

MONTANA **2012 mining**

A career founded on integrity: John Fitzpatrick

MMA associate member John Junnila is there to support the producers

New MMA executive director Tom Hopgood concerned with perception of mining industry

MMA scholarships honor early leaders by supporting future mining pros

MMA committees look forward to new horizons

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MONTANA MINING

is published by
DEL Communications Inc.
Suite 300, 6 Roslyn Road
Winnipeg, Manitoba, Canada R3L 0G5
www.delcommunications.com

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Production services provided by:
S.G. Bennett Marketing Services
www.sgbennett.com

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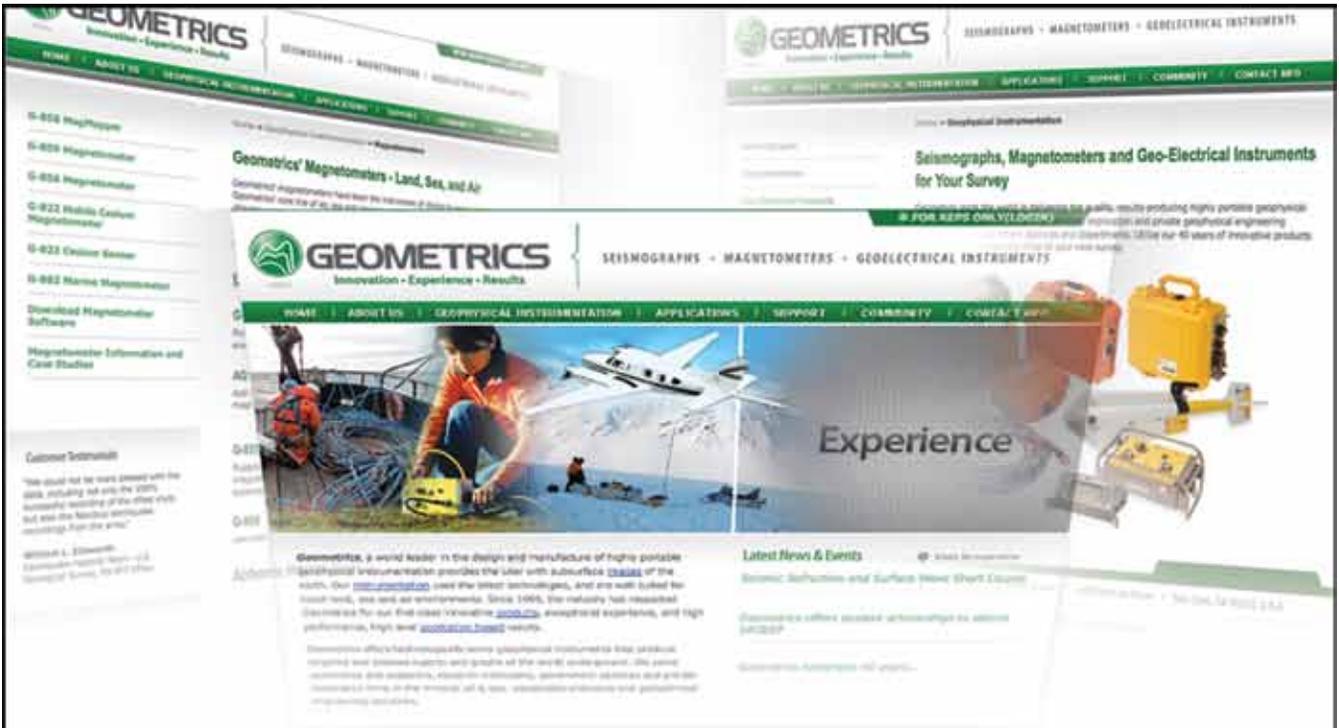
Cover Photo Courtesy of
Stillwater Mining Inc.

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A message from Tim Dimock, MMA President



The overarching mission of the Montana Mining Association is to protect and promote the mining industry in the state. Montanans desiring well-paying jobs, combined with some of the highest metal prices ever seen, offers a unique opportunity for positive growth for our industry in Montana. The Montana Chamber of Commerce

completed a survey of Montanans in 2011 which concluded that over 70 percent of Montanans want to see more natural resource development, including mining, in our state. I believe the Montana Mining Association can affect the needed legislative, regulatory and public opinion changes necessary to enable our industry to grow.

Over the past several years, our association has been successful at establishing a stable membership and re-establishing active safety, environmental, membership and legislative committees. This year we are attempting to be even more proactive in our efforts, having completed a strategic planning meeting at the end of 2011 that resulted in a prioritized list of objectives for each committee as well as the creation of the new MMA Education Committee. The strategic planning meeting was quickly followed up by a supplemental budget estimate that was approved by the board in January. Each committee is already making great progress toward our strategic goals.

The MMA Education Committee has received nominations and commitment from the first 29 MMA Ambassadors. Our ambassadors are being provided the training and the materials necessary to make impactful presentations about the relevance of our industry to community groups and organizations throughout Montana.

Additionally, in order to more easily provide pertinent information about our industry and the association, we have begun to design a new website for the MMA that we hope to unveil during the second quarter of 2012. The MMA Membership Committee has developed a new brochure that highlights the objectives of our association and provides prospective MMA members with information about the many benefits of membership in the MMA and how members can forward the cause of our association collectively.

The MMA Safety and Health Committee has been working hard to ensure that our members are focusing on the number one priority of sending every person home safe and healthy every day, as well as how best to comply with our regulations. A highlight of the 2012 MMA Annual Meeting will be the first-ever MMA Safety and Health Committee awards presented to members who have excelled with their safety programs and performance during the past year.

The MMA Environmental and Land Use Committee is working to provide both small and large producers with resources that will assist with permitting, compliance issues, and the best environmental management practices.

The MMA Legislative Committee has commissioned subcommittees to investigate issues affecting our industry and to determine if there is need for responsible changes or clarifications to Montana law. Other important goals of the legislative committee are to inform elected leaders about the importance of our industry and to reinvigorate the association's Political Action Committee to ensure that those who support responsible development of our resources are supported by individual members of our association.

If you believe, as I do, that the opportunity currently exists to affect positive change for our industry, economy and jobs in Montana, and would like to participate in this change, please contact the MMA office at 406-495-1444 to find out how you can help. ♦



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Montana Mining Association Mission Statement

The Montana Mining Association (MMA) is a Montana trade association dedicated to helping mining companies, small miners and allied trade members succeed, understand, comply and function in a complex business and regulatory world. The primary purpose of the Montana Mining Association is to protect and promote the mining industry in the state.

The Montana Mining Association monitors issues of concern and provides representation for its members at the state legislature and with various state and federal regulatory agencies. The Montana Mining Association supports national mining initiatives.

The Montana Mining Association provides information and education for its members and distributes information to the general public about the contribution of minerals and

mining to our economy and well-being. One of the MMA's primary functions is to promote and enhance the image of the mining industry.

The Montana Mining Association works in cooperation with other state and national mining associations, natural resource trade associations and groups with similar interests and needs.

The MMA serves the industry on a wide range of subjects through the expertise of its members. Many of the MMA's activities are conducted by various committees. The association has many active associates. Committees within the association are health and safety (including the health and safety of employees within the association), education, membership and legislative (including environmental and land use and political action committee).

YOU CAN MAKE A DIFFERENCE BY SUPPORTING THE MMA PAC

The Montana Mining Association supports candidates and issues that support mining and the value it brings to the state of Montana. Donate today and help us make a difference.

The Montana Mining Association PAC (Political Action Committee) is designed to promote and advance mining in the state of Montana. Our purpose is to educate officeholders and candidates for office about concerns and issues that affect the industry.

No MMA member money is used for candidate support. We very much appreciate individual contributions and assure you that your donation will be channeled to candidates who will best serve the industry. Your individual contribution will make a tremendous difference as we work to advance mining in our great state of Montana.

If you wish to make a contribution, please send a check to the Montana Mining Association PAC:

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Out-going Executive Director's Report

Debbie Shea



In December of 2006, I accepted the position as executive director of the Montana Mining Association. In many ways my hire was a leap of faith. I had never overseen an association nor worked under a board of directors. My work history included being a teacher for 26 years and regional coordinator for job training under the AFL-CIO. Yet, the job seemed to be a natural fit. I had a great love and respect for the industry,

as well as an appreciation for its remarkable contribution to Montana. I also had a fairly keen perspective on government, having served as a state legislator for 11 years and sponsoring various pieces of legislation on behalf of the mining industry – as a Democrat, no less. And so I was hired.

And now, five and a half years later, it is time to say good bye.

Looking back, I feel a great sense of accomplishment in all that we have achieved together. The MMA membership has greatly increased over these years. The five committees that are the driving force for the association are under skilled leadership, and through proactive membership are moving the industry forward. Our annual publication, *Montana Mining*, which made its debut in 2007, serves as a wonderful resource to tell our story and promote the best of mining in our great state. Through our scholarship program, our partnership with the Montana Tech Foundation fosters new careers in the mining field. Our annual meeting has exceeded all expectations and will once again, this year, surpass the previ-

ous year in attendance. The MMA's work to effect positive change in law, through our legislative efforts, has over the past five years had many successes. We are the Montana Mining Association and I applaud all who have worked so hard to bring it to new light.

I wish much success to Tom Hopgood as the new executive director of the MMA. I know the association will be served well by his contribution and direction.

I would like to thank my assistant Laura Feist, who does such an outstanding job in her multi-faceted role with the Montana Mining Association. Laura came to the MMA a year and a half ago, and her contribution has been enormous. In the throes of all the strategic planning activity, she has kept us all on track. Thank you Laura!

Finally, I wish to thank all of our membership. Your contribution and participation is immeasurable.

Tap 'er Light!

Debbie Shea ♦

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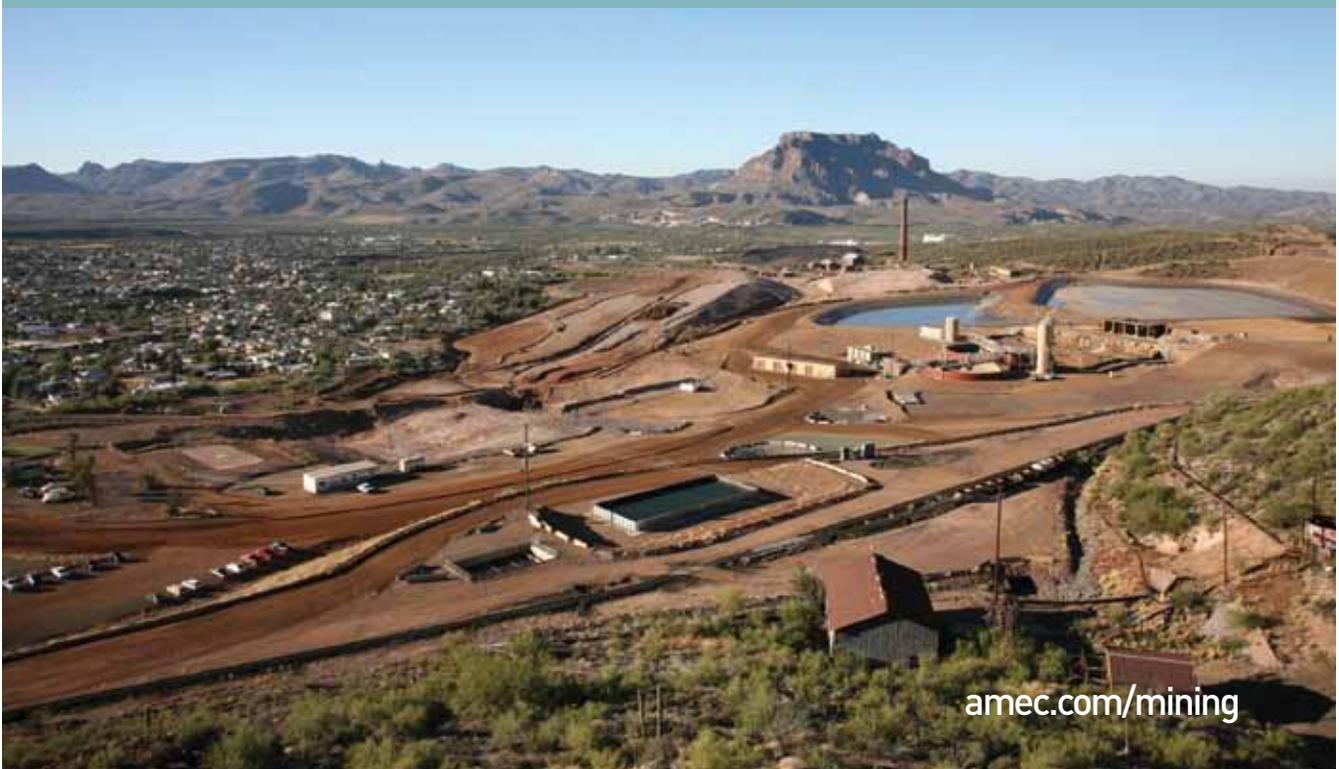
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Public perception of mining industry among new MMA exec's top concerns

Tom Hopgood well-acquainted with the process; knows many of the players

By Laura Tode



Helena attorney Tom Hopgood became Montana Mining Association's new executive director on May 1, bringing to the position a wealth of legal and administrative experience.

"I'm looking forward to getting to know all the members and hopefully establishing a good relationship with them," Hopgood said on his first day as executive director.

The position fits his experience well. Hopgood spent most of his legal career in Montana, working in the field of natural resources, including lobbying and administrative law. From 1997 to 2009,

he was senior attorney and later associate general counsel for MDU Resources Group, based in Bismarck. Most recently he worked with Gough, Shanahan, Johnson and Waterman, in an of-counsel position.

Hopgood is familiar with Montana politics and plugged into statewide issues. He's on the board of directors for the Western Environmental Trade Association and also involved with the Montana Petroleum Association.

"I really enjoy lobbying and working with the legislature; I am well-acquainted with the process and know many of the players," he says.

The public perception of the mining industry is among Hopgood's top concerns and is an issue that may become one of his greatest challenges.

"When you mention mining, people should think of jobs and economic progress – not noisy equipment, environmental threats and political control," Hopgood says. "I think the players in the mining industry in Montana are responsible and want to do things right."

The association has long recognized that public perception was faltering, and

an information campaign is already underway. Hopgood said he's planning to continue that work with the board to get the word out about the positive impacts mining has on the Big Sky State.

"This state was founded on mining," Hopgood emphasizes. "Our policy positions need to be supported by a positive recognition of what we do."

Although Montana hasn't been hit as hard as other states in the recent economic recession, mining can still be part of the solution by providing valuable jobs and contributing to the state's revenue base, Hopgood said.

Debbie Shea, the out-going executive director, is looking forward to Hopgood's leadership and she plans to continue working with the association part-time to focus on community outreach and education.

"We can see that there's such an importance in getting information out there – not just on the history of mining; but more importantly, on how we're moving forward, the technological advances in the industry, reclamation efforts, and the benefits mining provides," Shea says.

Shea hopes to have 60 Montana Mining Association ambassadors trained and ready to become involved in community dialogue throughout the state.

In his role, Hopgood will reinforce the positive image of the mining industry, and he's looking forward to help influence policy in the next legislative session.

Hopgood has deep roots in the Helena community. He is married, and he and his wife Loraine have two grown daughters. His oldest, Julie, will graduate from law school this spring, and his youngest, Amy, calls Bismarck home. ♦



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Mines and exploration in Montana: 2011 in review

By Robin McCulloch, Mining Engineer

Mining operations experienced a broad variety of conditions throughout 2011. For the small operators, especially the placer miners, the spring was late in coming and the heavy winter snowpack transitioned into local floods that lasted well into July. Many access roads were washed out, dry stream beds became torrents, and some placers became unworkable.

Larger metal operations enjoyed strong prices while industrial minerals mines noted a slow but steady recovery from the 2009 collapse. Operating costs have been steady; purchasing was slow and capital projects were limited. The construction industry has shown very little rebound; as an example, the earliest projected market recovery in the Portland Cement industry is 2014. Other sectors of the mining industry have speculated that total recovery may not be possible until 2017. One company stated that it was an

accomplishment to have survived under these business conditions. For most, it appeared to be a year of entrenchment rather than celebration.

Troy Mine (Cu, Ag)

Northwest of Missoula, near Libby, Revett Minerals, Inc. reported that their Troy mine (Genesis, Inc.) had done quite well for the year. Exploration of their strataform copper-silver deposit has continued to identify new reserves in the lower quartzite beds below the original discovery. Development of the “C” bed has found higher grades; new reserves have been identified in the “I” beds. Development of those reserves is expected in the coming year. Current reserves stand at seven years, with five additional years of resources at the JF property.

The company has made tremendous progress in building a cohesive workforce that has developed an “ownership atti-

tude” of the company. Many employees now lead local discussions on the environment and the mine’s activities. The company and the employees have developed a very proactive environmental conservation program, resulting in benefits for all, especially the environment.

During the year, the company made upgrades on their tailings pond and replaced some equipment. Operations were compromised when they could not secure rail cars to ship concentrates to the smelter, which interrupted their cash flow for a period of time.

Rock Creek Mine (Cu, Ag)

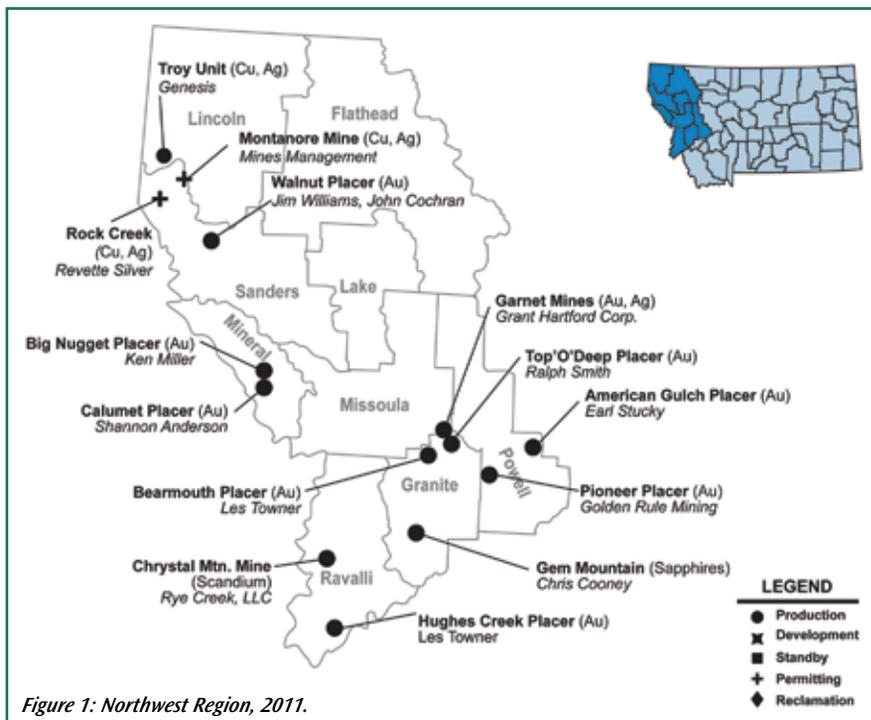
The Rock Creek Mine (Rock Creek Resources), a wholly owned subsidiary of Revett Minerals, Inc., continued efforts to permit their world-class strataform copper-silver deposit under the Cabinet Mountains near Noxon. This project has the record for the longest mining permit cycle in Montana, as it started in the fall of 1983. The company is working on a supplemental EIS to update sections of the original EIS following yet another intervention by the federal court.

The biological opinion of the project was appealed by environmental groups to the ninth circuit, where a favorable decision was awarded to the company and agencies.

At the same time, a Helena judge determined that the State was wrong in allowing the company to develop the mine under a generic water discharge permit and will require the company to obtain an individual MPDES permit.

Montanore Mine (Cu, Ag)

The supplementary DEIS is out for public review on the re-permitting of the mine for Mines Management, Inc. The company is continuing to pump to maintain the



water level in the decline until permitting is completed. The operations are located southeast of Libby at the upper portion of the Libby Creek drainage.

Current delays in permitting appear to be focused on the results of a water modeling program that was employed with very little relevant data. The erroneous model indicated that the project would dewater surface streams when the workings were developed. The implications of employing ground-water modeling without adequate data may have long-reaching effects on future development of mines in the state.

Walnut Placer (Au)

Jim Williams and John Cochran continued testing paleo-placer gravels near Lyons Gulch and producing from the last of the placer deposit in the Vermillion River bottom near Trout Creek. The company struggled with extended, catastrophic run-off and disappearing roads. The Vermillion placer appears to consist of re-worked gravel from the paleo-channel perched above Lyons Creek.

Calumet Placer (Au)

In Quartz Creek (near Superior), Shannon Anderson continued production of the Calumet placer mine. Excavations at the downstream end of the existing pit have revealed a deeper channel with larger boulders. Bulk tests have produced some nice nuggets.

Big Nugget Placer (Au)

Ken Miller continued a gold placer bulk test along an old drift mine in lower Meadow Creek. The gold produced consisted of small yet abundant flakes accompanied by ample amounts of black sand. The small-sized gold particles and gravel with black sand indicated that the excavation was likely on the margins of the main pay zone, and further testing will be necessary to characterize the deposit. Ken Miller sold the mine and equipment and retired at the end of the season.

Chrystal Mine Tailings

Rye Creek LLC, a wholly owned subsidiary of Boulder Scientific Mining Co., reprocessed tailings and mine waste from the Chrystal Mountain fluorite deposit and mill pond in Darby. The company is recovering thortveitite, a scandium mineral.

Hughes Creek Placer (Au)

Les Towner and company mined placer gravels during the summer in upper Hughes Creek, southwest of Darby. The company had located an unworked bench deposit in the previously mined drainage and produced some nice nuggets and wire gold.

Garnet Mines (Au, Ag)

West of Drummond, Grant Hartford Corp. shipped dumps from the Lead King mine to the Golden Sunlight mill. They drove 400 feet of decline into the Nancy Hanks mine and started the infrastructure for mining operations planned during 2012. The mill is planned for completion in 2013. The company did not succeed in raising the necessary capital to complete their projects but are planning to renew operations in April 2012.

Bear Gulch Placer (Au)

Les Towner's placer operation near Bear Gulch (west of Drummond) was flooded out. The previous year's pit had been reclaimed and promptly became a lake

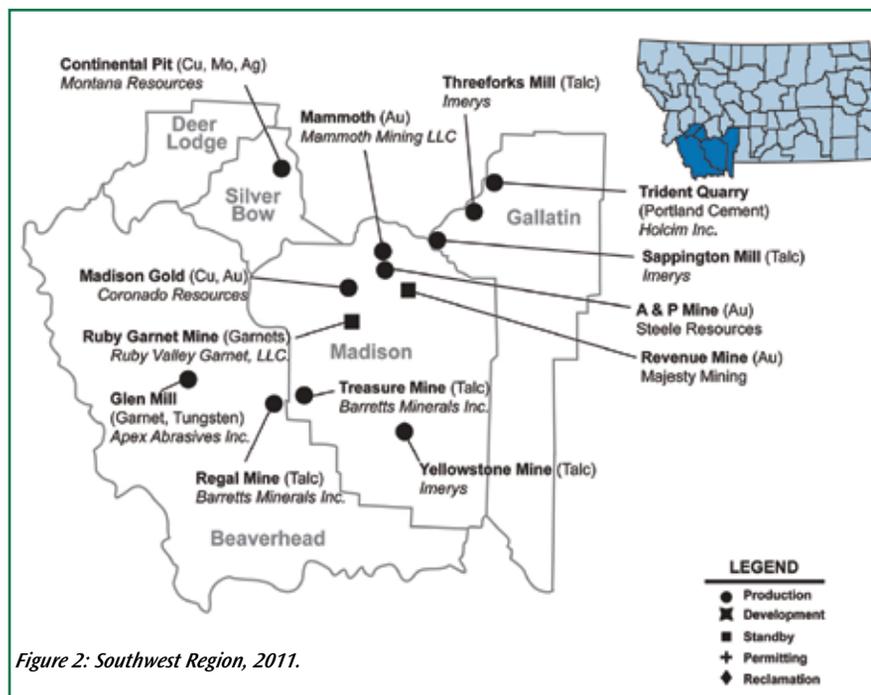
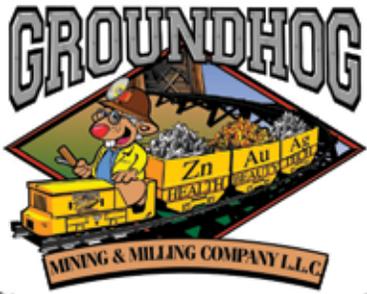


Figure 2: Southwest Region, 2011.



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for a long portion of the spring/summer. A small bulk test completed during the spring revealed the extent of drift mining that had been completed in the deposit. Large, barren, mined-out stopes exposed in the excavation emphasize the need for future testing prior to mining.

Top "O" Deep Creek Placer (Au)

Placer operations near Garnet on Top "O" Deep (upper Deep Creek) were suspended for the year while the company

tested a placer property in Idaho. Future work is planned in 2012.

Gem Mountain (Sapphire)

Chris Cooney continued production of sapphires at the Gem Mountain placer, located west of Philipsburg. Operations included a commercial operation as well as tourist operation for fee processing. The company has opened an additional outlet in downtown Philipsburg that includes panning and gifts.

Pioneer Placer (Au)

Near Garrison, Golden Rule Mining closed operations in early spring to upgrade safety requirements on their mining operation and equipment. Operations resumed in the fall on their Tertiary gold placer. The company spent the winter upgrading their facilities and recovery circuit in preparation of the 2012 season. The deposit was one of the first discoveries of gold in Montana in 1852.

American Gulch Placer (Au)

Earl Stucky mined placer gravels north of Avon in the Finn district.

Continental Pit (Cu, Mo, Ag)

The largest metal mining operation in Montana is owned and managed by Montana Resources, LLP in Butte. They maintained production of about 56,000 tons of ore per day as one of the lowest cost copper/molybdenum producers in North America. During the year, the company purchased ancillary replacement equipment such as dozers and cranes but made no major changes. The company reported increased costs for diesel and grinding media. Tire costs have stabilized and the availability has steadily improved.

Near Interstate-15 on the eastern mine boundary, some portions of the waste rock dumps were regraded and topsoiled in preparation of final reclamation. Results of their exploration drilling program beneath dumps on the south have substantially increased their reserve base. An additional year is planned for further exploration.

Madison Gold (Cu, Au)

West of Silver Star, Coronado Resources, Ltd. continued to campaign mine a copper-gold skarn at a rate of 500 tons per month. They purchased a mucker and a 15-ton truck and took over the mining of the deposit from their contractor. The high-grade copper ore has been shipped to China in recent years but it has diminished in availability. The remaining lower-grade copper ore was shipped to the Contact Mill in Philipsburg for enrichment and metallurgical testing while the



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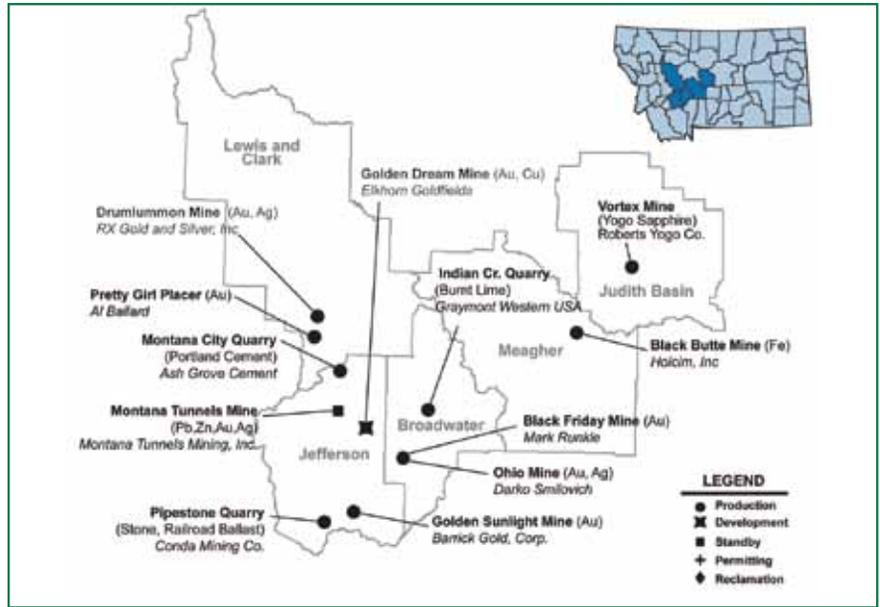
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gold ore was shipped to the Golden Sunlight (Barrick Gold Corp.). The company is trying to develop a drilling program to further define their reserves.

Ruby Valley Garnet Mine (Garnet)

Ruby Valley Garnet, LLC, located near Alder, has been inactive during the transition from the exhaustion of their placer resources and the development of their open pit resources. Expected development costs of \$2 to \$5 million for redesign of the mill and development of the open pit operations had prompted a search for capital that ended in the sale of the company late in 2011 to Garnet USA. The new company has initiated a trenching program on their lode deposit.



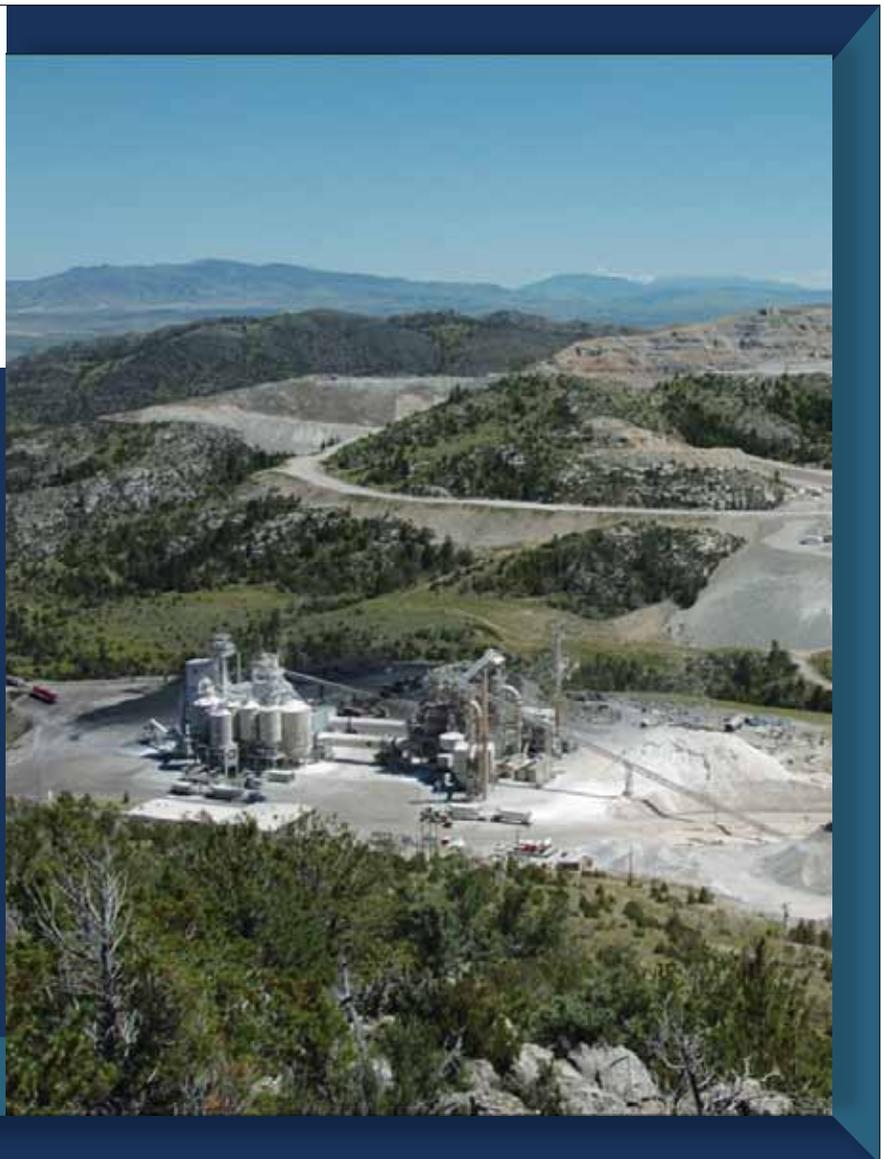
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Glen Mill (Garnet, Tungsten)

South of Melrose, Apex Abrasives, Inc. expanded their operation from production into marketing. After very limited sales in the wholesale market, the company has established a distribution network for their product. Apex personnel have reported favorable results in selling their water-jet cutting media, but had concerns that they may not have produced enough product to meet the demand. The company is the only mine in Montana producing tungsten. They have also developed a webpage as part of their marketing efforts (http://apexabrasives.com/Home_Page.html).

Regal and Treasure Mines (talc)

Barretts Mineral, Inc., a subsidiary of Specialty Minerals, Inc., produced talc from two open pit mines near Dillon. The Regal and the Treasure mines are mined on alternating years to provide stockpiles for mill-feed.

The company had a good year, increased personnel, and experienced increased sales. They have continued to expand their reserves with an active exploration program. They added a grinding mill to the plant south of Dillon.

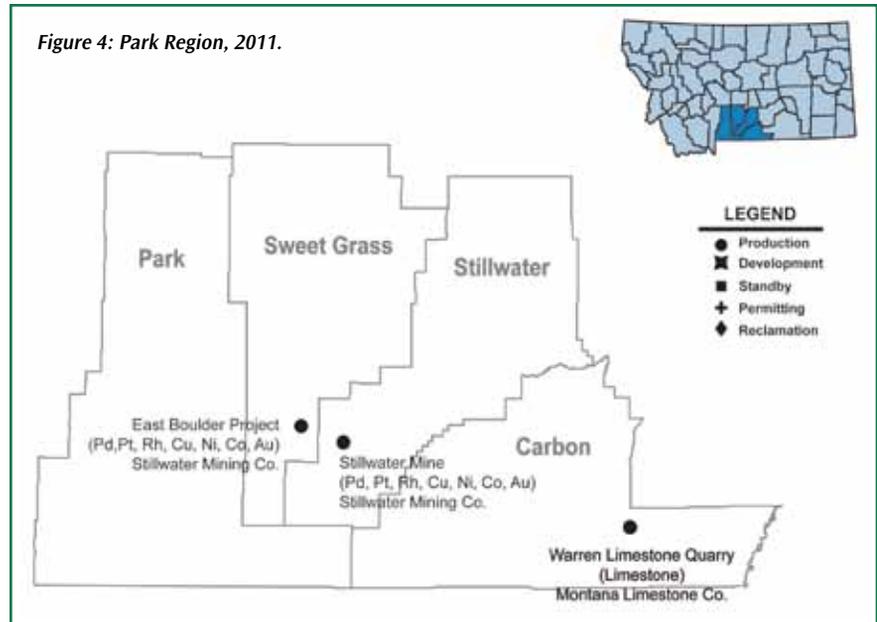
In operations, they replaced a truck and a loader and built a new shop at the Regal mine dump. At the Treasure mine, the company received approval on a new water and discharge system. Operations continued with no major changes.

Yellowstone Mine (talca)

The Yellowstone Talc mine has been operated most recently by Imerys Talc America, Inc. under the Luzenac Group. On August 1, 2011, the property was purchased by Imerys, an international industrial minerals company. Their new name is Imerys Talc, which is a division under the Performance and Filtration Minerals Group of Imerys.

Local operations reported no changes in labor or reserves. They purchased a haul truck during the year but had no large capital projects.

Figure 4: Park Region, 2011.



A&P Mine (Au, Ag)

West of Pony, Steel Resources Corp. shipped the dumps from the A-&P mine (Mineral Hill gold property) to the Golden Sunlight mill. Late in the year, they drove a 166-foot decline/drift into the A & P shear zone, which hosted the original ore body and sampled for future targets. A diamond drilling program from the surface is planned for the coming year.

Trident Quarry (Portland Cement)

Near Three Forks, Holcim, Inc. maintained production of their Portland cement plant. The plant continues with normal routine maintenance to ensure uninterrupted operations in the future.

Drumlummon Mine (Au, Ag)

North of Helena, RX Gold and Silver, Inc. completed the necessary underground development at the Drumlummon mine to facilitate production. The external decline was completed and connected to the internal decline off the Charley vein, providing the required secondary escape way. Production has been steady at 300 to 350 tpd with grades of 0.3 opt Au; silver credits bring the gold equivalent to 0.4 opt Au. The ore was shipped to the Contact mill in Philipsburg for processing. While completing the assessment of the Charley vein, production was confined to ancillary veins and gob

from the old stopes. Company employment in Montana, including the regional exploration office, has run between 125 and 130 personnel.

Pretty Girl Placer (Au)

On the western side of south Helena, Al Ballard maintained operations on the Pretty Girl placer. The mine is now under new management and the mine name has been changed to J.M. Safe Haven A. Mine. The plant site has been relocated and the company is trying to identify the location of the economic portions of the deposit.

Montana City Quarry (Portland Cement)

Operations continued at Ash Grove Cement in Montana City. In general, the year was very slow ending in furloughs of the workforce for nearly two months. The labor force has been steady; with the decline in demand, capital projects and replacement equipment have been placed on hold. For the near future, capital projects will be focused on changes within the cement plant to meet the forthcoming EPA regulations.

Montana Tunnels Mine (Au, Pb, Zn, Ag)

The Montana Tunnels mine, operated by Montana Tunnels Mining, Inc., a subsidiary of Elkhorn Goldfields, LLC,

remained in standby mode. The operation, located west of Jefferson City, is still searching for funding for the "M" pit development. Operations have been manned by a skeleton force until financing can be secured.

**Pipestone Quarry
(Railroad Ballast, Stone)**

Conda Mining Inc. (URS Corporation) continued production of railroad ballast from their quarry at Pipestone. They recently purchased additional rock resources from the Bureau of Land Management.

Golden Dream Mine (Au, Cu)

The Golden Dream mine (Elkhorn Goldfields, LLC) commenced development north of Elkhorn late in 2011. Final permits were granted by the Montana DEQ and the bond was posted. The company prepared their portal and drove the decline to 632 feet. A 200-foot crosscut was driven to the oxide ore body before too much water was encountered to prevent further development. Current mining

operations are on hold while the company completes building a water disposal system and treatment plant.

Golden Sunlight Mine (Au, Ag)

The Golden Sunlight mine (Barrick Gold Corporation), located east of Whitehall, completed mining the satellite ore body near the mill crushing circuit. They have completed the pre-strip for the last mine expansion for the main pit. Production in the pit resumed in mid-November 2011. Operations on that ore body will continue through 2015. During this latest stripping program, the company spent \$6 million refurbishing and upgrading the mill.

To sustain the mine, exploration has been focused on satellite ore bodies. Preliminary drilling results have been favorable and reserves have been expanded by a year. The company has planned an aggressive exploration budget to find additional reserves.

Through all of this activity, the company has worked to attain ISO-compliant

standards 14001 (environmental). They have received "international cyanide code compliant" status.

The company has purchased rock for mill feed from a number of small mining operations around southwestern Montana. Without that market opportunity, most of these sites would have required federal funds for cleanup of sites predating the 1930s.

Mammoth Mine (Au, Ag)

South of Cardwell, Mammoth Mining, LLC shipped the mill tailings from the Mammoth Mine tailings pond. The waste material ranged in grade from 0.03 to 0.07 opt Au. Although substantially lower in grade than desired, the operation has provided an opportunity for old tailings to be removed, potential pollution to be averted, and a profit to be made. This type of mining operation utilizes resources already mined and lost from a time of limited mining technology.



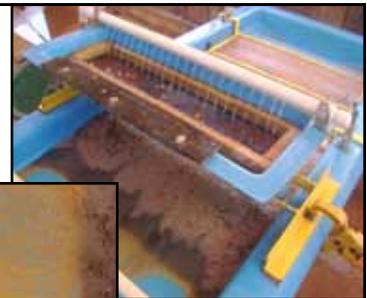
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Indian Creek Quarry (Burnt lime)

Near Townsend, Graymont Western US Inc. reported continuous production. The company said demand was steady, although competition within the market remains strong.

Staffing at the operation has remained unchanged except for some attrition due to retirements. Capital improvements were limited but they added some mobile equipment and replaced an ID fan motor on one of their kilns. The new road to the southern claims has been designed but not constructed.

The transition of surface management from the Bureau of Land Management to the Corps of Engineers has been an orderly process. The process is taking a bit longer than anticipated, but the company is anticipating a favorable result.

Black Friday Mine (Au, Ag)

West of Radersburg, the mining district was bustling. There was easily more mining activity than there had been in years. Mark Runkle shipped mine dumps from the Black Friday mine to the Golden Sunlight mill and explored reopening the old workings.

Ohio Mine (Au, Ag)

Darko Smilovich shipped the waste rock dumps from the Ohio mine, near the Black Friday mine, to the Golden Sunlight mill and then initiated a sampling program of the crown pillars in the underground mine workings.

Black Butte Mine (Fe)

Holcim, Inc. continued mining iron ore from the Black Butte mine located north of White Sulphur Springs. Operations are campaigned during summer and fall months to feed a stockpile.

Stillwater Mine

(Pd, Pt, Rh, Cu, Ni, Co, Au)

In the Park region, the Stillwater Mining Company operated the Stillwater mine near Nye, the East Boulder mine near Big Timber, and the Stillwater smelter in Columbus. They experienced one of their most profitable years, with a net income

of \$144.3 million. They did this while improving their safety record to only 3.3 accidents per 200,000 hours worked, certainly a commendable accomplishment.

The company completed a four-year contract agreement with the United Steelworkers Union. Grades have improved near the shaft in the lower levels. Productivity was high even with a few temporary production delays due to local stream flooding that blocked major transportation routes in the spring and evacuations related to smoke in the mine later in the year. Since production budgets had been met, operations shifted the emphasis from production to development during the fourth quarter.

They experienced a downturn in platinum-group-metal (PGM) prices in the second half of 2011. The Stillwater mine produced 297,300 oz of palladium and 89,600 oz of platinum for the year. Cash costs per ounce increased by 5.5 percent to \$401/oz PGM.

The company is constructing infrastructure in preparation for starting a tunnel bore to the east on the 5,000 level and a conventional tunnel to the east on the 5,600 level for the "Blitz Project." The anticipated start of development is in the second quarter of 2012. The "Blitz Project" is expected to develop ore resources over an additional 20,000 feet east of the existing Stillwater Mine.

Stillwater Smelter

Production from recycling catalytic converters is up by 70 percent to 486,700 PGM. Income from recycling has risen from \$11.5 million to \$18.8 million. The recycling of catalytic converters challenges the overall PGM production of the mines.

East Boulder Mine

(Pd, Pt, Rh, Cu, Ni, Co, Au)

Operating costs were up from \$442/oz PGM to \$475/oz PGM due to higher royalties and metal taxes as well as increases in labor and material costs. The Graham Creek project completed a 1,200-foot foot-wall lateral by the third quarter. Diamond drill results have demonstrated mineable PGM ore grades. The project has another 7,000 feet of development planned. The mine produced 101,600 oz palladium and 29,400 oz of platinum for the year, a slight decrease from 2010.

Warren Limestone Quarry (Limestone)

The Montana Limestone Co., located near Warren, a subsidiary of Dakota Coal Co. shipped about 650,000 tons of limestone products over the year. Capital improvements included permitting and building nine miles of power lines to take the operation from diesel power to grid power. Like the rest of the industry, they have experienced steady growth in market but have also seen an increase

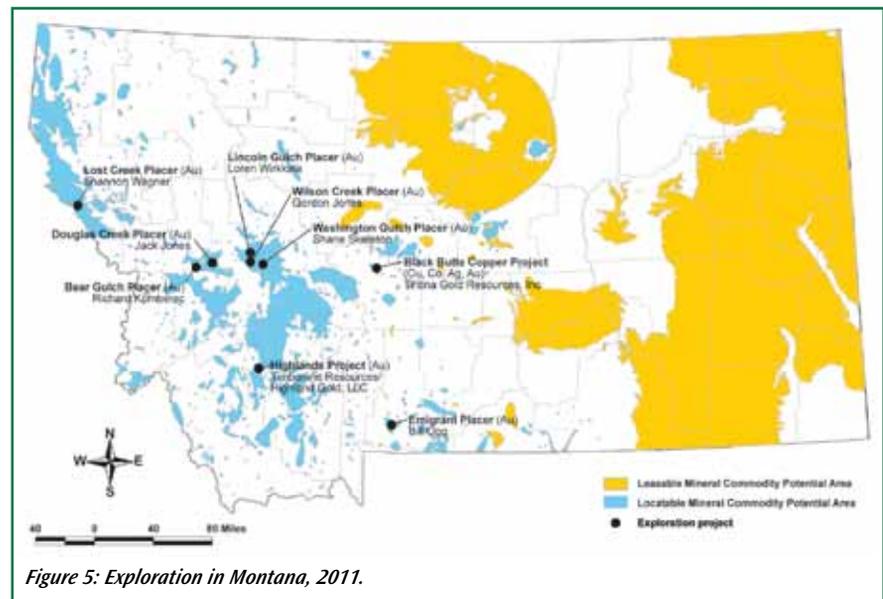


Figure 5: Exploration in Montana, 2011.

in energy and steel costs. Rail costs are up about four and a half percent and the company has had to increase prices correspondingly.

Metals exploration was dismal in 2011. Grassroots exploration was non-existent. The remaining lode projects continued to expand their reserve base while preparing for permitting for full production. Of nine projects, seven explored for placer gold resources. Gold placer mines usually only employ one to two individuals on a seasonal basis.

The combination of limited exploration and the exploration to production lag time (typically five to 10 years) must raise serious concerns about the long-term future of mining in Montana after the existing large-scale operations have exhausted their reserves.

Lost Gulch Placer (Au)

Near Superior, Shannon Wagner tested the Lost Gulch placer near the midpoint and identified resources on both sides of the existing mine workings. The program was not completed and will continue in the coming year.

Bear Gulch Placer (Au)

West of Drummond, Dick Komberc purchased many of the remaining patented placer claims in Bear Gulch. Much of the middle portion of the drainage was sampled at various vertical intervals to determine gold values, stripping volumes, and related costs. The values were very favorable, but much of it was deep and confined in a narrow canyon.

Douglas Creek Placer (Au)

Jack Jones sampled placer gravels in Weasel Creek and Douglas Creek. No results were released.

Lincoln Gulch Placer (Au)

Loren Wirkkala undertook a small sampling program on a placer near the historic town of Lincoln. Results were disappointing, with sample size and frequency identified as the problem. A second program at a larger scale will be completed this year.

Wilson Creek Placer (Au)

Gordon Jones sampled placer gravels in upper Wilson Creek near Helmsville. The results were favorable and further work is planned.

Washington Creek Placer (Au)

Shane Skeleton sampled gravels on the Stucky ranch north of Avon. Early results had been disappointing and there were no reports on the final segment of the testing program.

Highland Project (Au)

South of Butte, Timberline Resources and Highland Mining LLC joint-ventured the project to explore and develop remaining resources beneath and near the Highland mine that produced in the 1930s. The joint venture completed an 86-hole, 49,500-foot diamond drilling program on the "old mill block." This program outlined an ore body 275 feet on strike, 1,100 feet down dip, and eight- to 15-feet thick. They have completed their pump tests and believe the water volume is manageable but will require treatment to remove uranium.

The company decided to go ahead with permitting but is now considering trucking the ore west, down Moose Creek to Interstate 15, prior to shipping to the Golden Sunlight mill to minimize con-

flicts. Permitting has been on hold pending a resource assessment.

Black Butte Copper Project (Cu, Co, Ag)

North of White Sulphur Springs, Tintina Resources, Inc. continued drilling to expand their resource base for the Black Butte Copper deposit. There are two distinct underground minable deposits, each of which consists of multiple zones of copper-rich massive sulfides hosted by Precambrian shale.

The company drilled 100,000 feet of infill and exploration diamond drill holes during 2011 and have continued into 2012. They have indicated resources of 533 million pounds of copper at a grade of 2.96 percent and 623 million pounds of copper in inferred resources at 3.19 percent copper.

The resources currently identified are underground mineable, massive sulfides in two distinct deposits. The Johnny Lee deposit upper zone contains an indicated resource of 9.32 million tons at 2.96 percent Cu, 0.12 percent Co, 0.58 oz/ton Ag, and an inferred resource of 1.28 million ton at 2.64 percent Cu, 0.10 percent Co, and 0.58 oz/ton Ag. The Johnny Lee deposit lower zone contains an inferred resource of 2.70 million ton at 4.71 percent Cu, 0.06 percent Co, 0.0124 oz /ton Au,

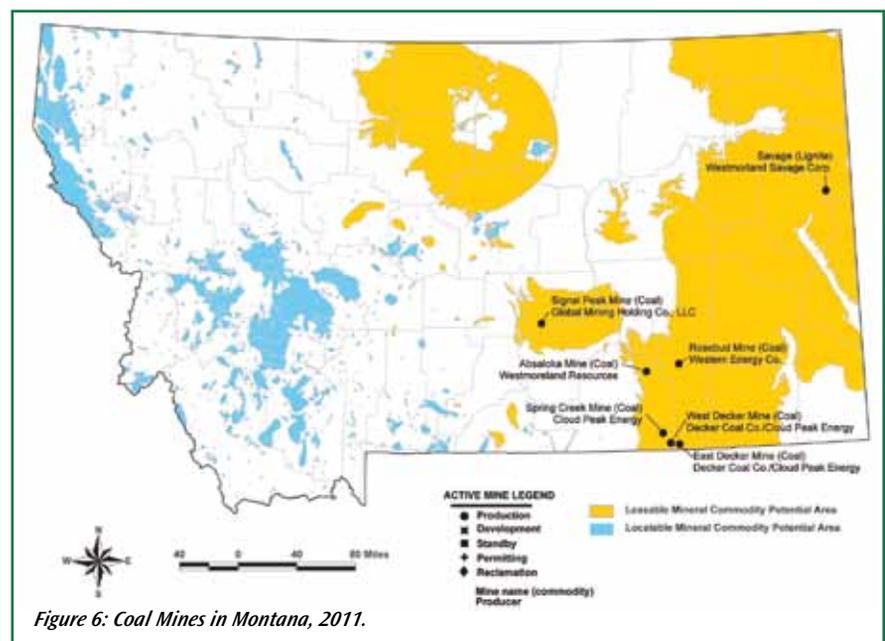


Figure 6: Coal Mines in Montana, 2011.

and 0.18 oz /ton Ag. The Lowry Deposit Middle Zone contains an inferred resource of 5.65 million ton at 2.6 percent Cu, 0.12 percent Co, and 0.52 oz/ton Ag.

Tintina reports an \$8-million exploration budget for next year. Limits of the current resources have not been delineated, other known deposits need more drill definition, and multiple targets are yet to be drilled. The company has initiated a preliminary economic assessment that is scheduled for completion by mid-2012 along with environmental baseline work.

Emigrant Placer (Au)

Bill Ogg and company initiated a placer testing program on the North Fork of Emigrant. Operations were focused in the disturbed area from the 1990s and results were reported as disappointing.

Coal production was down 6.2 percent to 41,958,168 tons from 44,711,711 tons. The lower production was almost entirely due to problems created by the excessive precipitation across the western United States.

Rosebud Mine

The Rosebud mine (Western Energy) production was down 28.2 percent to 8,581,708 tons. The Colstrip Energy Limited Project (CELP) plant that processes coal from the top two feet was down 25.6 percent to 203,121 tons. The company attributed the lower production to a number of reasons. On the western front, the record-setting snowfall in the Cascade Range prolonged hydroelectric production well through the summer, thus reducing the need for coal-fired energy generation. On the eastern front, floods in the Mississippi River drainage basin limited rail shipment of coal to the market. One customer experienced a fire and reduced coal purchases for the year. PPL Montana also had some extended maintenance at the power generation facilities during this period.

Decker Mines

The Decker Coal Company (a joint venture of Cloud Peak Energy and Level III Communication) is managed by Kiewit Mining Group. They accepted a buyout

offer for a coal supply contract (30 percent of production) and currently have no long-term contracts.

Production on the East Decker mine was up 1.8 percent to 2,749,387 tons. Production of the West Decker mine was up 29.6 percent to 295,575 tons. Two years ago that operation was said to be experiencing lower quality and an increasing strip ratio. It was said that it would be mined out about this year.

Spring Creek Mine

Near Decker, Cloud Peak Energy had a slight reduction at the Spring Creek mine. Production was down 1.3 percent to 19,080,553 tons. Substantial production is shipped west to Vancouver, Canada, for export to the Pacific Rim. Reductions may have been in the amount shipped to Centralia, Washington for power generation where the extended hydro-power season was extended by heavy winter snowfall. The company reported higher diesel costs and an increased strip ratio that were offset by increased prices and a strengthening Asian market.

Savage Strip Mine

Near Sidney, Westmoreland Savage Corp. increased lignite production by 0.9 percent to 354,669 tons to the Montana Dakota Utilities power generation facilities located in Sidney.

Signal Peak Mine

Near Roundup, Wayne Boich and First Energy, who own the Signal Peak mine, sold one-third interest to the Gunvar Group. The mine is now managed by Global Mining Holding Company, LLC. Operations were suspended periodically during the summer because of roof falls. Production was up 17.0 percent to 5,135,571 tons as Montana's only underground coal mine. Their production target is 7,000,000 tons per year. The company received an additional lease for 35.5 million tons from the Bureau of Land Management.

Absaloka Mine

Near Hardin, Westmoreland Resources, Inc. increased production by 1.6 percent to 5,557,604 tons. Production was also reduced by the flood impacts to rail service in the Mississippi River Drainage.

Otter Creek Coal

Arch Coal Company continued efforts to permit the Otter Creek coal tracts. Lawsuits have been filed on both the coal leases and the proposed railroad that is necessary for transportation of the coal. The company has opened an office in Billings and is expected to submit an application for mining in six to eight months.

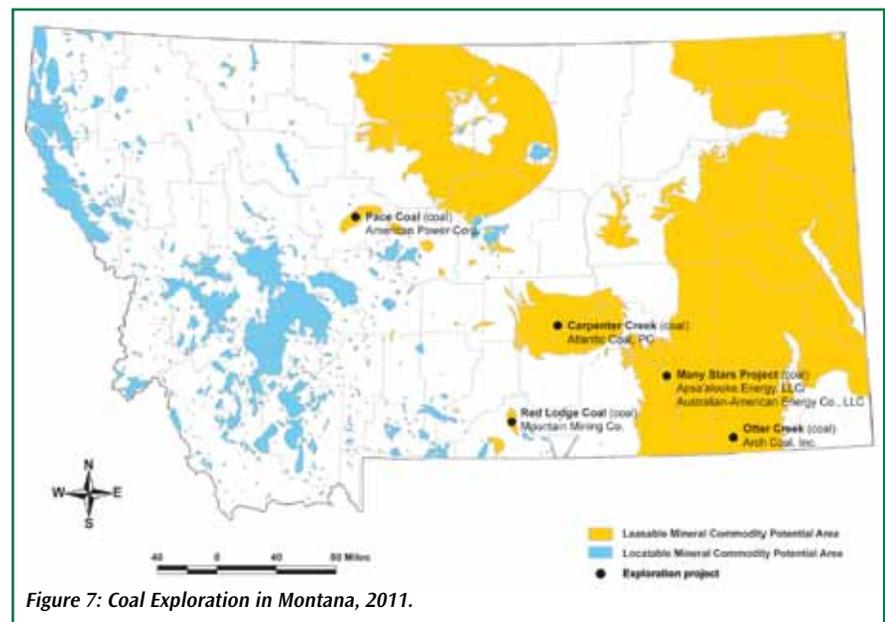
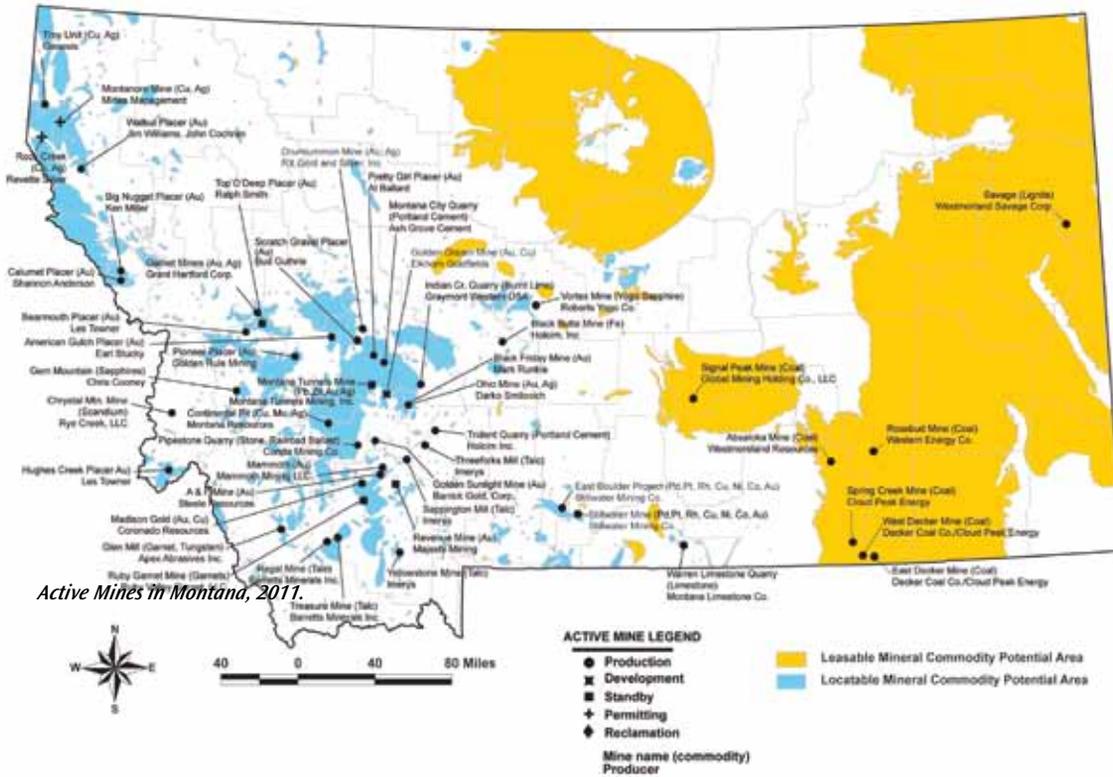


Figure 7: Coal Exploration in Montana, 2011.



ergy Company, LLC continue to explore coal resources on the Crow tribal lands. The joint venture had announced plans to build a coal biomass conversion plant to produce energy fuels such as diesel and gasoline. Those plans are on hold or at a reduced scale while they explore the possibility of shipping coal to the Asian market.

Acknowledgments

The author would like to thank the companies, individual miners, Bob Cronholm (Environmental Management Bureau, DEQ), BLM minerals personnel, the staff of the Industrial and Energy Minerals Bureau (Mt. DEQ), and the Montana Mining Association for their assistance with this report. Without their help, this report could not be possible. ♦

Carpenter Creek Coal

Atlantic Coal, PC has entered into a non-binding memorandum of understanding to acquire the Maple Carpenter Creek coal resources. These are located near Roundup and contain measured resources of 91.3 million tons, an indicated resource of 145.2 million tons, and an inferred resource of 144.3 million tons. Similar to the Signal Peak mine, they appear to contain underground mineable resources.

Red Lodge Coal

Coal Mountain Mining Company has secured a prospecting permit for exploration of coal near Red Lodge. Mining ceased there after a disastrous mine fire in the 1940s.

Pace Coal Project

American Power Corporation has drilled 30 to 40 holes near Stanford, on a 29,000-acre lease in the Great Falls coal field. The estimated resource is 172 to 410 million tons. The deposits have a history of high pyrite concentrations and have not produced since early in the 20th

century. When the coal was cleaned the waste pyrite was sold as a fuel to the smelter in Great Falls.

Many Stars Project

The Crow Nation, through Apsa’alooke Energy, LLC and Australian-American En-

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Senate Bill 312

By Terry Grotbo, Tammy Johnson and Mark Thompson

People active in the permitting of natural resource development projects are all too familiar with the seemingly infinite amount of dead-fall traps laying alongside of what otherwise should be a reasonably straight path to acquiring a permit. So what is one to do about this tangled thicket, which has become the permitting process for resource development?

The answer is far from simple. However, in the 2011 Montana legislative session, the MMA proposed legislation in the form of SB 312 [sponsored by Senator Chas Vincent; (R) Libby] to attempt to untangle the permitting process and bring forward in time the point at which an applicant has a reasonable amount of certainty that their project is permissible and what measures need to be incorporated into their project design to make it permissible. SB 312 incorporated the concept of separating when the various State statutes are applied to a permit application.

Most of us in the Montana hard-rock mining industry are unfortunately familiar with permit stipulations issued with the Record of Decision (ROD) of an EIS at the very end of the permitting process. For the most part, the stipulations are anticipated and discussed prior to their issuance, but others come from left field with no warning. Frequently the stipulations are fashioned to address impacts identified in an EIS regardless of statutory jurisdiction. The problem created is that the applicant is provided no certainty as to whether a permit will ultimately be issued until the very end of a multi-year EIS and the applicant cannot complete proj-



MMA mining advocates take time out at the Capitol in Helena to pose for a picture. Left to right: Mark Thompson, Don Allen, Fess Foster, Tammy Johnson and Terry Grotbo.

ect feasibility until the stipulations are received, as frequently the stipulations can significantly alter the economics of the project. In addition, because the EIS process formalizes public involvement, stipulations developed by the agency that have no basis in statute become political issues that the applicant hesitates to challenge; especially after investing a great deal of time and money to reach the point where a ROD and permit are being issued.

Recognizing that the Legislature has set forth requirements to regulate mining activities on private and State property in the form of the Metal Mine Reclamation Act (MMRA); further recognizing that the Legislature has clearly indicated that the Environmental Review process as defined in the Montana Environmental Policy Act (MEPA) is strictly procedural and contains no denial or enforcement provisions, the MMA proposed SB 312, which creates a distinct separation between processing an application under the MMRA and under the MEPA. The MMA believes that this distinction is important because only provisions in the MMRA can be used to compel an applicant to

alter a project's design or ultimately be used to deny the application. The MEPA lacks any statutory authority to do either of these things.

For far too long industry, regulators, the public, activists, NGOs and even the judiciary have intertwined statutes containing substantive authority with procedural statutes, to the point that an EIS has become the principle permitting tool.

Through this co-mingling, procedural statutes have been given enforceable substance; typically through the politics of the public involvement process and exhaustion of an applicant's resources (time and money). The statutory permitting tool for mining in Montana is the MMRA. The MEPA provides for public disclosure of the potential impacts of a project on the human environment and discloses what the decision maker considered in making their decision regarding the project.

This philosophical distinction between the MMRA and the MEPA is fine and dandy, but what are the nuts and bolts of SB 312?

- The Department now reviews an application for both completeness and compliance with the substantive provisions of the MMRA;
- Deficiencies noted in an application by the Department must be referenced to a substantive provision in the MMRA;
- It is the applicant's responsibility to provide the Department with sufficient and reliable information such that a defensible determination of compliance can be made;

- Once the Department determines that an application is complete and compliant, it issues a Draft Permit and a fact sheet which details how the application complies with the substantive provisions within the MMRA.

Issuance of the Draft Permit and fact sheet is a critical step for the applicant. Once the Department has completed their review of the application and a determination of compliance is made, the project is defined. The project has been determined to be permittable; it is bankable. The only remaining step in the process is the State's analysis and disclosure of potential impacts to the public under the MEPA.

This method of processing an application can be a significant positive advantage to the Montana hard-rock mining industry. However, the success of SB 312 is squarely on our shoulders. We need to submit complete and thorough applications; we need to actively participate in the application review process to ensure that a defensible draft permit and fact

sheet is generated; we need to be the drivers of the change!

SB 312 puts the burden of compliance demonstration squarely on the applicant. This allows the applicant to control the schedule and budget to conduct studies, investigations, and modeling necessary to determine adherence with all laws and regulations. For more complicated projects, the Department may choose to hire a consultant, at the applicant's expense, to assist the Department in review of the application. When an applicant engages the Department in a pre-application consultation, it is entirely likely that the scope of the Department's consultant can be determined prior to initiation of the process.

It behooves an applicant to engage the Department and other stakeholders before compiling and submitting an application for a permit. Understanding what the Department's needs are for baseline studies or modeling exercises will go a long way to making the permit application review much more efficient with

fewer iterations to address deficiencies.

SB 312 does not allow the Department to implement, review an application, find an application deficient, or impose stipulations under Federal Statute, such as the Endangered Species Act or Migratory Bird Treaty in a State permit, unless an analogous substantive State statute exists. Nor can the Department address political issues without legal authority to do so. However, this far from removes the burden to address these issues, but it does allow the applicant to fashion their own remedies. Should an applicant leave these issues unresolved, it will not be long before the Department is given substantive statutory authority to address these political and social issues. SB 312 provides the Montana hard-rock mining industry with some latitude; but if this latitude is not responsibly managed by permit applicants, the result will be much more regulatory involvement in our business than there was pre-SB 312. ♦

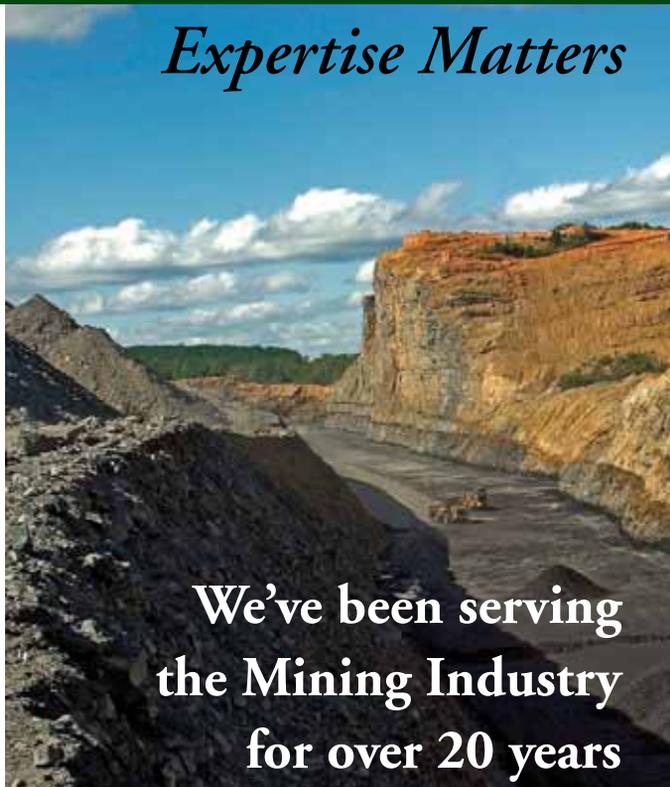


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MMA committees look forward to new horizons

By Rebecca Colnar

The Montana Mining Association has new energy following their strategic planning meeting in November 2011. Considering the current high price for metals and the fact that mines offer high-paying jobs even in a poor economy, the time is ripe for the MMA to come to the forefront for the mining industry in Montana.

“At our strategic planning session, we started with an open slate. Once we had everything on the table, we looked at costs and priorities, and then scaled back to develop something manageable,” states Tim Dimock, MMA president. “We still had a substantial increase from what we typically spent in a year, so we needed to gain additional funding for producer and associate members. We put the plan together to make progress in all five of our committee areas: education, legislative, environmental, safety and membership.”

There was agreement that educating the public and legislators, as well as assisting others in the mining industry with their concerns, were top of the list for the MMA. “We need to maintain our license to operate, and having active environmental and safety committees is critical to doing that,” notes Dimock. The group also acknowledged the need to recruit new members and keep them interested and active in the association.

“The time to implement these plans is now,” Dimock says.

Education Committee



Debbie Shea, out-going MMA executive director and chair of the MMA

Education Committee, says there’s a real need to disseminate information regarding mining in Montana. “The Education Committee has been absent for many years. Yet it’s important to educate people as to what mining is all about. At our Strategic Planning Meeting this fall, we organized the five committees and came up with ideas to implement the resurgence of the Education Committee.”

Those ideas will focus on an ambassador program, mine tours for the public, working with the Montana Historical Society on “mining trunks”, and an essay contest for eighth-grade students. Thirty ambassadors will be trained to talk about mining to service groups (such as Rotary, Kiwanis, Lions) and schools. There will be two trainings per year, and with 30 available ambassadors.

“Mining tours are a great way to connect the public to our industry,” notes Shea. “I grew up in Butte, but until I started teaching school and we did a mine tour, I had never been in a mine. People are fascinated with it.” The committee will work toward weekly (if possible) tours of MMA member mines that will be available to the community.

Shea explains the Montana Historical Society has educational trunks that are sent to schools and become part of the lesson plan. “There is one mining trunk they use, but it’s about the Gold Rush Era. We will work on a trunk that will include some history, but also educate about mining today, and the future of mining.”

As for the essay contest for eighth graders, Shea said the committee will develop a topic centered around mining, and come up with a prize.

“We’re planning to have a presence on our website, which we’re currently redesigning,” explains Shea. “We’ll have education materials, mineral ID, a Frequently Asked Questions section, and more. All of the committees will have a special place on the Web.”

Membership



Gaining and sustaining new members is the goal of the MMA Membership Committee, which has been working diligently to achieve this goal. “We need to increase our membership, sustain that membership, gain active participation and increase value,” explains Mike Mullaney, Holcim (US), who co-chairs the Membership Committee along with assistance from Laura Feist, executive assistant, Montana Mining Association.

One of the first things the Membership Committee did after the planning session was to revamp the MMA brochure. Feist was instrumental in developing and seeing the attractive, informative brochure to completion. She explains that the brochure, which was launched in April, gives new members some insight into the five committees and shows the value of membership.

Mullaney believes improving the MMA’s publications, networking and having good speakers at meetings will all help to add value to an MMA membership. “We have a few people on our committee, namely Carole Armstrong from Revett Troy Mine and Terry Larson from Stillwater, who are purchasing agents for major mining operations who are in communication with suppliers and contractors,” explains Mullaney. “Having purchasing agents become more involved and get to know each other certainly helps.”

Mullaney says a comprehensive mem-

bership directory is the committee's next goal. The committee will be actively working on this project in the next few months, with hopefully a production date in August.

The Membership Committee has many members in this group and has been very active in the last year. It has seen an increase in membership with active participation by this committee.

Legislative Committee



"Last fall, during our strategic plan review, the MMA Board and various committee members looked at what our legislative priorities were going to be in the next session and how we

could prepare ourselves with an eye towards proactive rather than reactive participation. The MMA had some success in the last session and we are hoping to build on those successes in the upcoming session," explains Stillwater Mining Company's Bruce Gilbert, who serves as committee chairman on the MMA's Legislative Committee.

"During the planning session, our committee set some goals and milestones for the 2013 session. One goal obviously involves recruiting and maintaining an open dialog and active participation with other natural resource developers and partners, such as the Western Environmental Trade Association, the Montana Petroleum Association, Montana Realtors, the Montana Chamber of Commerce, and others who deal with land use issues.

"Public and legislative education is another important strategy that has to be at the forefront of our preparations for the next session and it is critical that new legislators become knowledgeable on land use and mining issues before the session begins.

"Additionally, as an association, we need to focus on legislators and candidates who are supportive of natural resource development and work to support them throughout the legislative process," Gilbert explains.

Gilbert says the committee wants to educate and re-educate legislators and the general public on how modern mining has evolved; and that along with good-paying jobs and economic prosperity, Montana mining companies bring a dedication to responsible environmental management and a firm desire to be good neighbors and good corporate citizens.

"Going forward, the Montana Mining Association can be a clearing house to the industry in Montana and new mining projects through the dissemination of information related to the permitting process, environmental standards, operational alternatives and innovative technologies that can be applied in the permitting and development of new mining projects," affirms Gilbert. "It is in everyone's best interest to understand how the permitting process works in Montana and to make new companies aware of the resources available to them through the member companies of the association."

Environmental Committee



As environmental concerns continue to be a part of mining, the MMA's Environmental Committee is working to bring value to MMA membership.

This includes helping with permitting guidance; developing a process to identify and remove permitting redundancies; regulatory compliance assistance and recommended standards and guidelines.

"We're planning to have permitting and compliance information on our webpage," notes Mark Thompson of Golden Sunlight and co-chair of the Environmental Committee. "We feel it would be a great service to our members to include a list of permitting consultants who are MMA members."

Thompson explains the real value of MMA membership is that small miners can have access to experts who handle environmental issues for larger mining companies, along with members being able to exchange information regarding experiences with permitting and compliance issues.

"We want to develop standard guidelines and best practices for our members that will assist in sustainable mineral resource development," Thompson states. He sees the website as becoming the "go-to" place for reliable, helpful information for all members.

Safety Committee



"Every month, our safety committee has a conference call where we discuss training availability and share information about accidents that would be helpful to

pass along to sister mines," says Mike McGivern, safety manager for Montana Resources, LLP and chair of the MMA Safety Committee.

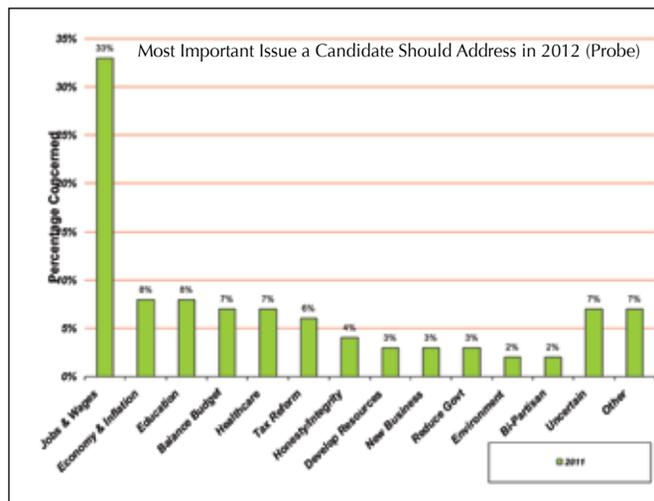
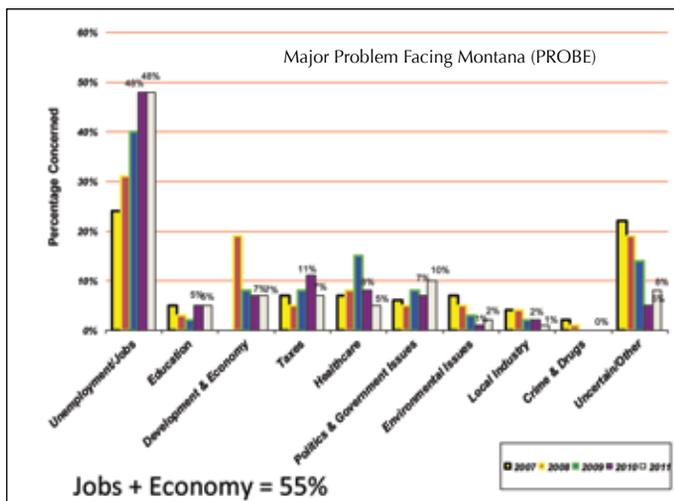
"Every quarter we have a meeting at one of our members' mine sites so we can meet and tour the mine. We plan to continue that process and hope to have increasingly more MMA members participate in our calls and tours. We're a very open group, and I feel that openness has helped us continue to improve safety protocols at our mines."

At the MMA's Annual Conference in May, National Mining Association president Bruce Watzman will talk about the new workplace safety and health paradigm, CORESafety. CORESafety is a scalable safety and health management system specifically designed for U.S. mining operations. It provides a comprehensive pathway to achieve, within five years, mining's goal of eliminating fatalities and reducing the rate of mining injuries by 50 percent.

"Our committee can then discuss how CORESafety works best fits for us," McGivern says. "If we can align ourselves with their efforts to promote safety on a national basis, we will adopt those protocols. This gives us something with which to work. If it's endorsed, our members will be able to receive it and adopt what they think is applicable to their mine. That's what I think will help us improve our safety programs as whole throughout the MMA." ♦

Poll of Montana voters reveals views on business and jobs

By Jon Bennion, Government Relations Director for the Montana Chamber



The results of the Montana Chamber’s annual poll of Montana voters are in and they reveal some interesting new political and economic trends that may affect your business.

The Power Base (P-base) is an annual scientific of 600 Montana likely voters on a variety of business and political issues with a margin of error of 4.1 percent. The poll is done to find out what regular Montanans think about important economic issues facing our state. The following are some of the results.

Economic Development and Jobs

The unemployment levels are a top concern for Montanans. Forty-eight percent listed it as the top problem facing our state; and the next highest problem, health care, was a third of that level at 15 percent. Montanans want to get back to work, and they are looking for businesses, not government, to provide the jobs.

As in prior surveys, the P-base shows that Montanans want to see more business growth, especially in high-wage businesses like the natural resource industries. For example, 81 percent of Montana voters want the state to encourage more timber harvesting, 76 percent want more oil and gas development, 73 percent want more coal development and 73 percent want more mining. More than two-thirds of Montanans say they support the Keystone XL pipeline and clear majorities support development of the Otter Creek coal tracts.

“The message from the survey is clear: Montanans want to see the state move towards long-term, sustainable growth by increasing natural resource development, improving our business climate, and creating more good-paying jobs,” says Webb Brown, president and CEO of the Montana Chamber.

Montanans are still pessimistic about the national economy. Sixty-six percent of voters believe the U.S.’s economy is on the wrong track as opposed to 21 percent who think we are on the right track. Voters believe the state’s economy is better off, with 46 percent saying we’re on the right track versus 30 percent saying wrong track.

Concerns of Voters

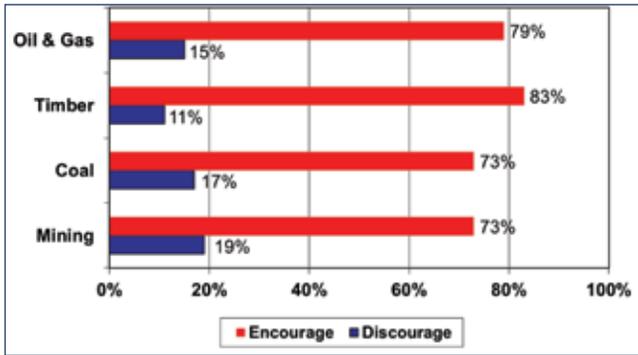
The P-base is also a good opportunity to see what financial concerns are on the minds of voters. For the seventh straight year, health care costs continue to be a top concern at 26 percent; retirement security came in second at 15 percent. Additionally, addressing the unemployment situation is the top issue (33 percent) voters want addressed in the coming elections.

In addition, respondents are asked about what they believe is the major problem facing Montana. Those concerned about more good-paying jobs overwhelmingly outpaces the other responses at 48 percent. In a different question, 33 percent of voters said they wanted candidates for office to have jobs and the economy at the top of their list of issues to explain to voters.

2012 Elections

When it comes to candidate endorsements, voters respect candidates who get stamps of approval from business groups, like chambers of commerce, agriculture groups and more. When asked whether a Montana Chamber endorsement of a candidate would influence their voter, 48 percent of voters said it would have a positive effect compared with only 13 percent who said it would have a negative effect (+35 percent net positive). Even

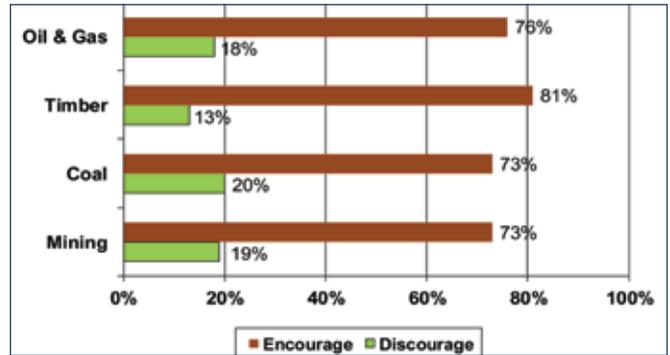
“Should State Government Promote or Discourage... 2010”



more popular are agriculture groups, with 63 percent positive to only seven percent negative (+56 percent net positive). Trial lawyers (-49 percent net negative), environmental groups (-23 percent net negative) and labor unions (-eight percent net negative) scored low in the poll.

When asked about the upcoming elections for the Montana state legislature, voters are more likely (53 percent) to want to replace their local legislator rather than re-elect them (28 percent). Additionally, Republicans have a slight edge going into the legislative elections. Thirty-six percent prefer GOP candidates for the legislature while 27 percent prefer Democrats. Any statewide candidate who opposes new coal development will have an uphill battle, with 58 percent of Montanans saying they would not support such a candidate. A repeal of new medical marijuana restrictions may be difficult since the results show a majority of Montanans support those changes.

“Should State Government Promote or Discourage... 2011”



“Candidates for the legislature need to focus on the economy, jobs, and growing the business sector,” explains Brown. “Voters are worried about how much the government is trying to do, so candidates need to offer solutions that center around responsible development of our natural resources, controlling government deficits, and free enterprise.”

Conclusions

The message from the survey is clear: Montanans want to see the state move towards long-term, sustainable growth by increasing natural resource development, improving our business climate, and creating more good-paying jobs. So what can you do to keep Montana on the right track? First, identify who the pro-business candidates are in your local and statewide elections in 2012. Second, support those candidates with donations, volunteer time and your vote on Election Day. ♦

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Innovative idea at Golden Sunlight Mine benefits the economy, the environment and the mine

By Rebecca Colnar



Over the highway, trucks deliver outside ores to Golden Sunlight for processing.

PHOTOS COURTESY: KEN EURICK OF FREELANCE PRODUCTIONS.

Barrick Golden Sunlight Mine, already known for mining its own gold ores, has recently been milling some outside ores. GSM's custom milling program is providing a benefit to the local economy and creating some jobs, as well as cleaning up some historic mine sites.

"Montana has abundant natural resources and there are a few small gold miners that can benefit from the current high metal prices if they are able to economically ship their ores to Golden Sunlight for processing," says Tim Dimock, general manager of the Barrick Golden Sunlight Mine in Whitehall.

However, Dimock emphasized that Golden Sunlight Mine is only able to accept ores from underground mines and

abandoned mine tails, not from surface mining. "Miners tried to change that law in 2011, and the legislature supported the change, but Governor Schweitzer vetoed the bill. It is unfortunate that more miners do not have the opportunity to utilize our custom milling options," Dimock stated.

Although a few of the small miners are delivering underground ores to GSM, most of the small miners are using Golden Sunlight's program to clean up old mine tailings like the Mammoth tails out of the South Boulder drainage of the Tobacco Root Mountains, a popular summer vacation area.

Thanks to the opportunity at Golden Sunlight Mine, small miners are able

to profitably collect tailings and waste rock, and bring the material to GSM where it is milled, the gold extracted, and the tailings placed in a fully lined bonded impoundment. The removal of these historic byproducts contributes to lessening and in some cases eliminating environmental impacts to surface and groundwater where beneficial uses were impaired, and are enhancing environmental sustainability. Dimock is pleased that this unique opportunity has not only helped the economy, but is helping clean up the environment – a feature that has not gone unnoticed.

In February 2012, the Whitehall Community Transition Advisory Committee (CTAC), in cooperation with the Jefferson



Local Development Corporation (JLDC), nominated Barrick Golden Sunlight Mine (GSM) for the Bureau of Land Management's Hardrock Mineral Environmental Award for their proactive reclamation efforts and community involvement.

"Barrick's Golden Sunlight Mine, located in southwest Montana near the community of Whitehall, has been in operation since 1982 and has a long history of mining activity that started in the 1850s. This area of Montana has an extensive rich mining heritage and legacy that has been around for over 150 years," explains Sheila Hogan, president of the Jefferson Local Economic Development Corporation, in her letter to the BLM. Hogan explains that many legacy mine sites continue to have environmental impacts that are in need of cleanup and reclamation efforts.

"Golden Sunlight Mine initiated a program to capitalize on their unique central location to many historic mine sites, coupled with high metal prices, to assist the entrepreneurial spirit of small miners to mill outside 'ores' (legacy mine materials) with reasonable concentrations of precious metals," Hogan notes. "The historic mines being assisted are fully permitted with the State of Montana, Forest Service, and BLM and are an excellent example of private sector stimulus projects with huge environmental benefits and also contribute to a positive economic impact."

GSM currently has 10 contracts for transportation of historic mine materials to GSM for processing and has completed contracts with other public land "ore" sources. Several of these projects were on priority clean up schedules for the various state and federal agencies. GSM's program to process these gold- and silver-bearing "liabilities" has resulted in saving taxpayers hundreds of thousands of dollars in environmental cleanup. The economic benefit of doing

cleanup and reclamation using private resources conserves and expands the capability of limited public resources allocated to historic mine clean-up operations. All agencies involved have hailed this project as a tremendous success.

"It's a win-win for everyone, from GSM and its employees, to the small miners bringing in ore, to the taxpayers and the economy, and especially to the environment," concludes Dimock. ♦

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MMA associate member **John Junnila** is there to support the producers

By Marjorie Smith



Montana Mining Association first vice president John Junnila relaxes in his backyard in Billings with Black Crude Joe, one of his English Pointer hunting dogs.

John Junnila is “only” an associate member of the Montana Mining Association, but few members are more committed to mining and its future in Montana. Producers are full members of MMA, with major producers entitled to an automatic seat on the board. Associate members are employed in related businesses.

Working from Billings, Junnila directs outside sales in Montana for Westate Machinery, which supplies mining equipment to the hard-rock mining industry as well as limestone and aggregate operations and the coal industry. “John represents associate members on the executive board,” says Debbie Shea, MMA’s out-going executive director. “He’s also our first vice president.”

“Most people don’t realize or appreciate the mining community’s vital part in the economics of this state and in our

“... I always keep in mind that we associates are there to support the producers. I really care about the MMA’s issues.”

lives,” Junnila says. He works through the MMA to correct that lack of appreciation. He rattles off the state’s strengths. “In Montana we have a dynamic combination of minerals – precious metals at Stillwater, gold and some silver at Golden Sunlight, gemstones – and we still have large copper operations.” And beyond the mines, of course, there are the oil and coal extraction industries.

“John’s been on the board a long time and is very diligent; an exemplary officer,” says Shea. “And remember – our board members receive no compensation. It’s entirely a volunteer position.”

“Although he’s an associate member, John attends all our board meetings,” says Mike Mullaney of Holcim, Ltd. at Trident, who served as president of MMA for the past four years. “Sometimes he would provide challenges to the rest of us at meetings. He always provided input and didn’t just show up. He represented his company well.”

“I guess I do see some things on the associate side which I try to mention in board meetings,” Junnila agrees. “But I always keep in mind that we associates are there to support the producers. I really care about the MMA’s issues.”

Foremost among those issues in Junnila’s view are the challenges posed to the mining community by what he considers as environmental extremism. “One hard-rock project near Libby has been trying to activate the claim since 1983,” he says. “It would be an underground mine, no harmful chemicals; yet environmentalists keep stopping it with the aid of a judicial system that seems to be supportive of the environmental obstructionists. “People need to understand the job cre-

ation and economic enhancement created by the mining industry in this state,” Junnila adds.

“The MMA’s biggest mission is to try to educate the public about the importance of mining and get them to recognize the ridiculous permitting process the industry is operating under right now.” He recounts the cautionary tale of the Montana Tunnels zinc mine west of Jefferson City, which closed in 2009 after 23 years in operation. “Montana Tunnels needed an expansion permit,” he says. “It took four years to get the permit, during which time the price of zinc dropped, so they closed down the mine. We have an inefficient permitting process to thank for shutting down a mine and causing the loss of many jobs.”

But Junnila sees hope for the future. “I think we’ve made progress in educating folks,” he says. “We made some progress in the last legislature and we just need to make more in this next session.”

He acknowledges that the MMA has gone through “some ups and downs.” “I think Mike Mullaney really was at the forefront in reviving the association and getting all the producers to join and see the value of having the association working for them,” he says.

Junnila has worked in the mining industry for about 30 years. He came to Montana and Westate Machinery from the iron mines in Minnesota. “My wife and I love Montana,” he says. “It’s a great place to live; a great place to raise kids.” Sadly, he says, both of his daughters are now living back east. “Montana just doesn’t offer enough in the way of jobs.” And that’s what he and the Montana Mining Association are working to change. ♦

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Revett's Troy Mine: *A social commitment at work*



Revett Minerals may one day be an excellent case study to showcase how positive social contracts are achieved, integrated throughout the business structure, and maintained over time. Revett operates the 190-plus employee Troy Mine and is permitting the Rock Creek Project in northwest Montana.

Their social commitment begins where it should – with the men and women who work to generate the capital needed to succeed in a very competitive world. Revett leaders acknowledge that

they mine silver and copper ore out of their holdings within a mountain but are quick to flatly state their belief that the most important resource they have are the people who work with them.

In late 2008, wages were voluntarily reduced by the workers when they successfully pleaded with Revett's Board to allow them to try to tighten their belts, improve production, and not suffer the already announced closure of the mine. The workers, while certainly concerned about their jobs, were most passionate

As the author of this article, I offer the following disclosure:

I have spent the better part of three decades in volunteer rural community advocacy. For nearly 20 years, I have co-owned a public affairs consulting company, Environomics. Revett Minerals is a client of Environomics and I own shares of the company. I have a brother, two nephews, a few cousins and scores of friends that work at Revett's Troy Mine.

As a graduate student at Gonzaga University's business school, I studied relevant companies that exemplified the emerging focus on what is now called a "social conscience." It is with pleasure that I now work with a company in my home area that may one day be the basis for similar academic study.

I must note, however, that it has been challenging to discuss this company's social conscience because of a very real aversion to anything that smells, to them, like "tooting their own horn." They see no need to brag about their actions when those actions are, to them, little more than just 'doing the right thing.'

Since I knew full well of the depth of this aversion, I asked for, and was given, literary license and complete editorial control of the article. Any perception of self-congratulation that appears in the article is of my doing – and not Revett's.

I wrote this article because I believe that the human, social conscience side of the mining story deserves telling. To me, the Revett story serves as a reflection of the opportunities and the hope offered by modern mining in rural America.

Bruce Vincent

when they voiced the concern that 'their towns just could not lose these last industrial jobs.'

The worker's strong work ethic coupled with their personal social conscience is symbolic of the driving force that has helped our system of American free enterprise make it through similar economic tough patches and lead the world. In this case, it helped their company to survive the Great Recession of 2008. The concessions of that period have long been restored and improved



Mining in Sanders County, Montana, circa 1908

Photo: Northwest Museum of Arts & Culture



Times have changed. So has mining.

Montana has made a lot of progress over the last 100 years. Mining has progressed, too.

In the old days, miners focused solely on recovering valuable ore and metals. In fact, the state motto is “Gold and Silver” and Montana is known as “The Treasure State.” But this historical single-minded approach is no longer acceptable to society or modern mining companies.

Today, the old ways are gone, replaced by modern technology, science, and environmental protection.

Modern mining projects are closely monitored by regulators and comply with thousands of pages of federal, state, and local regulations to ensure that the environment is protected. In addition, mining geologists and engineers utilize advances in science and technology that were unknown in the old days.

Key among those improvements is our ability to protect water quality.

Today’s mining projects are designed with multiple layers of environmental protections that must be approved before a single spade of dirt is turned.

For example, all of the water at The Rock Creek Project – whether natural ground water, processing water, or rainwater that has fallen on the tailing facility collected through an under drain system – will go through a dual water treatment process to ensure that it exceeds drinking water standards.

In addition, we will protect water quality by ensuring that the tailing created by processing the quartzite ore – actually just beach sand – remains within the designated storage area to be covered and landscaped to mirror the surrounding habitat both concurrently and at the conclusion of the Rock Creek Project.

To guarantee that this protection extends long after projects are completed, modern mines fund multimillion dollar bonds set by Montana’s Department of Environmental Quality and the U.S. Forest Service.

A lot has changed over the years, but one thing hasn’t changed: mining provides good paying jobs.

For example, The Rock Creek Project will provide 300 jobs paying \$50,000 a year, and over its life, Rock Creek will contribute \$400 million in salaries, \$50 million in tax revenue, and \$200 million in revenue for local businesses.

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and bonuses that include stock options assure that the workforce who took ownership of the fate of the company are true shareholding owners of their company.

Revett's workforce also knows that workplace safety represents a social contract with each other. Revett's employee-elected Safety Committee oversees efforts to ensure that their workplace is as safe as possible, the committee reviews suggestions from fellow employees and works closely with management to implement changes and safety initiatives.

The importance which management assigns to their employee's role was apparent when Revett, a new member of the New York Stock Exchange, was given the opportunity to lead the ceremonial ringing of the closing bell on the floor of the exchange. Revett held a raffle at the Troy Mine to select the worker who would serve the company with that honor. On January 11, flotation mill team leader and raffle winner Jerry Cummings, representing the men and women of Revett, stood proudly at the NYSE podium surrounded by his wife and his beaming 'co-workers' in management as he pounded the gavel.

For the Revett family, 'doing the right thing' might start on the job but it certainly does not end there. The NYSE raffle winner went to New York – but he donated the \$3,000 raised in the raffle to the area's Kiwanis Club for their Coats for Kids program.

It is notable that while the raffle was being held, a worker at the mine made a donation to a local food bank and, knowing that the Christmas season for Revett workers was better than many in the area, he issued a challenge to his co-workers to do the same. Hearing of the challenge, Troy Mine Manager Doug Miller led a management challenge to match the workers donations. In early December workers from the mine quietly

distributed over \$15,000 to the strapped food banks in Noxon, Troy and Libby.

These giving initiatives are symbolic of a community social conscience in action. The Troy Mine 'Giving Committee' meets regularly to coordinate the philanthropic sharing of the wealth with local communities. They pour over written requests for support and debate how their hard earned dollars can be shared to gain the most benefit for the most people in the places they live. High school booster clubs, classroom needs, 4-H clubs, community park boards and many others receive small but important contributions from the Revett committee.

Larger donations have supported the replacement and refurbishing of local high school gymnasium floors, a local initiative to gather grizzly bear DNA, rescue equipment for local ambulance services, funding for area hospital foundations and rural medical clinics, an elementary school playground and partnered support of the urban/rural cultural exchange program Provider Pals. Many people, even in the immediate area, have not heard about most of the donations because the committee says they are not giving for the accolades, they are giving because it is 'the right thing to do.'

The workforce at Revett is also personally committed to service within their communities. In off-hours, the work-



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ers serve on school boards, coach Little League and Little Guy Wrestling, serve on hospital foundation boards, are elders in their church, volunteer for Habitat for Humanity, and serve their local volunteer fire or ambulance teams.

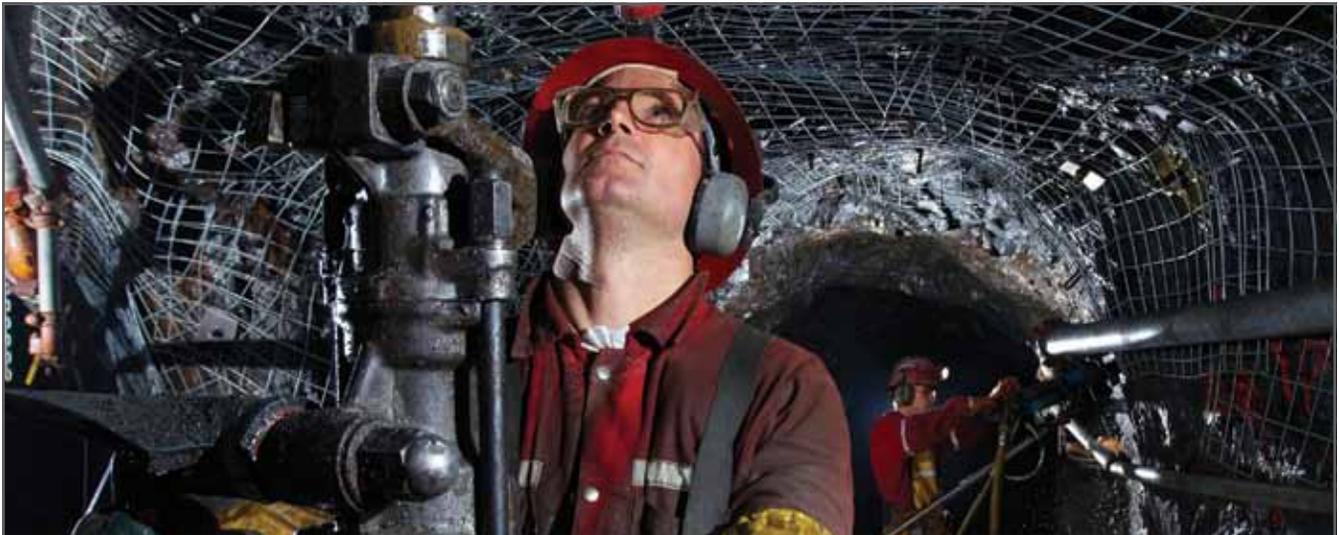
The communities that serve, and are served, by Revett recognize that this company is something special. Early this year, Lincoln County Commissioners asked Revett if they could do something to express their gratitude for the local contributions of Revett and the workers at the mine. In April of this year, the commissioners spent two days, along with as-

sistance from their spouses, barbecuing burgers just outside the Troy Mine office. Inside the lunch room every person on every shift enjoyed a meal of thanks from the commissioners.

The social conscience displayed by employees and management of Revett is not an anomaly in natural resource industries. The vast majority of rural towns exist because of the bounty of the environment and are inhabited by the cultures that have grown around the processes and the products of resource management. Often isolated, the people of these communities have had to have

resiliency, ingenuity, a hard work ethic, and a strong vein of personal and social responsibility in order to survive. They have also learned that they depend upon one another for survival and in areas all over our nation have built community oriented, school oriented and faith oriented societies filled with hard working, hard playing, hard loving individuals and families.

When these rural communities are embraced by a philosophy of 'doing the right thing', great things can happen. It is apparent in the hills of northwestern Montana that great things are happening. ♦



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MMA scholarships honor early leaders by supporting future mining pros

By Marjorie Smith



Anna Bradley (left) of Garneill received the Don C. Lawson Memorial Scholarship this year. She is completing her freshman year in mining engineering at Montana Tech.



Shawn Smith of Anaconda received this year's Gary Langley Memorial Scholarship from MMA. He is completing his sophomore year in environmental engineering at Montana Tech.

A future environmental engineer from Anaconda and an aspiring mining engineer from Garneill will receive this year's Montana Mining Association scholarships.

"Every year the MMA provides two \$1,000 scholarships to students enrolled at Montana Tech, to ensure that professionals are available for the mining industry of tomorrow in Montana," explains Debbie Shea, out-going MMA executive director.

"One scholarship is named in honor of the late Gary Langley, a former executive director of MMA," says Julie Crnich who, as assistant development director for Montana Tech, helps administer the scholarships. "The Langley award goes to a sophomore majoring in Tech's core engineering courses.

"The MMA established a second award, the Don C. Lawson Scholarship, to honor Mr. Lawson's efforts to get the scholarships established. It goes to a freshman in our core majors." Lawson was a charter member of the MMA and a former field agent for Montana Bureau of Mines and Geology who died in 2001.

"The MMA has been sponsoring scholarships for well over 20 years but they were recently renamed to honor the two gentlemen," Crnich says. "They used to have a raffle as a fundraiser for the scholarships. The surplus dollars raised were invested to ensure secure funding for perpetual support of MMA scholarships."

MMA members still look for students in their communities to nominate as they did before the program was turned over to Montana Tech to administer, but the nominees must past muster with academic authorities. "Scholarship requirements are that they be Montana students, have a decent grade-point average, and have financial need," Crnich explains, "as well as must be working on degrees in the mining industry."

Receiving the Langley scholarship this year is Anna Bradley, who is just finishing

up her freshman year at Tech majoring in mining engineering. She grew up in Garneill in central Montana and graduated from high school in Moore.

"My older brother was at Montana Tech and really liked it so I thought I'd like to go there, too, because it's a great engineering school," Bradley says. "I'd decided I also wanted to study engineering" – her brother is majoring in petroleum engineering – "but when I looked over the choices, mining engineering seemed the most interesting to me."

Bradley acknowledges that Butte is the perfect place to study mining engineering. "Professors in the mining department are very helpful to us students," she says. Bradley states that her aspiration after graduation would be to be a chief engineer at a mine. "What I would really like to be doing is mining silver or precious gems," she says.

Shawn Smith, who will receive the Lawson scholarship this year, is finishing his sophomore year in environmental engineering at Tech. Two years ago he graduated at the top of his class from Anaconda High School. "Growing up in Anaconda, it was natural to go to Tech," he says. He's now considering enrolling in Tech's five-year course that leads to a master in environmental engineering.

Also natural for Smith was his choice to major in environmental engineering. His favorite pastimes are outdoors – fishing, camping and hiking. "As an environmental engineer, I'll be the one being sure the mines where I work are complying with environmental laws and figuring out how to deal with problems some of the environmental regulations create."

"For those of us looking for funds to help students get through school, it's wonderful to have an organization like the mining association recognize the value of supporting students who will be future leaders in their industry," says Crnich. ♦

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Reclaimed waste rock facility, Golden Sunlight Mine, July 2010



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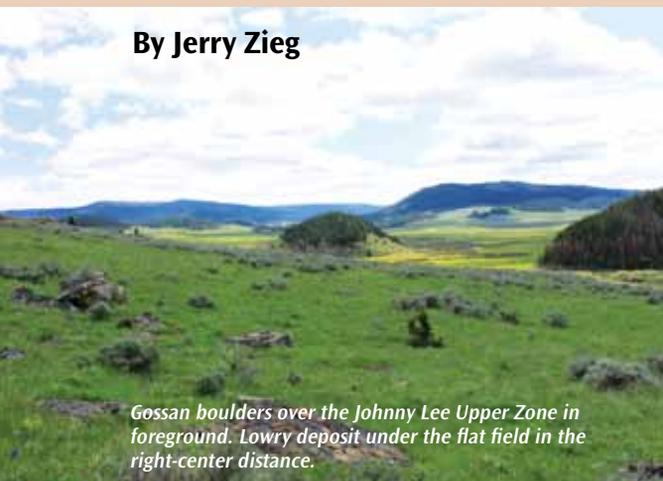
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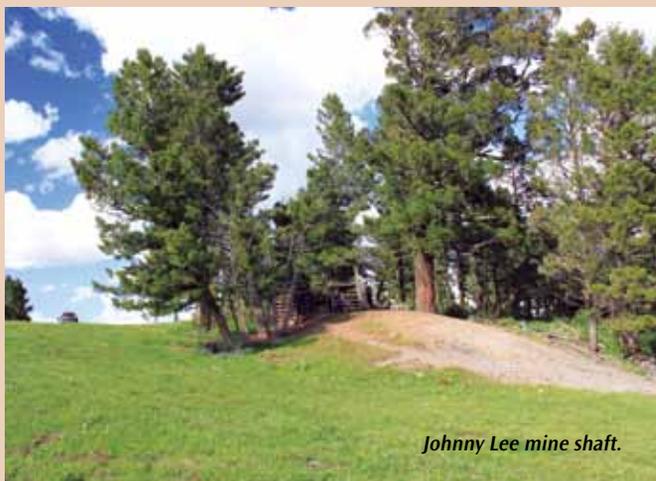
Gold pour, Golden Sunlight Mine, March 2011

Black Butte Copper:

By Jerry Zieg



Gossan boulders over the Johnny Lee Upper Zone in foreground. Lowry deposit under the flat field in the right-center distance.



Johnny Lee mine shaft.



View looking west

As a native of White Sulphur Springs, Montana, I've been extremely pleased to have the opportunity to return home and revive exploration and development work on the Black Butte Copper project (formerly known as the Sheep Creek project) 20 miles north of White Sulphur Springs. I spent much of my time as a young geologist with Cominco American Inc. exploring the property, which led to discovery of the copper deposits in 1985. Prior to that, my Master of Science geology thesis from University of Montana focused on the host rocks for copper deposits at Black Butte. After 15 years of dormancy, renewed contact with owners of the ranch properties which contain the copper resources has led to a new period of core drilling and development planning for the project, and I must say that due to favorable metal prices sustained by Asian demand, things are looking far better at Black Butte than they did in the early '90s.

The Black Butte Copper project is a pre-development stage, advanced exploration project focused on high-grade copper in massive sulfide deposits. Tintina Resources Inc. controls the 12,225-acre property of which 7,685 acres are private land. There are actually two separate massive sulfide deposit areas with resource estimates. Named for a homesteader and miner who lived on the deposit for many years, the Johnny Lee deposit outcrops along the county road 1.5 miles west of U.S. Highway 89, and consists of two lenses of copper sulfide mineralization. The shallowest lens crops out along the road and contains an estimated 10 million tonnes grading about three percent copper and 0.12 percent Co and with about a half-ounce of silver per tonne. The lower lens, over 1,300 feet below surface, contains about 2.5 million tonnes of 4.7 per cent copper. A second deposit called the Lowry deposit lies between the Johnny Lee deposit and the highway, and is named after Joe Lowry, a local homesteader who once lived above it. Over 1,000 feet deep,

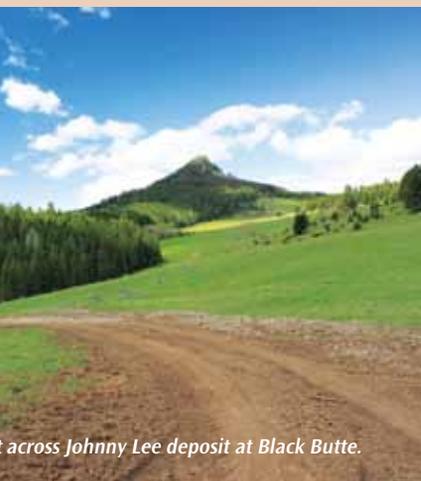
it contains an additional five million tonnes grading over 2.6 percent copper with cobalt and silver. The high copper grades of these deposits lend themselves well to Tintina's plans to mine them underground.

Geologically, the copper deposits formed about 1.4 billion years ago around sea-bottom hot springs (similar to the black smokers on today's ocean floor). Over a billion years later, during growth of the Rocky Mountains, the area was compressed and the deposits were faulted and folded into their present configurations. Remarkably, the host rocks and ore have not been metamorphosed, and I'm sure these unusually well preserved, pristine deposits will fuel many research projects in years to come.

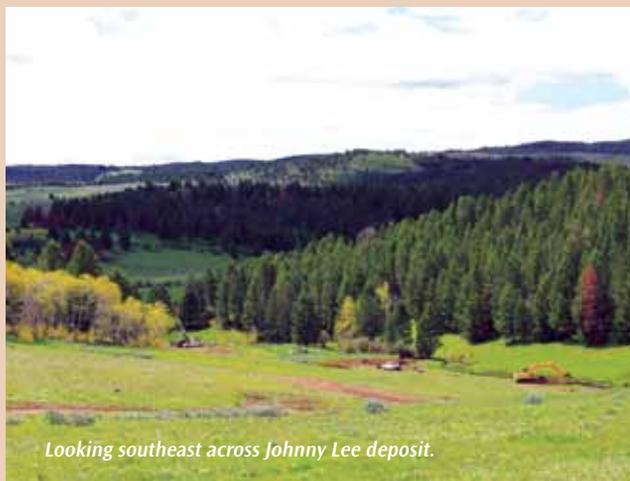
Tintina is working toward submission of an application to the Montana Department of Environmental Quality for an exploration decline later this year. This will allow Tintina Resources to gain knowledge of the ore-body, learn more about mining rates and methods in these rocks, and provide underground access for a more detailed evaluation of the resource. We are very hopeful that the advanced exploration will lead to an application for an operating permit. It is exciting to contemplate the potential for a great mining project that could employ many Montanans for a significant period of time in an area that is currently economically depressed. The possibility of providing jobs with good wages that will support families, contribute much-needed dollars to local and state tax bases, enable residents to spend considerable amounts of money in the purchase of goods and services through Montana businesses – jobs which would more fully support my hometown of White Sulphur Springs – makes this geologist very happy.

A primary objective for Tintina, now and in the future, is ensuring that the operation is a good fit for the community and

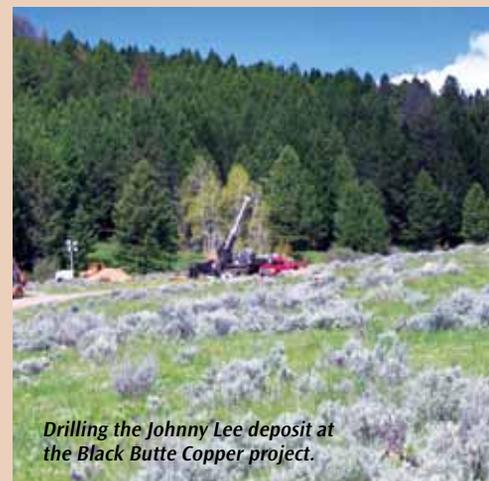
the 'Treasure State' delivers again!



Looking across Johnny Lee deposit at Black Butte.



Looking southeast across Johnny Lee deposit.



Drilling the Johnny Lee deposit at the Black Butte Copper project.

the state. Paramount in our planning is maintaining both the ranching culture and the outdoor recreational opportunities that made White Sulphur Springs a wonderful community in which to grow up. We know that a sharp focus on ensuring water quality in the area is crucial to our success. We're working closely with the landowners to minimize disruption of their

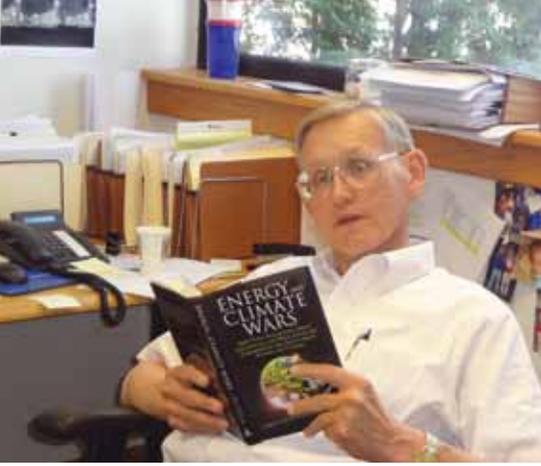
cattle operations; we want our footprint on the land to be as small as possible, and we will continue to work closely with community members to make certain the project is a welcome neighbor. It is very important to me and to my colleagues in Tintina to see the Black Butte Copper project turn into a mining operation that our community and state can truly be proud. ♦

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*Photo: Black Butte Copper Project, MT, USA
Doing this right the first time - Tintina Resources' reclaimed area.*



A career founded on integrity

MMA board member Fitzpatrick a successful lobbyist and published author

By Laura Tode

In the halls of Montana's capitol, John Fitzpatrick's name was nearly synonymous with mining. He lobbied for the industry for more than 20 years, beginning in the early '80s. Although he is now NorthWestern Energy's executive director of governmental affairs, he still supports the mining industry. He currently sits on the Montana Mining Association board of directors and occasionally lends advice to lobbyists and lawmakers.

Lobbying is difficult work, but Fitzpatrick said he has always enjoyed it.

"I find the legislative process is a very intriguing and interesting process. You're helping shape policy. And making sure that bad policy isn't enacted is just as important – maybe more so," Fitzpatrick says.

For anyone who knows Fitzpatrick's steady demeanor, dry wit and generosity, it is difficult to imagine him as a hard-hitting player in the legislative process; but maybe it's those qualities that make him ideal for the job.

"You have to keep a sense that it's about an issue, it's not about people," he states. "You can't let the process eat you alive."

He never let it get personal, and it was common to see Fitzpatrick share a cup of coffee with an environmental lobbyist in the capitol's coffee shop outside the house and senate chambers.

"I never had a personally contentious relationship with anyone in the environmental movement," Fitzpatrick comments.

For him, lobbying is part librarian, part salesman. He said good lobbyists have to know where to find good information, distill it into an understandable form and

get it to the hands of legislators as quickly as possible. Fitzpatrick took a direct approach to salesmanship, convincing many lawmakers to support the mining industry.

Fitzpatrick has never had a problem standing up for the mining industry, said Robin McCulloch, staff mining engineer for the Montana Bureau of Mines and Geology. He reviews his cases well, presents them well, and delivers with authority.

"He's managed to garner the respect of almost everybody," McCulloch states. "And that's due to his ethics, his honesty and his guts."

Fitzpatrick began his association with the mining industry in 1973 when he went to work for Cominco as a miner at their Brock Creek phosphate mines near Garrison, Montana. That work experience was incorporated into his doctoral dissertation entitled "Underground Mining: A Case Study of an Occupational Subculture of Danger."

After receiving his Ph.D. in Sociology from Ohio State University he returned to Montana and took a staff position with the Montana Department of Natural Resources, and later in the State Budget Office. It was during this time that he became familiar with Montana's environmental permit processes for mines and power-generating facilities and where he began his career of working with the state legislature.

In 1980, he left state government and became a partner in a small consulting company.

"We did all kinds of economic, business, and management consulting but our bread-and-butter projects came from

the Montana Power Company and the mining industry," Fitzpatrick says.

During that period he helped permit the Mineral Hill Gold Mine near Jardine, Montana Talc in Madison County, an expansion of the Rosebud Coal Mine at Colstrip, and the Montana Tunnels Mine in Jefferson County.

In 1985, Fitzpatrick left the consulting business and became the manager of administration at Montana Tunnels. He subsequently permitted the Beal Mountain Mine, Basin Creek, Diamond Hill and two major expansions of the Zortman-Landusky mine while employed by Pegasus Gold Corporation. That job ended in 1998 with Pegasus' bankruptcy and Fitzpatrick moved to the utility industry in a full-time governmental affairs capacity. His last major permit project was for the Dave Gates Generating Station, a 150-megawatt gas-fired power plant located near Anaconda.

One of Fitzpatrick's career highlights was during the 1989 session when he helped to pass a bill that cleaned-up and streamlined the process used to levy mine taxes and fees. Up until that point it was an annual battle with the Montana Department of Revenue, he said. He also worked on legislation that standardized mine safety regulation, and urged the state to implement programs that assist new mines and mines in the process of closing.

In 1996, Fitzpatrick was influential in reversing Initiative I-122, a bill that would have surely been the end of mining in Montana.

"Environmentalists tried to use the initiative process to create water standards that were unattainable in an attempt to

"I find the legislative process is a very intriguing and interesting process. You're helping shape policy. And making sure that bad policy isn't enacted is just as important – maybe more so."

put the industry out of business," Fitzpatrick says.

Again, he stepped into the role of librarian, and made sure the public was informed with quality, honest information. A grassroots movement turned the issue around.

Despite all the writing he's had to do preparing testimony, and corresponding with governmental agencies and lawmakers, Fitzpatrick turned to the written word as a hobby, a way to decompress and kill time in airports.

"I decided to do something besides walk up and down the concourse and curse Delta Airlines," he says.

He had little idea that his hobby would eventually lead him to write a dozens of short stories and radio dramas, a screenplay and a novel. His most successful work has been *Sherlock Holmes: the Montana Chronicles*, which has sold more than 9,000 copies.

The book includes four classic Holmes mystery stories set in Montana's glory days of the 1890s. All the stories are built around historic mining activity and incorporate well-known historic figures, including Fitzpatrick's grandfather, who was the sheriff of Deer Lodge County.

To have mining play an integral role in the stories was an easy decision. Fitzpatrick knows the history of the places where the books are set. As a child he would poke around old mining ghost towns with his father. And those places continued to appear in the modern history of mining, which Fitzpatrick helped to influence.

Unlike many authors who struggle to write dialogue, Fitzpatrick finds it easy.

He relies on his lobbying experience.

"It's the way I think when I'm preparing to give testimony," he said. "I do it in terms of dialogue and I anticipate questions from committee members. I write up my testimony to answer those questions."

Work has kept him from writing lately, but he has several outlines for *Twilight Zone*-style mysteries that he's hoping to flesh-out into short stories sometime soon.

"I don't have any problem writing once I get started," he says.

Fitzpatrick lives in Helena with his wife Connie. They have two grown sons. His oldest, Steve, is a lawyer in Great Falls and a state representative. His son Mike is a construction engineer in Phoenix. Both young men are married and have given Fitzpatrick and his wife two granddaughters and a grandson. ♦

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How Montana's injunction standard is problematic for parties awaiting final agency action

By Bill Mercer

When injunctive relief is ordered by a state district court, executive branch agencies (e.g., DEQ) are unable to proceed with implementation of a decision and interested parties (e.g., mining companies) are unable to act based upon preemption of the agency's decision (e.g., a permit). The United States Supreme Court has considered the standard for issuance of injunctive relief in recent years. The threshold for a Montana state court to impose an injunction is considerably lower than the standard established by the U.S. Supreme Court, which leads to uncertainty for permit applicants and others dependent upon finality with respect to agency decision-making.

The 2011 Legislature enacted amend-

ments to the Montana Environmental Policy Act (MEPA), but the reform package did not change the requirements for parties seeking to enjoin implementation of agency decisions based upon alleged MEPA violations. In July, after the Legislature adjourned, Judge Dayton imposed a preliminary injunction against the Montana Department of Transportation's final agency action involving permits issued to Imperial Oil for the so-called megaloads. Missoula County, the National Wildlife Federation, the Montana Environmental Information Center, and the Montana Chapter of the Sierra Club brought the case against MDOT. They succeeded in their quest to get a partial temporary restraining order in April 2011, a partial preliminary injunction in

July 2011, and a favorable decision on the merits this year.

In imposing the preliminary injunction, Judge Dayton ruled that the four plaintiffs met their burden on their likelihood of success of the merits of the complaint through proof of a failure on the part of MDOT to adequately consider (1) impacts of the project (no discussion of the scope of the project, permanency of the turnouts) and (2) reasonable alternatives (no discussion of an interstate highway route).

Judge Dayton did not find that issuance of a preliminary injunction was necessitated by irreparable harm to be incurred by plaintiffs without relief from the court. However, the court did find that continued issuance of permits without an injunction could nullify the benefit of any future relief from the court.

Standards For Temporary Restraining Orders/Preliminary Injunctions in Montana

In Montana, the facts necessary to enable a party to enjoin the acts of another party are determined by statute. Mont. Code Ann. § 27-19-201 sets forth five vehicles to get a district court to impose a preliminary injunction, but only three appear to be applicable to natural resources litigation. To get injunctive relief pursuant to these three subsections, plaintiffs need to demonstrate adequate facts in one of the following subsections of the statute:

(1) if the pleadings demonstrate that plaintiffs are entitled to the relief sought in their complaint and that the

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relief sought depends upon restraining an activity of the defendant (i.e., if it looks like the plaintiffs' case is a winner on the merits without regard to whether the injury is irreparable);

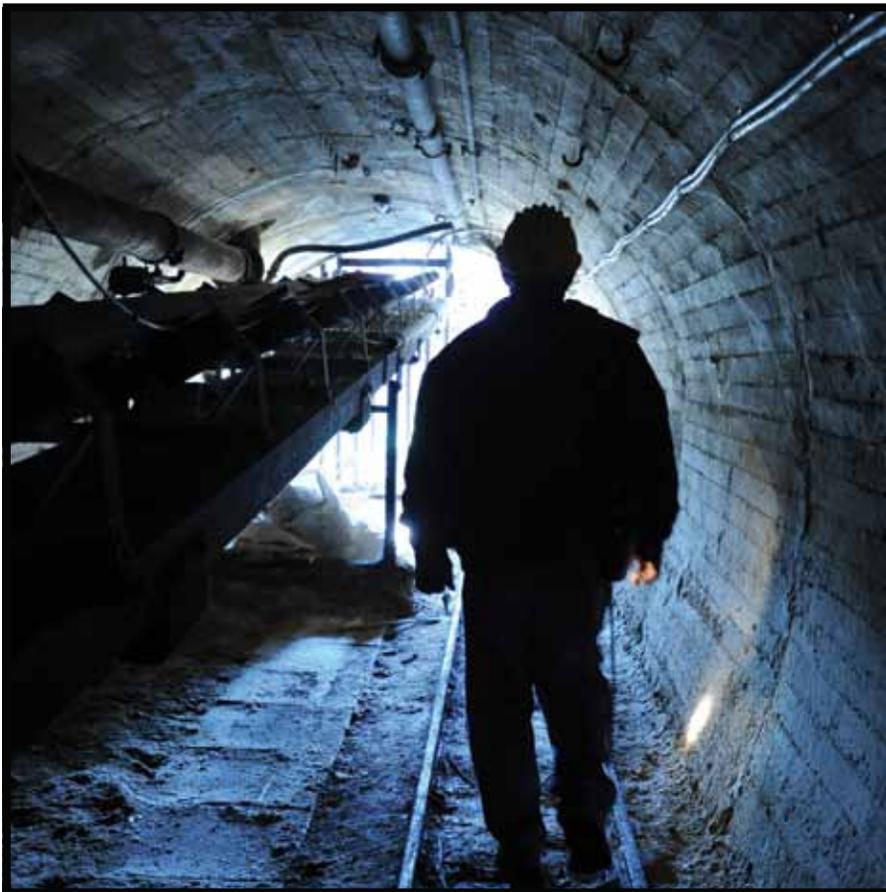
- (2) if great or irreparable injury would be incurred by plaintiffs during the pendency of the litigation if defendant is not enjoined from acting before the merits are fully and finally resolved (i.e., relief may be granted without regard to whether the Plaintiffs appear to have a strong legal case given the allegations in the complaint); or
- (3) if defendants are going to take steps during the pendency of the litigation which would (a) violate the rights of plaintiffs as set forth in the complaint and (b) undercut or nullify the benefit of relief to be received at a later date.

The Montana Supreme Court has held that plaintiffs need to meet only one of these sections to obtain an injunction. *Sweet Grass Farms v. Board of County Com'rs*, 2 P.3d 825, 829 (Mont. 2000). Unlike the familiar standard for injunc-

tive relief when violations of the National Environmental Policy Act are alleged in federal courts, plaintiffs need not demonstrate both a likelihood of success on the merits and clarity on how they will suffer irreparable injury before their rights can be fully litigated. As noted by the U.S. Supreme Court in its opinion in *Monsanto Co. v. Geertson Seed Farms*, 130 S.Ct. 2743 (2010), a plaintiff seeking a permanent injunction must demonstrate: (1) that it has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction. In *Winter v. NRDC*, 555 U.S. 7 (2008), in a case out of the Ninth Circuit, the U.S. Supreme Court concluded that a district court order to enjoin the government where the court found only a "possibility" of irreparable harm was too lenient a

standard even where the plaintiffs demonstrated a strong likelihood of success on the merits. In *Monsanto*, the U.S. Supreme Court explained that because "[a]n injunction is a drastic and extraordinary remedy, which should not be granted as a matter of course" ... "[i]t is not enough for a court considering a request for injunctive relief to ask whether there is a good reason why an injunction should *not* issue; rather, a court must determine that an injunction *should* issue under the traditional four-factor test set out above."

As the Legislature reconvenes in 2013, the fact that the Montana legal standard diverges to such a great degree from the one recently articulated by the U.S. Supreme Court in *Monsanto* and *Winter* may be on the agenda to minimize the risk that agency decisions will be enjoined without a showing of both irreparable harm and substantial likelihood of success on the merits by the moving party. ♦



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Holcim and community

By Laura Tode



With a history that spans more than a century, the Holcim (US) Trident plant has developed a legacy of community involvement. So it was no surprise that company executives leapt at the chance to take part in last summer's Digger Days. The day-long event was aimed at providing children with hands-on experience in construction, excavation, and related industries. It was held in Belgrade, and more than 1,000 children and their parents attended the event.

Employees from the Holcim (US) Trident plant guided children through the process of making a concrete garden stepping stone. The youngsters decorated their projects with glass beads, stones, marbles and glitter suspended in mortar mix supplied by the plant. The project gave the employees a chance to talk about how cement is made at the plant.

"It was good to see the kids have so much fun; and all the employees who participated very much enjoyed it as well," says Mike Mullaney, production manager at the Trident plant.

In addition to the stepping stones,





“It was good to see the kids have so much fun, and all the employees who participated very much enjoyed it as well,” says Mike Mullaney, production manager at the Holcim Trident Plant.

children were able to see what it is like to operate heavy machinery, including bulldozers, excavators, dump trucks and cranes provided by local heavy equipment contractors, under the supervision of expert operators. Numerous other mining and construction-industry related activities were also offered, including panning for gemstones and educational handouts.

Digger Days is a fundraiser for Eagle Mount, a non-profit, volunteer organization that provides recreational activities, including downhill skiing, to disabled people. The event raised approximately \$20,000.

Digger Days will be held again this year on Saturday, August 25th. As a long-time sponsor of the event, the Holcim (US) Trident plant and its employees are already looking forward to volunteering at the event. The Trident plant is one of several major sponsors of Digger Days.

The Holcim (US) Trident plant is located near Three Forks, a town of about 2,000 residents, and many of its employees live there. The company plays an ac-

tive role in the community and communities in the surrounding area.

The company also funds local scholarships and summer youth recreation activities. Trident employees participate in food and clothing drives for the local food bank during the holidays, and the company fulfills children’s wishes from

the Angel Tree which provides gifts for children in need.

“At Holcim, it’s part of our values,” Mullaney says. “We call it corporate social responsibility, and it’s not just about coming in here and making a product. It’s about being a part of the community.” ♦



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Safety works

Above: Plant employee John Pfeiffer during recent fire extinguisher training.

Top Right: Plant safety/environmental manager Jeff Briggs (left) and Ron

Dorval (right) with Dorval and Associates giving annual MSHA training to plant employees. Dorval and Associates perform safety audits and training throughout the mining industry.

Bottom Right: A group of plant employees who are certified First Responders practice a "man down" scenario.

By Nancy Kessler

Four thousand days and counting – that's how long the Ash Grove Cement Company has gone without a lost-time accident at its Montana City site, meaning not a single injury in more than 11 years to any of its 78 employees that prevented them from working their next scheduled shift.

That's impressive for a portland cement manufacturer whose workers operate major equipment in an industrial environment, haul tons of raw materials from quarry to processing plant and operate a kiln that can burn hotter than 2,500 degrees Fahrenheit. Additionally, company drivers making the two-mile round-trip between quarry and factory have driven more than two million miles without any type of accident, over an even longer period than the 11-year lost-time performance.

"We're pleased and proud of our record," says plant manager Dick Johnson. "We don't know of any other member of the Portland Cement Association that has gone that long without an accident. It's very rare."

The Montana City plant, one of nine owned by Ash Grove, has been honored with the company's President's Safety Awards every year except one since its inception in 1997. It also received the Sentinel of Safety Award from the federal Mine Safety and Health Administration in 2010, based on its safety record.

"I think our excellent record is due to the attitude of our employees toward safety," states Jeff Briggs, environmental safety manager for the local operation. "They

incorporate safety in whatever they do."

The company implemented STOP, the Safety Training Observation Program as developed by DuPont some 17 years ago, and has a very active employee safety committee that encourages employee suggestions and implements initiatives throughout the plant.

"Safety has become part of doing any job well," Johnson says, "and we're continually trying to improve our safety program."

Recognizing that healthy employees may be more likely to remain safe, Ash Grove introduced a wellness program more than a year ago that provides employee incentives for participating in a variety of health-based activities. Recently, the Montana City plant was rated as the healthiest of Ash Grove's facilities.

"Anybody who is healthier is going to be less prone to strains and sprains," says Briggs.

While employee safety is the company's foremost concern, the focus on safeguards isn't limited to people. The plant also is committed to protecting the environment and reducing its energy footprint. The plant was ISO 14001 certified in 2010 and was recognized as having the best ISO program in the company.

Last year Ash Grove met a company-wide goal of reducing energy costs by \$20 million, more than a year ahead of its scheduled five-year plan instituted in 2007, and is reducing particulate emissions at the same time. For Montana City, the Ash Grove Energy Management (AGEM) program resulted in about a 10

percent reduction in electricity use, Johnson said.

"One of the biggest things that contributed to our success was being smart," he says. "We only run equipment when necessary, and shut off everything from lights to motors when we can. We also have a committee that meets monthly to brainstorm more energy-saving ideas."

Following clarification of federal regulations that had halted a previous effort, the plant was able to restart using recycled glass, known as cullet, as a substitute for some of the silica used to make cement.

"Our permit allows 250 tons of recycled glass to be used as a raw material each year," states Briggs. "Since beginning recycling glass again, we've used about 340 tons of glass which would have been sent to local landfills."

The company also is on track to install a bag house on the kiln, which should be in operation by November. This \$12-million improvement is projected to reduce kiln particulate emissions by 95 percent, Briggs added.

Johnson, who has 23 years on the job, attributes the company's recent successes in health and safety to commitment, experience and dedication of the entire staff. With an average employee tenure of more than 15 years, there is a high level of respect and cooperation among workers.

"A critical part of a safe work environment is communication," Johnson emphasizes. "It's a simple fact that safety includes the ability of everybody to get along." ♦



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Montana Resources, LLP

Strong safety culture is paramount core value

By Tad Dale



Historical Safety Records Shattered

The mission of Montana Resources (MR) is: *to be a safe, low-cost producer of copper and molybdenum.*

To that end, the Continental Mine Operation has been very successful. In early

2012 the operation passed two million man-hours worked and also over 1,000 days worked without a lost-time accident. In short, no employee missed a scheduled work shift due to an on-the-job injury in over two years. This is the finest safety

1: *With equipment and personnel safely away, a sizable shot fractures rock in preparation for excavation. The city of Butte is in the background.*

2: *In the massive concentrator finely milled ore is mixed in vats with chemical reagents to release the metals, which are then skimmed off and dewatered.*

3: *Montana Resources' Continental Mine operations are adjacent to the city of Butte and part of the community.*

4: *Shovel operators enjoy comfortable cab environments to reduce fatigue.*

5: *Emphasizing the use of Personal Protective Equipment that is in good condition is part of Montana Resources' successful safety program.*

6: *In the concentrator control room, an employee oversees milling and concentrator operations.*



record ever attained at the Butte operation throughout the history of mining in the Butte district. It is a milestone that was pursued and reached by an engaged workforce that put safety above all other requirements of the 24-hours-per-day and seven-days-per-week operation.

MR employees know safety awareness is not a destination; it is a minute-by-minute, hour-by-hour and day-by-day thought process. You plan your actions and reduce the risk of any task you perform to the lowest level possible by us-

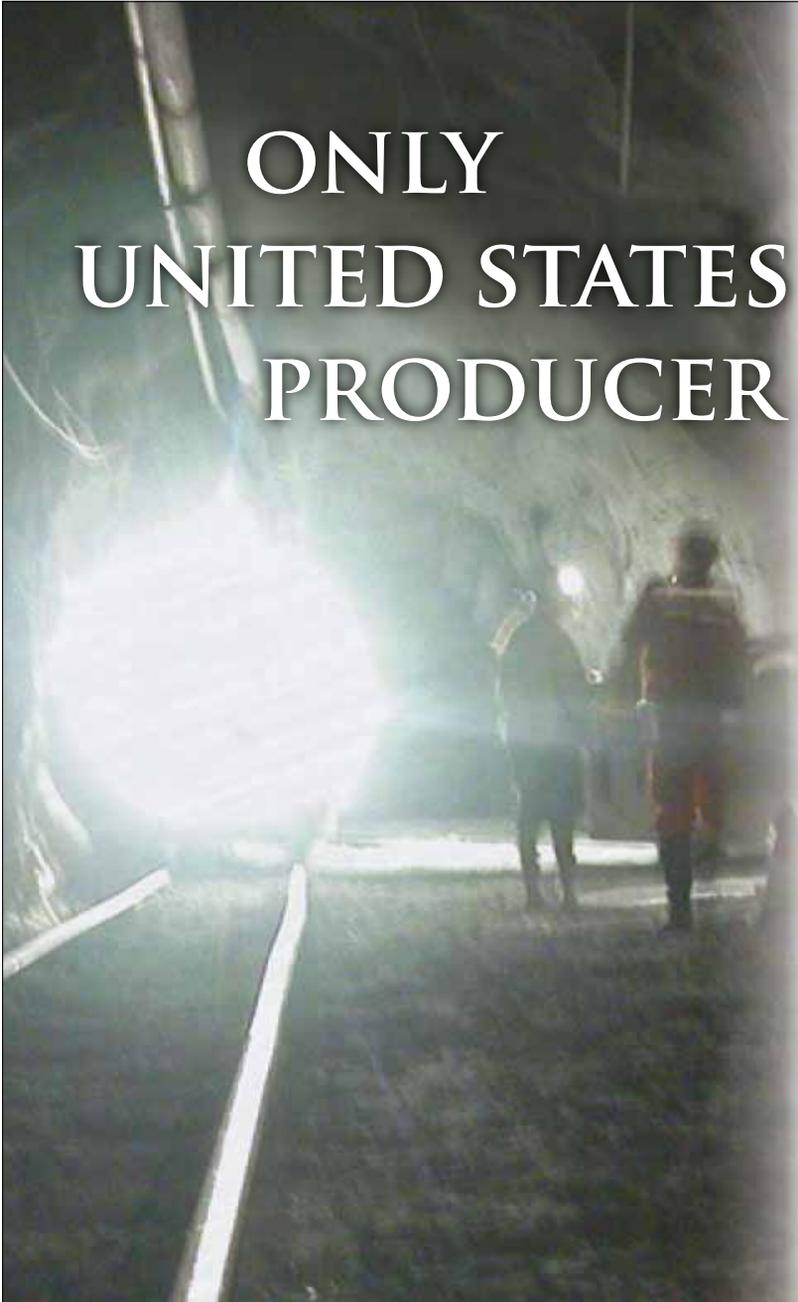
ing the right tools, proper job positioning, good communication, personal accountability, and thinking through each step of the task. You eliminate chaos, and that is where the "hazard demons" reside.

Clearly, the benefit of no injuries is returning home the same way you came to work. It is the highest responsibility that you owe to your family.

Low-cost Producer

MR mines one of the lowest-grade (if not *the* lowest-grade) copper deposit in the world. After each ton of ore is

mined and processed, MR has access to only five pounds of copper and only one-half pound of molybdenum; and since 100-percent recovery is not possible, the yield is less than that. What this means is that MR must perform at a high level of efficiency and tightly manage costs. MR employs approximately 350 people – a proud and skilled workforce and heirs to the tradition of mining in Butte dating back to the 1870s. MR employees work in a wide spectrum of professions, trades, and skills – pipe fitters, mechanics, ma-



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platinum group metals outside of South Africa and Russia. These precious metals are essentials in automotive catalysts used to convert otherwise harmful air pollutants into harmless emissions. As well these elements are used in jewelry, electronic, dental and medical applications. Stillwater's mining operations are located in southern Montana along the Company controlled 28-mile long J-M Reef, the world's highest-grade deposit of platinum group metals.



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chinists, welders, surveyors, mining engineers, geological engineers, metallurgical engineers, chemists, electricians, accountants, equipment operators, and office staff – each of them necessary for efficient operation of a modern mine and each a valuable asset to MR. MR's business model also includes profit sharing, a unique benefit in the world of mining. This plan allows employees to share in the profits of the operation. Production, however, cannot come at the expense of safety.

From Mine to Consumer

This was one theme that the Anaconda Company used in their advertising a half-century ago – but it is as true today as it was then. The need to explain to society where their basic needs are met must come from education. It is estimated that each baby born in America will need 935 pounds of copper in their lifetime. This copper is in the wire in our homes, in cars, in computers and cell

phones, in planes and in the medical equipment that saves our lives. Molybdenum is also vital to our society. It is used in the making of stainless steel and other specialty alloys of steel. Stainless steel provides the strength and corrosion-resistant requirements for water distribution systems, food handling equipment, chemical processing equipment and hospital needs. Molybdenum alloys are also used in light bulb filaments, lubricants, auto parts, gas turbine and furnace parts, crushing equipment and paints.

Vision into the Future

MR will complete a three-year exploration drilling program this year – the most extensive definition of the Continental Ore Deposit that has ever been undertaken. To plan into the future, the road map must be drawn today. Where do rock dumps go; where are tailing pipelines routed so they are not in the way of haul roads; where can concurrent

reclamation be accomplished without future disturbance; and where are the ultimate outlines of the open-pit walls? All of these questions and many, many more must be answered to methodically plan and efficiently operate this mine. When all of the drilling data is analyzed and modeled, it will add many more years of minable ore reserves and ensure the future of safe mining in Butte.

MR is committed to leave the next generation of miners secure in the knowledge that they can work in a community that they love, raise their families, and enjoy a high standard of living. Montana Resources has made every effort to make sure “the tradition of safe mining” continues in this place we call home – “the richest hill on earth.”

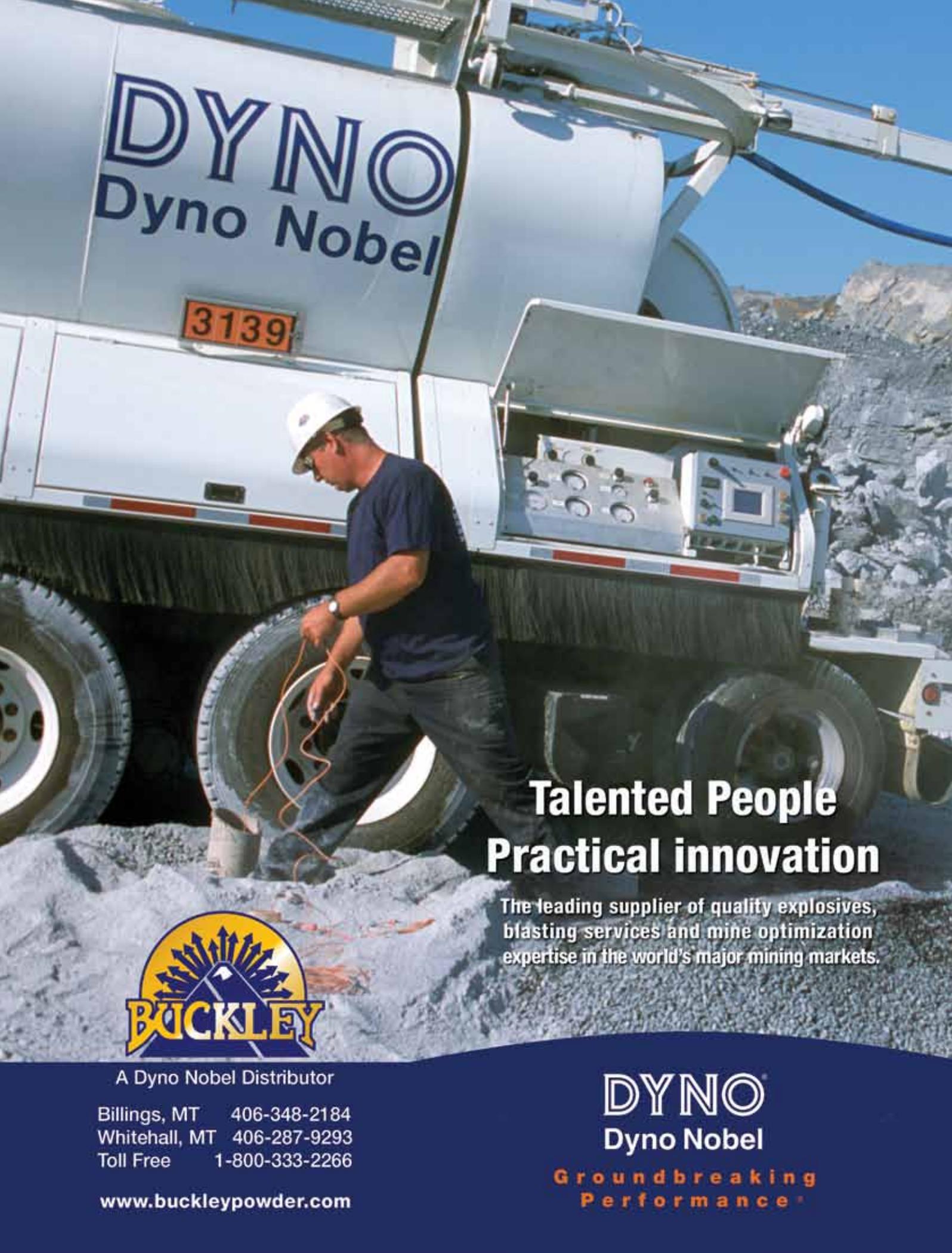
Tad Dale is VP of Human Resources at Montana Resources. ♦

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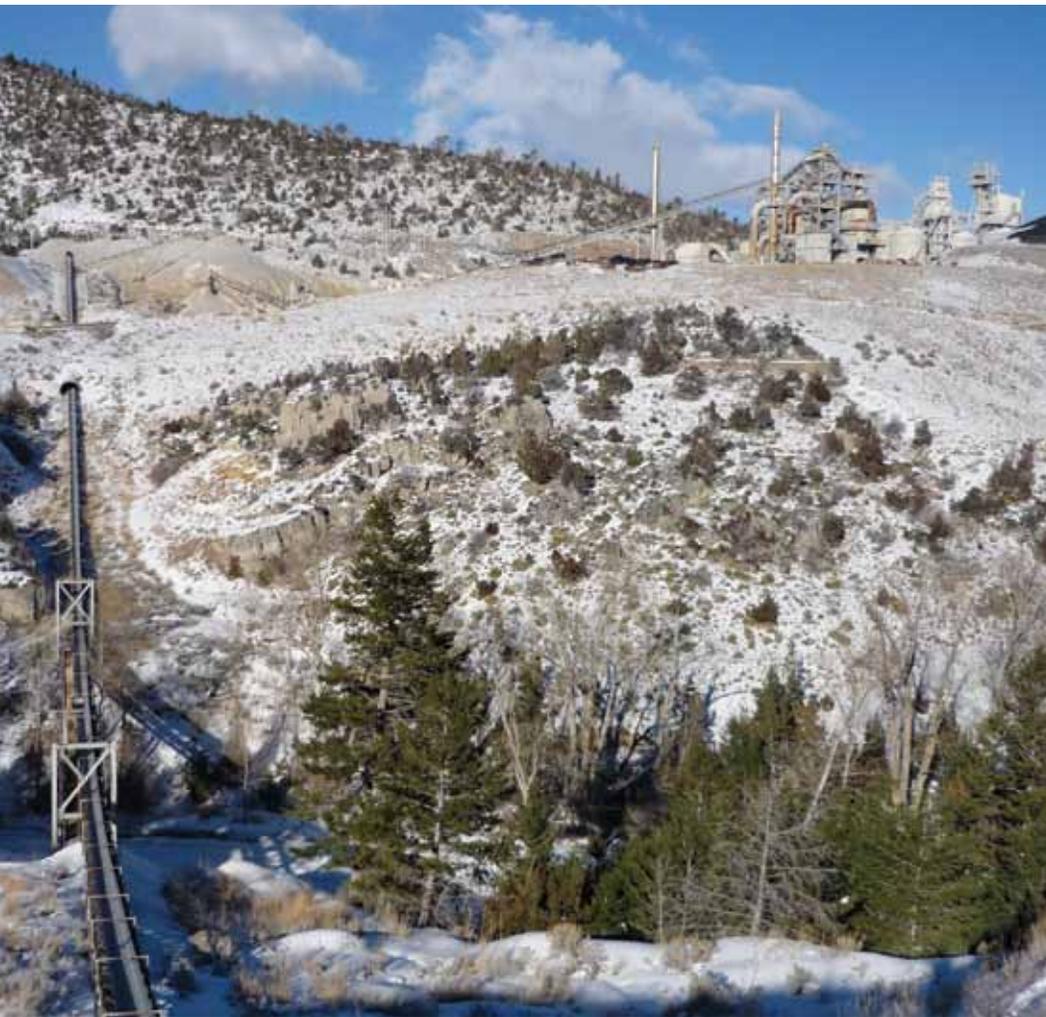
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In North America, Graymont is the third-largest producer of lime. In the United States, subsidiary companies operate in Montana, Wisconsin, Michigan, Ohio, Pennsylvania, Washington, Oregon, Utah and Nevada, while serving markets in a much wider geographic area. In Canada, Graymont subsidiaries have operations from New Brunswick to British Columbia.

In addition to Graymont's lime interests, Graymont Materials (located in upstate New York and the province of Quebec) provides construction stone, sand and gravel, asphalt products and ready mix concrete. Graymont also has a significant investment as a minor equity interest shareholder in Grupo Calidra, the largest lime producer in Mexico.

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Having been in the lime business for over 50 years, Graymont operates facilities on sites that have been in operation for up to 200 years. The company is among the leaders in the industry in adding new, efficient plants and equipment and operates some of the most modern facilities on the continent.

Central to the company's corporate philosophy is a long-term approach to business, built upon a solid commitment to sustainable growth through the active participation in responsible environmental, workplace, and operating practices.

At the same time, it is proud of its past accomplishments which demonstrate Graymont's commitment to responsible conduct of the business.

In Montana, the Indian Creek plant is located near Townsend, just north of the Limestone Hills. Here, lime is produced in two coal/coke-fired preheater kilns. The plant is equipped with lime-sizing and storage facilities, allowing Graymont to produce and store a full range of bulk quicklime products, as well as a hydrator capable of producing 300 tons of hydrated lime per day. This plant supplies

customers in Montana, as well as several other western states.

The quarry is located on the south side of Indian Creek. High purity limestone from the quarry is trucked to the crushing plant, where it is sized and conveyed to a large storage pile adjacent to the preheater kilns. Bulk truck loading facilities are provided at the plant site, and rail loading is available from a 1,500 ton terminal located on the Montana Rail Link line in Townsend.

The management team at Indian Creek is comprised of the following individuals:

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Jason Ellis, plant manager; Tyson Sweat, production supervisor; Mike Cartwright, maintenance supervisor; Jared Senn, quarry/quality supervisor; and Ben Mosher, process engineer.

Graymont continues to be of significant economic importance to the county, as it is one of the largest taxpayers in the county. In addition to providing many well-paying jobs, Graymont purchases many goods and services locally, within the community. Many important lime markets are serviced by Graymont:

- Agriculture • Asphalt • Building Construction • Lime Application • Mortar • Plastering • Restoration • Whitewash • Environmental Remediation • Flue Gas Desulphurization • Food • Glass • Mining • Precipitated Calcium Carbonate (PCC) • Pulp and Paper • Soda Ash • Soil Stabilization • Steel • Sugar • Water Treatment

In addition to providing high-quality products for its customers, Graymont provides engineering and technical support to facilitate customer applications in the following areas:

Product Application

With technical and sales personnel skilled in solving customer problems, employees work with customers and recommend the proper products to meet their specific needs. This may include support on FGD projects, steel blends of high calcium and dolomitic products, the usage of lime in asphalt, or how to apply building products.

Transportation

Having extensive expertise in transportation of products by truck, rail, or water, the company's emphasis is on building reliable, cost-efficient supply networks. An example of this commitment is the operation of a fleet of PCC delivery barges to support customers in the paper industry in the Northwest.

Material Handling

To ensure efficient and economical operations, Graymont reviews and inspects customer material-handling facilities and design criteria. If requested, Graymont is prepared to own and operate such facilities at the customer's site,

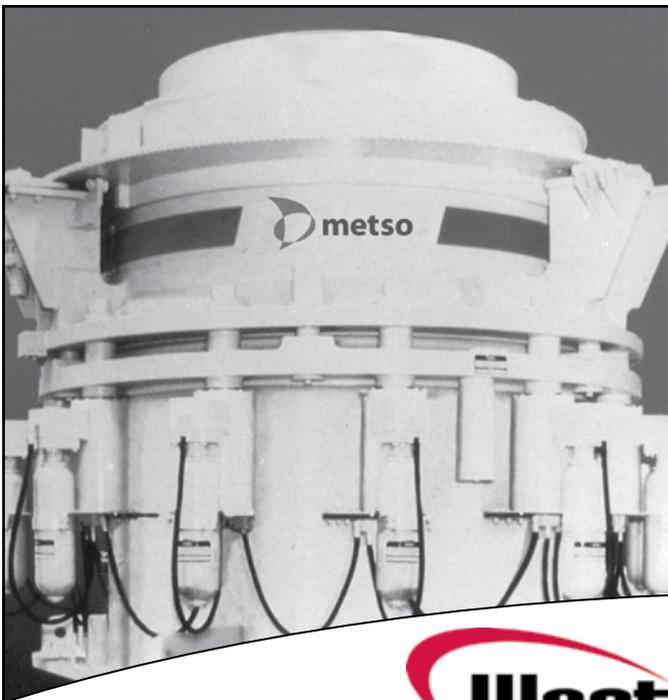
including storage facilities. Graymont also provides portable slakers, silos, and unloading and material handling equipment for short-term projects. Several customers lease this equipment until their project has been completed.

Research and Development

Graymont can work with customers in R&D efforts for new product and process applications, and has equipment available to facilitate testing of new applications at a customer's site.

Graymont's vision for the future involves supplying the ever-increasing need for quicklime to clean up and protect our environment; 80 percent of the company's product is used for environmental purposes.

Mining is essential in every aspect of our lives, and Graymont is committed to working with the members of our government and community to help provide these resources in a sustainable and environmentally safe manner. ♦



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Mine dewatering: overview and sizing a pumping project



Mine Dewatering

Water naturally occurs in mines. The deeper you go, the more water has to be handled. Geology also makes a difference – various structures, seams and formations all affect infiltration and determine how a dewatering system is sized, installed and managed over time.



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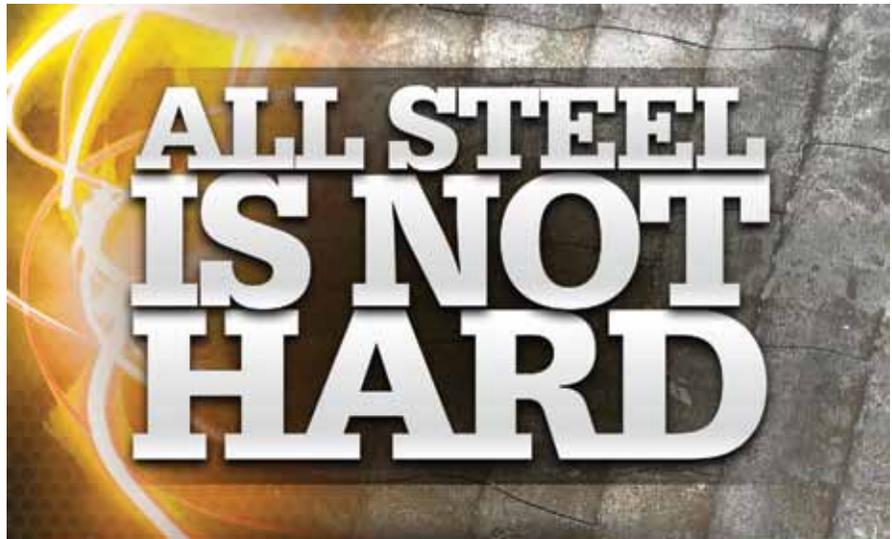
Pump systems are sized based on three factors: static lift; length to discharge location; and physical space available for the work. If there are no staging pumps, the static lift needs to be higher. As the discharge pipe gets longer, the more friction loss the pumps need to overcome. A smaller pipe is more economical to install, but such a system requires more powerful pumps. Pumping from sumps is easy, but the investment in a sump requires time and capital.

High head pumps, like Godwin HL series Dri-Prime pumps, offer high discharge head capabilities in a single-stage system design. They also handle sludges and liquids with suspended solids.

Electric drive motors are ideal for mining applications, since power is readily available. They eliminate the need for diesel engine maintenance and refueling in the system design. Electric drive pumps are built for long-lasting durability, and are a good fit for both temporary pumping and permanent installations.

Open Pits versus Underground

In open pits, there are more environmental conditions to consider, such as freezing, runoff, and flooding. But there is also more space, which enables larger portable pumps to be used and which can be moved as required. Diesel en-



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gines as well as electric motors are common. Underground, more planning is required and pumps cannot always be easily accessed for maintenance or repairs. Remote operation is common and compact size an advantage. Pumps can be equipped with floats or similar starters, so they start and stop automatically and pump only when needed. This reduces energy cost and mechanical wear on equipment.

In underground operations, electric submersible pumps are common, as

power is available and the pumps are compact and easily moveable. There has been an increase in the use of electric-powered Dri-Prime pumps. They are safer because no one needs to enter a sump to place the pump, since a suction hose is used instead. Dri-Prime pumps show less wear due to their ability to run at lower RPMs, and therefore last longer.

At the face of the mine, groundwater infiltration needs to be handled to allow for drilling and blasting. Water on ramps can cause tires on wheeled equipment

to spin and results in added cost and premature wear. Sumps used to stage water infiltration need to be pumped as water is boosted out of the mine. Sumps are becoming increasingly widespread and help extend pump life.

Face dewatering is often done with portable electric submersible pumps like those in the Flygt 2000 series. Operators can manage the water where it is and quickly alleviate rising levels as needed. Additional pumps can easily be added, and the system adapted throughout its use. The water is pumped to a sump further back in the drift, where another submersible or high-head Godwin Dri-Prime pump transports the water to another stage or directly to the main drainage station.

For main drainage, dry-installed single and multistage pumps are used and can offer higher heads than submersible pumps.

Special Conditions

For sump and face dewatering, single-stage pumps are used because of the solids in the water. If the material has a low pH, a stainless steel pump should be used. Very abrasive materials call for hard iron, or sometimes rubber-lined, pumps. If the water runs through a weir or solids are allowed to settle out, sometimes multistage pumps may be used. Very large multistage pumps can be used around the perimeter of a mine to form a cone of depression to lower the overall water table.

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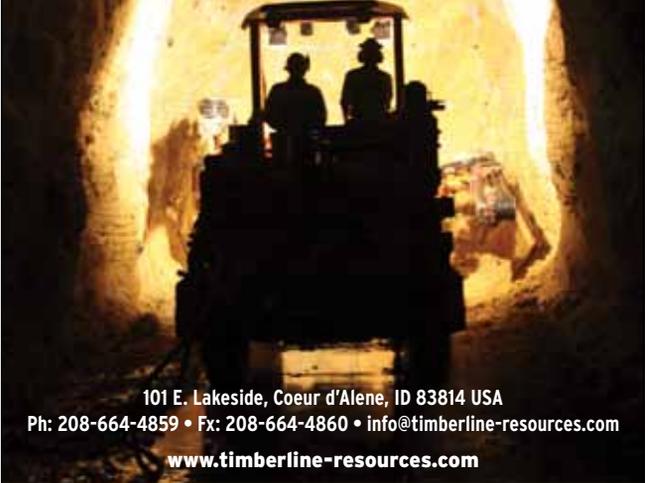
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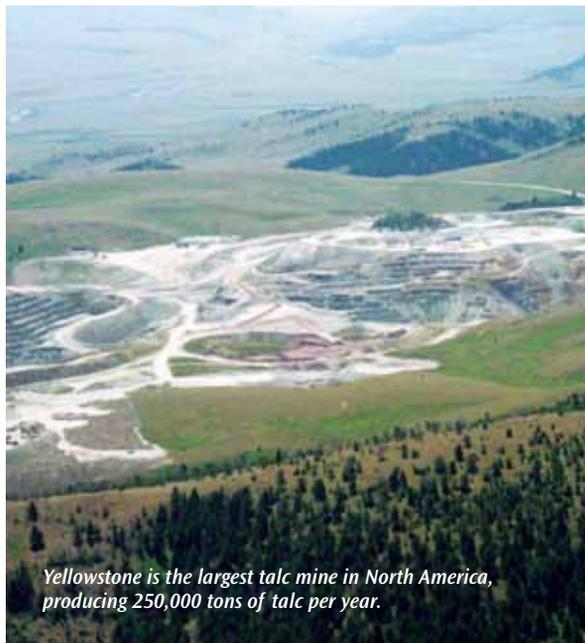
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Class A Legion – Montana State Baseball Tournament, Three Forks, Montana, July 2009. The baseball program has not only produced scholarships for players at collegiate level, but also at the professional level as well.



Yellowstone is the largest talc mine in North America, producing 250,000 tons of talc per year.



Talc has been mined from the Yellowstone Talc Mine for over 70 years and our business enjoys a sound reputation in the region as an environmentally, economically and socially responsible employer. Located 18 miles south of Ennis, Yellowstone is the largest talc mine in North America, producing 250,000 tons of talc per year. Initially part of the Cyprus mining group, the mine and its two dedicated milling facilities at Three Forks

were acquired in the early 1990s by international mining giant Rio Tinto. We were known as Luzenac Talc; then as Imerys Talc America, Inc.. On August 1st 2011, our operations opened a new chapter in their history when the talc branch of Imerys Talc America, Inc. was acquired by premier industrial minerals producer Imerys.

Introducing Imerys

Based in Paris, France, Imerys is the

world's largest industrial minerals producer with more than 240 sites – including 117 mines – spread over 47 countries worldwide. The Group employs over 16,000 people and generated more than \$US 4.7 billion in sales last year. Combining high-quality mineral resources with advanced industrial know-how and technologies, the Group designs, manufactures and sells mineral-based products for a wide range of industries, including construction, food, personal care, paper, paint, plastics, ceramics, telecommunications and energy. The talc business is part of the Performance and Filtration Minerals Division.

A Sustainable Approach

Talc fits perfectly into Imerys's already impressive portfolio of 29 minerals and into its customer-focused strategy. Like Rio Tinto Minerals, Imerys has the same market-driven approach to innovation. It shares the same deep understanding of its customers' expectations and technologies, and works in close partnership with

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customers. Imerys employs 300 scientists in eight R&D centers and 20 regional laboratories. In 2011 alone, it launched more than 50 new mineral products on world markets.

Perhaps more importantly for local stakeholders, Imerys shares the same commitment to the health and safety of its employees; to protecting the environment; and to maintaining excellent relations with the communities in which it operates. Our Montana operations will continue to fly the flag of sustainable development under the Imerys banner. By way of example:

We will pursue our 'Active Caring' behavior-based approach to safety at the mine and the mill. Active caring isn't random, but rather planned and purposeful acting and intervening for the welfare of others, the team and the community. Our sustainable safety and health process is viewed by our employees as their program and has proven very effective. Our Yellowstone mine and Sappington and Three Forks processing facilities have now

clocked up more than five years without a single lost-time accident.

We will continue efforts to reduce energy and water consumption. At Yellowstone mine, we use two patented ore sorting processes which allow us to minimize the amount of energy we need to produce high purity microcrystalline talc. At our Three Forks processing plant, we have recently installed a proprietary mill which uses fifty percent less gas and water to produce a ton of product. This is just one of several projects which have significantly reduced our carbon footprint.

Yellowstone Mine will continue to operate in harmony with the greater Yellowstone ecosystem, using ongoing reclamation to mitigate our footprint, and pursuing our partnership with the Rocky Mountain Elk Foundation, which involves providing elk with high-quality land for overwintering. This program has received national recognition for the support it provides to wildlife while conserving the soil and vegetative resources.

We will carry on providing support

for local communities through outreach programs such as our Legion baseball initiative. The Imerys ball field is used for all levels of baseball, from T-Ball through American Legion, as well as Girls Softball. It has attracted one of the best coaches in Montana and it is a rare year when Three Forks is not in the running for the state Class A American Legion title. The baseball program has not only produced scholarships for players at collegiate level, but at professional level as well.

The Future Looks Bright

Acquiring the talc business marks a major milestone for Imerys, which has every intention of developing our full potential. Yellowstone will be an important string to the company's bow as it provides the Group with a unique source of high purity microcrystalline talc grades which are highly prized by the automotive polymers, paints and paper markets in particular. Our new shareholder will give us the solid roots we need to continue to grow the talc business, both in the U.S.A. and on the burgeoning markets of Asia-



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Pacific. Imerys already has a strong foothold in the high-growth markets of India and Southeast Asia, which represent one-third of Imerys sales. As Imerys Talc, we will continue to build on the most solid foundation of mineral expertise available in the world today, so as to develop our business and provide value to all our stakeholders – customers, employees and local communities alike.

Talc – the Natural Solution

Talc is not only a natural, environmentally friendly product per se, it brings environmental benefits to a number of essential products and processes that improve our daily lives.

In plastics, talc is used to improve the impact strength of polypropylene (PP) auto parts such as fenders, dashboards and interior trim. Using talc in PP allows manufacturers to produce thinner, lighter parts. Less weight means greater fuel economy and fewer CO₂ emissions. This type of plastic also requires fewer toxic intermediaries to produce than other polymers, and is easier to recycle. Today's cars contain on average nearly 22 pounds of talc per vehicle. Talc is ideal for modern biopolymers. In wood-plastic composites – increasingly used as a sustainable substitute for lumber in outdoor decking – talc is used to improve structural integrity and protect both the wood and the plastic from biological attack and UV degradation.

In paints and coatings, talc lengthens the life cycle of painted goods by increasing covering power and durability. Certain talcs also help reduce volatile organic compound emissions associated with solvent based paints. As a natural, inert mineral, talc is an ideal additive in organic paints and coatings.

In rubber, talc is used as a replacement for less environmentally friendly, oil-based carbon black. Used in tires, it improves impermeability, enabling manufacturers to produce thinner, lighter tires with better rolling resistance. This provides benefits in terms of fuel consumption and wear resistance.

In paper, talc helps eliminate sticky contaminants that clog machinery with-

out resorting to chemical treatment systems. This reduces the amount of water needed to clean equipment and means papermakers can operate with closed water circuits, reducing fresh water consumption and wastewater output. Talc remains in the finished paper as an infinitely recyclable filler.

In ceramics, talc is the principal ingredient in the honeycomb cordierite structures used in today's automotive catalytic converters and diesel filters that clean up the exhausts of petrol and diesel engines.

In agriculture, talc provides natural UV protection for fruit ripening in the orchard and on the vine – a safe alternative to chemicals used for this purpose. It is ideal for organic farming. Talc also helps increase the yield of virgin olive oil by absorbing the natural emulsifier found in olives. This allows more oil to be extracted and lowers the amount of emulsion in wastewater often used to irrigate fields. After extraction, the talc remains in the solid matter which is used as a fertilizer. ♦



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Exploring new frontiers with magnetics

In exploration, our most valuable resource is data. Data, in all its many forms, is processed and converted to information, and assimilated – where it finally becomes knowledge. All process-

ing and interpretation ultimately reflects the underlying quality of the data. We must be ever-vigilant to ensure that we acquire the highest quality data in order to best grow our knowledge.

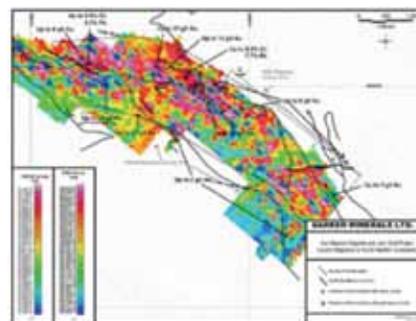
Next to geology, the most important type of data is magnetics. Magnetism measures the earth's field, either using ground instruments or instruments installed on helicopters, planes or unmanned airborne vehicles (UAVs). Data are typically presented in map form and delineate geology including lithologies and structure (faults, etc.). Magnetism also directly targets orebodies for drilling. And where cover is present, magnetism lets you to visualize the geology – giving an important edge where surface detail is obscured.

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In the example above, we see ground magnetism and EM conductors presented for the Ace Property, Western Cordillera, Canada. Broad variations in magnetism trend east-west and probably reflect differences in bedrock lithology, which also trend in that direction. A few local dipoles may represent small bodies of a magnetite-bearing rock such as diorite.

To achieve the highest quality data, such as is shown here, it is essential to use the appropriate instrument for data acquisition (or to make sure that contractors are using proven systems). As a world leader in magnetics, GEM has grown its reputation on the quality of data from its instruments, including Proton, Overhauser, and Potassium – both in the ground and air.

Proton Precession is an older style of instrument that uses protons in a hydrogen-rich mix for magnetic field mea-

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surement. GEM's system is the world's leading instrument as determined by the number of users globally. Customers have, for many years, relied on the rugged construction of the Proton system for completing projects on time and on budget.

A newer instrument invented by GEM is the Overhauser magnetometer. Intended as a mid-range system, the Overhauser magnetometer has evolved into the standard system for mineral exploration globally. Overhauser truly delivers high quality data based on its physical principles – the system energizes a special mix containing electrons which then allow measurements to be made at much lower energies and with more precision.

GEM's latest method is the Potassium system which uses potassium gas in a special sealed container to record magnetic data to an extremely high precision. The product of more than 15 years of research and development, Potassium has matured as an ultra-sensitive system for mapping subtle responses, such as those associated with gold deposits. It also has special options for prospecting for Iron (high field).

When selecting a system for the ground, it is important to consider the goals of the program and the target to be detected. Most targets will be best served by Overhauser and its clean data stream. Bulk, low-precision surveying can be done with a Proton system. And, Potassium is increasingly an alternative as professional explorers seek out even the most subtle signals corresponding to today's challenging deposits.

Ground surveying is used for follow up of targets identified from airborne surveys meaning that airborne surveying is often the initial activity performed in an exploration program.

Airborne surveys acquire high amounts of positioned data and give an overall picture of the prospect. They are often one of the first-pass methods used in property exploration.

GEM's airborne solutions are based on helicopter, fixed wing, and UAV platforms. They utilize the proven Potassium

airborne magnetometer that acquires some of the highest quality data anywhere.

"This is the first time that I have seen data of such high quality," remarked Steve Balch, president of Canadian Mining Geophysics (CMG) airborne.

The Potassium magnetometer is an order-of-magnitude more sensitive than other commercial systems which gives much more detail and high quality data in a single package. Installation is

straight-forward. If your contractor is not using Potassium, request it and your results will be finer than ever before.

Lastly, you will need to correct your results to remove magnetic drift from solar activity. GEM manufactures a complete line of base stations for this purpose.

And when your exploration program is ready to go, just remember, "Our World is Magnetic!" GEM ensures that you acquire the highest quality data. ♦



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Magnetics represent one of the most effective exploration methods in the United States outlining structure, geology, and ore deposits. The method continues to deliver across the country with results that have led to many discoveries.

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of the month. And I do not want it to go to your head, but you have been great. I felt like you trained me well and was there when I had a question or concern. I did not have the feeling of being lost out there alone. It seems to be working well and there were only a few bugs at first, and they have been addressed. I am very pleased and would definitely recommend it." ~*Deb Whitehead, J&D Belt Service*

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All Mechanical Services, with operations in Montana since 2009, is a certified woman-owned business. The company employs highly ambitious people with multiple skill sets. Each

employee was chosen for their area of expertise, but is also adaptable and able to provide quality work in other areas of the business. Owner Mari Jean Bellander says, "We are very fortunate to have assembled a multitalented team of Montana native residents which forms the core of our service business."

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MTI Montana: Your one-stop rebuild shop

By Casey Stranges



When Mining Technologies International decided to expand their operations into the U.S. in 2004 by adding a rebuilding facility in Billings, Montana, they never imagined it would grow into a “one-stop rebuild shop.”

Known today as MTI Montana, the 32,000-square-foot facility rebuilds mining, agricultural and construction

equipment, including each piece’s internal components, to ensure 100 percent customer satisfaction.

MTI development manager Gary Lehto believes the company’s rapid growth has as much to do with the quality of personnel as it does with the vehicles they rebuild.

“We have a fully staffed team, includ-

ing our Field Service Group,” says Lehto, “and three of our service technicians arrive on-site for equipment repairs and commissioning.”

Their service-oriented philosophy includes employing an in-house “drill doctor” who repairs hydraulic drills and hammers for most brands of drilling jumbos. They also utilize the talents of a dedicated quality inspector to test everything that goes out the door.

“With the degree of specialization and experience they bring to the table, there’s absolutely no equipment the service team isn’t qualified to work on,” says Lehto.

Lehto points to a recent example of MTI Montana’s versatility – a local farmer took MTI’s “one-stop rebuild shop” philosophy to heart and pulled into MTI’s Main Street shop on a tractor whose on-going problems had been frustrating him.

“He came right off the farm with his John Deere on a trailer,” says Lehto, “He was having hydraulic issues and couldn’t



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seem to get the equipment fixed right. Even though it was outside of our usual work, we didn't turn him away, and our guys got his tractor running again."

The MTI Montana reputation for "getting it rebuilt in one stop" has brought with it some unique requests.

"When the shop first started out, Stillwater Mining approached us with an unusual request," says Lehto. "They wanted us to overhaul a garbage truck that had seen better days. We rebuilt the truck, painted it up, and shipped it back to the mine site looking better than new."

MTI Montana's rebuilt equipment was also the driving force behind the drilling and excavation of Sanford's underground Neutrino laboratory at Homestake Mine in Lead, South Dakota.

"It's all about taking that customer's request for specialized equipment and making sure we rebuild it to its optimum level," explains Lehto.

The idea of creating a "one-stop rebuild shop" came from customers, who

The idea of creating a "one-stop rebuild shop" came from customers, explains Lehto, who were tired of the fledgling shops that lacked the ability and versatility to rebuild equipment and repair components while maintaining Original Equipment Manufacturer (OEM)-level quality.

were tired of the fledgling shops that lacked the ability and versatility to rebuild equipment and repair components while maintaining Original Equipment Manufacturer (OEM)-level quality.

MTI's extensive training emphasizes the company's deep roots as an OEM of mining equipment. Technicians are taught to understand heavy equipment

from a ground-up perspective, which ensures a process of rigorous testing and tight quality control.

"Because MTI Montana is a division of the MTI OEM group, they have access to all of the original drawings and specifications," says Lehto, "so when we rebuild, you're getting equipment that's being rebuilt to OEM standards and quality."

Ensuring high customer satisfaction means that MTI stocks aftermarket parts to support their rebuilt equipment. As an authorized Dana Spicer Service Center, MTI carries over two million dollars' worth of components to ensure they can turn around rebuilt axles, torque converters and transmissions in a timely manner.

"Once customers realize the cost savings in having their loaders, drills, and trucks rebuilt to OEM standards in one location," says Lehto, "they become customers for life." ♦



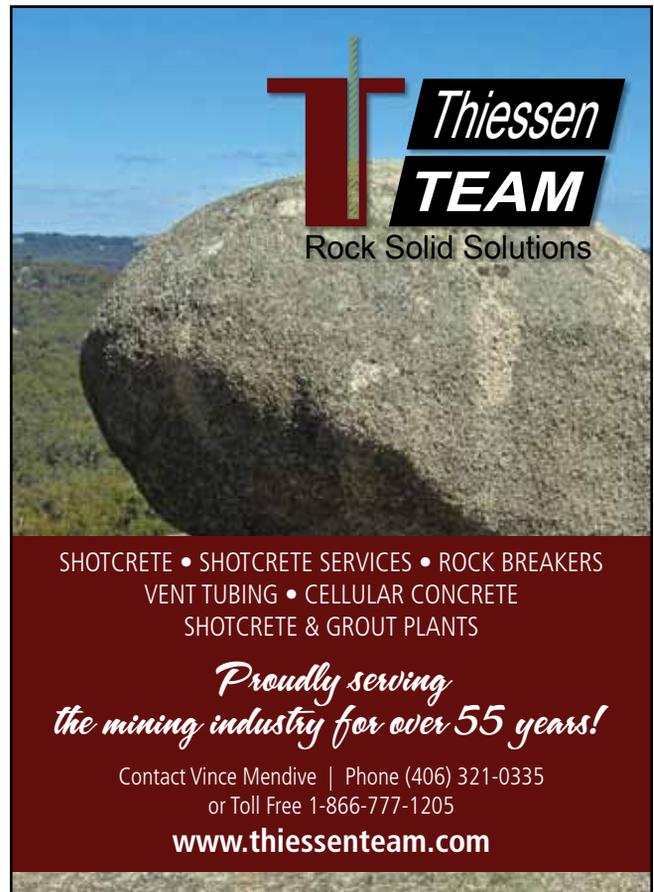
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How P&H LeTourneau wheel loaders help mines reduce costs



Surface mine operations across Montana apply a wide range of loading equipment including hydraulic excavators, rope shovels and wheel loaders. One of the most economical to own and operate loading solutions is contained within the line of P&H LeTourneau-series wheel loaders supplied and supported by Joy Global.

From the L-950 loader rated at an 18-cubic-yard bucket capacity on up to the heavyweight L-2350 with bucket capacity and payloads matched to 400-ton class haul trucks, P&H LeTourneau-series wheel loaders are designed and built to help mines obtain highly reliable, productive loading service through the application of innovative technology that results in lower total cost of operation and ownership.

Joy Global, through its P&H LeTourneau series brand, has a long history of

producing the largest rubber-tire loaders in the world, and what further sets them apart from other loaders is the highly efficient electric drive, as opposed to mechanical drive. System efficiency is a major operating cost component when calculating wheel loader TCO

or total cost of ownership.

Mechanical drive loaders require the application of torque converters, planetary power shift transmissions and cooling circuits that experience significant efficiency losses or stall conditions during the dig cycle, requiring high engine horsepower to maintain digging torque. AC generator/DC motor electrical drive systems of the kind featured on LeTourneau loaders provide high torque at low speed, exerting only about 25 percent sustained engine horsepower to maintain full digging torque.

P&H LeTourneau loaders utilize a hybrid technology SR (switched reluctance) energy recovery system that results in significant fuel consumption economy, longer diesel engine life, and reduced service and maintenance costs.

P&H LeTourneau-series wheel loaders contain several more cost-reducing

systems including quick-change brakes designed for lower component wear and maintenance requirements. The P&H LeTourneau wheel loader hydraulic system features gearboxes designed to match the life of the engine and pumps and controls – a relatively simple design made possible by the constant engine speed associated with electric drive.

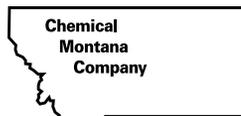
P&H LeTourneau loader air systems feature electrical component cooling air filtration, cab air filtration and primary engine intake filtration with high-efficiency, low-maintenance filters that obtain 99.9 percent removal of particulates down to 0.3 micron and rated at up to 5,000 hours of life for fewer change-outs and reduced operating cost.

Operator ergonomics on P&H LeTourneau loaders promote operator efficiency and safety through the application of simple two-pedal operation combined with joystick control, excellent work environment sight lines and a large, easy-to-see monitor screen providing access to the LINCS II (LeTourneau Network Control System) designed for Generation 2 SR drive system technology (SR generator with SR motors).

P&H LeTourneau loaders provide added value through application of a low center-of-gravity design combined with ball-and-socket pivot joints that absorb loads from all directions while providing easy maintenance through application of replaceable bronze liners, plus greater drive system oscillation and articulation range for increased maneuverability and stability.

P&H LeTourneau Generation 2 drive system technology provides optimized tractive effort or wheel rim pull over operating weight combined with useable breakout force and competitive hydraulic cycle times for overall wheel loader productivity performance value in mine operations. ♦

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West in Billings, Montana, we also have branch operations at 404 17th Avenue Northeast in Great Falls, Montana, 1901 Meadowlark in Butte, Montana, 1780 HWY 35 in Kalispell, Montana and 360 Floss Flats Road in Belgrade, Montana.

Our staff of 135 employees conducts business from our facilities in Billings,

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Our company has enjoyed a history of success, and has grown to be the largest wholesale distributor of our kind in the market region. We have a fleet of trucks delivering material between our branches and on a regular, weekly basis to our customers throughout the whole state of Montana and Northern Wyoming. Our aggressive management team is devoted to maintaining our productive staff, service, and inventory.

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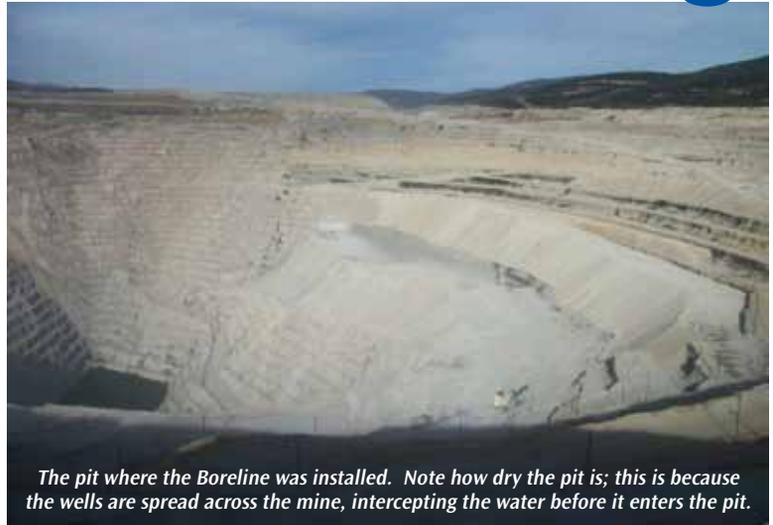
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Boreline for mine dewatering



The mine site.



The pit where the Boreline was installed. Note how dry the pit is; this is because the wells are spread across the mine, intercepting the water before it enters the pit.



The Boreline fitting connected to the submersible pump. The pump has been lowered into the well. The Boreline fitting is screwed into the check-valve and the Boreline is then placed over the fitting. The Boreline fitting has double-ring clamps which ensure twice the security.

In this project, the Boreline was used in a dewatering well at a large mine. The mine has over 100 wells in this pit alone and is dewatering at a rate of approximately 6,000 gpm. With so many wells spread around the pit, installation speed and retrieval and safety of personnel is the number one priority. Boreline was chosen to keep site work to a minimum and ultimately reduce the cost of maintaining the wells.

The Boreline is resistant to corrosion and due to its flexibility, prevents scaling and build-up inside the hose. This ensures optimum flow through the hose for the life of the pump. In this project, the pump was set at 500 feet on 2.5-inch Boreline.

Two sets of lifting clamps are used to raise the continuous length of Boreline and lower it into the well. While the one pair rests on the casing, the other pair lifts the Boreline. Boreline makes pumps installations easy, efficient and safe.

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Connecting the hose to the fittings using the Boreline three-piece clamps.



Preparing the hose to secure the power cable using the Boreline cable straps.



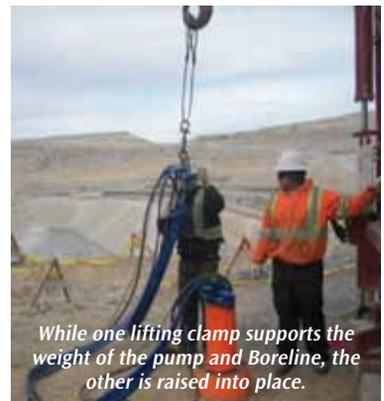
Connecting the power cable to the Boreline using the cable straps.



Clamping the hose using the lifting clamps to begin installation.



Raising the Boreline using the lifting clamps.



While one lifting clamp supports the weight of the pump and Boreline, the other is raised into place.



The lifting clamp rests on the well head.



Lowering the well head into position – another job completed on time, as usual.

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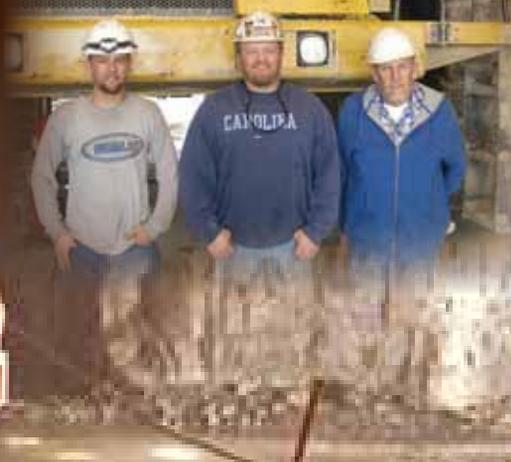
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- ▲ Educates members through the Annual Montana mining magazine, articles inform you about our members achievements and provide multiple advertising opportunities

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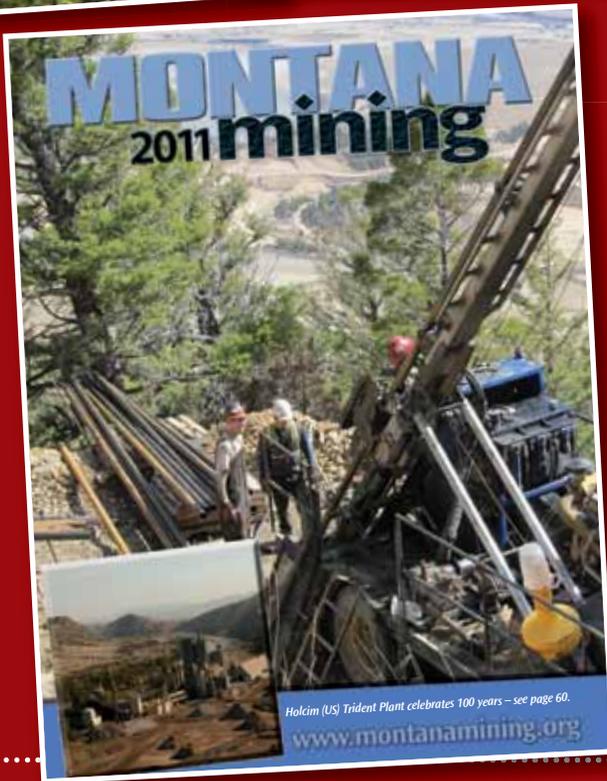
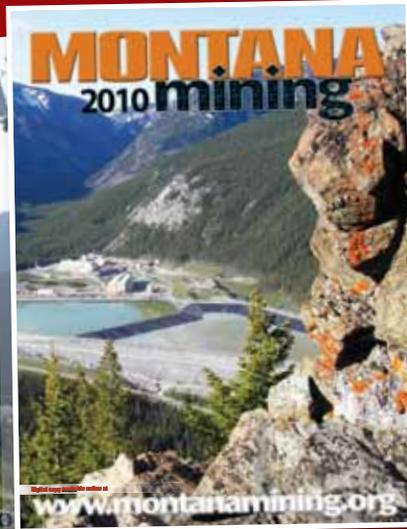
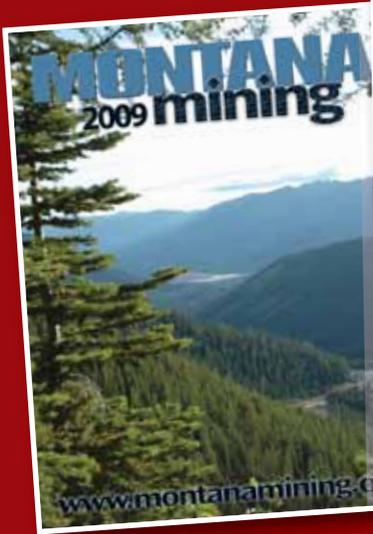
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