BRIAN SANDOVAL
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.state.nv.us/

Las Vegas Branch:
2030 E. Flamingo Rd.
Suite #220
Las Vegas, Nevada 89119
(702) 486-4343
Fax (702) 486-4345

RICHARD PERRY
Administrator

The Commission on Mineral Resources will meet on:
Thursday May 8, 2014 at
Legislative Counsel Bureau-401 S. Carson St. Room #4100 Carson City NV 89701
at 1:00 pm P.S.T.
Attached with this notice is the agenda for said meeting of the Commission.
This notice is posted pursuant to the NRS as amended by the 1995 Legislature.
This notice is to be posted at the following public places:

LEGISLATIVE COUNSEL BUILDING-CARSON CITY
STATE LIBRARY AND ARCHIVES
DIVISION OF MINERALS- CARSON CITY AND LAS VEGAS OFFICES
CAPITAL BUILDING-CARSON CITY

The public may contact Valerie Kneefel at (775) 684-7043 or Email Vkneefel@govmail.state.nv.us to request supporting material for the meeting described herein. The agenda and supporting material is available at www.minerals.state.nv.us

Dated this 2th day of May, 2014

NOTICE TO PERSONS WITH DISABILITIES

Members of the public who are disabled and require special accommodations or assistance at the meeting are requested to notify the Division of Minerals, 400 W. King Street, suite 106, Carson City, NV 89701 or by calling (775) 684-7043.

Richard Perry, Administrator
Division of Minerals

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RICHARD PERRY
Administrator

COMMISSION ON MINERAL RESOURCES
Legislative Counsel Bureau
401 S. Carson St. Room #4100
Carson City NV 89701

Thursday, May 8, 2014 1:00 P.M.

AGENDA

CALL TO ORDER

The Agenda for this meeting of the Commission on Mineral Resources has been properly posted for this date and time in accordance with NRS requirement.

ROLL CALL

PLEDGE OF ALLEGIANCE

COMMENTS BY THE GENERAL PUBLIC

Pursuant to N.R.S. 241, this time is devoted to comments by the public, if any, and discussion of those comments. No action may be taken upon a matter raised under this item on the agenda until the matter itself has been specifically included on a successive agenda and identified as an item for possible action. All public comments will be limited to 5 minutes for each person. **ACTION WILL NOT BE TAKEN**

I. MINUTES

A. February 13, 2014 meeting **FOR POSSIBLE ACTION**
B. January 16, 2014 Subcommittee meeting **FOR POSSIBLE ACTION**
C. January 16, 2014 Special CMR meeting **FOR POSSIBLE ACTION**

II. OLD BUSINESS

A. Fiscal Year 2015-17 Work Plan and Forecast Update **FOR POSSIBLE ACTION**
Linda Carrion

B. Website Update **FOR DISCUSSION ONLY**
Rachel Wearne

C. Consideration of draft language to revise NRS 522.050 **FOR POSSIBLE ACTION**
Rich Perry
Currently permitting fees for Oil and Gas Wells are set at $200.00 by statute in NRS 522.050. At the January 16, 2014 meeting the commission approved an updated fee schedule for permitting Oil and Gas Wells. A bill draft request will be presented for consideration.

D. Update on Hydraulic Fracturing Regulation process- **FOR DISCUSSION ONLY**
Rich Perry
Public workshops were held the week of March 17 -21, 2014, and public comments on the proposed regulatory changes ended March 28, 2014. Update on the process and the schedule will be presented.

III. NEW BUSINESS

A. Results of plastic claim post remediation efforts. **FOR DISCUSSION ONLY**
Mike Visher

IV. REPORT OF THE ADMINISTRATOR

A. Division of Minerals Activities
1) Administration – Rich Perry
2) Mining/Reclamation Bond Pool – Mike Visher
3) Abandoned Mine Lands (Update of AML Summer Internship 2014)– Rob Ghiglieri
4) AML/GIS – Rachel Wearne
5) Southern Nevada Operations – Bill Durbin
6) Oil, Gas, and Geothermal – Lowell Price (Well Inspection update)

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COMMISSION BUSINESS

A. Determination of time and place of next CMR meeting

ADJOURNMENT

NOTICE TO PERSONS WITH DISABILITIES

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The Commission will be attending a field trip on Friday, March 9, 2014 to EP Minerals Diatomite Mine and Nevada Cement plant & mine in Reno Nevada. Members of the public may attend but must provide their own transportation and safety equipment. Advanced notification is required. Please call Valerie Kneefel at (775) 684-7043.

I. Minutes

STATE OF NEVADA
COMMISSION ON MINERAL RESOURCES
Thursday, February 13, 2014 – 1:00 p.m.
Legislative Counsel Bureau
555 E. Washington Ave., Ste. 4412
Las Vegas, Nevada 89101

COMMISSIONERS IN ATTENDANCE:
Fred Gibson (Chairperson)
John Snow
Dennis Bryan
John Mudge
Richard DeLong
David Parker
Art Henderson

ALSO IN ATTENDANCE:
Lowell Price (NDOM)
Mike Visher (NDOM)
Jim Faulds (NBMG)
Bill Durbin (NDOM-LV)
Russ Fields (UNR)
Rich Perry - Administrator (NDOM)
Bryan Stockton (Deputy Attorney General)
Rachel Wearne (NDOM)
Rob Ghiglieri (NDOM)
John L. Muntean (NBMG)
Deborah Selig (NDOM)
Tamara Josserand (UNLV)
Valerie Kneefel (NDOM)

CALL TO ORDER/ROLL CALL/PLEDGE OF ALLEGIANCE - Chairperson Gibson called the meeting to order at 1:00 p.m., with a quorum of seven members present. The Pledge of Allegiance was conducted.

COMMENTS BY THE GENERAL PUBLIC – Pursuant to N.R.S. 241, this time is devoted to comments by the public, if any, and discussion of those comments. No action may be taken upon a matter raised under this item on the agenda until the matter itself has been specifically included on a successive agenda and identified as an item for possible action. All public comments will be limited to 5 minutes for each person. **ACTION WILL NOT BE TAKEN**

There were no public comment requests.

I. MINUTES

A. October 10, 2013 Meeting **FOR POSSIBLE ACTION**

Commissioner DeLong noted he clarified some of the wording in the minutes with staff.

Richard DeLong moved to approve the October 10, 2013 meeting minutes as amended. John Snow seconded the Motion. Motion carried unanimously.

II. OLD BUSINESS

A. Fiscal Year 2013 -14 Work Plan and Forecast Update **FOR DISCUSSION ONLY**

Background: The approved fiscal year 2014 work plan calls for expenditures of $2.4 M with total revenues from mining claim and other fees of $2.17 M, and a draw-down of reserves of $0.3 M; 2013 mining claim fees, which impact the fiscal year 2014 work plan are forecast to be ten percent below estimates, or approximately $200,000. A fiscal year 2013-14 forecast of revenues, expenditures and obligations will be presented for discussion.

With a PowerPoint© presentation, Rich Perry reviewed a year-to-date work plan and forecast. He stated the work plan was approved by Legislature. Travel costs needed to be changed through the Interim Finance Committee, to allow for additional money for inspecting oil, gas and geothermal wells. Operating Costs for Carson City and Las Vegas were more than

projected in the work plan. Obligated monies include the mining claim fees to the Mackay School of Mines and the remaining monies from the Nevada Bureau of Mines projects. Nevada Water Solutions has one-third of their funding remaining. They have assisted with hydraulic fracturing regulations. Mining claim fees from 2012 were carried over and have decreased this year by approximately 10%. AML securing fees have increased. A regulation change is needed for collecting bond pool administrative fees. The change should be agendized for approval at the May CMR meeting. The reserve was expected to decrease by approximately $300,000, but it has decreased more than projected. At the beginning of the fiscal year, the reserve was a little over $1 million. At the end of the fiscal year, the reserve will be at approximately $764,000. A budget forecast for FY 2015 may be presented at the May meeting.

Commissioner DeLong asked if the 10% decrease in claim fees was forecasted for FY 2015. Mr. Perry replied no, but it may be reviewed by the May meeting.

Commissioner Mudge requested to know if any additional funding was expected from claim fees. Mike Visher stated 90% of fees have been received for the fiscal year. There may be an additional 10% from new claims from last year.

Commissioner Henderson commented oil and gas fees will be decreasing by approximately 8% per year, unless there is success with the new wells. Mike Visher stated that was anticipated and was being taken into account for the FY 2014 forecast and FY 2015 budget.

Chairperson Gibson asked how much was left on the authorization for claim fees. Mike Visher replied $1.50. Chairperson Gibson suggested this information be provided to the Legislature to increase this fee. Mike Visher clarified the $1.50 is by regulation; therefore, the Commission has the authority to increase this fee up to the cap of $10.00 per claim, per NRS statute. Chairperson Gibson noted an increase in the authorization needed to be approved by the Legislature in the past. He suggested the Legislature be approached to approve an increase in the authorization fee over time over the current $10.00 cap.

Commissioner Parker requested to know what reserve amount would be comfortable to the Commission. Rich Perry stated he discussed this issue with the previous administrator who suggested half-a-year's worth of revenues should be in the reserve for operations. Most of the claim fees are received during the first half of the year. There may be a significant decrease in claim fees next year, due to the sage grouse. Mike Visher confirmed it may be closer to $1 million for a half year. He suggested the starting point for the reserve should be no less than $500,000. He explained the reserve is for the first several months. Monies from mining claim fees should begin coming in around October and are expected to be 60% of the $1.8 million.

Chairperson Gibson suggested the issue of the $400,000 taken from the bond pool be addressed.

Commissioner Bryan asked if fifty percent of the budget includes money given to the Mackay School of Mines. Mike Visher stated no. Monies that go to Mackey are over and above the special projects.

Commissioner Mudge commented that, in his opinion, there may be another funding request for sage grouse. He asked if it should be known that another request may not be approved. Rich Perry stated the sage grouse commitment was for two years; therefore, it is budgeted for FY 2015.

B. Recommendations from Subcommittee on Oil and Gas Fee Increases **FOR POSSIBLE ACTION**

The Subcommittee on Oil and Gas Fees met on January 16, 2014 and voted to recommend changes to the CMR to oil and gas drilling and production fees. A table with these recommendations is attached. Due to low volume and increased time associated with processing oil and gas drilling permits, the current fee structure does not cover the NDOM manpower and travel cost associated with permitting and compliance functions. Any increase in permit fees would require approval of the legislature during the 2015 session. An increase in production fees from $0.10/bbl to $0.20/bbl can be affected by the Commission in the current process of modifying NAC 522. NDOM Staff is seeking direction from the Commission on fee increases and approval to draft a BDR for the 2015 session.

With a PowerPoint© presentation, Rich Perry reviewed program revenues for 2013. He stated approximately $37,000 in revenue was collected and expenditures were at approximately $149,000. Commissioner Henderson reported the Subcommittee made the following recommendations:

- A three-tiered, sliding scale for drilling fees for conventional wells on public or private land:
  0-5,000 feet with an increase in fees from $200 to $500
  0-10,000 feet with an increase in fees to $1,000
  0-10,000 feet with an increase to $1,500
- Increase the drilling fee for unconventional wells on public property from $200 to $3,500 and for unconventional wells on private property from $200 to $4,500. The justification for this increase is that BLM charges $6,500 per well for their service sand for the drilling permit on public property.
- Establish a reclassification fee to $3,500 for an unconventional well on public property or $4,500 for an unconventional well on private property, minus the fee already paid in case a well is drilled as conventional and later converted to an unconventional well.
- Increase the $0.20 per barrel cap for administrative fees to $0.50 per barrel with the caveat not to collect administrative fees greater than oil and gas costs, with an audit at the first Commission meeting of each New Year, and to present this information at future CMR meetings.
- To charge $500 for each trade secret for administration of confidentiality.
- To charge $500 per well for cutting fees.
- Sundry fees would be the same as geothermal regulations: $100 for administrative sundries and $300 for operational sundries.

Commissioner Henderson noted the increase of the administrative fee from $0.10 to $0.20 was not included in the recommendations, but will be discussed in more detail during future workshops when there is new well production.

Commissioner Parker asked if monitoring or closure fees were taken into account. Commissioner Henderson stated those fees were discussed by the Subcommittee, but no action was taken as bonds were already in place.

Rich Perry commented on the decrease in oil production in the State of Nevada. He suggested a standard fee be established in case oil production increases. He recommended drilling permit fees be regulated by the Commission rather than the Legislature and for fees to be NAC rather than NRS for fees to be reviewed on an annual basis.

Commissioner DeLong stated he was strongly in favor of allowing the Commission to regulate fees rather than the Legislature.

Commissioner Snow asked if geothermal revenues were being taken into account before increasing oil fees. Rich Perry stated 2013 geothermal revenues were reviewed. Commissioner Henderson added there was approximately $10,000 more in the geothermal budget over the fees received and spent. There was still a deficit of approximately $100,000 in oil and gas for 2013. Mike Visher noted this figure included inspections. Commissioner Henderson stated the biggest concern is with the travel expense. Mike Visher stated the cost of the new employee has not been factored in.

Commissioner Mudge asked if the approximately $150,000 would be enough to comply with the audit. Mike Visher replied it may be, with the inspections being proposed for once every three years. The additional surplus could be applied to an additional half-time position. Rich Perry noted there is a vacancy in AML, but they were also looking for an individual with oil, gas, and geothermal background.

Commissioner Snow commented some of the wells are on BLM land. He suggested there be communication with BLM to share in some of the incremental inspection costs, if there is not a memo of understanding (MOU) where inspections are shared to accomplish the work with indirect costs. Rich Perry stated there is a proposal to hire and train a Petroleum Engineering Technician to assist with inspections and share the costs with NDOM if activity increases. Commissioner Snow commented there is push back from the public, so there needs to be good justification, and working with the BLM to soften increases would be good for establishing a friendly, regulatory environment.

Art Henderson moved to approve the recommendations from the Subcommittee on Oil and Gas in order to proceed with legislative action in approving the fee changes and to move the fee-making decision to the CMR level. Dennis Bryan seconded the Motion. Discussion followed.

Commissioner Snow asked for clarification that there was no recommendation to increase the $0.10 administrative fee. Commissioner Henderson clarified the administrative fee is in the draft hydraulic fracture regulations and is not included in the recommendations. This fee will be discussed for amendment during the March public workshop meetings.

Commissioner Mudge stated he was concerned about the best path through the Legislature and that he did not care for establishing a cap based on actual cost. Mining is currently carrying the burden of extra oil and gas and will exceed expenditures. He suggested future revenues for oil and gas should be a little bit higher to cover other programs. Commissioner Snow noted there is a production fee that will increase as activity increases.

Commissioner Parker stated he agreed with Commissioner Mudge's comment, because there needs to be some assurance that there is revenue to pay for duties completed. Rich Perry stated he will present, at the May meeting, draft language and a strategy for introducing this action to the Legislature.

Commissioner Henderson requested a roll call vote be taken.

The Motion carried by a vote of 4-3 based on the following roll call vote:
David Parker – No
Dennis Bryan – Yes
Art Henderson – Yes
Richard DeLong – No
Fred Gibson – Yes
John Mudge – No
John Snow - Yes

C. Request for support in FY14 of the UNR Mackay School **FOR POSSIBLE ACTION**

Recruitment and Retention Program in FY15 (tabled from CMR meeting 10/10/13) - Russ Fields NDOM has supported this effort through donations from claim fees for the past 6 years (2008-2013) for $100,000 per year. This request was approved and paid for FY 2013-14 and is being requested again for the 2014-15 fiscal year.

Russ Fields, Director Mackay School of Earth Sciences and Engineering, presented the request. He stated the request is for support of a significant portion of salaries for two individuals. This item had been tabled from the last CMR meeting. The CMR has provided support for recruiting and retention for the past six years at the rate of $100,000 per year. He commented that the success of recruiting and retention has helped Mackey become a very strong mining minerals school again. Overall, the undergraduate student head count has continued to increase. A major focus over the last five years has been on mining and metallurgical engineering, which has grown from 45 undergraduates in 2008 to 120 undergraduates in 2013. A lot of time is focused on retention and persistence to graduation. Retention includes career development and academic advising, which is assisting students in learning about making career choices and how to get through the process of going to college and receiving degrees. In 2013, 153 interview slots were provided. CMR's support has become critical as salaries and expenses have been derived over the last eleven years from soft money or money that is not a part of the state budget. The Howard Win endowment contributes to recruiting and retention, as well as annual corporate gifts, but $100,000 is still needed yearly to continue these services.

Commissioner Mudge commented that the budget shown is not the budget in its entirety. He asked how much the program costs and what additional revenues currently exist. Mr. Fields stated the $100,000 request covers approximately 50% of salaries and benefits. Salaries constitute 85% of the total cost; therefore, the entire program may cost approximately $275,000.

Commissioner Parker asked what percentage of individuals is employed after graduation. Mr. Fields stated it is close to 100%. Commissioner Parker asked if there may be a fluctuation with the decrease in mining exploration. Mr. Fields replied yes. There may be a reduction in jobs in the mining and metallurgical fields, but individuals may find employment in an engineering field.

Commissioner Mudge commented he believes in the program, but it would not be responsible to support the program. at this time. when expenditures exceed revenues and the reserve is decreasing.

Rich Perry stated he agreed with Commissioner Mudge's comments regarding the program, and funding a recruiter at Mackay is not a part of NDOM's statutory obligation.

Commissioner Snow commented it is a sad day when they have to fund sage grouse and not Mackay.

Commissioner Bryan stated he agreed with Commissioner Snow's comment.

Russ Fields commented that most of the Commissioners are either graduates or a part of the Board. He thanked the

Commission for their previous support and stated he will do the best he can to make up the difference to keep the program in operation. He suggested reducing the request down to $50,000 for the retention portion only.

Commissioner DeLong agreed with Commissioner Snow and Commissioner Bryan's comment. He suggested this item be deferred to the next meeting.

Chairperson Gibson tabled this item to the next meeting.

D. Update on the NBMG projects funded by the CMR and consideration for funding in FY 2015 FOR POSSIBLE ACTION Jim Faulds, Nevada Bureau of Mines and Geology; John Muntean will provide a short presentation on new web applications for mineral resource data. NDOM has contracted for support services with NBMG for $100,000 in FY 2013-14 for 1. Sample curation; 2. Mineral Industry reports; and, 3. Minerals database development. The current contract is for 2013-14. NBMG is seeking a commitment for similar support for FY 2014-15.

At this time, Jim Faulds provided an approximately seven-minute presentation for the Nevada Bureau of Mines and Geology. With a PowerPoint© presentation, Jim Faulds reviewed the NBMG projects funded by CMR in 2013 and 2014 and remaining funding for those projects. He stated there was funding remaining in the framework studies project, because there were delays in starting the project due to selecting the best area to apply those funds. Most of the funds for the Mineral Industry (MI) Report project will be expended by the end of the fiscal year; 4,200 individuals have visited the "gold" building and, from 2009, there have been approximately 240,000 hits on the website. Total revenue from purchases, over the phone or over the website, is $110,000. There is a slight decline, which reflects the slight downturn in the minerals industry over the past few years. The majority of publications are offered free to the public. A total of $83,000 has been received over the past two fiscal years for support of the sample curation project; there is $24,000 remaining for the current fiscal year. The proposal is for an additional $35,000 to maintain staffing at the "Gold" building, to continue curation of samples and cuttings; and, to continue development, maintenance, and enhancement of the web applications. There is $18,000 left for staffing of the MI Report project. John Muntean added projects were in the process of being completed. Jim Faulds stated the 2011 MI Reports were completed. The 2012 MI Reports will be completed soon. Reports are completed a year later, in order for complete data to be received and reported; $30,000 is needed to complete the MI Reports. Reports have been completed for the past thirty years, but state funding was eliminated in July 2012. The next installment of the MI Report is due by the end of next year. Then, they will co-op with the Nevada Division of Minerals to produce a small report called "Major Mines of Nevada". In addition, they are requesting $35,000 to complete an exploration survey every other year to be presented at the Legislative Council Bureau (LCB). They were also requesting additional funding to complete a geologic framework study in the Railway Valley area. They would co-op with some of the companies and use their data to better characterize the basin. Mr. Faulds stated 90% of state funding was lost due to budget cuts and they are only receiving $28,000 to continue operations at the "Gold" building. Another $29,000 is generated from publication sales. He reviewed interactive web applications being developed. John Muntean reviewed the technical map that lists coordinates of locations where the 43101 report has been completed. Mr. Faulds expressed his appreciation to the Commission for their continued support. He commented that there were indicators the economy was improving for the school and that the school was looking elsewhere for support, but additional support was needed from the Commission at this time.

Commissioner Bryan asked about the likelihood that the State would reinstate some of the funding that was taken away. Mr. Faulds stated it was not possible in this biennium; maybe 1/3 will be reinstated during the next biennium, but not all at once.

Commissioner Henderson asked if there were any reserves in the school's budget. Mr. Faulds stated there was approximately $200,000 in reserves. They receive a small percentage on the bonds associated with un-reclaimed mining lands, which totals $70,000 a year.

Commissioner Snow asked about the operating hours of the "Gold" building. Mr. Faulds stated it was four days a week and they close an hour earlier each day.

Commissioner Parker thanked Mr. Faulds and Mr. Muntean for their presentation. He asked about the stage of the digitization of well logs and how available that is. Mr. Faulds stated the PDFs of the well logs are available on some digitized databases, but not available through web applications. They do not have the staffing at this time to digitize well logs.

Commissioner Parker asked if there was any thought to digitizing well logs for cross-section analysis. Mr. Faulds stated that is completed on some individual projects. Mr. Muntean added the oil well data is in the system.

Commissioner Bryan suggested the Commission review their overall budget to determine if other budget items are

completely appropriate at this point in time. He asked if AML should be funded. Rich Perry commented, going forward, there is flexibility in the hard closure work that is contracted out in AML. Mike Visher stated, in FY 2015, $201,000 is budgeted for AML enhancements. Commissioner Bryan commented AML enhancements were completed when the Commission had a lot of money. The Commission does not have a lot of money anymore; therefore, he did not want other programs to suffer because of that fact. He suggested the Commission decide what is more important for the industry and the Commission.

Commissioner DeLong stated he agreed with Commissioner Bryan's comments, and that this issue be agendized for the next meeting. Rich Perry stated AML enhancement was a placeholder and that the Commission can discuss whether or not to continue this funding.

Commissioner Snow proposed to address the line items specific to the "Gold" building and the curation of cuttings, logs, well files for oil, gas, and geothermal, which is an extension of the Division of Minerals and a vital part of keeping the industry moving forward.

Jim Faulds noted contracts will need to be set up by April. He commented other states receive some portion of oil and gas revenues for their statutory functions. He suggested this be considered if new regulations are developed in the future. Rich Perry commented that, in his opinion, money can be shuffled around to make the commitment for next year. He will present this information at the May meeting.

Commissioner DeLong asked what is budgeted for the Mackay claim fee amount in FY 2015. Rich Perry stated it would be a percentage of $436,000 based on the ratio. Commissioner DeLong commented, in his opinion, money can be moved around and the $100,000 can be approved, which he was in favor of.

Art Henderson moved to approve $100,000 to NBMG projects. Dennis Bryan seconded the Motion. Discussion followed.

Commissioner Mudge commented he felt uncomfortable with this motion because the NBMG is not their division, yet they have become dependent on the Commission for support and that he felt guilty saying the Commission has no money. Commissioner Mudge stated he would go along with the consensus of the Commission on this motion. In his opinion, what is lacking in the presentation was their effort in finding support from other entities. Jim Faulds stated they are seeking federal funding from a variety of sources.

Rich Perry recommended funding NBMG projects through 2015.

Motion carried unanimously.

At this time, Chairperson Gibson called for a ten-minute break. At 3:28 p.m., the meeting resumed.

III. NEW BUSINESS

A. Presentation by Tamara Josserand, Director of Development – UNLV, on the Goldfield Collection FOR POSSIBLE ACTION

Chairperson Gibson commented on his upbringing in the mining industry and the cooperation needed between UNR and UNLV.

With presentation slides, Tamara Josserand, Director of Development and External Relations for UNLV University Libraries, stated they are the only public research library. There are four libraries: 1) music; 2) architectural; 3) curriculum materials; and, 4) main/lead library. Resources and material is shared with other higher education schools, especially Nevada State College and the College of Southern Nevada. They are also a large community resource with over 2.1 million users. They document the history and the culture of southern Nevada and make collections and material available to the public for posterity. The Special Collections Department has an oral history research center. The center is in its tenth year of operation. The Center for Gaming Research serves as a hub for the scholarly community around the study of gaming and gambling. It contains the largest, most comprehensive collections and materials related to gaming and gambling in North America. Once a collection is acquired, a digital exhibit is created for an on-line portal. She reviewed material acquired over many years for the Goldfield collection. They have partnered with other state and local museums, libraries, and individual collectors to create the on-line portal, "Southern Nevada: The Boomtown Years". The portal tells the story of the Old West as it was given way to the New West when the boom and bust in Southern Nevada shook the entire country's financial establishment from Wall

Street to San Francisco. The portal also provides lessons by subject and grade level for elementary to college level students.

Chairperson Gibson asked where the collections came from. Ms. Josserand stated it was derived, over the years, from a variety of sources. The primary goal is to collect and preserve the history. Items in the Goldfield Collection were purchased through auctions.

Commissioner Parker asked if there were any mineral specimens in the collection. Ms. Josserand stated there is only information about minerals, but not mineral samples.

Rich Perry commented that one his first jobs was as a Mine Geologist for mining Goldfield and there was a vault that included all original geologic maps hand done from around 1910. He asked if this information was included in the collection. Ms. Josserand stated there are items like that in the collection.

B. NDOM Logo **FOR POSSIBLE ACTION**

NDOM Staff have discussed developing an official logo for the Division. NDOM is one of the few State agencies with no official logo or branding. This discussion was brought forth during recent work on developing a new web site using State web development software. NDOM Staff is recommending the Commission request a design concept for the next meeting for consideration.

Rich Perry stated this item was agendized for the Commission to determine if an NDOM logo should be established when redesigning the website. Rachel Wearne reviewed logo examples and the new website home page.

Commissioner Bryan commented it was a great idea.

Rich Perry suggested staff select logo samples to be presented to the Commission for approval.

Commissioner Mudge suggested a logo showing more active mining.

Commissioner DeLong suggested incorporating geothermal in the logo.

Commissioner Henderson suggested receiving input from students at the Mackay school.

C. Request for funding from the UNR John Mackay Club **FOR POSSIBLE ACTION**

For travel to the SME meeting and the International Mining Competition- letter of Nov 25, 2013 included in packet.

Rich Perry noted a funding amount was not provided for the request. Commissioner DeLong suggested the Mackay Club not be funded, if recruiting cannot be funded. Commissioner Snow suggested weaning the club off of funding by providing only one-half of their request. Chairperson Gibson deferred this item to the next meeting, as more information is needed.

D. Discussion of LCB Audit **FOR DISCUSSION ONLY**

A performance audit was conducted in 2013 by the Legislative Council Bureau Audit Division. Periodic performance audits are conducted on state agencies and reported to the Legislative Audit Committee, which consists of five legislators. Audit results were reported at public meeting on January 7, 2014. The purpose of the audit was to evaluate the Division's efforts to monitor oil, gas and geothermal operations for compliance with regulations and the AML program. The Division has sixty days to develop and submit a plan for corrective action and six months to implement the plan. The Administrator will present the audit results and corrective plan.

Rich Perry stated the audit period was from FY 2010-2013. There were three findings: 1) The Division had not established a rigorous inspection process that was documented on oil, gas, and geothermal operators; 2) The Division lacked documentation to show wells were being inspected. Mr. Perry stated the Division is not required to conduct inspections, by statute, but it was the LCB's contention that inspections should be conducted and documented by the Division since the Division is the regulatory agency. A plan was established several months ago to inspect all wells and build a data file that showed well location, photos, well condition, and to contact any operators that had deficiencies; and 3) The Division did not conduct safety tests on geothermal well operations, which is the blow-out prevention tests. Mr. Perry stated, in statute, the Division is required to conduct these tests. Language was changed to allow a third-party or some form of documentation to show these tests were conducted. These tests are now being witnessed. Rob Ghiglieri reviewed the notification process for the AML follow-up on hazards. He stated, in the past, the response rate was approximately twenty percent. A three-step program has been developed that notifies the County, Board Commissioners, and the Claimant of hazards by letter. Mr.

Ghiglieri reviewed sample letters.

Commissioner DeLong asked if the program would be for private land or unpatented mining claims. Mr. Ghiglieri stated it was for all hazards on all claims, private and federal.

Commissioner Mudge asked if counties address hazards in their area. Mr. Ghiglieri replied no, but the audit requires the Division to notify counties of hazards and follow-up.

Commissioner Parker asked if the BLM is notified. Mr. Ghiglieri stated BLM and Forest Service receive copies of the database on a quarterly basis. They do not receive copies of the hazard letters. He commented on the need to update the database, drastically, in order to capture notification activity.

Commissioner Henderson noted that, if they are required to inspected oil and gas wells, he would like to know what needs to be inspected before going forward.

Commissioner Snow stated he agreed with Commissioner Henderson. He did not know why"housekeeping inspections were needed. He suggested these types of inspections be conducted every five years and a strategy be established for inspecting new, ongoing activity.

Commissioner Parker commented the wells he inspected had only housekeeping items that needed to be taken care of, but unless notified, these items were forgotten. He stated it was also important to see where production is at.

Commissioner Snow stated they have no statutory or regulatory authority through the Nevada Division of Minerals to complete beautification inspections on spills.

Lowell Price stated he inspected 295 out of 430 geothermal wells and 121 out of 123 oil wells to-date. He explained his procedure of visiting the site and taking photos. There were six geothermal wells that had fluid in the cellars and oily sludge in two oil wells. Operators were notified of the findings.

Commissioner Parker asked if there was authority to issue a compliance letter. Mr. Price stated the only issue on fee lands was sign issues and the operator was notified. He notified the operator of those geothermal wells with fluid and also stated that the BLM wanted primacy to correct this issue with a copy of the letter going to the BLM.

Rich Perry noted, if they had the documentation Lowell Price completed, the Division would not have been cited by the auditor. The Division has thirty days to develop a risk-based approach.

Commissioner Henderson suggested a summer intern complete inspections.

Lowell Price noted wells are in very good shape, especially well heads.

Commissioner Snow questioned why the auditor wants the Division to conduct well head inspections when the Division has no jurisdiction and no enforcement and NDEP has a well head inspection program. Lowell Price commented that, due to the quality in which the geothermal and oil fields are maintained, he did not believe further inspections were needed, in his opinion.

E. Discussion regarding potential changes to NAC 522.235 **FOR DISCUSSION ONLY**

Location and spacing of wells - This section of NAC addresses the spacing of oil & gas wells in the absence of a special order of the Division establishing drilling units or authorizing different densities of wells. There has been some discussion by staff and commissioners that parts of the current code are obsolete and do not accommodate the drill spacing needed for unconventional wells.

Commissioner Snow suggested a task force be established comprised of Commissioner Snow, Commissioner Henderson, Lowell Price, John Mendgini, and two members of the Nevada Petroleum and Geothermal Society to address well spacing and density when drilling is completed unconventionally and to present recommendations to the Commission. Rich Perry stated that he agreed.

Commissioner Henderson asked when is the latest that changes can be presented. Rich Perry stated it can be initiated anytime the Commission wants to begin the process, since it will be changes to NAC and does not go through the legislature.

Commissioner DeLong stated the only issue with amending the NAC is determining if it will be a permanent or temporary regulation.

IV. REPORT OF THE ADMINISTRATOR

A. Division of Minerals Activities

1. Administration – Rich Perry stated he had no additional information to report.

2. Mining/Reclamation Bond Pool – Mike Visher stated the bond pool status report was provided to Commissioners in their packets. He stated they were still at 130%+ with regards to funding. Junior activity has increased, which is reflected in the increase in gold prices. The LCB reviewed and slightly amended the regulation change approved by the CMR in August 2013, to include a business impact statement. The regulation will be reviewed during a public workshop and sent to the CMR for approval, then to LCB.

   Commissioner Bryan asked if it was fair that some people were bonded over 100%. Mr. Visher stated that is what the regulation states.

At this time, agenda item IV6 was presented.

6. Oil, Gas, and Geothermal – Lowell Price stated another 90 geothermal inspections may be completed by the end of the month. He reviewed oil well inspections he will complete. He stated, in 2013, 21 geothermal permits were issued and 15 geothermal wells; 16 oil permits were issued and 5 oil wells were drilled. Nobel Energy drilled two wells that were currently under evaluation.

   Commissioner Henderson thanked Mr. Price for conducting inspections.

At this time, Chairperson Gibson asked for public comment.

COMMENTS BY THE GENERAL PUBLIC

Pursuant to N.R.S. 241, this time is devoted to comments by the public, if any, and discussion of those comments. No action may be taken upon a matter raised under this item on the agenda until the matter itself has been specifically included on a successive agenda and identified as an item for possible action. All public comments will be limited to 5 minutes for each person. **ACTION WILL NOT BE TAKEN**

There were no public comment requests.

IV. REPORT OF THE ADMINISTRATOR (CONTINUED)

A. Division of Minerals Activities (Continued)

At this time, agenda item IV4 was presented.

4. AML/GIS – Rachel Wearne (Website update) – Rachel Wearne introduced the new website format to the Commission.

   Commissioner Parker asked if there was a way to track the number of hits received. Debbie Selig stated there was a way to track hits when work first started on the website, which may still be in place or a BOT may be added.

3. Abandoned Mine Lands (Update of AML Summer Internship 2014) – Rob Ghiglieri reviewed 2013 securings and unsecured hazards. He stated securing rates are higher than inventory rates, because more revisits need to be completed. If AML enhancements are cut, funding will need to be found for UTV, tablets and to update databases.

   Commissioner Mudge suggested looking at other options for claim holders to take responsibility.

5. Southern Nevada Operations – Bill Durbin stated preparations were underway for the 2014 Teacher Workshop in Las Vegas. The workshop will be held on April 15-16, 2014. The Mackay School of Mines has estimated 81,000+ students have attended the school. A fund-raising event for the school will be held

on Saturday, April 26, 2014 at the Henderson Convention Center and a golf tournament event at the Boulder City Golf Course will be held on Friday, April 25, 2014; the theme will be authentic 1950 and '60's revue. The Bureau of Reclamation has permanently closed 29 sites in Clark County around the Search Light area during the months of November, December, and January; most of which were moderate to high hazards. He attended the Southern Nevada Science Teacher's Association Conference last week, which displayed information regarding the Workshop and twelve registrations have been received for the workshop.

Commissioner Bryan asked for information regarding the Interstate Mining Compact Commission meeting to be held in April 2014. Rich Perry stated it will be hosted at the Peppermill. The Governor will offer the welcome speech. Tim Crowley will present a speech regarding Nevada Mining and Alan Biaggi will present the sage grouse issue. Assistance will be provided for sign-ins. Three people are currently registering for the meeting.

COMMISSION BUSINESS

A. Determination of time and place of next CMR meeting – The next meeting will be held on May 8, 2014 in Carson City at 1:00 p.m.

ADJOURNMENT

There being no further business, the meeting adjourned at 4:42 p.m.

Dennis Bryan moved to adjourn the meeting. Richard DeLong seconded the Motion. Motion carried unanimously.

STATE OF NEVADA
COMMISSION ON MINERAL RESOURCES
SUBCOMMITTEE MEETING
Thursday, January 16, 2014 – 9:00 a.m.
Legislative Counsel Bureau
401 South Carson Street
Room #2135
Carson City, Nevada

Subcommittee Members in Attendance:
Art Henderson (Chairperson)
Richard DeLong
Dennis Bryan
John Snow
Rich Perry – Secretary/Administrator - NDOM

Also in Attendance:
Mike Visher – NDOM
Lowell Price – NDOM
Bryan Stockton (Deputy Attorney General)
Valerie Kneefel - NDOM

CALL TO ORDER/ROLL CALL/PLEDGE OF ALLEGIANCE– Chairperson Henderson called the meeting to order at 9:01 a.m., with a quorum of five members present. The Pledge of Allegiance was conducted.

COMMENTS BY THE GENERAL PUBLIC – Pursuant to N.R.S. 241, this time is devoted to comments by the public, if any, and discussion of those comments. No action may be taken upon a matter raised under this item on the agenda until the matter itself has been specifically included on a successive agenda and identified as an item for possible action. All public comments will be limited to 5 minutes for each person. **ACTION WILL NOT BE TAKEN.**

There were no public comment requests.

I. NEW BUSINESS

A. Discussion of existing NDOM Oil and Gas fees, and revenues to-date – Chairperson Henderson noted the current permit fee for drilling is $200, per NAC 522.212. Rich Perry stated the fee was last changed in 1999. The fee had been increased from $50 to $200. At the same time, the administrative fee increased from $0.05 to $0.10 per barrel, and remains the current fee. The administrative fee was due to the State joining the Interstate Oil and Gas Compact Commission in 2005, with NDOM, beginning in 1999, as the entity to pay those fees each year. Chairperson Henderson reviewed NAC 522.230 regarding bonds and deposits.

Commissioner DeLong clarified the $200 application fee and the barrel production fee is paid to the Division for operating expenses. Bond and deposits, in his opinion, he would view as a reclamation bond, with funding used for abandonment if the operator does not appropriately abandon the well.

Commissioner Bryan asked about the expenditures of NDOM. Chairperson Henderson stated, in 2013, the total Oil and Gas Program costs for NDOM staff was $148,236 for 16 permits issued, 56 sundry notices, and 118 well inspections. Action was taken on the 56 sundry notices and the 118 well inspections at no cost. Administrative fees were at $34,153; oil was at approximately 340,000 – 360,000 barrels, which was a decrease from 2012; revenue from oil and gas fees was at $4,600; and, 23 permit applications were received. There was $148,236 expended and $38,753 in revenue, so there is a deficit of $110,000 in revenue. Estimated costs for the two Noble wells are approximately $14,855.

Lowell Price reported costs for the two Noble wells include approximately 14 ½ days in the field. On the first well, Mr. Price stated he witnessed the BOP testing, surface and production casing run and its related cement job. On the second well, he

witnessed the same activity, but it took approximately 6 ½ days compared to the eight days on the first well. In the office, he reviewed sundries, forwarded them for approval, reviewed reports for various cement jobs, and reviewed the cement bond logs, both CBOs and the cast log. Linda Wells contributed approximately two days, primarily in processing sundries, obtaining daily reports and saving them to hard drives, printing reports and filing.

Chairperson Henderson asked if time spent on the Noble wells was because there was concern about the wellborn integrity of the well for future hydraulic fracturing alterations or is this activity conducted on all wells that are being drilled. Mr. Price stated, with these two wells being among the first two approved wells for unconventional drilling and hydraulic fracturing completions, it was primarily to witness that the wellborn integrity was or was not there. From what he witnessed, he was satisfied with the wellbore integrity for the wells.

Chairperson Henderson noted more time is needed on completion of the wells. Mr. Price replied that is correct. There will be several days per each well related to the completion of the well.

Chairperson Henderson stated, on an unconventional well, there was approximately $7,400 in costs being incurred by NDOM at this time. The only fees that will be received at this time are $200.

Commissioner Snow asked for a breakdown of the $148,236 as it relates to processing the paperwork. Lowell Price stated, in his estimation, the amount of time was relatively minor compared to the overall time spent on the two wells. Chairperson Henderson stated there were three people from NDOM that worked on administrative duties; Lowell Price spent 56% of the time; Mike Visher spent 12% of the time; and Linda Wells spent 15% of the time. Approximately $30,000 was spent for administration. Lowell Price stated he spent approximately 65% of his time on the fluid side of the Division, which includes inspections of other companies besides Noble and 35% of his time was spent on geothermal. In prior years, he spent more time on geothermal. Chairperson Henderson noted 2013 costs for oil and gas was $148,000 and $102,000 for geothermal.

Commissioner Snow commented he wanted to understand the cost for inspection. Chairperson Henderson stated, this year, they wanted to inspect all oil and gas wells and that to-date, all oil and gas wells have been inspected. Lowell Price clarified 121 wells have been inspected; of which, 119 wells are active. He has inspected all active wells. Two other wells have been temporarily abandoned. He has visited one of those wells in the last year, but he has not conducted an official inspection. He intends to return to this location either tomorrow or Saturday when he visits McGinnis Hills for a blow-out prevention test. He will visit the other temporary abandon well the next time he goes to Noble. The two temporary abandoned wells have cement plugs in the open hole and a cement plug over the last casing point, but no top plug.

Commissioner Snow asked what percentage of the 119 active wells inspected was on private land. Lowell Price replied approximately 98-99% was on public land. There were only three wells that were on private land.

Chairperson Henderson added, this year, 100% of wells were inspected, but the percentage may decrease in the future.

Rich Perry stated inspections this year were largely driven by the legislative audit, which questioned if oil and geothermal wells were only inspected when there was a problem. A timeline will be developed for inspecting all oil, gas, and geothermal wells in the State on some periodic basis.

Lowell Price added there is always “down” time in the field when he has to wait for drilling activity to be completed, which can be from 8-10 hours. During the “down” time, he looks for issues in the oil fields. Of the 119 wells he has inspected, there have only been some signage issues. He has also inspected 295 of the approximately 430 geothermal wells. The main issue is signage; however, there are five wells with some water in the cellar. The operators and BLM have been notified of those wells.

Chairperson Henderson noted $20,000 of the $148,000 was used for travel expenses in 2013.

Commissioner Snow explained the Memorandum of Understanding (MOU) with the BLM regarding inspection of geothermal wells. He stated the MOU had a strong inspection component in the past based on the Department of Interior’s INE Program which required a strategy to inspect wells on a regular basis, in accordance with site security, production verification, and general well “housekeeping” site regulations. The Division of Minerals agreed to inspect public land in the western half of the State and BLM would inspect private land in the eastern half of the State and address any issues that rose between the two departments. The BLM also had for, at least twenty-five years, an inspector station in Ely that conducted inspections.

Lowell Price noted that the BLM has requested primacy on any corrective actions, which the Division of Minerals has agreed to. Commissioner Snow stated that, in his opinion, the past practices were a highly successful approach because the federal regulations meet and exceed the State regulations in every aspect.

Lowell Price clarified the BLM has allowed him to take immediate action on a situation he may come across on a federal lease.

Commissioner Snow stated that can be referred to as the "one or two pickup" option, because the theory behind the cooperative agreement with the BLM is that 98% of these wells belong to them. He questioned if it makes good governance to send someone from the Division of Minerals to conduct the same activity.

Rich Perry noted they had sixty days to respond to the Legislative Counsel Bureau's Audit Committee on how they will address deficiencies. He stated it was his understanding that the Legislative auditors interpreted that, if NDOM is the regulators in the State for oil, gas, and geothermal, there should be some periodicity to inspections of those wells regardless of whether the wells are on private or public land. There is an opportunity to work with the BLM on a program where inspection information and documentation is shared between the two divisions.

Chairperson Henderson summarized, in the State of Nevada, there are more dry holes than wells that produce, which is the reason why the cost for the two Noble wells were broken out for the Division to manage. They would like more of the burden of costs to be on the drilling permit fee rather than the cost per barrel.

Commissioner Snow noted there is an opportunity that the current fee may be self-healing in this new frontier and provided an example from the previous Grant Canyon oil field.

B. Discussion of procedure for changing or adding NDOM Oil and Gas fees – Chairperson Henderson stated the only fee increase that can be implemented without changing statute is to the administrative fee cap from $0.10 per barrel to $0.20 per barrel.

Commissioner DeLong stated he was in favor of not increasing the fee given the limited information on production expenditure costs for the Division.

C. Discussion of possible changes or additions to NDOM Oil and Gas fees – Chairperson Henderson stated there are three types of drilling permit fees to be addressed for possible changes: 1) conventional wells; 2) unconventional wells on public property; and, 3) unconventional wells on private property. BLM is charging $6,500 for a drilling permit on unconventional wells on public property, which is in line with the Division costs to review the conventional well drilled by Noble on private land. He suggested increasing the drilling permit fee on all three types based on a sliding scale. In his opinion, the operator on public land should not have to pay $6,500 to the BLM on top of charges to NDOM and that wells on private property do not have to pay for inspection costs. He suggested the following increases:

$200 increased to $500 for conventional wells
$200 increased to $3,500 for unconventional wells on public property
$200 increased to $4,500 for unconventional wells on private property

He clarified, in the geothermal regulations, fees are allowed to be charged for each sundry notice and provided an example.

Commissioner Snow asked how "unconventional well" is defined. Chairperson Henderson stated there is a box on the application that must be checked if the operator plans to hydraulically fracture the well. If checked, the well is considered unconventional. The fee increase is needed because the inspector will need to verify if the well is horizontal or vertical.

Commissioner Snow asked if a sundry notice fee would make up the cost difference. Chairperson Henderson stated, if the same geothermal fee structure was adopted, the answer would be no. It will be up to the operator to know in advance if the well is going to be unconventional. If a change is needed, an extra cost will be needed.

Commissioner Snow stated he likes the logic, but the process needs more work.

Lowell Price added a reclassification fee may need to be considered from a conventional well to an unconventional well, if occurred at a later date through a sundry.

Commissioner Bryan asked if an operator can choose at any time to have an unconventional well or does this classification need to be known at the beginning of the drilling program. Chairperson Henderson explained it is important to know a well will be hydraulically fractured up front, but there may be cases where it is not known until a later time.

Commissioner Bryan asked if operations will need to be restarted if an operator decides to hydraulically fracture a well at a later time. Chairperson Henderson replied no. An operator will have to ensure all casings meet hydraulic fracturing requirements and that the well is inspected by NDOM.

Commissioner DeLong asked if BLM inspections, as part of the management of the workload, will be included in the tiered permitting fees. Rich Perry replied yes, but it will need to be worked out in the MOU. Common files will also be needed. He added it would reduce the travel costs if the inspection responsibility is a shared responsibility.

Commissioner DeLong asked if there was enough BLM staff for those inspections. Lowell Price stated, normally, the BLM uses a Petroleum Engineer Technician (PET) for inspections, but they have difficulty in keeping a PET in Nevada, so most of the workload will fall on the Division. Chairperson Henderson added S.B. 390 charges the Division of Minerals and the Nevada Department of Environmental Protection with protecting the ground water in the State of Nevada on public and private property; therefore, inspections will always be conducted.

Rich Perry noted the BLM currently does not have a PET.

Commissioner Snow stated a PET can be brought in from another state. A PET also conducted all inspections in accordance with the National INE Plan for the last two fiscal years. He suggested adding deep well and a depth cut off on the sliding scale. Most conventional wells drilled in the State are just shy of 5,000 feet. Chairperson Henderson noted other states currently implement that information, so it can be reviewed.

Rich Perry added, if fee changes are adopted, it will increase the workload for NDOM, because water is the driving force and protecting it for the State on both private and public land is the responsibility of NDOM. Therefore, requirements will be more stringent than BLM requirements. He explained he calculated the proposed fee increases to the work completed last year and that it would have totaled $50,000 compared to the $4,600 that was collected for permitting fees.

Commissioner Snow asked if a refund on the $3,500 permit fee would be given to those wells that are not hydraulically fractured in the end and provided an example. Chairperson Henderson suggested adding refund language.

Bryan Stockton, Deputy Attorney General, reminded a vote is needed for any recommendations to be presented to the Commission.

Commissioner DeLong suggested voting on recommendations at the end of today's discussion.

Chairperson Henderson requested to know the fee recommendation for wells greater than 5,000 feet. Lowell Price stated he had no problem with the sliding scale fee. He suggested it be broken into three increments: 1) 0 to 5,000 feet; 2) 5,000 to 10,000 feet; and 3) 10,000 feet or more.

Commissioner Snow noted he picked 5,000 feet specifically, because that is the cut-off between statewide 40-acre and statewide 160-acre well density spacing, and because most of the existing production in railroad and Pine Valley comes from a depth less than 5,000 feet.

Chairperson Henderson reviewed the sliding scale established in Louisiana.

Commissioner Snow stated he liked Mr. Price's suggestion, because more work will be required the deeper the well goes.

Rich Perry suggested charging $500 for wells up to 5,000 feet deep that are drilled conventionally on public or private land and an increase of $200 to $1,000 for conventional wells that are drilled on public or private land greater than 5,000 feet.

Commissioner Snow suggested doing a projection on the revenue these increased fees may bring to NDOM.

Chairperson Henderson suggested a projection be completed and presented at the February Commission meeting.

Commissioner DeLong noted he would like to see a three-tiered system and that Rich Perry suggested a two-tiered system.

Rich Perry stated his two-tiered system was suggested based on Commissioner Snow's point that existing regulations with regards to well spacing are based on less than 5,000 and more than 5,000. A two-tier system would make it easier.

Commissioner Snow stated, in his opinion, Mr. Price's suggestion of a three-tiered system would be appropriate, because a well going beyond 10,000 feet would go beyond the 30-day drilling time and require an additional inspection; therefore, the $500 increase would be appropriate.

Chairperson Henderson suggested a proposal that would allow the Commission to increase the cap on administrative fees in the future from $0.20 per barrel to $0.50 per barrel, because it is very low in comparison to other agencies.

Commissioner Snow noted federal oil and gas leases pay a basic royalty; are subject to the State net proceeds of mineral tax; and, to the Division of Minerals production fee of $0.10 per barrel. The largest operator and producer has paid over the years under protest because they believe it is a double taxation when geothermal does not have a double fee. He cautioned that there may be some push back from operators if the fee was increased.

Chairperson Henderson stated they are not proposing a fee increase at this time, but on placing a cap, which would give the ability to increase the fee in the future.

Rich Perry commented the state does not have a large oil industry at this time. The current $0.10 per barrel fee covers the IOGCC fee and will be sufficient if there is an increase in production activity.

Commissioner DeLong commented that, being a representative of large scale mining, he was sensitive to the fee versus tax issue, which the Mining Industry faced in the past with the Legislature. He stated a fee on production appears to be legal, but a tax on production above and beyond the proceeds may not be legal, so the Subcommittee needs to be cognizant of the fact that the fee on production needs to be tied to an actual direct cost rather than appearing like a general tax. He was in favor of the cap, but with the proviso that what is charged needs to be reviewed relative to the true cost of implementing that portion of the program.

Lowell Price stated the Commission can also look at lowering the cost per barrel to cover activities related to the oil industry.

Commissioner Snow noted NDOM is a non-general fund agency, but is self-sustaining. The oil and gas industry generates a considerable amount of revenue that reverts back to the State and the Treasurer from monies collected from the leasing of federal oil and gas rights on public lands in the State of Nevada. Past legislative actions have channeled some of that money to administrative activity. He has reviewed the oil and gas leasing impact that the BLM has had on the State of Nevada and it is substantial on leasing than on royalties. In his opinion, it is possible that monies collected by the BLM be reviewed to come back to support the program and not to increase fees on production.

Commissioner DeLong commented that the Legislature may view that as NDOM requesting to receive general fund money, which would not be possible; therefore, he would not vote for that recommendation.

Chairperson Henderson suggested making a recommendation to increase the cap of the administrative fee from $0.20 per barrel to $0.50 per barrel with a requirement to not collect administrative fees greater than oil and gas costs audited at the first CMR meeting of each new year.

Commissioner Bryan stated NDOM already has the ability to double the fees. The perception in the industry to increase the cap by 500% higher than what it is currently and also to increase permit fees could be detrimental. He suggested leaving the cap at $0.20 per barrel since it is currently not in use.

Chairperson Henderson stated the reason this issue is being addressed is to prepare for a possible increase in productivity and to have the resources to keep up with the increase.

Commissioner Snow suggested grandfathering existing production and establishing a new production structure.

Chairperson Henderson stated his clause was not to collect fees greater than costs. Currently, costs are not being covered at $0.10 per barrel, but they do not want to increase to $0.20 per barrel at this time because they are sensitive to oil and gas producers in the State.

Commissioner DeLong commented that, in his review of the numbers, in his opinion, $0.20 per barrel would not cover costs.

Mike Visher clarified NRS 522.150 covers administration expenses of the Division. One additional expense are the dues to the Interstate Oil and Gas Compact Commission, which is tiered, meaning the more production, the more funding that is paid. Therefore, the Division currently has the statutory authority to raise the fee to cover expenses, but the permit fee is not set up to cover administrative costs.

Commissioner Bryan asked, if the permit fee was increased to what is being proposed, but keep the $0.10 per barrel fee, how far underwater would the Division be. Rich Perry stated it depends on future activity.

Commissioner Bryan suggested new producers pay at a rate of $0.15 per barrel and keep current producers at $0.10 per barrel.

Chairperson Henderson noted increasing to $0.20 per barrel will not cover costs for 2013.

Commissioner Snow asked if the $148,000 projection includes the new staff member. Chairperson Henderson replied no.

Rich Perry commented that it may be difficult to request a higher statutory limit from the Legislature when the Division is not currently at that limit.

Chairperson Henderson commented that, if drilling activity cannot be supported, there will not be increased drilling production. He stated there are increased costs to the Division to protect the groundwater, as established by S.B. 390; therefore, the Division needs the ability to balance the budget with oil and gas revenue and not take revenue from other streams of income.

Commissioner DeLong noted the Legislature has directed the Division to establish a regulatory program for the future, which includes changing the cap.

Commissioner Bryan asked if this issue will be addressed in a public workshop. Bryan Stockton, Deputy Attorney General, clarified legislative changes are not addressed in a public workshop, but go through the legislative process. There will be a public hearing during a future Commission meeting to vote on suggesting a bill draft.

Commissioner Snow commented that, in his opinion, the current assessment fee is not in line with the basic overhead for the program. He is prepared to make a recommendation for an increase to reflect a base overhead that would support the program given the decline in oil and gas.

Lowell Price stated he did not receive the December numbers, but there is an 8% decline in oil and gas.

Commissioner Snow suggested recommending a base limit of $50,000.

Chairperson Henderson noted $0.50 per barrel would cover costs for 2013.

Commissioner Snow stated the structure is great, but he was not in support of having the legacy producers pay more to support the inspection program for two wells. He agreed the $0.10 per barrel is not sufficient for baseline overhead.

Commissioner DeLong stated, in his opinion, the $148,000 covered permitting and maintenance of production through inspections. The per barrel fee should be covering the production-based inspection part of the program and the permitting side should be covered by the permitting fees.

Rich Perry stated the Division can come up with a per barrel and permit fee recommendation in table form before the February Commission meeting based on last year's numbers.

Chairperson Henderson commented on an oil spill response tax in other states. He stated he was not proposing a similar tax for the State of Nevada at this time, but that it may be considered for the future.

Commissioner DeLong stated he did not believe there was any statutory authority to regulate spills. It may be an NDEP issue. Lowell Price concurred and provided an example.

Chairperson Henderson reviewed sundry fees for geothermal under NAC534A.540. He noted no fees were charged for the 56 sundry notices submitted to the Division in 2013. He suggested a charge be established for sundry notices that are presented to the Division for approval.

Commissioner Snow stated he would be in support of that recommendation.

Chairperson Henderson commented there are laws in the State of Nevada regarding disclosure of trade secret chemicals used for hydraulic fracturing. He suggested establishing a $500 fee for every trade secret that the operator wants to submit for hydraulic fracturing. He noted other states have established similar fees.

Commissioner Snow asked how a trade secret is determined. Chairperson Henderson stated a list of chemicals will be established. Lowell Price clarified the chemical constituency will be requested, not the recipe mixture.

Mike Visher stated he was in favor of an increase in fees for administrative costs, because it will cover additional costs and administering the evaluation of the claim as well as keeping track of confidential information.

Commissioner Snow commented he did not consider a fee for tracking and identifying chemicals until today.

Commissioner Bryan asked for clarification that this is only for unconventional drilling. Rich Perry stated this was only a recommendation to the CMR and that, if approved, will result in a bill draft request. He was concerned this bill draft request may create more negativity from the Legislature.

Chairperson Henderson stated he was suggesting a fee on trade secrets because it may prevent them from being used for hydraulic fracturing.

Commissioner Snow questioned how implementing a fee would be interpreted.

Chairperson Henderson commented that he would prefer there not be trade secrets in hydraulic fracturing, but companies are allowed to have trade secrets, by State law, and there will be a cost to track this information.

Commissioner DeLong asked if there will be chemicals that may not be disclosed to the Division or not disclosed to the public. Chairperson Henderson replied the public. NDOM will know the chemical, but the public will not be given this information.

Commissioner Snow asked how trade secrets will be governed. Commissioner DeLong stated, under State law, a company has the ability to declare a trade secret. The Division cannot control that. The Division can only figure out how to deal with it. Bryan Stockton, Deputy Attorney General, clarified all information is made public record, unless made confidential by statute. Trade secrets have their own separate category where they are not subject to public disclosure; therefore, this information will need to be kept separate from public records. He did not know the liability for disclosure of trade secrets.

Commissioner Snow commented on the need for a good set of rules at NDOM to keep this information confidential.

Lowell Price commented NDOM only requires a list of the chemicals and not the formula for using those chemicals and this information can be kept separate from the well file.

Chairperson Henderson commented that procedures will need to be implemented that follow State law and that costs for those procedures should be recovered by a fee.

Commissioner Snow commented that frac focus is a choice. There does not need to be a procedure within the Division that requires submission of that information.

Chairperson Henderson stated the Division has to have the list of chemicals and chemicals need to be reported to Frac Focus within sixty days of completion of the frac job.

Commissioner Bryan asked for clarification that Frac Focus has provisions for trade secrets and if trade secrets have to have an MSD sheet. Chairperson Henderson stated, even if it is a trade secret at the well site, the MSD sheet must be presented in the well area. The MSD sheet is not sufficient because it only relates to exposure to chemicals.

Chairperson Henderson noted some states charge plugging and abandonment fees, but he does not believe the State of Nevada needs to charge these fees.

Commissioner Snow suggested establishing new injection well permits to lower the fee.

Lowell Price commented an injection well would be drilled on a conventional basis and would be a $500 fee.

Commissioner Snow stated, in his opinion, injection wells will continue to be stimulated and fractured as the need for them grows. He also suggested a fee for the cuttings that are submitted for each well.

Rich Perry clarified the original projection of $148,000 includes $30,000 for curation.

Commissioner DeLong commented Mr. Snow's suggestion of a cutting fee makes sense.

Lowell Price noted nine wells were drilled for oil in 2013.

Chairperson Henderson commented that would be approximately $3,500 for each well that was drilled to support the entire program.

Commissioner DeLong asked for clarification that the $30,000 was an annual fee for maintenance or to curate annual as the material comes in. Mike Visher stated he believed it was an annual fee. Rich Perry stated it is a part of the $100,000 that is provided to the Nevada Bureau of Mines every year. He suggested the sundry fee and the cutting fee be combined.

Commissioner Snow stated he believes a sundry would imply action needs to be taken and approved. A cutting, by rule, is to be submitted and should be submitted with a $500 fee.

At this time, Chairperson Henderson opened discussion to public comment. There were no public comment requests.

D. Subcommittee recommendations for fee changes to Commission – Chairperson Henderson summarized the following recommendations:

- A sliding scale, three-tier drilling fee: 0-5,000 feet = $500; 0-10,000 feet = $1,000; and, 0-10,000+ = $1,500 for a conventional well on public or private land
- Increase the drilling fee for unconventional wells on public property from $200 to $3,500
- Increase the drilling fee for unconventional wells on private property from $200 to $4,500
- A reclassification fee to either $3,500 for an unconventional well on public property minus the fee already paid or $4,500 for an unconventional well on private property minus the fee already paid.
- The Division to review the increase of the cap to $0.50 with a requirement to not collect administrative fees greater than oil and gas costs audited at the first Commission meeting of each new year and to present this at the next CMR meeting.
- Administration of chemicals used in hydraulic fracturing claiming trade secrets would be $500.
- Cutting fees: $500.
- Sundry Fees: NDOM to propose utilizing the current geothermal regulations to be used in oil and gas with the oil and gas nomenclature to be presented at the next Commission meeting.

Richard DeLong moved to approve the recommendations. Dennis Bryan seconded the Motion. Motion carried unanimously.

COMMENTS BY THE GENERAL PUBLIC – Pursuant to N.R.S. 241, this time is devoted to comments by the public, if any, and discussion of those comments. No action may be taken upon a matter raised under this item on the agenda until the matter itself has been specifically included on a successive agenda and identified as an item for possible action. All public comments will be limited to 5 minutes for each person. **ACTION WILL NOT BE TAKEN.**

There were no public comment requests.

ADJOURNMENT

There being no further business, the meeting adjourned at 11:33 a.m.

Dennis Bryan moved to adjourn the meeting. Richard DeLong seconded the Motion. Motion carried unanimously.

STATE OF NEVADA
COMMISSION ON MINERAL RESOURCES
SPECIAL MEETING
Thursday, January 16, 2014 – 1:00 p.m.
Legislative Counsel Bureau
401 South Carson Street
Room #2135
Carson City, Nevada

COMMISSIONERS IN ATTENDANCE:
Fred Gibson (Chairperson)
John Snow
Dennis Bryan
John Mudge
Richard DeLong
David Parker
Art Henderson

ALSO IN ATTENDANCE:
Lowell Price (NDOM)
Mike Visher (NDOM)
Dawn Harris
Paul Lenart (IWW)
David Von Seggern
Alex Tanchek (Keith Lee Public Affairs)
Tom Gallagher (Nevada Water Solutions)
Bob Fulkerson (PLAN)
Glenn Miller (GBRW)
John Hadder (GBRW)
Jerry Walker (Consulting Geologist)
Neo Mock
John Sande IV (WSPA)
Alan Tinney (NDEP)
Paul Enos (Noble Energy)
Rich Perry - Administrator (NDOM)
Joe Bryan
Tim Wilson (NDWR)
Karen LeFebre (NDWR)
Bill Ehni (EEI)
Joe Johnson
Valerie Kneefel (NDOM)
Bryan Stockton (Deputy Attorney General)

CALL TO ORDER/ROLL CALL/PLEDGE OF ALLEGIANCE - Chairperson Gibson called the meeting to order at 1:00 p.m., with a quorum of six members present. The Pledge of Allegiance was conducted.

COMMENTS BY THE GENERAL PUBLIC – Pursuant to N.R.S. 241, this time is devoted to comments by the public, if any, and discussion of those comments. No action may be taken upon a matter raised under this item on the agenda until the matter itself has been specifically included on a successive agenda and identified as an item for possible action. All public comments will be limited to 5 minutes for each person. **ACTION WILL NOT BE TAKEN.**

A. Bob Fulkerson, Progressive Leadership Alliance of Nevada (PLAN) Director, commented there was a recent audit by the Legislative Council Bureau on the Nevada Division of Minerals (NDOM). Audit findings showed NDOM seldom inspects existing oil and gas wells. NDOM relied on a producer to conduct a required test for a blow-out prevention process. He commented the State of Nevada does not provide funding for the number of inspectors required. The audit found only one inspector hired for the entire oil and gas industry in the State. Mr. Fulkerson stated, in his opinion, it is a fundamental conflict of interest to have a Commission regulate and oversee the mining, oil, and gas industry whose mission it is to promote, advance, and protect those industries and whose individuals profit from those industries. He commented the Commission should not have a say unless the Commission is broadened to include private individuals. He presented a petition of 6,000 signatures against fracking in Nevada and requested these comments be taken into consideration. (The petition presented is incorporated herein by reference).

B. Joe Bryan commented fracking oil has some hazards. Hazmat capability needs to be reviewed, because a temperature shift could cause an explosion and contamination throughout communities. He presented documents regarding concern about water contamination and possible earthquakes in the State by weakening shelf plates. He

noted there is a tie between fracking and earthquakes in North Dakota. Transportation of fracking material is also a concern, because of the static electricity and changes that can occur between rail cars.

C. David Von Seggern commented he was pleased to know companies will have to report chemical fluids used for fracking to NDOM. Water monitoring will also be required before and after fracking, but only for a one mile radius. He commented on the lack of water sources and suggested water monitoring be completed for a larger area. Also, if a water source cannot be found, it should be required that a water well be drilled and monitored. He noted, in fracking, especially in shale, horizontal drilling takes place. He suggested the one mile radius be reviewed from the target location rather than the well head.

D. Glenn Miller commented he was on the faculty of the Department of Natural Resources and Environmental Science and he worked on Marcellus Shale Fracking Consulting, mostly on the environmental side. He stated, for the record, that he was not an opponent of fracking because he has land in Montana that may possibly be fracked. He commented that groundwater contamination is fairly uncommon, because water moves slowly and takes a long time for lateral transport of contaminants. Well placement is important and appropriate, because it is completed in the mining industry. Radioactivity is common in most deep wells. He recommended a measurement of gross alpha and beta be completed on the water used for fracking and possibly the well water. There should be a requirement to analyze iron, manganese and arsenic because methane could escape and cause contamination. Well construction is the most important issue for protecting the surface from contamination. There should also be a stipulation that, if well water is not sampled and is contaminated, the fracking company should be held liable, which would encourage more systematic sampling from all available water wells. More specificity is needed in the regulation on page 12 that would require water taken from the fracking site to be put back in at a greater depth rather than transported to a facility, because it can contaminate waterways and there is no way to get salts out of the water.

E. John Hadder, Great Basin Resource Watch Director, noted detailed comments on the regulations will be submitted at a later time. He commented this regulation should fall under the Division of Environmental Protection. In general, the regulations and requirements for monitoring should be to the same extent as required for the mining industry. The company should also develop a proper ground water model to determine the proper amount of monitoring needed, which is a requirement by the Division when the mining industry submits for a water pollution control permit.

F. Dawn Harris commented she has studied this issue extensively, from both an industry and environmental perspective, and that she is not convinced that the State can be safeguarded from issues that come from hydraulic fracturing. One of her main concerns is that there were exclusions in U.S. Code exempting the company from issues that arise from hydraulic fracturing due to the Superfund Act or the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Safe Drinking Water Act; therefore, it will fall to the State to clean up any contamination. She is also concerned with the lack of addressing air quality issues. She commented that, in her opinion, the State should not get involved with hydraulic fracturing and suggested allowing science to catch up with the industry. The State is playing with the health of its citizens. Citizens can do without energy and money, but it cannot do without air or water. She noted she is representing 6,000 individuals and requested signatures to be included in the public record. (The signatures referred to were incorporated herein by reference under A, when first presented).

G. Karen LeFebre, Division of Water Resources, commented she has studied S.B. 4, which relates to California's fracking regulations. She stated California's sampling analysis program is more robust and includes a water management program. She encouraged the Commission to review S.B. 4. Bond funding for abandonment in Nevada, in her opinion, is also too low. She suggested a blanket bond anywhere from $500,000 to $1 million and, per well, should be approximately $80,000-$100,000. Her main concern is having orphan wells in the State.

H. Neo Mock commented that his main concern is that Nevada is water constrained and that fracking uses a significant amount of water.

I. Paul Lenart commented that Nevada has not had a great deal of exploitation of non-traditional methods, which is an advantage, especially in a State that has vast hydro-electric resources and potential renewable resources. He hoped fracking would be held to the strictest monitoring.

I. NEW BUSINESS

A. Consideration of draft changes to NAC 522 (Oil & Gas) to address the use of hydraulic fracturing in the drilling of exploration or production wells for oil and/or gas in Nevada. FOR POSSIBLE ACTION

Background: The Nevada Legislature approved Senate Bill 390 (NRS 522.119), during the 2013 session, which reads as follows:

1. The Division of Minerals and the Division of Environmental Protection shall, jointly, develop a hydraulic fracturing program to:

   (a) Assess the effects of hydraulic fracturing on the waters of the State of Nevada;
   (b) Require a person who engages in hydraulic fracturing to disclose each chemical used to engage in hydraulic fracturing; and,
   (c) Provide for notice to members of the general public concerning activities relating to hydraulic fracturing in this state.

2. The Commission on Mineral Resources shall adopt regulations to implement the hydraulic fracturing program required by subsection 1.

NDOM and NDEP are working with industry and environmental community stakeholders to develop a program for hydraulic fracturing that addresses direction from the legislature.

NDOM staff will present the program and recommend changes to NAC 522 which would establish new regulations for drilling of oil and gas wells where hydraulic fracturing will be used, and recommend other changes to update NAC 522.

The Commission can approve, request modifications or reject the program presented.

If the proposed program is approved, the language for changes in NAC 522 would be submitted to the Legislative Council Bureau for legal review. Once LCB has completed the legal review, staff would schedule public workshops at several venues in the State and gather public and industry recommendation and comments. These would be presented with a final draft of the recommended programs to the Commission at a later date in 2014.

With a PowerPoint© presentation, Rich Perry reviewed oil production and oil regulations in the State of Nevada and draft regulations developed for hydraulic fracturing that are to be in place by 2015, as mandated by the Legislature. Mr. Perry stated oil production mostly occurs in the eastern part of the state. It peaked in 1990 at approximately 4 million barrels a day. It has been on a steady decline in the fields that were found and developed. As of 2012, 368,000 barrels were produced. Oil production is concentrated in two areas: 1) Railroad Valley in Nye County; and 2) Pine Valley in Eureka County. In 2012, there were seventy-one producing wells in the entire State. The Legislature mandated the Division of Minerals and the Division of Environmental Protection to develop a program and regulations for hydraulic fracturing, which is listed in NRS 522.119 and include: 1) assess the effects of hydraulic fracturing on waters in the State of Nevada; 2) require person who engages in hydraulic fracturing to disclose each chemical used to engage in hydraulic fracturing; and, 3) provide for notice to members of the public concerning activities relating to hydraulic fracturing in the State. The program should be in place in 2015. He noted NRS 522 regarding oil regulations in the State was adopted in 1979. The last time there was an update to NRS 522 was in 2001. Fundamental in NRS 522, is the protection of fresh water and to seal off strata that produces oil from the strata that has ground water to prevent contamination. The permit application process requires drilling details and bonding information. He noted, if the well is located on federal ground, bonding is collected by the BLM. If a well is located on private ground, bonding is collected and held in an account by the Division of Minerals; 97% of the producing oil wells in the State of Nevada are located on federal ground. Sundry notices are required for any changes. A well completion report is required at the end of activity. Confidentiality will be granted to an operator for six months as far as the well log and cuttings, and is included in code. There is a clause for penalties for violators and injunctive relief if a violator needs to be brought into compliance, which occurs in the district court of the county where the violation occurred. Conditions of approval are included with the permit and are conditions under which a permit is granted to complete an exploration for oil or gas. There are currently three individuals involved in the evaluation and granting of a permit; 1) the Oil, Gas, and Geothermal Program Manager; 2) the Administrator; and, 3) the Deputy Administrator. These individuals are currently sufficient for the amount of permit activity that occurs in the State at this time. If there is an increase in activity, more individuals will be involved in the process. NDOM staff, Commissioner Henderson, and NDEP representatives developed draft regulations. Other state statutes and regulations were reviewed. The BLM was also consulted, because there is a Memorandum of Understanding (MOU)

with them. The Interstate Oil and Gas Compact Commission was also consulted, of which, the State of Nevada is a member. On November 21, 2013, a stakeholder meeting was held. The direction received was to include conditions of approval to the regulations. The draft received was also available to the public on the Internet. Regulation language includes the following:

- Having an application for permit to drill with an area of review minimum of one mile, which is currently not in regulations, and would also require the applicant to produce a map that is similar to one that is submitted for a water right.
- Ground baseline sampling and monitoring of up to four wells by the operator will require sampling before the well is hydraulically fractured six – twelve months after a frac, and sixty to seventy-two months after hydraulic fracturing, which is language borrowed from other states, specifically from Colorado.
- Submission from the operator to the Division of Minerals and triggers for notification if certain accidences were found.
- Require a cement bond log and pressure monitoring during hydraulic fracturing, which occurs during the drilling of the well. A cement bond log is done to determine if there are any voids in the cement after it is set behind the casing. Pressure monitoring is to prove that there are no leaks in the casing or the cement.
- Intermediate casing will be required for wells proposed for hydraulic fracturing.
- Production casing will be required to be cemented to 500 feet above the upper most zone of hydro-carbon interest to make sure there is a seal between the strata.
- An individual engaged in hydraulic fracturing will be required to disclose each chemical in use. In the proposed regulations, the use of the NDOM website was added. A standard list of chemicals and maximum concentrations used in hydraulic fracturing fluids will be sourced from Frac Focus, which is funded by IOGCC and the Ground Water Council. NDOM will also enlist the assistance of NDEP to evaluate those chemicals, as they have more individuals specialized in that type of review.
- The operator will post the chemicals used on a publicly-available chemical disclosure registry and to Frac Focus within 60 days.
- The operator will be required to provide a 14-day notice of intent to NDOM and the land owner disclosing the location of where hydraulic fracturing will occur before it is initiated. This requirement will be included in NRS 522.

Mr. Perry noted approved permits will be available for public viewing on the NDOM website. He reviewed current regulations for conventional and unconventional wells that will be added to the hydraulic fracturing program. They were proposing to remove the regulation that allows drilling for oil and gas with cable tools. The Commission also requested a change in administrative fees and a repeal of the first year administration fee on oil production. Public workshops will be held in March 2014 in Carson City, Las Vegas, Elko, and Ely. NDEP will update the MOU to provide additional assistance for the proposed regulations. A 30-day notice will be sent out before the Notice of Public Hearing for the final adoption by the Commission.

Commissioner Henderson asked how many of the seventy-one producing wells in 2012 were inspected in 2013. Mr. Perry stated all 118 permitted wells were inspected in the last six months.

Commissioner DeLong asked which Division was being referred to on page 12, paragraph G, the last line. Mr. Perry replied the Division of Minerals.

Commissioner Parker commented, on page 6, paragraph two stated the area of interest will be one mile out. He asked for clarification that the area of interest can be extended two miles out. Mike Visher stated the area of review will not only be around the well bore, but will extend along the surface trace of any proposed lateral. They will be looking for information that can be used as part of the permit application to assist with evaluating what safeguards need to be in place for well-bore integrity. Commissioner Parker asked if this will include an extension of water monitoring. Mr. Visher replied no. The water monitoring will be restricted within the one mile radius unless the Division feels there is a need for an extension. The operator may want to combine multiple applications within one area of review, so it would create a larger area, but water monitoring will still be restricted to the well bore and the one mile radius from that location.

Commissioner Mudge questioned the wording on page 4, item D. He stated the intent was for a sample to be completed within twelve months prior to a well being drilled. On page 3, item A, Commissioner Mudge requested clarification and asked if there could be a water sample twenty-four months before drilling or within the same twelve-month period. Mike Visher clarified it was within the same twelve month period.

Commissioner Henderson asked which section addressed the increase in the administrative fee. Mike Visher stated it was at the bottom of page 20.

Commissioner Henderson requested an explanation of the procedure to increase the administrative fee. Rich Perry stated it can be changed during a workshop or 30 days prior to the final draft.

Commissioner Parker asked if the Division was restricted to only NRS 241 direction. Rich Perry stated air quality issues are outside of the jurisdiction of the Division and would be up to NDEP to address.

Commissioner Mudge commented he was under the impression that NDEP would oversee ground water. He asked for clarification that it was NDEP or NDOM. Rich Perry clarified NDOM would not regulate ground water, but do need to approve where frac water will go. Mike Visher added the operator has to indicate the method that may be used for storing frac water. NDEP will regulate the diposal method. Commissioner Bryan noted this information was on page 12, item G.

Commissioner Snow commended Commissioner Henderson and the staff of NDOM and Environmental Protection for their efforts on the legislative mandate. He noted Nevada is the twenty-sixth state to implement hydraulic fracturing rules and regulations.

In response to public comment, Commissioner DeLong stated the Division was directed by the Legislature to develop a set of regulations under NRS 522, regarding oil and gas provisions. The Division does not have jurisdiction over air quality or water quality. Air Quality and water quality is under the jurisdiction of the Nevada Division of Environmental Protection.

Commissioner Henderson asked for clarification that this information is only a working draft to be presented to the Legislative Counsel Bureau to begin public workshops. Mr. Perry clarified that is correct.

Art Henderson moved to approve the draft changes without modification to NAC 522, as presented in the meeting binder and direct staff to LCB for pre-adoption review. Richard DeLong seconded the Motion. Motion carried unanimously.

COMMENTS BY THE GENERAL PUBLIC – Pursuant to N.R.S. 241, this time is devoted to comments by the public, if any, and discussion of those comments. No action may be taken upon a matter raised under this item on the agenda until the matter itself has been specifically included on a successive agenda and identified as an item for possible action. All public comments will be limited to 5 minutes for each person. **ACTION WILL NOT BE TAKEN.**

NOTE: The Chairperson, Commission on Mineral Resources, or other Presiding Officer of the Commission reserves the right to change the order of the agenda, and if the agenda has not been completed, to recess the meeting and continue on another specified date and time. Additionally, the Commission reserves the right to combine two or more agenda items, and/or remove an item from the agenda, or delay discussion relating to an item on the agenda at any time.

A. Clarification was requested regarding if the Division of Minerals or NDEP will decide on where and how water will be disposed because there are major differences in jurisdiction and evaluation. He considers that the most environmental issue.

B. Bob Fulkerson, PLAN, commented that regulations were adopted without any direction or resolution on how the polluted water will be handled. He stated he would have liked to have seen a broader discussion on the matter. He appreciated the questions posed by Commissioner Parker regarding air quality. Rich Perry clarified no regulations were adopted. This meeting is a preliminary view of draft regulations that will be addressed in-depth during public workshops.

C. Alan Tinney, NDEP, stated they have statutory and regulatory authority for any discharge of any fluid in the State of Nevada through the ground or through the surface area. The permitting process will be through NDEP.

D. Colleen Cripps, Division of Environmental Protection Administrator, added they have been working closing with the Division of Minerals on this process and will continue to do so. The air quality issues that were mentioned that does come under the purview of the Division of Environmental Protection and they feel they already have existing regulatory and statutory authority to address that issue.

E. Dawn Harris stated she had a question regarding page 5, item 3A which states a previous sample can be used; however, under item b, it says a previous sample may not be used. She requested clarification of this statement. She commented there were so many issues that she was concerned about, including the one-mile radius and the health of workers. She questioned what guarantee there is that these issues will be regulated that will safeguard the state. She suggested there be some direction to the public on what to expect on the Division's website. Rich Perry reiterated one workshop will be held in Carson City in March and will be posted for the public and will be in a venue where changes to the draft language can be addressed.

F. Joe Bryan stated his concern again is if fracturing shatters a shelf plate, will this decrease the earthquake factor. He questioned how fracturing will be contained if there is a major earthquake and how it will be monitored. He was also concerned with the transportation of fractured material because there are minimal regulations for this issue. He suggested hazmat inspections be conducted when transporting this material through the State.

ADJOURNMENT

There being no further business, the meeting adjourned at 2:19 p.m.

II. Old Business

II. OLD BUSINESS

A. Fiscal Year 2015-17 Work Plan and Forecast Update

II. OLD BUSINESS

B. Website Update

Nevada Commission on Mineral Resources

Division of Minerals

NV.gov Agencies Jobs About Nevada

This Site Only State-Wide

HOME ABOUT US COMMISSION PROGRAMS NEWS & EVENTS CONTACT US

Lowell Price

Steam rises from a geothermal plant in Dixie Valley

Important Links

- Upcoming Meetings
- Nevada Bureau of Mines and Geology
- Nevada Mining Association Teacher Workshops

HOME
Nevada Governor
State of Nevada

ABOUT US
FAQs

COMMISSION
Meetings

PROGRAMS
Bond Pool (Reclamation)
Oil & Gas

NEWS & EVENTS

CONTACT US

Select Language

GEOTHERMAL

- NV Geothermal Power Plants
- NV Geothermal Power Production
- Major Mines, Oil Fields, and Geothermal Plants Map

Nevada Geothermal Resources and Production

Nevada's geothermal resources are utilized in three major ways. The geothermal resources are used to generate electricity, for space heating, and commercial applications.

- Geothermal Production Summary 2013

Electrical Generation

Nevada's geothermal electrical generation plants are located predominantly in the northern portion of the State. Currently, Nevada has 586 megawatts of nameplate generating capacity from 22 operating geothermal plants, at 14 different locations. Nevada's geothermal plants can theoretically generate up to 539 megawatts of power collectively in any given hour. A megawatt is 1,000 kilowatts, which is enough electrical power to serve over 300 typical households. The 2013 gross electrical output for Nevada's 22 geothermal plants was 3,433,903.5 MWh, with net output (sales) being 2,588,629.0 MWh. Nevada's electrical generation capacity from its geothermal plants is second only to California.

Space Heating

Geothermal energy is used to heat homes and businesses in numerous Nevada locations. The cities of Elko and Caliente have small heating districts that are approved by the Public Utility Commission to provide heat for buildings. A private heating district provides heat to homes in southwest Reno. Domestic geothermal heating systems utilizing an anomalous heat source provide heat to individual residences and ranches. Heat pump and ground source heat systems that do not utilize an anomalous heat source are not considered geothermal systems in Nevada.

Commercial Applications

Geothermal resources can be used to assist processing in both agricultural and mining operations. In the case of agriculture, heat from geothermal fluids is used in the dehydration process of vegetables. In mining, geothermal fluids have been used to assist in the separation of gold from associated ore.

Geothermal Program Contact

Lowell Price
Oil, Gas, and Geothermal Programs Manager
lprice@govmail.state.nv.us

Regulations

NAC 534 A

NRS 534 A

BLM Links

LR 2000

BLM Geothermal

Nevada Geothermal Guidance

EDUCATION AND OUTREACH

Minerals Education

The Nevada Division of Minerals and the Nevada Mining Association have been involved in all aspects of mineral education programs for Nevada schools. These education programs have been very successful and well received by Nevada teachers.

Earth Science Workshops

Since August 1984, the Nevada Division of Minerals and the Nevada Mining Association have co-sponsored annual Earth Science Education Workshops for teachers from throughout Nevada. A summer "State-wide" workshop is held in rural communities near operating mines. A spring workshop is held in Las Vegas, specifically designed for teachers in Southern Nevada. Teachers enrolled in the Earth Science Education Workshops can receive Nevada Department of Education recertification, Professional Development (PDE) (School District), or university (UNR or UNLV) credit.
Teachers attending the workshops have an opportunity to participate in "hands-on" classroom activities which can be incorporated into existing curriculum. Attendees also get the opportunity to visit operating mines and examine mining and processing procedures. All attendees gain an appreciation for the mineral industry and the importance of minerals to society.
To date over 4,000 teachers and administrators have participated. The mineral education workshops are nationally recognized, and NDOM/NMA staff have trained teachers and industry representatives from other states (including California, Wyoming, Minnesota, New Mexico, Indiana, and Montana) to develop similar programs. We are currently working with Florida to help develop a program for their teachers. We welcome representatives from other states who would be interested in observing and possibly emulating our program.

Upcoming workshops:

Las Vegas - April 15 - 16, 2014
Reno - July 15 - 17, 2014

- Information on Earth Science Workshops

Educational Resources

- Educational Links
- Nevada Mining Association Classroom Activities
- Women in Mining
- Exhibits, Clubs & Tours

Education Contacts

- Bill Durbin - NDOM - Las Vegas
- Rachel Wearne - NDOM - Carson City

Programs

ABANDONED MINE LANDS (AML)

AML Program

The Division of Minerals is legislatively mandated to conduct the State's AML program to identify inactive mines, rank their degree of hazard, and carry out activities to secure these sites, be it through owners or Division staff. The Division also conducts an extensive public awareness and education campaign focused on the dangers in and around abandoned mines.

- AML Hazard Information
- AML Education and Outreach

About Abandoned Mines

Hazardous abandoned mines are found throughout Nevada and pose a significant rick to human and animal life. These mining features can be shafts, adits (tunnels), open pits, or stopes and are very unstable due to their age and can be difficult to see when exploring Nevada. Please be careful - know the hazards and what to look for. Being uninformed may result in accidental injury or death. Stay out and Say Alive!

- About Abandoned Mines

A Brief History of Mining in Nevada

Modern mining in Nevada began in 1850 when a Mormon wagon train on their way to California discovered placer gold near present day Dayton. The placer discovery led prospectors to work upstream towards the site now known as Virginia City, and eventually to the discovery of the great Comstock Lode in 1859. For over the first 60 years of Nevada's economy, mining was one of the largest contributing industries. The vast majority of the abandoned mines in Nevada were in operation before the surface management amendment to the 1872 Mining Law, leaving little to no consequences for miners to walk away from potentially dangerous mine features.

AML Contact

Rob Ghiglieri
Chief - Abandoned Mine Lands Program
rghiglieri@govmail.state.nv.us

Southern Nevada Contact

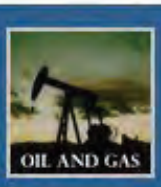
Bill Durbin – Chief, Southern Nevada Operations

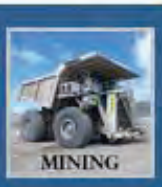
Publications and Links

- AML Report
- AML Fact Sheet
- FAQ

Regulations

- NAC 513 – Regulations on Dangerous AML Conditions





II. OLD BUSINESS

C. Consideration of draft language to revise NRS 522.050

NRS 522.050 Permits to drill wells required; fees.

1. A person desiring to drill a well in search of oil or gas shall notify the Division of that intent on a form prescribed by the Division. ~~[and shall pay a fee in an amount established pursuant to subsection 2 for a permit for each well.]~~ *The Division of Mineral Resources shall impose and collect a fee for examining and filing an application for a permit to drill or operate an oil or gas well. The fee must be deposited with the State Treasurer, for credit to the Account for the Division of Minerals created in the State General Fund pursuant to NRS 513.103.* ~~[Upon receipt of the notification and fee, the Division shall promptly issue to the person a permit to drill, unless the drilling of the well is contrary to law or a regulation or order of the Division. The drilling of a well is prohibited until a permit to drill is obtained in accordance with the provisions of this chapter.]~~

~~2. The Commission on Mineral Resources shall, by regulations, establish the fee required pursuant to subsection 1 in an amount not to exceed $200 per permit.~~

2. *The Commission may establish reasonable fees for the review of plans, specifications and changes thereto by the administrator and for services provided by the Division.*

3. The Division of Minerals may use the money deposited in the Account to administer the duties of the Division.

4. Upon receipt and review of the application and payment of the fee, the Division shall promptly issue to the person a permit to drill, unless the drilling of the well is contrary to law or a regulation or order of the Division.

5. The drilling of a well is prohibited until a permit to drill is obtained in accordance with the provisions of this chapter.

II. OLD BUSINESS

D. Update on Hydraulic Fracturing Regulation process-

UPDATE ON DEVELOPMENT OF HYDRAULIC FRACTURING REGULATIONS

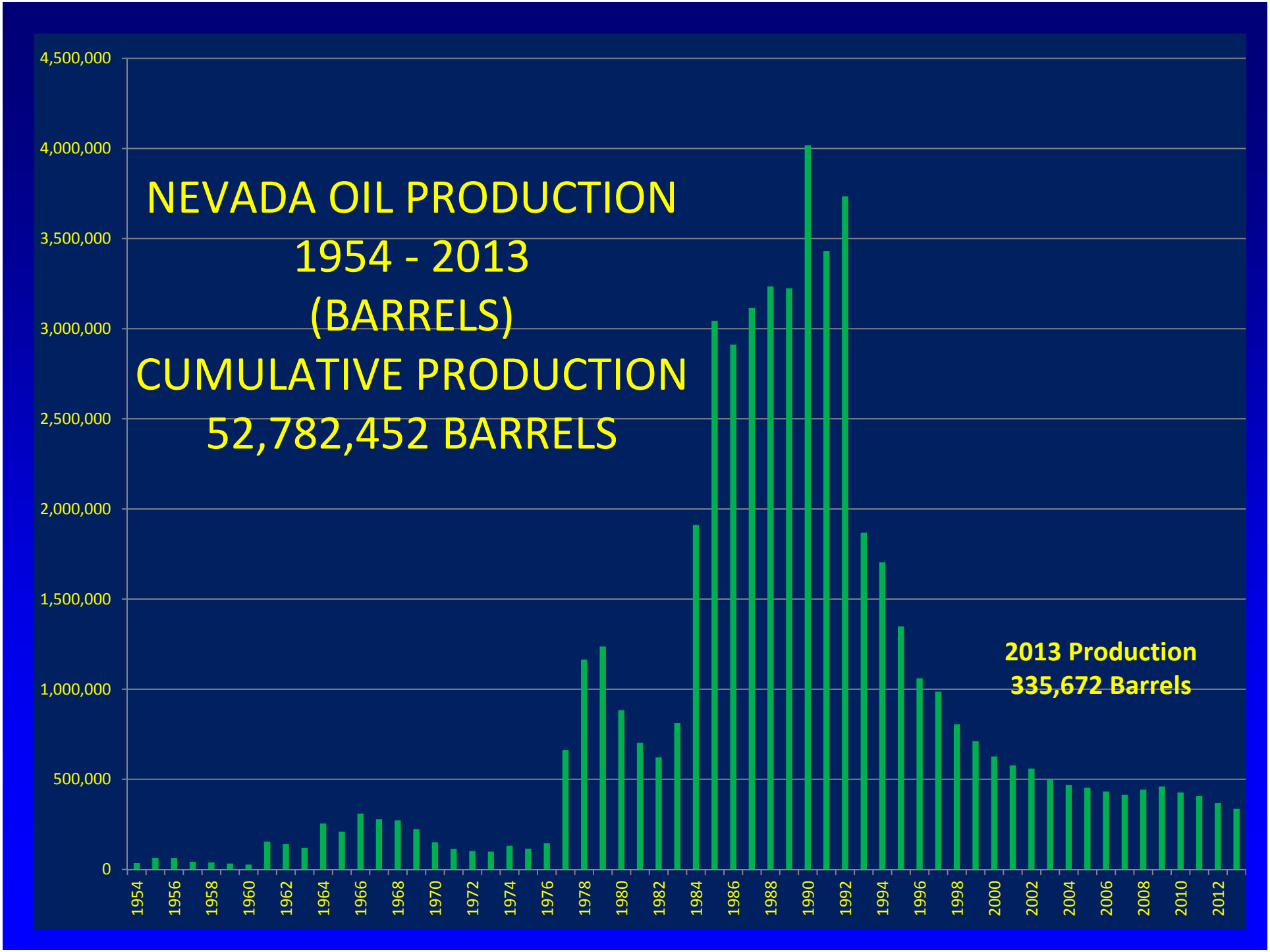
Commission on Mineral Resources Quarterly Meeting

May 8, 2014
Carson City, Nevada

Richard Perry
Administrator
Nevada Division of Minerals
400 W. King Street #106
Carson City, NV 89703
minerals.state.nv.us

Nevada's Oil & Gas Regulations: NAC 522

- **Adopted in 1979, updated in '87, '92, '99**
- **NAC 522.185 Protection of fresh water**
- **Requires an application for permit to drill with details of plan**
- **Requires bonding to ensure holes are plugged upon abandonment**
- **Daily reports to NDOM O&G Program Manager**
- **Well completion report w/logs and cuttings to NDOM and NBMG.**
- **All permits have specific conditions of approval**


NEVADA OIL PRODUCTION
1954 - 2013
(BARRELS)
CUMULATIVE PRODUCTION
52,782,452 BARRELS
2013 Production
335,672 Barrels
4,500,000
4,000,000
3,500,000
3,000,000
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2,000,000
1,500,000
1,000,000
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NRS 522.119 (SB 390)

- **NRS 522.119 Development of program; regulations.**

1. The Division of Minerals and the Division of Environmental Protection shall, jointly, develop a hydraulic fracturing program to:

(a) Assess the effects of hydraulic fracturing on the waters of the State of Nevada;

(b) Require a person who engages in hydraulic fracturing to disclose each chemical used to engage in hydraulic fracturing; and

(c) Provide for notice to members of the general public concerning activities relating to hydraulic fracturing in this state.

NRS 522.119 (SB390)

- Program to be developed by July 1, 2014
- Regulations to implement the program to be adopted by January 1, 2015

DEVELOPMENT OF REGULATIONS

1. **Reviewed regulations of 32 current oil-producing states**
2. **Reviewed BLM proposed rule on hydraulic fracturing**
3. **Utilized Interstate Oil and Gas Compact Commission (IOGCC) resources on HF**
4. **Staff discussed what works and what does not with regulators in Arkansas, California, Colorado, Kansas, North Dakota, Ohio, Pennsylvania, Texas and Utah.**
5. **Borrowed portions of "rule 609" from Colorado's recent update: water well sampling.**
6. **Benchmarked regulatory elements with other States**
7. **Team approach**

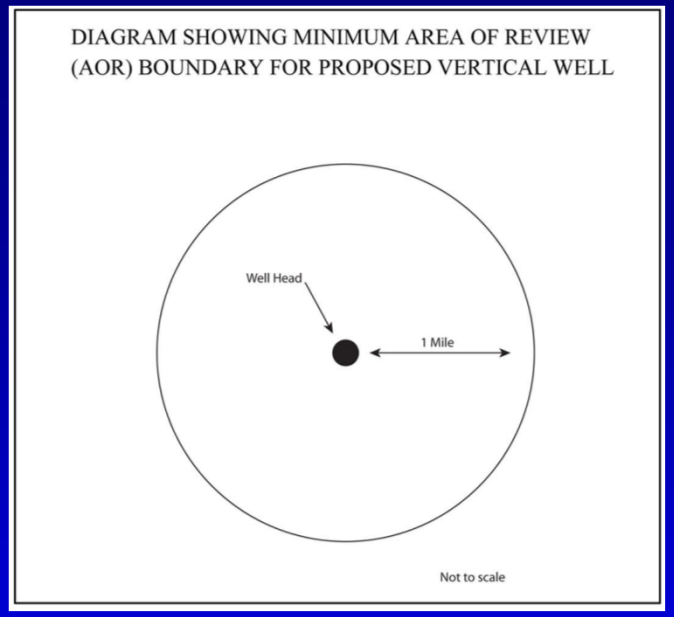
MULTI-AGENCY EFFORT WITH NDEP, NDWR

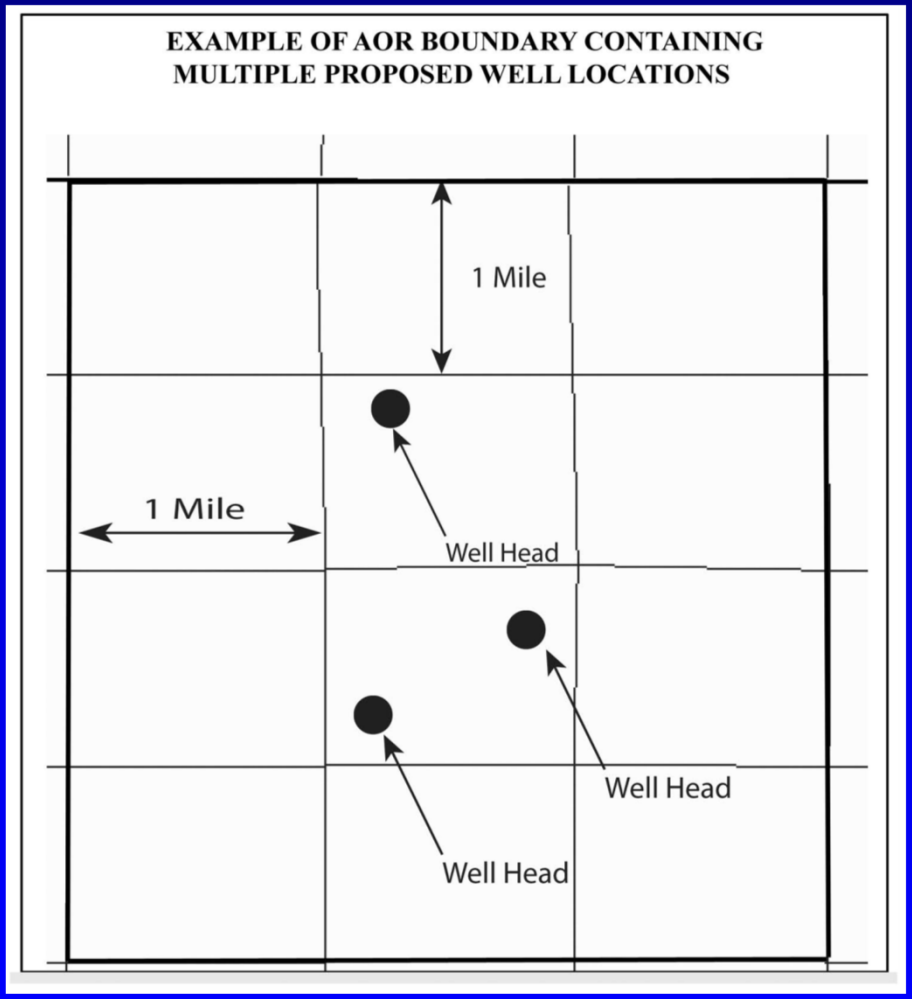
SUMMARY OF PROPOSED CHANGES TO NAC 522

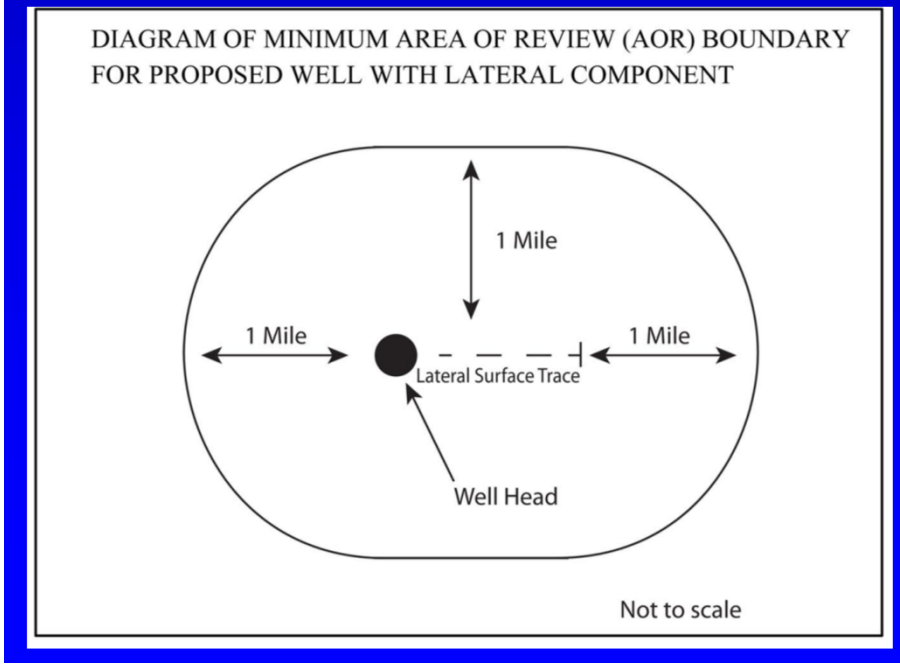
APPLICATION FOR WELL WHERE OPERATOR INTENDS TO USE HYDRAULIC FRACTURING:

- **Application to include Area of Review (AOR): land ownership, wells, groundwater levels, geology & geography.**
- **Groundwater baseline sampling and monitoring of up to 4 existing water wells by operator before and after HF process.**
- **Sample to be analyzed by a Nevada certified lab per NAC 445A; submit to Division.**
- **Analysis for a relevant suite of dissolved inorganic and organics, and dissolved gases. Post-HF samples have limits requiring notifications if petroleum hydrocarbons present.**
- **Approved permits with conditions of approvals posted: http://minerals.state.nv.us/**

AREA OF REVIEW MAPS



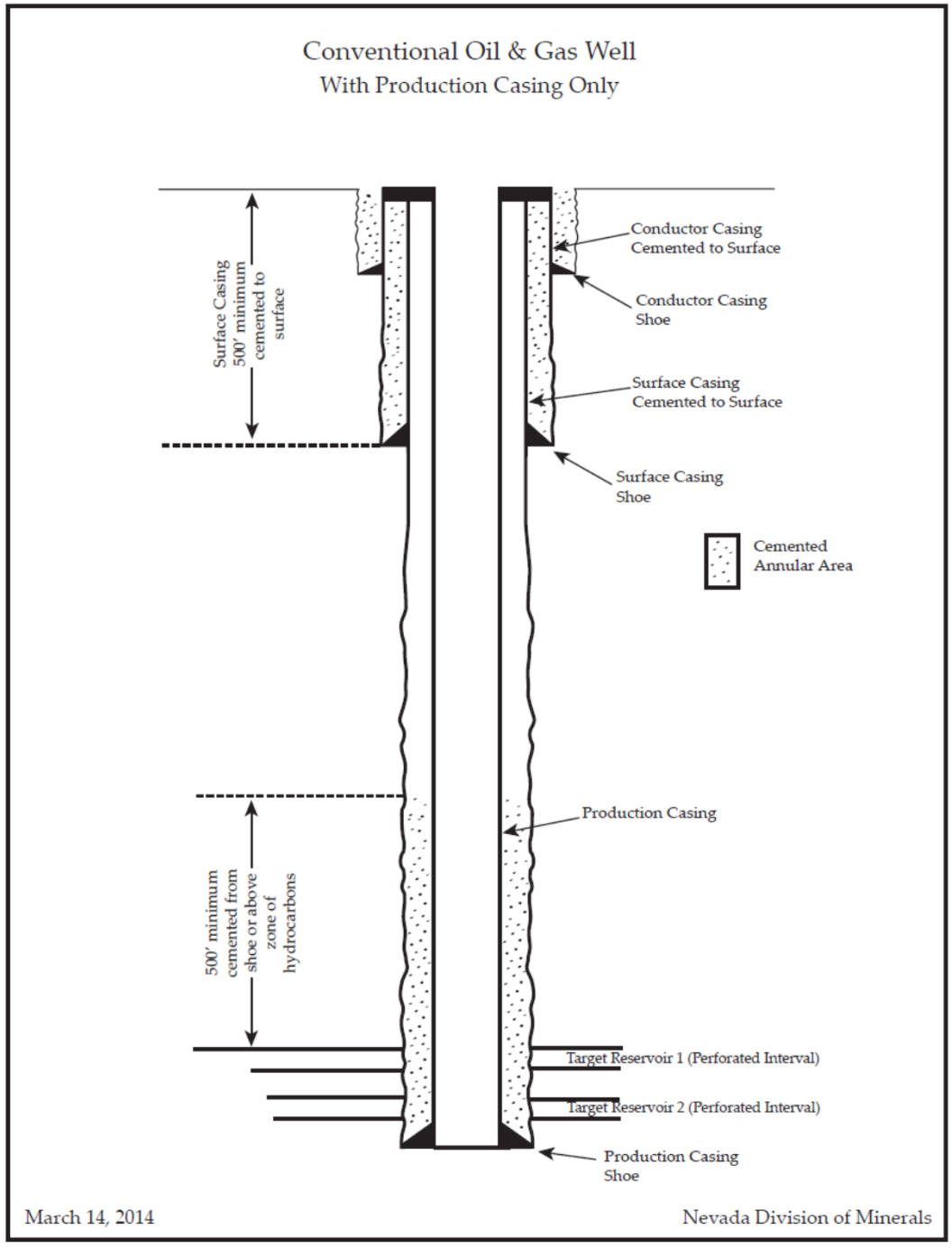




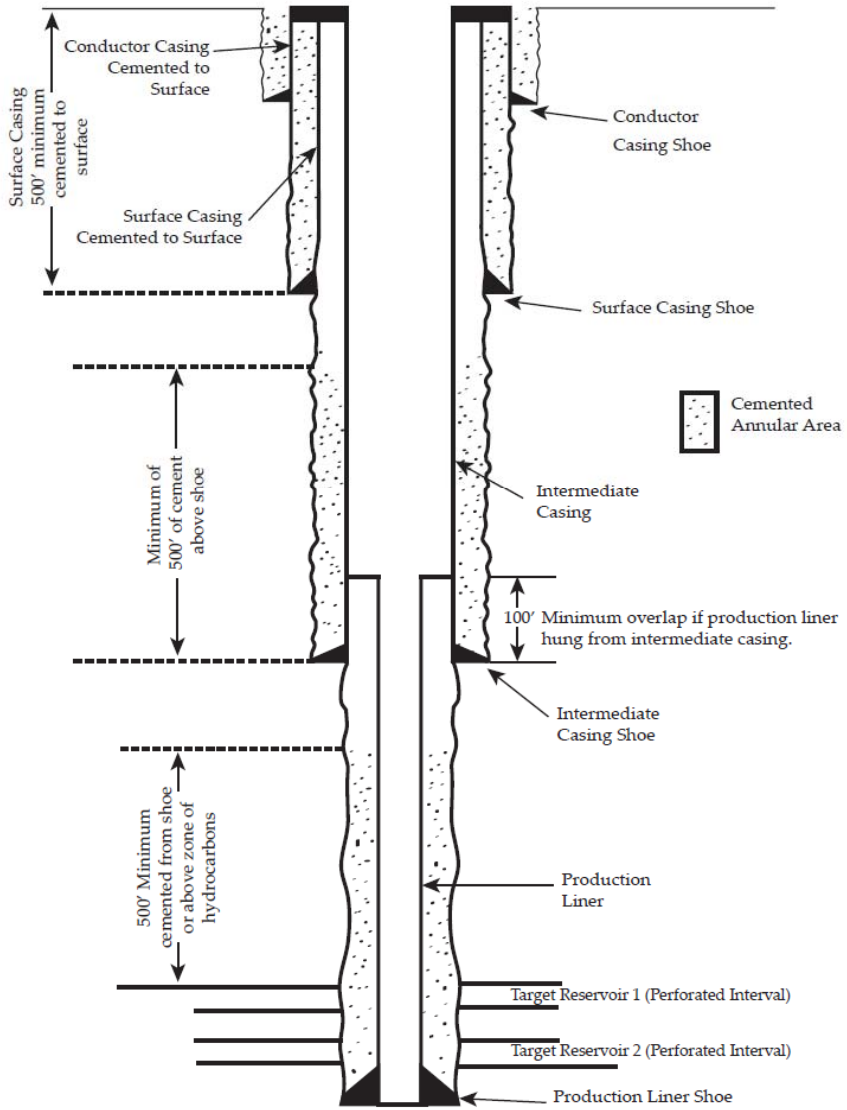
SUMMARY OF PROPOSED CHANGES TO NAC 522

DRILLING OF WELL WHERE OPERATOR INTENDS TO USE HYDRAULIC FRACTURING:

- **Intermediate casing from installed depth to surface required.**
- **Pressure testing of production casing to 3000 psi for 30 minutes.**
- **Production casing cemented to 500’ above uppermost zone of hydrocarbon interest.**


Conventional Oil & Gas Well
With Production Casing Only
Surface Casing 500' minimum cemented to surface
Conductor Casing Cemented to Surface
Conductor Casing Shoe
Surface Casing Cemented to Surface
Surface Casing Shoe
Cemented Annular Area
Production Casing
500' minimum cemented from shoe or above zone of hydrocarbons
Target Reservoir 1 (Perforated Interval)
Target Reservoir 2 (Perforated Interval)
Production Casing Shoe
March 14, 2014
Nevada Division of Minerals

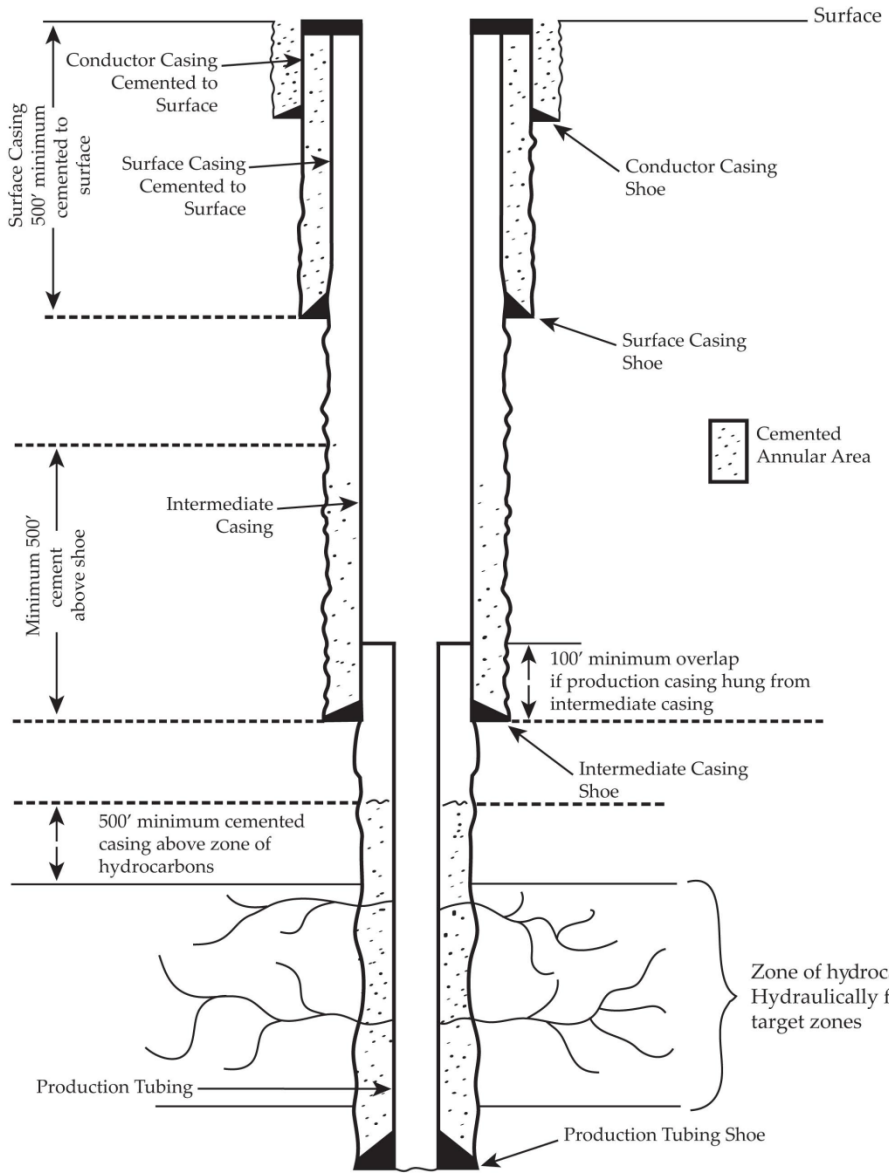
Conventional Oil & Gas Well
With Intermediate Casing and Production Liner



March 14, 2014

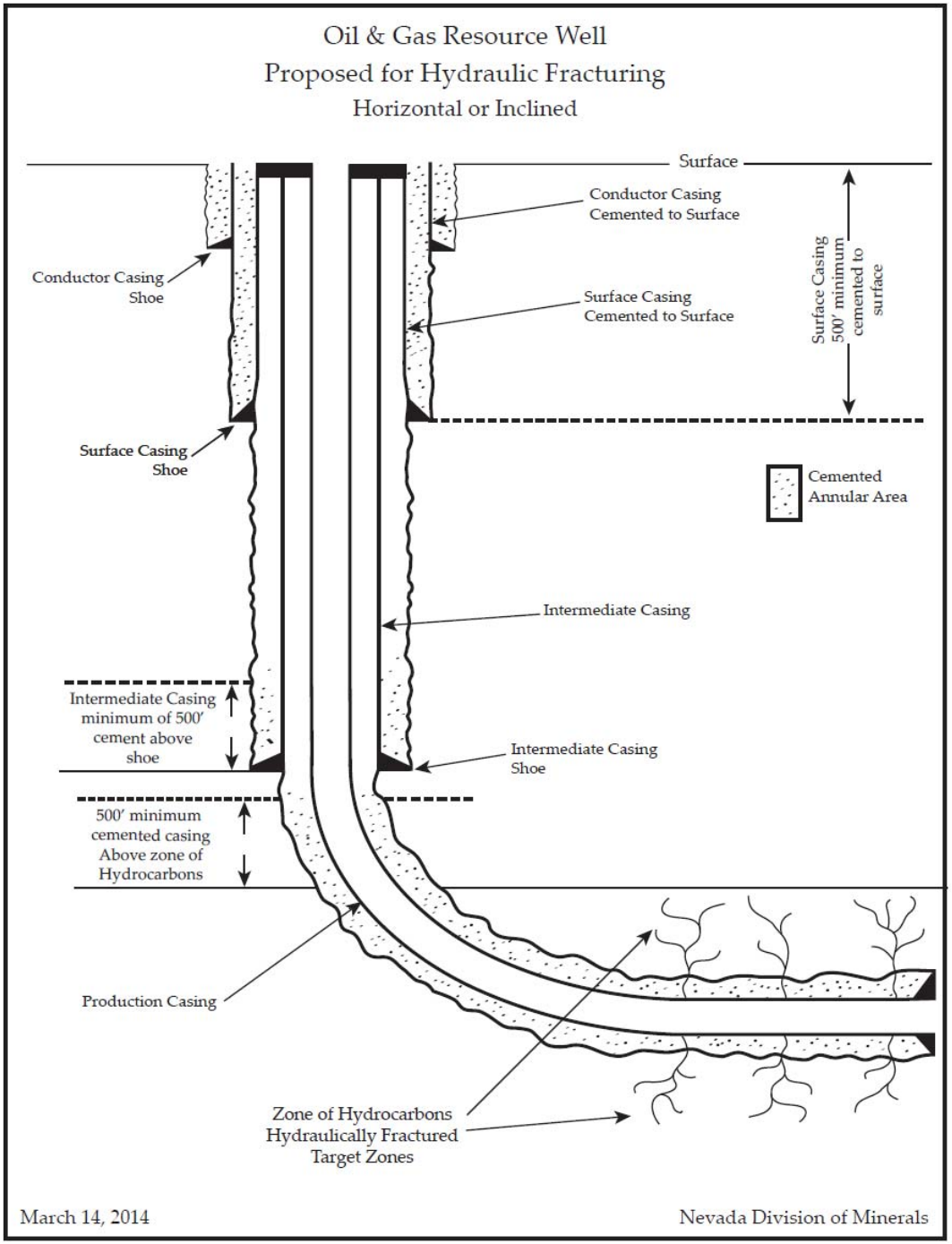
Nevada Division of Minerals

Oil & Gas Resource Well
Proposed for Hydraulic Fracturing
Vertical



March 14, 2014

Nevada Division of Minerals


Oil & Gas Resource Well
Proposed for Hydraulic Fracturing
Horizontal or Inclined
Surface
Conductor Casing
Cemented to Surface
Surface Casing
500' minimum
cemented to
surface
Conductor Casing
Shoe
Surface Casing
Cemented to Surface
Surface Casing
Shoe
Cemented
Annular Area
Intermediate Casing
Intermediate Casing
minimum of 500'
cement above
shoe
Intermediate Casing
Shoe
500' minimum
cemented casing
Above zone of
Hydrocarbons
Production Casing
Zone of Hydrocarbons
Hydraulically Fractured
Target Zones
March 14, 2014
Nevada Division of Minerals

SUMMARY OF PROPOSED CHANGES TO NAC 522

- **HYDRAULIC FRACTURING**

  - **14 day notification to nearby landowners/lessees before commencing HF.**
  - **Well water sampling 6-12 months after HF**
  - **Sundry notice describing HF plan at least 14 days prior:**
  - **Sundry notice at least 30 days prior if chemicals proposed for HF are not listed on NDOM web site. Division can deny use of any chemical it deems is detrimental to the protection of fresh water.**
  - **Monitor and record HF pressures during process.**
  - **Contain all flow-back liquids in steel tanks or containment per NAC 445A.**
  - **HF flow back disposal plan must be approved prior to transport from well pad (in permits if no UIC wells).**

SUMMARY OF PROPOSED CHANGES TO NAC 522

AFTER COMPLETION OF A WELL WHERE HYDRAULIC FRACTURING IS USED:

- **Operators post HF chemicals and amounts used on Fracfocus.org within 60 days:**

  http://www.fracfocusdata.org/

- **Re-sample water wells 60-72 months after HF treatment, submission to Division**
- **Notification to Division if certain levels of methane or petroleum hydrocarbons are detected in a sampled well**

OTHER PROPOSED CHANGES TO NAC 522

- APPLIES TO ALL OIL & GAS WELLS
  - **Conductor casing cemented to surface**
  - **500 feet minimum cemented surface casing**
  - **500 feet of cemented intermediate or production casing from bottom of shoe or highest hydrocarbon producing zone**
  - **Casing specification minimum A.P.I. 5CT**
  - **Casing cement specification minimum A.P.I. 10A**
  - **Cement and pressure test report submission to NDOM**
  - **Administrator can require a cement bond log if cement/pressure reports are inconclusive**
  - **B.O.P.E. rating 3000 p.s.i. Division to witness or approve of test from submitted report and pressure curves**

HOW DO THESE PROPOSED REGULATIONS COMPARE WITH OTHER STATES ?

- Center of Energy Economics and Policy

"The State of State Shale Gas Regulation"

- Of the 20 regulatory elements evaluated in the benchmark study, Nevada's proposed regulations will address 20:
  - 16 command-and-control regulations
  - 3 case-by-case permitting
  - 1 performance standard

http://www.rff.org/centers/energy_economics_and_policy/Pages/Shale_Maps.aspx

SCHEDULE

- Development of draft regulations by NDOM and NDEP staff – August to November, 2013
- Stakeholder meeting – Nov 21, 2013
- Draft changes to NAC 522 – Dec. 2013
- Public meeting Jan 16, 2014. CMR approved draft
- LCB pre-adoption review January, 2014.
- Public Workshops – March 17-21 in CC, Elko, LV
- Public comment ended 5 PM March 28th
- Consideration of public comments and resulting edits: April-June, 2014
- LCB Pre-adoption review of edits – July, 2014
- Public Hearing before CMR on regulations ~ date TBD
- CMR to consider adoption of final regulations ~ date TBD

III. New Business

MINE CLAIM MARKER REMEDIATION PROJECT
Rehabilitating Cavity-nesting Bird Habitat in Nevada
Summary of activities completed by GBI–ICEV crews, 2012-2013

Executive Summary

Nevada has an extraordinary diversity of minerals and currently ranks as the #1 gold producing state in the Nation. As a result, Nevada has a rich mineral heritage and mining history. Since the early 1980's hollow, white, plastic posts have been a popular material of choice for monumenting new mining claims throughout the western U.S., but with exceptionally high use in Nevada. Unfortunately, cavity-nesting birds and other wildlife looking for a safe place to rest or nest are attracted to the opening at the top of the hollow plastic mine claim marker, enter the post, and become entrapped and perish. The Nevada Department of Wildlife (NDOW) has positively identified at least 55 different bird species that have succumbed in the posts, including countless mountain bluebirds, Nevada's state bird. In 2011 new legislation (NRS 517.030) was enacted that now makes it acceptable for anyone to knock over any uncapped post located on public land, effectively eliminating any additional future risk to wildlife.

In 2012-2013 the Great Basin Institute's (GBI) International Conservation Exchange Volunteer (ICEV) crews spent several months in the field knocking down posts associated with more than 36 major project areas resulting in over 14,700 posts knocked down and at least 2,091 bird mortalities recorded. The combined documented bird mortalities in 2012-13 resulted in an overall mean mortality rate of 14.2% or 14.2 birds/100 posts; although this rate varied greatly by project area and habitat type, from a low of 1.8% in the Pumpernickel Valley area of Humboldt County, to a 83.5% mortality rate in the Cuprite Hills and Palmetto Mountains of Esmeralda County. Six new species not previously documented were noted (red-breasted nuthatch, downy woodpecker, spotted towhee, vesper and Brewer's sparrow, and sharp-shinned hawk). Combined, rock wrens (24.8%) and ash-throated flycatchers (24.6%) accounted for nearly half of all the identified mortalities, followed by mountain bluebirds (10.9%). Fifty-one western screech owls and 32 American kestrels were also documented. Work completed by GBI—ICEV in 2012-13 represents a marked increase in effort, as calculated by number of posts knocked down compared to historic efforts. In that short two-season timeframe crews increased the total number of posts knocked down by 82.5% (*n*= 17,800 posts to 32,500), while the number of tallied mortalities increased 23.2% (*n*= 9,012 birds to 11,103) through this effort!

Since NDOW began keeping records, at least 78 project areas have been treated. To date, statewide, with reported data from all years combined, more than 11,103 bird mortalities have been documented in at least 32,500 total posts knocked down, resulting in a mean mortality of 34.2 birds/100 posts. Observed mortality rates have ranged from a low of 1.7% in Buffalo Valley, to 379.5%, or an average of 3.8 birds per post in Mojave scrub habitats near Searchlight, Nevada.

The Mine Claim Marker Remediation Project is an on-going effort focused on locating and knocking down hollow mine claim markers and estimating associated wildlife mortality through analysis of the post contents. Due to the nature of this project being labor-intensive, not knowing how many posts exist in Nevada, nor where they are all located, it will take many more years of hard work and diligence by concerned individuals before we can presume the project is complete. In 2012 and 2013 the GBI—ICEV field crews were contracted to locate and knock down hollow mine markers. These two seasons of the project were funded through contributions and donations from the NDOW Mining Assessment Fee ($47k), Nevada Division of Minerals (27k), Barrick Gold Corporation (15k), Newmont Mining Corporation (12k), and the Audubon Society Whittell Fund (22k).

MINE CLAIM MARKER REMEDIATION PROJECT
Rehabilitating Cavity-nesting Bird Habitat in Nevada

Summary of activities completed by Great Basin Institute – International Conservation Exchange Volunteers, 2012-2013

Introduction

Nevada has an extraordinary diversity of minerals and currently ranks as the #1 gold producing state in the Nation. As a result, Nevada has a rich mineral heritage and mining history. Staking a mine claim is a complicated process, governed by various federal and state laws, and accordingly, part of the procedure requires the claimant to locate and distinctly define the boundaries of the claim by placing a valid legal monument at each corner of the claim. Since the early 1980's hollow, white, plastic posts have been a popular material of choice for monumenting new mining claims throughout the western U.S., with exceptionally high use in Nevada. Unfortunately, cavity-nesting birds and other wildlife looking for a safe place to rest or nest are attracted to the opening at the top of the hollow plastic mine claim marker, enter the post, and become entrapped and perish. The Nevada Department of Wildlife (NDOW) has positively identified at least 55 different bird species that have succumbed in the posts, including countless mountain bluebirds, Nevada's state bird. Legislation in 1993 required hollow markers be capped, but shortly thereafter the majority of the offending claims were abandoned and classified as 'closed'. This led to a failure to correct the problem and left possibly hundreds of thousands of these posts scattered across Nevada's landscapes with no one taking the responsibility of addressing the threat to wildlife. In 2011 new legislation (NRS 517.030) was enacted that now makes it acceptable for anyone to knock over any uncapped post located on public land, effectively eliminating any additional future risk to wildlife.

The Mine Claim Marker Remediation Project is an on-going effort focused on locating and knocking down hollow mine claim markers and estimating associated wildlife mortality through analysis of the post contents. Due to the nature of this project being labor-intensive, not knowing how many posts exist in Nevada, nor where they are all located, it will take many more years of hard work and diligence by concerned individuals before we can presume the project is complete. This summary report covers activities conducted in 2012 and 2013 by the Great Basin Institute's (GBI) International Conservation Exchange Volunteers (ICEV) field crews, in coordination with NDOW and the Bristlecone Audubon Society. These two years of the project were funded through contributions and donations from the NDOW Mining Assessment Fee, Barrick Gold Corporation, Newmont Mining Corporation, the Nevada Division of Minerals, and the Audubon Society Whittell Fund. A brief overview of a stand-alone, three-day NDOW project in November 2013 and a historic, overall summary and perspective are also provided. The data and numbers presented in this report are likely very conservative and not reflective of the sweeping effort that is on-going by interested parties that are now able to contribute as a result of the new legislation. Rather these findings are limited to data collected by or specifically reported to NDOW.

Methods

Volunteers and agency personnel located mine claim markers by scanning the landscape with binoculars, investigating the posts via hiking to each one or using an all-terrain vehicle (ATV), and knocking down each marker by hand. Work conducted prior to 2011 additionally involved both bundling and carrying the posts out on foot, or when appropriate, removal via ATV's, and then ultimately properly disposing of or recycling the posts. Removal of the posts from the landscape was taken on due to the common perception and attitude that the abandoned markers were considered trash; however, stipulations associated with NRS 517.030 now require markers to be left on the ground immediately adjacent to the location from which they were removed in order to preserve evidence as a monument for a mine claim.

Wildlife mortalities emptied from each hollow marker knocked down were identified on site and/or collected and later identified by qualified personnel. The number of markers knocked down was recorded and tallied, as well as numbers and species of dead birds, and

occasionally mammals and reptiles too. Bird mortalities were observed in varying states of decay, ranging from extremely desiccated and often disarticulated to intact and fully feathered. Classification of the latter was usually straightforward; however, in the case of mummified or completely disarticulated remains, enumeration of mortalities was calculated by number of skulls, and individual identification was based on size and shape of the skull and bill. When identification to exact species wasn't possible, an attempt was made to assign probable species-guild identification. Cavity-nesting bird mortality rates were calculated using only identified species and/or species-guild mortality totals. General mortality rates are calculated as number of carcasses/100 posts and may be calculated for all species combined, individual species or species guilds, and/or by habitat type. Calculated mortality rates generated and presented here are from actual field observations; they do not take into account probable carcass attrition due to decomposition or predation, nor do they consider any future mortality.

Project areas were determined and delineated using historic, anecdotal information which fundamentally is the result of institutional knowledge of several NDOW biologists amassed over several decades. This list is not comprehensive nor definitive, as it is impossible to know how many hollow posts still exist in Nevada and where they all are all located; however, on-going efforts are made to evaluate approximate numbers and distribution of extant hollow claim markers still standing across Nevada. To date, more than 150 potential project areas have been identified across all elevations and habitat types from the Mojave Desert to subalpine forest communities. Identified project areas may consist of any number of posts, ranging from estimates of 10's to 1,000's per project area.

In 2012 and 2013 GBI—ICEV crews were tasked with locating and knocking down hollow mine claim markers. Crews varied in size from four to six people, and field tours lasted from four to eight days at a time. The crews traveled across the state, camping in remote areas, hiking many miles each day and working in rugged areas and under all weather conditions.

Results

GBI—ICEV

In 2012-2013 alone, GBI—ICEV crews spent several months in the field knocking down posts associated with more than 36 major project areas (Figure 1) resulting in over 14,700 posts knocked down and at least 2,091 bird mortalities recorded. The crews worked various project areas throughout the state and focused on areas with known, large concentrations of standing posts. Since the ICEV crew members were not trained biologists they were instructed to collect all mortalities, which NDOW staff later sorted and identified. The combined documented bird mortalities in 2012-13 resulted in an overall mean mortality rate of 14.2% or 14.2 birds/100 posts; although this rate varied greatly by project area and habitat type, from a low of 1.8% in the Pumpernickel Valley area of Humboldt County, to a 83.5% mortality rate in the Cuprite Hills and Palmetto Mountains of Esmeralda County. Twenty-two different bird species were positively identified, including six new species not previously documented (red-breasted nuthatch, downy woodpecker, spotted towhee, vesper sparrow, Brewer's sparrow, and amazingly a sharp-shinned hawk). Combined, rock wrens (24.8%) and ash-throated flycatchers (24.6%) accounted for nearly half of all the identified mortalities, followed by mountain bluebirds (10.9%). Fifty-one western screech owls and 32 American kestrels were also documented.

Work completed by GBI—ICEV in 2012-13 represents a marked increase in effort, as calculated by number of posts knocked down compared to historic efforts. In that short two-year timeframe crews increased the total number of posts knocked down by 82.5% (*n*= 17,800 posts to 32,500), while the number of tallied mortalities increased 23.2% (*n*= 9,012

birds to 11,103) through this effort. Table 1 summarizes and compares some of the 2012-13 highlights correlated to the overall, all-years, all-project area totals.

NDOW Project

In November 2013, six NDOW personnel and one volunteer used ATV's to knock down mine claim markers in the Butte Valley/Cherry Creek Range project area of the Great Basin. During a two and a half day period 121 bird mortalities were documented in 862 posts knocked down, resulting in a mean mortality rate of 14% or 14 birds/100 posts. Vegetation ranged from mostly monotypic big sagebrush with some xeric mixed sage to pinyon-juniper woodland edge habitat. Mountain bluebirds (*n*= 61; 50% of totals) were the most common mortality observed, followed by American kestrel, loggerhead shrike, rock wren, European starling, and sage thrasher.

Overall

Since NDOW began keeping records, at least 78 project areas have been treated, although most are not considered completely cleared of mine claim markers. Statewide, with reported data from all years combined, to-date more than 11,103 bird mortalities have been documented in at least 32,500 total posts knocked down, resulting in a mean mortality of 34.2 birds/100 posts. Observed mortality rates have ranged from a low of 1.7% in Buffalo Valley, to 379.5%, or an average of 3.8 birds per post in Mojave scrub habitats near Searchlight, Nevada. Fifty-five different species (Table 2) have been identified among the mortalities, with Ash-throated flycatchers, wrens and mountain bluebirds being the most common mortalities statewide.

Discussion

Nevada is a diverse state, represented by as many as 72 different habitat types (SWReGAP, EPA, Kepner *et.al.* 2005). According to the Nevada Bird Records Committee, a total of 487 species of birds have been recorded in Nevada. After several intensive years of focused post-pulling projects across the state among many disparate habitats, a few anecdotal trends have emerged. First, cavity-nesting species appear to be most at risk. Cavity-nesting species are those that nest, lay eggs, and raise young inside a sheltered chamber or cavity, regardless of the origin of the cavity. Of the 55 positively identified species 44% are known cavity-nesters and account for 89% of all identified carcasses to-date. Most of the remaining identified species are represented by very low numbers/mortality rates; for example, 25 (45%) of the 55 identified species make up only 1.1% of all reported mortalities statewide, and are not known cavity-nesters. Nonetheless, bird mortalities associated with extant hollow mine claim markers may represent a substantial population sink for several cavity-nesting and non-cavity nesting species that occupy Nevada for at least part of their annual life cycle. Data gathered by GBI—ICEV in 2012-2013 correlate well to data collected previously statewide, by both comparative habitat types and bird species. Over the past two years, the highest mortalities continued to be represented by three top species, the ash-throated flycatcher, rock wren, and mountain bluebird, all of which are known cavity-nesters.

Mountain bluebirds comprise a large number of mortalities associated with these posts, and given the mountain bluebird's propensity for migrating in large flocks over open country (Dawson and Bowles 1909) these posts may represent an alluring, secure location to night roost or to wait out a storm and may account for some of the high mortality rates encountered in several non-wooded locations. Of mountain bluebirds in Manitoba, Criddle (1927) wrote, "The male bluebird is an extreme optimist and nearly any hole meets with his approval." As compared to female mountain bluebirds, which have been documented rejecting their mates' choices of cavities nine times out of ten, the male bluebird's less-discerning attitude may account for the skewed 4:1 sex ratio in mortalities observed in some project areas (P. Bradley pers. comm.).

Ash-throated flycatchers range throughout the entire state of Nevada, but are far more common in southern Nevada's Mojave Desert ecosystem, confirmed by the probability of occurrence predictive map for the species, in the Atlas of Breeding Birds of Nevada (Floyd *et al*, 2007). This heat-tolerant flycatcher is common in low to mid-elevation desert scrub and woodland habitats. Similar to mountain bluebirds in other habitats, ash-throated flycatchers are an obligate cavity-nesting species that do not excavate their own cavities, and are therefore mostly dependant on woodpecker-excavated holes in Joshua tree, mesquite, ash and catclaw. Since naturally made cavities can be quite limited, the flycatchers will readily attempt nest in many artificial cavities, including abandoned mine claim markers.

The aptly named rock wren is also widespread and numerous in Nevada, with descriptions of the bird's habitat almost always including the word 'rock'. However, these wrens can also be found in non-rocky habitats, so long as there exists areas "rich in crevices, interstices, passageways, recesses, and nooks and crannies of diverse shapes and sizes" (Ryser 1985). The rock wrens probability of occurrence map clearly shows the birds' ecological flexibility by predicting a moderate to high chance of finding this wren in most of the state and nearly all habitat types. The rock wren's propensity for using cavities explains the high mortality rates being observed across the state, as additional mine claim project areas are being investigated. Currently, the rock wren is second only to the ash-throated flycatcher in statewide mortalities and has been documented in virtually all project areas. This is troubling when you consider that rock wren populations have declined significantly since the 1960s (Sauer *et al.* 2005). The causes of the population-level declines are not known, but it's possible that the mine claim marker issue may be contributing at local or regional scales.

A second emerging trend suggests that regardless of post density, mortality rates are driven by habitat type and thus habitat-species assemblages. An anecdotal review of the data suggests that posts located in habitats consisting of monotypic or relatively less diverse vegetative assemblages produce lower observed mine claim marker mortality rates than other areas, despite high numbers of posts. For example, the Pumpernickel Valley project, located in predominantly mixed salt desert scrub, greasewood flat, playa, and big sagebrush habitats, had the lowest observed mortality rate 1.8% (19 mortalities in 1,064 posts). When data from this project are lumped with several others located in similar habitat types and scattered across the state (i.e. Newark, Big Smokey, Rattlesnake and Trail Canyon project areas) the result is that only 7% of the bird mortalities (*n*=147) were attributed to 37% of the posts pulled (*n*=5,362), during the two-year period of 2012-2013. In other words, more than a third of the posts pulled during that time-frame were in relatively monotypic habitats and contained comparatively few mortalities. A partial, plausible explanation is that while salt desert scrub and associated vegetation (e.g. saltbrush, shadscale, and greasewood) make up an estimated 21% of ground cover in Nevada, the correspondent bird species assemblages consist of few, if any, cavity-nesters, and the large expanses of these habitats have very limited bird life in general (GBBO 2010).

Conversely, projects that have been treated in pinyon-juniper, in some Mojave scrub habitats, and along ecotones have resulted in exceptionally high mortality rates relative to the number of posts. In fact, historic analysis of the data comparing bird mortality rates to proximity of pinyon-juniper woodlands originally suggested a positive correlation (P. Bradley pers comm.) which is supported by documented mortality rates of 23% and 34% at the pinyon-juniper dominated Medicine and Spruce projects. Species mortality data at these projects was skewed towards mountain bluebirds and ash-throated flycatchers, which were most often encountered in pinyon-juniper habitats during survey efforts conducted for the development of the Atlas of Breeding Birds of Nevada (2007).

Meanwhile, in 2009 the first large-scale project was initiated in the Mojave ecoregion of southern Nevada, where, in only 195 posts, 740 dead birds were discovered, resulting in a record 379.5% mortality rate (3.8 birds/post). This trend was also noticed in the Piute and Crescent project areas, where 219.8% and 149.8% mortality rates were respectively observed. The factor common to all of the high-mortality Mojave project areas is their association to mid-elevation mixed desert scrub habitats, with strong Joshua tree and blackbrush components. A main reason for the high mortality rates can possibly be attributed to the presence of these old-growth Joshua tree and cactus stands, which are of high value to both primary and secondary cavity-nesting species. This is illustrated by the affinity that species like the ash-throated flycatcher, western screech owl, cactus wren, and woodpeckers and flickers have for the unique woodlands.

And finally, the 'edge-effect' (Smith 1974), created by the convergence or transition of different habitats, is known to result in higher species richness and diversity when compared to single, more homogenous habitats, due to species common to both communities being present. This effect created by the transition between the Mojave and Great Basin biomes is represented by project areas in the Cuprites Hills (83.5% mortality rate) and Palmetto Mountains (40.1%), which coincidentally also include pinyon-juniper and Joshua tree habitat components.

It is currently unknown how many posts remain standing in Nevada, however estimates range from 10,000's to 100,000's (P. Bradley pers comm.). Due to the high variability of Nevada's habitat types and significantly different observed mortality rates at various projects areas, no one calculated mortality rate should be extrapolated to other areas or across the state. Yet, based on the range of mortality rates calculated thus far, it is estimated that bird mortalities in extant posts could be as high as the 100,000's, and increasing with each passing year. Given the durability and extremely slow decomposition rate of these hollow markers in situ, the problem worsens with each passing day that posts remain standing. The reality is that these posts will continue to kill wild birds, reptiles, mammals and insects until such time that, either, they fill up to the brim with carcasses or they are physically knocked, whichever comes first. The collective results from the various individuals and crews working on the problem since its discovery are testament that we are making good progress. This issue has drawn a great deal of attention in the media since 2011, and as a result it is unknown how many posts have been pulled by interested parties who have not reported data to NDOW, therefore overall statistics reported here should be considered conservative and not all-inclusive. Through additional hard work, long hours, and additional funding, we hope to eventually rid the Nevada landscape of this unfortunate threat to wildlife.

Recommendations

Based on the findings of the statewide abandoned mine claim marker remediation projects, the following recommendations are put forth in regard to the need to eliminate this source of wildlife mortality:

1. Continue to implement statewide habitat rehabilitation projects focused on knocking down invalid hollow mine claim markers.

2. Conduct necessary analysis of existing data to prioritize future rehabilitation efforts. Apparent trends suggest certain habitats are more deadly than others, and therefore we should endeavor to prioritize those areas. Nevertheless, all known posts, regardless of habitat type, must eventually be knocked down.

3. Continue to identify new potential project areas with special emphasis on currently under-represented portions of the state, including west, northwest and central

Nevada. At this time the gaps in the known distribution of extant posts are not necessarily due to lack of posts in certain areas, but rather lack of ground-truthing to determine presence or absence of posts.

4. Solicit additional sources of funding to continue the project. Work towards hiring multiple 3-4 person seasonal crews, outfitted with ATV's, focused on finding and knocking down remote, difficult to access mine markers (that GBI crews are unable to address) throughout Nevada.

5. Educate the public that vertical, 3-5" diameter, open-ended posts of any material or color, placed in any habitat type in the world may become significant sources of mortality for cavity-nesting avian species, bats, reptiles and flying insects.

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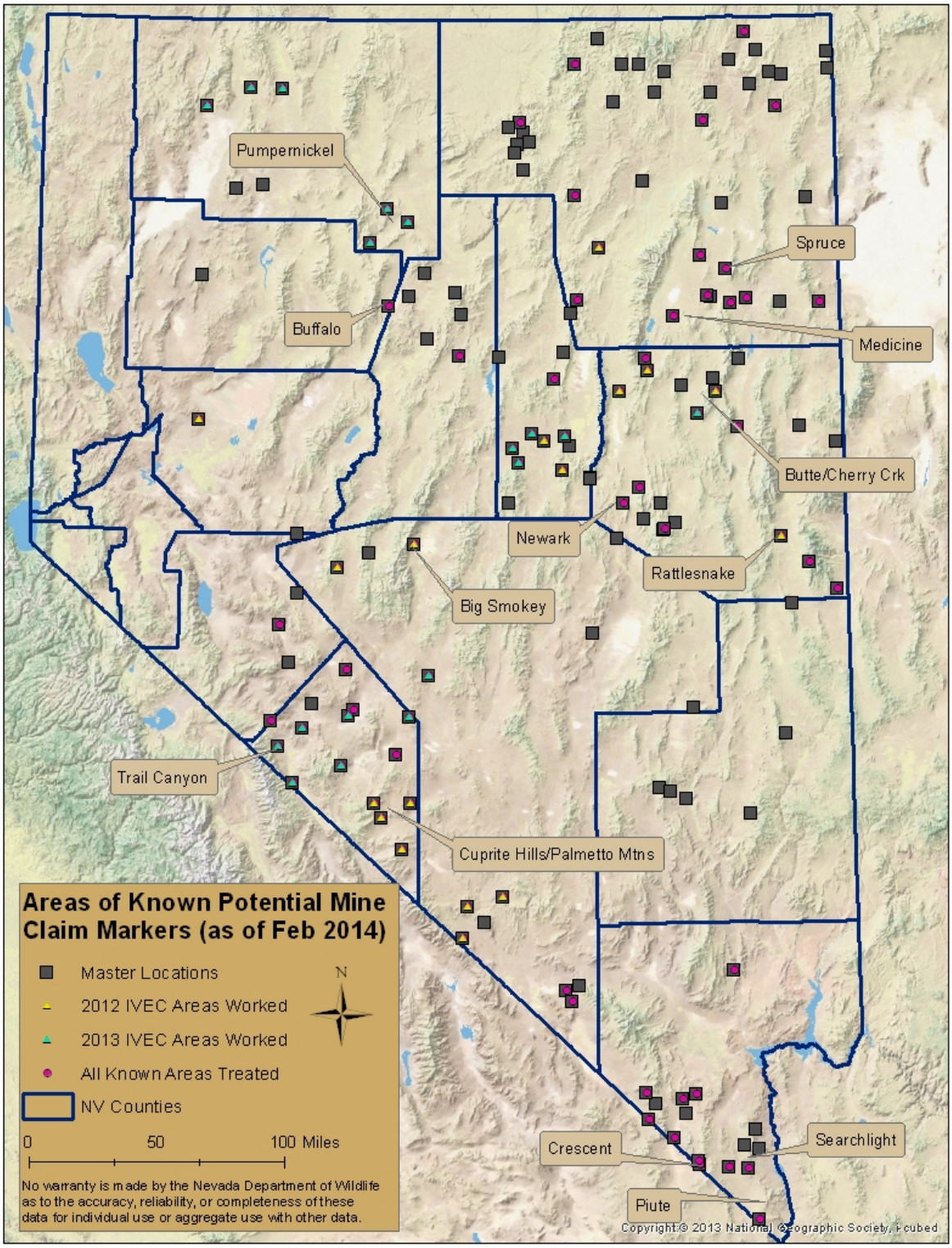


FIGURE 1. General locations of known potential mine claim marker project areas as of Feb 2014. Map depicts project areas addressed by GBI—ICEV work crews in 2012 and 2013, as well as all areas that have received some level of treatment since NDOW record keeping commenced. All project areas referenced in this report are labeled. Project Areas are represented as the centroid of each estimated project area; individual project areas varied greatly in size and extent, which is not represented by any relative scale in this figure. This map does not depict the true extent of hollow mine markers, just areas where they have been observed and reported.

TABLE 1. Top bird mortalities for 2012-2013 and all years overall combined.

Species	Comparative Wildlife Mortality Summary		
	2012-2013	Overall Total*	Overall % of ID'ed Birds*
Ash-throated Flycatcher	514	4,576	53.6%
Rock Wren	519	1,169	13.7%
Mountain Bluebird	228	807	9.5%
Cactus Wren	3	248	2.9%
Loggerhead Shrike	52	203	2.4%
American Kestrel	32	157	1.8%
Western Screech Owl	51	131	1.5%
--All Wren sp.	527	1,521	17.8%
--All Sparrow sp.	193	418	4.2%
--All Finch sp.	14	198	2.3%
--All Woodpecker/flicker	7	158	1.9%
Unidentified birds	409	2,576	N/A

*Overall Total and Overall % of Identified birds includes 2012-2013 and all other known historic data, as reported to NDOW.

TABLE 2. List of all identified bird species mortalties, to-date total numbers by species for all project areas, and percentages of all identified as mortalities during the mine claim marker remediation projects.

Species	Scientific Name	Total	% ID'ed Birds	% All Birds
American Kestrel	*Falco sparverius*	157	1.84%	1.41%
Sharp-shinned Hawk	*Accipiter striatus*	1	0.01%	0.01%
Dove (Unidentified Sp)	*Columbidae Family*	3	0.04%	0.03%
Western Screech-Owl	*Otus kennicottii*	131	1.54%	1.18%
Burrowing Owl	*Athene cunicularia*	5	0.06%	0.05%
Northern Saw-whet Owl	*Aegolius acadicus*	2	0.02%	0.02%
Owl (Unidentified Sp)	*Otus sp (*perhaps *flammeolus)*	8	0.09%	0.07%
Common Nighthawk	*Chordeiles minor*	2	0.02%	0.02%
Common Poorwill	*Phalaenoptilus nuttallii*	4	0.05%	0.04%
Downy Woodpecker	*Picoides pubescens*	1	0.01%	0.01%
Ladder-backed Wdpecker	*Picoides scalaris*	14	0.16%	0.13%
Northern Flicker	*Colaptes auratus*	96	1.13%	0.86%
Woodpecker (Unidentified)	*Picidae Family*	47	0.55%	0.42%
Western Wood-Pewee	*Contopus sordidulus*	4	0.05%	0.04%
Say's Phoebe	*Sayornis saya*	35	0.41%	0.32%
Ash-throated Flycatcher	*Myiarchus cinerascens*	4576	53.66%	41.21%
Unk Empid Flycatcher	*Empidomax sp*	4	0.05%	0.04%
Loggerhead Shrike	*Lanius ludovicianus*	203	2.38%	1.83%
Northern Shrike	*Lanius excubitor*	4	0.05%	0.04%
Horned Lark	*Eremophila alpestris*	17	0.20%	0.15%
Western Scrub-Jay	*Aphelocoma californica*	3	0.04%	0.03%
Pinyon Jay	*Gymnorhinus cyanocephalus*	5	0.06%	0.05%
Clark's Nutcracker	*Nucifraga columbiana*	4	0.05%	0.04%
Violet-green Swallow	*Tachycineta cyaneoviridis*	4	0.05%	0.04%
Tree Swallow	*Tachycineta bicolor*	1	0.01%	0.01%
Mountain Chickadee	*Poecile gambeli*	12	0.14%	0.11%
Juniper Titmouse	*Baeolophus griseus*	14	0.16%	0.13%
Bushtit	*Psaltriparus minimus*	2	0.02%	0.02%
Verdin	*Auriparus flaviceps*	8	0.09%	0.07%
Red-breasted Nuthatch	*Sitta canadensis*	2	0.02%	0.02%

Pygmy Nuthatch	*Sitta pygmaea*		2	0.02%	0.02%
Rock Wren	*Salpinctes obsoletus*		1169	13.71%	10.53%
Canyon Wren	*Catherpes mexicanus*		50	0.59%	0.45%
House Wren	*Troglodytes aedon*		5	0.06%	0.05%
Cactus Wren	*C. brunneicapillus*		248	2.91%	2.23%
Wren (Unidentified Sp)	*Troglodytidae Family*		49	0.57%	0.44%
Ruby-crowned Kinglet	*Redulus calendula*		1	0.01%	0.01%
Blue-gray Gnatcatcher	*Polioptila caerulea*		54	0.63%	0.49%
Black-tailed Gnatcatcher	*Polioptila melanura*		6	0.07%	0.05%
Western Bluebird	*Sialia mexicana*		15	0.18%	0.14%
Mountain Bluebird	*Sialia currucoides*		807	9.46%	7.27%
Townsend's Solitaire	*Myadestes townsendi*		3	0.04%	0.03%
Northern Mockingbird	*Mimus polyglottos*		4	0.05%	0.05%
Sage Thrasher	*Oreoscoptes montanus*		8	0.09%	0.07%
European Starling	*Sturnus vulgaris*		73	0.86%	0.66%
Black-thrtd Gray Warbler	*Dendroica nigrescens*		1	0.01%	0.01%
Green-tailed Towhee	*Pipilo chlorurus*		30	0.35%	0.27%
Spotted Towhee	*Pipilo maculatus*		4	0.05%	0.04%
Brewer's Sparrow	*Spizella breweri*		4	0.05%	0.04%
Black-throated Sparrow	*Amphispiza bilineata*		54	0.63%	0.49%
Song Sparrow	*Melospiza melodia*		1	0.01%	0.01%
Vesper Sparrow	*Pooecetes gramineus*		5	0.06%	0.05%
Sparrow (Unidentified Sp)	*Emberizidae Family*		354	4.15%	3.91%
Brown-headed Cowbird	*Molothrus ater*		1	0.01%	0.01%
Scotts Oriole	*Icterus parisorum*		8	0.09%	0.07%
Western Meadowlark	*Sturnella neglecta*		3	0.04%	0.03%
Pine Siskin	*Carduelis pinus*		1	0.01%	0.01%
House Finch	*Carpodacus mexicanus*		100	1.17%	0.90%
Lesser Goldfinch	*Carduelis psaltria*		1	0.01%	0.01%
Finch (Unidentified Sp)	*Fringillidae Family*		97	1.14%	0.87%
Unidentified Birds			2576		
Total Bird Mortalities From Inspected Posts		11103			
Total Bird Mortalities of JUST ID'd birds		8527			
Total Posts		32500			

IV. Report of the Administrator

BRIAN SANDOVAL
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.state.nv.us/

Las Vegas Branch:
2030 E. Flamingo Rd.
Suite #220
Las Vegas, Nevada 89119
(702) 486-4343
Fax (702) 486-4345

RICHARD PERRY
Administrator

Abandoned Mine Lands Update:

- Erik Langenfeld was hired into the new AML/OGG field position and has started his training.
- Eight interns were hired for the 2014 season (7 UNR, 1 UNLV). The field locations have been selected and planned by Rachel.
- Received $12,295 from the USFS Assistance Agreement. More funds are available for 2014 field season.
- Nevada Abandoned Mine Lands Environmental Team (NAMLET) held its first meetings in 5 years.
- Requested $250,000 from the U.S. Army Corps of Engineers (USACE) Restoration of Abandoned Mine Sites (RAMS) program for the development and implication of a new AML database with a Web Application for access and a field Application for digital logging.
- The 2013 AML report is completed.
- Four permanent closure projects planned for FY15.

2014 Tentative Summer Intern Schedule

Week 1 – (May 19th): Training week:

a. Monday: Paperwork with Valerie and intro to AML. Sexual Harassment training 1-4.
b. Tuesday: Defensive driving training at NDOM 10 AM. Continue with AML training and anything remaining from Monday. Take interns to shed – show them where supplies are and make sure all trucks are outfitted as needed.
c. Wednesday: Mine Safety Training specific to AML.
d. Thursday: DAT Training with Carson City BLM at NDOM 8:30. Field work in VC.
e. Friday: Continue AML training, VC or nearby area with Brian for securings.

Week 2 – (May 27th): Training week – Lovelock area, Humboldt Mountains and Cinnabar City.

Topo quads include: Star Peak, Congress Canyon, Rye Patch Dam, Rochester, Oreana, Fitting, Fisher Canyon, Buffalo Mountain. If time allows heck out Fondaway Canyon and Cox Canyon farther south.

Week 3 – (June 2): Camping Week with Bill Durbin. Caliente and Hiko area.

Topo quads include: Chief Mountain, Delamar, Delamar NW, Mail Summit, Monte Mountain, Mosey Mountain, Mount Irish, Pahroc Spring SE, Slidy Mountain, Tempiute Mountain North, Tempiute Mountain South, and Tempiute Mountain SE

Week 4 – (June 9): Training Week – Big Kasock Mountain – Camping week with staff. Need to address NY-2444 with Ken Maas – Large securing that needs a few people to help (Ellsworth Quad).

Topo Quads Include: Big Kasock Mountain, Rawhide, Pilot Cone, and Fourmile Canyon. Check out Fondaway Canyon and Cox Canyon if not addressed in week 2.

Week 5 – (June 16): Stewart Spring (OMCO Mine)/Simon (Warrior Mine)/Black Spring/Cloverdale Ranch/Secret Basin/Orizaba. Check out intersection of Gabbs, Paradise Peak, Goldyke, and Granny Goose Well quads. New loggings, securings, and repairs and revisits along the race route.

Topo quads include: Sunrise Flat, Stewart Spring, Simon, Goldyke, Black Spring, Cloverdale Ranch, and Secret Basin

Week 6 – (June 23): Austin Area – Camping week.

Topo quads include: Austin, Bartine Ranch, Barton Spring, Brewer Canyon, Grass Valley Ranch, Hay Ranch, Kingston, Simpson Park Canyon, Vigus Butte, and Yankee Blade.

Week 7 – (June 30): Short Week – 4th of July Friday. Yerington to Hawthorne (N of Artesia Lake) area for unsecured orphans, new loggings, revisits, and USFS work. Camping week.

Topo quads include: Lucky Boy, Corey Peak, Powell Mountain, Mount Hicks, Hawthorne West, Mount Grant, Mitchell Spring, Desert Creek Ranch, Mt. Etna, Lincoln Flat, Pine Nut Valley, Artesia Lake (these will be a day for a team of two apart from the rest of the group).

Week 8 – (July 7): Oasis Divide and east of Gold Point.

Topo quads include: Piper Peak, Indian Garden Peak, Oasis Divide, Mohawk Mine, Lida Wash SW, and Lida Wash.

Week 9 – (July 14): Teacher Workshop week and furlough. 4 interns in field, 4 interns assisting with Teacher Workshop.

Topo quads for those in the field include: Carters Station, Topaz Lake, Oreana Peak, Mount Como, and Lahontan Mountains.

Week 10/11 – (July 21 - 30): Ten Day Trip – Eastern Nevada: North and East of Elko.

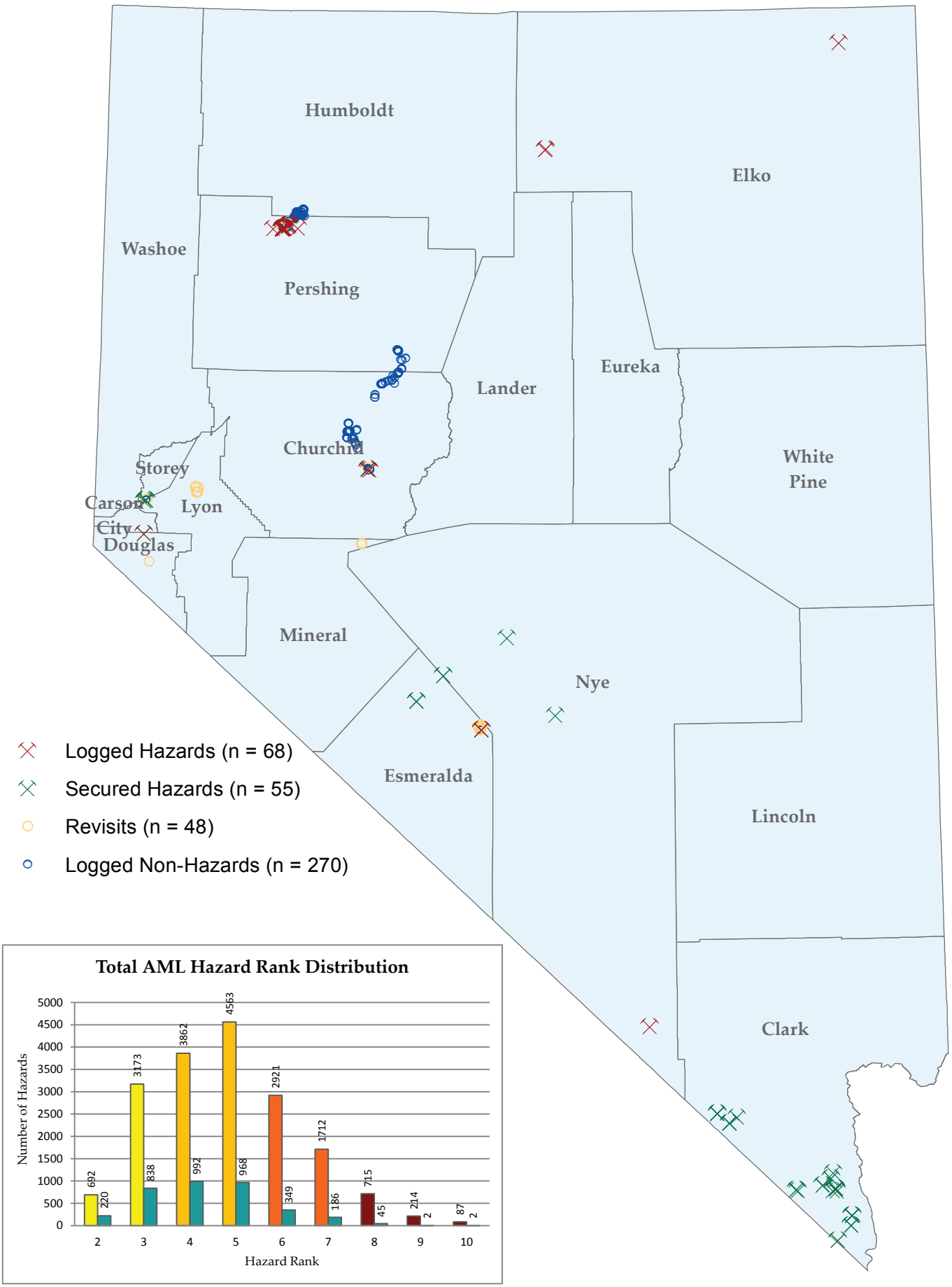
Possible topo quads include: Dry Canyon, The Baldies, Delano Peak, Emigrant Springs, Contact, Middle Stack Mountain, Tijuana John Peak, Texas Spring, Blanchard Mountain, Henry, Elk Mountain, Mary's River Basin NE, Jarbidge North, Jarbidge South, Bearpaw Mountain, Mary's River Basin NW, Annie Creek, Cornwall Mountain, Big Table (Sites near Rowland), Hicks Mountain, Merritt Mountain, Mountain City, Ungina Wongo, Maggie Summit, Bull Run Reservoir (probably not this one since access is restricted), Reed Station, among others.

Week 12 – (August 4): Ely area

Topo Quads Include: Cave Creek, Currant Mountain, Currant Summit, Franklin Lake NW, Franklin Lake SW, Horse Track Spring, Little Horse Canyon, Mount Moriah, Old Mans Canyon, Sixmile Canyon, The Cove, White Pine Peak

Week 13 – (August 11): Last week – Clean up week in office. Minimal local field work as time allows.

Recent AML Work Completed
January 31, 2014 - April 21, 2014



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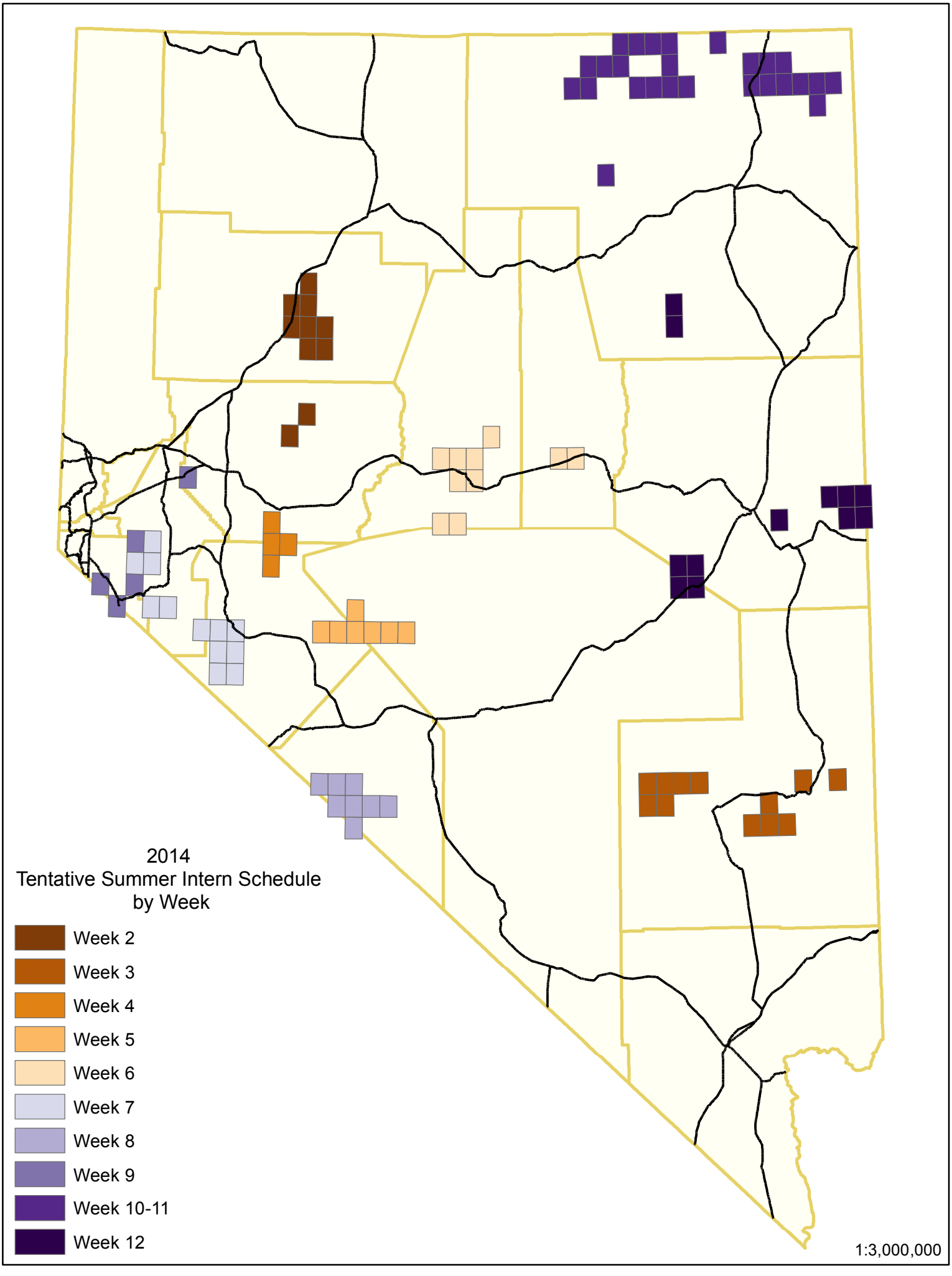
2014
Tentative Summer Intern Schedule
by Week
Week 2
Week 3
Week 4
Week 5
Week 6
Week 7
Week 8
Week 9
Week 10-11
Week 12
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AML Database Statistics Current to April 21, 2014

COUNTY	SITES DISCOVERED	SITES SECURED	PERCENT SECURED
Carson	76	76	100.00%
Churchill	670	549	81.94%
Clark	2145	1664	77.58%
Douglas	200	187	93.50%
Elko	708	542	76.55%
Esmeralda	2653	2311	87.11%
Eureka	775	706	91.10%
Humboldt	797	700	87.83%
Lander	575	474	82.43%
Lincoln	686	545	79.45%
Lyon	1024	865	84.47%
Mineral	1540	1314	85.32%
Nye	2527	1888	74.71%
Pershing	1518	1045	68.84%
Storey	194	167	86.08%
Washoe	428	394	92.06%
White Pine	1423	910	63.95%
TOTAL (Since 1987)	**17,939**	**14,337**	**79.92%**
1/31/2014	17,837	14,273	80.02%
Sites recorded as Discovered/Secured Since last meeting:	**102**	**64**	

2010-2014

Carson City
8/17/2012-Tour in Yerington

Virginia City

Reno
5/12/2010
10/19/2010
4/29/2011
7/27/11 – Tour of Bat Cupola in VC
11/2/2011
5/03/2012- Virginia City
11/09/2012
5/03/2013- Hazen and Olinghouse
10/10/2013
05/09/2014- EP Minerals; Nevada Cement Plant and Mine.

Las Vegas
2/11/2010 – Tour of the McCaw School of Mines - Henderson
2/7/2011 – Tour of Molycorp Mine
2/27/2012 – Searchlight Area
2/21/13
2/14/14- Tule Springs Park

Battle Mountain
July 30, 2010 – Tour of Newmont Phoenix Mine

Tonopah
8/15/13 - Solar Reserve Plant
8/16/13 - Tonopah Mining Park