IDAHO MINING AND EXPLORATION, 2012

Virginia S. Gillerman, Idaho Geological Survey, Boise

NWMA, Spokane, WA
December 6, 2012
Non-fuel Mineral Production
Idaho 2011p: $1,287,203,000.
Idaho ranks 17th in the nation.
<table>
<thead>
<tr>
<th></th>
<th>3/2011-3/2012</th>
<th>$/Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining</td>
<td>2,254</td>
<td>$31.68</td>
</tr>
<tr>
<td>Mining Support</td>
<td>364</td>
<td>$31.44</td>
</tr>
<tr>
<td>Non-metallic</td>
<td>1,103</td>
<td>$18.89</td>
</tr>
<tr>
<td>Chem Manufact.</td>
<td>2,420</td>
<td>$26.03</td>
</tr>
<tr>
<td>Total</td>
<td>6,141</td>
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</tbody>
</table>
## Mining Taxes
### 2005 - 2006
*(Thousand of Dollars)*

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>5 YR TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property Taxes</td>
<td>$5,619</td>
<td>$4,428</td>
<td>$4,420</td>
<td>$4,456</td>
<td>$4,436</td>
<td>$23,459</td>
</tr>
<tr>
<td>Federal Royalties</td>
<td>2,997</td>
<td>2,009</td>
<td>2,413</td>
<td>2,452</td>
<td>4,136</td>
<td>14,007</td>
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<tr>
<td>State Royalties</td>
<td>2,991</td>
<td>1,862</td>
<td>3,233</td>
<td>4,382</td>
<td>4,259</td>
<td>16,727</td>
</tr>
<tr>
<td>Mine License Fees</td>
<td>370</td>
<td>3.563</td>
<td>3.555</td>
<td>1,259</td>
<td>675</td>
<td>9,422</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>$11,977</td>
<td>$11,862</td>
<td>$13,621</td>
<td>$12,649</td>
<td>$13,506</td>
<td>$63,615</td>
</tr>
</tbody>
</table>
Over 1.22 billion oz. Ag
PRODUCTION and EXPLORATION in 2012
Siemag - Tecberg hoist (Milwaukee, WI)

Hecla Mining Company

Lucky Friday #4 Shaft

<table>
<thead>
<tr>
<th>Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spent to Date (6/30/2011)</td>
</tr>
<tr>
<td>2011 (2nd Half)</td>
</tr>
<tr>
<td>2012</td>
</tr>
<tr>
<td>2013</td>
</tr>
<tr>
<td>2014</td>
</tr>
<tr>
<td>Anticipated Total Capital Requirements</td>
</tr>
</tbody>
</table>
Coeur Mine and Mill
500 tpd (Pb-Ag)

Galena Mill, 900 tpd (Cu-Ag)
Surface and Underground Drill Targets

Controlled by U.S. Silver

Approximately 9 Miles

- CDA "GAP"
- Western Coeur Mine
- Argentine Vein
- Deep Coeur Mine
- Deep Silver Vein
- Calady Mine Lead-Silver
Mill Expansion to 300-350 tpd

Paste fill for tailings disposal.
Thompson Creek Metals

2010 production: 25 million lbs. Mo

2011 production: ~ 23 million lbs. Mo
Thompson Creek Metals

Expansion to Phase 8
DEIS: Summer 2012 with final in 2013
Molybdenum Oxide Price

11.34 USD/lb
22 Oct '12

Infomine.com
Ore goes by truck to Elemental Phosphorus Plant at Soda Springs.

Exploration drilling at N. Caldwell Canyon.
Monsanto - Blackfoot Bridge Mine

ROD approved
June, 2011.
No legal challenges!!
Agrium: N. Rasmussen Ridge

DEIS in progress for Rasmussen Valley mine plan.

Exploration Drilling /mine plan Husky 1 lease.
Great Start: Dec. 2010 ruling by 9th Circuit Ct. OK to proceed mining in south lease area (Panels F & G).
Phosphate - feed for the future?

Paris Hills: Mineral Resource and Drill Hole Status

Lower Zone Resource Estimate

<table>
<thead>
<tr>
<th>Lower Zone</th>
<th>Tonnes (millions)</th>
<th>Grade (% P₂O₅)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measured + Indicated</td>
<td>19.0</td>
<td>30.6</td>
</tr>
<tr>
<td>Inferred</td>
<td>12.0</td>
<td>30.1</td>
</tr>
</tbody>
</table>

DRILL HOLE STATUS
- Completed for Resource Estimate
- Planned or in Progress for Future Resource Updates

RESOURCE STATUS
- Measured Resource
- Indicated Resource
- Inferred Resource
- BLM Mineral Rights Area

Source: Mineral Resource and Drill Hole Status as of November 17, 2011. Drill holes are shown at surface location. Center of resource circles shown are based on the drill-hole Lower Phosphate Zone intercept. Any difference between collar location and Lower Phosphate Zone intercept is due to down-hole drill-hole deviation.

Details on next page of this presentation.
2011 TRENDS

More stable than 2010.

Flat is good.

Still here is great.

Worry index still high.

3 Rivers flagstone
Ash-Grove Cement, Inkom, ID
Emerald Creek Garnet

- Production flat from 2010.
- Markets stable.
- Concurrent reclamation.
- Exploration up.
Production way down at L & W Stone Corp. quarry in Custer County.

Oakley Stone quarries down also.
Idaho Travertine

- Ted Orchard running company again; increased marketing.
- Medicine Lodge quarry active – “Continental Ivory” stone.
- Quarried ~ 50 truckloads for 2 jobs in California.
- Custom cutting facility in Idaho Falls.
Table Rock Sandstone

- Blasted in November; quarry in Boise.
- New business building at BSU.
- Gerhard Borbonus Landscaping and stone fabrication facility.

“Castle” on Warm Springs Ave., Boise
Hess Pumice
Malad, ID

For Gold Mines!

Wrights Creek mine

Idaho Minerals – Perlite
Bear River Zeolite (USAC)

Markets: Removal of radioactive contaminants, animal nutrition, water filtration, oil/gas well reagents, water treatment, fertilizer, etc.

2011 similar to 2010 – good year. Worked well for cleanup of Sr$^{90}$ at demo site in NY.

18 employees at Preston mine.
Energy Resources: Oil/Gas

IGS archives files from historic oil and gas wells in Idaho.

2010 Drilling by Bridge Resources, Payette County

11 wells total, near pipeline
Natural Gas in Idaho? Yes
Fracking? Hmm?

- Snake River Oil & Gas
- Bought out Bridge Resources, 5/2012
  - Hamilton Field
    - 5 gas wells
  - Willow Field
    - 2 gas condensate wells
  - Mini-fracking
    - 4 wells
You bet!
i-minerals: Bovill Kaolin

Product Applications

- **Feldspar** (KB) (PC):
  - glass, ceramics, paint, filler
- **Quartz** (KB) (PC):
  - decorative glass, paint, ceramics
- **High Pure Quartz** (KB) (PC):
  - lighting, sodium silicate, glass tubing, solar glass, LCD glass
- **Kaolin** (PC):
  - ceramics, filler, meta-kaolin (cement)
- **Halloysite** (PC):
  - Plastics, polymers, life sciences

Drilled WBL and Middle Ridge areas, processing tests, kaolin/halloysite contents, permits. Marketing critical.
United Silver: Crescent mine

PROPOSED SURFACE DRILLING
PROPOSED SPIRAL RAMP
(in footwall)
PROPOSED DRILL HOLES
New Drill Holes Positioned to Intersect the Down-Dip Projection of the South Vein

COUNTESS DECLINE
WILKIE INCLINE

SOUTH VEIN
ALHAMBRA VEIN

3D ROTATED VIEW (LOOKING NW)
SHOWING UNDERGROUND WORKINGS & PROPOSED DEVELOPMENT

SRK Block Model
Ag (ppm)
< 200
200 to 499
500 to 999
1000 to 2499
2500 to 4999
>=5000

Scale is approximate
Hecla Mining: Silver Valley Exploration

- Tamarack
- Hercules
- Tiger-Poorman
- Hecla
- Noonday
- Gold Hunter
- Lucky Friday
- Silver Mtn
- YLK/30 Vn
- Star-Morning
- Lucky Friday Expansion

- 314 M oz Ag
- 4.5 Mt Pb
- 2.2 Mt Zn

9 miles
Premium Exploration:
Orogrande Shear Zone

Buffalo Gulch Zone
Historic Resource
Indicated: 111,000 oz in 4.8 Mt @ 0.8 g/t Au
0.4 g/t cut-off
*see disclaimer

Deadwood Zone
Historic Resource
Indicated: 38,940 oz in 1.6 Mt @ 0.75 g/t Au
Inferring: 18,840 oz in 0.7 Mt @ 0.75 g/t Au
0.4 g/t cut-off
*see disclaimer

Monday and Friday Zones
NI 43-101 Resource
Indicated: 343,000 oz in 11.8 Mt @ 0.90 g/t Au
Inferring: 879,000 oz in 26.4 Mt @ 1.04 g/t Au
0.5 g/t cut-off

Lucky Strike Zone

Premium has ~ 44,000 acres under claim.

*Disclosure and Buffalo Gulch estimates of gold resources are historical in nature, produced and are non-compliant with NI 43-101. Premium is not treating the historical estimate as current mineral resources or reserves. Premium has not undertaken any independent investigation of the resource estimates, nor independently verified the results of the previous exploration work in order to verify the resources, therefore the historical estimates should not be relied upon.
2011: Phase 4 drilling
Friday Zone: 6,000 m in 18 holes.
Deadwood Zone: 4,300 m in 9 holes.
Buffalo Gulch: 330 m in 2 holes.
Formation Capital Corp.
Idaho Cobalt Project

- Permitting – complete; Construction – underway
- Financing - Recovery Zone Bonds
  - French BNP out; Bank of Montreal Letter of Credit for $43.6 million of bonds secured in November.
Smaller Projects

- Musgrove Minerals - Empire mine, 24 RC, 1 core hole
- Elissa Resources – Sage Creek, 4 DDH; REE claims
- Shoshone Silver/Gold, Rescue Mill
- Anglo-Bomarc, Hercules Ag mine
- Morning Star – Pearl District, DH
- U.S. Rare Earths – Lemhi Co.
- Placer mines
- Silver Falcon – War Eagle Mtn.
Midas Gold – Golden Meadows

Stibnite District

Drilling DMEA zone

Hangar Flats

Yellow Pine
Midas Gold – Golden Meadows

Golden Meadows Project
Yellow Pine Deposit
Section 26 NE

- 2.57 g/t Au/65.8 m
- 2.30 g/t Au/135.6 m
- 2.95 Au/15.8 m
- 1.59 g/t Au/96 m
- 2.21 g/t Au/242 m
- 2.21 g/t Au/19.8 m
- 1.27 g/t Au/9.1 m
- 1.00 g/t Au/13.7 m
- 0.82 g/t Au/9.1 m
- 0.86 g/t Au/51.2 m
- 1.24 g/t Au/26.8 m

Legend:
- 0.25 - 0.5
- 0.5 - 2.0
- > 2.0 g/t

Note: The map shows the distribution of gold (Au) concentrations in the Golden Meadows Project, with specific grades and depths indicated for various intervals.
Overview

Cumom is the largest un-mined molybdenum project in the world!

With the use of molybdenum in nearly every stainless steel product on the market today, the potential for this project is astounding.
With special thanks to Earl Bennett and to IGS for funding participation at NWMA this year. Prospecting tools there for a reason – 2011 saw return to prospecting and exploration across the state.

Metal price rises of last few years have resulted in record values for Idaho mineral production. Dip in 2009 due to recession. 2010 should be new record, near $ 1.2 billion. 2011 should be similar. Employment: ~ 2500 just for mining.

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New for 2012
According to the USGS, Idaho’s non-fuel mineral production total value was:
2010 – final numbers:
$ 1,183,105,000
2009 – final
$935,293,000
And PRELIMINARY value for 2011: $1,287,203,000
(published in MCS on web)
Which may well be a new record.
Idaho also ranks 17th among the states.
However, 2012 should be down substantially due to closure at Lucky Friday, lower ore grades and tons at Thompson Creek along with lower Mo price.
Employment in mining alone at end of 2011: 2547 jobs an 11% increase from prior year according to DFM. In 2010, metals were about 74% of value.
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Employment in mining alone at end of 2011: 2,547 jobs, an 11% increase from prior year according to DFM.
**Mine Taxation**

**BACKGROUND:** Idaho's constitution requires the state to balance its annual budget. Historically the state has accomplished this with taxes on individual and corporate income and on the sale of goods. Local governments and schools generally rely on local property taxes to fund their operations.

The mining industry is subject to all of these taxes. While the industry is exempt from paying sales taxes on production equipment, other equipment and goods used by the industry are subject to sales tax. Profitable enterprises must pay income taxes. Land, buildings and equipment are all subject to local property taxes. The value of a mineral ore body for local property tax purposes is determined under state law through the valuation of net profits. In addition to all of these taxes, the mining industry pays a mine license tax based on the net value of the minerals produced each year.
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Stats available at
http://www.idahomining.org/ima/idmining.html
As Earl said – it was a fantastic year in Idaho’s famous Coeur d’Alene District: hosted in PC Belt rocks; high grade siderite-quartz-sulfide veins. One of largest Silver Districts in world, with over 1.22 billion ounces of silver produced since 1884. Plus lead, zinc, and copper, and antimony. Lucky Friday and Galena mines at full production all year.

Hecla’s Lucky Friday mine at Mullan had very good year in production, but suffered two accident-related fatalities at the mine. Production from the Gold Hunter deposit, mined off the 4900 and 5900 levels continued on target to match 2010’s 3.36 million ounces Ag. Cash costs were up due to increased costs of fuel and other materials, but due to byproduct credits, remained below $6 per ounce. Major news was Board of Director’s approval in August for development go ahead #4 shaft expansion project. Shaft-sinking was ongoing after Board approved project in mid-year. Approximately $81 million has been spent to date. Completion estimated for end of 2014. Accident in early November involved 2 workers for Cementation contractor on the shaft.
Exploration at Lucky Friday mine proper focused on: 1. definition drilling and western extension to Silver Fault between 6000 and 6600 levels. And 2. center of resource at similar depths. Drilling upgraded resource in 30 vein system and others. Lots of structural blocks within Silver Fault zone and some high-grade intercepts (10 ft. of 18 opt Ag, 15% Pb, 4% Zn horizontal intercept at 7700 level) Will talk about district work later.

By November, approximately $81 million had been spent. Ultimate depth will be about 8800 level. Note current mining off 5900 and orebody in red extending down deep below that. Exploration drilling was continuing from the mine. Hecla also doing optimization studies on the mill. Setback Nov. 17 accident. Condolences to Cementation Inc. employer Brandon Lloyd Gray who died in the November accident. Long-time Hecla miner Larry Marek died in rockfall incident in April at Lucky Friday. From Dave Berwick, Hecla, 10/19/2011

The hoist was manufactured by Siemag Tecberg out of Milwaukee Wisconsin. This used to be Nordberg. The hoist is a 8 foot diameter, double drum with a 1000 hp AC drive. We will be able hoist 1,100 ore tons per day from the 8800 level shaft bottom.
Slide 15

2010 Production –
- 2.276 million oz. Ag
- 5.6 million lbs. Pb
- 1 million lbs. Cu

7-year 43-101 based mine life.
Exploration replaces production.
14,000 acre land position, favorable exploration targets.
237 employees in 2011.
Current 43-101 based mine life of approximately 7 years.

Slide 16

Excess Capacity
Galena Mill 900 tons/day and Coeur Mill 500 tons/ day = total capacity of 1,400 tons/day

Ores
2 ore types (silver-copper and silver-lead) have separate crushing, milling and flotation circuits

Recoveries
Consistent mill recovery rates of 96% for silver-copper and 92% for silver-lead ores

Smelters
Silver-copper concentrates railed to Quebec and silver-lead cons trucked to Trail, BC
Mining at Galena mine focusing on higher grade zones to increase head grades. Cash costs running about $16/oz. High. Trying to reduce those. One tool is using alimack raise machine as opposed to conventional wooden raises.

Multiple stopes: Ag-Pb veins and Ag-Cu veins. Mining on Silver vein, 175 vein, and 117 vein principally. Really beefed up exploration drilling to double 2010 levels.

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Currently have 2 surface drills doing exploration, 12,000 ft. program:
CDA Gap (above old CDA mine) on west side
Argentine Vein, above and below tunnel. Nothing yet at Western Coeur as may get it from underground.
Targets based on surface/mine showings; geochemical profiling, correlation between surface tetrahedrite and deeper silver vein systems.

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U.S. Silver has also initiated a surface drilling program and is diamond drilling the Argentine and Geraldine Veins, in Argentine Gulch, between the Galena and Coeur Mines. The two veins are the surface expression of the 2400 level, 290 Vein. One deep drill hole has been completed and is being processed, and a second wedge-off hole has been initiated. Additionally, U.S Silver is collaring diamond drill holes at the Coeur D’Alene Mine to explore extensions of known silver-copper bearing veins. Currently two
Drills are operating on the surface 24 hours a day seven days a week. A total of 2,200 feet surface exploration drilling has been completed.

2011 Drilling cont.
Drilling in 2011 continues U.S. Silver’s 2010 trend of identifying new silver veins as well as extensions of existing silver veins at the Galena and Coeur Mines. The best intersection encountered on the Coeur 3400 level (425 vein) was 8.2 feet (2.50 m) of true thickness averaging 25.1 opt (780.70 gpt) Ag and 0.58 % Cu. Since March 4, 2011, the best intersection encountered on the Galena 4000 level (West Argentine area, 260 & 284 veins) was 2.3 feet (0.70 m) of true thickness grading 44.33 opt (1378.82 gpt) Ag and 2.2% Cu. The best intersection on the Galena 5200 level (220, 196 and 230 veins) was 10.3 feet (3.14 m) of true thickness grading 26.0 opt (808.69 gpt) Ag and 0.93 % Cu.


Robert Higdem, 2010 208-783-2892 (Ext 202)
Putting together an exploration/development plan.
Dewatered almost to the 3700 foot level
Employ 29 people
Slide 20

Giving a tour in August, 2011
Hoist room looks cleaner than my kitchen.

Slide 21

New Jersey Mining operates this mill at Kellogg and a small underground gold mine, the Golden Chest, at Murray, north of the Silver Valley.

The Company has a joint venture with Marathon Gold Corporation at the Golden Chest gold mine near Murray, Idaho, and an ore processing joint venture with United Mining Group at its New Jersey mill near Kellogg, Idaho. The Company’s portfolio of mineral properties also includes: the Niagara copper-silver deposit, the Toboggan gold exploration project, the Silver
The mill construction is going ahead. We are pouring the ball mill foundation today and parts of the mill are arriving from Europe and China. We will close up the building after we hoist the ball mill in place, as we need to go thru the roof.

Fred
25th Anniversary of silver American Eagle. Conceived as way to make sure Idaho silver had good market. Over 275 million purchased since 1986 (source: Coin World)
Thank you Earl Bennett – who would be glad to examine any of your old coins, inc. American Eagles.

Huge Thompson Creek moly mine near Challis had great year. Finished mining stockpiled Ph. 6 ore in October and will transition to Ph. 7 ore near year’s end. Much of Ph. 6 ore higher grade, so greater Mo output. Much of year spent stripping off Ph. 7 overburden. About 375 employees. Ore Concentrate trucked to roaster in Pennsylvania.

Pit sequencing made 1st half better for ore than second half of year. Mine also did exploration drilling near the mine, while working on the EIS for expansion to Phase 8 by pushbacks of both high walls. Would extend mine life to 2025. Moly prices softening a bit late in year.
Denver's Thompson Creek Metals Co. on Wednesday announced it was suspending stripping activity on the upcoming phase of production at its Thompson Creek Mine in Idaho.

The company will continue its molybdenum mining operations through 2014 but will not restart stripping until market conditions for molybdenum improve. The suspension of future phases will save $100 million in operating costs and $8 million to $9 million in capital expenditures. The company also will reduce its mine workforce by 100 workers.

"As a result of continuing weakness and uncertainty in the world economy, we have decided to reduce our costs, strengthen our balance sheet, and conserve cash," said Kevin Loughrey, chairman and chief executive officer of Thompson Creek, in a statement released Wednesday.

The Thompson Creek Mine is expected to produce 20 million to 22 million pounds of molybdenum in 2013 and 17 million to 19 million pounds in 2014. If stripping is not restarted prior to 2015, cash costs are expected to be approximately $4.75 to $5.75 per pound in 2013 and $5.00 to $6.00 per pound in 2014, according to the statement.
Bucyrus 495 HR has about a 100-capacity.

Caterpillar 789 C truck has a capacity of about 195 tons and produces 1,705 HP.

30,000 tpd mill capacity.
Phosphoria and black organic shales enrich other elements: P, plus C, V, U, Mo, Se, etc. Selenium enriched in center waste shales and easily released if material is oxidized and has water flowing through old waste dumps, etc. Quite a problem.

Squares = plants
Ovals = mines (open pits)
Southeastern Idaho
3 companies

Though slightly lower than a year ago, phosphate fertilizer prices remain strong – and as long as world food production is a priority, phosphate, an essential ingredient of fertilizer looks good.
Mines: leases from feds and state, as well as private land.
3 companies, 3 plants: 2 fertilizer, 1 elemental (Monsanto, Roundup).
Plants employ 400 people each approximately.
Monsanto plant running at near-capacity, so demand pretty good.
Monsanto continued to mine on state and federal leases at the South Rasmussen mine. About 1 ½ years left. Doing concurrent reclamation. Note nice stratigraphy of Phosphoria Fm. Ore = black stuff.

BLM issued positive ROD in June 2011, approving mine plan, including use of geosynthetic liner cover for waste rock piles. Decision to approve did NOT receive any legal challenges and construction began in late summer. Photo: looking SW. Crushing/screening plant in foreground. 200,000 tons of -4” drain rock for base of large water management ponds. Dark area = Geogrid that drainrock goes on. Lower photo of CP2 pond liner installation.

Note that culverts to convey potential impacted seepage from EOP (east overburden pile) toe to CP2 lined pond. Water then to larger water management ponds. Major innovation was highly impermeable geosynthetic liner layer as cover to avoid infiltration of surface water into overburden piles. Project next to Blackfoot River. Designed around water management. Objective to avoid mobilizing any of selenium found naturally in the Phosphoria Fm., esp. waste shale.
Production expected in 2013.

Mining ended at Dry Valley mine in May. Stockpiles depleted in August, 2011, and company began backfilling and doing reclamation according to approved plan.

Rasmussen Ridge mine (South, Central, and North) has been mined since 1991 by Agrium/NuWest Industries. Started with South part and continued to north. 2003 – EIS approved to move to North Ras, but in 2004, Agrium acquired FMC’s Dry Valley mine and decided to move active mining down there. 2011 depletion at Dry Valley made N. Rasmussen Agrium’s sole ore source. Agrium needs ore for its phosphoric acid fertilizer plant at Conda. Future mine plans in to agencies for review – Rasmussen Valley area (extreme south end of Rasmussen
Ridge), and at Husky/N. Dry Ridge areas. Collecting baseline data and scoping on both. Anticipate DEIS release in 2012 for Rasmussen Valley.

Great Start: Dec. 2010 – ruling by 9th Circuit Ct. OK to proceed mining in south lease area (Panels F&G).

Smoky Canyon had great year – challenged by 200% snowpack start to year and waiting on Court cases. Started in December – just after last NWMA – with final decision by US Ninth Circuit Court of Appeals to uphold BLM/FS decision to allow mine expansion onto Manning and Deer Creek leases, according to approved plans. 2011 mining in Pit B and on Panel F (Manning Crk.) with backfill into Panel E. First of 4 pits on Panel F nearly complete.

87 milelong pipeline to deliver slurried phosphate from the mine to the Don fertilizer plant at Pocatello.
Slide 39

Tried to mostly mine Panel F while roadless issues (that would not affect pit B) were undecided. Doing some mining and reclamation on Pit B, shown here. Also worked on quality control plan for Dinwoody cover system and major drilling program at Dairy Syncline. Drilling mostly for geotechnical holes and groundwater monitoring more than for exploration and development ore control. Dairy Syncline will be next proposed mine for Simplot. BLM anticipates release of DEIS in 2013.

Slide 40

Stonegate Agricom, via its subsidiary, PHA (Paris Hills Agricom, Inc.) has been drilling in the far SE corner of Idaho near town of Bloomington. Several old, underground phosphate mines in Bloomington Canyon date from early 1900s. Drilling on BLM split estate lands, private and state since acquiring property in late 2009. Slides from corporate presentation of Nov. 29, 2011. Impressive amount of work including market analysis and drilling. Bear Lake County. NI 43-101 report available on their website. 881 hectares property.
Two phosphate-rich zones, similar to major mines further north. Paris Hills also hosts distinct V-rich bed right below the Upper zone. Both in horizontal and upturned limb of Paris Syncline. Paris started drilling in Sept. 2010 and continued through November, 2011. Drilling RC pre-collar and coring through Meade Peak Member, the Phosphate horizon. Assays shown here. Considerable adjustment and improvements in assaying and sampling procedures since initial work in area. At least 60 holes drilled for 16,000 m, of which 5,400 meters were core. Also doing metallurgical testing.
Quick look at a few of smaller industrial mineral operations. Long-lived and surviving even in recession. Rural economies need a few jobs in local communities.

Near Fernwood in Benewah County. Sandblasting, water jets, filtration 2011 and 2010: About the same as last year. One washing plant on Carpenter Creek. Doing concurrent reclamation and some exploration. Forest Service runs tourist garnet digs – going very well. 5000 visitors about.

Nov. 2009: Despite the poor economic conditions, WGI’s operations have returned positive results for the third quarter by improving production flows, managing expenses and
responding to customer needs. TGI, our supply partner in India, has increased production of garnet by bringing on capacity in Andhra Pradesh. This capacity is associated with TGI’s production of ilmenite. During the quarter the Company recognized its second brokered ilmenite sale of the year, after being absent from this market since 2004. The Company’s mining and processing facilities at Emerald Creek Garnet (“ECG”) in Idaho, U.S.A. has increased its productivity and lowered costs through more efficient processes despite the lowest sales levels of its range of products seen in the Company’s eighteen years of operations.

The Company hired a full time geologist in North America to work with the existing management team to identify mineral deposits and evaluate those deposits through drilling programs and other means deemed necessary to understand the geological characteristics and economics of those deposits. To date this work has been concentrated in areas around existing ECG mining. The Company has also retained a qualified person to prepare the necessary reports once economical deposits are confirmed. Today this project continues and the Company hopes to be able to report on its efforts in 2010.

Despite the poor economic conditions, WGI’s operations have returned positive results for the third
quarter by improving production flows, managing expenses and responding to customer needs. TGI, our supply partner in India, has increased production of garnet by bringing on capacity in Andhra Pradesh.

Idaho operations about the same but some reduction in employees and production due to costs and ore grades. Market still good but who knows when it will change. Biggest change was away from trommels to flat screens for more efficiency. Coeur d’Alene, Idaho, September 15, 2008 – WGI Heavy Minerals, Incorporated (WGI) (TSX: WG) today announced that it has completed the sale of its investment in Transworld Garnet India (Pvt) Limited (TGI). The sale consists of WGI’s 74% equity interest in TGI and the repayment of debt financing. WGI has repatriated from India US $4.85 million in cash for its 74% equity interest in TGI. (Sept. 2008) The sale marks the beginning of WGI’s three-year distribution agreement with V.V. Mineral covering garnet, ilmenite and other minerals that may be present in the beach sands mined by V.V. Mineral. The agreement provides WGI with an assured minimum supply of 60,000 metric tons of garnet annually, which is a significant increase over current production rates. Garnet grades and quality levels will be consistent with material currently supplied to WGI by TGI, and
additional quantities of garnet will be supplied as V.V. Mineral’s capacity expands. In addition,
WGI will act as a broker for the sale of V.V. Mineral’s ilmenite products.

Very low level of production at Three Rivers and also Ramshorn quarry inactive.
Three Rivers Quarry and its colorful flagstone is one of Idaho’s premier decorative rocks. Reportedly produced under half of its maximum output (30,000 short tons or so).

Three Rivers production about 22,000 tons in 2008 but only 15,000 tons estimated for 2009 (BLM). May be partly market conditions but also delays and work needed for EIS completion. Nearby Ramshorn quarry of local company Rockworks also active. Challis area
Ted Orchard and family regained their travertine company when 2008 owners did not take their option. Hopefully markets will improve. Very attractive stone and good cutting facility. Trying to get things up and running again. Photo is Potter County Courthouse, Texas.

2011 (Joe): Better than last 2 years. Paint market increased well. Record year for US Grout – Au mines. Seal leach fields and water percolation. Special grout is about 50% pumice and 50% cement. Superfine grind. Fixes concrete breaks, also in oil wells. 70 employees in Malad.

2010: Business picking up (except for stone veneer/housing market). Especially in electronics (personal computer boards – Cu boards cleaned and prepped by ultrafine pumice prior to applying laminate), also paint filler markets improving. Maintaining key workforce. US Grout – special
ultrafine cement – increasing sales to South American gold mines to reduce water infiltration.
Idaho Minerals – perlite sales also steady to slightly up.

2009: Business slow but hanging on. Any construction related market is just gone. Pumice production down 43% from prior year. Perlite only dropped 10% due to shutdown of competitor. Still have 60 employees. Did have layoffs. Used downturn to remodel plant for needed finer grinds for new uses, esp. filler markets. Also doing R and D on alkali-resistant concrete with pumice ingredient.


2007-Hess Pumice had good year with pumice market steady. About 10-15% of their production went to new Owens-Corning artificial stone plant constructed next door. Shut down recently due to softening in housing market. 30 people laid off. Not Hess employees. Owens will probably mothball facility.
Produced 180,000 tons of pumice in 2005. A lot is used into making lightweight aggregate for the new Owens Corning Plant built by Hess Pumice. The plant produces a trademarked cultured stone.
Idaho Minerals, also owned by Hess mines Perlite that is largely used for
potting soil. The perlite is processed at a new expander plant built by Hess at Malad. Perlite also steady in 2007. Canadian peat bogs mix it with their stuff. Also U. S. Grout.

J. Marvin Hess and son Michael J. Hess, owners of Hess Pumice Products, Inc.

From Mike Hess, 11/30/2006

BK Pumice is a new company started by a Hess employee who makes cosmetic products from pumice. This replaces the Italian pumice producers who used to have a lock on the cosmetic abrasive business. Italy is out of luck now as the UN declared the site of the main pumice mines a World Heritage site and shut the mines down. This allowed Hess to move into European markets. Owens Corning plant will probably expand next year. The company makes various products from cultured stone made from pumice and cement. TV tube polishing has moved to China and Hess has lost a lot of this business. There are no TV glass plants left in the U.S. Hess now has an office in London to capitalize on the loss of the Italian pumice producers. Hess built a new ultra fine grind plant for the European paint business and hopes to expand this into U.S. paint market. Hess now employs 115 people at their facilities.
2011: Normal. Same as 2010. International orders from animal feed up some. Bought new drill rig. 85% Clinoptilolite balance opaline silica
2010: Doing very well. 2010 production will be up ~ 30% over 2009. Aggressive marketing and new uses.
Adding VSI (vertical shaft impacter) crusher
2008-Bear River Zeolite (subsidiary of US Antimony) believes that its sales will be fifty percent higher for 2008 than they were during 2007. The higher sales are a result of a broader and more diversified customer base. Key markets include animal nutrition, water filtration, oil and gas well carriers for reagents, waste water treatment, soil conditioning, air filtration, and numerous retail products. Potential new uses include plastic food containers to adsorb ethylene gas that causes ripening and rotting of vegetables and fruits, a pozzolan for cement, oil and gas well cementing, and alkaline soil remediation. The Company has added a 60 inch vertical roller mill to its circuit that has increased capacity by 200 tons per day. Other improvements have included more product silos, a new semi-automatic packaging plant, increased quality control, truck scales, and more mine equipment. Bear River Zeolite is regarded as one of the finest zeolites in the world.

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ZEOLITE, (known as "La Rocka Magica" in Italy) is mined in southeast Idaho. Development of the mine and construction of the plant began in
2001 and sales commenced in 2002. Although the deposit has never been drilled, dozer cuts and outcrops indicate mineralization of more than 200,000,000 tons.

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Opened in 2001; USAC major owner
Sales/tons increasing
Adding new screens to up mill capacity
Aggressively pursuing new markets,
uses
Uses: water filtration & remediation,
animal nutrition, odor control, soil amendments, etc.

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5/04/2012- Snake River Oil and Gas has partnered with AM Idaho LLC, a Texas based exploration & production company, to purchase the assets of Bridge Resources and its former partner Paramax Energy. Bridge, now Idaho Natural Resources Inc. retains some interests in the original seven wells in Payette County that showed the state can produce natural gas commercially.

Last couple years, more interest in oil and gas potential in Idaho. IGS new search routine for information on historic (1903-1988) wells drilled. Files are archived in Moscow office.
2010 – Bridge Resources (JV with Paramax) announced commercial
quantities of natural gas in several wells drilled near New Plymouth in Payette County, western Snake River Plain – about 40 miles NW of Boise. Hosted in Tertiary basin-fill sands with some organic-rich shaly horizon source beds.

Lots of adverse reaction by public and local officials to news that 4 of the 7 commercial wells would need fracking. First commercial oil/gas discovery in Idaho. Very new thing to everyone. Bridge reservoir = sand, needs “mini-fracing” with additive of physical proppant for near well-bore stimulation in vertical holes. Much different than large-scale fracking in horizontal wells for shale reservoirs in Eastern and Mid-western US. Lots of media attention.

By November, financial difficulties – unrelated to Idaho project – forcing Bridge to sell its assets – mainly the Idaho field leases (now largely permitted). Still working on pipeline permits and facilities for connecting to pipeline.
2011 was a great year for exploration. Many of same large programs in 2010 were back to drill more footage in 2011. Precious metals – both Au and Ag – were main target. Also Mo, Co, base metals, REE. Already covered phosphate. Other industrial minerals – gemstones, clay/feldspar/quartz, diatomite (Grefco), garnet. Many small operators not on this map.

i-minerals continued exploring Bovil Kaolin property:

i-minerals did additional drilling to upgrade resource from inferred to indicated category. Have recognized locally significant concentrations of halloysite – tubular clay mineral used in modern nanotube applications. High unit value commodity. Preliminary Economic Assessment in Jan. 2011 – good economics.

United Silver Corp. (TSX: USC) is currently earning, through development and operations, an 80% interest in the Crescent Silver Mine project. United Silver Corp., formerly, United Mining Group. Other 20% held by Gold Finder Explorations Ltd., formerly SNS Precious Metals Inc. United Mining has spent $ 9 million on exploration and development work for that 80%. That work includes drilling and development of Countess Portal and underground work to evaluate the two vein systems – Alhambra and South
vein resources. In late 2010, project acquired additional claims – shown in yellow. Includes prospective ground off to west towards famous Bunker Hill mine and some to east close to Sunshine mine. South vein may be same as Yankee Girl in the Sunshine mine.

In mid-2011, company undertook strategic review of finances and project and announced it would temporarily halt pre-production operations and exploration while re-evaluating finances and economic analysis of resources. Graphic – one of many plans – but shows existing Hooper level, 2010’s Countess decline and two drilled out vein zones. Grades are high - + 20 opt Ag, mostly from tetrahedrite.


2010: When completed, our 2010 surface exploration program will total 20 diamond drill holes totaling 34,000
feet. The program commenced April 1 and we had three drill rigs operating through much of the summer. We will be drilling on the surface at least through the end of October. Additionally, we collected more than 2,000 soil samples along a grid extending from Mullan to Burke.

Our primary targets were the extensions of the Gold Hunter trend to the west toward the Star mine and to the east toward the Silver Mountain property. Additionally, we reopened the Upper Grouse 700 Level portal that accesses an LHD ramp into the Noonday veins in the Star upper country. Our surface drilling in the Noonday area, combined with underground sampling along the LHD ramp and sublevels, will support a resource calculation up dip from historic stopes. This area was last mined by Star Phoenix in 1990.

We are expanding our detailed 3D modeling to mines in the Burke area with the objective of defining additional drill targets in that area.
View of old Hecla shaft and Star mine complex, located in Burke Canyon. From inset: Star Zn mine connects to Morning mine – off to east trending towards Lucky Friday. Star-Morning mine (1891-1982) over 7900 feet deep and nearly a mile long produced over 71 million oz. Ag. Hecla rehabilitated Star 2000 level (10,000’ worth) to drill vein systems inc. Noonday, As You Like It, and others from ug. DOing surface drilling since June on Star mine veins. With favorable intercepts (18 ft. of 13 opt Ag, 22% Pb at Noonday). Will be doing underground drilling by December. District-wide soil sampling and geochemistry to explore other veins. Longer-term studies on deep Star mine – closed with million ton resource.

Newmont returned all its interest and all data in the Toboggan joint venture at Murray back to owner New Jersey Mining. New Jersey also retains its interest in Niagara silver-copper property.

In July, 2010, diamond drilling began on Toboggan joint venture of New Jersey Mining and Newmont, who is operator. Several specific properties, including the Gold Butte prospect, are located in an area of 38 square miles north of town of Murray. Last year’s drilling intersected a 7 g per ton gold intercept in silicified fault zone. Several holes were drilled – both core and RC. Scenic view is Toboggan Creek.
Near Elk City, Premium had another large drill project. Elk City/Orogrande area another of Idaho’s placer-dominated gold producing regions – over 800,000 ounces historic production. Recent exploration of area started in 1970’s and small open pit, oxide deposit permitted by Bema at Buffalo Gulch before gold price dropped in early 1990’s. Cyprus-Amx and Kinross did prior drilling on Orogrande Shear Zone, and Premium acquired property a few years ago. Aggressive exploration on regional-scale structure. Shear zone extends approximately 30 km. Friday/Petsite zone – focus of much drilling located around historic lode mines at Orogrande. Note lots of forests.
Friday-Petsite zone hosts NI 43-101 compliant resource, of 343,000 oz. Au indicated and 879,000 oz. Au inferred. Grades in 1 g/t range. Open to N and S. In middle of 25,000-meter drill program.

Orogrande Shear zone known locally as Friday fault. Other faults. Structurally controlled mineralization.

Photo of Shear Zone within Friday resource area. Near vertical shear foliations.

Orogrande Shear zone cuts Cretaceous granodiorite and older metamorphic rocks. Local intrusions of Eocene rhyolite to trachyte dikes. Mineralization – hosted in sheared to brecciated, phyllically altered granodiorite/qz.monz. And schist. Pyrite + asp, lollingite, galena, magnetite, hematite. Core is HQ, oriented with triple core tube, maximum recovery.

Persistence pays off and is needed. Formation Capital finally started construction on the two sites of its Idaho Cobalt Project. Permits for underground Cu-Co-Au mine in Blackbird Mining District, Lemhi County, received at end of 2009. 2011 - Working on financing and optimizing mine plan and block model and processing. Cash balance at end of 3rd Quarter, 2011, of $50 million.

Cobalt cons will be sent to Kellogg where the former Sunshine hydromet refinery (now Formation Metals precious metals refinery) is undergoing modification and expansion to convert to a cobalt hydrometallurgical operation.

Site preparation, shown here, at mine site started once the heavy snow finally came off. About 80% of dirt work is done, Pads in for concentrator, crusher, stockpiles, etc.. Underdrains and excavations done for tailings/waste facilities. Plan is to wait till spring to do most of concrete work and continue optimizing engineering over winter. Mine site is fairly high elevation.
At the Empire Mine project at Mackay, Musgrove Minerals completed 24 infill RC holes (over 14,000 feet) and 1 PQ core hole. Cu-Zn skarn with about 1 oz. Ag credits. Elissa Resources drilled 4 holes on stratabound gold target at Sage Creek property in Lemhi County. Also staked claims to explore rare earth prospects in Lemhi County.

2011: 40 core holes for about 9200 meters (30,246’), inc. 2 metallurgical holes at Kilgore. Epithermal gold-silver mineralization in lithic tuff associated with Tertiary rhyolites. Infill drilling of main Mine Ridge deposit – extended deposit to NW and SE along dike swarm (Northwest Fault). Much effort going back to old drilling and reinterpreting and standardizing logging (lithology and alteration) descriptions to redo geologic sections. Nearly done. New 3D geologic model. Otis – 64,000 feet of drilling in last 3 years. Additional 681 soil samples. Mineralization not closed off. Plan to do more metallurgy and next year baseline environmental work.
2011 drilling with 4 core and an RC rig, helicopter supported. 80 holes (16,000 meters) done by November. Assays slow. Gold intercepts similar to what shown on this section, 1-3 g/t Au over tens of meters. One of best is on this X-section: MGI-11-59 with 242 m @ 2.2 g/t Au. Structurally controlled along Meadow Creek Fault Zone. Local Antimony, tungsten and silver. Host rock is granodiorite and calc-silicate from roof pendant. Early stages of environmental baseline work and metallurgy. Midas was planning winter drilling program – but project slowed down after young field crew in serious injury accident on road to Yellow Pine in November.
Atlanta Gold had its largest program ever. Drilled 59 core holes, some fairly deep. Expanded and may be able to connect Monarch and East end pits. Structure still strong at depth. Plan update of 43-101 resource in 2012. Was about ½ million ounces. Also, contrary to some media reports, Atlanta is still talking with agencies to devise plan to remediate As-bearing mine discharge from 900-level workings.

Western Pacific exploring old Pegasus producer, Black Pine Mine area. Historic Tallman pit (Hg, Au). Idaho’s Carlin-style gold mine. Off interstate 84 in Cassia Co., just above Utah line. Modern discovery by Noranda, mined by Pegasus before they went bankrupt. Drilled 35 RC holes for 10,430 ft. Did 1,179 soil samples and rock chip samples and ran magnetics and gravity. Plan on more work next year to follow up geochem anomalies away from known pits.
Thunder Mtn. Gold – Evaluating 2010 results of drilling on intrusive breccia with skiff of gold, and two intercepts of high grade polymetallic mineralization from Laxey ug zones: LO-7 (25 ft. of + 8% Zn, 1 opt Ag) and LO-6 30 ft. of 4% Zn with Au and Ag. Both holes extend high grade skarn ore few 100 ft. below tunnel levels.

Terraco – Drilled Idaho-Almaden mine with 16 large diameter holes (HQ3) for 18,500 ft. Much better recovery. Finished in early Nov. Use split tubes inside core barrel. Less jumbling of core especially in highly fractured hot spring/epithermal system. As deep as 2000 feet. NI 43-101 resources total 948,000 ounces (measured, indicated, and inferred) or 48 million tons @ 0.020 opt Au. Confirmed other drilling and got results where no data from prior operators. Will be back in 2012. Hole TAL-751C with 90’ of 0.047 opt Au.

Thunder Mtn.: 2010: The last hole, LO 7, which was placed to test the down-dip extension of the Laxey ore shoot, intercepted 25 feet (600-625 feet) of 8.56% zinc and 1.15 ounce per ton (opt) silver. This intercept proves the extension of the Laxey ore zone approximately 120 feet below the maximum depth mined during World War II when over 51,000 tons of sulfide ore were mined and direct shipped to the Anaconda Smelter in Utah. The grade of this ore mined over the 800 feet of shaft and stope mining was 15% zinc, 10 opt silver, 0.06 opt gold, 2.3% lead and 0.7% copper.

Drillhole LO 6 was placed to test the
down dip extension of the historic DMEA 2 ore shoot. As previously reported, this hole proved the down dip extension of the sulfide mineralization to at least 415 feet below the Sonneman Level of the underground workings. This hole cut 30 feet (760-790 feet) of 3.55% zinc, 1.87 opt silver and 0.271% copper, and 15 feet of 0.06 opt gold internal to the 10 foot intercept.

Also seeking financing. Large porphyry Mo deposit. Prelim resource (43-101) is 2.14 billion pounds Mo oxide (indicated) plus another 2.34 billion pounds MoO3 inferred. About 2 billion tons. HUGE. Lots of legal battles with environmental groups likely.
Small staff at the Idaho Geological Survey had very busy year. Geologic mapping (Statemap and state-funded hydro project). Diamond Creek only active exploration area. Scott Furman joined IGS as new MSHA trainer (Mike Weaver at Hecla’s Greens Creek operation), AASG Geothermal Project, and others. Check out our website.

Final activity to mention for 2011: Belt Association (spear-headed by IGS geologist Reed Lewis) and colleagues sponsored weekend meeting and field trip in September. Excellent participation by many companies working in Silver Valley. Note silver-haired Earl Bennett, Dean of the Silver Valley. Home with the flu this year.