UPDATE ON PRODUCTION AND EXPLORATION ACTIVITY IN NEVADA

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$400+/oz Au

Nevada is a great place to explore for and mine gold.
Gold Production, 1835-2002

- ‘49ers – 29 M oz
- Goldfield, Cripple Creek, and porphyries – 95 M oz
- Carlin and other Nevada deposits – 171 m oz

We are in the midst of the biggest gold boom in American history.
7.7 Moz in 2002, 81% of U.S. and 10% of world production
Minerals of Nevada
NBMG Special Publication 31
(2003, 512 pages)
$75 for a signed copy
(by December 31 –
www.nbmg.unr.edu)

Gold, Round Mountain
Opal, Virgin Valley
Major Mines, Oil Fields, and Geothermal Plants

24 major gold mines (44% from the Carlin trend; 8 not on the trend with > 100K oz)
Section by Steve Moore & others, Newmont, NBMG Bulletin 111 -
Gold Deposits of the Carlin Trend, edited by Tommy Thompson, Lew Teal, and Dick Meeuwig (204 pages, with detailed geologic maps and sections – $35 from www.nbmg.unr.edu)
MINING CEASED
(with residual production from heaps in 2002) at

Echo Bay’s McCoy/Cove operations in Lander County
Kennecott’s Rawhide mine in Churchill County
Barrick's Ruby Hill mine in Eureka County
Placer Dome resumed production in 2002 at its **Getchell** operations in Humboldt County, in April of 2003 announced startup of the **Turquoise Ridge** underground mine (with full production of 300,000 oz Au per year is expected by November of 2004), and will JV with Newmont to mill the ore at their nearby Twin Creeks mine.
Metallic Ventures Gold Inc. plans to produce from the high-grade Martinez and Prospectus veins at Aurora (Esmeralda Project in Mineral County) – 350 ton per day mill, full production expected in 2004.
U.S. Gold Corporation and BacTech Environmental Corporation say that gold production is targeted for 2004 at the Tonkin Springs mine in Eureka County – using a bioleach technology.
Newmont’s Gold Quarry South Layback – scheduled to produce in the 4th quarter of 2003, ramping up to a rate of 420,000 to 440,000 oz Au/yr.
Round Mountain Gold is filing a plan of operations with BLM for a new open pit at Gold Hill, north of Round Mountain. A feasibility study is planned for early 2004.
Planned New Production

Phoenix Project

(Newmont)

6.03 million ounces of gold (reserve)

515 million pounds of copper (reserve)

Planned production for 2008:

415,000 ounces of Au/yr,

2.2 million ounces of Ag/yr, and

28.8 million pounds of Cu/yr
Planned New Production

Expansion fully underway at Marigold mine

When new production is phased in (in 2005), production will rise from about 75,000 oz Au/year to about 180,000 oz Au/year.

Millenium Project
(Marigold JV of Glamis Gold Ltd. & Barrick)
south of the Marigold Mine, Humboldt County

MEASURED AND INDICATED RESOURCE:
71.6 million tons @ 0.031 opt = 2.22 million oz Au

INFERRED:
94.7 million tons @ 0.022 opt = 2.06 million oz Au

RESERVE AT $275/oz:
50 million tons @ 0.033 opt = 1.57 million oz Au
Planned Production
Leeville Underground
Newmont Mining Corp.

production scheduled for 4th quarter of 2004
(500,000 to 550,000 oz Au/yr for 7 years from
3 deposits—West Leeville, Four Corners, and Turf)
2002 Gold Production Per Unit Area

- Nevada: 828
- South Africa: 323
- Peru: 108
- Indonesia: 89
- Australia: 34
- USA: 31
- China: 18
- Canada: 16
- Russia: 10

Metric Tons Per Million Square Kilometers

Worldwide average (17)
Gold from Water (and Other Mining Scams) – NBMG
Special Publication 22
(www.nbmg.unr.edu – free on the Web)

Report suspected scams to the Nevada Division of Minerals.
Fly Ranch Geyser, Washoe County

NBMG Map 141 ($16 or free at www.nbmg.unr.edu)
Equatorial Mining received a $157 million judgement against Kvaerner US for damages as a result of misrepresentation and professional negligence regarding a feasibility study at the company’s copper mine near Tonopah.
gently dipping quartz veins
Refolded, metamorphosed Proterozoic sedimentary rocks and Cretaceous sills and dikes

In July, 2003, Golden Phoenix Minerals Inc. announced resumption of operations at the Mineral Ridge Mine in the Silver Peak district, Esmeralda County. The company announced the first gold pour in September. Target production for the first phase of the operation is 1,000 ounces of gold per month.
Pre-ore-stage quartz-pyrite vein with muscovite selvedge
Gold-bearing calcite vein cutting Miocene dike
Li brine ponds, Clayton Valley

gently dipping quartz veins
So far in 2003 exploration activity has been reported in 63 of the 526 mining districts in Nevada, up from 55 in 2002 and 42 in 2001, but still less than 92 in 2000 and 107 in 1999.
DISCOVERIES

Glamis Gold Ltd.

• Terry Zone North (TZN)
• Section 7 of the Marigold Mine
• Additional $1M authorized for exploration
• Mineralization is deep but oxidized and above the water table
• Amenable to run-of-mine heap leaching
• Scoping study to be completed this year
DISCOVERIES

Cortez Joint Venture

- “E.T. Blue” gold deposit in Horse Canyon “corridor”
- Cortez Hills gold deposit 7 miles from Pipeline
- Pediment deposit 800 m south of Cortez Hills
- Later two are in oxidized material
- Cortez Hills contains 4.5 M oz measured and indicated and 1 M oz inferred Au
NEVADA EXPLORATION SURVEY 2002

• NDOM ninth annual survey
  – Level of exploration activity
  – Factors influencing these levels

• Exploration and mining companies with projects or claims in Nevada

• 33 respondents from 105 questionnaires
  – All exploring for precious metals
SURVEY TOPICS

- Exploration expenditures
- Geologists employed
- Number of claims held
- Breakdown of exploration expenditures
- Factors influencing activity
- Type of reserve replacement
- Overall attitude toward exploration
NEVADA EXPLORATION EXPENDITURES 2002

Expenditures in Dollars

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TOTAL EXPLORATION SPENDING 2002/2003

Dollars (Millions)

Actual 2002
- Nevada: 23.6
- Rest of U.S.: 64.6
- Rest of World: 308.8

Projected 2003
- Nevada: 10.5
- Rest of U.S.: 69.4
- Rest of World: 337.4

TOTAL EXPLORATION SPENDING 2002/2003

- Nevada: 23.6 + 10.5 = 34.1
- Rest of U.S.: 64.6 + 69.4 = 134
- Rest of World: 308.8 + 337.4 = 646.2

TOTAL: 34.1 + 134 + 646.2 = 814.3
AVERAGE SPENDING 2002/2003

Dollars (Millions)

ALL RESPONDENTS

RESPONDENTS >$1M

RESPONDENTS < $1M

Nevada
Rest of U.S.
Rest of World
EXPLORATION GEOLOGISTS EMPLOYED IN NEVADA 2002/2003

ALL RESPONDENTS

RESPONDENTS >$1M

RESPONDENTS <$1M

Number of Geologists

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0 20 40 60 80 100 120 140 160

EXPLORATION GEOLOGISTS EMPLOYED IN NEVADA 2002/2003
10,489 new claims were filed in Nevada in 2003, compared with 4,472 in the same period in 2002 – an increase of 135%.
FACTORS INFLUENCING ACTIVITY 2002
ALL RESPONDENTS

- Existence of Favorable Geology
- Commodity Prices
- Announcements of New Discoveries
- Length of Permitting Timeframes
- Uncertainty of Permitting Timeframes
- Mining Law Reform
- Federal Claim Maintenance Fees
- Changes in Foreign Law
- Land Exchanges/Withdrawals
- WSAs / ACECs

Level of Importance

- NOT MUCH
- SOME
- A GREAT DEAL
OPTIMISM INDEX 1994-2002

- COMPLETE OPTIMISM
- INCREASING OPTIMISM
- NEUTRALITY
- INCREASING PESSIMISM
- COMPLETE PESSIMISM

Legend:
- Green line: All Respondents
- Red line: Respondents >= $1 M
- Yellow line: Respondents < $1
SUMMARY

• Higher spending and employment and more new claims filed in 2002 than in 2001
• Nevada exploration expenditures projected to increase 7% from $64.6 M to $69.4 M
• Worldwide exploration to increase 5% from $397.0 M to $417.3 M
• Exploration geologists employed in Nevada to rise from 128 to 140
SUMMARY

• 74% of budgets spent on direct exploration expenditures
• Number of claims held in Nevada has stabilized at 89,000
• Most important factors influencing activity continue to be favorable geology and commodity prices
• Domestic exploration - 65% optimistic, 19% neutral, and 16% pessimistic
Nevada is a great place in which to explore for and mine gold, silver, and other mineral commodities.
Ten Top Reasons to Explore in Nevada

1. Great geology and potential
2. Many large producing mines, including high-grade, underground mines
3. Mines operated by the leading international companies
4. Regulatory system with recent examples of rapid permitting and recent changes that favor mining

5. Excellent infrastructure (roads, drillers, supplies, assayers, hotels, etc.)

6. Large areas open to exploration on BLM lands
7. Dry climate and year-round access in many areas
8. Network of knowledgeable exploration geologists, organizations, and agencies (Geological Society of Nevada, Nevada Mining Association, Nevada Division of Minerals, Nevada Bureau of Mines & Geology, Ralph J. Roberts Center for Research in Economic Geology and other units of the Mackay School of Earth Sciences and Engineering, building on the tradition of the Mackay School of Mines)
9. Recent discoveries and new mines
Ten Top Reasons to Explore in Nevada (continued)

10. No malaria, black flies, moose, polar bears, or crocodiles (just elephants).