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MINING, MINERALS, AND THE ENVIRONMENT IN IDAHO, 1999

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Introduction

ASARCO, Inc.

Asarco, Inc. barely had time to celebrate a century of operations in April because by October the company had been taken over by Grupo Mexico SA de Cv in a $1.24 billion cash takeover. The takeover began in July when Asarco announced plans to merge with Cyprus-Amax Minerals Company forming Asarco-Cyprus Inc., a company worth about $2 billion. Phelps Dodge then got into the act and offered $2.7 billion for Asarco-Cyprus in a plan to combine the three companies into the world's largest copper company. Grupo Mexico then made the successful counter offer for Asarco-Cyprus.

In May, Asarco traded most of its silver properties in the Coeur d'Alene District to Coeur the Precious Metals Company for a 19.3% interest in Coeur. Coeur issued 7.125 million shares to cover the transaction. Asarco turned over its 50% interest in Silver Valley Resources Corporation formed in 1994. The corporation owned and operated the Coeur and Galena mines. In addition, Asarco gave Coeur shares in Canadian and South American interests. Asarco was reportedly getting out of the silver business, a rumor further substantiated when the company sold their interest in the closed Troy copper/silver mine in Montana to Sterling Mining Company in October.

The New Bunker Hill Mining Company

Coeur- The Precious Metals Company

Coeur the Precious Metals Company moved a big step closer to becoming a major silver producer. As noed, the company reached an agreement with Asarco acquiring Asarco's interest in Silver Valley Resources (Coeur and Galena mines), a 5% interest in American Silver of Vancouver, BC (20% net profits in the company's Quiruvilca silver mine in Peru) and an interest in a Bolivian prospect (via the Empresa Minera Manquiri which owns the San Bartolome silver mine near Potosi). Coeur swapped 7.125 million shares of stock worth $33.4 million for the properties and this gives Asarco 19.3% in Coeur and two seats on Coeur's board. Plans call for increasing production from the Galena mine to _____ ounces of silver and _____ pounds of copper won from _______ tons of ore in 1999 ~~to~~ 3,260,363 ounces of silver, 2,234,374 pounds of copper from 176,304 tons of

from

ore milled in 1998. Lower gold prices forced the layoff of 75 employees or 9% of Coeur's workforce in June and reduced its exploration budget by $2 million.

The company purchased the Nevada Packard property adjoining its flagship Rochester Silver mine in Nevada for $2.1 million. The buy adds 6.5 million ounces to the company's reserves in this area. Coeur also completed studies at the Kensington mine 45 miles north of Juneau, Alaska. The optimization study could reduce costs from $280 to $192 per ounce. The mine should produce 200,000 ounces of gold annually. Proven and probable reserves are estimated at 1.9 million ounces with 13.9 million tons grading 0.136 ounces of gold per ton. The mine is controversial, as Coeur wants to dispose of sand-sized tailings in the Lynne Canal. Finer tailings will be mixed with cement and used as backfill underground.

In March Coeur settled a class action lawsuit for $13 million. The suit filed in 1997 claimed that the company had artificially inflated share prices and misled stockholders about activity at the Golden Cross mine in New Zealand and the Fachinal mine in Chile in 1995 and 1996. Insurance covered $7 million of the settlement and Coeur promised to add $6 million if a lawsuit against Cyprus Amax was successful. In September it was announced that Cyprus Amax Mineral Company would pay Coeur $31 to settle the suit over the Golden Cross mine. Coeur bought the property in 1993 and took a $53 million write down in 1996 due to problems with the mine's tailing impoundment. Shareholders approved a motion to increase the number of shares of common stock from 60 million to 125 million and double preferred shares from 10-20 million.

Hecla Mining Company

Hecla Mining Company placed the Lucky Friday mine back in production in February following repair of the No. 2 shaft, which closed the mine for two weeks. The 2400 level of the shaft was damaged by a rock fall. The shaft is only used as the mine's secondary escapeway, but it must be maintained for safety purposes. The mine employs about 200 people. In May, the company announced a letter of intent to purchase Monarch Resources Ltd. for $25 million ($9 million in cash and $16 million in stock). Monarch owns the La Camorra gold mine in Venezuela. The sale was consummated in June. The underground mine produced 51,000 ounces in 1998 and production is scheduled to go to 80,000 ounces by 2001. Hecla had its first gold pour at La Camorra in October. The company also formed a joint venture with Firmil Gold to explore the Highland project, 100 miles east of Reno in West-central Nevada. The company can earn a 51% interest on the 6,900-acre property by spending $3 million on exploration over five years. Hecla continued exploration at the Noche Buena gold project in Mexico located just south of its La Choya mine closed late last year. Production and exploration also continued at the Rosebud gold mine in northern Nevada. The company's industrial minerals division (Kentucky-Tennessee Clay group, MWCA-Colorado Aggregates division, MWCA-Mountain West Products division) also did well producing $__ million in profits for the year. Hecla is interested in selling MWCA to raise cash for debt reduction and possible exploration projects. The company took a $3.9 million write down on MWCA reflecting the difference between the company's book value and the anticipated sales price.

On a negative note, Hecla continues to have problems with cyanide leaking from the tailings impoundment at the closed Grouse Creek gold mine on Jordan Creek, a tributary of the Yankee Fork of the Salmon River. The company notified state and federal agencies about the problem in April. Tears in the impoundment liner are a possible culprit. The company still operates a water treatment plant at the mine and the $1.5 million in improvements made at the plant in 1997 are working fine. The company was working with agencies to come up with a plan to fix the problem. Hecla announced that they would spend $27.3 million over the next several years on reclamation projects at Grouse Creek and in the Silver Valley.

OK before last week

Sunshine Mining and Refining Company

Sunshine Mining Company had good news early in the year reversing last year's fear of low reserves by announcing new finds in the West Chance area of the mine. The company wrote down $50 million in the mine last November contributing to the year's $64.8 million loss. A reverse split announced in August was designed to reduce company stock by eight fold (to 34.6 million shares) and raise the price per share to above $1, a requirement for continued listing on the New York Stock Exchange. Estimates were for more than 5.2 million ounces per year in 1999 and 2000 with cash costs about $4.60 per ounce. The company employs about 300 people at the world's richest silver mine. The "Shine" was down for four days due to a power failure that affected the mine's secondary hoist that is used as an escape route. Sunshine started work on a $2 million ramp project scheduled for completion in 2001 to connect the Sunshine mine with the nearby ConSil property. This opens up real "elephant country" for the discovery of additional reserves. Sunshine continued a feasibility study at the Pirquitas mine in northwest Argentina. Reserves are estimated at 101 million troy ounces. Costs at Pirquitas are expected at about $2 per ounce silver over the 10-year life of the mine. At a mining rate of 5,000 metric tons per day the mine should yield 9 million ounces of silver and 4,000 tonnes of tin annually. Development costs for the open pit mine are estimated at $124 million and it could be in production in 2001. The company also made its first foray into Mexico by optioning the 69,000 acre Juanicipio concession in Zacatecas. The property is adjacent to the Fresnillo mine owned by Penoles, Mexico's largest silver miner.

Other Coeur d'Alene Mines

The Sierra Silver mine continued to pack in the tourists in Wallace. The attraction brings in about 20,000 people each year. The nonprofit tours began in 1982 and have been a smash hit ever since. The 75-minute tour gives visitors a close look at how mining is done in the Silver Valley and is led by experienced miners. Another mine tour opened this year at the Crystal Gold Mine near Kellogg.

Bert Doughty
CO

Other Producing Metal Mines

Thompson Creek Mining

Thompson Creek Mining Company continued operations at the Thompson Creek molybdenum mine near Clayton, ID. In March, the mine received a Record of Decision (ROD) on the Supplemental Environmental Impact Statement (SEIS) that was finalized in January. The ROD allows the mine to operate in accordance with Alternative 2 in the SEIS. This is an interim decision providing time for a complete consultation under the Endangered Species Act. Alternative 2 calls for reducing acid rock drainage from the breakdown of the mineral pyrite. A pyrite separation circuit in the mill does two things; remove pyrite, which is placed in the tailings impoundment under water, and produce a reduced pyrite tailings that will be placed in the impoundment dam. The ROD was appealed by the Idaho Conservation League and the Boulder-White Clouds ~~Council~~. Coalition Under the appeal, the company could not operate the pyrite separation plant for 60 days or until the appeal was reversed. The U.S. Forest Service reversed the appeal in May and the pyrite plant was allowed to operate. The mine employs 170 people and has reserves for at least 15 years. The plan will be in effect for 1999 while a long-term decision is reached about the operation based on the company's updated supplemental plan of operations for the year. The mine produced ____ pounds of MoS_2 from ________ tons milled in 1999 compared to ______ pounds from ______ tons in 1998.

Meridian Gold Company

Meridian Gold's Beartrack mine hosted hundreds of local citizens and guests at an open house on July 10 in anticipation of the mine's closure scheduled for mid-2000. The mine produced 110,000 ounces of gold and _____ ounces of silver from _5.1 million tons of ore (37 million tons of waste) mined in 1999 compared to 110,000 ounces of gold, _____ ounces of silver from ______ tons of ore in 1998. The big heap leach open-pit mine is the largest employer in the Salmon, ID area employing ___ people. Reclamation continued at the North Pit with new ore coming from the South orebody. The operation covers some 670 acres and reclamation will be completed at a cost of some $9.6 million spent by 2010. Since startup in 1995 the company has reclaimed over 400,000 ounces of gold and the final tally could be about 700,000 ounces. The company has been a great neighbor for the Salmon community paying out $9 million in wages and benefits in 1998 and $190,000 in property taxes. About 50% of the work force are local. In addition the company has donated some $250,000 to the local community in the past 4-5 years. When the mine closes, the company will help displaced workers with on-site career transition and training. Meridian will also promote Salmon as a great place to establish light industry. Most of the layoffs are expected in July 2000 when the workforce will drop to 15-25 people.

Other Small Mining Operations

Warren- Rescue Mine

Yellowjacket Mine

Phosphate

Introduction

FMC Corporation

FMC Corporation will invest $60 million in a new purified phosphoric acid (PPA) plant at NuWest's site at Conda. The plant will have a capacity of 80,000 tons of acid per year and will use the technology employed at FMC's plant at Huelva, Spain. Ore feed will come from FMC's Dry Valley mine. FMC will build the plant and then lease it to NuWest as part of NuWest's integrated phosphate operation. NuWest will spend $30 million over two years to lease and operate the plant and another $30 million for modernizing their current wet acid plant. New pollution control equipment including new air scrubbers on the plant's phosphoric acid ore digester, will be installed as part of the new facility. FMC will buy the purified acid under a long-term contract. The plant will also supply Astaris, LLC, the new joint venture between FMC and Solutia Inc.'s phosphorous chemicals business. The PPA facility should be finished in 2001.

Solutia, Inc. and FMC Corporation announced a new venture, Astaris LLC. in April. This is not a merger but a joint venture designed to enhance both companies' competitiveness. The two companies will continue to operate as separate entities. Astaris will operate 12 manufacturing plants in seven states and Brazil.

FMC announced plans to double the size of the Dry Valley mine. The 592-acre open pit mine is located about 14 miles east of Soda Springs. The new mine will cover an additional 599 acres. The draft EIS calls for placing topsoil over mine waste dumps, backfilling a pit so it is above the water table, and adding wetlands. The mine employs 68 people.

FMC operates the world's largest elemental plant at Pocatello, employing some 460 people. In addition, the company has some 380 temporary contract workers.
In October, FMC agreed to pay a record $11.8 million penalty for hazardous waste violations at its process ponds at the Pocatello facility. The company will spend some $190 million through 2002 to resolve more than a decade of air and land pollution problems. Improvements should cut air emissions by more than 70%. In 1999 the company reduced windblown dust around the shale stockpile, minimized white smoke from the furnace flares, and changed the slag digging operation to a molten slag process on two of the four furnaces reducing PM10 emissions and the brown haze associated with the plant. The slag-handling project is designed to haul molten slag to a disposal site in 40 80-ton ladles moved by four new slag haulers. Currently, the slag flows into pits

where it solidifies and is then disposed of. The agreement came at the end of 16 months of negotiation with the U.S. Environmental Protection Agency, the Shoshone-Bannock Tribe and the Justice Department.

J. R. Simplot Company

Agrium, Inc.

Nu-West Industries, a subsidiary of Agrium, Inc., operated the Central Rasmussen Ridge Mine and the fertilizer plant at Conda all year. The company submitted a modified plan of operations for the mine to the U.S. Forest Service. The design change will lower the pit slope and create more waste. One dump will be extended adding about 75 more disturbed acres to the initial mining plan. Agrium awarded Morrison Knudsen Corp., the mining contractor, another year's contract. The mine has an annual capacity of 1.95 million tons of ore and requireds the removal of about 12 million tons of waste.

Solutia, Inc.

Solutia, Inc. proposed to expand the Enoch Valley mine site by 380 acres. The mine currently covers 760 acres of state and private land.

Kerr-McGee Vanadium Plant.

Other Phosphate

The major environmental problem in Idaho's phosphate industry is selenium that is leached from waste rock piles and introduced into local waterways. In 1996 and 1997 six horses had to be destroyed because they grazed on selenium tainted grass downhill from an old mine. The companies have launched a major effort to find out what the source of the selenium is and how it can be kept out of the local water system. Over $1.5 million has been spent to date. Scientists from the University of Idaho, the U.S. Geological Survey and other state and federal agencies have discovered that most of the selenium is coming from the middle shale that separates the two phosphate bearing beds. Selective mining and careful disposition of the middle shale should control the problem in the future. Sampling of animals, plants and water was done during the year to try and characterize the scope of the existing problem at older inactive sites. Several experiments are underway to see if the problem can be controlled at these older sites.

The U.S. Forest Service and Bureau of Land Management announced that the Dairy Syncline Tract (2,342 acres0 and Manning Creek Tract (880 acres) in Caribou County will be available for competitive bids for phosphate exploration and mining. The two tracts are critical reserves for Idaho's phosphate industry.

Industrial Minerals

Western Garnet International Ltd. operated its almandine garnet operation on Emerald Creek all year. The garnets are used for abrasives, garnet cutting torches and in filters. The company also improved reserves at its Bengal Bay garnet operation in Tamil Nadu, India with proven reserves of 1.1 million tons of garnet. Western plans on opening a new bulk facility in India and worldwide sales and marketing offices in 2000.

Ash Grove Cement, Inkom.

Hess Pumice, Malad.

Last year- Hecla's **Mountain West Bark** merged with Colorado Aggregate Inc. to form MWCA, based in Rexburg.

Last year**- Chemical Lime's** limestone quarry and Maerz kiln produce high quality lime near Bancroft, ID. The quicklime is used in gold mines and steel industry. Markets were slow this year due to a downturn in gold mining. The plant was producing at 60% capacity.

Last year- In SW Idaho**, CARCO's Ben Jel bentonite** mine in Owyhee County
L & W Stone quarry Three Rivers stone.
Table Rock Sandstone

Exploration

Formation Capital Corporation privately sold 2.5 million shares to Clubb Capital Ltd, London, to raise $750,000 to advance the Sunshine cobalt project in east-central Idaho. The project contains two ore bodies, the Sunshine and the Ram zone. The deposits have diluted proven and probable reserves of 974,700 tons grading 0.69% cobalt, 0.069 % copper and 0.02 oz of gold per ton. An inferred resource is estimated at 1.4 million tons. The stratiform mineralization is hosted in the Yellowjacket Formation of Proterozioc age. Ore minerals are primarily cobaltite and chalcopyrite. A scoping study by Mine Development Associates of Reno, NV recommended a 400 tpd underground and flotation milling operation that would ramp up to 800 tpd in three years. A copper concentrate would be shipped to a commercial smelter and the cobalt concentrate would be processed at an off-site 50-tpd company-owned hydrometallurgical plant. Reserves would allow for a mine life of just over four years with a possible extension to nine year. At a value of cost of $7.73 per pound cobalt and assuming a cobalt price of $20 per pound, the deposit has a possible value of about $80 million. A six-hole drilling program this summer extended the strike length of the Ram deposit from 1,400 to over 2,350 feet. Four of the holes had at least 0.2% cobalt over a 5-foot length.

Intergold Corporation made news last year by announcing a major gold discovery at the Blackhawk project hosted in volcanic rocks in Lincoln County. The company drilled 50-60 holes and announced an average gold value of 0.14 ounces per ton. The discovery was questioned by a number of people and apparently with good reason. In October, Intergold filed a $10 million law suit against Dames and Moore and Auric Metallurgical Laboratories, LLC. claiming misrepresentations about assays performed by Auric and in reports prepared by Dames and Moore, and other breaches of contract. All work on the property is on hold awaiting the legal action.

Glassey 385-05-54

Twin Gold Corporation renegotiated a lease option–to-purchase agreement on the Atlanta Gold Project by making an initial payment of $100,000 to Monarch Greenback . The change was needed when Quest International Resources, holding 20% of the venture, dropped their participation in development costs. During the 10-year term of the new lease, a unit of Twin Gold has the right to buy the property for $2 million. A study by Behre Dolbear showed that finer ~~grinding and~~ crushing increased gold extraction to between 62-65% resulting in a rate of return between 17 and 21% at a gold price of $290 per ounce. Resources at the property are 22.1 million tons grading 0.06 oz per ton gold for a total of 1.37 million ounces. The conventional open pit heap-leach mine could produce 70-80,000 ounce of gold and 200,000 ounces of silver annually. ~~The company had spent about $6 million on the property by year's end.~~

Quest USA Resources still has a participating 20% interest, but has elected to be diluted rather than contribute at this time.

Thunder Mountain Gold announced plans to open the Thunder Mountain mine located east of Yellowpine in the central Idaho Wilderness area. The mine could be operational by 2002. The site is at the old Dewey mine and near the location of the Thunder Mountain heap-leach gold mine operated by Coeur d'Alene Mines Corporation in the 19__ and closed in 19__. The Dewey was in development by USMX several years ago and has since reverted to the owner. USMX invested about $3.5 million in drilling and exploration costs and was starting on an EIS for the property. The program outlined reserves of about 300,000 ounces of gold. Thunder Mountain Gold has a partner, Science Applications International (SAIC).

Update from last year;
Phelps Dodge Exploration- Copper Basin
Silver Trend Mining Company
Idaho Consolidated Metals Corp.- Kinross Gold- Orogrande
The Kilgore project in eastern Idaho was taken over by **Latitude Minerals**

Reclamation

The first phase of the cleanup at the old Triumph Mine on the East Fork of the Wood River was completed this summer. Initially scheduled for listing as a Superfund site, the local citizens and the state were able to convince EPA to let the state handle the cleanup.

The Idaho Department of Environmental Quality oversaw the project work by contractors McCulley, Fricke and Gillman, and Environcon. The cost of the initial phase was $2 million . Topsoil was replaced and new sod laid at a number of sites. The final phase will be done this winter when Asarco blocks the Triumph adit, a source of contaminated water, with a concrete plug at a cost of about $1 million.

The Bureau of Land Management moved to close the Moran tunnel located about 17 miles west of Arco and began remediation at the North Creek mine 12 miles north of Howe. This is the initial phase of a general program by BLM that will address remediation at abandoned mines throughout Idaho on lands administered by the agency. A similar program is underway by the U.S. Forest Service. This year the old Silver Summit or Moon Creek mine on Moon Creek in the Silver Valley was cleaned up. Old tailings were removed from the active waterway of the creek. Work also proceeded in the Boise Basin area at the Comeback Mine. The Idaho Geological Survey is inventorying abandoned mine sites in the state including lands north of the Salmon River and BLM administered lands in Owyhee County.

Last year- Envirocon, Inc. (Missoula, Montana) beat out eight other companies and won a $1.5 million contract to clean up the Triumph mine site south of Ketchum, ID. The work will include stabilizing and capping the mill tailings site at the mine. Waste rock from nearby dumps will be used to stabilize the tailings. In addition, Asarco, a principal responsible party along with the state of Idaho at the site will clean out about 1,500 feet of the old Triumph tunnel and then block the tunnel to prevent the flow of acid mine water that is currently a problem at the mine. Envirocon must complete its contract by October 1999 and the cost may vary according to how much material must be finally moved.

Last year- Work continued with the cleanup at the Blackbird mine by Noranda Mining Company. Oreille. The mine is located on land administered by USFS. The settlement with the families was for $10,000. Shortly after the accident, the mine was sealed against human entry.

Idaho AML Program Award Winning Projects. Idaho Land Board is proud to recognize environmentally responsible miners. Winners of 1999 Reclamation Awards include:

Other News

The largest ever merger in the aluminum industry occurred when Alcan merged with the French aluminum producer Pechiney and Swiss group Alusuisse Lonza. The new company, called APA, would be the largest producer in the world by revenue and the second largest by market capitalization. Alcan would own 44% of the company that would have sales of about $21.6 million dwarfing the $15.5 billion that industry leader Alcoa posted in 1998. Pechiney would control 29% of APA and the Algroup shareholders the remaining 27%. Alcoa's capitalization at $23 billion is still larger than APA's $19 billion. APA would have 91,000 employees with 159 facilities in North America, Europe, Asia and South America.

Alcoa countered the APA merger within hours offering $5.6 billion in stock and cash for Reynolds Aluminum. The company's combined revenues would be $21.6 billion. Alcoa had $15.3 billion in revenue in 1998 and has operations in 31 countries. It is the world's largest producer of alumina. Reynolds with $5.9 billion in revenue has operations in 24 countries and is best known for Reynolds Wrap aluminum foil. The combined company will have 123,500 employees in 315 operations in the United States, Canada, Brazil, Europe and other locations.

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