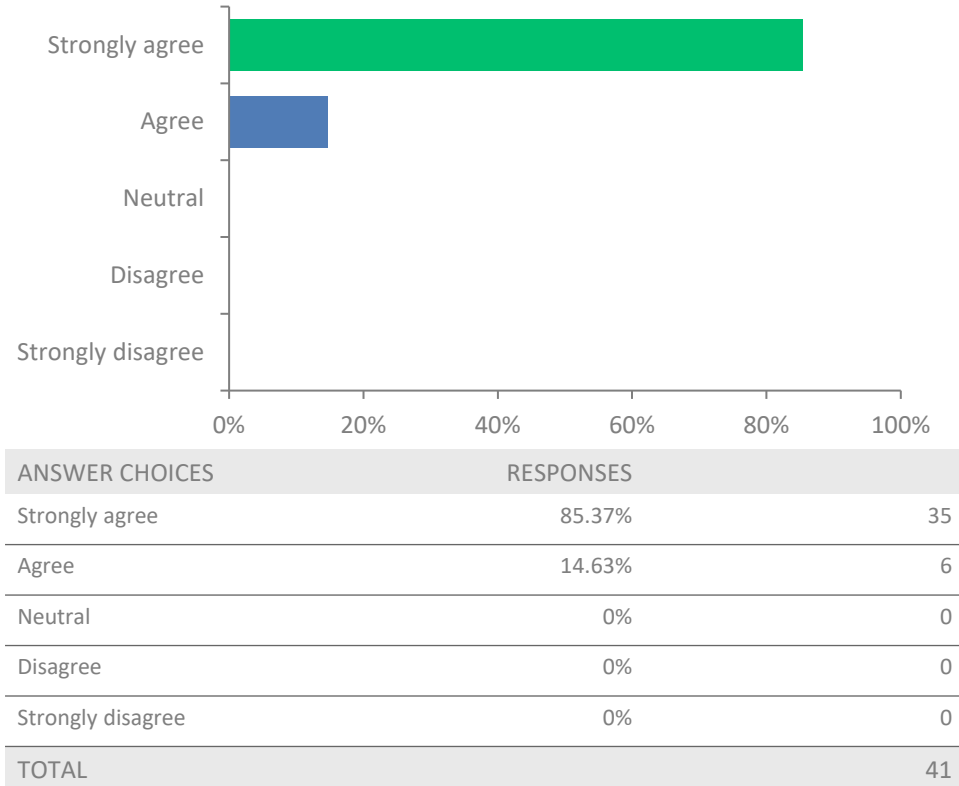
Answered: 41 Skipped: 1





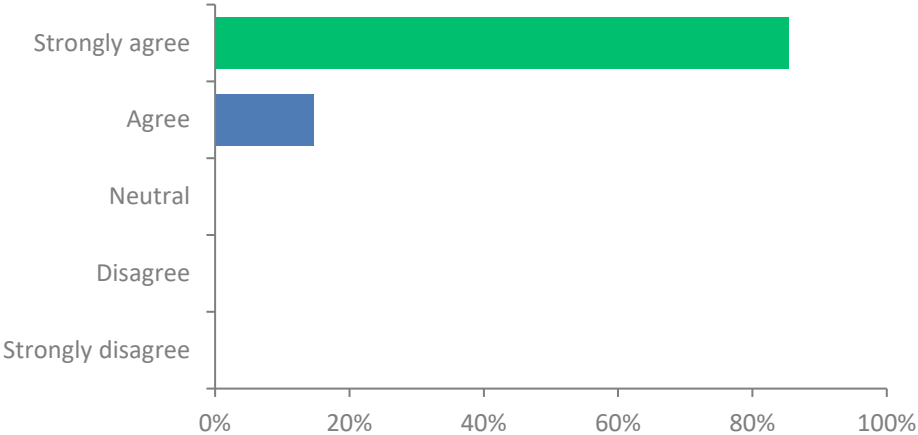
## Q4: I feel that I have received important content from this workshop that I can use in my classroom.

Answered: 41 Skipped: 1



# Q5: This workshop has been a great experience overall.

Answered: 41 Skipped: 1



ANSWER CHOICES	RESPONSES	
Strongly agree	85.37%	35
Agree	14.63%	6
Neutral	0%	0
Disagree	0%	0
Strongly disagree	0%	0
<b>TOTAL</b>		<b>41</b>

### **3. 2023 Northern Nevada Mineral Education Workshop Survey Results**

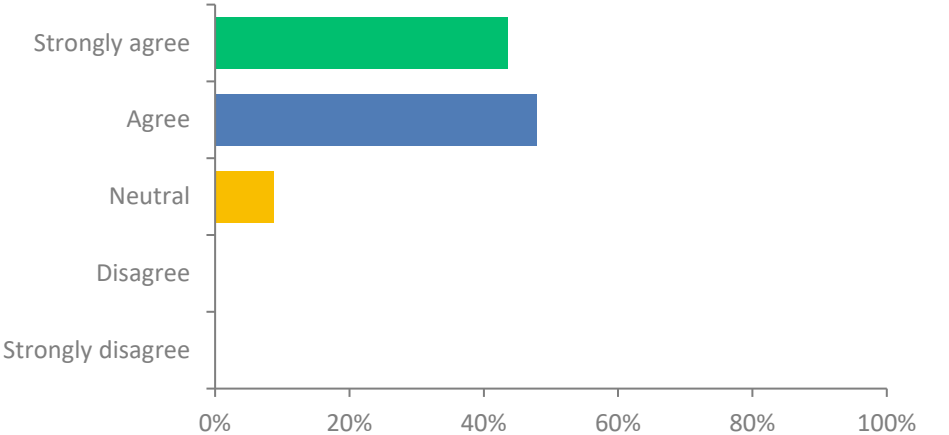
June 21-22, 2023

Lowry High School  
Winnemucca, Nevada

Enrolled: 55  
Attended: 32

# Q1: Pre-workshop information and registration is accessible and convenient.

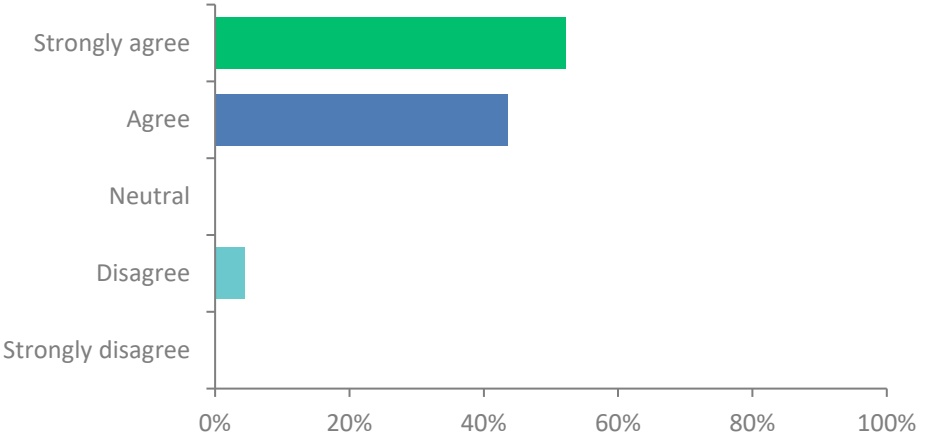
Answered: 23 Skipped: 0



ANSWER CHOICES	RESPONSES
Strongly agree	43.48% 10
Agree	47.83% 11
Neutral	8.70% 2
Disagree	0% 0
Strongly disagree	0% 0
<b>TOTAL</b>	<b>23</b>

# Q2: The facilities are comfortable and conducive to learning.

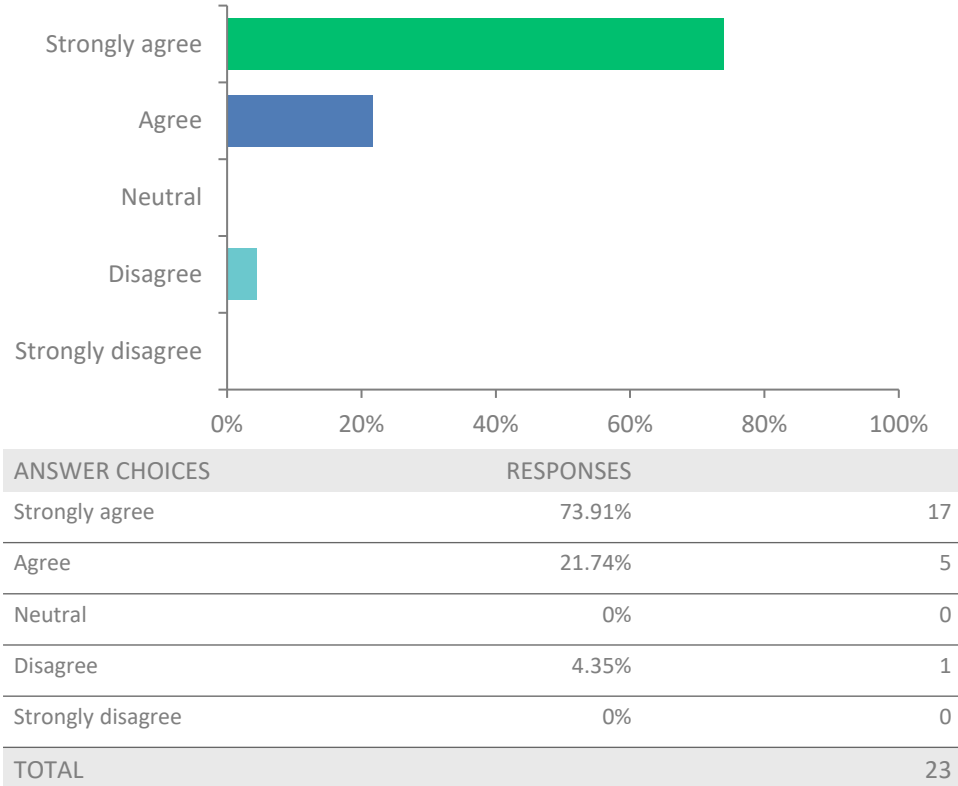
Answered: 23 Skipped: 0



ANSWER CHOICES	RESPONSES	
Strongly agree	52.17%	12
Agree	43.48%	10
Neutral	0%	0
Disagree	4.35%	1
Strongly disagree	0%	0
<b>TOTAL</b>		<b>23</b>

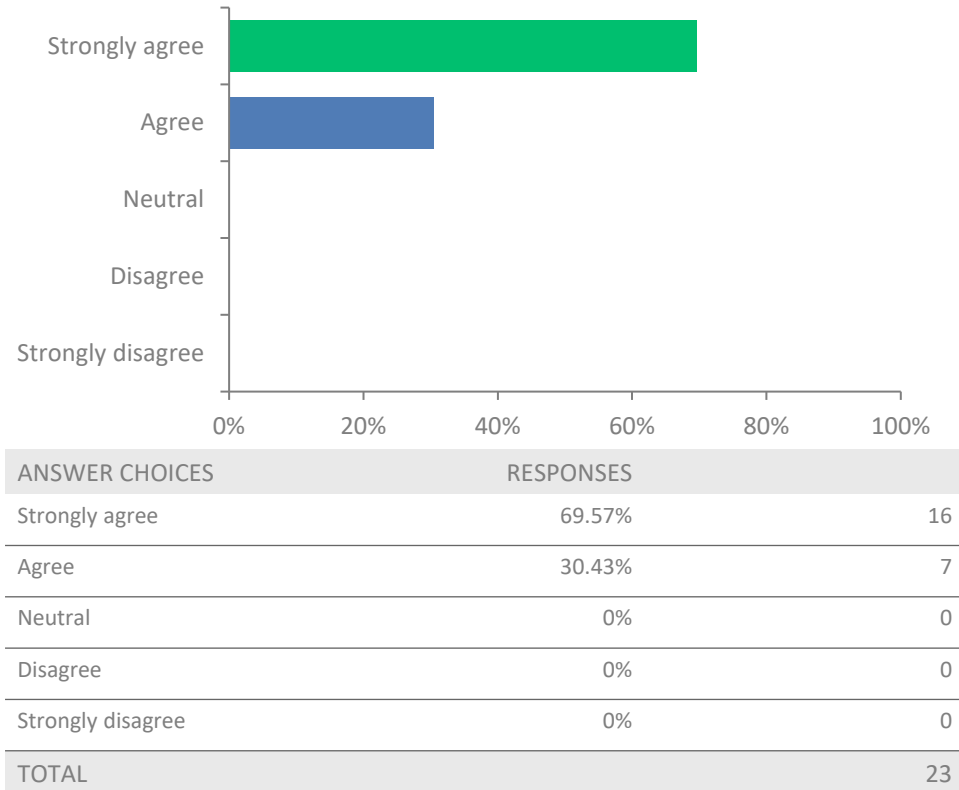
### Q3: The workshop schedule is satisfactory (e.g., session and break lengths).

Answered: 23 Skipped: 0



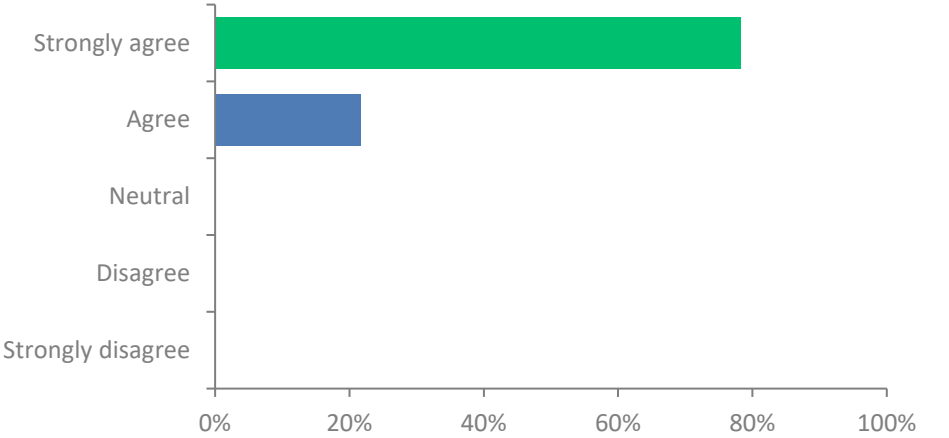
## Q4: I feel that I have received important content from this workshop that I can use in my classroom.

Answered: 23 Skipped: 0



# Q5: This workshop has been a great experience overall.

Answered: 23 Skipped: 0



ANSWER CHOICES	RESPONSES	
Strongly agree	78.26%	18
Agree	21.74%	5
Neutral	0%	0
Disagree	0%	0
Strongly disagree	0%	0
<b>TOTAL</b>		<b>23</b>



## **4. FY 23-24 - All About Mining: Mining for a STEM Education Survey Results**

Virtually on CCSD Canvas and  
[allaboutmining.com](http://allaboutmining.com)



How has  
mining  
changed with  
technology?



## All About Mining Teacher Workshops and Field Trips!

Two-day Workshops in Golden and Leadville, and Mining Across Colorado field trips. Workshops and field trips provide teachers with hands-on mining-related tools and lessons in the earth sciences, history, math, technology, and engineering.

[LEARN MORE](#)



### SESSIONS, LABS, AND FIELD TRIPS

Workshops will be offered at the Colorado School of Mines in Golden (June 5-6) and at the National Mining Hall of Fame and Museum in Leadville (June 8-9). Plus an exciting 4-day field trip tour "Mining Across Colorado" (June 19-22).



### CLASSROOM SESSIONS

Interactive, hands-on sessions on the importance of a responsible, sustainable mining industry in our everyday lives which is critical for a greener economy. Receive lesson plans that are age-specific, standards-based, and ready to use!



### EXCITING FIELD TRIPS

During the 2-Day Workshops, we'll visit several essential mining operations near Golden and Leadville. On our longer Mining Across Colorado field trips we'll visit many more active mine sites in our beautiful state!

## FY 23-24 MSE Virtual Course Enrollment

Session	Enrolled	Awarded Credit
2022 Summer	40	28 (70%)
2022 Fall	30	29 (97%)
2023 Spring	33	30 (91%)
*2023 Fall	40	TBD

# FY 23-24 MSE Virtual Course Survey

**Q1:** Course was organized and understandable.

Session	S. Agree	Agree	Neutral	Disagree	S. Disagree
2022 Summer	24 (71%)	9 (26%)	1 (3%)	0	0
2022 Fall	27 (71%)	11 (29%)	0	0	0
2023 Spring	32 (82%)	7 (18%)	0	0	0

99% average Strongly Agree or Agree

## FY 23-24 MSE Virtual Course Survey

**Q2:** Course was balanced between content videos, activities, and interaction on Canvas.

Session	S. Agree	Agree	Neutral	Disagree	S. Disagree
2022 Summer	21 (62%)	10 (29%)	3 (9%)	0	0
2022 Fall	23 (60%)	12 (32%)	2 (5%)	1 (~3%)	0
2023 Spring	29 (74%)	10 (26%)	0	0	0

95% average Strongly Agree or Agree

## FY 23-24 MSE Virtual Course Survey

**Q3:** Course content and lesson is adaptable for use in the classroom (i.e. reasonable cost, access to materials, technical level, time allowance, etc.).

Session	S. Agree	Agree	Neutral	Disagree	S. Disagree
2022 Summer	20 (59%)	14 (41%)	0	0	0
2022 Fall	22 (59%)	14 (38%)	0	1 (3%)	0
2023 Spring	25 (64%)	12 (31%)	2 (5%)	0	0

97% average Strongly Agree or Agree

## FY 23-24 MSE Virtual Course Survey

**Q4:** Would you use this lesson in the classroom? (i.e., standards specific, materials, grade level, etc.)

Session	S. Agree	Agree	Neutral	Disagree	S. Disagree
2022 Summer	21 (62%)	12 (35%)	1 (3%)	0	0
2022 Fall	21 (56%)	15 (39%)	0	2 (5%)	0
2023 Spring	26 (67%)	11 (28%)	2 (5%)	0	0

96% average Strongly Agree or Agree

## FY 23-24 MSE Virtual Course Survey

### Q5: What did you think was the best part of this course? (2023 Spring)

- I have such a deeper understanding of the impact of mining. The videos provided multiple opportunities to learn and build that concept of "if it isn't grown, it's mined."
- I loved learning about all the different parts of mining.
- I like the self-paced and fast grading. It encouraged me to keep going!
- I really enjoyed the information that was presented in the videos. Lots of different aspects to mining that I never knew about.
- The content was very thorough and covered a wide range of topics within earth science/geology. There were lessons and videos that would be appropriate for my elementary students.
- I loved all of the videos. The meeting at the end of the course was very helpful too.
- In my opinion, the best part of the course was two-fold. I liked learning about the processes required for mining and I liked the information about the different types of mines (videos, examples and video tours of different types of mines, safety protocols, etc.).
- I really enjoyed learning about mining! It is something I didn't know much about and I am happy I am more knowledgeable now! Thank you!



## FY 23-24 MSE Virtual Course Survey

### Q6: What would you change in this class? (2023 Spring)

- I feel like the lesson plan portion was a little intimidating.
- This course takes more than 18 hours to complete, especially if we could include the beginning and end of course required zoom/google sessions.
- Some of the videos were a little technical and it was hard to follow, let alone remember, some of the information presented. I would shorten or re-do some of the technical videos (like the chemical compounds for example).
- More kid friendly resources we can take back to the classroom.
- It was much longer than the 18 hours. Not including the extra videos, (I did not count them on my time sheet.) it was 20 hours. Plus the lesson plan...
- I would add 2-3 more quizzes or a couple Nearpod activities to keep engagement up.

# FY 23-24 MSE Virtual Course Survey

## Q7: General comments on the course. (2023 Spring)

- I loved this course. It was informational and entertaining. I am excited to bring this industry into the elementary classroom. I would recommend it to all of my colleagues.
- Great course!
- I loved it! Thanks!
- The instructor was very quick to respond and knowledgeable.
- Really learned a lot of information about mining.
- I enjoyed most of what I learned and I liked being able to go at my own pace. Instructor always answered my questions and inquiries.
- I did enjoy the class. I didn't realize how important mining was in my everyday life and how it is EVERYWHERE! I have recommended this class to others to take for the fall session.

## **5. FY 23-24 - All About Mining: Mining for a STEM Education Capstone Lesson Plan**

## **Lesson plan criteria:**

**1.Header:** Write your name, the title of your lesson, date, grade level(s), curriculum (science, art, math, etc.), and an estimate of the time required for this lesson.

**2.Abstract (Concept/Overview):** Provide a short written abstract or overview of the lesson, including the specific type of activity or activities included in the lesson, i.e., timeline, mapping, technology, etc. Include reference(s) to what part of All About Mining this activity relates. This should be approximately one paragraph in length.

**3.Standard(s) Addressed:** List the standards that this lesson plan will address. Identify for which curriculum area they are taken and whether they are from state or local school district standards.

**4.Specific Objectives:** After completing this lesson, students will be able to (SWBAT)... [Identify skills and knowledge that students will have acquired after completing the lesson].

**5.New vocabulary words:** Provide an appropriate number of new vocabulary words with their respective written definitions. These words may not be new to you but would be to your students. You will experience around 400 new words in this internet course. Understanding industry-specific vocabulary is essential to understanding some of the concepts presented within this course.

**6.Suggested Activities:** List the activities in which the students will participate. Each activity should help reinforce knowledge learned in your related lesson. Include specific step-by-step instructions for the teacher implementing this lesson.

**7.Required Materials:** Provide references, hardware, software, presentations, worksheets, forms, or handouts that will be utilized by the students.

**8.Assessments and/or Evaluation:** Provide a list of specific examples of how the content and skills in the lesson will be assessed or evaluated.

**Format:** Provide us with an electronic copy of your lesson plan. Your electronic copy needs to be in Microsoft Word. Insert any visuals that you feel are paramount to your lesson plan. We will reproduce the lesson plans for all participants taking this class. You will receive an email after the course containing a file of all the lesson plans created in this course.

## How Does Mining Help the Community?

1st grade

6/20/2022

ELA and Social Studies: 60 minutes

### Objectives:

*I can* learn what mines are.

*I can* discover the things I have because of mines.

*I can* show I know what comes from mines.

### Procedures:

- Intro- Show picture of a smart phone and ask how is this made. Help students by prompting them.
  - Where does it come from?
  - Who made it?
  - How is it made?
  - Tools needed?
  - Where does the material come from?
- Explain how phones are not just made and developed by scientist and engineers but miners.
  - Show and explain vocabulary
- [Show video what makes up your smart phone?](#)
- What else do you think we have that comes from mines?
  - Create anchor chart
- Read book: What's it like to Live here? Mining Town by Katie Marsico
- Why is mining important?
  - Add to anchor cart
  
- Assignment: Students will be given a large piece of paper and will draw two things with labels that we have because of mines.
  - Examples: House labeling the wood, lights, and floors
  - Computer
  - Tv
  - fridge

### Standards:

**RI.1.4** Ask and answer questions to help determine or clarify the meaning of words and phrases in a text.

**SS.1.20** Describe how the environment impacts how we live and the work we do.

### Materials:

- Paper
- Pencils
- Crayons
- Book: What's it like to Live here? Mining Town by Katie Marsico
- Slides with vocabualry

### Vocabulary:

- Mining- the act of finding the metals and minerals in mines.
- Ore- a rock the contains metal
- Minerals- doild substances found in the earth that do not come from an animal or plant.
- Mine- hole where you find important materials.

### Assessment: Formative

Students will be graded on if they were able to correctly identify two objects we have because of mines.

Students will continue to build their understanding of community helpers in the current unit of How We Organize Ourselves.

- Header:** Erin Strait, Eureka! Mining for Minerals, 5/14/2023, 7th grade.science, one 50 minute period.
- Abstract (Concept/Overview):** This activity will help students determine where minerals exist in Nevada. They will understand where deposits can be found, and what resources are mined there. This relates to the following portions of All About Mining:
- Standard(s) Addressed:**

NGSS Standards:

MS-ESS3-1: Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes.

- Specific Objectives:** After completing this lesson, students will be able to (SWBAT)... identify profitable areas of mining in Nevada and predict why minerals are found in that area
- New vocabulary words:**
  - Mineral:**
  - Ore:** A naturally occurring solid material from which a metal or valuable mineral can be profitably extracted.
  - Host Rock:** The rock surrounding the ore deposit or the type of rock where mineralization occurs
  - Open Pit Mine:**
  - Topography:**
- Suggested Activities:**
  - Students should predict what types of commodities are mined in Nevada and what portions of Nevada have active mines in them. Discuss.
  - Students should navigate to the interactive "Nevada Mineral Explorer" map found at : <https://nbmg.maps.arcgis.com/apps/webappviewer/index.html?id=e279fb2d805945b59dea1cf661f5b4e6>
  - Students should analyze the key and make connections about what type of materials are mined most in Nevada.
  - Students should then select 10 current mining locations and Nevada and describe them. For example, are they near water? A mountain? A flat area? Another mine? Etc
  - Students should try to make connections between the location of mines and the topography of the land. Students should notice that many mines are close together, and many mines are near higher elevation levels.
  - Students should then predict why they think mines are not evenly distributed across Nevada. In a later lesson, students will learn that the Earth's dynamic processes lead to mineral deposits.

Preview Questions:

How many mines do you think are currently active in Nevada?

What kind of materials do you think they mine?

Where do you think the mines are located?

Mine Location	Commodity Mined	County	Type of Mine	General Location	Observations when you ZOOM IN
Ez: Amargosa Clay Operations	Clay	Nye	Open Pit	Southwest Nevada; near the border of CA	The area is flat and there are a bunch of dots on the map

After using the interactive map, what were you surprised by?

Generally speaking, where do mines occur? (Near water, flat land, elevated land, near other mines, etc.)

Why do you think the mines in Nevada are not evenly distributed?


Camme Chown  
Impact of Mining  
April 21, 2023  
4th Grade-Science and Writing  
40 minutes

Concept:

This lesson will allow students to address the question "How does mining affect our day-to-day life?" through a written response. Students will understand that almost every single item we use contains minerals and metals from a mine somewhere around the world. Minerals and metals are in cell phones and transportation, paints and jewelry, buildings, and even dog and cat food. In fact, everything that is not grown comes from a mine! Students will be able to support their discovery with a written response, citing evidence from 2 different video resources.

Structure	Purpose/Implementation	Resources
<b>Standards</b>	RI.4.3 Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text. W.4.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly. 4-ESS3-2 Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.	Printed objectives
<b>Student Friendly Objectives</b>	I can explain how mining impacts our daily life. I can explain events, procedures, ideas, or concepts in an informational text by describing what happened, why it happened, and how it happened. I can write an informative text that conveys how mining impacts our daily life.	Sentence strips with student-friendly objective
<b>Vocabulary</b>	Minerals: substances that do not come from an animal or a plant. It comes from the earth. Salt, gravel, gold, and silver are a few examples Natural Resources: materials found in nature that are important for living or making money. Environment: everything within the natural world, including animals, plants, the soil, and bodies of water Mining: the process of removing useful materials from the earth	
<b>Introduction 5 minutes</b>	TW display the quote "If it can't be grown, it has to be mined." Display Google slides of various everyday items and have students sort items under the category of grown or mined. WGW will discuss if those items have mined items in them.	<a href="#">Google Slides</a> with pictures to sort!
<b>Focus of Instruction 20 minutes</b>	Watch <a href="#">Everyday Mining</a> on Discovery Education Students will take notes using the note catcher. TW model if needed Watch <a href="#">Is Silver Calling to you?</a> <a href="#">https://www.youtube.com/watch?v=...</a> Students will take notes using the note catcher. WGW revisit the Google Slide to see if changes should be made	<a href="#">Note Catcher</a>
<b>Small Group/Independent Work 15 minutes</b>	Using the RACES strategy, students will use information gathered on their note catcher to write a response for the following statement: How does mining affect my daily life?	<b>RACES poster</b> <b>Paper, pencils,</b> <b>Chromebooks</b>

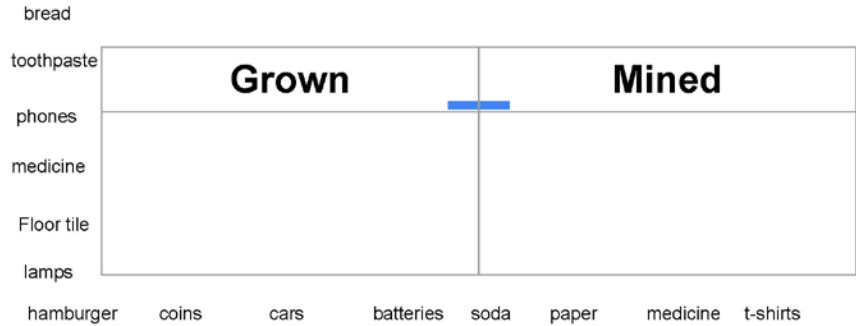
Camme Chown  
Impact of Mining  
April 21, 2023  
4th Grade-Science and Writing  
40 minutes

		
<b>Closure 5 minutes</b>	TW review how the class completed the objective: "I can explain how mining impacts my daily life."	
<b>Assessment</b>	Formative: Note catcher Summative: Written Response Summative: Completed quiz on Active Learn: <a href="#">Mining and Branching in Nevada</a>	<b>Chromebooks</b> <a href="#">RACES Rubric</a>
<b>Additional Literature</b>	What Was the Gold Rush? Terror at the Ghost Town Mine Gold Fever The Secret of the Silver Mines by Shane Peacock	

Note Catcher for the Effects of Mining on our Daily Life

Date:	Name:
List 3 ways mining affects our daily life	Everyday Mining: 1. 2. 3.
List 3 ways mining affects our daily life	Is Mining Critical in our Lives?: 1. 2. 3.

**“If it can’t be grown, it has to be mined”**





**Questions**