NEVADA BUREAU OF MINES AND GEOLOGY 2005

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NEVADA GOLD – 1993 to 2004

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Mining Activity Update

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This information should be considered preliminary.

It has not been edited or checked for completeness

or accuracy

Introduction

The performance of Nevada's gold mining industry was investigated for the period January 1993 to December 2004. Operating mines and exploration projects were analyzed on a yearly basis to determine the extent that mine output was replaced by exploration success. Variations in total mining industry activity are presented to provide a separate, relative measure of Nevada's gold mining industry.

The 10-year period from 1993 to 2002 was marked by erratic but generally lower trending gold prices and a less favorable regulatory climate for mining and exploration projects within the United States. In contrast, positive political developments primarily in Latin America resulted in that geographic region being viewed more favorably by the minerals industry. Finally, in the mid to late 1990s, a strong technology sector of the North American economy appeared to have siphoned some venture capital that traditionally was invested in the mining industry.

The 2-year period from 2003 to 2004 saw a revival in industry activity in close correlation with an increasing gold price. Other factors ,such as the collapse of the "dotcom" industry in late 2000 resulting in more available venture capital for the minerals industry, the weakening U.S. dollar, and the emergence of China and India as major consuming countries, has led many to speculate that a growth period for the mining industry is presently at hand.

Nevada Activity

Press releases document each company's significant achievements to their stockholders and investing public. They may relate to a new property acquisition, new drill results, new reserve and/or a resource calculation or other activities that are of importance to the company. Appendix A is a tabulation of +1,800 press release summaries catalogued for the period 1993–2004. Although not considered to be a complete archive of all releases that relate to Nevada during the study period, the tabulation is considered to be a uniform sampling of the major events over the period.

A graph of mining industry activity for Nevada (Fig. 1) as defined by the number of catalogued news events displays a nearly horizontal line from 1993 through 1997. Since then, activity levels have declined roughly in sync with the price of gold recording a low in early 2002 at a level one-third that of the peak in mid 1997. At the end of 2004, activity levels had improved by roughly 50% from the early 2002 low.

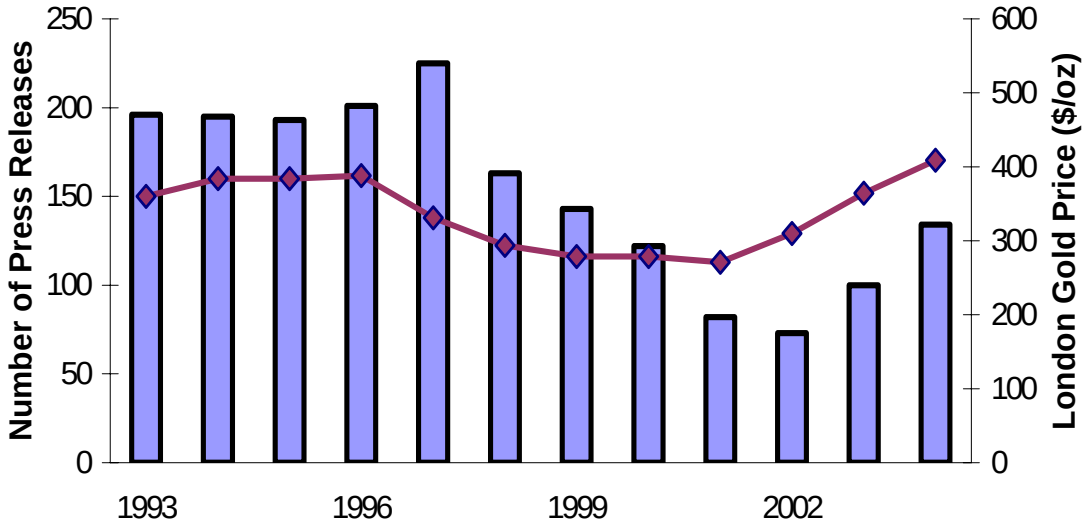

Figure 1. Nevada mining industry activity (bars) and London gold price (line).

Operating Mines

There are 25 to 30 operating mines in Nevada that report some yearly gold production (Appendix B). Table 1 is a summary of gold production and total resource changes for those mines that produced over 30,000 ounces at some point of their life. Several of the companies do not report a total resource for their operating properties; therefore a proven and probable reserve figure was substituted in Appendix B.

Table 1. Production and total resource changes for Nevada's major gold mines.

Year	# of Operations	Total Resource (ozs Au) Net Change	Production (ozs Au)
1993	21	+486,525	6,152,200
1994	22	+6,560,480	6,644,390
1995	21	+3,233,480	6,499,760
1996	23	+6,966,035	6,668,960
1997	25	-19,101,520	7,631,330
1998	23	-9,099,520	8,355,065
1999	21	-6,582,190	8,021,430
2000	19	-14,370,740	8,535,020
2001	18	-9,398,360	7,884,540
2002	17	-2,454,400	7,527,670
2003	17	+3,981,290	7,376,670
2004	17	+1,046,310	6,988,310

The number and specific mix of operations examined in Table 1 varied from year to year due to a variety of reporting complications but primarily mine openings and closings. A summary list of major events for the operating mines follows:

1993 March – Twin Creeks Mine start-up.
May – Paradise Peak Mine closed.
All autoclaves commissioned for Goldstrike Mine.
June – Lone Tree Mine start-up.
November - Candelaria Mine start-up.

1994 September - South Pipeline Mine start-up.
October - Gold Bar Mine closed.

1995 March – Pipeline lawsuit settled.
June – South Pipeline suit settled.
August – Getchell open-pit closed.

1996 September - Meikle Mine became operational.
Getchell and Turquoise Ridge reserves combined for reporting.
Sleeper Mine closed.

1997 January - Daisy Mine became operational.
February - Dee Mine closed.

March - Pipeline Mine became operational.
Cortez, South Pipeline and Pipeline reserves combined for reporting
April - Candelaria Mine closed.
Rosebud Mine became operational.
November - Archimedes Mine became operational.

1998 March – Pinson Mine closed.
October - Olinghouse Mine became operational.
November - Bullfrog Mine closed.
December - Midas Mine became operational.

1999 February - Barrick/Newmont Carlin land exchange.
Hycroft Mine closed.
August - Olinghouse Mine closed.
December – Mineral Ridge Mine closed.
Getchell Mine closed.

2000 January - Daisy Mine closed.
July - Getchell/Turquoise Ridge reserves downgraded to a resource.
Rosebud Mine closed.
October – Dee Mine closed.
December – Archimedes Mine closed.

2001 January – Deep Post OP Mine closed.
May – McCoy/Cove Mine closed.

2002 January – Rodeo Mine start-up.
November – Archimedes Mine closed.

2003 June – Turquoise Ridge Mine became operational.

2004 February – Rawhide Mine closed.

As shown in Table 1, operating mines were able to replace production with new reserves and/or resources in 1993–96 and 2003–04. The period 1997–2002 was characterized by significantly lower gold prices and, as a result, many mines raised the cut-off grade for defining a reserve and/or a resource accordingly. Invariably, a higher cut-off grade generally leads to a decrease in the total ounces identified at a specific property.

Throughout the 12-year period under study, only five operating mines were able to completely replace production ounces with newly discovered and announced ounces. They are discussed in summary below.

CORTEZ COMPLEX – Placer Dome(60%)/Kennecott(40%)
1993–2004 = 10.4 MM ounces added to total resource.

The Cortez Mine has operated nearly continuously since the early 1970s. The Pipeline deposit was discovered in 1991 under 100–250 feet of alluvium during condemnation drilling in a designated expansion site for the Gold Acres heap-leach pads. The South Pipeline deposit was discovered in 1992 by drill holes designed to acquire hydrologic data for dewatering studies of the Pipeline deposit. It also is located below 50–150 feet of alluvium roughly 1,500 feet south of the Pipeline discovery. Both deposits subsequently became the subject of litigation, which was

finally resolved in March and June 1995. The ensuing exploration effort then resulted in the expansion of the Pipeline/South Pipeline deposit cluster with new discoveries. The average grade for the combined property has decreased from 0.100 opt Au (1995) to 0.035 opt Au (2002), but an increase to 0.047 opt Au (2004) was noted when the Cortez Hills discovery was incorporated into the Cortez Complex reporting data.

CARLIN UNDERGROUND – Newmont Mining Corp. (100%)
1994-2004 = 4.9 MM ounces added to the total resource

Newmont began underground production along the Carlin trend in 1994 at the Deep Star Mine. Subsequent underground production was obtained from the Deep Post Mine (1996), the Rain Mine (1997), the Carlin Mine (1996) and the Chukar Mine (2002). Production from the new discoveries along the Leeville Corridor is expected in 2006 (ex. Leeville and Turf). As Newmont's open-pit mine production from the Carlin Trend decreased, underground production gradually increased until it now accounts for roughly 42% of Newmont's Carlin trend total.

MARIGOLD MINE – Glamis Gold (66.7%)/ Barrick Gold (33.3%)
1993-2004 = 2.1 MM ounces added to total resource.

The Marigold Mine has operated throughout the period under review with yearly production being replaced essentially in balance with new reserve additions. The average head grade has diminished (0.034 opt Au in 1993 and 0.023 opt Au in 2004) but the reserve/resource tonnage expanded greatly in 2003 with the inclusion of the Millennium deposit discovery. Lower cost, bulk-mining methods are now being investigated.

BALD MOUNTAIN – Placer Dome Inc. (100%)
1993-2004 = 1.1 MM ounces added to the total resource

Placer Dome Inc. acquired extensive land holdings in the general vicinity of their Bald Mountain Mine from USMX Inc. in 1993-94. Subsequent exploration on the combined properties has allowed the reserve base to expand ahead of the mine's production rate albeit at ever decreasing average head grades. (0.046 opt Au in 1993 and 0.030 opt Au in 2004)

GETCHELL - Placer Dome (75%)/Newmont Mining (25%)
1993-2004 = 0.9 MM ounces added to the total resource

In 1993, the Getchell Mine consisted of underground and surface open-pit production from mineralization hosted along the Getchell Fault. The Turquoise Ridge deposit was discovered in 1994 at a depth of +1,000 feet roughly 1,800 feet to the east. Underground development at Turquoise Ridge proved difficult and the Getchell/Turquoise Ridge Mine was closed in 1999 pending further studies. The mine re-opened in 2003 under Placer Dome Inc. ownership.

Exploration Projects

Exploration projects are non-operating properties that are in the process of being evaluated with new drill results. Once sufficient success is achieved and mine exploitation is attempted, they are no longer considered in this section of the report. Unfortunately, some exploration projects are difficult to track from year-to-year due to the following:

- Many exploration projects are located near operating mines owned by the same company. Periodically, the reserve/resource data as reported for the exploration project is merged with the reserve/resource data for the operating mine (ex. Cortez Complex, Carlin Complex,

Getchell Mine). This analysis attempts to differentiate between the two so gold ounces are not counted twice (once as an exploration project and subsequently as it is incorporated into the operating complex).

- Some exploration projects are announced as a "new discovery" whereas drilling prior to 1993 may have identified a preliminary resource not compliant with the present, generally accepted stock-exchange resource definition. Whenever possible, the old resource figure was retrieved and used as a base for this analysis.
- An announced "new discovery" can be based on new drill results but also can be based primarily on the employment of a lower cut-off grade. Large, low-grade resources therefore look impressive but may have no economic significance. This analysis includes the new resource figure without bias.
- Exploration discoveries that eventually become an operating mine can, at times, fail due to the use of overly optimistic assumptions in the development plan. This section examines exploration success as announced prior to mine operation and does not take into account errors that were revealed at the mine start-up phase (poor continuity of the mineralization, incorrect assays, poor sample quality, etc.).

In theory, a direct measure of exploration success can be obtained from the press release archive. A total of 127 news releases were identified where some change in the resource for a non-operating project was documented (either increase or decrease). Table 2 displays the number of exploration projects where a resource change was announced as well as the aggregate resource change for all projects during the corresponding year. It reveals that the number of projects remained essentially constant throughout 1994–98 with exploration success averaging roughly 7.6 MM ounces/year. Since 1998, the number of projects declined sharply and exploration success declined to 3.5MM ounces/year.

Table 2. Total resource changes for Nevada exploration projects.

Year	Number of Projects	Resource Change (ozs Au)
1993	10	+6,044,730
1994	20	+6,768,780
1995	17	+8,570,320
1996	17	+6,582,390
1997	16	+9,276,800
1998	12	+6,756,680
1999	5	+7,997,960
2000	7	+2,099,450
2001	6	+4,736,460
2002	5	+3,828,570
2003	5	+1,199,320
2004	7	+2,442,890

Nearly all of the exploration projects experienced multi-year resource revisions based on new drill results. When the complete record is assembled, only the 26 projects listed in Table 3 experienced a positive growth of more than 500,000 ounces. The locations of these projects are shown in Figure 1.

Table 3. Nevada Discoveries 1993–2004.

#	Deposit	Ozs. Discovered	Discovery Date	Owner
1	Rodeo	10,112,630	1997	Barrick Gold
2	Turquoise Ridge	7,831,390	1993	Getchell Gold/Placer Dome
3	Phoenix	6,383,960	1994	Battle Mtn Gold/Newmont
4	Cortez Hills	5,524,200	2001	Placer Dome/Kennecott
5	Sleeper	4,975,680	1996	X-Cal Resources Ltd.
6	Converse	4,440,300	1997	Metallic Ventures/Newmont
7	Midas	4,020,000	1995	Franco/Euro Nevada
8	High Desert JV	3,173,940	1994	Barrick Gold/Newmont
9	Leeville	2,576,670	1994	Newmont Mining
10	Millennium	2,316,600	2000	Rayrock/Glamis Gold
11	South Pipeline	1,827,530	1992	Placer Dome/Kennecott
12	Goldbud/Barrel	1,532,620	1994	Newmont Mining
13	Pony Creek	1,361,970	2003	Mill City International
14	Archimedes	1,360,800	1995	Homestake Mining
15	Shaft	1,329,600	1996	Getchell Gold
16	Mule Canyon	1,313,030	1993	Santa Fe Pacific Gold
17	Rossi/Storm	1,121,600	1997	Meridian Gold
18	Daisy	1,080,800	1994	Rayrock/Interrock
19	Pediment	1,056,000	2002	Placer Dome/Kennecott
20	Turf	928,880	1996	Getchell Gold
21	New Deep/Gracie	905,300	1993	Minorco/Meridian
22	Olinghouse	820,200	1993	Phelps Dodge
23	Meikle	671,400	1993	Barrick Gold
24	Limousine Butte	620,740	2002	Nevada Pacific Gold
25	Crossroads	554,400	2000	Placer Dome/Kennecott
26	Mountain View	526,500	1995	Canyon Resources

Several of the gold discoveries deserve specific mention due to their magnitude and geologic setting. The specifics for each property may also be a model for future discoveries.

RODEO - Barrick Gold Corp.
1997–2000 = 10.1 MM ounces added to the total resource

The Rodeo Deposit is located midway between the Meikle and Goldstrike mines within the central portion of the Carlin trend. Successful exploration by Barrick Gold in 1997 identified the deposit, but it was not until a land exchange with Newmont was completed in February 1999 that a major resource increase was reported.

TURQUOISE RIDGE - Getchell Gold Corp./Placer Dome Inc.
1993–2001 = 7.8 MM ounces added to the total resource

The Turquoise Ridge Deposit was initially discovered in 1993, at a depth of over 1,000 feet, roughly 1,800 feet east of the main Getchell mineralized zone. Subsequent deep drilling resulted in the discovery of the Shaft Zone (south), the “A” Zone (west), the Bud Hill Zone (southwest) and the “N” Zone (north). Owner FirstMiss Gold was reorganized in 1995 to form Getchell Gold Corp., which then merged with Placer Dome Inc. in 1999.

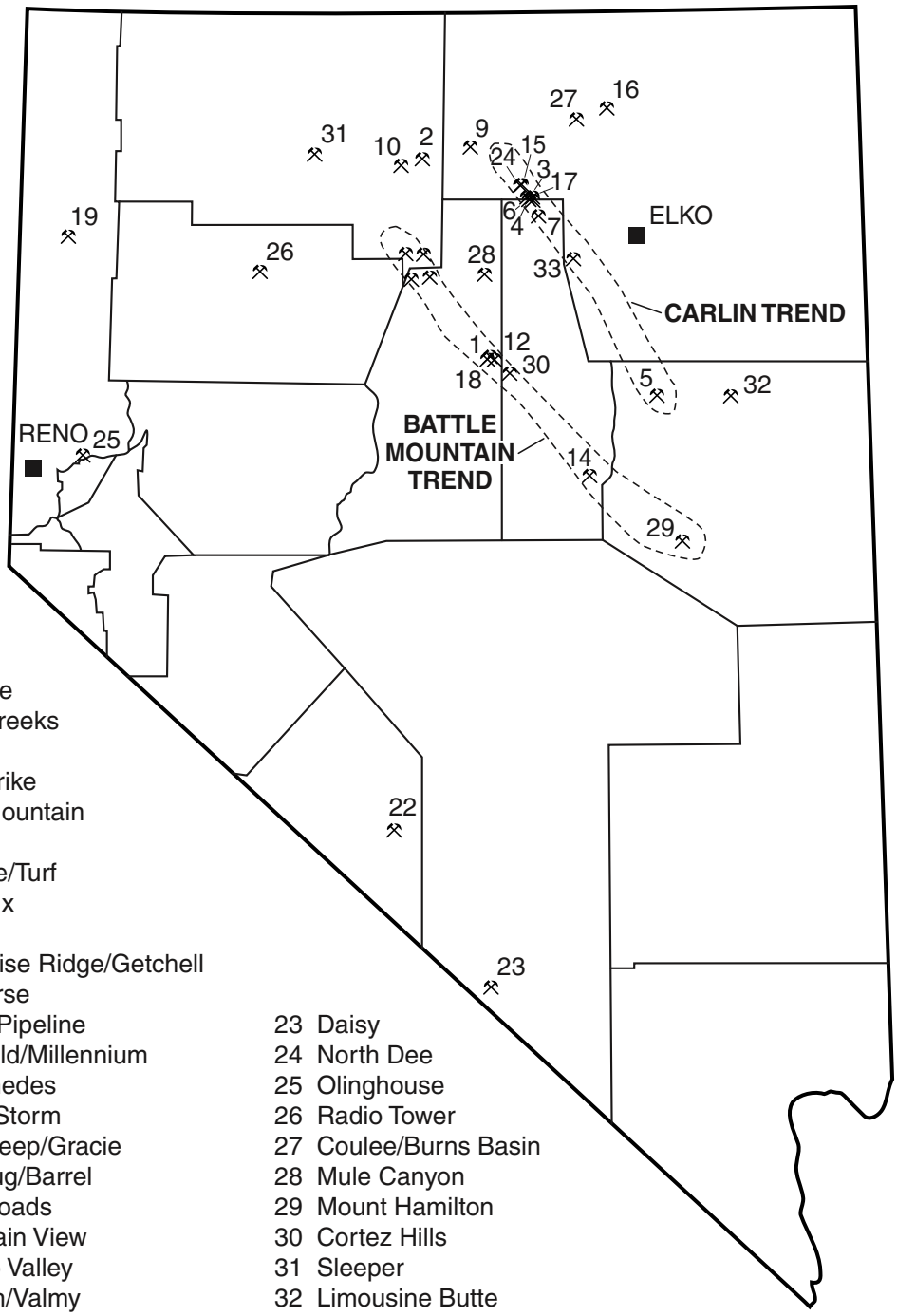

Figure 1. Nevada discoveries 1993–2004.

Throughout this period, reserves and resources for the Turquoise Ridge Project increased dramatically. In 1999, new owner Placer Dome reclassified all of the mineralization as a resource pending additional studies. Mine development was then reinitiated in 2002, with mine start-up in 2003.

PHOENIX - Battle Mountain Gold Co./Newmont Mining Corp.
1994–2000 = 6.4 MM ounces added to the total resource

Originally called the Fortitude Extension Project, Phoenix is the offset portion of the Fortitude Deposit east of the Virgin Fault. Exploration drilling was conducted prior to 1993, although difficult metallurgy and the slightly erratic nature of the mineralization delayed project development. A large resource increase was recorded in 1999 and 2000 when the new owner, Newmont Mining Corp, resolved many of the problems with the project.

CARLIN NORTH - Newmont Mining Corp./Barrick Gold Corp.
1994–1999 = 5.7 MM ounces added to the total resource

This was originally a joint venture project between Newmont(60%) and Barrick(40%), variously termed the Cattleguard, High Desert, Turf and/or Leeville Project. Newmont made the original discovery in 1994 at a depth of 1,700 feet. The project took on new life when a land exchange with Barrick was concluded in February 1999 that ceded Barrick's 40% interest to Newmont (roughly equivalent to 2.9 MM tons @ 0.42 opt Au). Exploration drilling in 1997-1998 expanded the Leeville and Turf mineralized areas along what is now known as the Leeville Corridor. Collectively, Newmont identifies the deposit cluster as the Carlin North Project.

CORTEZ HILLS – Placer Dome/Kennecott
2002-2004 = 5.5 MM ounces added to the total resource

Cortez Hills is located near the old Cortez town site roughly 10 miles southeast of the Pipeline Mine. Drilling in 2001 identified the Pediment Deposit (1.0 MM oz) under 200–400 feet of gravel cover hosted within a gravity slide block. Later drilling in the general vicinity returned thick mineralized intervals hosted within bedrock under gravel cover (Cortez Hills). Recent studies imply that the two deposits are related and resource ounces are expected to grow to +7.0 MM.

SLEEPER – Kinross Gold/X-Cal Resources
1997–1998 = 4.9 MM ounces added to the total resource

The Sleeper Mine closed in 1996 due to the lack of economic reserves. Since then, drilling has identified low-grade mineralization on the property as well as the old leach pad-material as a "potential" resource. Although a large resource is recognized, the average grade is 0.012 opt Au.

CONVERSE - Santa Fe Pacific Gold/Metallic Ventures Inc.
1997–2004 = 4.4 MM ounces added to the total resource

The Converse Project is located 6 miles southwest of the Marigold Mine. Initial exploration was focused on a gravity "high" interpreted to be indicative of shallow bedrock under alluvium. A blind discovery was announced in 1997 under 120 to 600 feet of gravel cover and, eventually, two separate deposits were identified (Redline and North Redline). Metallic Ventures obtained the property and completed additional drilling in 2003. Based on a lower cut-off grade, a large low-grade resource is now recognized with an average grade of 0.015 opt Au.

MIDAS (i.e., Ken Snyder Mine) – Franco/Euro Nevada Mining Corp. Ltd.
1995–1998 = 4.0 MM ounces added to the total resource

The Midas or Gold Circle Mining District was established in 1907 to exploit a series of high-angle veins hosted in Tertiary volcanics. Sporadic production was obtained into the mid 1950s with aggregate output from several separate properties recorded at 0.1 MM ounces of gold and 1.0 MM ounces of silver. Modern exploration attempts were numerous with most focused on a bulk-mineable target to be tested with vertical, relatively shallow holes. Franco Nevada's initial exploration effort was also directed towards locating disseminated mineralization, but early exploration success followed by +1,000 foot, angled drill holes revealed deeper, vein-hosted mineralization.

MILLENNIUM - Rayrock Yellowknife/Glamis Gold Ltd.
1999–2002 = 2.3 MM ounces added to the total resource

The Millennium Deposit discovery was announced in February 2000 as a shallow, oxidized resource located below 50–150 feet of alluvium south of the Marigold Mine. This discovery is the major factor that led Glamis Gold Ltd. to acquire Rayrock Yellowknife Gold Ltd. in 2000.

ARCHIMEDES - Homestake Mining Co.
1994–1996 = 1.4 MM ounces added to the total resource

The Eureka Mining District was established in 1869, with aggregate production to 1940 totaling 1.5 MM ounces of gold, 39.0 MM ounces of silver and 0.2 MM tons of lead. Sharon Steel Co. owned the central and northern portion of the district and Homestake Mining acquired its property holdings out of bankruptcy in 1992. The discovery was announced in 1994 under 100-300 feet of alluvium. After a short development period, the mine became operational in 1998.

NEW DEEP/GRACIE - AngloGold/Meridian Gold Corp.
1994–1995 = 0.9 MM ounces of gold added to the total resource

In 1989, dump condemnation drilling at the Jerritt Canyon Complex intersected gold mineralization at a depth of 625–1,000 feet lying below previously completed shallow drill holes. Lateral continuity for the mineralization was eventually confirmed and the zone was named the New Deep Deposit. Additional favorable drill results to the west in 1994 identified what was known as the Gracie Deposit. The combined zone of mineralization is presently being exploited underground as the Murray Mine.

Summary

As shown in Table 4, gold production from the larger mines under consideration peaked at 8.0-8.5 MM oz/year during 1998–2000. Aggregate production has since decreased by roughly 1.0-1.5 MM oz as recorded for 2004 or roughly 250,000–300,000 ounces/year. Exploration success at both mines and non-operating projects peaked at 11.0-13.0 MM oz/year during 1994-1996 and has since declined to 3.0–5.0 MM oz/year as recorded for 2003-2004 at roughly the same rate that exploration expenditures (as compiled annually by the Nevada Division of Minerals) declined. A question of major importance—does the data presented in this analysis imply that the major mines are entering a period of slow decline or are they just recovering from a period of a low gold price? As well, are new development projects and successful exploration projects of sufficient magnitude and quality to eventually replace closed production capacity?

Table 4. Ounces discovered and US$/ounce discovery cost.

Year	Ounces of Gold Discovered			Expenditures	Discovery
	Mines	Exploration	Total	MM US $	Cost/US $
1993	+486,525	+6,044,730	+6,531,255	150.0	$22.97
1994	+6,560,480	+6,768,780	+13,329,260	154.0	$11.55
1995	+3,233,480	+8,570,320	+11,803,800	141.0	$11.94
1996	+6,966,035	+6,582,390	+13,548,425	121.0	$8.93
1997	-19,101,520	+9,276,800	-9,824,720	138.8	N/A
1998	-9,099,200	+6,756,680	-2,342,520	90.8	N/A
1999	-6,582,190	+7,997,960	+1,415,770	86.7	$61.24
2000	-14,370,740	+2,099,450	-12,271,290	76.9	N/A
2001	-9,398,360	+4,736,460	-4,661,900	51.2	N/A
2002	-2,454,400	+3,828,570	+1,374,170	64.6	$47.01
2003	+3,981,290	+1,199,320	+5,180,610	69.2	$13.36
2004	+1,046,310	+2,442,890	+3,489,200	89.1	$25.53

The major operating mines are expected to invest in only minor production capacity increases in the future since major reserve+reserve additions appear unlikely due to the extensive exploration already completed. A continuation of the decrease in the average head grade is therefore anticipated, so aggregate production will continue to decline. Based on the decline measured for 2001–2004 (Table 1), a 200,000–250,000 oz/yr decline is estimated. Several operating mines also appear to be approaching the end of their productive lives especially Lone Tree (200,000 oz/yr), Florida Canyon (200,000 oz/yr) and Rochester (70,000 oz/yr). Jerritt Canyon (250,000 oz/yr) is a relatively high cost producer and could also be in jeopardy if the average gold price does not remain strong.

Major new development projects are limited but consist of Phoenix (350,000 oz/yr) and Leeville (400,000 oz/yr). Both projects are now in the construction phase and will experience start-up during 2006. No other major development projects including the Cortez Hills discovery are yet in the permitting stage as of 2004.

It therefore seems reasonable to assume that aggregate production for the major mines will continue to decrease gradually to roughly 6,500,000 oz/yr for 2005 and 2006 followed by additional decreases to 6,400,000 in 2007 and 6,000,000 in 2008. Major gold price increases will probably not halt the slide although a substantial price decrease will accelerate the decline.

Exploration will therefore be the key factor to determine future production levels and the future viability of Nevada's gold industry. As shown in Table 4, exploration success averaged 6.5-7.5 MM oz/yr during 1993–1999 with aggregate exploration expenditures of $126,000,000/year. Since 1999, exploration success has decreased to 2.0–3.0 MM oz/yr with aggregate exploration expenditures of only $70,000,000/year.

As shown in Table 4, the calculated discovery cost averaged $13.85/oz for 1993–1996; became "not applicable" during the low gold price period and then returned to $19.45/oz for 2003–2004. Clearly it is the level of exploration expenditures and not the cost/discovered ounce that dictates the level of exploration success.

Conclusions

In theory, any exploration success resulting in total ounces discovered exceeding production should be sufficient to replenish existing mines with new reserves as well as new mine development projects. However, reserves are not being replenished as fast as they are being mined and, unfortunately, as noted above, the average head grade at some operating mines decreased substantially over the 12-year period under analysis, and some of the "new discoveries" are low-grade and of questionable present economic significance.

In general, the following statements are thought follow from the above information:

- Aggregate production from the larger Nevada mines peaked at 8.0-8.5 MM oz/year during 1998-2000. Future aggregate production will decline as older mines close or reduce output due to a decreasing average head-grade. Future aggregate production levels will become more dependent upon the price of gold as the mines become higher cost producers.
- New mine development projects may take longer to permit, and their economics will likely be more sensitive to the price of gold.
- Industry exploration expenditures must continue to increase above the present $70–75 MM level. An expenditure of +$100,000,000 is closer to level where significant new discoveries have the potential to maintain the viability of the industry.
- In general, the discovery cost per ounce has remained essentially constant over the study period at a level that appears to be competitive with other regions in the world. A "maturing" of the exploration track record is not indicated and Nevada therefore remains attractive and justifies continued exploration interest.

In addition, the following observations regarding exploration guidelines are also possible based on the above information:

- In June 1993, the Bureau of Land Management to imposed a $100/claim rental fee in lieu of the assessment work requirement. Records indicate that 400,000 unpatented mining claims were valid in Nevada at the end of 1992 while only 125,000 claims remained by the end of 1994. Exploration expenditures from 1993 to 1994 actually increased implying that exploration attention was directed increasingly towards operating properties and "head frame" targets and away from traditional "grass roots" targets. Exploration interest must be redirected to include more selective "grass roots" targets within high-priority areas to provide additional opportunities for exploration success.

- Many of the new exploration discoveries of present economic significance have been found on properties that have been maintained by the major mining companies since at least the early 1980s. In part, this relationship is the result of the increasing "head frame" emphasis for exploration projects, but also the recognition that Nevada's geology is complex, and that a constant re-evaluation of high-priority targets areas with new exploration techniques is required.

- Most of the larger discoveries are located within the traditional, high-priority areas widely recognized by the industry. The Rodeo, Meikle, Leeville, Rossi/Storm, and Turf deposits are all located on the Carlin trend in northeastern Nevada, whereas the Pipeline, South Pipeline, Phoenix, Crossroads and Cortez Hills deposits are located on the Battle Mountain trend in north-central Nevada (Figure 1).

- Shallow discoveries still occur, although most are blind under +200 feet of gravel or volcanic cover. The lower-grade discoveries tend to be sub-economic but possibly may become significant future resources based on optimistic gold price assumptions. The higher-grade

discoveries can be economically attractive when even conservative gold-price assumptions are employed (e.g. Cortez Hills).

- Higher-grade deposits below realistic open-pit depths comprise the bulk of the larger, more recent discoveries. Prior to 1994, deep underground targets were rarely the focus of exploration programs and maximum drill-hole depths of 400–600 feet were the norm. It is now common for exploration holes to be completed to depths of +2,000 feet.

In conclusion, Nevada remains attractive for gold exploration, although innovative exploration ideas and methods are required. In the past, exploration programs were designed to evaluate as many quality prospects in the shortest time possible (the run-and-gun approach), and companies devoted significant budgets and staff to the effort. During the period under study, this method of exploration is primarily viewed responsible for the Midas (1995), Daisy (1994), Olinghouse (1993) and Mountain View (1995) discoveries, but in general, these discoveries occurred early in the study period and are considered to be of secondary economic importance.

Focused exploration programs on large property holdings have proven to be more successful throughout the study period. The operating companies generally conduct these programs on their "trend" properties subjecting localized areas to repeated evaluation attempts. This method requires an established land position within an attractive area, an experienced staff, and a management with patience and a multi-year commitment.

Future success will continue, although at present much of the exploration activity appears to be driven by the smaller groups looking for "news" to report to the shareholders. The focus appears to be the acquisition low-cost projects with the known presence of gold. Any new drilling then has a high probability of intersecting mineralization and that "encouragement" is reported to the shareholders. Unfortunately, these projects usually do not survive past the second drill campaign and rarely result in a +500,000 ounce discovery. A better approach might be to invest more time and effort into locating one higher quality project that may not necessarily be low-cost. Although any exploration effort is welcomed and can succeed, the odds of a significant discovery can be improved if the land plays are more selective in their location and the exploration effort is funded over an extended period of time.

References and Acknowledgments

References consist primarily of the press release archive presented in Appendix A. The source of each individual press release is referenced and varied. In addition, the Annual Summaries of the Nevada Division of Minerals and the yearly summaries of the Nevada Bureau of Mines and Geology were reviewed to maintain the accuracy and completeness of this study.

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