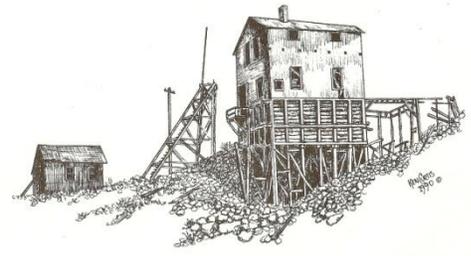
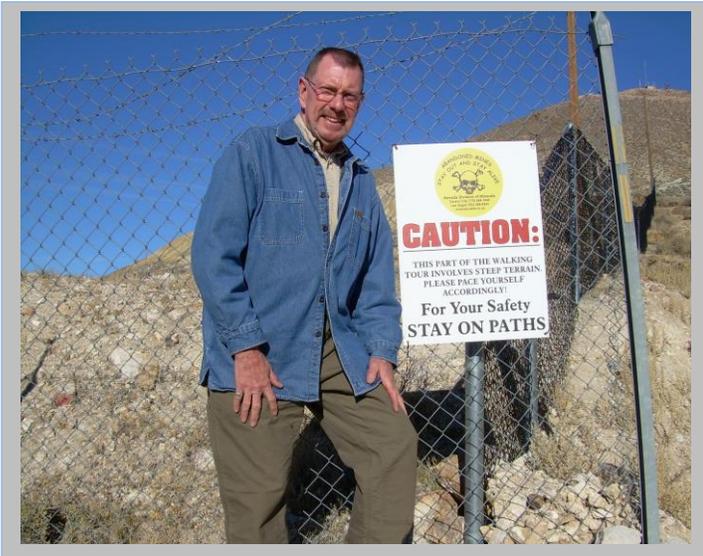


Tailings



Volume 11-1

Spring 2013



Nevada's Abandoned Mine Lands Program

1987-2013

By Bill Durbin, Chief,

Southern Nevada Operations, Division of Minerals

Tonopah, the "Queen of the Silver Camps" is one of hundreds of mining towns and camps that emerged in Nevada over the last 160 years as prospectors and miners sought new wealth from the mineral treasures just waiting to be discovered. Some towns, like Tonopah and Virginia City, have survived to this day. Many, however, were short-lived, leaving behind ruins, mine workings and waste rock dumps as reminders of days gone by.

Many of the geologic processes that created Nevada's spectacular landscape also contributed to the deposition of valuable mineral resources. One doesn't have to travel too far anywhere in Nevada to encounter evidence of mineral exploration or development. There are 526 recognized mining districts in Nevada where both metallic and non-metallic minerals have been identified, explored for or produced.

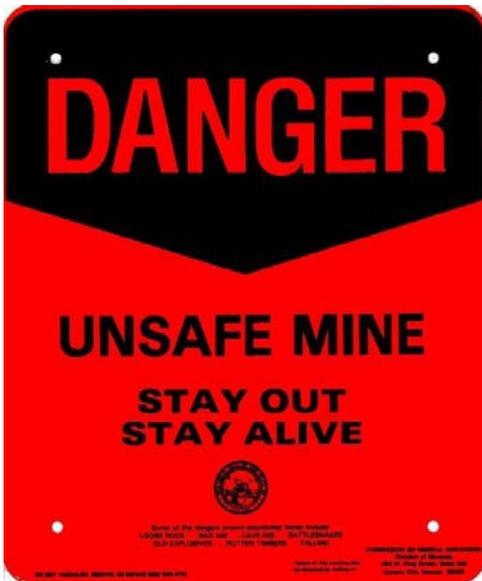
Following the decline of the Comstock Lode in the late 1870s, prospectors and miners set out from Virginia City in all directions, looking for the next big strike. As a result of many decades of prospecting and mining, Nevada has a legacy of abandoned mine workings. They are found in every county. They range from small prospect pits and trenches to vertical shafts over 3,000 feet deep to complex mines with many miles of underground workings. It is estimated that there are 200,000 to 300,000 mining related features in the state and the Nevada Division of Minerals estimates that, of those, 50,000 may pose a significant hazard to people or domestic animals.

Abandoned mines are passive hazards. They do not move about searching for victims. Civilization creeps toward the mines. As population grows, housing and infrastructure expands. Mine workings that were once miles away from the nearest road or town are now easily accessible to the general public and the mines are a curiosity. Abandoned mines hold a fascination for those looking for old relics or artifacts. They are visited by rock and mineral collectors. Some visit old mines seeking thrills and some use the sites for partying, an especially dangerous situation. It is possible to encounter abandoned mines while hiking, 4-wheeling, riding ATVs, dirt bikes, horses or mountain biking.

Abandoned mine openings are considered “windows in the earth” by exploration geologists, who sometimes evaluate them for possible new mineral discoveries but they are a serious safety hazard for the general public.

What are the hazards posed by abandoned mines? They may include one or more of the following:

- Soft, loose ground at the collar (top) of a mine shaft that could give way under foot, resulting in a fall.
- Loose rock overhead or along the walls of an adit or tunnel could cave in by touching it or from vibration from movement or talking while walking along.
- Old mine timbers may appear solid but may be dry-rotted and break if touched or stepped on, resulting in a fall or cave-in. Old ladders are especially dangerous and could break under the weight of a small child.
- Abandoned mines may be a haven for rattlesnakes which escape sunlight and summer heat in the cool, dark recesses and hunt for rodents which often inhabit the workings.
- Rodents can carry hantavirus which is usually fatal to humans.
- Bats can be found in abandoned mines and occasionally carry rabies.
- Various species of spiders call abandoned mines home and some can give a serious bite.
- Old explosives and blasting caps are sometimes found in abandoned mines. Left behind by past generations of miners, the material becomes unstable with time and can be detonated by the slightest movement, a footstep or falling rock.
- “Bad air” is an accumulation of gases such as carbon monoxide, carbon dioxide or sulfur dioxide that rob the air of vital oxygen and can claim a life in just minutes.
- Mine workings can be flooded with water and pose a drowning hazard.
- Winze – a miner’s term for a vertical or inclined shaft that is dug down from the floor or bottom of a horizontal adit or tunnel. Often, winzes are not clearly visible or may be covered over by old timbers that may be dry-rotted and snap underfoot.



The Nevada Division of Minerals has records of abandoned mine incidents dating back to 1961. Since that time, there have been 22 injury accidents, 19 human fatalities, 9 dog rescues and 2 dog fatalities. The most recent incident occurred November 10, 2012 south of Henderson in Clark County. A 33-year old man fell down a 35-foot vertical winze and sustained serious injuries. He was rescued and transported to a local area hospital and is expected to recover. Five persons have been killed and 12 persons injured in falls down winzes in Nevada since 1961.

In 1987, the Nevada Legislature, concerned with the number of abandoned mine accidents that were occurring, passed legislation creating an abandoned mine lands program. It was made a part of the Nevada Division of Minerals function. The new program was instituted with two major priorities: **1)** a) Physically inspect and inventory the 50,000 hazardous mine openings and apply a hazard ranking based on location (1 to 5 points) and hazard type (1 to 5 points). The hazard rank is a combination of the two point systems. A hazard rank of 2-3 points is a minimal hazard; 4-5 points, a low hazard; 6-7 points is a moderate hazard; 8-10 points is a high hazard. b) Notify claimants and private property owners of their obligation to secure the hazardous conditions and, **2)** Develop a public awareness campaign to educate the public of the hazards of abandoned mines. This campaign was named “Stay Out and Stay Alive”.

In 1989, the program was expanded to include securing of abandoned mines by the Division on open public lands (Bureau of Land Management and U.S. Forest Service) where there were no active federal mining claims.

Abandoned Mine Investigation and Securing

Through January 9, 2013, 17,063 mine hazards have been identified and hazard ranked. 13, 285 have been secured (77.9% secured). The securing work has been done by claimants, property owners, mining companies, contractors, Boy and Girl Scouts, volunteers, Division of Minerals staff and summer interns.

Securing abandoned mines is accomplished using a variety of methods.

A “first line of defense” is fencing. T-post and barbed wire fences are constructed and posted with warning signs with the intention of preventing accidental entry. Common sense and good judgment are required on the part of the public who visit fenced sites to heed the warning on the signs which is: “DANGER - UNSAFE MINE – STAY OUT – STAY ALIVE”. Fences are subject to vandalism and the effects of exposure, so they are not a permanent solution to securing abandoned mines.

Permanent abandoned mine closures result in changes to the landscape. Therefore, before closure work is done, cultural and biological resource surveys must be done to evaluate potential effects to historical resources, plants and animals. Permanent closure methods include **backfilling** the mine openings using the non-mineralized rock material that was dumped outside the opening; **polyurethane expansive foam plugs (PUF)**, constructed in areas where there is insufficient fill material or in remote areas where use of heavy equipment is not feasible. The PUF material forms a strong, permanent seal in mine shafts or adits. It must be painted or covered with rock and dirt to prevent exposure to sunlight;

bat gates are constructed in adits where bat usage has been identified. The gates are constructed of heavy gauge steel beams and bars and are securely pinned to the walls, ceiling and floor of the adits. The bars are welded into place spaced 5 3/4 inches apart to allow bats to easily enter and exit the mine and keep people out; **bat cupolas** are built over the collar or top of a mine shaft. They usually have a concrete footing built a safe distance from the collar. A steel framework is secured to the footing containing the bat bars with 5 ¼ inch spacing on one or more sides and steel grating on top and sides that will prevent entry by persons or animals; **culvert bat gates** are employed in adits and shafts where there are problems with loose or fractured ground. Metal culverts, ranging from 24 to 72 inches in diameter are installed in the mine opening and secured in place with polyurethane expansive foam. Steel bars with 5 ¼ inch spacing are welded to a framework on the end of the culvert. Other closure methods include **steel mesh netting** and **steel grating** covers.



Through January 9, 2013, 3,652 abandoned mine hazards have been permanently closed in Nevada. This represents 27.5% of the 13, 285 mine openings secured in the state.

A PUF closure was completed at the Tonopah Historic Mining Park on October 9, 2012. The Mizpah air shaft, originally 400 feet deep and dug for the purpose of improving mine ventilation, re-opened after the backfill material used to close it over 20 years ago settled following a very wet November 2010. The air shaft opened up in the corner of the Mining Park’s Visitor’s Center parking lot. With no on-site backfill material available to re-close the shaft, a PUF plug sealed the

What Lies Beneath?



Miners worked hundreds of feet below where you are now standing.

Over a century ago men worked endless hours underground to bring out the silver that was discovered here. A virtual maze was constructed below ground as miles of tunnels, shafts and stopes were built to accomplish the task. Though the hard work paid off, today it can have consequences those men never dreamed of...



An incredible underground support system was built for the mines.

A HOLE APPEARS

The Mizpah Hoist (below) lowered men and supplies hundreds of feet down long shafts to work underground.

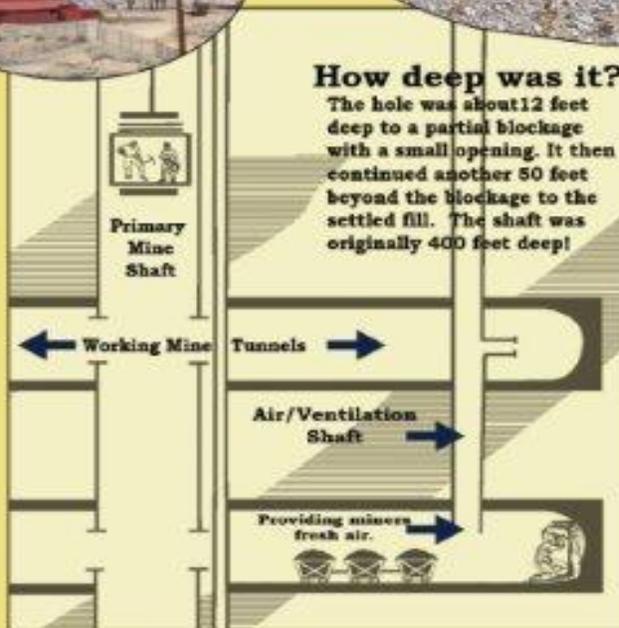


During a wet November in 2010 this hole (left) opened up in the parking lot nearly swallowing a vehicle! In the 1980s the parking lot had been expanded to this area using 'back-fill'. The heavy rain and snowfall caused the fill material to settle, re-opening the old ventilation shaft.

Ventilation (air) shafts were built to provide fresh air for the miners as toxic gases often built up in the mines.

How deep was it?

The hole was about 12 feet deep to a partial blockage with a small opening. It then continued another 50 feet beyond the blockage to the settled fill. The shaft was originally 400 feet deep!



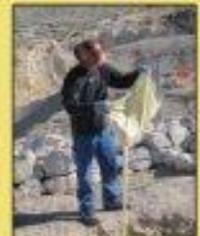
HOW TO FILL THE HOLE?

A Plug made of PUF*!
(*PolyUrethane expansive Foam)

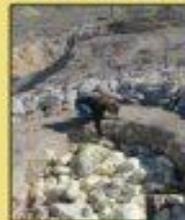


A tube was placed in the hole so that foam could fill it from at least a depth of 12 feet to the surface.

Each bag of foam was mixed and poured manually into the open hole. Within minutes the foam solidified into a kind of rubbery mass. Each bag that was added filled the hole further.



As the foam began to rise and fill the hole, rocks were also added to the mixture. The result was a plug foam-fitted to reach into all of the potential air pockets.



This close-up shows the yellowish hardened foam mingled with rocks.

Within several hours the hole was safe enough to stand on. A pole was placed to designate the center of the former opening.



Danger Averted!
Safe enough to walk on! Go ahead!

All Abandoned Mines are Dangerous!
Stay Out! Stay Alive!

Sponsored by the
Nevada Division of Minerals
in Association with
The Tonopah Historic Mining Park
Produced by goldcreekfilms.com



The say Decoder App on your smartphone to watch a short video.

ideal solution. The work was performed by Environmental Protection Services of Carson City under contract to the Nevada Division of Minerals. The plug required a total of eight cubic yards of PUF. Preparatory work and the closure process were photographed and videotaped by Gold Creek Films of California. A video of the PUF closure is available on YouTube and Gold Creek Films has made an interpretative sign that will be installed at the site of the plug. The plug has been left exposed at the ground surface so that visitors can view it. It will be painted to prevent sunlight from degrading the material.

Public Awareness Campaign

In concert with the on-the-ground efforts to locate and secure abandoned mines, the Nevada Division of Minerals conducts an aggressive public awareness campaign to promote the “Stay Out and Stay Alive” message.

In 2011, Division personnel made 113 classroom presentations in six Nevada counties to more than 5,000 students and teachers. Presentations were made at 36 additional events all across Nevada that reached over 15,000 people.

Handout materials including informational brochures, bumper stickers, refrigerator magnets, pencils, “hard hat” stickers, temporary tattoos, coffee mugs and “stress bats” (with the message “Abandoned Mines are for Bats – Not People – Stay Out and Stay Alive”) are distributed to students and the public at all major events.



The Division has an 11-minute “Stay Out and Stay Alive” video that has been distributed to all public and private schools and public libraries in the state. The video (in VHS or DVD format) can also be obtained from either Division office – Carson City or Las Vegas.

Division personnel developed an Abandoned Mine Lands Program “Mini-Unit” curriculum guide containing information and activities geared to 4th and 8th grade levels.

The Mini-Units have been distributed to all 4th and 8th grade classes in public and private schools and new mail-outs are done annually for schools adding additional 4th or 8th grade classes. In 2013, brochure and Mini-Unit mail-outs will be changed from 8th grade to 7th grade to align to the curriculum standards for Nevada history, which is taught at the 7th grade level.

In 2012, 78,500 “Stay Out and Stay Alive” brochures were sent to every 4th and 8th grade student in public and private schools in Nevada.

In Conclusion

Given the tremendous growth in population in Nevada over the past 25 years, it is our belief that the combination of the field investigations and securing work and public awareness has contributed to the low number of incidents that have occurred over that time, although one incident is one too many!

The Division of Minerals is grateful for the tremendous support of the abandoned mine lands program by the Nevada mining industry. The program is funded by fees paid by the mining industry, grants from the BLM and US Forest Service. The Division does not receive any state General Fund tax dollars.

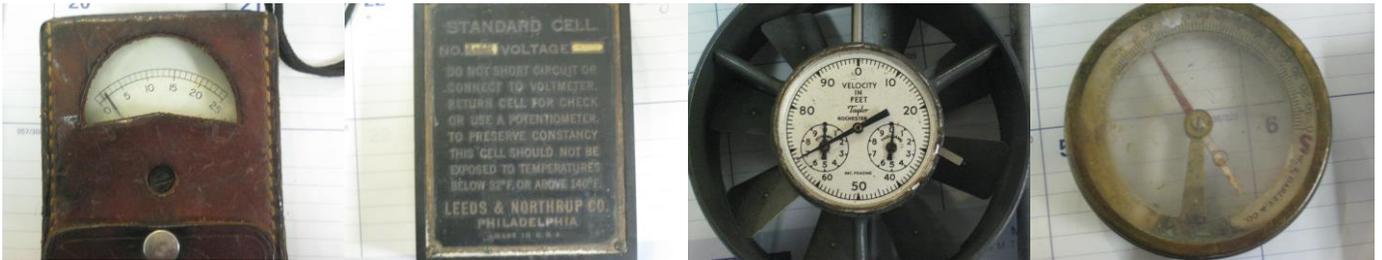
The Division has forged strong partnerships with the federal land management agencies. The Nevada BLM reports that more work is accomplished on abandoned mines annually in Nevada than in all of the other BLM states combined.

If an accident occurs at an abandoned mine, contact the county sheriff as soon as possible, DO NOT attempt to rescue the victim without the assistance of professionals.

If an unsecured mine opening, or one with a damaged or vandalized fence is encountered, please report it to the Nevada Division of Minerals. Provide clear directions or GPS coordinates (taken from a safe distance away from the opening), if possible. Division staff is usually able to respond within 24 to 48 hours. The hazard will be investigated and arrangements will be made to have the mine opening properly secured. The Nevada Division of Minerals has offices in Carson City (775) 684-7040 and Las Vegas (702) 486-4343. For more information on Nevada's Abandoned Mine Lands Program, please visit their website at <http://minerals.state.nv.us>

Do not become a victim of an abandoned mine! Please remember to "Stay Out and Stay Alive"!

Recent Park Donations:



Surveyor tools donated by Ed Tomany and Fred Holabird

Dixson Inc. Blasting Galvanometer

Leeds and Northrup Co. Standard Cell (electrical measurer)

Taylor Company Mining Anemometer

1900 W.S. Darley & Co. Telescoping Mining Compass



We are completing a joint grant from the Nevada State Society Daughters of the American Revolution and the National Society of the Daughters of the American Revolution for park signage. We are also putting the finishing touches on a brochure on park collections funded by Nevada Humanities.



Stephen Tibbals

Introducing our new Trustee

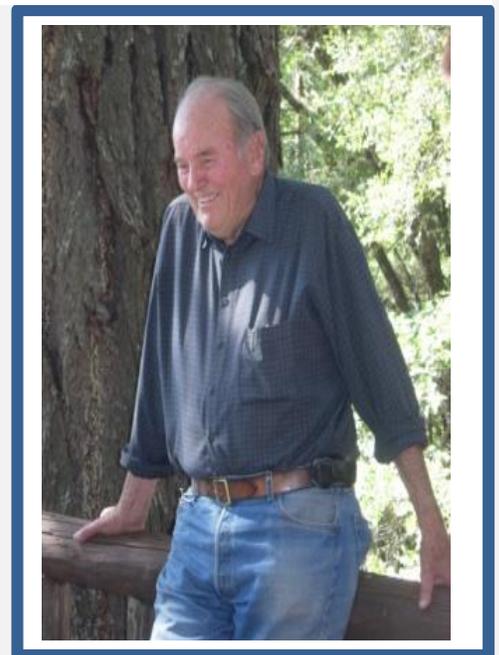
Stephen Tibbals was born in Reno, Nevada to a mining family, living in Nevada, California, Colorado and Washington states as a child and young man. After receiving an AS Degree in Electronics at Monterey Peninsula College in Monterey, California, Mr. Tibbals transferred to the Mackey School of Mines, University of Nevada, Reno. He received his BS degree in Mining Engineering from Mackey 1976 and is the third generation in his family to graduate from Mackey School of Mines.

Mr. Tibbals has worked in all phases of the mining industry from corporate offices to remote mine sites. He has held a variety of Jobs from Junior Engineer to COO of a Junior Mining Company. After spending his early mining career working underground in the silver mines in Northern Idaho at the Bunker Hill Mine and the Lucky Friday Mine, Tibbals went on to work in the uranium industry where he worked for Kerr McGee Nuclear, Pennsylvania Power and Light and Western Nuclear before transitioning into the gold industry. Mr. Tibbals has worked at a variety of gold mines in Nevada (including the Red Top Pit in Goldfield and at Northumberland) working in ore reserve estimation, mine design and planning, mineral economics, property acquisition, permitting and mine management. Stephen is currently General Manager of the Relief Canyon Mine in Pershing County, Nevada for Pershing Gold as well as the President of North Franklin Mining Company in Wallace Idaho.

A Registered Member in the SME (Society for Mining, Metallurgy & Exploration) and a QP (Qualified Person) in mine planning and mineral economics, Tibbals is active in the mining community and is currently on the Board of Directors of the McCaw School of Mines in Henderson, NV, National President of Women in Mining (WIM), Treasurer of the Nevada Chapter of WIM, Chairman of the Humboldt County Republican Central Committee and Chairman of the Mining Foundation for Lowry High School in Winnemucca, NV. Mr. Tibbals is an active member of the Lovelock Lions Club and is a Mason.

In Memoriam

John Livermore, a geologist and prospector whose microscopic gold strike revolutionized the mining industry. John developed the method of reclaiming microscopic bits of precious metal. He discovered the Carlin trend, a five mile by forty mile ore body that ranks today as one of the world's richest gold veins. Having worked in a great many countries all over the globe, Livermore was known for his kindness and generosity as evidenced by his Public Resources Foundation funding of preservation and environmental issues. The mining park's seed money came from Public Resources. A former Tonopah Historic Mining Park Foundation Trustee and Friend of the Park, his commitment to preservation and his long support of the mining park is but one of the legacies left behind by John.





Focus on our Facebook Friends



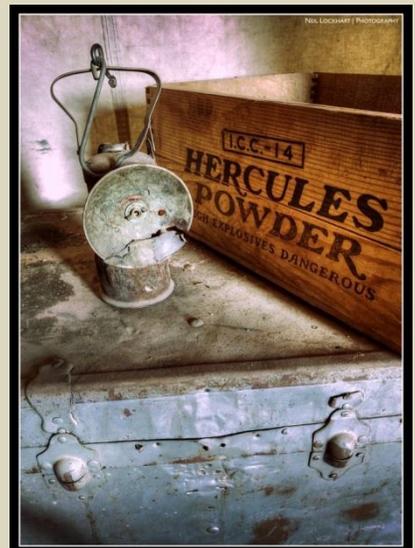
NEIL LOCKHART | PHOTOGRAPHY

"I could have photographed this one room alone, for hours." Neil Lockhart, Professional Photographer

Mining Still Life, Tonopah, NV



NEIL LOCKHART | PHOTOGRAPHY



Neil Lockhart | Photography

Mining Park Memberships

Individual - \$25.00

Family - \$35.00

Business - \$75.00

Individual Life - \$250.00

Family/Business Life - \$350.00

Benefactor * Individual/Family Life - \$1,000.00

Benefactor * Business Life -
\$1,500.00

Name

Address

City

State ____ Zip Code _____

E-mail Address

Phone Number

Clip this form and mail to:

Tonopah Historic Mining Park
PO Box 965
Tonopah, NV 89049

MINING PARK'S CALENDAR OF EVENTS

L.A.S.T. 2013 – Locate, Assess, Stabilize & Transport Training Conference

Friday, April 26, through Sunday, April 28

Patty Winters, Trainer, EMS Division

Nye County Emergency Services

P.O. Box 868

Tonopah, Nevada 89049

Phone - 775-482-5135

pwinters@co.nye.nv.us



Nevada State Mining Championships



During Jim Butler Days,
Memorial Day Weekend,
Saturday, May 26

Contests start after the parade
Sunday, May 27 at 9 a.m.

Cash prizes!

Blacksmithing Classes

Saturday, June 22: 8 a.m. to 5 p.m.

Sunday, June 23: 8 a.m. to 1 p.m.

Saturday, July 19: 8 a.m. to 5 p.m.

Sunday, July 20: 8 a.m. to 1 p.m.



Registration forms for all events can be found on our
website. www.TonopahHistoricMiningPark.com

Blacksmithing Classes at The Tonopah Historic Mining Park June 22 & 23 & July 20 & 21, 2013



Designed for those with an interest in learning the fundamentals of blacksmithing and/or continuing their education, students will learn to light and work with a coal forge, to heat metal to more than red hot, and to use hammers and other tools to forge, bend and twist the hot metal to desired shapes. **Classes will be tapered to student's skill levels.** Classes are intended for adults. However, responsible and well-behaved youth are invited to participate *with* adult supervision and support. Observers are always welcome to watch this exciting educational "living exhibit".

**Taught by California Blacksmith Association
Certified Instructors:
Mike Barth & Mike Stanton**

Cost: \$45.00 for Saturday classes
 \$20.00 for Sunday classes or
 \$60.00 for both classes

*** Mining Park members receive a 10% discount***

Registration Forms can be found on our website:
www.TonopahHistoricMiningPark.com

**In recognition and appreciation to Joni Eastley
for your longstanding membership on
the Tonopah Historic Mining Park Board.
Thank you for your endless hours of support.**

Nevada State Mining Championships

Every year, over Memorial Day weekend during Jim Butler Days, the Tonopah Historic Mining Park hosts the Nevada State Mining Championships. The two day event features both professional and amateur competitions. Held for more than 30 years, the competitions involve the skills miners needed to make a living at their profession. Event contests include double and single jack drilling, individual and team mucking, spike driving, timber toss and timber sawing.

On Saturday the professional mining events start immediately after the Jim Butler parade, normally around noon. Women and men participate in a wide variety of events. Large cash prizes are the incentive and the reward is being able to brag that you are the Nevada State Champion!

Everyone is invited to participate. Those entering the professional events are not eligible to compete in the amateur events on Sunday. Prize money is donated by supportive local companies and individuals. The more money donated, the bigger the purse. Entry fees are added in and used to boost the final take even more. There must be at least three participants entered for an event to be held.

On Sunday, the amateurs take over. Young and old participate in single and team mucking as well as a mining relay race. Age categories start at 7 years and under. Special sized ore cars are used for the youngsters. Those older than 15 years get to muck the same amount of

dirt as the professionals. The mining park is offering free admission to the park's 110-acre walking tour. Self-guided walking tours are available in the park office. Now is the time to plan that trip, bring your mountain bike, hiking boots, running shoes and camera. Plan to spend the day at the mining park enjoying the mining championships. It promises to be a wonderful weekend for the entire family.

Welcome to our new

THMP Lifetime Members

The Skilbred & Darling Families

The Mining Park

**is available for reunions, receptions
and weddings too.**

**If your group would like to tour the
Park, please contact the office at**

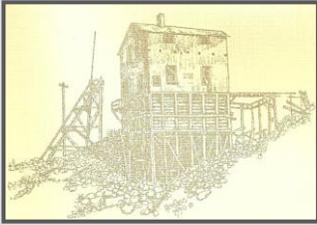
**(775) 482-9274 or email us at
tonopahminingpark@gmail.com.**

**For more information visit our website
www.TonopahHistoricMiningPark.com**

Find us on Facebook and YouTube

Mining Park Hours:

**Open 7 days a week from 9:00am - 5:00pm
Closed on legal holidays**



TONOPAH HISTORIC MINING PARK

PHYSICAL ADDRESS - 110 BURRO ST,
TONOPAH, NV 89049

MAILING ADDRESS - PO BOX 965, TONOPAH, NV
775-482-9274



**The Nevada
Division of
Minerals
Abandoned
Mines**

**Stay Out
and
Stay Alive
Program**