2015

- Horrible Commodity Prices.
- Large mine closed.
- Exploration companies in or near bankruptcy.
- Economic Slowdown in Asia.
- Politics and Terrorism.
- Permitting, etc.

IDAHO

- At bottom of supercycle, the only direction is up.
- Mine expansions; great rocks.
- Society still uses minerals.
- Discoveries still to be made.
IDAHO NON-FUEL MINERAL PRODUCTION (USGS)

**Total**

<table>
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<tr>
<th>Year</th>
<th>Million Dollars</th>
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<tr>
<td>2005</td>
<td>800</td>
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<tr>
<td>2006</td>
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<td>2014p</td>
<td>1300</td>
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<tr>
<td>2015p</td>
<td>1200</td>
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IGS Estimate
2011 Record Production: $1.32 billion for Idaho
2013 Production: $980 million
2014 Estimate: $1.2 billion
2015 Estimate: Much less due to moly mine closure.
2015 COMMODITIES

Gold Price
1,075.25 USD/oz
24 Nov 15

Mo Oxide Price
4.30 USD/lb
23 Nov 15

Silver Price
14.21 USD/oz
24 Nov 15

Zinc Price
0.69 USD/lb
23 Nov 15

Gold Price
1,340
1,200
1,100
1,000
900
800
700
600
500
400
300
200
100
0
Nov 3 2014
Jan 26 2015
Mar 14 2015
Aug 7 2015
Nov 2 2015

Mo Oxide Price
8
7
6
5
4
3
2
1
0
May 1 2015
Jun 19 2015
Aug 2 2015
Sep 15 2015
Nov 13 2015

Silver Price
22
20
18
16
14
12
10
8
6
4
2
0
Nov 3 2014
Feb 1 2015
May 27 2015
Sep 9 2015

Zinc Price
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
May 1 2015
Jun 18 2015
Jul 30 2015
Sep 11 2015
Oct 27 2015

InfoMine.com
EMPLOYMENT & WAGES

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<td>2,568</td>
<td>2,413</td>
<td>$ 68,021</td>
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<tr>
<td>Chemical</td>
<td>2,597</td>
<td>2,487</td>
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<tr>
<td>Manufacturing</td>
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<tr>
<td>Total</td>
<td>5,165</td>
<td>4,900</td>
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</table>

Multiplier Effect (+ 6300 workers indirectly tied to mining)

Standard US mining wages: $ 15 to 40/hr for unskilled to skilled labor.

Data Sources: Idaho DFM, Idaho Dept. of Labor
Over 1.24 billion oz. Ag

Check Out: **THURSDAY PM SESSION:**
“EXPLORATION IN NORTHWEST”
Lucky Friday mine

By October: ~ 2.5 million tr. ounces mined; 2015E ~ 3 mill. tr. ounces + Pb, Zn.

Replaced 2 large vent fans (3rdQ production). 

Mining 5900 level to 6300.

2016 is Hecla’s 125th birthday.
HECLA: DEEP ORE AND #4 SHAFT

30 vein, 5550 level, Lucky Friday

State Geologist Ed Ratchford
Top Station Silver Shaft, Sept. 2015
HECLA #4 SHAFT

- Final Depth 8600’
- Completion, Q4 2016
- 89% complete, $194 million spent (Q3, 2015)

18’ concrete-lined

Checking Ground, 8100 level
HECLA #4 SHAFT

Looking up at Draw Works from 8100 level
AMERICAS SILVER CORPORATION

- **Galena Mine Complex**
  + Coeur mine, Caladay
- Name Change - Scorpio Mining Corp., merger with US Silver & Gold late 2014.
- 2014: 1.6 mil. oz. Ag;
- 2015 Q3: 408,000 ounces, up 14%; cash costs down 23% from 2014.
- Silver-Lead Vein focus.
- 26,000’ Diamond Drilling UG - high grade intercepts.
GALENA MINE

2015 PLANNED PRODUCTION
PROPORTIONAL BUBBLE MAP

- Proportions are based on tonnes.
- Tonnages reported in units of tonnes.

Red: Silver/Copper
Blue: Silver/Lead

U.S. Silver & Gold Inc.
Americas Silver Corporation
BUNKER HILL VENTURES

- CEO Bob Hopper, Jr.
- Refurbish Mill
  - 150 ton/day mill
  - 2 million dollar investment
- Bunker Hill mine: Pb, Zn
  - Largest employer in state at one time.
  - Processing Stockpile:
    - March - October
Golden Chest mine
- Murray, Idaho (Au).
- JV NJMC and miners Juniper Resources (SMD).
- ~ 6.5 g/t gold Skookum Shoot.
- Processed 40,840 tons at 360 tpd mill in Kellogg.
- Pyrite Con and leach.
- Shut down and lease terminated 9/15.
- Falling gold prices.

NJMC commissions study and has option to acquire 100% of project.

Multiple improvements at mill.
CARE and MAINTENANCE

- Limited Stripping Phase 8 in 2015. Mill was operating as toll facility.
- Continued permits for new mine plan and 380-acre expansion. Awaiting BA.
- Mine expansion Phase 8; ROD in 2015 appealed by conservation groups.

Mo oxide spot price $ 4.90/pound (11/15)

2013: Nearly 21 million pounds Mo produced.

**WAS Economic Driver of Custer County** 2014: Produced 17.37 million pounds Mo before closed.
SE IDAHO PHOSPHATE DISTRICT

- Permian Phosphoria Fm.
- Meade Peak Member
- Phosphatic Black Shale

3 Producing Companies

Two Products:

- Phosphoric Acid Fertilizer
- Elemental Phosphorus
Elemental Plant at Soda Springs

2015: Mining North Pit, Blackfoot Bridge Mine

Drilling exploration holes at Caldwell Canyon

Reclaimed Pad at Caldwell Canyon
SIMPLOT

- Don Fertilizer Plant
- Smoky Canyon Mine
  - Mining (Panels B, F)
  - Site Prep (Panel G)

Smoky Canyon, Panel F, Oct. 2015, look NE

- Concurrent Reclamation
- Evaluating and Testing Cover Systems for Overburden Piles
- Mill upgrades (Don Plant) in Pocatello. Fertilizer Products.
April: Sentinels of Safety Recognition from NMA

New Hitachi 3600 Excavator
SIMPLOT 2015

Pole Canyon NTCRA, October 2015

East Smoky Panel, August 2015
~ 500,000 tons MAP, SPA Fertilizers per year
Mining finished in 2011

2 year reclamation project (Agrium)

Today the site is home to local wildlife and native plants

Land can now be used for recreation and grazing
AGRIUM – NORTH RASMUSSEN MINE

Panel B
Mining

Panel A,
Backfilling
AGRIUM – RASMUSSEN VALLEY EIS

- Ridge-Wide Reclamation Focus (RCA)
  - Eliminates Permanent External Overburden on Ras Valley
  - Places Excess Ras Valley Overburden in SRM Pit (old Monsanto mine)
  - Improves Ras Valley and SRM Reclamation

- Cap and Cover
  - Natural Cover Design
  - On-Site Materials
  - Easily Constructible and Durable

- Mine Ore Transportation
  - HR5 (Across Existing Impacts)

- Mine Backfill
  - Full 3:1 Backfill—No Open Pit Remaining

- Electrical Utilities
  - Diesel Generators
Objective: Minimize any Se issues and wetlands/groundwater disturbance
**INDUSTRIAL MINERALS**

- Decent Markets
- Status Quo
- Housing Industry Locally Improved
- Rural Locations
- Stable Operations
- Unknowns?
  - Sage Grouse Restrictions
  - Economy
  - Markets Very Competitive
- Latah County Clay Pits
- State Leases
- Multi-commodity
  + Clays (kaolin, halloysite)
  + Feldspar
  + Quartz
- Feasibility Study (2016)
  + (GBM Engineers LLC)
- Optimizing Processing Flow Sheets; markets
- Small drill program – density measurements
EMERALD CREEK GARNET

- Owned by: Opta Minerals Inc.

- Mining leases along St. Maries River floodplain. Former areas on Emerald and Carpenter Creeks.

- Use jig system in field to concentrate garnets; send to jig plant to wash.

- Good Year with full Production in 2015. Water jet blasting media markets up.

- Reclaimed 55 acres.

Carpenter Creek reclaimed after 1998 mining.
OAKLEY STONE QUARRIES

- Producers
  + Northern Stone Supply
  + Oakley Valley Stone
  + Sawtooth Stone
  + Scrivanich Stone
  + Other smaller ones

- Good Year

- Unique Product

Other Dimension Stone Producers:
- Idaho Travertine – worked with basalt
- Table Rock Sandstone
E & S MINING AND TRUCKING
HIGHWAY 20 PUMICE PIT

- Near Fairfield, ID
- Gold-colored pumice
- E & S Mining (Gooding) acquired pit from Mtn. West Products (Rexburg)

Products
  + Landscaping
  + Diamond Dust – for baseball diamond infields

“Moonstone Mine” Pumice
E & S Mining and Trucking

Offering the Finest Diamond Dust
for Infields and Materials for Hardscapes

Trusted Supplier of Pumice Stone, Decomposed Granite, & Diamond Dust

Get fine grade bulk materials at E&S Mining Trucking Co. Inc. in Gooding, Idaho. We mine and supply mineral aggregates such as granite, river gravel, and diamond dust.

Mining
We utilize surface mining techniques, particularly strip mining, in extracting rocks. We use a bulldozer to pull the overburden and strip the deposit from the side. We then send the rocks to the screen plant, where they are crushed into different sizes to serve various purposes.

Diamond Dust
Worry less about rainouts and focus more on the baseball match by topping your infield with our "diamond dust." It soak up water and allows rain to keep going. Because of its soft texture, players can safely slide across it. Also, it brushes off clean and won't leave stains on clothing. It also lines the baseball fields at the following schools:

Clarence “Bert” Covey and CAT 992G 24-ton Payload Loader.
HESS PUMICE PRODUCTS

- Malad, Idaho
- 80-100 employees
- Wrights Creek mine
- Multiple Companies:
  - Hess Pumice
  - Idaho Minerals/Hess Perlite
  - US Grout
  - Hess Pozz
- Unique, high purity pumice
- Market research

Ship Worldwide
Custom Specs
Concern over future sage grouse management restrictions and expansions?
Bear River Zeolite

- Preston, Idaho
- Subsidiary of US Antimony
- Sales up in Fall, 2015
- New 998 Loader,
- New Rock Truck
- Adding vertical shaft crusher
- Clinoptilolite
- Oil field drilling and ammonia control in mine water effluent
AGGREGATE - IGS WEB APP/DATABASE

http://www.idahogeology.org/webmap/
**Aggregate Material Sources**

**Web Application Content:** 250 properties (ITD)

### Property Details

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<td></td>
<td>Asphalt Plant Mix</td>
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### GEOLOGY

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<td>KNW</td>
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<td>Qasg</td>
<td>NR</td>
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<td>L.A. Abrasion/Wear (AASHTO T 96 or equivalent)</td>
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<td>Information compiled by IITD, district independent. For the Department of Justice (see separate Excel worksheets, but listed here as a single reference resource for brevity. See [Agency Alias] [District] to identify appropriate district for reference.)</td>
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**DD-9: Digital Database 9**

- Additional 750 properties verified from IDL, USGS.
- Specific Geology and Test Type/Results where available.
- Sourced references for all query returns.
- Designed flexibility for accommodating public and private interests.
- 2015 = Idaho’s first hydrocarbon production
  - Wildcat Discovery, Bridge Resources 2010
  - Willow Creek Field
- Alta Mesa Idaho
  - Production Mid-year 2015
  - Oil, gas, condensate
- New Plymouth, Payette Co.
- New applications to drill, Fall 2015

Tour with Idaho Petroleum Council, July 2015
ALTA MESA: 2015 ACTIVITIES AND ISSUES

- First Commercial Production
  + 5 commercial wells
  + 1 direct gas to town

- Gas to Langley Gulch Power Plant; Condensate to SLC

- Seismic Exploration

- Regulatory Work
  + Integration

Little Willow Facility, Jan. 2015 under construction

Highway 30 Facility
New Plymouth, Idaho

First Production August 1, 2015
- **US Geothermal** – Raft River Power Plant operating (13MW)
- **Walker Ranch LLC**
  - Agua Caliente (private parent co.)
  - Raft River Valley
  - 3 wells total
  - 2015 – new production well 27-14
- **Ormat** – Panther Creek Hot Springs (lease application)
WALKER RANCH – RAFT RIVER GEOTHERMAL PROJECT

Slim Hole – monitoring well
Also 3D Seismic

Recent Updates. New Web App

www.idahogeology.org

AEMA Booth 320 (USGS), Christopher Tate (Wed., Thurs.)

DD-1 (MPM) (early 2015)

8840 properties

Searchable Online

Links to scanned docs

Query on “tungsten”
Details for CH0127
Yellow Pine Pit
Stibnite
(over 300 scanned docs online)
EXPLORATION 2015

- Metal Markets Awful
- Downward Price Trends
- Global Slowdowns
- Fundraising Difficult
- Permitting Concerns
  - Lawsuits, Cost, Time
- Sage Grouse -
  - Mineral Withdrawal
  - Management Plans
- Good Geology and Small Miners

FUTURE: Emphasis on Restoration?
Many projects inactive; some companies in bankruptcy or simply out of money and conserving funds.

Examples:
- Premium (Orogrande)
- Terraco (Almaden)
- Western Pacific at Mineral Gulch (Black Pine)
- Thunder Mtn. (South Mtn.)

Good Projects Available

Exploration: Energy, Industrials, CDA covered
**FORMATION CAPITAL: IDAHO COBALT**

- Lemhi County
- Continued on care and maintenance
  - Environmental Compliance
- Fully permitted
- Cobalt markets showing signs of life
- **Positive PEA – April, 2015**
- Untimely death of former CEO Mari-Ann Green (Oct. 2015)

2013 Aerial Overview
**OTHER SALMON AREA**

- **Inactive:**
  - Lemhi Gold Trust – Ditch Creek
  - Musgrove
- **US Rare Earths**
  - Agreement with Oak Ridge for metallurgical work on Last Chance mine (MT)
- **Meridian** – water treatment
- **Placer Gold Mining**
- **Big Creek Area** – Golden Hand ROD signed in June but litigation underway *(American Independence)*.
New Project
Monitor mine – 1900s high grade Au-Cu south of CDA
St. Lawrence mine (MT)
Belt-hosted veins
15 core holes for 9000 feet
Plans for 2016
  + underground sample
  + Fire restrictions

Drilling Monitor and Richmond Veins, July 2015
BUSY YEAR on Au-Sb project (~ 4 million oz.).
Site characterization (POO, EIS for mine development):
+ Engineering optimization
+ Environmental baseline
+ Site restoration (legacy issues)
+ Solar power installation

2015 Environmental Excellence Award (IACI).
Public relations – 110 community events.

Planted 7000 trees
MIDAS GOLD – STIBNITE 2015

Core at Fern mine area

Auger drilling at SODA
Future gold miners at Midas’ event

Chris Dail and John Muntean studying high grade outcrop
Boise County
Huge Mo-Cu Porphyry
Supplemental EA for exploration: Received Oct. 9, 2015
Agreement with county for road access/maintenance
Evaluating engineering optimizations to cut costs (ex.: ore sorting)
Resource Update (Nov.)
ATLANTA GOLD

- **Atlanta District:**
  - Water Treatment Method
  - Provisional Patent Nov. 19, 2015 for As-removal
  - 3 years successes
  - Placed filter tanks uphill and to clean groundwater

- **Neal District, Elmore Co.**
  - Drilled 1989-90 (123 holes)
  - Granite-hosted Au veins
  - Mineral Point LLC
**ATLANTA GOLD/ MINERAL POINT LLC**

- **Neal District**

- **Trenching, September 2015**

- October, 2015, site visit

- **IDL Permit for 5-acre disturbance.**

- **8,000 ton stockpile on private land.**

- Trenching and sampling.

- **NEW: 125 samples average 0.4 oz/ton, with a few > 5 opt..**

- Looking at mine plan with later reclamation to sage grouse habitat.

---

Trenching, September 2015

October, 2015, site visit
Clark County, eastern Idaho

Young epithermal AuAg system

NI 43-101 resource 520,000 ounces from prior work, + inferred

Drilled 19 RC holes,

10,500’ total, 2 areas

Offset mineralization, NW part of deposit. Testing soil anomalies.
SMALL MINES

Trans-Challis working in the North Pearl District near Horseshoe Bend. Student-assisted mapping, geochemical sampling program.

Corby mine, Pine Creek, CDA

East Boulder Placer Exploration, Lemhi County
AML CLOSURES

War Eagle Mtn., Owyhee County
Illinois Central Shaft

Painter Mine,
Next to Salmon River above
Mackay Bar
IGS 2015 (WWW.IDAHOGEOLGY.ORG)

- **Statemap:**
  + Rexburg, Weiser-Boise, Salmon, Smiths Ferry

- **New Oil and Gas Geologist:**
  + Renee Breedlovestrout

- **New WEB Apps for Mining, Map Scans, Aggregate**

- **Stibnite**

- **FORGE**