Nevada Bureau of
Mines and Geology

Special Publication MI-2004

The Nevada Mineral Industry 2004

Metals

Industrial Minerals

Oil and Gas

Geothermal

Exploration

Development

Mining

Processing

This report, twenty-sixth of an annual series, describes mineral, oil and gas, and geothermal activities and accomplishments in Nevada in 2004: production statistics, exploration and development including drilling for petroleum and geothermal resources, discoveries of orebodies, new mines opened, and expansion and other activities of existing mines. Statistics of known gold and silver deposits, and directories of mines and mills are included.

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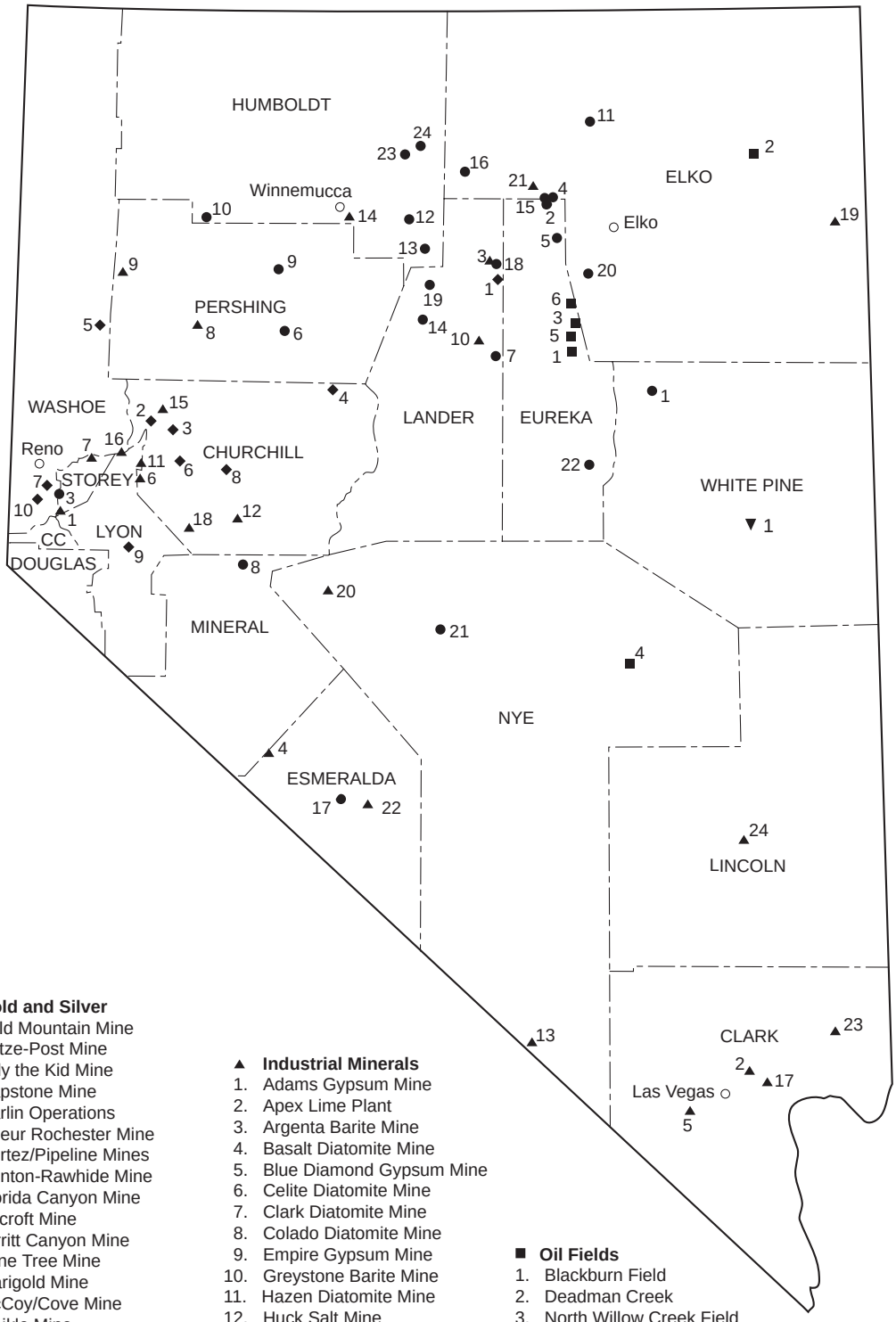

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Major mines, oil fields, and geothermal plants, 2004.

Overview

by Jonathan G. Price and Richard O. Meeuwig

This report highlights activities through 2004 in metals, industrial minerals, geothermal energy, and petroleum. Numerous graphs and charts are incorporated for rapid inspection of trends in production and price. The value of overall mineral and energy production in Nevada reached an all-time high of $3.5 billion in 2004, primarily as a result of the increase in the prices of gold and nearly all other commodities. Gold production, however, has steadily decreased from 8.1 million ounces in 2001 to 6.9 million ounces in 2004, but 2004 was nonetheless the ninth highest level in history. Nevada led the nation in the production of gold, barite, and diatomite and was the only state that produced magnesite, lithium, and the specialty clays, sepiolite and saponite. Other commodities produced in Nevada in 2004 included construction aggregate (sand, gravel, and crushed stone), geothermal energy, lime, cement, copper, gypsum, silica (industrial sand), silver, clays, dolomite, perlite, dimension stone, salt, zeolite, semiprecious gemstones, mercury as a by-product of gold and silver processing, and petroleum.

Nevada ranked second in the United States in terms of value of overall nonfuel (excluding oil, gas, coal, and geothermal) mineral production in 2004 (according to the U.S. Geological Survey, Mineral Commodity Summaries 2004, http://minerals.usgs.gov/minerals/pubs/mcs/). California, with its large population and commensurate demands for construction raw materials, was first. Arizona, the nation's leading copper producer, was third. Texas, another populous state and major producer of construction raw materials, was fourth. Florida, the leader in phosphate production, was fifth.

Nevada's production of gold, valued at $2.8 billion, was 84% of the U.S. total and helped make the U.S. the third leading gold producer in the world in 2004. Nevada alone accounted for 9% of world production of gold. Only the countries of South Africa and Australia produced more gold than the State of Nevada in 2004. Second to gold in terms of Nevada's mineral value in 2004 was construction aggregate, $180 million. Electrical power from geothermal energy production in Nevada in 2004 was valued at $73 million. Silver, chiefly a by-product or co-product of gold production, ranked as the fourth leading mineral commodity in 2004, with a value of $67 million.

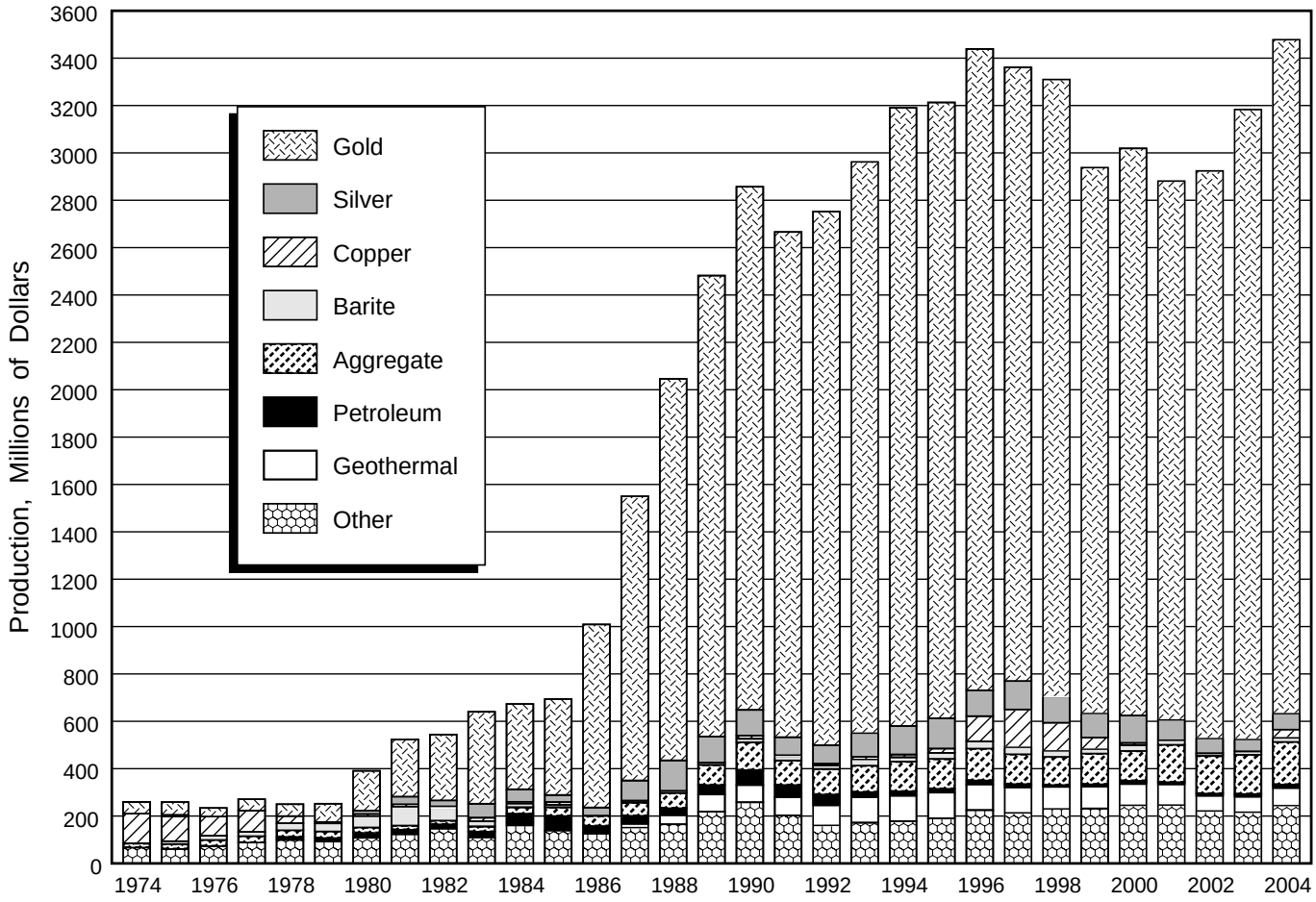
The contributions that mining makes to the economies of Nevada and the United States are significant in terms of jobs, commerce, taxes, improvements to the infrastructure, and lowering of the U.S. trade deficit. Because of Nevada's production, the U.S. is a net exporter of gold, most of which is sold on the international market for jewelry and artwork and some of which is sold for its superior qualities in computers and other electronics and for use in dental work. The U.S. is a net exporter of few mined commodities and a net importer of many. Among the major mined products in Nevada, the U.S. relies upon imports for barite (79% of total U.S. consumption from imports in 2004, according to the U.S. Geological Survey, used primarily to prevent blowouts in oil and gas drilling), silver (54%, used in tableware, coins, jewelry, and in photographic and other applications), copper (43%, used primarily to conduct electricity), and gypsum (26%, used in wallboard). Our exports of gold help offset the staggering U.S. trade deficit

MINERAL, GEOTHERMAL POWER, AND PETROLEUM PRODUCTION IN NEVADA[1]

Minerals	2003 Quantity	2003 Value (millions)	2004 Quantity	2004 Value (millions)	% change from 2003 to 2004 Quantity	% change from 2003 to 2004 Value
Gold (thousand troy ounces)	7,318	$2,660.0	6,942	$2,846.0	-5.1	+7.0
Silver (thousand troy ounces)	10,246	50.0	10,398	67.2	+1.5	+34.4
Copper (thousand pounds)	0	0	26,900	35.1	—	—
Aggregate (thousand short tons)	37,000	166.5	40,000	180.0	+8.1	+8.1
Gypsum (thousand short tons)	1,865	29.9	2,083	31.2	+11.7	+4.3
Barite (thousand short tons)	466	13.5	560	16.8	+20.2	+24.4
Geothermal energy (thousand megawatt-hours)	1,176	65.0	1,285	73.0	+9.3	+12.3
Petroleum (thousand 42-gallon barrels)	493	12.1	462	14.8	-6.1	+22.3
Other minerals[2]	—	216.1	—	243.7	—	+12.8
Total	—	$3,213.1	—	$3,507.8	—	+9.1

[1] Production as measured by mine shipments, sales, or marketable production (including consumption by producers); compiled by the Nevada Division of Minerals and the Nevada Bureau of Mines and Geology. Products milled or processed in Nevada but mined from deposits in California are excluded. Specifically, colemanite from a mill in Amargosa Valley in Nye County and zeolite from the Ash Meadows plant in Nye County are not included in these totals.

[2] Building stone, cement, clay, diatomite, lime, lithium carbonate, magnesite, mercury, perlite, salt, and silica sand.



Nevada mineral, geothermal power, and petroleum production, 1974–2004.

(difference between imports and exports of goods and services), which amounted to an annual record of $587 billion in 2004 (according to the Department of Commerce, Bureau of Economic Analysis, www.bea.gov).

The local economy also benefits from mining. Construction of new homes, casinos, other businesses, schools, and roads continues the strong demand for local sources of sand, gravel, crushed stone, gypsum, and raw materials for cement, all of which are abundant in Nevada. The mining industry directly employed approximately 9,600 people in 2004, and the industry is responsible for another 48,000 jobs related to providing the goods and services needed by the industry and its employees (Driesner and Coyner, 2005, Major Mines of Nevada 2004, Mineral Industries in Nevada's Economy, Nevada Bureau of Mines and Geology Special Publication P-16, 28 p.; available at www.nbmg.unr.edu/dox/mm/mm04.pdf).

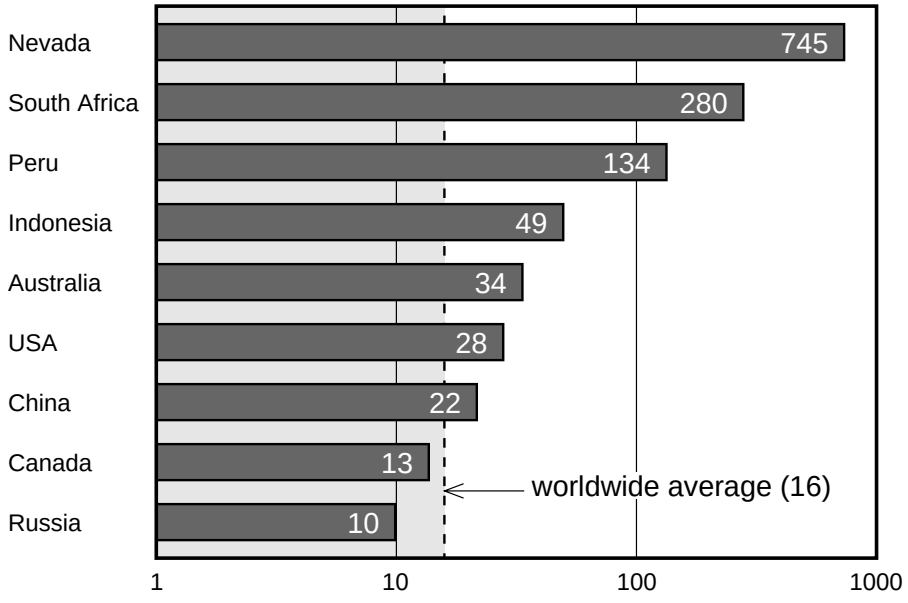
Nevada and the U.S. make significant contributions to the world's production of several mineral commodities. Thanks in part to Nevada's production, the U.S. is the world's leading producer, as well as consumer, of gypsum (with the U.S. accounting for 17% of world production in 2004) and industrial sand (26% of world production). In addition to gold, the U.S. is a leading silver producer (7% of world production). The U.S. is essentially self sufficient, as are most countries, in construction aggregate, largely because of the high expense of transportation. Total U.S. production of construction sand, gravel, and crushed stone in 2004 was approximately 2.79 billion metric tons, according to the U.S. Geological Survey. Net imports of aggregate account for less than 1% of consumption. The U.S. is also self sufficient in the other major mined material, coal. According to the U.S. Energy Information Administration (www.eia.doe.gov), the U.S. produced and consumed approximately 1.0 billion metric tons of coal in 2004. Although no coal is produced in Nevada, coal is the primary source of energy for generation of electricity in Nevada.

As a result of its favorable geology, Nevada has tremendous potential for the discovery of additional mineral deposits. Areas where prospective rocks are beneath a cover of young, valley-filling sediments and volcanic rocks have only been explored to a limited extent, and ore deposits continue to be discovered in and near Nevada's 526 historical mining districts. Like the Gauteng Province, the most productive region of South Africa, Nevada is a world leader in terms of gold production per unit area.

WORLD PRODUCTION OF SELECTED MINERAL COMMODITIES (metric tons) in 2004*

Country/State	Area (10^6 km^2)	Gold	Silver	Copper	Gypsum	Barite	Industrial Sand
Algeria	2.38	—	—	850,000	—	48,000	—
Australia	7.68	259	2,240	—	4,000,000	—	5,000,000
Austria	0.08	—	—	—	1,000,000	—	6,800,000
Belgium	0.03	—	—	—	—	—	1,800,000
Brazil	8.51	—	—	—	1,650,000	55,000	1,600,000
Burma	0.68	—	—	—	—	nd	—
Canada	9.96	129	1,340	560,000	9,000,000	—	1,600,000
Chile	0.76	—	1,400	5,410,000	—	—	—
China	9.57	215	2,450	620,000	6,900,000	3,900,000	—
Egypt	1.00	—	—	—	2,000,000	—	—
France	0.57	—	—	—	3,500,000	82,000	6,500,000
Germany	0.36	—	—	—	—	110,000	8,500,000
India	3.28	—	—	—	2,300,000	720,000	1,500,000
Indonesia	1.90	93	—	840,000	—	—	—
Iran	1.65	—	—	—	11,500,000	204,000	1,700,000
Italy	0.30	—	—	—	1,200,000	—	3,000,000
Japan	0.38	—	—	—	5,700,000	—	4,800,000
Kazakhstan	2.72	—	—	460,000	—	—	—
Korea, North	0.12	—	—	—	—	70,000	—
Mexico	1.97	—	2,700	400,000	6,800,000	300,000	1,700,000
Morocco	0.45	—	—	—	—	357,000	—
Netherlands	0.04	—	—	—	—	—	nd
Norway	0.32	—	—	—	—	—	1,600,000
Peru	1.29	173	3,000	1,035,00	—	—	—
Poland	0.31	—	1,250	500,000	1,100,000	—	1,500,000
Russia	17.07	169	—	675,000	2,000,000	60,000	—
South Africa	1.22	341	—	—	—	—	2,240,000
Spain	0.50	—	—	—	7,500,000	—	6,500,000
Thailand	0.51	—	—	—	6,500,000	125,000	—
Turkey	0.78	—	—	—	—	120,000	1,300,000
United Kingdom	0.24	—	—	—	1,500,000	60,000	4,000,000
Uruguay	0.18	—	—	—	1,130,000	—	—
Zambia	0.75	—	—	25,000	—	—	—
United States	9.37	258	1,250	1,160,000	18,000,000	532,000	29,000,000
Nevada	**0.29**	**216**	**323**	**12,200**	**1,890,000**	**507,000**	**680,000**
WORLD	149.90	2,443	18,400	14,500,000	105,200,000	7,240,000	111,000,000

* Production data for all areas except Nevada are from the U.S. Geological Survey (USGS) minerals information publications (http://minerals.usgs.gov/minerals/), with revisions for some data from USGS mineral commodity specialists; production data for Nevada are from Driesner and Coyner (2005), with modifications as noted in this report; USGS statistics are adjusted to be consistent with Nevada data.



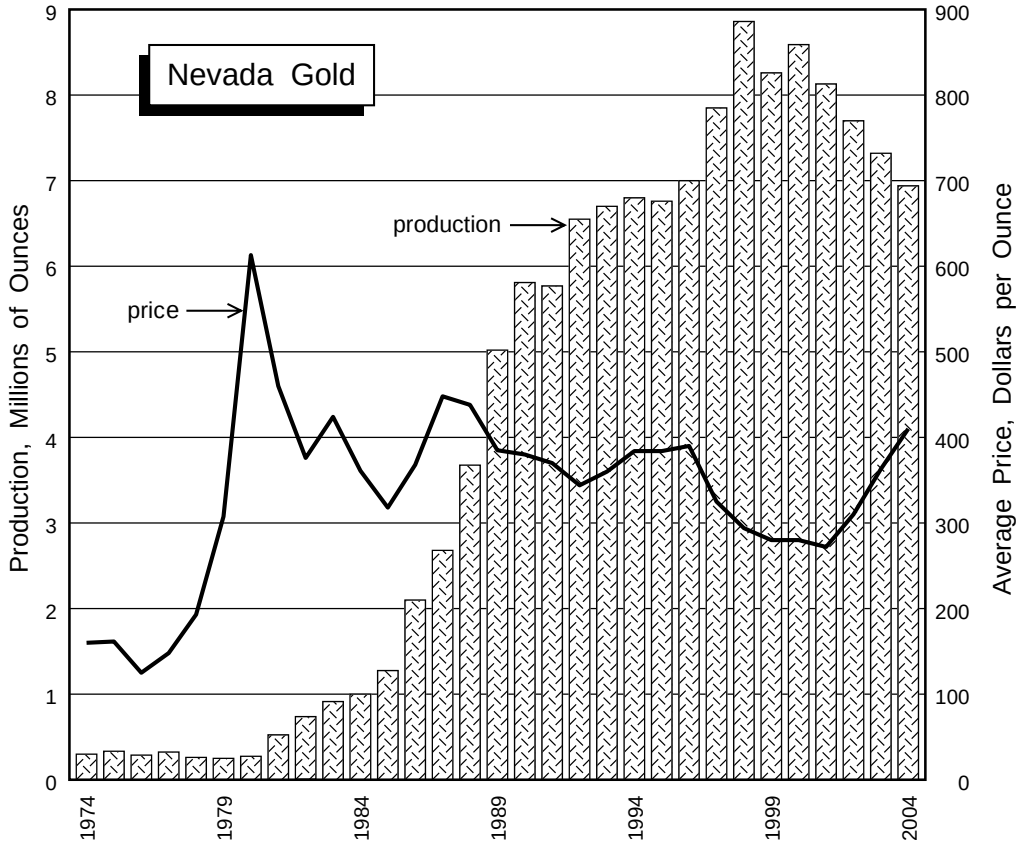
Gold production in 2004
(metric tons per million square kilometers, log scale).

Through a survey conducted early in 2005, the Nevada Division of Minerals collected data for Nevada Bureau of Mines and Geology Special Publication P-15, Major Mines of Nevada 2004. This publication includes, in handbook form, location maps, names and telephone numbers of operators, numbers of employees, and nonproprietary production figures for most mines in Nevada. It also contains a section on economic impacts of the industry. The full contents of this 28-page publication are available for free on the World Wide Web (www.nbmg.unr.edu), as are the contents of this report. The data from this survey are used, along with information from other sources, in this publication and will be used to update, revise, and check preliminary statistics collected and released by the U.S. Geological Survey.

The section on **Metals** and the table of **Major Precious-Metal Deposits** provide details on new deposit discoveries, new mine openings, mine closures, additions to reserves, and mine expansions. As has been the case in recent years, gold has been the leading commodity produced in Nevada. Production of gold in 2004 came from 25 major mining operations. The Carlin trend in northeastern Nevada accounted for 47% of the total production. Eight additional mining operations, not on the Carlin trend, each produced over 100,000 ounces of gold from mostly multimillion-ounce deposits.

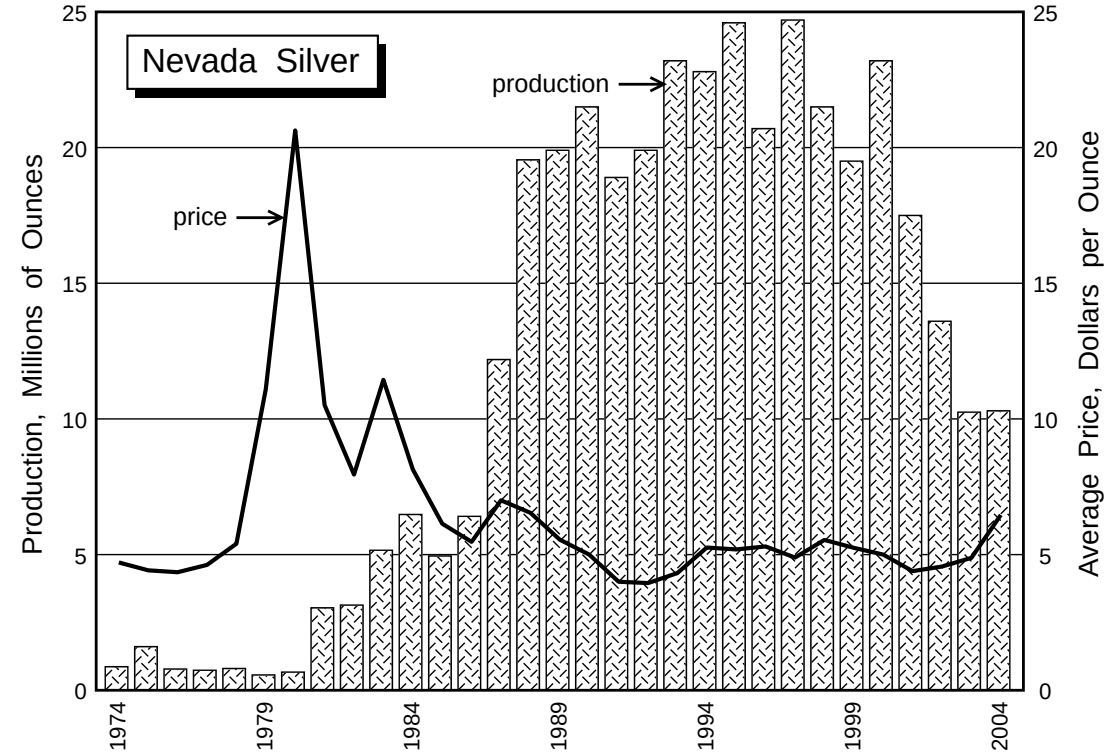
Nevada and the U.S. have produced a significant portion of world gold. The U.S. Geological Survey estimates that total world gold production, since the beginning of civilization, has been 150,000 metric tons (4.7 billion troy ounces). Interestingly, about 85% of that gold is still in use (in bullion, coins, jewelery, electronics, etc.), and most gold currently being mined is recycled. Through 2004, cumulative gold production in Nevada (since mining on the Comstock lode in 1859) stands at 4,867 metric tons (156.47 million ounces). Remarkably, 84% of this total has been produced during the current boom (since the Carlin Mine began production in 1965), and 49% of this total has been produced in the decade from 1995 to 2004. Total U.S. production, primarily since 1835, is approximately 16,300 metric tons (506 million ounces or nearly 11% of total world gold production), and total Nevada production is 3% of total world production. The Carlin trend alone accounts for a bit more than one percent of all the gold ever mined in the world. By the end of 2004, cumulative production from the Carlin trend reached 1,833 metric tons of gold (58.9 million ounces), keeping its place as one of the most productive gold-mining districts in the world.

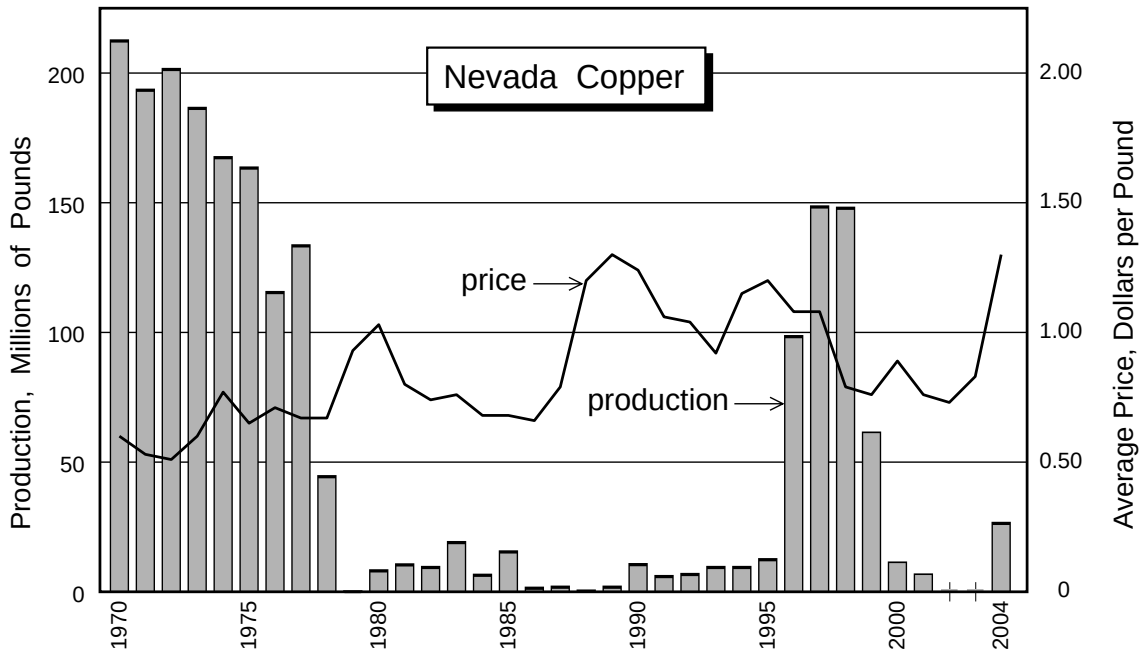
Barrick's Betze-Post Mine in Eureka County produced 1,381,315 ounces, making it the largest gold mine in the state, and Barrick's Meikle Mine in Elko County produced 561,345 ounces, making it the largest underground producer in 2004. Barrick's overall gold production in the state in 2004, including its portion of joint ventures, totaled 2,377,301 ounces, slightly less than Newmont's overall production of 2,416,616 ounces from several mines, including one joint venture. Newmont's production on the Carlin trend, including its Carlin operations and Capstone/Bootstrap and Rain Mines, totaled 1,287,674 ounces. Placer Dome's Cortez operation (Pipeline and nearby deposits in Crescent



Valley, Lander County) produced 1,051,197 ounces of gold in 2004. One new gold mine (Apollo Gold's Standard Mine in Pershing County) opened in 2004, and Quadra Mining Ltd. reopened the Robinson copper-gold mine near Ely in White Pine County.

Much of Nevada's silver production in 2004, which totaled 10.4 million ounces, was a co-product or by-product of gold mining. With a ratio of value (average price of gold to average price of silver) of 63:1 in 2004, only those deposits with more than 63 times as much silver as gold can be considered primary silver deposits. Only one such deposit was mined in Nevada in 2004-the Coeur Rochester Mine in Pershing County (with a silver to gold production ratio of 82:1 and total silver production of nearly 5.7 million ounces). This one mine produced 55% of Nevada's silver in 2004. The mine also reached a significant milestone in 2004—cumulative production of 100 million ounces of silver. Nevada's production in 2004 accounted for 25% of the U.S. total and 1.7% of the world total. Depending on price, Nevada is likely to retain the present-day distinction of its nickname, the "Silver State."

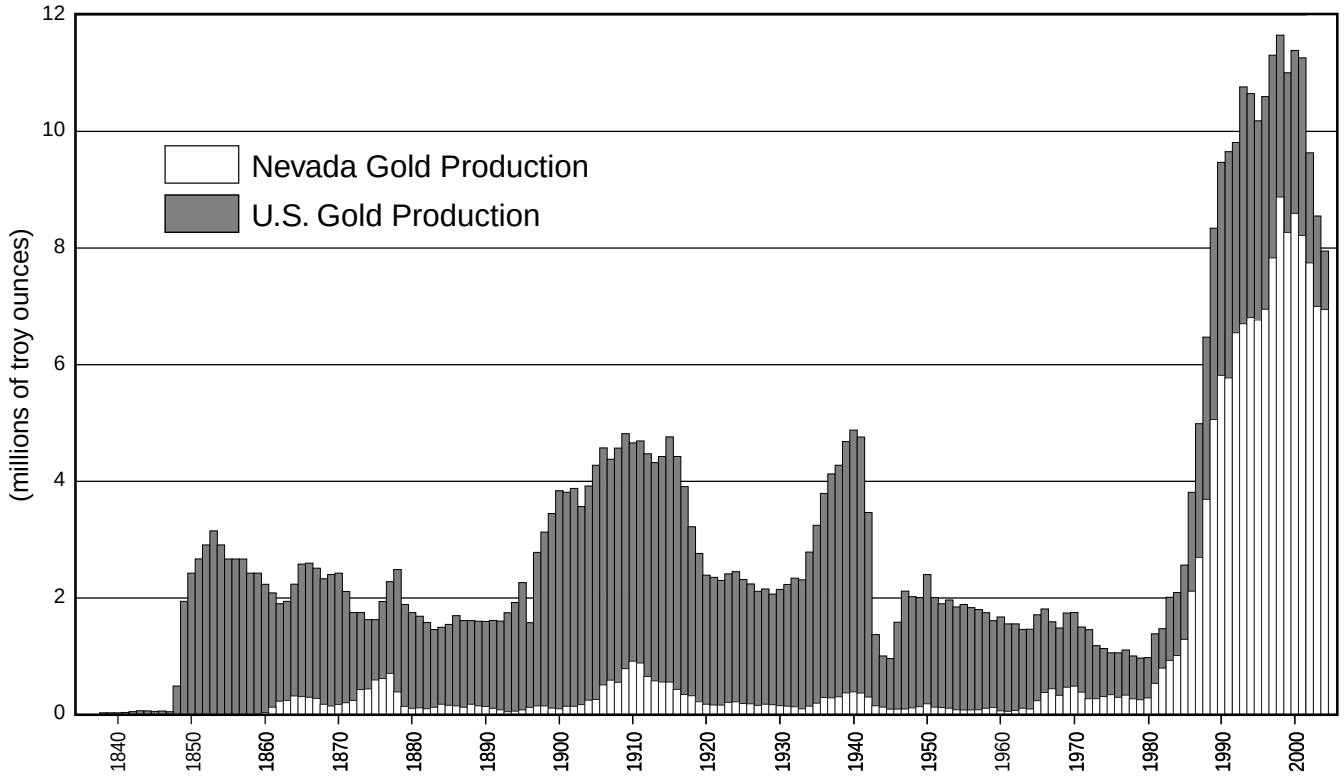




Mercury occurs in many of the gold and silver ores in Nevada and is produced as a by-product of gold and silver processing. Mercury production figures are not reported by the companies. The industry has implemented a voluntary program to reduce mercury emissions to the atmosphere. The Nevada Mining Association (www.nevadamining.org) noted that for 2004 Nevada mines reported air emissions of 2.2 tons (0.04% of global atmospheric mercury or slightly more than 2% of national mercury emissions to air). Mercury emissions to the atmosphere from the Nevada mines have been reduced by 75% since 1998. The USGS reports that the mercury prices have risen from $155 per 76-pound flask in 2002 to $350 per flask in 2004.

Exploration in 2004 (summarized in the section on **Metals**) included high-grade (mostly vein) targets, which tend to be popular during times of depressed prices for gold, and low-grade, large tonnage deposits, which generally become more profitable when gold prices are higher. Average price in 2004 was $410 per ounce, well above prices in 2003 and 2002 ($363 and $310 per ounce, respectively). New discoveries were reported along the Carlin trend, in the Jerritt Canyon district, along the Battle Mountain-Cortez-Eureka trend, and in several other districts. Barrick added 2.3 million ounces of gold to their reserves at the Betze-Post Mine, and Newmont added 2.3 million ounces of gold to their reserves at the Phoenix Project in the Battle Mountain district. Extensions of mineralization were also discovered near the Marigold, Pinson, Sleeper, Hycroft, and Hog Ranch mines. Exploration has occurred in many greenfield areas as well as many of Nevada's famous mining districts. By concentrating on a gold deposit that Hecla hopes to mine with underground techniques, the company is avoiding archaeological resources near its Hollister project in Elko County. Interestingly, these resources—chalcedony used for stone tools—probably formed by the same hydrothermal system that deposited the gold.

Most exploration efforts focused on gold and silver, but strong prices for other commodities have stimulated exploration for several other commodities, including molybdenum, copper, and zinc. As measured by the numbers of active claims on public lands, grass-roots exploration activity rose significantly during the last year. According to a survey of exploration activities by the Nevada Division of Minerals (D. Driesner, 2005, Nevada Exploration Survey 2004, available at http://minerals.state.nv.us/), exploration activity in Nevada has been steadily increasing since 2001, when companies reported $51.2 million in expenditures in Nevada. The 23 companies responding to the survey reported spending $79.7 million on exploration in Nevada in 2004. This figure is well below the level of $138.8 million in 1995, but the companies are optimistic about Nevada's potential and project spending $111.9 million in 2005. Another measure of exploration activity is the number of exploration geologists employed by these companies: 124 in 2004 compared with 126 in 2003 and 309 in 1997.



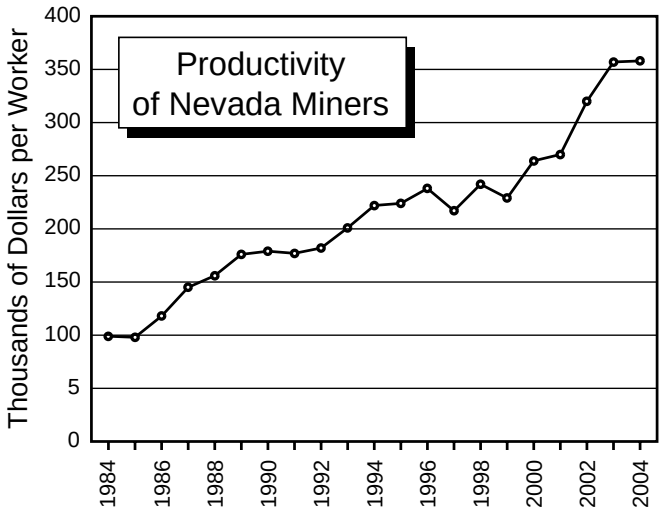
United States and Nevada gold production from 1835 through 2004. Data from U.S. Gold Industry 1998 (NBMG Special Publication 25) by J.L. Dobra and from the U.S. Geological Survey.

These companies project employing 145 exploration geologists in 2005. Because of its favorable geology and regulatory climate, Nevada continues to attract a large portion of the worldwide exploration expenditures of the companies actively exploring in Nevada. Significant exploration (including drilling, geochemical sampling, geological mapping, and claim staking) was reported in all 17 Nevada counties. The number of active claims in Nevada rose substantially in 2004 but is still close to the relatively low level reached in 1993 after the introduction of new fees by the federal government.

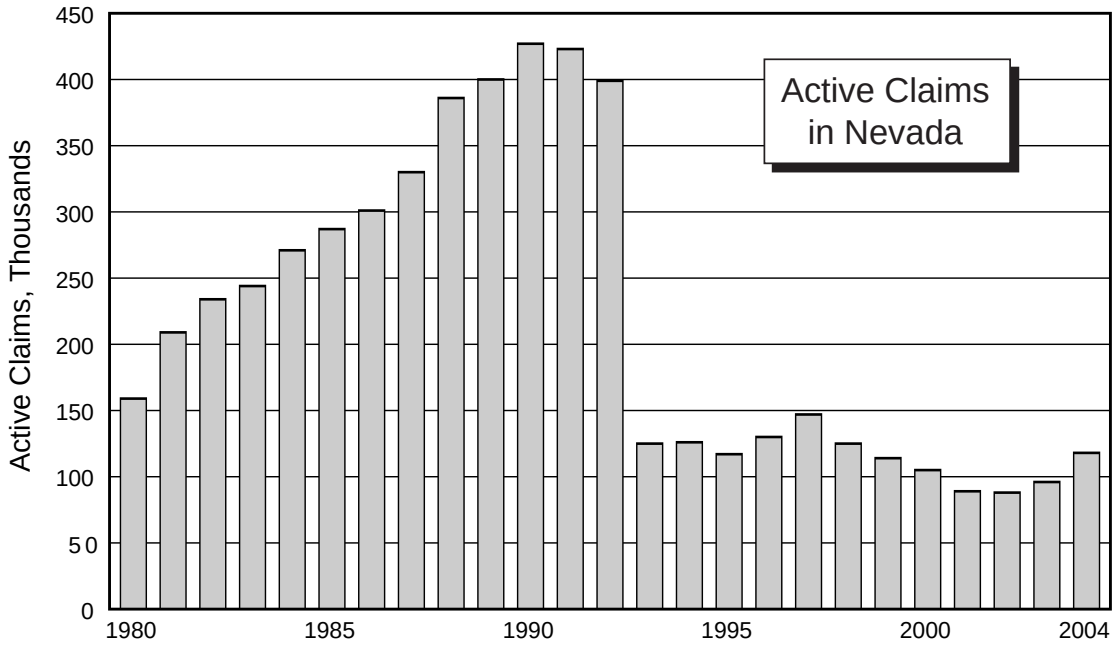
We continue to be in the midst of the biggest gold boom in U.S. history, as the graph of historical U.S. gold production illustrates. The recent surge in production in the U.S. is largely the result of discoveries of Carlin-type gold deposits and other deposits in which fine-grained gold is widely disseminated in the ore. These deposits are primarily in Nevada. The U.S. production so far in the current boom, the period from 1981 to 2004, has been 186.5 million ounces. This is significantly greater than the total production during the era of the California gold rush (1849 to 1859, with 29 million ounces), the Comstock (Nevada) era from 1860 to 1875 (with 34 million ounces), and the period from 1897 to 1920, when Goldfield (Nevada), the Black Hills (South Dakota), Cripple Creek (Colorado), and by-product production from copper mines in Arizona and Utah contributed to cumulative production of 95 million ounces. U.S. production in the decade from 1995 to 2004 alone was 103 million ounces.

The announced gold resources in Nevada, including mineable reserves and perhaps some subeconomic resources (as reported in announcements by companies and compiled by the Nevada Bureau of Mines and Geology, with deductions for production), are enough to sustain gold production at substantial levels for 15 to 20 years, assuming stable prices. The term “reserve” has special meaning with regard to U.S. securities laws. To be called a reserve, the deposit must be able to be mined profitably. With relatively high gold prices and continued technological improvements, some of the subeconomic resources of previous years have been or may be upgraded to reserves.

Productivity of Nevada mining operations is exceptionally high. Measured simply by the value of the commodities produced divided by the number of employees, productivity of Nevada miners is outstanding. On the average, each of the 9,559 workers in the nonfuel mineral industry in Nevada produced approximately $357,800 in mined products in 2004, an all-time high figure.



Total value of mined product per mine worker in Nevada (excluding petroleum and geothermal energy).



Number of active claims in Nevada as of October 1, 1980 through 2004.
Data from the Nevada State Office of the U.S. Bureau of Land Management.

Challenges that face the precious metal mines in Nevada include:

- economic, safety, and environmental concerns, particularly uncertainty in metal prices;
- obtaining financial assurances (bonds) for reclamation and closure;
- hazards of underground mining;
- regulatory changes and length of time that it typically takes to obtain permits;
- preservation of archaeological and ecological resources;
- treating refractory (iron sulfide and/or carbon-bearing) ores, including innovative ways to oxidize these ores and to recover gold-bearing pyrite by flotation;
- minimizing release of mercury to the environment;
- dewatering mines;
- predicting the ultimate chemical compositions of pit lakes;
- procedures for closure of heaps used for leaching gold and silver from ore; and
- treatment and disposal of large volumes of water, some of which may be too warm to introduce directly into streams or may contain potentially toxic elements that need to be removed.

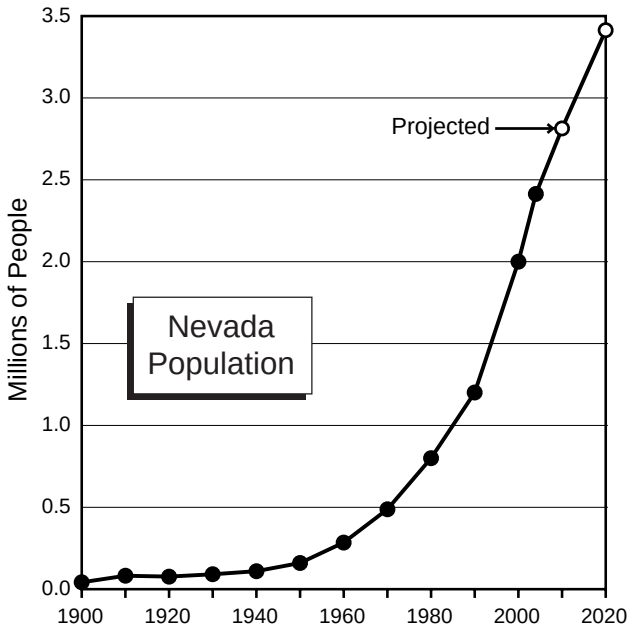
Through research on new technologies and engineering approaches, industry is responding well to these challenges.

The section on **Industrial Minerals** covers developments during 2004 and gives details on important commodities produced from or processed in Nevada, such as aggregate, barite, cement, clays, diatomite, dimension stone, dolomite, gypsum, lime, limestone, lithium, magnesite and brucite, perlite, salt, semiprecious gemstones (opal and turquoise), silica, and zeolites (clinoptilolite and mordenite). In 2004 Nevada ranked first in the nation in barite, diatomite, and gypsum production. The Silver Peak lithium operation in Clayton Valley, Esmeralda County, where subsurface brines are evaporated on the floor of the playa, is the only domestic lithium producer, and the Premier Magnesite Mine near Gabbs in Nye County is currently the nation's only producer of magnesite.

Aggregate production reached an all-time high in 2004 as a result of Nevada's expanding population and needs for construction materials for homes, schools, streets, highways, airports, resort hotels, and other businesses. Demand for construction raw materials is likely to remain strong owing to Nevada's booming population. According to the U.S. Census Bureau (www.census.gov/), Nevada's population reached 2.3 million in 2004, up 17% from 2.0 million in the 2000 census. The booming population requires extraordinary amounts of construction raw materials. Although Nevada has only 0.8% of the total U.S. population, Nevada mined 1.3% of the total amount of aggregate produced in the U.S. in 2004. Population growth is particularly strong in the Las Vegas metropolitan area (Clark County), where the influx of nine to ten new residents per hour results in approximately two acres per hour of land development for homes, businesses, and roads. A new cement plant, anticipated to be in production by 2008, is planned for the Las Vegas market. According to the U.S. Geological Survey, Nevada's cement consumption per person is highest in the country, another expression of the rapid urban growth rate.

An interesting trend that is occurring nationwide as well as in the Las Vegas area is the combination of aggregate quarries with landfill operations. Planning for the eventual uses of quarries is vital in areas where urban expansion encroaches on the mineral resources that must be mined locally to reduce transportation costs and related concerns regarding highway safety. Gypsum mines near the urban growth areas of Las Vegas are now being considered as sites for housing developments.

Developments in the geothermal industry are covered in the section on **Geothermal Energy**. Electric power production rose significantly in 2004. Fourteen plants operating at ten sites sold $73 million in electricity, far surpassing the value of petroleum production. Additionally, geothermal energy is used at numerous places in Nevada for space heating, warm water, recreation, dehydrating vegetables, and other agricultural applications. New programs in the U.S. Department of Energy, energy bills passed by the Nevada and California legislatures, and activities of the Great Basin Center for Geothermal Energy at the University of Nevada, Reno are stimulating geothermal development in Nevada. Five new plants are planned to meet Nevada's renewable



Data from the U.S. Census Bureau <www.census.gov>. Projection to 2020 by Nevada State Demographer.

energy portfolio standard. Nevada Bureau of Mines and Geology Map 141, Nevada Geothermal Resources, shows the locations of geothermal plants, direct-use locations, hot and warm springs and wells; it demonstrates the fact that Nevada has great potential for geothermal development. Considerable information on geothermal energy in Nevada is provided on the Web (www.nbmg.unr.edu/geothermal/gthome.htm).

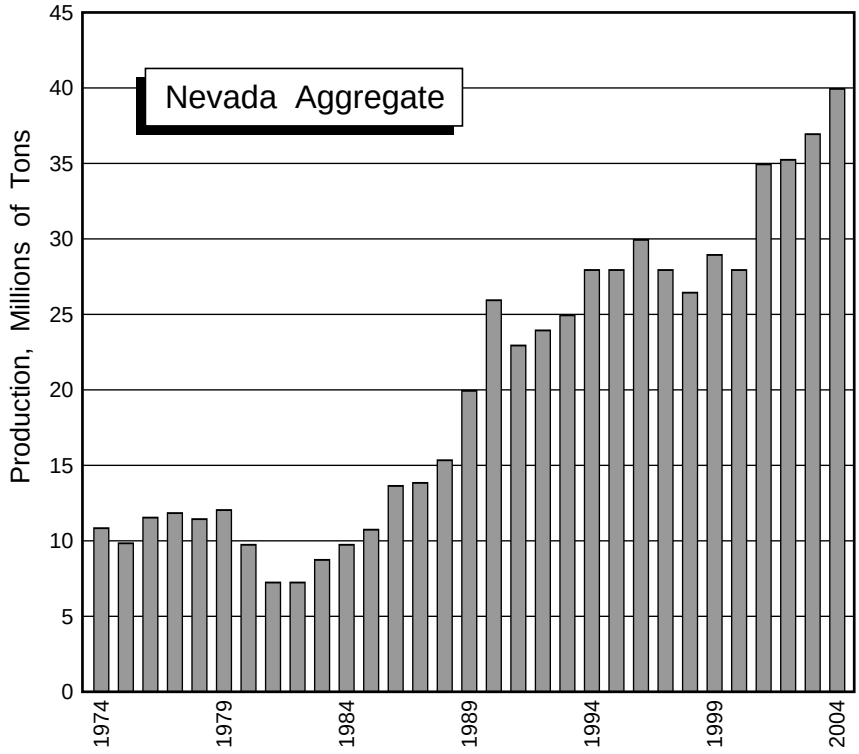
Nevada has great potential for renewable energy (particularly geothermal, wind, and solar energy for electricity). Approximately 89% of Nevada's electricity currently is generated by power plants that burn fossil fuels, with 51% from coal and 38% from natural gas (2002 statistics from the Energy Information Administration, http://www.eia.doe.gov/). Hydroelectric dams account for 7%, and geothermal power plants account for nearly 4%. Geothermal energy experts at a July 25, 2005 meeting of a taskforce set up by the Western Governors' Association to assess geothermal resource potential estimated that within the next 20 years Nevada could add approximately 1,500 to 2,900 megawatts of geothermal power-generating capacity (beyond the current capacity of 222 megawatts). If this potential were realized, and if energy prices continue to rise, geothermal power could become a billion-dollar per year business in Nevada.

Developments in the Nevada petroleum industry are covered in the section on **Oil and Gas**. Oil is produced primarily in two areas—Railroad Valley in Nye County and Pine Valley in Eureka County. Total annual oil production from Nevada (valued at $14.8 million in 2004) is a minor part of U.S. production. The amount of oil production declined for the eleventh consecutive year, and no new fields were discovered in 2004. Small amounts of natural gas are used to fuel equipment needed for oil production.

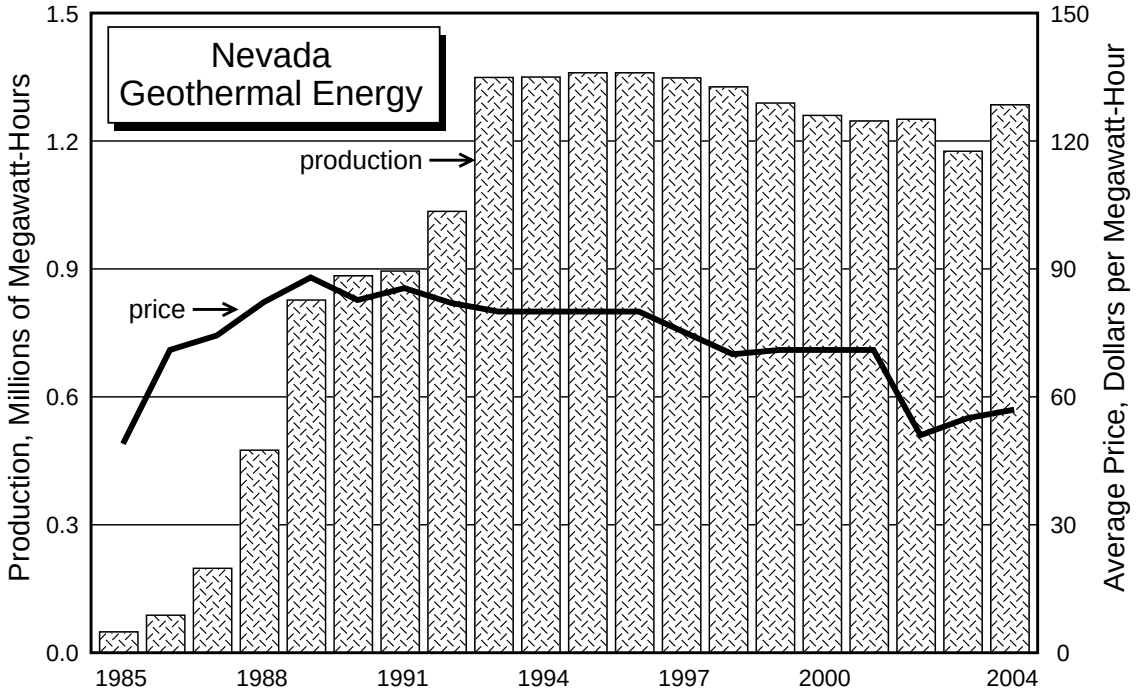
Relatively high oil prices and the 2003 discovery of oil at the Covenant field near Richfield in south-central Utah, where by the end of 2004 Wolverine Oil and Gas Corporation was producing 1,500 barrels per day from two wells, has stimulated exploration and leasing of federal lands in Nevada. According to the Utah Geological Survey, this oil field is in folded Jurassic Navajo Sandstone within the Sevier overthrust belt. Similar geological settings occur in Nevada.

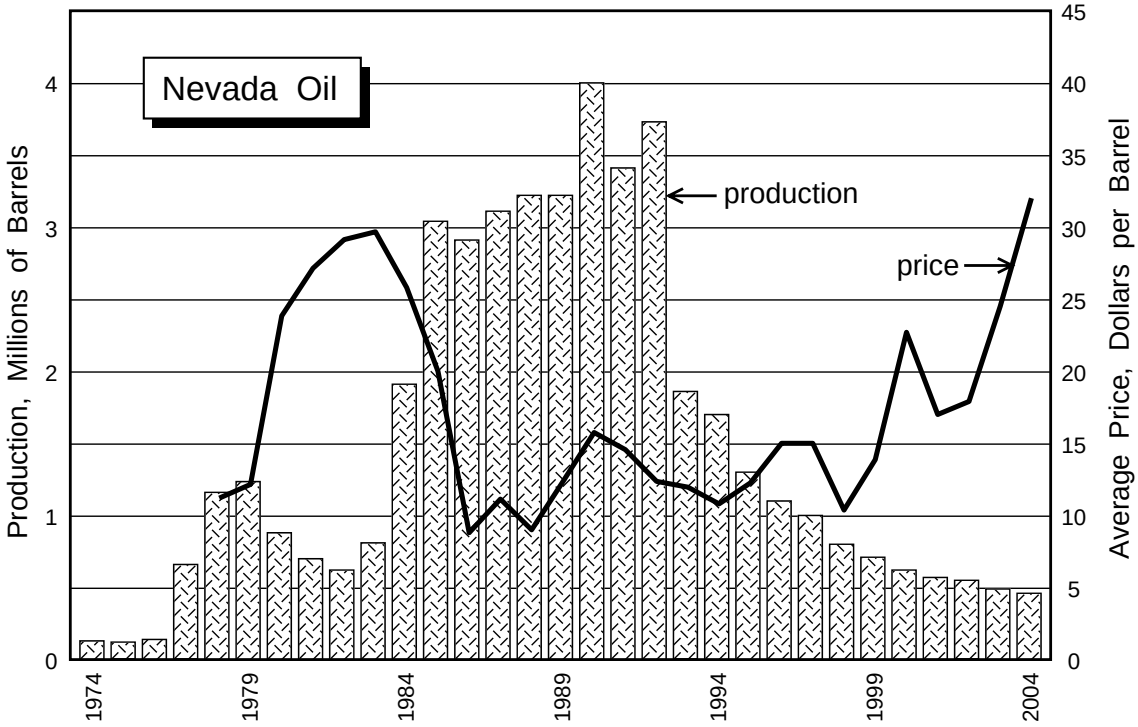
In May 2005, the U.S. Geological Survey released its assessment of undiscovered oil and gas resources of the Eastern Great Basin (available at http://energy.cr.usgs.gov/oilgas/noga/index.htm), an area that includes the eastern portion of Nevada, western Utah, and part of southeastern Idaho. The U.S. Geological Survey estimates mean figures of 1.6 billion barrels of oil and 1.8 trillion cubic feet of natural gas remaining to be found in this region.

Exploration for oil in Nevada is encouraged by the cumulative production from the two premier fields in Railroad Valley, Grant Canyon and Trap Spring (21 million and 13 million barrels, respectively). Historically, few exploration wells have been drilled in the state (fewer than 1,000 wells, or fewer than one well per 111 square miles or 286 square kilometers). With so much area unexplored, even discounting areas underlain by high-grade metamorphic and granitic rocks, the potential for finding more multimillion-barrel fields remains high. Six new exploration wells were spudded in 2004.



Additional information about the Nevada mineral industry and the U.S. gold industry, including the contents of selected publications, is readily available on line through the World Wide Web from the Nevada Bureau of Mines and Geology (www.nbmg.unr.edu/) and the Nevada Division of Minerals (http://minerals.state.nv.us/). Useful national and international data on nonfuel minerals can be obtained from the U.S. Geological Survey (http://minerals.usgs.gov/minerals/), and the U.S. Energy Information Administration (www.eia.doe.gov/) provides data on oil and gas, geothermal, and other energy sources. The Geological Society of Nevada (www.gsnv.org) held its once-every-five-year symposium in May of 2005; approximately 90 reviewed papers will be published in a bound volume, which should be available near the end of the 2005.





Metals

by Joseph V. Tingley

Nevada produced 6.94 million ounces of gold and 10.4 million ounces of silver in 2004. Gold production was down by about 376,000 ounces compared to 2003, but silver production increased by about 152,000 ounces. Nevada maintained its place as the leading producer of gold in the United States but was second to Alaska in silver production. Twenty-five mines in Nevada reported gold production in 2004, while 20 reported silver production.

Newmont Mining Corp., reporting production from its Carlin trend mines, Twin Creeks, Lone Tree, Mule Canyon, Phoenix, McCoy/Cove, and Midas Mines (plus its 25% share of the Turquoise Ridge Joint Venture), had a total Nevada production of 2,416,616 ounces of gold, taking first place in Nevada for 2004. Barrick Gold Corp., with production from its Betze-Post, Meikle, and Ruby Hill Mines (plus its 50% share of Round Mountain's production and 33% share of Marigold's production), had a total production of 2,377,301 ounces of gold for second place.

For the fifth consecutive year, Barrick Gold's Betze-Post Mine was Nevada's most productive gold mine, with an output of 1,381,315 ounces. Newmont's Carlin trend mines produced 1,131,197 ounces of gold, and Placer Dome's Cortez operations produced 1,051,197 ounces of gold. Barrick's Meikle Mine, the largest underground mine in Nevada, produced 561,345 ounces of gold in 2004, an increase of almost 10,000 ounces over 2003.

Coeur D'Alene Mines Corp.'s Rochester Mine maintained its place as the largest silver mine in Nevada in 2004 with a production of 5,585,385 ounces. Newmont's Midas Mine was in second place with 2,471,135 ounces of silver, and the Round Mountain Mine followed in third place with 773,950 ounces.

EXPLORATION

Exploration activity continued at a high pace in Nevada in 2004. Companies continued the search for high-grade veins in and around old districts but, reminiscent of porphyry copper exploration in the southwest in the late 1960s, pediment areas and valleys with deeper gravel cover were blanketed with new claims. Placer Dome's successful activities in the Cortez area spawned serious staking programs by several companies in Pine Valley, Kobeh Valley, and the Antelope district of central Eureka County. Although the majority of the exploration activity in the state was concentrated on gold, companies and individuals also searched for copper, molybdenum, and zinc. The Standard gold mine opened in Pershing County, Nevada's first new gold mine since 1998, and in White Pine County, the Robinson copper mine resumed production.

Over 28,800 new mining claims were recorded in Nevada in 2004, a 63% increase over 2003's total. These claims were scattered in 285 districts and areas across the state but major activity was in the Antelope district (3,147 claims), the Kobeh Valley area (1,606 claims), Bald Mountain (1,404 claims), and the Pine Valley area (1,217 claims).

Figure 1 shows the location of Nevada mining districts and areas in which exploration activity was reported during 2004. Figure 2 shows the distribution of claim staking activity, by district and area, in Nevada in 2004. Specific 2004 exploration and development projects are summarized by county and mining district in the following section.

CHURCHILL COUNTY

Bell Mountain District

Bell Mountain Property. Globex Mining Enterprises Inc. optioned its Bell Mountain gold property to Platte River Gold (U.S.) Inc. The Bell Mountain property contains a low grade gold and silver resource, and Platte River Gold has started surface and underground mapping and sampling in the area of the known resource. (Globex Mining Enterprises Inc. press releases, 6/28/2004, 9/22/2004).

Wonder District

WILLI Property. Sultan Minerals Inc. purchased the 20-claim WILLI property situated at the west end of the Wonder district, and is planning a surface exploration program of geological mapping, geochemistry, and geophysical surveying in order to define targets for reverse circulation drill testing. (Sultan Minerals Inc. press release, 2/6/2004)

CLARK COUNTY

Goodsprings District

Boss Property. Boxxer Gold Corp. began a diamond core drilling program on its Boss property, located in the Goodsprings mining district about 55 miles west-southwest of Las Vegas. The preliminary drilling program will total approximately 3,000 feet of HQ-size core from five to six shallow (400- to 600-foot) angled holes designed to test three targets identified by geologic mapping, rock-chip sampling and geochemical/geophysical survey programs completed since the fall of 2003.

Concurrent with the drilling program, detailed geologic mapping, rock chip sampling, and prospecting will continue on the east side of the property where several areas of high-grade gold-arsenic mineralization have been identified along the Keystone thrust fault. (Boxxer Gold Corp. press release, 4/29/2004)

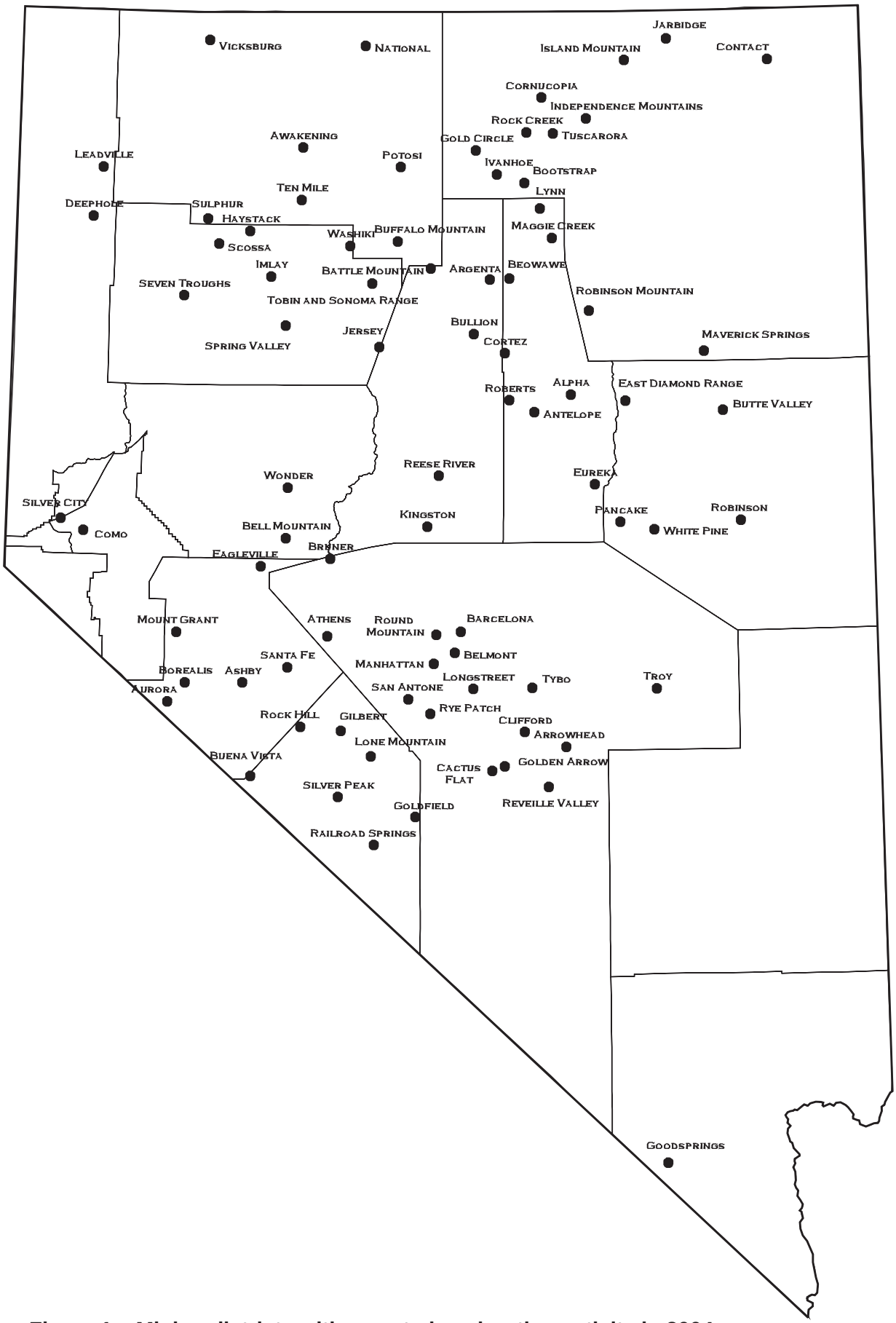


Figure 1. Mining districts with reported exploration activity in 2004.

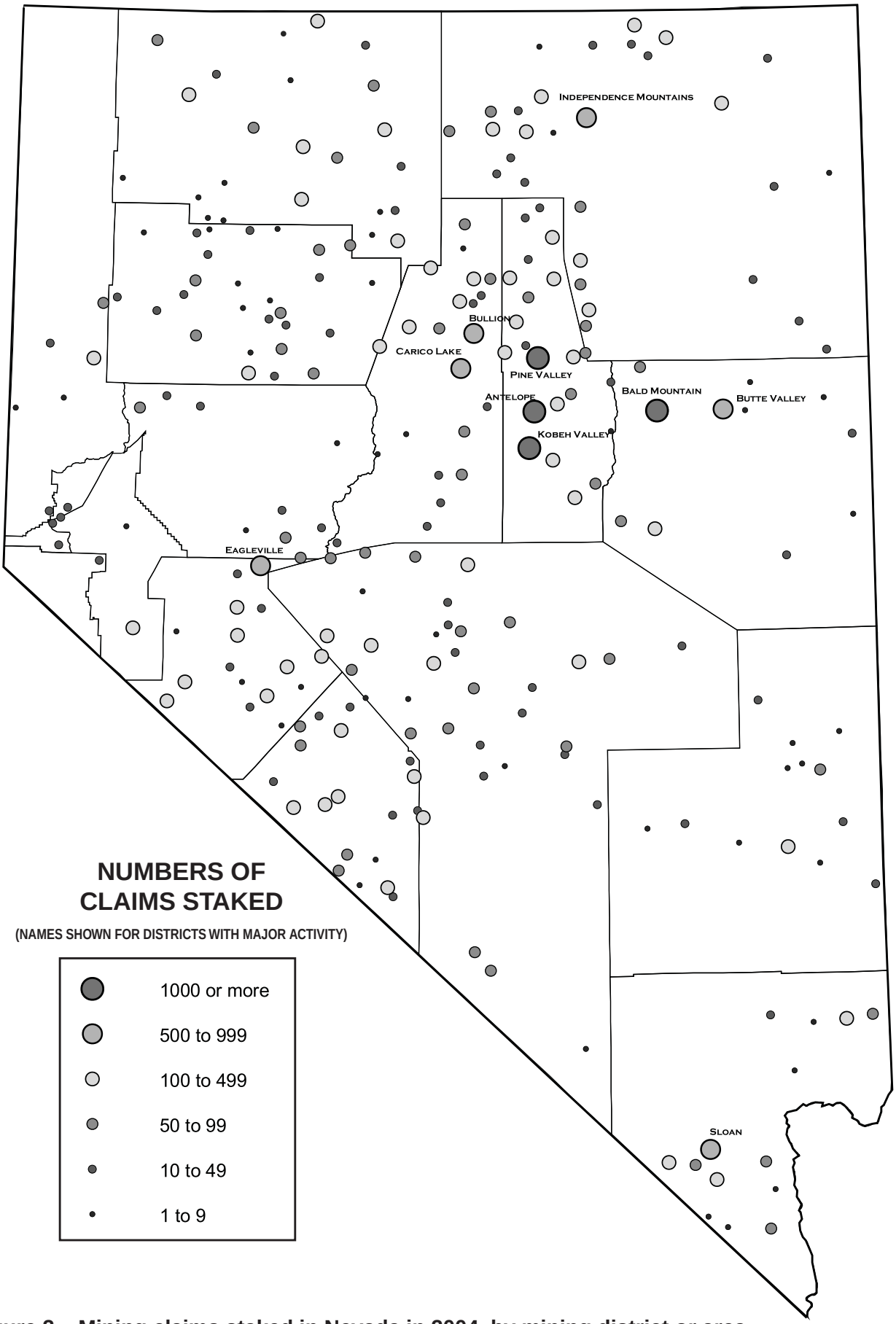


Figure 2. Mining claims staked in Nevada in 2004, by mining district or area.

ELKO COUNTY

Bootstrap District

Rossi and Dee Properties. At Barrick Gold Corp.'s Rossi and Dee properties in the Bootstrap district, an underground drill program to better define the Storm resource as well as a pre-feasibility study were completed during 2004. Exploration in 2005 will be focused on continuing to expand the reserve. (http://www.barrick.com/index.aspx?usesid=-1&sid=168)

Contact District

Contact Project. Drilling during 2004 at Golden Phoenix Minerals, Inc.'s Contact copper project focused on the poorly explored North Vein zone, where earlier drilling identified intercepts of 22 feet of 4.35% Cu (including 4 feet of 11% Cu) and 41 feet of 3.03% Cu (including 2 feet of 20% Cu) in two separate holes. This year's drill holes were placed to confirm and extend this mineralization. Golden Phoenix Minerals learned from this drilling effort that the North Vein becomes absorbed in a large mineralized body that is hosted in highly altered skarn above the granodiorite-limestone contact, identifying a potentially new zone of copper mineralization. Drilling in this zone and the previously identified Brooklyn zone will continue in 2005. A resource evaluation of all drill holes and trenches on the property found that the Contact copper deposit holds a mineralized material inventory of 97,427,000 tons averaging 0.54% Cu at a 0.1% cutoff grade. At a 3% Cu cutoff, the mineralized material inventory is 1,777,000 tons averaging 7.17% Cu. (Golden Phoenix Minerals, Inc. press release, 12/7/2004)

Cornucopia

Wild Horse Property. Senator Minerals Inc. optioned the 22-claim Wild Horse property from Janet and Carl Pescio. The Wild Horse claims cover an area of exposed silica sinter along the Wild Horse fault system. Past work on the property includes rock chip, float, and soil sampling by Superior Oil and Placid Oil companies, and limited drilling by Barrick Gold (2,515 feet) and Freeport McMoRan (6,695 feet). The drilling encountered gold mineralization at depths ranging from 5 feet to 705 feet with values ranging from 0.01 opt (troy ounces per short ton) Au to 0.16 opt Au. (Senator Minerals Inc. news release, 1/8/2004)

Gold Circle District

Clover Property. Atna Resources Ltd. granted Grandcru Resources Corp. an option to earn an interest in Atna's Clover gold property. Atna regained the Clover property after the termination of the option agreement with Newmont early in 2004. Previous drilling on the south end of the property encountered high-grade gold intersections that require follow-up work. (Atna Resources Ltd. press release, 3/25/2004)

Golden Zebra Property. Romarco Minerals Inc. acquired the Golden Zebra property located north of the Clover property of Atna/Grandcru. Romarco believes that chalcedonic quartz veins evident on the Golden Zebra, some of which show calcite replacement, may lead to mineralized quartz-adularia veins at depth. (Romarco Minerals Inc. press release, 9/8/05)

Independence Mountains District

Jerritt Canyon Property. Queenstake Resources Ltd. continued near-mine exploration programs at its Jerritt Canyon property. Additions to identified mineralization were reported from the Smith, SSX, Steer, and Murray Mines, and drilling was done at the Burns prospect. Queenstake also announced the discovery of a significant zone of high-grade mineralization at its Starvation Canyon property. Drilling has identified a zone of high-grade gold mineralization approximately 2,000 feet long, open on strike in both directions. Queenstake reports that mineralization at Starvation Canyon appears to be fairly typical of Jerritt Canyon gold deposits. High-grade gold mineralization occurs as pods at the intersections of northwest- and northeast-trending structures and is hosted primarily at the contact between Units 2 and 3 of the Hanson Creek Formation. (Queenstake Resources Ltd. press release, 12/16/2004)

Cobb Creek Property. Staccato Gold Resources Ltd. acquired the Cobb Creek gold property in the Independence Mountains district on a 50/50 basis with Bell Coast Capital Corp. The Cobb Creek property, which now comprises an area of 1,500 acres, has seen exploration by BHP, Newmont, Geomaque, and Orvana since the discovery of the mineralized zone in 1983. The McCall zone within this property has an estimated resources of over 173,000 oz Au. (Staccato Gold Resources Ltd. news release, 11/19/2004)

Big Springs Project. Gateway Gold Corp. continued work on its Big Springs project. A new geological model was developed based on the results of last year's drilling and the company expects drilling this year will validate the model. (Gateway Gold Corp. press release, 9/16/2004)

Dorsey Creek Project. On the Dorsey Creek project, about 2 miles southwest of the Big Springs project, Gateway Gold completed a grid soil geochemical survey and an induced polarization geophysical survey over an area of 1.5 miles by 1.2 miles. Several multi-element geochemical anomalies were defined overlying, and adjacent to, a large silicified zone identified by outcrop mapping. Drilling is planned to test these anomalies. (Gateway Gold Corp. press release, 9/16/2004)

Golden Dome Property. Gateway Gold Corp. also conducted geophysical work on their Golden Dome property located about 4 miles south of the Big Springs project and planned a 9,800-foot drill program. (Gateway Gold Corp. press release, 9/16/2004)

Island Mountain District

Island Mountain Property. Gateway Gold Corp. commenced drilling on its Island Mountain gold property in the Island Mountain district, 9 miles northeast of Big Springs. Four target areas have been defined by previous drilling on the property. (Gateway Gold Corp. press release, 9/16/2004)

Ivanhoe District

Golden Cloud Property. Drilling began at Atna Resources Ltd.'s Golden Cloud property. Atna's Joint Venture partner, Great Basin Gold, planned a program totaling about 5,000 feet of reverse circulation drilling to test structures containing chalcedonic quartz and anomalous gold and mercury values. The Golden Cloud property is a "bonanza-style," low-sulfidation epithermal gold target on the eastern margin of the Northern Nevada rift, and is contiguous with the southern boundary of Great Basin Gold's Ivanhoe claim block. (Atna Resources Ltd. press release, 5/13/2004)

Hollister Project. At the Hollister property, Hecla Mining Co. began work on a two stage development program that could lead to commercial production. Stage 1 of this program involves development of a decline to access the eastern extremities of the high-grade gold veins and underground drilling leading to the establishment of mineral reserves and completion of a feasibility study. One reason that underground exploration is necessary at this stage of the project is because the mineralized zone is beneath the Tosawihi Quarries Archaeological District where Indians mined for white chert for many years. (Elko Daily Free Press, 4/27/2004)

Ivanhoe Creek Project. Senator Minerals Inc. completed geochemical and geophysical work on its Ivanhoe Creek property, and a 13-hole program consisting of approximately 6,000 feet of reverse circulation and 3,000 feet of core drilling has been recommended. (Senator Minerals Inc. news release, 11/26/2004)

Silver Cloud Project. Geologix Explorations Inc., acquired Placer Dome's interest in a joint venture (between Placer and Teck Resources Inc.) on the 544-claim Silver Cloud property. Previous exploration at Silver Cloud encountered shallow anomalous gold and deeper high-grade gold and silver concentrations beneath the mercury-bearing, hot spring system. (Geologix Explorations Inc. press release, 8/16/2004)

Jarbidge District

Atna Resources Ltd. optioned and staked approximately 3,200 acres of mineral claims covering a substantial portion of the historical low-sulfidation, epithermal gold camp of Jarbidge. Exploration will target untested, newly discovered veins and faulted offsets of extensions to known veins. Gold-bearing veins were first discovered at Jarbidge in 1909, and the bulk of historical production occurred between 1918 and 1932. Production is estimated to have been 355,000 oz Au and 1,600,000 oz Ag from 800,000 tons of ore. Atna has staked and optioned claims completely surrounding the mined out core of the principal deposit. (Atna Resources Ltd. press release, 1/12/2004)

Maverick Springs Area

Maverick Springs Property. In April 2004, Vista Gold Corp. announced the results of an updated resource analysis for their Maverick Springs property. The resource estimate, based on a database containing 159 drill holes, credits the property with indicated resources of 696,300 oz Au and 69,630,000 oz Ag, and inferred resources of 684,400 oz Au and 85,550,000 oz Ag. The Maverick Springs gold-silver property, located about 50 miles southeast of Elko, contains a large, flat-lying, Carlin-type system with gold-silver mineralization occurring in a zone 100 to 400 feet in thickness. (Vista Gold Corp. press release, 4/21/2004)

Robinson Mountain

Pony Creek Property. Mill City International received new resource calculations on a portion of the company's Pony Creek property. The calculations show an inferred resource of 1,426,000 oz Au contained within a larger potential resource of 2,585,000 oz Au. This resource averages 0.044 opt Au and is based on 175 drill holes, which test part of a regionally extensive structural zone over a length of 2.4 miles, with an average width of 3,300 feet. The resource, although shallow (92% less than 500 feet deep), is based on wide-spaced drilling, which does not allow a determination as to the amount which will ultimately be mineable. In late July, 2004, Mill City optioned the 20-plus-square-mile Pony Creek/Elliott Dome property to Grandview Gold Inc. of Toronto. (Mill City International press releases, 4/4/2004, 1/10/2005)

Rock Creek District

Horse Mountain Project. Anaconda Gold Corp. assigned an option agreement held by Hunter Dickinson Group Inc. on Anaconda's 196-claim Horse Mountain gold project in the Rock Creek district to a new company, Quicksilver Ventures Inc. Mineralization within the property is developed along the Rock Creek fault, which displays strong silicification, disseminated stibnite, arsenic oxide staining, and strongly anomalous gold, silver,

arsenic, antimony and mercury over strike length of 5,000 feet. Quicksilver Ventures intends to drill test for the presence of lower plate carbonate rocks and high-grade, Carlin-type gold mineralization similar to that found at the Ren and Meikle deposits to the south. (Anaconda Gold Corp. press release, 9/20/2004)

Tuscarora District

Dottie Property. Minefinders Corp. Ltd. has begun a core drilling program on its Dottie property located in the Tuscarora district. The drilling targets a highly silicified vein/stockwork zone on the east flank of the Tuscarora Range. The vein system has been mapped over more than 2 miles of strike-length and remains largely untested. The drill program consists of six holes placed along strike to test for high-grade gold vein mineralization at depths of 800 to 1,500 feet below surface. (Minefinders Corp. Ltd. press release, 10/28/2004)

ESMERALDA COUNTY

Buena Vista District

Tip Top Property. Gold Summit Corp. continued reverse circulation drilling at its Tip Top property in the Buena Vista district west of Tonopah. This year's program was designed to test for the down-dip extension of a high-grade shoot outlined by earlier drilling. (Gold Summit Corp. press release, 4/12/2004)

Gilbert District

Monte Cristo Property. Gold Summit Corp. tested for mineralization below high-grade gold values in quartz veining at the base of the former Maclean Pit on the Monte Cristo property, northwest of Tonopah. The Maclean Pit produced 300,000 tons grading about 0.08 opt Au in the 1980s, when mining ceased; a remnant, steeply dipping, high-grade core zone was left at the bottom. Beneath that, old drill intersections show potential for underground ore with reasonable indications of continuity along strike and down dip. Gold Summit drilling of the MacLean zone has encountered gold mineralization along approximately 1,000 feet of strike and 1,000 feet down dip to the west. It remains open in both of these directions and continues to show increase in grade with depth. (Gold Summit Corp. press releases, 4/12/2004, 10/1/2004, 11/8/2004)

Goldfield District

Goldfield Project. Metallic Ventures Gold Inc. began surface drilling on its Gemfield deposit on the western edge of the main Goldfield district. On completion of this drilling program, the company plans to proceed with a feasibility study of the deposit. At the company's McMahon Ridge deposit, infill drilling intersected high-grade gold on newly interpreted structures and ledges within the known deposit, and high-grade gold with copper was also intersected along important structural trends in the main district. (Metallic Ventures Gold Inc. press releases, 2/2/2004, 4/19/2004)

Goldfield West Property. During the summer of 2004, Bonaventure Enterprises Inc. conducted ground magnetics, an IP survey, and a 23-hole, 7,695-foot drilling program on two separate targets at its Goldfield West property. Drilling at the Nevada Eagle identified a northwest-trending feeder fault as well as a new parallel gold-bearing structure. At the South Zone target, drilling defined a thick (100–150 feet), gently dipping horizon of +0.5 ppm Au including a basal higher grade section (+1.0 ppm Au). This zone appears to trend east-west or northwest instead of north-south as originally thought. A second phase of drilling is recommended both in the two targets drilled (Nevada Eagle and the Southern Target) and the Central target located between the Nevada Eagle and South targets. (Bonaventure Enterprises Inc. press releases, 4/5/2004, 5/24/2004)

Lone Mountain District

Millers Property. Quincy Resources Inc. acquired the 21-claim Millers property from Pacific Intermountain Gold Corp., a subsidiary of Seabridge Gold Corp. The company will explore a set of at least five parallel chalcedonic veins that occur in zone up to 400 feet wide that can be traced along surface for more than a mile. Dickenson-Nevada held the property in the late 1980s. They conducted soil sampling and drilled six holes ranging from 355 to 505 feet in depth, but the veins were intersected in only two holes. Quincy Resources believes that there is untested potential for bonanza-style epithermal mineralization at depth at this property. (Quincy Resources Inc. news release, 3/8/2004)

Railroad Springs District

Imperial Mine. American Goldfields Inc. completed six holes in its Phase 1 drilling at the Imperial Mine property in the Railroad Springs district southwest of Goldfield. The company is exploring an untested 1,500-foot-long portion of the Imperial Mine vein system. Encouraged by a high-grade intersection in one hole (10 feet averaging 0.50 opt Au occurring within a 40-foot interval that averages 0.154 opt Au), the company plans a Phase 2 drill program. (American Goldfields Inc. press release, 12/15/2004)

Rock Hill District

Redlich Property. Newcrest Resources Inc. completed the first phase of drilling on Miranda Gold Corp.'s 104-claim Redlich property, located in the Rock Hill district about 40 miles west of Tonopah. Newcrest drilled 19

reverse circulation holes for a total of 11,094 feet with an average depth of about 600 feet per hole. Past drilling in this property encountered mineralized intervals from 0.08 opt Au up to 0.59 opt Au associated with wide intervals of sub-economic mineralization. Gold mineralization at Redlich occurs in quartz veins or quartz fracture zones, and boulders and cobbles of well-banded quartz vein float are found over an area of approximately 100 acres. (Miranda Gold Corp. news releases, 7/28/2004, 11/2/2004)

Silver Peak District

Mineral Ridge Mine. Golden Phoenix Minerals, Inc. plans to increase gold production at its Mineral Ridge Mine with the rehabilitation of the Lone Mountain mill. The mill, which lies just north of Lone Mountain and about 15 miles west of Tonopah, was built in about 1981 to process tailings from the old Tonopah silver district. Golden Phoenix plans to add a gravity and primary crushing circuit to handle the Mineral Ridge ore. Once milling begins, low-grade ore will continue to be placed onto a leach pad at the mine site, while high-grade ore will be trucked approximately 43 miles to the mill for processing. (Golden Phoenix Minerals, Inc. press release, 12/1/2004)

EUREKA COUNTY

Alpha District

Whistler Property. Exploration by Pacific Ridge Exploration Ltd. at its Whistler property outlined hydrothermal breccia zones coincident with two northwest-trending gold-arsenic geochemical anomalies that are 7,000 feet and 5,000 feet in length. Drilling of the anomalous areas is planned for 2005. (Pacific Ridge Exploration Ltd. press release, 11/10/2004)

Antelope District

Red Canyon and Red Hills Properties. Miranda Gold Corp. entered joint venture agreements on two separate exploration properties in the Antelope district. On its Red Canyon property, located about 20 miles south of Cortez, the joint venture partner is Newmont, while on the Red Hill property, located along the eastern edge of the district, Placer Dome is Miranda's partner.

The Red Canyon property consists of 237 mining claims situated between the Tonkin Springs and the Gold Bar deposits. Past sampling and drilling have identified three areas of gold mineralization within the property.

The Red Hill property consists of 79 lode mining claims that occupy a large percentage of the JD window. The JD window exposes lower-plate carbonate rocks that elsewhere in the Cortez Trend are the host rocks for disseminated gold deposits. Anomalous gold mineralization associated with barite and antimony mineralization has been located along several prominent faults that cross the property, and a small gold resource has been discovered on adjacent claims. (Miranda Gold Corp. news releases, 10/19/2004, 10/28/2004)

Tonkin Springs Mine. At the Tonkin Springs Mine, U.S. Gold Corp. and its joint venture partner, BacTech Mining, continued engineering and permitting work leading toward reopening the mine. A staged operation lasting up to 10 years is planned that includes construction of a new heap-leach pad for processing oxide and oxidized sulfide ores and a bio-oxidation facility to oxidize sulfide ores. Mining will use traditional open-pit mining methods and involve three open pits. In addition, BacTech proceeded with a program of infill and step-out drilling at existing pits and an exploration program on the northern section of the property. (U.S. Gold Corp. press releases, 3/18/2004, 6/16/2004)

Beowawe District

Beowawe Gold Project. Prospector Consolidated Resources Inc. optioned properties in the Beowawe district from Atna Resources Ltd. and from Alpha Oil Inc. The combined properties, totaling more than 4,600 acres, are located west of the town of Beowawe along a deep-seated, northeast-trending fault. Targets within the properties are hot spring-, silica sinter-, and epithermal-vein-related anomalies where gold mineralization is known to occur. An initial program will consist of six to ten drill holes comprising 3,000 to 6,000 of drilling. (Prospector Consolidated Resources Inc. press release, 12/1/2004)

Cortez District

Golden Trend and HC Properties. J-Pacific Gold Inc. completed preliminary drilling on its Golden Trend and HC properties located on the south side of the Cortez Mountains. The program at Golden Trend consisted of two holes drilled to test targets with coincident geochemical anomalies and structural traps that occur in favorable geological settings similar to Placer Dome's Cortez Hills discovery about 10 miles to the north. Both drill holes cut intervals of hydrothermal alteration associated with anomalous gold values.

At the HC property, the target is gold mineralization hosted by the Woodruff, Webb, and Devil's Gate Formations associated with steeply dipping faults and silicification. Drill targets were developed from the results of geologic mapping and soil geochemistry, but winter weather and permitting restrictions prevented completion of the drill program. Exploration is planned for both properties in 2005. (J-Pacific Gold Inc. press release, 3/04/2005)

Mill Canyon Property. A Phase 1 deep drilling program at Victoria Resource Corp.'s Mill Canyon project in the Cortez district outlined a large "Carlin style" alteration system in the southern portion of the property. Holes drilled in the RJR Zone intersected a broad zone of dolomitized

and brecciated limestone cut by numerous silica-flooded zones containing anomalous gold values throughout. The RJR alteration and mineralized zone is at least 2,000 feet long, 700 feet wide, and at least 2,000 feet deep. The breccia zone consists of brecciated and sulfidized hydrothermal dolomite with minor, silica-flooded zones (locally sulfidized) that form a series of capping jasperoids within the larger dolomitic zone. Victoria plans a second phase of drill holes beyond the dolomite zone to test for a silica-network, more gold-rich portion of the system at depth. (Victoria Resource Corp. press release, 2/08/2005)

Quicksilver Phenomenon Claims. Royal Gold Inc. acquired 31 mining claims from Quicksilver Phenomenon LLC on lands southeast of Cortez Gold Mines' exploration sites in the Cortez district. (Elko Daily Free Press, 8/20/2004)

Eureka District

Ruby Hill Property. In September 2004, Barrick Gold Corp. announced that it had decided to proceed with the East Archimedes project at the Ruby Hill property in the Eureka district. The new mine will be an open-pit, heap-leach operation exploiting the East Archimedes deposit, a deeper continuation of the ore mined previously at Ruby Hill. Construction is expected to take two years once permitting is secured, and the first gold pour is targeted for mid 2007. (Barrick Gold Corp. 2004 Annual Report)

Lynn District

Goldstrike Property. Barrick Gold Corp. continued exploration drill programs at its Goldstrike property, focusing on targets north and south of the open-pit mine. The programs were successful in adding both reserves and resources, and 2.3 million contained ounces of gold were added to Goldstrike's reserves. In 2005, Barrick's single largest exploration expenditure will be in the Goldstrike district and on the North Carlin trend. (Barrick Gold Corp. 2004 Annual Report)

Maggie Creek District

Gold Quarry Mine. At Newmont's Gold Quarry Mine in the Maggie Creek district, infill drilling converted non-reserve material to reserves and, coupled with design changes of the Gold Quarry pit, maintained reserves of 6 million ounces of gold after depletion of more than 600,000 ounces in 2004. (Newmont Mining Corp. news release, 2/24/05)

Roberts District

Hot Gold Property. Fjordland Exploration Inc. acquired the Hot Gold property and will explore an arsenic-antimony-gold anomaly associated with hot spring sinter. The 14-claim Hot property is located about 9 miles northwest of the Tonkin Springs gold deposit and 11 miles south of the Cortez Hill gold deposit. Limited work was performed on the Hot property by Great Basin Mining and Exploration in 1991-1992. (Fjordland Exploration Inc. press release, 11/18/2004)

Keystone Property. Nevada Pacific Gold Ltd. signed agreements with Placer Dome U.S. Inc. whereby Placer will fund an exploration program on the company's Keystone property in the Roberts district south of Cortez. The property includes base and precious metal mineralization that occurs along the edge of the Keystone window in both upper and lower plate rock, near the northern contact of a 33.4 Ma granodiorite stock. Past drilling shows indications of Carlin-style gold mineralization with assays up to 0.125 opt Au in lower-plate jasperoids. Nevada Pacific retains the rights to base metals and silver. Nevada Pacific plans to conduct an exploration and drilling program along the margin of the intrusive to test the high-grade base metal potential of the area. All permits, roads, and drill pads are in place with drilling planned to begin in 2005. (Nevada Pacific Gold Ltd. press releases, 3/3/2004, 3/3/2005)

HUMBOLDT COUNTY

Awakening District

Sleeper Gold Project. Joint Venture partners, New Sleeper Gold Corp. and X-Cal Resources Ltd. completed additional sampling and drilling at their Sleeper gold project in the Awakening district. Core drilling on the West Wood target confirmed the presence of gold in colloform veins at the base of the West Wood breccia and further drilling is planned to define this mineralization. In addition to the drilling at West Wood, six core holes and one wedged directional hole were drilled to test for extensions to gold mineralization under the Sleeper Pit, which is now flooded. Mapping and sampling was done in the Alma-Dome-Electrum area 3 miles southwest of the Sleeper Pit, and on the Range Front Fault target, located east of the Sleeper Pit. Drilling is proposed in 2005 to test all of these targets. (New Sleeper Gold Corp. press release, 11/22/2004)

Sleeper Gold Property. Cypress Development Corp. staked its 24-claim Sleeper gold property in the Slumbering Hills approximately 5 miles to the south of the Sleeper Mine. Cypress is compiling data on the property and will begin a program of mapping and sampling. (Cypress Development Corp. news release, 11/18/2004)

Battle Mountain District

Millennium Project. In the Humboldt County portion of the Battle Mountain district, Glamis Gold Ltd. received BLM (U.S. Bureau of Land Management) approval to begin its Millennium expansion project at the Marigold

Mine. The project will include expansion of two existing open pits, development of five new open pits, construction of two new heap-leach facilities and waste rock facilities, as well as expanding existing waste rock dumps. (Elko Daily Free Press, 2/9/2004)

Pediment Gold Property. Pediment Gold entered into a joint venture agreement with Placer Dome U.S., Inc., wherein Placer Dome granted Pediment Gold the right to explore and develop a 920-acre (1.4-square-mile), gravel-covered pediment area controlled by Placer that is located approximately 6 miles north of the Marigold Mine. (Battle Mountain Gold Exploration Corp. press release, 12/6/2004)

Buffalo Mountain District

Converse Project. Metallic Ventures Gold Inc. purchased four sections of fee land (approximately 2,555 acres) within the boundaries of its Converse project in the Buffalo Mountain district from Nevada Land and Resource Company. A portion of the Converse deposit is within the boundaries of the purchased land and the balance will be utilized for the location of mining facilities and related infrastructure. The combined land package of the Converse project totals approximately 11 square miles and contains measured and indicated resources of 3,937,000 oz Au and 15,310,000 oz Ag in addition to inferred resources of 500,000 oz Au and 1,833,000 oz Ag. (Metallic Ventures Gold Inc. press release, 11/23/2004)

National District

Buckskin-National Property. Romarco Minerals Inc. acquired the Buckskin-National property in the National district from Paragon Precious Metals, Inc. In addition, Romarco has secured mining claims in area of the high-grade Bell Vein. Large parts of the project area, including numerous targets revealed by recent geological reinterpretation, remain untested or improperly tested by previous drilling. Geological evidence indicates that a swarm of vein systems may exist beneath acid-sulfate-altered volcaniclastic rocks that crop out on the top of Buckskin Mountain. The Buckskin-National area has been mined historically for both mercury and gold-silver ores.

During 2004, Romarco completed a mapping and sampling program on the property, and a Plan of Operations has been submitted to the U.S. Forest Service that will permit the exploration drilling and road building in late spring or early summer 2005. (Romarco Minerals Inc. press release, 3/1/2004)

National Project. Gold Summit Corp. optioned 209 patented and unpatented lode claims located in the heart of the historical district, including the Birthday and Blum Veins. Detailed mapping and grid soil sampling is planned to refine drill targets for 2005. (Gold Summit Corp. news release, 9/20/2004)

Potosi District

Pinson Mine Project. Results from Atna Resources Ltd.'s 2004 drilling program at the Pinson Mine Project in Nevada confirm the continuity of high-grade gold mineralization between previous drill intercepts in the mineralized envelope around both the CX and Range Front zones. Approximately 28,000 feet of drilling have been completed and the dimensions of the overall mineralized envelopes in both target areas have been expanded beyond the limits of earlier drilling. An underground exploration program for definition drilling of the mineralization is planned to begin in 2005. (Atna Resources Ltd. press release, 11/22/2004, 1/5/2005)

Sulphur District

Hycroft Mine. In August 2004, Vista Gold Corp. announced an updated resource estimate for its Hycroft Mine prepared by Mine Development Associates of Reno. The resource estimate, based on a database containing 575 drill holes, credits Hycroft with measured and indicated resources of 754,600 oz Au, and inferred resources of 133,600 oz Au. (Vista Gold Corp. press release, 9/22/2004)

Ten Mile District

West Coast Mine. Consolidated Global Minerals Ltd. plans to acquire the West Coast Mine located in the Ten Mile district west of Winnemucca. The property consists of approximately 25 claims covering some 500 acres containing at least five veins or vein systems; only two veins have been extensively developed. (Consolidated Global Minerals Ltd. press release, 2/17/2004)

Vicksburg District

Ashdown Property. Golden Phoenix Minerals, Inc. reports progress on permitting its Ashdown gold-molybdenum property. A pilot mill has been acquired and will be relocated to the mine area. Molybdenite production could begin about 45 days after mill construction is started. Past economic evaluations by other operators identified about 146,000 tons of molybdenum resource averaging about 2.9% Mo and, in a separate deposit, 1.18 million tons of gold resource averaging about 0.125 opt Au. Both deposits are open for possible expansion of the mineralized inventory and numerous step-out exploration holes have identified strong mineralization needing follow up drilling. The property currently consists of 196 mining claims, covering about 6.1 square miles. Golden Phoenix has a joint venture agreement on the property with property owner, Win-Eldrich Mines, Ltd., Toronto, Canada. (Golden Phoenix Minerals, Inc. press releases, 2/10/2004, 11/9/2004)

LANDER COUNTY

Argenta District

Dome Property. Senator Minerals Inc. optioned the 52-claim Dome property in the Argenta district from Janet and Carl Pescio and RMIC Gold. Two zones anomalous in sulfur and mercury have been identified on the sides of a silica-veined and -flooded volcanic dome within the property. (Senator Minerals Inc. news release, 1/8/2004)

Battle Mountain District

Elephant Property. Randsburg International Gold Corp. and Duncan Park Holdings Corp. entered into an agreement to give Randsburg rights to earn up to a 50% interest in Duncan Park's Elephant property located 2 miles southeast Copper Canyon in the Battle Mountain district. Duncan Park controls 253 lode mining claims covering 6.5 square miles at Elephant, and an additional 3,591 acres (5.8 square miles) of private lands that border the Elephant claims on the east. Exploration targets on the Elephant property include porphyry-related gold-copper-silver intrusion-hosted deposits, skarn-related gold-silver-copper deposits, replacement gold-silver-(copper) bodies in Paleozoic rocks such as the Battle Conglomerate, Antler Limestone, and Edna Mountain Formation, and debris flow alluvial gold deposits contiguous with or peripheral to Newmont's adjacent Peninsula resource. Duncan Park has received approval from the BLM to drill up to 50 holes at Elephant; five holes have been drilled to date with another five holes planned for Phase 2 drilling in 2005. (Randsburg International Gold Corp. press release, 11/22/2004)

Lewis Property. Madison Enterprises Corp. completed a prospecting and a rock and soil geochemical sampling program at its Lewis property to collect information on three of the subparallel structural trends associated with the Virgin structure, the principal mineralized zone on the property. Exploration has outlined a geological environment identical to that underlying the nearby Phoenix-Fortitude property. Madison plans additional drilling at the Lewis property. (Madison Enterprises Corp. press release, 9/22/2004)

Phoenix Project. At Newmont Mining Corp.'s Phoenix project in the Battle Mountain district, a ground-breaking ceremony in the fourth quarter of 2004 was followed by the start of construction of the processing facilities. Initial gold production from Phoenix is expected in mid-2006. During 2004, a 275-hole drill program at Phoenix resulted in the addition of 2.3 million ounces of gold reserves, increasing the projected mine life from 13 to 17 years. (Newmont Mining Corp. press release, 2/24/05)

Bullion District

Cornerstone Project. Nevada Pacific Gold Ltd. completed a detailed soil sampling grid over the Flag Zone on the company's 3.3-square-mile Cornerstone property located about 12 miles south of Placer Dome's Cortez Hills and Pediment deposits. The surface exploration further defined the Flag Zone mineralization and identified two new significant structural zones displaying strong alteration and gold mineralization. Permitting has been initiated in preparation for trenching and drilling on the identified structures. (Nevada Pacific Gold Ltd. news release, 10/15/2004)

Fire Creek Property. Klondex Mines completed a Phase 2 drilling program at its Fire Creek property in the northern part of the Bullion district. The program consisted of 28 holes and 36,295 feet of reverse circulation and core drilling that investigated the north-northwesterly striking mineralized structure over a length of about one mile. Drilling to date appears to have defined four vein systems on the property, and all four veins are targets for resource expansion in 2005. Klondex is also investigating driving an exploration and development decline for direct underground access to the vein systems and to provide underground drill sites for ore shoot definition. (Klondex Mines Ltd. press releases, 10/18/2004, 12/29/04)

Mill Creek Property. During 2004, X-Cal carried out more than $1 million of work at its Mill Creek property, which confirmed a favorable geochemical and geological environment. A program of re-mapping the property was conducted by contractors to X-Cal Resources Ltd. and Placer Dome Exploration. Channel sampling was done by X-Cal contractors on individual outcrops, road exposures, and in seven new dozer and excavator trench outcrops along new roads, and a detailed gravity survey was conducted followed by an 11-hole program of reverse circulation and HQ-diameter core drilling. (X-Cal Resources Ltd. press releases, 2/28/05, 6/29/05)

Robertson Project. Coral Gold Corp. completed a 10-hole reverse circulation drilling program at its Robertson property which surrounds the old camp of Tenabo. Eight of the holes were directed at expanding the 39A Zone resources, and two holes were aimed at assessing a potential northwest extension of mineralization in the Porphyry Zone resource area. The 2004 drilling resulted in a modest increase to the high-grade portion of the 39A resource. (Coral Gold Corp. news release, 1/18/05)

Rynn Gold Property. Fjordland Exploration Inc. acquired the 17-claim Rynn gold property situated midway between the Hilltop and Tenabo gold mines. Mineralization at Rynn consists of a northwest-trending, one-mile-long, 650-foot-wide gold anomaly (>100 ppb gold) within upper plate, Slaven Formation rocks. Spikes of higher values within the anomaly suggest the presence of veins or stockworks. The

gold occurrence at Rynn may represent the uppermost portion of a mineralized feeder system, and the most prospective target is where this feeder system intersects Wenban Formation limestones below the upper plate rocks. (Fjordland Exploration Inc. press release, 11/18/2004)

Cortez District

Cortez Properties. Placer Dome completed approximately 495,000 feet of exploration, development, and condemnation drilling on its Cortez district properties in 2004. Of this, 15% was directed to the Pipeline/South Pipeline/GAP Complex, 65% to the Cortez Hills/Pediment area, and 20% to adjacent targets. The 2004 drilling continued delineation of the Cortez Hills mineral reserve and mineral resource and newly defined anomalous areas within the joint venture and continued refinement of the areas around the Pipeline/South Pipeline and Gap deposits. The focus in 2005 will be exploration and condemnation drilling in the Cortez Hills / Pediment area, the Horse Canyon / ET Blue area, and the GAP, North GAP, and Pipeline Stages 8 and 9 areas, as well as other targets in the greater Gold Acres area. (Placer Dome Inc. news release, 2/23/05)

Wenban Spring Property. Bullion River Gold Corp. completed a geophysical program consisting of over 7 line miles of controlled-source audio magnetotelluric (CSAMT) geophysics on its Wenban Spring property located 6 miles southwest of the Cortez Hills gold deposit. The program was aimed at identifying buried faults and estimating the thickness of post-mineral alluvial cover across the 7.25 square-mile property. The CSAMT program confirmed Bullion River's assumptions of the structural settings of buried fault zones and, furthermore, identified fairly shallow alluvial cover extending east from the range front. As a result of this program, Bullion River Gold decided to accelerate its plans for drilling the property and selected eight drill sites for completion in 2005. A Plan of Operations has been submitted to the BLM, with approval expected early in 2005. (Bullion River Gold Corp. press releases, 11/16/2004, 12/14/2004)

Kingston District

Gilman Gold Prospect. American Goldfields Inc. acquired the Gilman gold property from MinQuest Inc. The property consists of 19 mining claims covering approximately 390 acres over the eastern flank of the Toiyabe Range north of Kingston Canyon. (American Goldfields Inc. press release, 5/13/2004)

Reese River District

Amador Canyon Silver Project. Nevada Pacific Gold Ltd. completed a Phase I drill program on its Amador Canyon silver project located 4 miles north of the town of Austin in the northern portion of the Reese River district. Eighteen reverse circulation holes and three core holes totaling 10,008 feet were drilled in the Phase I program. Mineralization in outcrop at Amador Canyon has been traced by mapping and sampling for over 9,000 feet, and the Phase I drilling was designed to test approximately 1,200 feet of the strike length of the north-northwest-trending zone of mineralization.

The original exploration target at Amador was a bulk tonnage disseminated/stockwork-type silver deposit. Phase I drilling demonstrated that the original exploration model of bulk mineable silver does not exist in the area drilled by Nevada Pacific, although results indicate that high-grade silver (up to 34 opt over 5 feet) is present in localized areas. Although management believes that additional work is warranted in the southern half of the project area, Nevada Pacific has elected to write off the capitalized expenditures on this property. (Nevada Pacific Gold Ltd. press releases,10/1/04, 3/1/05)

Cottonwood Property. Bonaventure Enterprises Inc. added 55 claims to its Cottonwood property. The total claim block now covers approximately 2 square miles and includes two exploration targets. Bonaventure has completed two trenches in Phase 1 exploration on the property.

At the Cotton target in the southern part of the property, quartz-scorodite-arsenopyrite vein-breccia fragments have been identified at several areas and mineralization has been identified in the dumps of three caved adits and over an area of about 300 by 2,300 feet along the south side of Cottonwood Creek. No drilling has been done in this area, but samples taken from two trenches returned high gold values. The highest values were found in the top portion of Trench 1 (20 feet of 0.16 opt Au). Sampling of two quartz-sulfide veins in this area gave values of 1.67 opt Au and 0.70 opt Au across 1-foot widths. Trenching will be extended up slope to further define the zone. Trench 2, located east of Trench 1 and all in intrusive rock, exposed several north- to northeast-trending quartz-arsenopyrite veins. The highest values in this trench were 3 feet of 0.03 opt Au and 1 foot 0.19 opt Au.

The Yankee Blade target is located at the northwest corner of the property, and is characterized by steeply dipping, north- to northeast-trending, quartz stockworks in argillite. Both the Cotton and Yankee Blade structures should intersect favorable carbonate host rocks at depth. (Bonaventure Enterprises Inc. press releases, 4/7/2004, 11/4/04, 6/10/05)

LYON COUNTY

Como District

Blackrock Project. Fjordland Exploration Inc. acquired the 12-claim Blackrock property located on the northern fringe of the Como district. Blackrock contains an epithermal gold-silver mineral system similar to the Comstock Lode deposits located about 12 miles to the

northwest. Previous surface and underground sampling as well as geological mapping at Blackrock has traced a northeast-trending, southeast-dipping, silicified vein/stockwork system along strike for a distance in excess of 3,000 feet. Upon receipt of a permit from the BLM, the company plans to complete approximately 2,000 feet of reverse circulation drilling on the vein system to test the potential for bonanza-style gold and silver mineralization. (Fjordland Exploration Inc. press release, 4/7/2004)

Hercules Property. Three reverse circulation holes drilled by Lincoln Gold Corp. to test the deeper levels of the Hercules vein system in the Como district failed to find bonanza-grade gold and silver mineralization. The holes encountered intervals of low-grade gold values near the surface, but the bonanza-grade values were not present at depth. Miranda Gold Corp. and Lincoln therefore terminated their joint venture and option on the Hercules property. (Miranda Gold Corp. news releases, 8/12/2004, 11/2/2004)

MINERAL COUNTY

Ashby District

Ashby Property. Fjordland Exploration Inc. announced drill results from its Ashby property in the Ashby district. The Ashby property consists of a gold-bearing, quartz-limonite, vein/stockwork. Five angled diamond drill holes tested a vein system below old mine workings. The presence of copper mineralization with the gold suggests that a porphyry copper-gold system may exist at depth. (Fjordland Exploration Inc. press release, 2/16/2004)

Aurora District

Esmeralda Project. Metallic Ventures Gold Inc. reported the start-up of its 350 ton-per-day mill at its Esmeralda property in January 2004, and poured its first precious metal bullion on February 16. However, in the third quarter of 2004, Metallic Ventures suspended all production and exploration activities at this project in the Aurora district. The project was not providing consistent positive cash flow and, in order to ensure the company has adequate funding for its other Nevada projects, Esmeralda was placed on care and maintenance status. (Metallic Ventures Gold Inc. press releases, 1/20/2004, 11/12/04)

Borealis District

Borealis Property. Gryphon Gold Corp. drilled at Golden Phoenix Minerals, Inc.'s Borealis gold property as part of its program to bring the property into production. Gryphon also continues to work on the engineering and design of a proposed mining operation and is performing additional claim staking on peripheral areas that may have some gold potential. By the end of 2004, Gryphon had earned a 70% interest in the property, with Golden Phoenix retaining 30%. (Golden Phoenix Minerals, Inc. press releases, 5/18/2004, 2/1/05)

Northern Lights Property. Bonaventure Enterprises Inc. acquired the Northern Lights property, located between the Aurora and the Borealis Mines, from Minquest Inc. The Northern Lights claim group covers an epithermal lode target zone about 4,000 feet in length that contains abundant quartz float in alluvial cover. Magnetic mapping was completed in the property in 2004, and Phase 1 exploration, including trenching and possible drilling, is scheduled for summer 2005. (Bonaventure Enterprises Inc. press release, 1/28/2004; www.bonaventure.us/news_releases.htm)

Ramona Gold Property. Redhawk Resources Inc. completed geophysical surveys (gradient array grid resistivity and spontaneous potential surveys) in November 2004 at its Ramona Gold property located approximately 12 miles southwest of Hawthorne. The one-square-mile Ramona property adjoins and is immediately west of the Freedom Flats open pit in the Borealis Mine area. The survey results indicate the probable presence of east-northeast striking, high-angle faults coincident with linear high resistivity anomalies possibly associated with silicification. The pervasive low resistivity response background is likely associated with the expected argillization of volcanic host rocks typical of high-sulfidation epithermal deposits. Plans are to test these features by reverse circulation drilling. (Redhawk Resources Inc. press releases, 5/6/2004, 1/5/05)

Scorpion Property. Cypress Development Corp. staked 26 lode mining claims within an east-west-trending zone of faulting and alteration known as the Cerro Duro shear zone located on strike between the Borealis Mine and the Camp Douglas Mine areas. Numerous quartz vein swarms, some with surface gold values of up to 500 ppm, are located within quartz-alunite-altered andesite on the Scorpion claims. Cypress has completed a surface rock-sampling program on the property and is now preparing a budget for a detailed work program. (Cypress Development Corp. news release, 12/17/2004)

Eagleville District

Eagleville Property. Terraco Gold Corp. completed a CSAMT (controlled source audio magneto tellurics) geophysical survey on its Eagleville property, followed by geological mapping and sampling. A diamond drill program was completed on the property in May 2004, and more drilling has been recommended. (Terraco Gold Corp. press release, 3/17/2004)

Mount Grant District

Lapon Canyon Property. World Ventures Inc. plans an exploration program for its Lapon Canyon property located about 30 miles southeast of Yerington. Initial work

will include underground and surface mapping of old workings to verify sampling records from work done by J.W. Newell in l936. Newell reported values from a vein running 6 feet in width at an average grade of gold at 0.98 opt over a length of 160 feet. This zone and other parallel veins occur within a zone of mineralization and alteration which ranges in width from 30 to 450 feet within a granitic country rock. The program will include clearing the lower workings to map and delineate zones of high-grade gold mineralization that may be amenable for direct trucking to a custom mill. (World Ventures Inc. press release, 12/21/04)

Santa Fe District

New York Canyon. In March 2004, Aberdene Mines Ltd. acquired under an option agreement from Nevada Sunrise LLC the rights to explore Nevada Sunrise's New York Canyon copper property. The property includes unpatented and patented mining claims totaling approximately 4,890 acres, and contains the Santa Fe South copper resource (inferred to contain 142 million tons of 0.35 to 0.40% Cu in two deposits, the Copper Queen and the Champion).

Adding to these holdings in July 2004, Aberdene acquired a package of 18 patented mining claims from Jaycor Mining Inc. The property package includes the Mayflower patent claim covering a portion of the Longshot Ridge copper-oxide deposit; the Wallstreet, Turk, and Vacation patented claims, which were important historical producers of copper and associated precious metals during World War I, and 14 patented claims covering the Champion copper occurrences. Longshot Ridge contains an estimated mineral resource of 18 million tons of 0.57% Cu (oxide) and 15 million tons of 0.50% Cu (sulfide).

Aberdene began exploration activities concurrently on the Longshot Ridge copper oxide deposit and the Copper Queen sulfide porphyry deposit. On the Copper Queen targets, Aberdene will focus on areas with higher-grade values (0.6 to 1.0% Cu) within a large lower-grade halo, using geological and geophysical methods, followed by a combined program of reverse circulation and diamond drilling. (Aberdene Mines Ltd. press releases, 3/18/04, 7/22/2004, 11/23/2004)

NYE COUNTY

Athens District

SUN, PAC, HD, and ACE Properties. Timberline Resources Corp. acquired four gold prospects in the Athens district of Nye County and the adjacent Bell district of Mineral County. The four properties, known as the SUN, PAC, HD, and ACE Claim Groups, lie along the Walker Lane mineral belt, 10 to 20 miles southeast of Gabbs.

The SUN property, which has potential for volcanic-hosted, structurally controlled and replacement-type precious-metal mineralization, lies adjacent to and along trend of the mineralization at the Mina Mine east of the Simon (Bell) silver-lead district. The PAC and HD Properties are exploration-stage projects that may contain high-level epithermal precious-metal mineralization similar to the Paradise Peak deposit. The ACE claims lie along the projected strike of the gold-bearing quartz vein system of the Warrior Mine in the Athens district and cover an area containing exposures of silicified breccia, inferred to be continuation of the Warrior vein system. (Timberline Resources Corp. news release, 2/17/2004)

Arrowhead District

Needles Project. Taranis Resources Inc. continued exploration on the Needles property in the Reveille Range east of Tonopah. Work in 2004 included surface sampling, induced polarization/resistivity surveys, and drilling. A high point of the current program was the discovery of high-grade gold and silver in outcrops of porphyry on the north side of the Arrowhead fault about 500 feet west of the Arrowhead Mine. The mineralization occurs in altered and silicified quartz-feldspar porphyry similar to that of the higher grade zones exploited in the early 1900s at the Arrowhead Mine. Induced polarization surveys undertaken in three key areas of the property (the Whopper Junior Area about 1 mile north-northwest of the Arrowhead Mine, the Blanca area 0.6 mile west of the Arrowhead Mine, and the Arrowhead Mine area itself) identified a number of anomalies located around known mineralization. Drilling is planned in 2005 to test deeper targets. (Taranis Resources Inc. press releases, 11/16/2004, 1/11/2005)

Barcelona District

Antone Canyon. Bullion River Gold Corp. completed its initial drill program consisting of three holes to test the strike and depth extension of known high-grade structures at its Antone Canyon property. Each drill hole was about 1,000 feet in length. The drill results have expanded the high-grade mineralized zone to a strike length of at least 1,300 feet. (Bullion River Gold Corp. news releases, 10/18/2004, 11/22/04)

Corcoran Canyon Property. Bullion River Gold Corp. initiated a drill program to test the strike and depth extension of the silver and gold structures at its Corcoran Canyon property. Between 1970 and 1988, Corcoran Canyon was drilled to shallow depths and an inferred resource of about 9 million ounces of silver at a grade of about 5 opt Ag and 0.025 opt Au was calculated. Further surface sampling and mapping by Bullion River have identified a strike length of over 3 miles for the mineralization. Bullion River designed the drill program to test strike and depth extensions. (Bullion River Gold Corp. news release, 10/25/2004)

Belmont District

Belmont Property. American Bonanza Gold Mining Corp. acquired an exploration property in the Belmont district about 40 miles north of Tonopah. American Bonanza currently controls 500 acres through the staking of 23 lode mining claims.

Silver was discovered at Belmont in 1865 and was mined continuously to 1891, producing approximately 15 million ounces of silver at bonanza grades, estimated to have averaged 60 opt Ag. Ore was mined from steeply dipping veins hosted in shale and limestone.

American Bonanza's Belmont property is located immediately south of the main workings and covers the strike extension of the veins, where the veins are overlain by young gravels. The potential for vein type targets and bulk tonnage targets will be investigated, and an exploration program leading up to exploratory drilling is underway. (American Bonanza Gold Mining Corp. press release, 2/2/2004)

Bruner District

Bruner Property. American International Ventures Inc. completed drilling its Bruner property in May 2004. Gold values greater than 0.02 opt Au were detected in all five holes that were drilled, and higher grade intercepts were present in three of the holes. The company controls 28 patented claims and 48 unpatented claims totaling 1,500 acres in the heart of the Bruner district. (American International Ventures Inc. press release, 7/6/2004)

Cactus Flat Area

Stealth Property. Telkwa Gold Corp. acquired the 18-claim Stealth property from Goodsprings Development Co. of Reno. The claims are located approximately 35 miles southeast of Tonopah. The Stealth property is an extinct hot spring center with explosive hydrothermal breccias and silicified zones in rhyolite. Telkwa plans to test this environment for high-grade, bonanza-style gold mineralization. (Telkwa Gold Corp. press release, 8/23/2004)

Clifford Area

Clifford Project. Seabridge Gold reported that its joint venture partner, Castleworth Ventures, Inc., successfully completed its initial round of exploration drilling at the Clifford project. The initial program consisted of 17 holes designed to test various targets on the property. Eleven of the first 14 holes encountered anomalous to high-grade gold mineralization. The highlight of the program thus far is a 10-foot intercept in one hole of 1.73 opt Au gold with 6.00 opt Ag from 150 to 160 feet. Castleworth plans to continue the program with additional drilling to offset this new discovery.

The Clifford property consists of 206 claims and is part of the Thunder Mountain Joint Venture between Castleworth and Pacific Intermountain Gold, a 75% owned subsidiary of Seabridge. (Seabridge Gold Inc. press release, 2/10/2004)

Golden Arrow District

Golden Arrow Property. Pacific Ridge Exploration Ltd. completed drilling on its Golden Arrow property and, following study of this and previous drilling, decided to cease work and terminate their agreement on the Golden Arrow property with Nevada Sunrise LLC. The exploration results on the property did not meet Pacific Ridge's corporate objectives. (Pacific Ridge Exploration press release, 4/27/2004)

Longstreet District

Longstreet Project. Rare Earth Metals Corp. reported the final results for the drill holes from the 2004 program, completed at its Longstreet gold-silver project located 30 miles northeast of Tonopah. The drilling was successful in intercepting gold-silver mineralization within and beyond the historical resource area and also in the down-dip direction. Several higher-grade silver and gold intervals were intercepted in the deeper holes, which indicate there is potential for higher grade mineralization as the system deepens.

There are eight known areas of gold-silver mineralization at surface on the property, only one of which, the Longstreet Zone, has been extensively drilled. Future work on the property will continue evaluation for additional open-pit, heap-leach amenable mineralization on the property. (Rare Earth Metals Corp. press release, 2/15/05)

Manhattan District

Gold Wedge. By late November 2004, Royal Standard had completed nearly 700 feet of decline and had crosscut the mineralized horizon at the 6,742 level at its Gold Wedge property. The underground decline has been constructed to production size and standards and will initially be employed to obtain the bulk sample and pursue a test mining program.

Gold mineralization at Gold Wedge occurs within a zone that is about 70 feet wide and consists of at least five higher-grade zones that are enclosed by lower-grade gold values. The zone has been established through drilling over a vertical extent of 300 feet. The 300-foot strike section under evaluation is part of a structural zone that has been drill tested for more than 1,100 feet in length and is open along strike and to depth.

Royal Standard planned to begin the bulk sample and test mining during the first quarter of 2005. (Royal Standard Minerals Inc. press release, 11/29/2004)

Ralston Valley. Golconda Resources Ltd. completed a drilling program on its Ralston Valley claims and reported that in has intersected a widespread hydrothermal system in a gravel-covered pediment area. (Golconda Resources Ltd. press release, 9/1/2004)

Reveille Valley Area

Alien Gold Project. A Phase Two program of additional GAR (Gradient Array Resistivity) surveying and both reverse circulation and core drilling has been recommended as follow-up to Phase One work on Redhawk Resource's Alien Gold Project in the Reveille Valley area. Redhawk's Alien Gold property is located 60 miles east of Tonopah, along the eastern boundary of the Nevada Test and Training Range.

The recently completed Phase-One core drill program tested a 1,200 foot portion of the 4,000-foot Cap Zone within the volcanic hosted, low-sulfidation, epithermal precious metals system. Of the 23 reverse circulation and core holes drilled to date into this 1,200-foot portion of the Cap Zone, 13 holes had gold intersections grading more than 0.03 opt, including six holes with intersections grading more than 0.15 opt Au, five holes with intersections grading more that 0.29 opt Au, and four holes with intersections grading more than 0.44 opt Au.

The recommended Phase-Two program consists of expanding the GAR survey until the limits of the hydrothermal system are reached and a drilling program consisting of 7,000 feet of core drilling and 45,000 feet of reverse circulation drilling. The reverse circulation drilling is designed to evaluate geological and geophysical targets currently identified and any identified in the expanded GAR survey. The core drilling is planned for areas of known or discovered gold and silver mineralization. (Redhawk Resources Inc. press release, 10/1/04)

Round Mountain District

Round Mountain Mine. Barrick Gold Corp. carried out a pit expansion drill program at the Round Mountain Mine and designed an exploration decline to access a zone of high-grade mineralization northwest of the Round Mountain pit that had been identified in previous deep drilling. The decline will be collared early in 2005. (www.barrick.com/index.aspx?usesid=-1&sid=52)

Gold Hill Property. Barrick continued exploration in the Gold Hill area, north of the Round Mountain Mine where drilling totaling 68,000 feet in 75 core and reverse circulation drill holes tested blind, gravel-covered targets that had been defined by geophysics. The drilling intersected encouraging disseminated mineralization as well as a number of high-grade veins that are being evaluated as underground targets. (www.barrick.com/index.aspx?usesid=-1&sid=52)

Rye Patch District

Midway Property. In June 2004, Newmont Mining Corp. terminated its joint venture agreement with Midway Gold Corp. on the Midway gold project. Newmont completed over 100 drill holes with expenditures exceeding $3.5 million. Newmont completed 10,195 feet of reverse circulation drilling and 5,847 feet of HQ core drilling on the property. Newmont's last round of drilling was designed to test for deeper bonanza veins by angled holes beneath and around the Enterprise, Cross Fault, Nautilus, the 121, and South Discovery Zones. Midway Gold will be reviewing the new Newmont data to decide how to best develop the Midway property. (Midway Gold Corp. press release, 6/10/04)

San Antone District

Cimarron Project. Cimarron Mining Corp., a wholly owned subsidiary of Bullion River Gold Corp., has an option to acquire interest in 30 unpatented mining claims located in the San Antone district 19 miles north of Tonopah and about 9 miles west of Midway Gold's Midway project. The Cimarron property contains volcanic-hosted epithermal gold mineralization associated with rhyolite dikes and flow domes. Previous drilling defined a resource of approximately 52,000 oz Au on the property, and a number of high-grade vein and breccia zones occur within and adjacent to this resource and elsewhere in the district. Sampling by Cimarron has confirmed the high-grades, with rock-chip samples returning values up to 1 opt Au. Analysis of the resource area and other parts of the district is underway, with preliminary results indicating that mineralization in the resource area is open along strike and that additional high-grade structures have not been adequately tested. A drilling program is planned. (Bullion River Gold Corp. news release, 2/20/2004)

Troy District

Troy Project. Miranda Gold completed preliminary exploration work including underground mapping and sampling at the Locke Mine located in the Troy district about 90 miles east of Tonopah. Gold at the Locke Mine occurs in multiple north-striking, east-dipping fault-veins that overprint an older quartz body. Gold is associated with late-stage vuggy, sugary, gray quartz with abundant limonite and local sphalerite, galena, and arsenopyrite. Trace elements show a strong gold-bismuth correlation suggesting that the Troy veins represent an intrusion-associated mesothermal gold system.

Accounts of historical production for the Locke Mine report head grades from 0.345 to 0.571 opt Au during the period 1948 to 1950. Stopes dating from this period are typically from 2.5 to 10 feet wide. Miranda's sampling suggests that high-grade gold occurs preferentially in the hanging wall contact of the fault-vein, especially at fault/shear intersections.

The Troy property has never been drilled and little work is required to prepare the project for drilling. The stacked vein system can be readily tested with a series of west-directed angle drill holes about 500 feet deep. (Miranda Gold Corp. news release, 11/5/2004)

Tybo District

Tybo West Property. Taranis Resources Inc. completed exploration work on its Tybo West property, focusing on the Dimick epithermal trend where a number of gold and silver occurrences are exposed in outcrop, drill holes, and float. In order to more adequately assess the exploration potential in the alluvium covered area of the trend, a comprehensive soil sampling program was recently conducted. (Taranis Resources Inc. press release, 8/23/2004)

PERSHING COUNTY

Haystack District

Haystack Property. Pacific Ridge Exploration Ltd. completed surface exploration at its Haystack property and plans to begin drilling on high-grade gold targets. Gold-bearing quartz veins were explored and mined in shallow workings by early workers through three shafts. Pacific Ridge's 2004 mapping, sampling and soil sampling survey expanded the size of the gold mineralizing system and outlined four parallel east-west gold anomalies varying from 3,000 to 4,000 feet in length over a 3,000-foot-wide area of largely alluvium covered granodiorite. Individual anomalies vary from 200 to 400 feet in width and the historical workings are located in the central part of one of the four gold anomalies. (Pacific Ridge Exploration Ltd. press release, 11/9/2004)

Imlay District

Buffalo Canyon Property. Apollo Gold Corp. reports encouraging gold grades from the recently completed Phase I drilling program on its Buffalo Canyon property adjacent to its Standard Mine. Potential gold grades from reverse circulation drilling on this 480-acre property have approximated those of Standard's gold ore reserves and, assuming it is economic, Buffalo Canyon will be operated as a satellite pit sometime after the Standard Mine is brought into production. A planned Phase II program will include 5,150 feet of reverse circulation drilling to further define the mineralization and its continuity. (Apollo Gold Corp. press release, 5/13/2004)

Standard Gold Mine. Apollo Gold Corp. received permits allowing it to develop its Standard Mine and construct the leach pad and associated facilities in May 2004. The first gold was poured in late December and the property was expected to reach commercial production in the second quarter 2005. The Standard Mine is situated 5 miles south of Apollo's Florida Canyon Mine and is operated in conjunction with that property. Total capital spending at the Standard Mine in 2004 was $9.0 million ($10.6 million with reclamation bonding costs). The Standard Mine is the first new mine to be put into production in Nevada since the Midas (Ken Snyder) Mine opened in 1998. (Apollo Gold Corp. press release, 12/29/2004)

Jersey District

Jersey Canyon Project. Geologix Explorations Inc. received BLM approval and began a reverse circulation drill program on the company's 131-claim Jersey Canyon project located south of Battle Mountain. The Phase I drill program will consist of 10 to 12 holes and is designed to explore a 400-foot-wide structural corridor that trends north-south for at least 5,000 feet through the claims. The structure was identified from surface mapping, sampling and a ground magnetic survey. (Geologix Explorations Inc. press release, 10/25/2004)

Seven Troughs District

Seven Troughs Project. Quincy Gold Corp. will carry out an 8,000 foot reverse circulation drilling program on its Seven Troughs property that, when completed, will satisfy its commitment to spend $500,000 on the property by September 1, 2005. Quincy Gold acquired the 349-claim Seven Troughs property from Newmont Capital in January 2004.

The Seven Troughs district has recorded production of 150,000 tons grading 1.2 opt Au and 4.0 opt Ag. The district is underlain by mid-Miocene-age basalt and rhyolite which have been cut by northerly, northwesterly and northeasterly structures which form a complex zone of horst and graben blocks. An area approximately 5 miles long and 2.5 miles wide has been variably altered by shallow level hydrothermal solutions within which gold and silver mineralization is hosted in banded quartz veins as well as in sheared gouge zones. The historical mining exploited spotty but very high-grade orebodies primarily in two areas at the Coalition and Fairview mines. Quincy's Seven Troughs program is designed to test the strike and dip extensions of the bonanza gold veins, and drill holes will explore the down-dropped block between the Coalition Mine and the Badger Mine. (Quincy Gold Corp. press release, 4/13/05)

Scossa District

Lantern Project. Quincy Resources Inc. acquired the 2,500-acre Lantern property under a lease agreement with Newmont Mining Corp. and Platoro West Inc. Phase I exploration is anticipated to include approximately 10,000 feet of reverse circulation drilling. Previous exploration on the property has identified a 300,000 oz gold-equivalent shallow open-pit resource. (Quincy Resources Inc. press release, 1/21/2004)

Spring Valley District

Spring Valley Property. Drilling on Midway Gold Corp.'s Spring Valley property encountered a new gold zone hosted in quartz stockwork veins within an altered feldspar porphyry intrusion. Preliminary assays from one hole identified 320 feet of 0.030 opt Au extending from 500 to 820 feet. Additional testing of this interval using a coarse

gold sampling procedure is underway and could potentially identify higher values of gold—coarse gold is common at the Spring Valley project. This hole lies north of the Pond zone, where 40 of 56 holes have intercepted gold values in excess of 10 feet of 0.01 opt Au. Midway will continue to test the new target and the recently discovered Wabash zone, which encountered 60 feet of 0.034 opt Au in a rhyolite sill east of the Pond zone. (Midway Gold Corp. news release, 1/18/05)

Tobin and Sonoma Range

Big Mike Copper Project. GoldSpring, Inc. signed a memorandum of understanding with MBMI Resources Inc. to acquire a 50% interest in the 310-acre Big Mike copper property located 32 miles south of Winnemucca. Big Mike is a volcanogenic massive sulfide deposit that consisted of a secondarily-enriched pod of massive copper and iron sulfides enveloped by altered rock containing zones and disseminations of secondary copper mineralization. Ranchers Exploration and Development Co. produced 25 million pounds of copper from direct-shipping, high-grade copper sulfide ore from this property in 1970. Five target areas have been identified for additional exploration on and adjacent to the Big Mike property. (GoldSpring, Inc. press release, 11/1/05)

Washiki District

Clear Property. Minefinders Corp. Ltd. completed 14 reverse circulation drill holes, totaling 8,877 feet, on its Clear property in the Washiki district. Drilling was designed to follow up results from its 1997 drill program. The 1997 drilling encountered mineralization more than 2,000 feet west of an earlier-defined mineral resource that occurs along a northwest-trending thrust fault.

The 2004 drill program targeted this thrust zone, along strike and down dip, to test the continuity of mineralization. Of the eight holes drilled along this zone, seven encountered significant grades of gold. Drilling has now confirmed the continuity of mineralization along more than one 3,000 feet of the structure with intercepts that include 0.624 opt Au over 5 feet. Additional drilling will attempt to define the higher grade zones identified to date as well as extend gold mineralization to the northwest. (Minefinders Corp. Ltd. press release, 9/9/2004)

STOREY COUNTY

Silver City District

Billie The Kid Mine. GoldSpring, Inc. completed a 44-hole, 9,090-foot reverse circulation drill program on the Billie the Kid mine properties (Hartford Hill Complex) operated by Plum Mining LLC. The Phase 1 drilling was designed to expand the known mineralized zone at the Plum Mine. Three areas adjoining Plum's Billie the Kid Pit were drilled: Billie the Kid-Southwest, Olympia (adjacent to the Hartford pit), and Hartford-Lucerne. The results of this program were positive, and the company began supplemental step-out drilling along the northwest mineralized trend of the Billie the Kid Pit.

Following completion of the first-phase drilling, two additional drill programs are planned. Phase 2 will provide further infill drilling of the newly defined mineralized material will establish consistency of structural elements and document continuity of grade, and a Phase 3 program will be designed to develop a defined reserve. These programs are to be completed in 2005. (GoldSpring, Inc. news release, 1/31/05)

WASHOE COUNTY

Deephole District

Mountain View Gold Property. Vista Gold Corp. completed drilling a five-hole reverse circulation program totaling 4,330 feet at the Mountain View Gold property. Vista acquired the property in October 2002 from Newmont Capital Limited, a subsidiary of Newmont Mining Corp. Intercepts in two holes (230 feet of 0.039 opt Au, and 165 feet of 0.026 opt Au) indicate the presence of a new zone of bulk mineralization approximately 400 feet east of the known core of mineralization. Higher grade gold intercepts included 5 feet of 0.370 opt Au and 20 feet of 0.112 opt Au.

A resource estimate prepared in 2002 credited this property with 23.2 million tons at 0.013 opt Au indicated resources and 4.5 million tons at 0.039 opt Au inferred resources. (Vista Gold Corp. press releases, 2/12/2004, 11/5/2002)

Leadville District

Hog Ranch Project. Romarco Minerals Inc. completed Phase I and Phase II drilling programs on the Hog Ranch property in the Leadville district. Hog Ranch is a large volcanic-hosted gold-silver deposit that contains local zones of banded quartz-adularia veins containing free gold. The property yielded approximately 200,000 oz Au during open-pit, heap-leach mining operations conducted between 1987 and 1994.

The Phase I drilling program consisted of 2,380 feet in three reverse circulation holes that were designed to test bonanza gold vein targets below and around the previously mined Geib Pit. A 70-foot intercept averaging 0.152 opt Au was penetrated in one drill hole which included 20 feet of 0.382 opt Au, 5 feet of 0.837 opt Au, and 5 feet of 0.502 opt Au. The Phase II program consisted of 4,586 feet in six core holes; all of the six holes encountered significant or strongly anomalous gold mineralization. The highlight of the program is a 5-foot intercept of 0.446 opt Au in one hole included within

a 25-foot intercept averaging 0.118 opt Au. In addition, numerous broad zones of lower grade gold mineralization were intersected during the Phase II drilling program. (Romarco Minerals Inc. press releases, 3/23/2004, 7/6/2004)

WHITE PINE COUNTY

Butte Valley District

Limousine Butte Property. Placer Dome began exploration on Nevada Pacific Gold's Limousine Butte project in the Butte Valley district. Recent claim staking by Placer Dome has more than doubled the size of the Limousine Butte property, which now covers about 31 square miles (20,000 acres). Property-wide exploration is expected to begin in 2005. (Nevada Pacific Gold Ltd. press releases, 9/8/2004, 10/28/2004)

East Diamond Range Area

Gunman Zinc Property. Cypress Development Corp. received the results its 32-hole, 8,600- foot, reverse circulation drill program its Gunman zinc project north of Eureka. The 2004 program was designed to test targets along the open-ended north-northwest and south-southeast extensions of the high-grade RH Zone deposit, where grades average 9% Zn and 2.5 opt Ag over significant widths. As partially delineated by the 2000 drill programs, the RH Zone deposit is about 300 feet long, 150 feet wide, and about 80 feet thick starting at or near surface.

The results of the 2004 drill program show that a silty, altered limestone containing anomalous zinc is present throughout the target area and extends for over 1,600 feet north of the RH Zone and at least 1,300 feet to the south. When combined with 1991 soil geochemistry results south of the RH South Zone, a prospective trend of over 1.2 miles strike length has been established. (Cypress Development Corp. news releases, 7/16/2004, 9/29/2004, 12/17/2004)

Pancake District

Pan Gold Property. Castleworth Ventures, Inc. received approval from the BLM to proceed with a 370-hole drilling project on its Pan gold project in the Pancake district. The 3,850-acre, 197-claim Pan Gold property is located 20 miles southeast of Eureka, within the southeastern extension of the Battle Mountain-Eureka trend.

Castleworth reported that drilling during 2004 demonstrated persistent gold mineralization along a strike length of nearly 2,000 feet. The company staked an additional 50 claims in order to cover the possible extent of the mineralized system. (Castleworth Ventures Inc. news releases, 1/26/2004, 3/22/2004)

Robinson District

Robinson Mine. Quadra Mining Ltd. announced updated proven and probable reserves at its Robinson Mine total 146.3 million tons grading 0.687% Cu and 0.008 opt Au. Over 97% of the mineral reserves at the mine are in the proven category. Contained and recoverable copper at the Robinson Mine has increased from 1.67 and 1.38 billion pounds to 2.0 and 1.67 billion pounds respectively. The increased reserves add 2 years to the estimated 8 year mine life. Quadra began commercial production at Robinson on October 1, 2004, and produced 23.6 million pounds of copper and 10,490 ounces of gold in concentrate in the remainder of 2004. (Quadra Mining Ltd. news releases, 8/11/2004, 2/22/2005)

White Pine District

Mount Hamilton Gold Property. Augusta Resource Corp. acquired the Mount Hamilton Gold property located in the White Pine district about 45 miles east of Eureka. Extensive prior exploration and drilling on the property has identified six target areas that will be further examined for surface bulk mineralization as well as high-grade vein mineralization. (Augusta Resource Corp. press release, 12/2/2004)

Major Precious-Metal Deposits

by Joseph V. Tingley

The information in this compilation was obtained from the Nevada Division of Minerals and from published reports, articles in mining newsletters, and company annual reports and press releases. Locations of most of these deposits are shown on NBMG Map 120, and most active mines are shown on page 2 of this publication.
opt = troy ounces per short ton.

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
CHURCHILL COUNTY				
Bell Mountain (Bell Mountain district)	1982: 1 million tons, 0.055 opt Au, 1.4 opt Ag 1989: *reserves*—30,000 oz Au, 125,000 oz Ag 1997: 2.5 million tons, 0.059 opt Au equiv. oz		rhyolitic tuff	Miocene
Buffalo Valley gold property (Eastgate district)	1996: 96,000 oz Au		rhyolitic ash-flow tuff	Tertiary
Dixie Comstock (Dixie Valley district)	1991: 2.4 million tons, 0.049 opt Au 1995: 100,000 oz Au		Tertiary rhyolite	Miocene?
Fondaway Canyon (Shady Run district)	1988: 400,000 tons, 0.06 opt Au 1990: 400,000 tons, 0.06 opt Au	1989: 1,065 oz Au, 87 oz Ag 1990: 12,000 oz Au	Triassic slate and phyllite	Cretaceous
New Pass property (New Pass district)	1994: 3.4 million tons, 0.042 opt Au 1997: 3.1 million tons, 0.055 opt Au		Triassic siltstone	
CLARK COUNTY				
Crescent property (Crescent district)	1992: 390,000 tons, 0.05 opt Au; 3.3 million tons, 0.022 opt Au			
Keystone (Goodsprings district)	1990: *estimated geologic resource* 64 million tons, 0.05 opt Au 1992: 110,000 tons, 0.11 opt Au	1990: ~1,000 oz Au 1993: idle	lower Paleozoic carbonate rocks	Triassic
ELKO COUNTY				
Big Springs (Independence Mountains district)	1987: 3.76 million tons, 0.148 opt Au 1989: 1.55 million tons, 0.172 opt Au	1987–88: ~106,000 oz Au 1989–92: 274,000 oz Au, 48,000 oz Ag 1993: 52,752 oz Au 1994–95: 30,095 oz Au, 2,877 oz Ag	Mississippian to Permian overlap assemblage clastic and carbonate rocks	Eocene
Bootstrap/Capstone/ Tara (Bootstrap district)	1989: *geologic resource*—25.1 million tons, 0.039 opt Au 1996: 20.2 million tons, 0.046 opt Au proven and probable reserves; 1 million tons, 0.086 opt Au mineralized material	1988–90: included in Newmont Gold production, page 48 1996: 19,800 oz Au 1999: 147,088 oz Au, 28,395 oz Ag 2000: 131,979 oz Au, 13,402 oz Ag 2001: 92,775 oz Au, 21,093 oz Au 2002: 23,415 oz Au, 4,717 oz Ag 2003: 29,742 oz Au, 5,480 oz Ag 2004: 154,521 oz Au, 43,566 oz Ag	dacitic dikes, Paleozoic siltstone and laminated limestone/chert	Eocene
Cobb Creek (Mountain City district)	1988: *geologic resource*—3.2 million tons, 0.045 opt Au			
Cord Ranch (Robinson Mountain district)	1991: 3.5 million tons, 0.037 opt Au 1994: 350,000 oz Au in 3 deposits (*see* Piñon)		Webb Formation Devils Gate Formation Tomera Formation Diamond Peak Formation	
Dee (Bootstrap district)	1982: 2.5 million tons, 0.12 opt Au 1990: 4.5 million tons, 0.059 opt Au 1999: 1.4 million tons, 0.157 opt Au, proven and probable reserves	1985–88: 189,983 oz Au 1989–92: 172,745 oz Au, 142,000 oz Ag 1993–95: 97,860 oz Au 1996: 45,070 oz Au, 50,322 oz Ag 1997–98: 72,595 oz Au 1999: 36,329 oz Au, 68,400 oz Ag 2000: 61,171 oz Au, 110,900 oz Ag 2001: 2,351 oz Au, 6,028 oz Ag	Vinini Formation Devonian carbonates, dacitic dikes	Eocene

continued

MAJOR PRECIOUS-METAL DEPOSITS (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
ELKO COUNTY (continued)				
Doby George (Aura district)	1995: 3.7 million tons, 0.060 opt Au 1997: 250,000 oz Au		Schoonover Formation	
Jerritt Canyon (includes Saval Canyon and Burns Basin) (Independence Mountains district)	1981: 12.5 million tons 0.231 opt Au 1989: 21.6 million tons, 0.143 opt Au mill ore; 6.5 million tons, 0.043 opt Au leachable 1999: 1.5 million oz Au, proven and probable reserves; 3.8 million oz Au other 2000: 1.3 million oz Au proven and probable; 3.7 million oz Au other mineralized material 2001: 2.058 million oz Au proven and probable; 893,000 oz Au other 2002: 580,913 oz Au, proven and probable reserves; 1.296 million oz Au measured and indicated resources; 1.035 million oz Au inferred resources 2003: 820,104 oz Au, proven and probable reserves; 2.295 million oz Au measured and indicated resources; 1.034 million oz Au inferred resources 2004: 9.988 million tons, 0.241 opt Au measured and indicated resources; 4.1 million tons, 0.219 opt Au inferred resources	1981–90: ~2.6 million oz Au 1991–94: 1,380,000 oz Au, 25,000 oz Ag 1995–98: 1,296,492 oz Au 1999: 363,000 oz Au 2000: 334,747 oz Au 2001: 295,328 oz Au, 7,752 Ag 2002: 338,660 oz Au, 8,154 oz Ag 2003: 302,095 oz Au 2004: 243,333 oz Au	Hanson Creek and Roberts Mountains Formations	~40 Ma
Kinsley Mountain (Kinsley district)	1988: 2.1 million tons, 0.048 opt Au 1996: 3.4 million tons, 0.032 opt Au	1993: evaluation 1995–97: 127,065 oz Au, 24,452 oz Ag 1998: 9,543 oz Au 1999: 1,543 oz Au	upper Paleozoic carbonate rocks	Oligocene?
Maverick Springs (Maverick Springs area)	2002: 350,000 oz Au, 32.3 million oz Ag, indicated resources; 747,000 oz Au, 68.8 million oz Ag inferred resources 2004: 69.63 million tons, 0.01 opt Au, indicated resources; 85.55 million tons, 0.008 opt Au, inferred resources			
Meikle (Lynn district)	1992: *geologic resource*—7.9 million tons, 0.613 opt Au 1999: 5.9 million tons, 0.647 opt Au proven and probable reserves; 3.3 million tons, 0.457 opt Au mineralized material 2000: 4.9 million tons, 0.540 opt Au proven and probable reserves; 2.9 million tons, 0.450 opt Au mineral resource 2001: 9 million tons, 0.439 opt Au proven and probable reserves; 13.5 million tons, 0.433 opt Au mineral resource 2002: 9.8 million tons, 0.398 opt Au proven and probable reserves; 12.9 million tons, 0.396 opt Au mineral resource 2003: 3,316,000 tons, 0.467 opt Au proven reserves 5,862,000 tons, 0.326 opt Au probable reserves 1,580,000 tons, 0.435 opt Au measured resources 4,261,000 tons, 0.423 opt Au indicated resources 7,725,000 tons, 0.366 opt Au inferred resources 2004: 7,575,000 tons, 0.392 opt Au proven and probable reserves; 6,268,000 tons, 0.379 opt Au mineral resource	1996: 78,442 oz Au 1997–98: 1,421,621 oz Au, 426,030 oz Ag 1999: 977,356 oz Au, 263,225 oz Ag 2000: 805,718 oz Au, 205,000 oz Ag 2001: 712,688 oz Au, 213,370 oz Ag 2002: 640,337 oz Au, 203,574 oz Ag 2003: 551,664 oz Au, 99,614 oz Ag 2004: 561,345 oz Au, 129,520 oz Ag	Popovich and Roberts Mountains Formations	Eocene
Midas (Ken Snyder) Mine (Gold Circle district)	1995: 13 million tons, 0.16 opt Au, 2.7 opt Ag, announced resource, proven Au reserve <500,000 oz 1996: 1.1 million tons, 1.324 opt Au, 14.95 opt Ag 1999: 3.0 million tons, 0.816 opt Au, 9.835 opt Ag proven and probable reserves 2000: 3.4 million tons, 0.63 opt Au, 7.77 opt Ag proven and probable reserves 2002: 3.4 million tons, 0.65 opt Au proven and probable reserves; 400,000 tons 0.46 opt Au measured and indicated mineralized material; 200,000 tons 0.55 opt Au inferred mineralized material 2003: 700,000 tons, 0.83 opt Au proven reserves; 2,700,000 tons, 0.51 opt Au probable reserves; 900,000 tons 0.42 opt Au indicated material 2004: 2.9 million tons, 0.510 opt Au proven and probable reserves; 200,000 tons, 0.58 opt Au indicated resources; 700,000 tons, 0.31 opt Au inferred resources	1998: 4,357 oz Au, 55,329 oz Ag 1999: 189,081 oz Au, 1,938,470 oz Ag 2000: 197,800 oz Au, 1,941,989 oz Ag 2001: 198,518 oz Au, 2,393,246 oz Ag 2002: 232,949 oz Au, 2,870,164 oz Ag 2003: 218,966 oz Au, 2,647,374 oz Ag 2004: 219,778 oz Au, 2,471,135 oz Ag	Tertiary volcanic rocks	15.3 Ma

continued

MAJOR PRECIOUS-METAL DEPOSITS (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
ELKO COUNTY (continued)				
Piñon (South Bullion and Dark Star) (Robinson Mountain district)	1996: 38.3 million tons, 0.026 opt Au geologic mineral inventory 2002: 30.6 million tons, 0.026 opt Au, measured, indicated, and inferred resources		Webb Formation siltstone Devils Gate Limestone	
Pony Creek (Carlin district)	1994: *geologic resource*—1.1 million tons, 0.057 opt Au			
Railroad Property (POD zone) (Railroad district)	1997: 1.5 million tons, 0.085 opt Au drill-indicated resource			
Rain Property (Carlin district)	1982: 3.4 million tons, 0.147 opt Au and 8.3 million tons, 0.083 opt Au			
Gnome deposit	1988: 2.7 million tons, 0.048 opt Au		Webb Formation	Eocene
Rain Emigrant Springs deposits	1989: 30.3 million tons, 0.021 opt Au 1996: 16 million tons, 0.028 opt Au proven and probable reserves; 10.4 million tons, 0.021 opt Au mineralized material	1994–96: 160,000 oz Au 1997–98: included in Newmont Gold production, page 48	Webb Formation	36–37 Ma
Rain deposit	1999: 13,467,000 tons, 0.026 opt Au proven and probable open-pit ore, 411,000 tons, 0.316 proven and probable underground ore	1999: 23,477 oz Au 2000: 25,004 oz Au, 2,539 oz Ag 2001: 43,488 oz Au, 9,887 oz Ag 2002: 20,065 oz Au, 4,042 oz Ag 2003: 5,039 oz Au, 928 oz Ag 2004: 1,956 oz Au, 551 oz Ag		
SMZ deposit	1989: *geologic resource*—1.6 million tons, 0.019 opt Au			
Rain district	2000: 13.5 million tons, 0.026 opt Au proven and probable open-pit ore; 308,000 tons, 0.267 opt Au proven and probable underground ore 2001: 13.5 million tons, 0.026 opt Au proven and probable open-pit ore; 21,000 tons, 0.024 opt Au proven and probable underground ore; 1.3 million tons, 0.048 opt Au mineralized material			
Rossi Mine (Storm resource) (Bootstrap district)	1998: 3.1 million tons, 0.371 opt Au resource 2000: 2.7 million tons, 0.345 opt Au resource 2002: 1.9 million tons, 0.335 opt Au measured and indicated resources; 1 million tons, 0.0335 opt Au inferred resources		Popovich Formation	Eocene
Trout Creek (Contact district)	1988: 1.5 million tons, 0.04 opt Au	1988: exploration	Miocene sedimentary rocks	
Tuscarora (Dexter) (Tuscarora district)	1987: 2 million tons, 0.039 opt Au, 1.9 opt Ag 1988: 1.8 million tons, 0.037 opt Au, 0.74 opt Ag	1896–1902: 29,940 oz Au, 28,543 oz Ag 1987–90: 34,163 oz Au, 189,865 oz Ag	Eocene rhyolitic ignimbrite and andesite	39 Ma
Winters Creek (Independence Mountains district)	1986: 1.4 million tons, 0.146 opt Au		lower Paleozoic carbonate rocks	Eocene
Wright Window (Independence Mountains district)	1986: 1.3 million tons, 0.095 opt Au	1992: 3,500 oz Au	lower Paleozoic carbonate rocks	Eocene
ESMERALDA COUNTY				
Boss (Gilbert district)	1987: 500,000 tons, 0.07 opt Au 1990: *reserves*—637,500 tons, 0.023 opt Au *geologic resource*—31,000 oz Au 1996: *see* Castle		Ordovician sedimentary rocks	Miocene?
Castle (includes Boss) (Gilbert district)	1996: 3.7 million tons, 0.03 opt Au 1997: 10 million tons, 0.03 opt Au resource 2000: 215,000 oz Au indicated resource and 93,000 oz Au inferred resource		Ordovician Palmetto Formation	

continued

MAJOR PRECIOUS-METAL DEPOSITS (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
ESMERALDA COUNTY (continued)				
Gemfield (Goldfield district)	1996: 9.5 million tons, 0.04 opt Au 1998: 500,000 oz, 0.04 opt Au 2003: see Goldfield project 2004: 16,853,000 tons, 0.032 opt Au measured and indicated resources; 1,001,000 tons, 0.022 opt Au inferred resource		Oligocene Sandstorm Rhyolite	21 Ma?
Goldfield Project (Goldfield district) ***(see Gemfield, Goldfield Main, and McMahon Ridge)***	1983: 1.75 million tons, 0.087 opt Au 1994: 3.48 million tons, 0.071 opt Au 2003: 23,410,200 tons, 0.031 opt Au measured and indicated resources; 10,239,100 tons 0.024 opt Au inferred resources (includes Goldfield Main, McMahon Ridge, and Gemfield)	1903–45: 4.19 million oz Au, 1.45 million oz Ag 1989–97: 28,373 oz Au	andesite, rhyodacite, rhyolite	21 Ma
Goldfield Main (Goldfield district)	2004: 6,651,000 tons, 0.036 opt Au measured and indicated resources; 2,129,000 tons, 0.038 opt Au inferred resources			
Hasbrouck (Divide district)	1982: 5 million tons 0.06 opt Au, 1.5 opt Ag 1986: 12.9 million tons, 0.0291 opt Au, 0.59 opt Ag 1998: 7.7 million tons, 0.036 opt Au, 0.7 opt Ag	1986–92: exploration	Siebert Formation tuff and volcaniclastic rocks	16 Ma
Hill of Gold deposit (Divide district)	1988: 500,000 tons, 0.04 opt Au, 0.40 opt Ag 1996: 1.6 million tons, 0.026 opt Au		Miocene silicic tuff	16 Ma
Mary-Drinkwater (Silver Peak district)	1991: 531,300 tons, 0.124 opt Au	1991: 25,000 oz Au, 8,000 oz Ag	Wyman Formation	Mesozoic?
McMahon Ridge (Goldfield district)	2004: 8,200,000 tons, 0.035 opt Au measured and indicated resources; 171,000 tons, 0.019 opt Au inferred resources			
Mineral Ridge (Silver Peak district)	1995: 5.2 million tons, 0.068 opt Au proven and probable reserves (includes Mary-Drinkwater) 1998: 4 million tons, 0.06 opt Au; 241,000 oz Au 2000: 2.84 million tons, 0.074 opt Au minable reserve 2002: 2.66 million tons, 0.079 opt Au total reserves 2003: 8.3 million tons, 0.061 opt Au resources (includes 2.66 million tons, 0.079 opt Au reserves)	1997: 13,793 oz Au, 7,907 oz Ag 1998: 8,582 oz Au, 4,877 oz Ag 1999: 27,145 oz Au, 19,915 oz Ag 2000: 2,200 oz Au, 1,000 oz Ag 2001: 1,399 oz Au, 424 oz Ag 2002: 397 oz Au, 396 oz Ag 2003: 675 oz Au, 704 oz Ag 2004: 3,638 oz Au, 3,062 oz Ag	Wyman Formation	Mesozoic?
Tip Top (Fish Lake Valley district)	1997: 109,000 tons, 0.103 opt Au, 0.88 opt Ag indicated resource 1998: 168,000 tons, 0.088 opt Au inferred geologic resource	1997: exploration 2001: exploration	Tertiary quartz latite	
Three Hills (Tonopah district)	1996: 3.2 million tons, 0.036 opt Au 1997: 6.3 million tons, 0.023 opt Au		Miocene Siebert Formation and Oddie Rhyolite	
Weepah (Weepah district)	1986: 200,000 tons, 0.1 opt Au, 0.4 opt Ag	1986–87: 58,000 oz Au	Wyman Formation	Cretaceous

continued

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
EUREKA COUNTY				
Afgan (Antelope district)	1996: 80,000 oz Au drill indicated resource 1999: 2.8 million tons, 0.037 opt Au oxide resource		Webb Formation	
Betze-Post (Lynn district)	1988: 128.4 million tons, 0.095 opt Au 1999: 135.6 million tons, 0.153 opt Au proven and probable reserves; 23.3 million tons, 0.099 opt Au mineralized material 2000: 116.4 million tons, 0.155 opt Au proven and probable; 55.9 million tons, 0.063 opt Au mineral resource 2001: 108.9 million tons, 0.151 opt Au proven and probable; 49.9 million tons, 0.069 opt Au mineral resource 2002: 107.1 million tons, 0.150 opt Au proven and probable reserves; 47.6 million tons, 0.070 opt Au mineral resource 2003: 61,551,000 tons, 0.128 opt Au proven reserves; 48,191,000 tons, 0.162 opt Au probable reserves; 14,077,000 tons, 0.059 opt Au measured resources; 23,326,000 tons, 0.061 opt Au indicated resource; 323,000 tons, 0.065 opt Au inferred resource 2004: 123,334,000 tons, 0.131 opt Au proven and probable reserves; 22,318,000 tons, 0.050 opt Au mineral resource	1974: 302,807 oz Au 1980–88: 440,000 oz Au 1989–92: 2,214,508 oz Au, 92,347 oz Ag 1993: 1,439,929 oz Au 1994–98: 8,920,871 oz Au, 372,403 oz Ag 1999: 1,130,094 oz Au, 65,804 oz Ag 2000: 1,646,640 oz Au, 52,000 oz Ag 2001: 1,549,975 oz Au, 261,261 oz Ag 2002: 1,409,984 oz Au, 135,716 oz Ag 2003: 1,559,401 oz Au, 115,473 oz Ag 2004: 1,381,315 oz Au, 130,609 oz Ag	Ordovician to Devonian chert, shale, sltstone, and impure carbonates; in part, Vinini Formation	Eocene
Blue Star (Lynn district)	1987: 1.95 million tons, 0.066 opt Au 1989: *geologic resource*—22.2 million tons, 0.030 opt Au	1974–84: intermittent 1988–2004: included in Newmont Gold production, page 48	lower Paleozoic sandy siltstone and carbonate rocks, granodiorite	Eocene
Bobcat (Lynn district)	1988: *geologic resource*—17.7 million tons, 0.029 opt Au		lower Paleozoic rocks	Eocene
Buckhorn property (Buckhorn district)	1984: 5 million tons, 0.044 opt Au, 0.585 opt Ag 1990: 700,000 tons, 0.05 opt Au; *geologic resource*—200,350 oz Au 1993: *geologic resource*—1.1 million tons, 0.11 opt Au	1988–93: 109,422 oz Au, 409,887 oz Ag	basaltic andesite, sinter, silicified sedimentary rocks	14.6 Ma
Buckhorn South/ Zeke deposit (Buckhorn district)	1989: 2 million tons, 0.056 opt Au, 0.224 opt Ag 1998: 2.4 million tons, 0.046 opt Au		lower Paleozoic rocks	
Bullion Monarch (Lynn district)	1987: 1 million tons, 0.10 opt Au	1977–84: 17,779 oz Au	lower Paleozoic sedimentary rocks	Eocene
Carlin North (Lynn district)				
Deep Star	1996: 1.4 million tons, 0.8765 opt Au proven and probable reserves	1995: 2,800 oz Au 1996: 93,400 oz Au 1997–2004: included in Newmont Gold production, page 48	Popovich Formation	Eocene
Genesis	1989: *geologic resource*—35.8 million tons, 0.044 opt Au 1990: 32 million tons, 0.047 opt (includes Blue Star)	1986: production commenced 1988–2004: included in Newmont Gold production, page 48	Ordovician-Devonian limestone, argillite chert	Eocene
Genesis/North Star/ Sold	1996: 22.7 million tons, 0.034 opt Au proven and probable reserves; 11 million	1994–95: 684,600 oz Au 1996–2004: included in Newmont Gold production, page 48	Ordovician-Devonian limestone, argillite chert	Eocene
Genesis Complex	2000: 14.1 million tons, 0.026 opt Au proven and probable open-pit reserves			
Post/Goldbug	1996: 25.6 million tons, 0.190 opt Au proven and probable reserves; 43.6 million tons, 0.079 opt Au mineralized material	1999–2004: included in Newmont Gold production, page 48	lower Paleozoic sedimentary rocks	Eocene
Deep Post	2000: 3.1 million tons, 0.814 opt Au proven and probable underground reserves			
Carlin Mine	1965: 11 million tons, 0.32 opt Au 1965–86: 3.8 million oz Au			
Carlin/Pete/Lantern	1995: 14.8 million tons, 0.031 opt Au 1996: 13.7 million tons, 0.046 opt Au proven and probable reserves; 14.7 million tons, 0.046 opt Au mineralized material	1994–96: 68,700 oz Au 1997–2004: included in Newmont Gold production, page 48	Roberts Mountains	Eocene
Carlin North-other	2000: 19.8 million tons, 0.052 opt Au, proven and probable open-pit reserves			

continued

MAJOR PRECIOUS-METAL DEPOSITS (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
EUREKA COUNTY (continued)				
Carlin North (Lynn district) continued				
Carlin North area	2000: 8.2 million tons, 0.495 opt Au, proven and probable underground reserves			
Carlin North area, open-pit	2001: 32.6 million tons, 0.044 opt Au, proven and probable reserves; 13.0 million tons, 0.039 opt Au mineralized material			
Carlin North area, underground (including Deep Post)	2001: 10.9 million tons, 0.56 opt Au, proven and probable reserves; 2.1 million tons, 0.55 opt Au mineralized material			
Carlin South (Maggie Creek district)				
Gold Quarry/Mac/Tusc	1982: 25.1 million tons, 0.106 opt Au and 150 million tons, 0.036 opt Au 1987: 197.8 million tons, 0.042 opt Au 1990: 212.6 million tons, 0.042 opt Au, *geologic resource*—534.3 million tons, 0.037 opt Au 1996: 174.8 million tons, 0.046 opt Au proven and probable reserves; 51.9 million tons, 0.058 opt Au mineralized material	1981: 6,000 oz Au, 1982: 19,000 oz Au 1983: 74,000 oz Au, 1984: 68,200 oz Au 1985: 136,200 oz Au, 1986: 309,800 oz Au 1987: 446,600 oz Au 1988–93: included in Newmont Gold production, page 49 1994–96: 2,978,000 oz Au 1997–2004: included in Newmont Gold production, page 48	Ordovician to Devonian chert, shale, siltstone, and impure carbonates; in part, Vinini Formation	Eocene
Carlin South area	2000: 75.2 million tons, 0.059 opt Au proven and probable open-pit reserves			
Carlin South open-pit	2001: 61.3 million tons, 0.062 opt Au proven and probable reserves; 24.6 million tons, 0.028 opt Au mineralized material			
Chukar Footwall underground	2001: 278,000 tons, 0.49 opt Au proven and probable reserves; 115,000 tons, 0.46 opt Au mineralized material			
Carlin North and South combined (includes all Carlin properties)				
Carlin open pit	2002: 181.8 million tons, 0.042 opt Au proven and probable reserves; 9.5 million tons, 0.028 opt Au measured and indicated mineralized material; 9.3 million tons, 0.035 opt Au inferred mineralized material 2003: 17,500,000 tons, 0.052 opt Au proven reserve; 203,300,000 tons, 0.044 probable reserve; 1,000,000 tons 0.035 measured material; 11,200,000 tons 0.024 indicated material; 10,400,000 tons 0.034 opt Au inferred material 2004: 201,600,000 tons, 0.047 opt Au proven and probable reserves; 13,200,000 tons, 0.022 opt Au indicated material; 7,700,000 tons, 0.034 opt Au inferred material	2004: included in Newmont Gold gold production, page 48		Eocene?
Carlin underground	2002: 10 million tons, 0.57 opt Au proven and probable reserves; 2.6 million tons, 0.50 opt Au measured and indicated mineralized material; 200,000 tons, 0.53 opt Au inferred mineralized material 2003: 2,700,000 tons, 0.670 opt Au proven reserves; 6,100,000 tons, 0.500 opt Au probable reserves; 3,700,000 tons 0.480 opt Au inferred material 2004: 8,700,000 tons, 0.510 opt Au proven and probable reserves; 100,000 tons, 0.260 opt Au indicated material; 3,900,000 tons, 0.470 opt Au inferred material	2004: included in Newmont Gold gold production, page 48		Eocene?
Genesis (see Carlin North-Genesis)				
Genesis/North Star/Sold (see Carlin North-Genesis)				
Gold Bar (Antelope district)	1984: 2.8 million tons, 0.09 opt Au 1990: mined out in December 1994: 240,000 oz Au 1995: 190,000 oz Au 2001: 473,000 oz Au in 6 deposits 2002: 3.6 million tons, 0.100 opt Au resource	1987–90: 238,262 oz Au 1991: 80,727 oz Au, 3,000 oz Ag 1992–94: 155,080 oz Au	Devonian Nevada Formation	Eocene?

continued

MAJOR PRECIOUS-METAL DEPOSITS (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
EUREKA COUNTY (continued)				
Gold Canyon (Antelope district)	1992: *reserves*—86,500 oz Au, *geologic resource*—131,000 oz Au 1993: 770,000 tons, 0.080 opt Au 2001: see Gold Bar 2002: 2.5 million tons, 0.056 opt Au resource	(reported with Gold Bar)	Paleozoic sedimentary rocks	Eocene?
Gold Pick (Antelope district)	1988: 10 million tons, 0.06 opt Au 1993: 1.4 million tons, 0.079 opt Au 2001: see Gold Bar 2002: 5 million tons, 0.057 opt Au measured mineral resource	(reported with Gold Bar)	Paleozoic sedimentary rocks	Eocene?
Gold Quarry/Mac/Tusc (see Carlin South)				
Gold Ridge (Antelope district)	1988: 4 million tons, 0.06 opt Au 1993: 426,000 tons, 0.059 opt Au 2001: see Gold Bar 2002: 584,164 tons, 0.046 opt Au resource	(reported with Gold Bar)	Paleozoic sedimentary rocks	Eocene?
Goldstone (Antelope district)	1988: 1.7 million tons, 0.08 opt Au 1993: 130,928 tons, 0.104 opt Au 2001: see Gold Bar	(reported with Gold Bar)	Paleozoic sedimentary rocks	Eocene?
Horse Canyon (Cortez district)	1984: 3.94 million tons, 0.055 opt Au 1988: included in Cortez Joint Venture figures	1984: 40,000 oz Au 1988–93: included with Cortez Joint Venture	Vinini Formation, Wenban Limestone	≤35 Ma?
Maggie Creek (Maggie Creek district)	1977: 4.5 million tons, 0.09 opt Au 1988: *geologic resource*—303,000 tons, 0.092 opt Au	to 1986: est. 400,000 oz Au operation transferred to Gold Quarry Mine	Ordovician to Devonian siltstone, chert, sandstone, impure limestone	Eocene
North Star (Lynn district)	1989: *geologic resource*—6.9 million tons, 0.052 opt Au 1990: 3.9 million tons, 0.052 opt Au	1988: 4,250 oz Au 1989–2004: included in Newmont Gold production, page 48	lower Paleozoic sedimentary rocks	Eocene
Post/Goldbug (see Carlin North-Post)				
Ratto Canyon (Eureka district)	1984: ~200,000 oz Au		Dunderberg Shale, Hamburg Dolomite	Oligocene
Rock Creek (Eureka-Lander Co. line)	1997: 800,000 tons, 0.045 opt Au	1997: exploration	Tertiary latite tuff	
Rodeo Projects (Rodeo, Griffin, Goldbug, North Betze) (Lynn district)	1998: 2.9 million tons, 0.487 opt Au proven and probable reserves; 5.8 million tons, 0.302 opt Au mineralized material 1999: 5.8 million tons, 0.466 opt Au, proven and probable reserves; 13.0 million tons, 0.270 opt Au mineralized material 2000: 9.2 million tons, 0.414 opt Au proven and probable; 7.4 million tons, 0.333 opt Au mineral resource			Eocene
Ruby Hill (Eureka district)	1994: *geologic resource*—20 million tons, 0.08 opt Au 1995: 7.62 million tons, 0.099 opt Au 1999: 3.77 million tons, 0.110 opt Au proven and probable; 7.33 million tons, 0.072 opt Au mineralized material 2000: 2.7 million tons, 0.105 opt Au proven and probable reserves; 7.3 million tons, 0.072 opt Au mineralized material 2004: (East Archimedes) 17,093,000 tons, 0.059 opt Au proven and probable reserves; 3,049,000 tons, 0.061 opt Au mineral resource	1997–98: 133,100 oz Au, 8,686 oz Ag 1999: 123,841 oz Au, 7,688 oz Ag 2000: 125,193 oz Au, 7,984 oz Ag 2001: 134,737 oz Au, 9,315 oz Ag 2002: 135,448 oz Au, 9,750 oz Ag 2003: 18,134 oz Au, 2,441 oz Ag 2004: 6,057 oz Au, 1,868 oz Ag	Goodwin Limestone	Cretaceous? or Oligocene?
Tonkin Springs (Antelope district)	1983: 1.84 million tons, 0.089 opt Au, 0.204 opt Ag 1987: *oxide*—1.5 million tons, 0.05 opt Au; *sulfide*—2.5 million tons, 0.09 opt Au 1991: 9 million tons, 0.05 opt Au 1999: 30.7 million tons, 0.045 opt Au resource	1987–88: 10,265 oz Au 1989–90: 3,821 oz Au, 1,872 oz Ag	Vinini Formation, dacitic dikes	Oligocene?
Turf (Lynn district)	1996: 2.5 million tons, 0.367 opt Au mineralized material	included in Newmont Gold production, page 48	Roberts Mountains Formation	Eocene

continued

MAJOR PRECIOUS-METAL DEPOSITS (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
EUREKA COUNTY (continued)				
Tusc (Maggie Creek district)	1988: *geologic resource*—15.8 million tons, 0.059 opt Au 1990: 13.3 million tons, 0.062 opt Au	included in Newmont Gold production, page 48	lower Paleozoic sedimentary rocks	Eocene
West Leeville (Newmont) (Lynn district)	1996: 2 million tons, 0.377 opt Au proven and probable reserves; 581,000 tons 0.354 opt Au mineralized material	1995–96: 272,000 oz Au 1997–2000: included in Newmont Gold production, page 48	Roberts Mountains Formation	Eocene
West Leeville (Newmont-Barrick) (Lynn district)	1996: 7.1 million tons, 0.425 opt Au proven and probable reserves; 500,000 tons 0.328 opt Au mineralized material		Roberts Mountains Formation	Eocene
Windfall (Eureka district)	1988: 3 million tons, 0.03 opt Au 1995: mined out	1908–16: 24,000 oz Au 1975–84: 90,000 oz Au 1988: 6,380 oz Au, 59 oz Ag	Hamburg Dolomite	Eocene or Oligocene
HUMBOLDT COUNTY				
Adelaide Crown (Gold Run district)	1989: *south pit*—585,000 tons, 1.313 opt Ag, 0.043 opt Au; *additional area*: 165,000 tons, 0.015 opt Au, 1.10 opt Ag	1990–91: 4,917 oz Au, 53,474 oz Ag	Preble Formation	Tertiary
Ashdown (Vicksburg district)	1987: 1.16 million tons, 0.125 opt Au 1992: 1.1 million tons, 0.12 opt Au 2002: 100,000 oz Au		Mesozoic granite	Mesozoic
Buckskin (National district)	1997: 50,221 oz Au, 466,243 oz Ag estimated resource		Miocene rhyolite flows and flow breccias	15 Ma
Chimney Creek (Potosi district)	1988: *proven, probable*—26.9 million tons, 0.068 opt Au; *inferred in south pit*—2.1 million oz Au 1993: *see* Twin Creeks	1987–88: 300,000 oz Au 1989: 222,556 oz Au, 55,953 oz Ag 1990: 220,000 oz Au 1991–92: 476,034 oz Au, 213,463 oz Ag 1993: *see* Twin Creeks	upper Paleozoic sedimentary rocks	41.9 Ma
Converse/Redline (Buffalo Valley district)	2003: 77,459,000 tons, 0.020 opt Au measured and indicated resources 2004: 3,940 oz Au measured and indicated resources		Havallah Formation granodiorite	Tertiary
Getchell (Potosi district)	1989: 8.1 million tons, 0.154 opt Au mill grade and 1.43 million tons, 0.049 opt Au heap-leach ore; *additional geologic resource*: 5.7 million tons, 0.092 opt Au sulfide and 2.6 million tons, 0.055 opt Au oxide 1999: 18.1 million tons, 0.359 opt Au 2000: 2.8 million oz Au measured resources, 5.5 million oz Au indicated resources, and 6.7 million oz inferred resources 2002: 2.69 million oz Au proven and probable reserves; 1.51 million oz Au measured and indicated mineral resources 2003: (Turquoise Ridge) 6,000,000 tons, 0.570 opt Au proven reserve; 2,400,000 tons, 0.620 opt Au probable reserve; 4,400,000 tons, 0.300 opt Au measured material; 2,800,000 tons, 0.400 opt Au indicated material; 4,800,000 tons, 0.490 opt Au inferred material 2004: (Turquoise Ridge) 11,600,000 tons, 0.610 opt Au proven and probable reserves; 25,793,000 tons, 0.380 opt Au measured and indicated material; 3,149,000 tons, 0.600 opt Au inferred material	1938–50, 1962–67: 788,875 oz Au 1987–88: ~35,000 oz Au 1989: 120,730 oz Au, 9,407 oz Ag 1990–91: 372,987 oz Au 1992–95: 790,600 oz Au, 258,700 oz Ag 1996–97: 348,517 oz Au 1998: 175,302 oz Au, 52,490 oz Ag 1999: 111,000 oz Au 2002: 54,600 oz Au, 5,400 oz Ag 2003: 93,337 oz Au 2004: 162,637 oz Au	Comus and Preble Formations, granodiorite dikes, granodiorite	42–41 Ma
Hycroft (formerly Crofoot/Lewis) (Sulphur district)	1988: 25 million tons, 0.025 opt Au 1999: 23.8 million tons, 0.0204 opt Au proven and probable reserves; 2.3 million tons, 0.0177 opt Au indicated reserves 2000: 41.9 million tons, 0.0196 opt Au measured and indicated resources; 14.1 million tons, 0.0152 opt Au inferred resources 2004: 47,479,000 tons, 0.016 opt Au measured and indicated; 12,029,000 tons, 0.011 opt Au inferred resources	1988: 75,800 oz Au 1989–98: 868,544 oz Au, 2,717,170 oz Ag 1999: 40,075 oz Au, 183,190 oz Ag 2000: 13,493 oz Au, 38,418 oz Ag 2001: 3,232 oz Au, 2,000 Ag 2002: 1,771 oz Au, 217 oz Ag 2003: 644 oz Au, 100 oz Ag 2004: 61 oz Au	Camel conglomerate, rhyolite dikes	1–2 Ma

continued

MAJOR PRECIOUS-METAL DEPOSITS (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
HUMBOLDT COUNTY (continued)				
Lone Tree (Buffalo Mountain district)	1990: 5.4 million tons oxide mill ore, 0.159 opt Au, 5.7 million tons heap-leach ore, 0.025 opt Au and 1.2 million oz Au in sulfide ore 1994: 4 million oz Au 2000: 40.8 million tons, 0.060 opt Au proven and probable reserves (Lone Tree Complex) 2001: 29.2 million tons, 0.065 opt Au proven and probable reserves; 7.9 million tons, 0.032 opt Au mineralized material 2002: 21 million tons, 0.069 opt Au proven and probable reserves; 2 million tons, 0.057 opt Au measured and indicated mineralized material; 1 million tons, 0.047 opt Au inferred mineralized material 2003: 3,300,000 tons, 0.092 opt Au proven reserves 13,000,000 tons, 0.084 opt Au probable reserves 2,100,000 tons, 0.054 opt Au indicated material 600,000 tons, 0.054 opt Au inferred material 2004: 14,000,000 tons, 0.063 opt Au proven and probable reserves; 3,400,000 tons, 0.044 opt Au indicated material; 200,000 tons, 0.116 opt Au inferred material	1991–99: 546,335 oz Au 1995: 240,000 oz Au, 11,000 oz Ag 1996–97: 536,820 oz Au 1998: 257,702 oz Au, 27,484 oz Ag 1999: 191,975 oz Au, 35,617 oz Ag 2000: 281,022 oz Au, 38,346 oz Ag 2001: 260,518 oz Au, 29,974 oz Ag 2002: 327,160 oz Au, 65,905 oz Ag 2003: 434,704 oz Au, 80,094 oz Ag 2004: 497,065 oz Au, 140,144 oz Ag	Havallah Formation and dacite porphyry	38 Ma
Marigold (Battle Mountain district)	1987: 8 million tons, 0.0935 opt Au 1990: 4.3 million tons, 0.105 opt Au mill ore, 7.6 million tons, 0.026 opt Au heap-leach ore 1999: 19.09 million tons, 0.032 opt Au 2000: 30.2 million tons, 0.035 opt Au proven and probable reserves; 20.7 million tons, 0.029 opt Au measured and indicated resources 2001: 75.5 million tons, 0.027 opt Au proven and probable reserves; 109.9 million tons, 0.014 opt Au measured and indicated resources 2002: 79.1 million tons, 0.026 opt Au proven and probable reserves; 129.7 million tons, 0.014 opt Au mineral resource 2003: 9,366,000 tons, 0.031 opt Au proven reserve; 83,909,000 tons, 0.023 opt Au probable reserves; 19,937,000 tons, 0.020 opt Au measured reserve; 20,069,000 tons, 0.020 opt Au indicated resource; 177,450,000 tons, 0.014 opt Au inferred resource 2004: 71,218,500 tons, 0.023 opt Au proven and probable reserves; 18,043,500 tons, 0.022 opt Au measured and indicated resources; 21,000,000 tons, 0.014 opt Au inferred resource	1989–93: 322,219 oz Au, 9,784 oz Ag 1994–98: 363,771 oz Au 1999: 74,000 oz Au 2000: 68,000 oz Au 2001: 84,784 oz Au, 401 oz Ag 2002: 83,321 oz Au, 1,281 oz Ag 2003: 142,100 oz Au, 2,080 oz Ag 2004: 141,304 oz Au, 2,354 oz Ag	Paleozoic chert, argillite, and carbonate rocks	early Oligocene
North Stonehouse (Buffalo Mountain district)	1991: 2.5 million tons, 0.103 oz Au mill ore		Havallah Formation and porphyry dikes	39 Ma
Pinson (includes Mag pit) (Potosi district)	1980: 3.245 million tons, 0.119 opt Au 1989: 480,000 oz Au 1996: 2.6 million tons, 0.072 opt Au	1980: 56,000 oz Au 1986–88: 189,864 oz Au 1989: 72,489 oz Au (includes Preble) 1990–91: 112,022 oz Au 1992–94: 145,210 oz Au, 12,700 oz Ag 1995: 44,854 oz Au 1996–98: 128,935 oz Au, 7,990 oz Ag 1999: 11,975 oz Au, 442 oz Ag 2000: 1,116 oz Au, 31 oz Ag 2001: 679 oz Au	Comus Formation	Eocene?
Preble (Potosi district)	1985: 1.8 million tons, 0.062 opt Au 1986: 3.16 million tons, 0.093 opt Au heap leach, 80,000 tons, 0.242 opt Au mill grade 1989: 15,110 oz Au	1985: 17,000 oz Au 1987: 28,000 oz Au 1988: 18,828 oz Au 1989: included with Pinson 1990: 1,161 oz Au	Preble Formation	Eocene?
Rabbit Creek (Potosi district)	1989: 4.1 million oz Au; additional geologic *resource*—1 million Au in refractory material 1992: *reserves*—3.26 million oz Au 1993: *see* Twin Creeks	1990–92: 296,000 oz Au 1993: *see* Twin Creeks	Ordovician	Eocene?

continued

MAJOR PRECIOUS-METAL DEPOSITS (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
HUMBOLDT COUNTY (continued)				
Sleeper (Awakening district)	1985: 4.2 million tons, 0.13 opt Au, 0.73 opt Ag 1989: 1,975,000 oz Au 1990: 44.1 million tons, 0.038 opt Au, 0.152 opt Ag 1999: 2.1 million oz Au at average grade of 0.025 opt Au; 18.1 million oz Ag at average grade of 0.208 opt Ag	1986: 128,000 oz Au, 94,000 oz Ag 1987–88: 389,106 oz Au 1989–96: 1,149,054 oz Au, 1,838,791 oz Ag 2001: 90 oz Au, 197 oz Ag 2002: 130 oz Au, 263 oz Ag	Miocene "latite" flows and dikes, silicic ash-flow tuff, Triassic slate and phyllite	16.1 Ma
Trenton Canyon (Buffalo Valley district)	1994: *oxide resource*—14.6 million tons, 0.035 opt Au, (517,000 oz Au) 1999: 995,000 tons, 0.021 opt Au (North Peak); 10.8 million tons, 0.022 opt Au (Valmy)	2000: included with Lone Tree 2001: 24,228 oz Au, 2,996 oz Ag 2002: 3,685 oz Au, 742 oz Ag	Vinini Formation	
Trout Creek (Battle Mountain district)	1989: 50,000 oz Au			
Twin Creeks (Chimney and Rabbit Creeks) (Potosi district)	1993: 5.7 million oz Au 1999: 87.1 million tons, 0.079 opt Au proven and probable 2000: 75.2 million tons, 0.086 opt Au proven and probable 2002: 47.6 million tons, 0.081 opt Au proven and probable reserves; 55 million tons, 0.057 opt Au measured and indicated mineralized material; 1.8 million tons, 0.046 opt Au inferred mineralized material 2003: 14,000,000 tons, 0.085 opt Au proven reserve 48,200,000 tons, 0.074 opt Au probable reserve 8,000,000 tons, 0.051 opt Au measured material 34,800,000 tons, 0.051 opt Au indicated material 1,700,000 tons, 0.041 opt Au inferred material 2004: 61,800,000 tons, 0.075 opt Au proven and probable reserves; 15,300,000 tons, 0.077 opt Au indicated material; 800,000 tons, 0.043 opt Au inferred material	1993–98: 3,338,026 oz Au, 1,317,456 oz Ag 1999: 879,453 oz Au, 119,191 oz Ag 2000: 779,075 oz Au, 103,909 oz Ag 2001: 831,962 oz Au, 95,721 oz Ag 2002: 786,313 oz Au, 158,401 oz Ag 2003: 697,607 oz Au, 128,535 oz Ag 2004: 352,810 oz Au, 99,472 oz Ag	Paleozoic	Eocene?
Winnemucca Gold property (Winnemucca district)	1998: 130,000 to 140,000 oz Au proven, 300,000 oz Au indicated			
LANDER COUNTY				
Austin Gold Venture (Birch Creek district)	1986: 1.75 million tons, 0.16 opt Au 1989: mined out 1999: 154,000 oz Au resource	1986–88: 141,000 oz Au 1989: 50,000 oz Au	Antelope Valley Limestone	Cretaceous or Tertiary
Battle Mountain Complex (Battle Mountain district)	1992: 500,000 oz Au 1995: *resource* (overall Battle Mountain complex)—60.2 million tons, 0.036 opt Au, including *reserves*—46.6 million tons, 0.040 opt Au 1999 (Phoenix): 5,680,000 oz Au proven and probable; 1.5 million oz Au additional mineralization 2000: 175.2 million tons, 0.034 opt Au proven and probable reserves	1994–98: 274,741 oz Au, 632,739 oz Ag 1999: 8,322 oz Au, 19,526 oz Ag 2000: 1,509 oz Au, 1,756 oz Ag 2001: see Phoenix		Eocene
Buffalo Valley Gold Project (Buffalo Valley district)	1988: 1.5 million tons, 0.05 opt Au 1994: 4.8 million tons, 0.07 opt Au 1997: 600,106 oz Au resource; 100,797 oz Au, other mineralized material	1988–90: 39,668 oz Au		Eocene?

continued

MAJOR PRECIOUS-METAL DEPOSITS (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
LANDER COUNTY (continued)				
Cortez Joint Venture (Bullion district) CJV includes original Cortez Mine, Pipeline, and South Pipeline	1968: 3.6 million tons, 0.279 opt Au (Cortez deposit) 1987: 4.8 million tons, 0.105 opt Au 1999: 189.4 million tons, 0.050 opt Au proven and probable; 119.1 million tons, 0.035 opt Au mineralized material 2000: 151.3 million tons, 0.047 opt Au proven and probable; 60.0 million tons, 0.047 opt Au mineralized material 2001: 191.1 million tons, 0.044 opt Au proven and probable; 76.6 million tons, 0.040 opt Au resources 2002: 229.3 million tons, 0.034 opt Au proven and probable reserves; 281.7 million tons, 0.025 opt Au measured and indicated mineral resources 2003: 88,131,000 tons, 0.061 opt Au proven reserve 49,623,000 tons, 0.045 opt Au probable reserve 44,617,000 tons, 0.046 opt Au measured resource 130,580,000 tons, 0.027 opt Au indicated resource 18,023,000 tons, 0.047 opt Au inferred resource 2004: 193,560,000 tons, 0.046 opt Au proven and probable reserves; 188,860,000 tons, 0.028 opt Au measured and indicated; 20,500,000 tons, 0.024 opt Au inferred resource	1942–84: 2.4 million tons, 0.13 oz Au/ton; 2 million tons, 0.041 opt Au leached. Little Gold Acres: 800,000 tons, 0.124 opt Au 1988: 42,322 oz Au (includes Horse Canyon) 1989: 39,993 oz Au, 12,234 oz Ag (includes Horse Canyon) 1990–91: 107,445 oz Au, 16,750 oz Ag 1992–93: 141,850 oz Au 1995–98: 1,817,273 oz Au, 31,332 oz Ag 1999: 1,328,525 oz Au 2000: 1,009,992 oz Au 2001: 1,184,732 oz Au 2002: 1,081,677 oz Au 2003: 1,065,402 oz Au 2004: 1,051,197 oz Au	Roberts Mountains Formation, Wenban Limestone, Valmy Formation, quartz porphyry dikes	92.8–94 Ma and 36 Ma
Crescent Pit (Bullion district)	1994: 1.97 million tons mill grade, 0.125 opt Au, 2.2 million tons heap-leach, 0.029 opt Au 1997: included in Cortez Joint Venture			
Crescent Valley (Bullion district)	1994: *placer reserve*—8 million cu yd, 0.031 oz Au/cu yd 1995: *placer resource*—6 million cu yd, 0.03 oz Au/cu yd			
Dean (Lewis district)	1995: *proven reserve*—11,000 oz Au *possible to probable resource*—240,000 oz Au			
Elder Creek Project/Shoshone (Lewis district)	1989: 91,500 oz Au 1990: 1.5 million tons, 0.041 opt Au	1990–91: 20,102 oz Au	Valmy Formation	Cretaceous or Eocene
Fire Creek (northeast of Bullion district)	1982: 350,000 tons, 0.06 opt Au	1983–84: 767 oz Au	basaltic andesite	Miocene
Fortitude Complex (Battle Mountain district)	1984: 16 million tons, 0.15 opt Au, 0.57 opt Ag	1986: 253,000 oz Au, 902,000 oz Ag 1987: 255,000 oz Au 1988–93: 985,616 oz Au, 1,707,992 oz Ag (includes Surprise) 1994: 50,000 oz Au, 95,000 Ag (Reona Mine) 1995: see Battle Mountain Complex 2001: see Phoenix	Battle Formation Antler Peak Limestone Pumpernickel Formation	37 Ma
Fortitude Extension (Battle Mountain district)	1992: 500,000 oz Au 1993: *geologic resource*—900,000 oz Au 1996: included in Battle Mountain Complex			
Hilltop (Hilltop district)	1984: 10.3 million tons, 0.073 opt Au 1989: 10 million tons, 0.049 opt Au		Valmy Formation	Oligocene?
Klondike property	1989: 100,000 oz Au equivalent			

continued

MAJOR PRECIOUS-METAL DEPOSITS (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
LANDER COUNTY (continued)				
McCoy/Cove (McCoy district)	1981: 2.5 million tons, 0.08 opt Au, 1 opt Ag (McCoy) 1987: 14 million tons, 0.05 opt Au (McCoy); 4 million oz Au, 250 million oz Ag (Cove) 1989: *proven and probable reserves* 2.9 million oz Au, 128 million oz Ag *geologic resource*—3.5 million oz Au, 1.50 million oz Ag 1999: 11.8 million tons, 0.043 opt Au, 2.387 opt Ag proven and probable reserves; 100,000 tons, 0.350 opt Au, 2.0 opt Ag other mineralization 2000: 4.7 million tons, 0.034 opt Au, 2.309 opt Ag proven and probable reserves 2001: 430,000 tons, 0.031 opt Au, 2.624 opt Ag proven and probable reserves	1986: 50,000 oz Au 1987–98: 3,046,660 oz Au, 85.79 million oz Ag 1999: 124,500 oz Au, 8.43 million oz Ag 2000: 162,784 oz Au, 12,328,297 oz Ag 2001: 94,633 oz Au 6,451,425 oz Ag 2002: 33,142 oz Au, 1,987,421 oz Ag 2003: 4,699 oz Au, 706 oz Ag 2004: 8,454 oz Au, 64,335 oz Ag	Panther Canyon Formation (conglomerate, sandstone), Augusta Mountain Formation (limestone), granodiorite	39.5 Ma
Mud Springs (Bald Mtn. Zone) (Bullion district)	1993: *geologic resource*—42,000 oz Au			
Mule Canyon (Argenta district)	1992: 8.5 million tons, 0.136 opt Au 1996: 9 million tons, 0.112 opt Au	1996: 6,743 oz Au 1999: 55,392 oz Au, 10,022 oz Ag 2000: 40,027 oz Au, 5,856 oz Ag 2001: 33,616 oz Au, 3,100 oz Ag 2002: 13,444 oz Au, 2,708 oz Ag 2003: 8,086 oz Au, 1490 oz Ag 2004: 2,289 oz Au, 645 oz Ag	basalt and basaltic andesite	15–16 Ma
Phoenix (Battle Mountain district)	2001: 174.2 million tons, 0.034 opt Au proven and probable reserves; 156.3 million tons, 0.17% Cu proven and probable reserves; 73.8 million tons, 0.026 opt Au mineralized material; 99.6 million tons, 0.14% Cu mineralized material 2002: 174.2 million tons, 0.034 opt Au probable reserves; 156.3 million tons, 0.16 % Cu probable reserves; 1.5 million tons, 0.033 opt Au measured and indicated mineralized material; 72.3 million tons, 0.026 opt Au inferred mineralized material; 63.5 million tons, 0.14 % Cu inferred mineralized material 2003: 175,700,000 tons, 0.035 opt Au probable reserves; 94,700,000 tons, 0.022 opt Au indicated material; 18,900,000 tons, 0.029 opt Au inferred material; 85,200 tons, 0.12% Cu indicated material; 14,300 tons, 0.11% Cu inferred material 2004: 248,000,000 tons, 0.034 opt Au proven and probable reserves; 33,900,000 tons, 0.022 opt Au indicated material; 34,900,000 tons, 0.028 opt Au inferred material; 216,700,000 tons, 0.15% Cu probable; 32,000,000 tons, 0.21% Cu indicated; 29,800,000 tons, 0.17% Cu inferred	2001: 5,641 oz Au, 6,468 oz Ag 2002: 6,134 oz Au, 1,236 oz Ag 2003: 5,444 oz Au, 1,003 oz Ag 2004: 7,887 oz Au, 2,224 oz Ag		Eocene
Pipeline (Bullion district)	1991: *geologic resource*—11.3 million tons, 0.237 opt Au 1996: 136.7 million tons, 8.7 million oz Au measured resource, includes South Pipeline 1997: included in Cortez Joint Venture	included in Cortez Joint Venture	Roberts Mountains Formation	Eocene?
Robertson (Bullion district)	1988: 11 million tons, 0.04 opt Au 1999: Porphyry zone, 254,678 oz Au proven and probable reserves; Lucky Boy, 33,000 oz Au measured; Altenburg Hill, 21,300 oz Au measured; Widows Mine, 37,300 oz Au inferred; Gold Pan, 91,400 oz Au measured	1989: 3,700 oz Au	Valmy Formation	early Oligocene
Slaven Canyon property (Bateman Canyon district)	1994: 50,000 oz Au 2002: 1.6 million tons, 0.043 opt Au			
South Pipeline (Bullion district)	1992: 9 million tons, 0.082 opt Au 1994: *geologic resource*—76.5 million tons, 0.048 opt Au 1996: *see* Pipeline 1997: included in Cortez Joint Venture		Roberts Mountains Formation	Eocene?

continued

MAJOR PRECIOUS-METAL DEPOSITS (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
LANDER COUNTY (continued)				
Surprise (Battle Mountain district)	1987: 225,000 oz Au 1988–91: production and reserve included in Fortitude figures 1994: mined out	1987: 2,000 oz Au	skarn	37 Ma
Toiyabe	1988: 813,400 tons, 0.066 opt Au	1988: 32,000 oz Au, 10,300 oz Ag 1990–91: 20,480 oz Au, 15,125 oz Ag	lower Paleozoic calcareous siltstone	Eocene?
Victorine (Kingston district)	1992: 915,000 tons, 0.304 opt Au 1995: *proven and probable reserves*—256,000 tons, 0.36 opt Au, plus *additional geologic resource*—31,160 oz Au 2000: 120,000 oz Au proven and probable reserves; 200,000 oz Au possible reserves		Cambrian to Ordovician Broad Canyon sequence	
LINCOLN COUNTY				
Atlanta gold property (Atlanta district)	1980: 1.1 million tons, 0.08 opt Au, 1.6 opt Ag 1996: 300,000 oz Au, 3 million oz Ag	1980: 88,000 oz Au, 1,710,000 oz Ag	Pogonip Group, Ely Springs and Laketown Dolomites, Oligocene silicic tuff, dacite dikes	early Miocene
Caliente property (Pennsylvania district)	1997: *geologic reserves*—50,000 tons, 0.03 opt Au, 0.80 opt Ag; *geologic resource*—700,000 tons, 0.039 opt Au		Tertiary diorite Tertiary andesite	
Easter and Delamar Project (Delamar district)	1994: *geologic resource*—3.36 million tons, 0.069 opt Au 1995: 1.5 million tons, 0.069 opt Au	1994: exploration	Cambrian quartzite	Miocene
LYON COUNTY				
Fire Angel (Como district)	1989: 5,600 oz Au, *geologic resource*—148,500 oz Au			
Hydra-Hercules (Como district)	1997: 259,329 oz Au, 1,956,511 oz Ag	1997: exploration	Tertiary andesite	
Pine Grove (Pine Grove district)	1994: 2.5 million tons, 0.061 opt Au		Cretaceous granodiorite	
South Comstock Joint Venture (Silver City district)	1994: 3 million tons, 0.05 opt Au 1995: 100,000 oz Au			
Talapoosa (Talapoosa district)	1988: 2.5 million tons, 0.041 opt Au, 0.53 opt Ag *oxide* 14.9 million tons, 0.03 opt Au, 0.49 opt Ag *sulfide* 1995: *geologic resource*—45 million tons, 0.025 opt Au and 0.33 opt Ag, including *proven and probable reserves* of 29.9 million tons, 0.026 opt Au and 0.4 opt Ag		Kate Peak Formation	Miocene
MINERAL COUNTY				
Aurora Mine (Aurora district)	1989: 347,000 tons, 0.253 opt Au 1996: 900,000 tons, 0.1 opt Au 2003: see Esmeralda	1989–90: 25,656 oz Au, 34,562 oz Ag 1991: 15,000 oz Au 1992–93: 23,600 oz Au, 52,200 oz Ag 1995: 15,000 oz Au, 35,000 oz Ag 1996: 10,374 oz Au 1997–98: 15,414 oz Au, 7,287 oz Ag	andesite, rhyolite	10 Ma

continued

MAJOR PRECIOUS-METAL DEPOSITS (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
MINERAL COUNTY (continued)				
Aurora Partnership (Aurora district)	1983: 1.5 million tons, 0.129 opt Au, 0.3 opt Ag 1995: 230,000 tons, 0.208 opt Au (in portion of Humboldt vein system) 2003: see Esmeralda	1930s: 100,000 oz Au 1983: 10,000 oz Au 1988: 10,302 oz Au 1989: 27,825 oz Au, 26,000 oz Ag 1991–96: 157,796 oz Au, 318,933 oz Ag	andesite, rhyolite	10 Ma
Borealis (Borealis district)	1981: 2.1 million tons, 0.08 opt Au, 0.5 opt Ag 1988: 1.792 million tons, 0.046 oz Au/ton 2000: 33.4 million tons, 0.044 opt Au, 0.22 opt Ag cumulative resource	1981–84: 170,000 oz Au 1986–88: 116,256 oz Au 1989–90: 107,495 oz Au 52,401 oz Ag	rhyolite flow dome, andesite flows, breccias, volcaniclastic rocks	5 Ma
Candelaria Mine (Candelaria district)	1982: 18.5 million tons, 1.09 opt Ag, 0.009 opt Au 1988: 24 million tons, 1.267 opt Ag, 0.011 opt Au 1999: 27.3 million tons, 3.4 opt Ag unmined resource; additional 8 million oz Ag in low-grade stockpile 2000: 48,000 oz Au and 45.4 million oz Ag indicated reserves	1982: 1.7 million oz Ag, 9,000 oz Au 1987: total production was 10 million oz Ag as of June 1987 1988–98: 30.67 million oz Ag, 95,218 oz Au 1999: 96,896 oz Ag, 237 oz Au	Candelaria Formation serpentinite, granitic dikes	Cretaceous
Denton-Rawhide (Rawhide district)	1986: 24.1 million tons 0.045 opt Au, 0.47 opt Ag 1989: *reserves*—29.4 million tons, 0.040 oz Au and 0.368 opt Ag; *geologic resource*—59.3 million tons, 0.0274 opt Au, 0.298 opt Ag 1997: 447,000 oz Au, 3.9 million oz Ag	1990–98: 916,800 oz Au, 7,438,000 oz Ag 1999: 115,900 oz Au, 665,000 oz Ag 2000: 104,349 oz Au, 817,787 oz Ag 2001: 100,747 oz Au, 727,095 oz Ag 2002: 82,584 oz Au, 695,248 oz Ag 2003: 63,283 oz Au, 525,809 oz Ag 2004: 43,390 oz Au, 446,000 oz Ag	rhyolite plugs, flows, tuffs, breccias	16 Ma
Esmeralda (Aurora district)	2003: 30,710,500 tons, 0.031 opt Au bulk-minable measured and indicated resources 9,206,300 tons, 0.025 opt Au bulk-minable inferred resources 192,152 tons, 0.50 opt Au underground-minable resources (Martinez & Prospectus)		andesite rhyolite	10 Ma
Mina Gold (Bell district)	1997: 1.77 million tons, 0.055 opt Au geologic resource	1997: exploration	Tertiary feldspar porphyry	
Mindora (Garfield district)	1988: 1.0 million tons, 0.037 opt Au and 1.78 opt Ag	1988: exploration		
Santa Fe (Santa Fe district)	1984: 8 million tons, 0.032 opt Au, 0.26 opt Ag 1990: 6.8 million tons, 0.035 opt Au and 0.241 opt Ag	1989–95: 345,499 oz Au, 710,629 oz Ag	Luning Formation	Miocene
NYE COUNTY				
Baxter Springs (Manhattan district)	1988: 1 million tons, 0.050 opt Au 1990: *geologic resource*—5 million tons 0.050 opt Au			
Bruner property, Duluth zone (Bruner district)	1992: *geologic resource*—15 million tons, 0.026 opt Au	1993: exploration	Tertiary volcanic rocks	Miocene
Bullfrog (Bullfrog district)	1989: 18.6 million tons, 0.097 opt Au 1996: 10.2 million tons, 0.062 opt Au proven and probable reserves; 3.7 million tons, 0.040 opt Au mineralized material	1989–98: 2,237,484 oz Au, 2,935,484 oz Ag 1999: 76,159 oz Au, 90,967 oz Ag	rhyolitic ash-flow tuff	9.5 Ma
Cimmaron (San Antone district)	2004: 1,730,600 tons, 0.035 opt Au inferred material			
Corcoran Canyon (Barcelona district)	2004: 1,774,700 tons, 0.025 opt Au, 5.11 opt Ag indicated and inferred material		rhyolitic ash-flow tuff	
Daisy (Bare Mountain district)	1993: 4.7 million tons, 0.024 opt Au *geologic resource*—430,000 oz Au 1998: 4.2 million tons, 0.033 opt Au proven and probable reserves	1997–98: 64,504 oz Au 1999: 30,660 oz Au 2000: 8,740 oz Au 2001: 347 oz Au	Cambrian Bonanza King, Nopah, and Carrara Formations	11–13 Ma(?)
Gold Bar (Bullfrog district)	1987: 1.23 million tons Au ore 1993: idle		silicic volcanic rocks	Miocene

continued

MAJOR PRECIOUS-METAL DEPOSITS (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
NYE COUNTY (continued)				
Golden Arrow (Golden Arrow district)	1997: 12.4 million tons, 0.039 opt Au resource		Tertiary rhyolite tuff	
Gold Hill property (Round Mt. district)	1998: 306,620 oz Au, 4,871,890 oz Ag potential resource 2003: (included in Round Mt.)		rhyolite ash-flow tuff	26 Ma(?)
Gold Wedge property (Manhattan district)	2002: 104,706 oz Au, 0.494 opt Au measured resource; 47,052 oz Au, 0.583 opt Au indicated resource; 394,626 oz Au, 0.494 opt Au inferred resource			
Longstreet property (Longstreet district)	1989: 4 million tons, 0.024 opt Au, *geologic resource*—9.6 million tons, 0.024 opt Au		rhyolitic volcanic rocks	Oligocene
Manhattan property (Manhattan district)	1989: *geologic resource*—100,000 tons, 0.50 opt Au 1997: 1.7 million tons, 0.13 opt Au proven and probable		Cambrian Gold Hill Formation	
Midway (Rye Patch district)	1997: 270,000 oz Au preliminary resource		Ordovician Palmetto Formation	
Montgomery Shoshone (Bullfrog district)	1988: 3.1 million tons, 0.072 opt Au, 0.240 opt Ag		rhyolitic ash-flow tuff	9.5 Ma
Nevada Mercury (Bare Mountain district)	1994: *geologic resource*—50,000 oz Au			
Northumberland (Northumberland district)	1988: 12 million tons, 0.06 opt Au	1939–42: 327,000 oz Au 1981–84: 950,000 tons/year 1988: 29,667 oz Au, 130,394 oz Ag	Roberts Mountains and Hanson Creek Formations, granodiorite, tonalite, quartz porphyry dikes	
Paradise Peak/ Ketchup Flats pit (Fairplay district)	1984: 10 million tons, 0.1 opt Au, 3 opt Ag 1989: 5.22 million tons, 0.09 opt Au, 3.62 opt Ag, mill ore; 11.52 million tons, 0.036 opt Au, 0.445 opt Ag, leachable 1996: 5 million tons, 0.022 opt Au, 0.2 opt Ag (Ketchup Flats)	1986–88: 560,000 oz Au, 8.5 million oz Ag 1989–94: 1,054,084 oz Au, 15.6 million oz Ag	rhyolite and andesite flows, ash-flow and air-fall tuffs	Miocene
Reward property (Bare Mountain district)	1998: 77,500 oz Au		Cambrian Wood Canyon Formation	
Round Mountain (Smoky Valley) (Round Mountain district)	1977: 12 million tons, 0.061 opt Au, 0.07 opt Ag 1989: *geologic resource*—271 million tons, 0.032 opt Au 1999: 320 million tons, 0.018 opt Au proven and probable reserves; 126 million tons, 0.016 opt Au mineralized material 2000: 273.2 million tons, 0.019 opt Au proven and probable reserves; 18.7 million tons, 0.022 opt Au mineralized material 2002: 192.1 million tons, 0.020 opt Au proven and probable reserves; 54.6 million tons, 0.012 opt Au mineral resource 2003: 129,866,000 tons, 0.017 opt Au proven reserve; 49,838,000 tons, 0.020 opt Au probable reserve; 21,000,000 tons, 0.013 opt Au measured resource; 54,440,000 tons, 0.018 opt Au indicated resource; 19,580,000 tons, 0.018 opt Au inferred resource (includes Gold Hill) 2004: 433,400,000 tons, 0.018 opt Au proven and probable reserves; 64,000,000 tons, 0.015 opt Au mineral resource	1977–84: 313,480 oz Au, 160,419 oz Ag 1987–88: 424,300 oz Au 1989: 386,227 oz Au, 211,297 oz Ag 1990: 483,192 oz Au, 236,600 oz Ag (includes Manhattan) 1991–98: 3,248,946 oz Au, 2,607,892 oz Ag 1999: 541,808 oz Au, 464,415 oz Ag 2000: 640,133 oz Au, 424,530 oz Ag 2001: 746,949 oz Au, 509,121 oz Ag 2002: 755,493 oz Au, 627,579 oz Ag 2003: 784,587 oz Au, 761,333 oz Ag 2004: 762,966 oz Au, 773,950 oz Ag	rhyolite ash-flow tuff	26 Ma
Sterling (Bare Mountain district)	1983: 200,000 tons, 0.20 opt Au 1989: 469,000 tons, 0.21 opt Au 1996: 129,000 tons, 0.245 opt Au	1983–88: 75,900 oz Au 1990–91: 24,841 oz Au 1995–98: 36,811 oz Au 1999: 3,093 oz Au	Wood Canyon and Bonanza King Formations	14 Ma
South Monitor (west of Ellendale district)	1996: 250,000 oz Au 1997: 14 million tons, 0.026 opt Au, 0.12 opt Ag		Tertiary volcanic rock	

continued

MAJOR PRECIOUS-METAL DEPOSITS (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
NYE COUNTY (continued)				
Sullivan (Fairplay district)	1987: 10.2 million tons, 0.039 opt Au, 0.086 opt Ag and 0.37% Cu 1995: *proven and possible*—17 million tons of 0.34% Cu, 0.0255 opt Au, + 8.5 million tons of 0.32% Cu		Mesozoic granodiorite and metavolcanic rocks	Mesozoic
PERSHING COUNTY				
Bunce (Velvet district)	1989: *geologic reserve* - 600,000 tons, 0.04 opt Au 1990: 500,000 tons, 0.04 opt Au		rhyolite	
Colado Gold (Willard district)	1997: 15 million tons, 0.022 opt Au resource		Triassic-Jurassic metasedimentary rocks	
Florida Canyon (Imlay district)	1987: 22 million tons, 0.023 opt Au 1988: 37 million tons, 0.023 opt Au 1997: *reserves*— 45.5 million tons, 0.024 opt Au proven and probable mineralized material, 122.8 million tons, 0.022 opt Au 2002: 20 million tons, 0.017 opt Au proven and probable reserves 2003: 374,393 oz Au proven and probable reserves 2004: 16,792,000 tons, 0.016 opt Au proven and probable reserves	1987–88: 109,300 oz Au 1989–98: 1,146,148 oz Au, 610,326 oz Ag 1999: 139,590 oz Au, 111,232 oz Ag 2000: 173,623 oz Au, 129,361 oz Ag 2001: 121,206 oz Au, 98,645 oz Ag 2002: 121,516 oz Au, 72,567 oz Ag 2003: 101,811 oz Au, 60,065 oz Ag 2004: 73,082 oz Au, 60,405 oz Ag (includes Standard)	Grass Valley Formation	Late Tertiary?
Goldbanks Project (Goldbanks district)	1994: 900,000 oz Au 1996: 80.8 million tons, 0.019 opt Au proven and probable reserves; 7.4 million tons, 0.014 opt Au possible reserves; 106.8 million tons, 0.028 opt Au drill indicated resources 2000: 569,000 oz Au and 1.7 million oz Ag indicated reserves			
Relief Canyon (Antelope Springs district)	1983: 9 million tons, 0.032 opt Au 1988: ~ 1.3 million tons, 0.03 opt Au 1996: 8.6 million tons, 0.022 opt Au	1984: 24,500 oz Au 1987–88: 82,000 oz Au 1989–90: 34,266 oz Au, 39,235 oz Ag	Natchez Pass Limestone, Grass Valley Formation	Cretaceous?
Rochester (Rochester district)	1981: 75 million tons, 1.5 opt Ag 1989: *geologic resource*—94.5 million tons, 0.012 opt Au, 1.40 opt Ag 1997: 74.2 million oz Ag, 603,000 oz Au 2000: 50 million oz Ag, 410,000 oz Au (includes Nevada Packard) 2001: 51.4 million tons, 0.85 opt Ag, 0.007 opt Au proven and probable reserves; 61.8 million tons, 0.75 opt Ag, 0.005 opt Au mineralized material 2002: 46.9 million tons, 0.008 opt Au, 0.85 opt Ag proven and probable reserves; 33.8 million tons, 0.009 opt Au, 0.77 opt Ag mineralized material (includes Nevada Packard) 2003: 32.7 million tons, 0.01 opt Au, 0.91 opt Ag proven and probable reserves; 40.3 million tons, 0.01 opt Au, 0.77 opt Ag mineralized material 2004: 21,453,000 tons, 0.010 opt Au, 0.87 opt Ag proven reserves; 2,545,000 tons, 0.010 opt Au, 0.81 opt Ag probable reserves; 26,205,000 tons, 0.010 opt Au, 0.81 opt Ag measured resources; 8,551,000 tons, 0.010 opt Au, 0.96 opt Ag indicated resources; 308,000 tons, 0.003 opt Au, 1.73 opt Ag inferred resources	1986–98: 810,329 oz Au, 59.3 million oz Ag 1999: 70,396 oz Au, 6.2 million oz Ag 2000: 75,886 Au, 6,678,274 oz Ag 2001: 81,200 oz Au, 6,478,916 oz Ag 2002: 71,905 oz Au, 6,417,792 oz Ag 2003: 52,363 oz Au, 5,585,385 oz Ag 2004: 69,456 oz Au, 5,669,073 oz Ag	Koipato Group, Weaver Rhyolite	Late Cretaceous
Rosebud Project (Rosebud district)	1992: 570,000 oz Au (0.362 opt), 5.5 million oz Ag (5.5 opt) 1999: 216,000 tons, 0.323 opt Au	1997–98: 225,651 oz Au, 815,123 oz Ag 1999: 112,652 oz Au, 247,900 oz Ag 2000: 47,944 oz Au, 191,919 oz Ag	Tertiary volcanic rocks	Miocene
Standard (Imlay district)	2002: 17.2 million tons, 0.019 opt Au proven and probable reserves 2003: 404,100 oz Au proven and probable reserves 2004: 25,776,000 tons, 0.017 opt Au proven and probable reserves	1939–42, 1946–49: 45,743 oz Au, 127,451 oz Ag 2004: included with Florida Canyon	Natchez Pass Limestone, Grass Valley Formation argillite	

continued

MAJOR PRECIOUS-METAL DEPOSITS (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
PERSHING COUNTY (continued)				
Tag-Wildcat (Farrel district)	1989: *geologic resource*—1.5 million tons, 0.043 opt Au; *reserves*—416,000 tons, 0.076 opt Au 2003: see Wildcat		Tertiary volcanic rocks	Miocene
Trinity (Trinity district)	1987: 1 million tons, 5.25 opt Ag	1988: active, production not reported 1989: 718,714 oz Ag, 70 oz Au	rhyolite plugs	Miocene
Wildcat (Farrel District)	2003: 38.1 million tons, 0.018 opt Au indicated resources; 28.4 million tons, 0.015 opt Au inferred resources		Tertiary volcanic	Miocene
STOREY COUNTY				
Billie the Kid Mine		2004: 2,836 oz Au, 12,695 oz Ag		
Comstock heap leach project (Comstock district)	1992: 475,000 tons, 0.072 opt Au, 0.60 opt Ag 1996: 100,000 oz Au, 1.2 million oz Ag			
Flowery (Golden Eagle) (Comstock district)	1989: 1 million tons, 0.037 opt Au 1993: 362,000 tons, 0.064 opt Au, 0.97 opt Ag, *geologic resource*—88,128 oz Au and 1 million oz Ag	1988: 836 oz Au, 9,473 oz Ag 1990: 6,000 oz Au, 70,000 oz Ag 1992–97: 16,949 oz Au, 195,701 oz Ag	Alta Formation	12 Ma
Oliver Hills (Comstock district)	1990: 3.37 million tons, 0.054 opt Au, 1.2 opt Ag 1993: 4 million tons, 0.05 opt Au, 0.5 opt Ag, *geologic resource*—225,000 oz Au and 2.25 million oz Ag	1991: 573 oz Au, 6,947 oz Ag		
WASHOE COUNTY				
Mountain View Gold Project (Deephole district)	1995: 19.5 million tons, 0.027 opt Au 1998: 10.7 million tons, 0.055 opt Au 2002: 23.2 million tons, 0.013 opt Au indicated resources; 4.5 million tons, 0.039 opt Au inferred resources		rhyolite	Miocene
Olinghouse (Olinghouse district)	1994: *geologic resource*—500,000 opt Au, 0.057 opt Au 1997: 512,800 oz Au proven and probable reserves, 0.042 opt Au	1998: 2,912 oz Au, 1,879 oz Ag 1999: 28,655 oz Au, 17,598 oz Ag	Miocene andesite	Miocene
Hog Ranch (Leadville district)	1984: 2.5 million tons, 0.085 opt Au 1988: 5.5 million tons, 0.064 opt Au proven and probable reserves; 20.1 million tons, 0.029 opt Au geologic resource 2003: 1,598,350 tons, 0.033 opt Au indicated; 440,924 tons, 0.054 opt Au inferred	1986–87: 80,000 oz Au 1988–95: 118,045 oz Au, 25,400 oz Ag	rhyolite, explosion breccia sinter	15–16 Ma

MAJOR PRECIOUS-METAL DEPOSITS (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
WHITE PINE COUNTY				
Alligator Ridge (Bald Mountain district)	1983: 5 million tons, 0.09 opt Au 1989: 1 million tons, 0.064 opt Au 1992: 11.5 million tons, 0.046 opt Au; *geologic resource*—661,888 oz Au, includes Casino/Winrock	1981–90: 632,057 oz Au, 84,188 oz Ag 1991–92: 27,450 oz Au 1993: included with Bald Mountain 1994: 40,000 oz Au 1995: idle 1996: included with Bald Mountain	Pilot Shale	Mesozoic or early Tertiary
Bald Mountain (Top) (Bald Mountain district)	1989: 6.7 million tons, 0.069 opt Au 1999: 32.6 million tons, 0.041 opt Au, proven and probable reserves; 31.7 million tons, 0.044 opt Au, mineralized material 2000: 509,000 oz Au proven and probable; 2.03 million oz Au measured and indicated resources 2002: 508,000 oz Au proven and probable reserves; 2.03 million oz Au measured mineral resources 2003: 10,143,000 tons, 0.033 opt Au proven reserves; 8,549,000 tons, 0.040 opt Au probable reserve; 10,371,000 tons, 0.027 opt Au measured resource; 10,836,000 tons, 0.043 opt Au indicated resource; 19,224,000 tons, 0.029 opt Au inferred resource 2004: 21,530,000 tons, 0.044 opt Au proven and probable reserves; 53,586,000 tons, 0.027 opt Au measured and indicated resource; 10,808,000 tons, 0.018 opt Au inferred resource	1986: 50,000 oz Au 1988–89: 103,731 oz Au 1990–93: 287,110 oz Au, 76,745 oz Ag 1994: 80,000 oz Au 1995–96: 221,908 oz Au, 62,460 oz Ag 1997–98: 243,500 oz Au, 63,416 oz Ag 1999: 105,475 oz Au, 18,058 oz Ag 2000: 134,469 oz Au, 14,400 oz Ag 2001: 108,392 oz Au, 18,321 oz Ag 2002: 172,328 oz Au, 21,547 oz Ag 2003: 90,602 oz Au, 26,810 oz Ag 2004: 46,685 oz Au, 27,635 oz Ag	quartz porphyry, Cambrian shale and limestone	Jurassic?
Bellview (White Pine district)	1988: 277,000 tons, 0.04 opt Au, *geologic resource*—1 million tons, 0.036 opt Au			
Casino/Winrock (Bald Mountain district)	1989: **Casino** - 804,000 tons, 0.054 opt Au; **Winrock** 1.3 millon tons, 0.037 opt Au 1990: **Winrock** - 993,000 tons, 39,000 oz Au 1992: *see* Alligator Ridge	1990–92: 46,800 oz Au	late Paleozoic sedimentary rocks	Eocene
Easy Junior (Nighthawk Ridge) (White Pine district)	1989: 5.68 million tons, 0.031 opt Au 1991: 137,000 oz Au	1990: 11,500 oz Au, 900 oz Ag 1997: 510 oz Au, 76 oz Ag	Devonian and Mississippian rocks	Eocene
Golden Butte (Cherry Creek district)	1989: 4.23 million tons, 0.031 opt Au	1989–91: 43,519 oz Au, 16,911 oz Ag	Chainman Shale	Cretaceous or Eocene
Griffon Gold property (White Pine district)	1993: *geologic resource*—60,000 oz Au 1994: *geologic resource*—50,454 oz Au, 0.039 opt Au 1995: *proven and probable reserves*—2,737,000 tons, 0.025 opt Au 1997: 100,000 oz Au	1998: 37,921 oz Au, 269 oz Ag 1999: 24,740 oz Au	upper Joana Limestone	
Horseshoe (Bald Mountain district)	1991: 1.5 million tons, 0.039 opt Au		Pilot Shale and intrusive quartz porphyry	36–38 Ma
Illipah (Illipah district)	1987: 57,000 oz Au	1987: ~25,000 oz Au/year 1988: 25,324 oz Au, mining ended 1989: 3,874 oz Au, heap-leached	Paleozoic sedimentary rocks	Eocene?
Little Bald Mtn. (Bald Mountain district)	1986: 1 million tons, 0.10 opt Au 1989: 200,000 tons, 0.13 opt Au; *geologic resource*—260,000 tons, 0.127 opt Au 1993: 140,000 tons, 0.13 opt Au, *geologic resource*—21,800 oz Au	1985–88: 21,700 oz Au 1989: 5,500 oz Au, 1,500 oz Ag	Antelope Valley Formation	35–38 Ma
Mt. Hamilton (White Pine district)	1988: 7.7 million tons, 0.05 opt Au, 0.5 opt Ag 1994: *reserve*—9.04 million tons, 0.052 opt Au, 0.38 opt Ag 1996: 10.8 million tons, 0.038 opt Au, 0.24 opt Ag 1997: 7.72 million tons, 0.035 opt Au	1995–97: 99,500 oz Au, 207,500 oz Ag	Dunderberg Shale	Cretaceous

continued

MAJOR PRECIOUS-METAL DEPOSITS (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
WHITE PINE COUNTY (continued)				
Pan (White Pine district)	1989: 241,000 oz Au 1998: 10.86 million tons, 0.022 opt Au drill indicated and inferred 2003: 17,890,000 tons, 0.019 opt Au indicated resources; 7,986,000 tons, 0.016 opt Au inferred resources		Mississippian rocks	
Robinson (Robinson district)	1989: 46.0 million tons, 0.019 opt Au; *geologic resource*—1 million oz Au 1991: *geologic resource*—200 million tons 0.012 opt Au 1999: 194 million tons, 0.59% Cu, 0.007opt Au, proven and probable reserves 2003: 146.3 million tons, 0.687% Cu, 0.008 opt Au, proven and probable reserves	1986: 48,000 oz Au, 96,000 oz Ag 1987–88: 88,957 oz Au 1989–90: 153,828 oz Au, 121,340 oz Ag 1991: 21,674 oz Au 1992: 35,581 oz Au, 55,000 oz Ag 1993: 13,432 oz Au 1996–98: 196,000 oz Au, 783,500 oz Ag, 370 million pounds Cu 1999: 26,250 oz Au, 153,104 oz Ag, 62 million pounds Cu 2004: 12,228 oz Au, 26,874,000 lbs Cu	Rib Hill Sandstone Riepe Spring Limestone intrusions	Cretaceous
Taylor (Taylor district)	1980: 10 million tons, 3 opt Ag	1980: 1,200 tons/day	Guilmette and Joana Limestones, rhyolite dikes	Eocene or Oligocene
White Pine (White Pine district)	1989: 63,000 oz Au, 0.04 opt Au	1989: 20,654 oz Au	Pilot Shale	Oligocene?
Yankee (Bald Mountain district)	1992: 683,000 oz Au	1990: ~15,000 oz Au 1992: 10,800 oz Au 1993: *see* Bald Mountain	Pilot Shale	36–38 Ma?

Newmont Gold and Silver Production in the Carlin Trend

Production data for individual mines owned by Newmont Gold Co. in the Carlin trend are not available in many cases. Annual production of Newmont operations in the Carlin trend is as follows:

Year	Gold (oz)	Silver (oz)
1988	895,500	NA
1989	1,467,800	117,400
1990	1,676,000	NA
1991	1,575,700	NA
1992	1,588,000	98,000
1993	1,666,400	175,000
1994	1,554,000	158,000
1995	1,634,500	188,000
1996	1,700,000	322,000
1997	1,819,000	118,000
1998	1,575,391	150,400
1999	1,536,401	255,011
2000	1,865,648	108,111
2001	1,547,247	292,241
2002	1,378,782	277,753
2003	1,122,208	206,767
2004	1,287,674	363,052

NA= not available

Industrial Minerals

by Stephen B. Castor

The total value of industrial minerals produced in Nevada in 2004, an estimated $472 million, was 11% above that of 2003. This substantial rise is due to increased production of some Nevada industrial mineral commodities as well as higher prices for many. In order of estimated value, the most important Nevada industrial minerals in 2004 were construction aggregate, lime, diatomite, cement, gypsum, barite, silica, magnesia, clay, and lithium, each valued at more than $10 million. Commodities with sales values of less than $10 million were dolomite, perlite, dimension stone, salt, zeolite, and gemstones. Borate and zeolite processed in Nevada but mined in California were not included in the estimate of total industrial mineral value reported above. Data used for these estimates, and data reported for individual commodities below, were obtained from the Nevada Division of Minerals, the U.S. Bureau of Land Management, or directly from companies that produced the commodities. Data are given in short tons unless otherwise noted.

Aggregate (Sand and Gravel, Crushed Stone)

According to the U.S. Geological Survey, in 2004 the U.S. produced about 2.8 billion metric tons (3.1 billion short tons) of sand and gravel plus crushed stone, up slightly from 2003. The average price for this material was $5.73 per metric ton ($5.21 per short ton). Some of the crushed stone reported by the U.S. Geological Survey is used in the manufacture of commodities such as cement and lime; such material is not included in our aggregate figures because the processed commodities are listed separately.

For the year 2004, Nevada's statewide construction aggregate production is estimated at 40 million tons, 3 million tons more than production for 2003. This production had an approximate value of $180 million, well below that of gold but higher than that of any other of the state's mined commodities. Aggregate production from sand and gravel deposits accounted for about 65% of aggregate production statewide, with crushed stone and lightweight aggregate making up the balance.

Construction aggregate produced in the Las Vegas area in 2004, estimated at 30 million tons, was 11% higher than in 2003. Las Vegas has topped the University of Central Florida's Private Construction Intensity Index for domestic metropolitan areas every year since 1999. In the first five months of 2004, more than 3,400 Las Vegas area new home construction permits were issued monthly, compared with about 2,000 per month in the same period in 2003. The boom in new home construction, along with attendant infrastructure construction and tourist destination building has maintained local demand for construction aggregate at high levels.

Sand and gravel operations accounted for about 70% of the aggregate used in the Las Vegas metropolitan area in 2004, with crushed stone and lightweight aggregate making up the balance. The most important source of sand and gravel aggregate for Las Vegas is the Lone Mountain area northwest of Las Vegas, which accounted for more than 8 million tons in 2004. Significant production also comes from sand and gravel pits in the southwest part of Las Vegas. Since the mid 1990s, portable crushers that produce aggregate from sand and gravel at construction sites have been important producers of base aggregate in Las Vegas, although this production may have fallen off in 2004. Crushed stone, mostly crushed carbonate rock mined from outlying areas, has gained importance in the Las Vegas construction aggregate market in recent years, particularly for concrete aggregate.

Companies in the Las Vegas area that produced more than a million tons of aggregate in 2004 were Nevada Ready Mix Corp., Las Vegas Paving Corp., Frehner Construction, and Rinker Materials. Companies with production in excess of 500,000 tons per year were American Sand and Gravel, Granite Construction, American Asphalt, Wells Cargo Inc., and Hollywood Sand and Gravel.

Nevada Ready Mix mined all of its aggregate from a complex of pits in alluvium in the Lone Mountain area; minor production also comes from adjacent bedrock. Las Vegas Paving produced sand and gravel from its Blue Diamond and Lone Mountain pits, and portable crushing operations. The company also produced crushed stone from the Apex landfill about 10 miles northeast of Las Vegas. Rinker Materials (a subsidiary of the Australian-based CSR Group) produced crushed granite from the El Dorado pit near Railroad Pass. Frehner Construction (a subsidiary of Aggregate Industries of England) mined and crushed limestone from its Sloan property a few miles south of Las Vegas. Community pits and other aggregate mining facilities administered by the U.S. Bureau of Land Management and operated by several companies contributed more than 7 million tons to the Las Vegas area total in 2004. The Southern Nevada Lightweight operation near Jean mainly produced aggregate for lightweight concrete block and sand for use in stucco. Lightweight aggregate was also shipped into the Las Vegas market from a cinder operation near Amargosa Valley in Nye County by Cind-R-Lite Block Company.

Most Las Vegas area aggregate is mined from private property; however, some is produced as a saleable commodity from U.S. Bureau of Land Management (BLM) community pits. Lode claims continue to be held on carbonate rock resources that may be used for aggregate in the Las Vegas area. This process was initiated in 2001 when Rinker Materials Inc. acquired claims on carbonate rock in the Sloan area south of Las Vegas. In 2004, the U.S. Bureau of Land Management (BLM) completed a Mining Claim Validity Report on these claims, which included comparative testing of materials from the claims with similar material from producers of crushed carbonate rock in the Las Vegas area. On the basis of this report, a hearing in federal court is scheduled for early 2005. Finalization of judgment and appeal on this matter may take years.

Companies that held claims on carbonate rock or other aggregate material in the Las Vegas area in 2004 include Frehner Construction Co. in the Sloan area, Sierra Ready Mix and Diamond Generating Corp. in the Ivanpah area about 20 miles south of Las Vegas, and Las Vegas Paving in the Dry Lake area northeast of Las Vegas. Other companies may have staked aggregate resources in the Las Vegas area by proxy.

Production of construction aggregate in the Reno-Sparks-Carson City area, at about 7 million tons, was about 20% higher than in 2003. Companies in the area that produced more than a million tons of aggregate were Granite Construction Co., RMC Nevada, Martin Marietta Materials Inc., and Rilite Aggregate. Granite Construction produced aggregate from five pits in the area. RMC Nevada, part of a U.K. group, owns the former All-Lite Aggregate and Paiute Pit Aggregates operations. Most of Martin Marietta's production comes from the Rocky Ridge Quarry north of Sparks. Frehner Construction, and A & K Earthmovers, Inc. were also important producers. Crushed rock, which accounted for about 65% of the aggregate used in 2004 in the Reno-Sparks-Carson City area, included material from Martin Marietta Materials, Granite Construction, and Frehner operations and lightweight rhyolite aggregate from RMC Nevada, Rilite, and Naturalite Aggregate Corp.

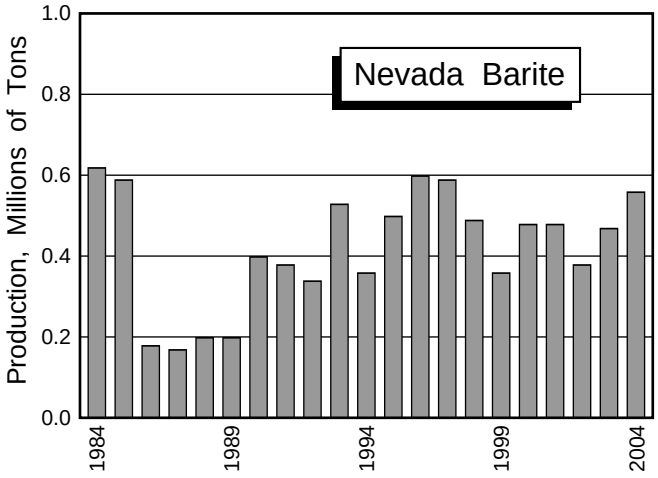
Aggregate that was produced outside of the major metropolitan areas in 2004 is estimated at about 3 million tons. Lincoln County producers shipped more than 500,000 tons of aggregate, mostly into the Las Vegas market. Operators in Nye County together produced more than 500,000 tons of aggregate in 2004, most in the Pahrump area. Elko, Churchill, and Lyon County each produced more than 200,000 tons of aggregate; much of the Lyon County material was sold into the Reno-Carson City metropolitan area. Storey and Humboldt County each produced more than 100,000 tons of aggregate; other rural Nevada counties are estimated to have produced less than 100,000 tons of aggregate each in 2004.

Barite

Nevada produces nearly all of the barite mined in the United States. About 560,000 tons of barite was produced in the state in 2004, a 15% increase over the 465,000 tons produced in 2003. About 95% of the barite sold in the U.S. is used as a weighting agent in oil and gas well drilling fluids. In September, 2004 the total domestic drill rig count rose to 1250 rigs from 1090 a year earlier. According to the U.S. Geological Survey, the country imported 2.1 million tons (2.3 million short tons) of barite in 2004, about the same as in 2001. Most of the imported barite is from China. Nevada barite is mostly sold into Colorado and Wyoming for gas drilling, which increased in 2004 over 2003. Nevada producers were also competitive in California and Canadian markets in 2004 and probably also shipped product to grinding mills along the Gulf Coast.

M.I. Drilling Fluids, which is jointly owned by Smith International and Schlumberger, was the largest Nevada barite producer in 2004, with combined production of about 320,000 tons of screened and crushed high-grade ore from the Greystone Mine and ground and bagged barite from its Battle Mountain plant, both in Lander County. The company was reportedly evaluating barite deposits elsewhere in Nevada in 2003, particularly in the Lone Mountain area in Elko County.

Baroid Drilling Fluids, a subsidiary of Halliburton Co., was the second largest producer in Nevada in 2004. The company mined barite from the Rossi Mine in Elko County and processed it at the Dunphy Mill in Eureka County. Baker Hughes INTEQ also produced a significant amount of barite from its Argenta property near Battle Mountain in Lander County. Standard Industrial Minerals shipped a small amount of barite from a deposit of white, paint-grade barite at the P and S Mine in Nye County to a processing plant in Bishop, California.



Borate

American Borate Co. processes borate minerals from a mine in Death Valley, California, at the Lathrop Wells mill in Nye County, which has a 22,000-ton annual capacity (B_2O_3 basis). This production is not included in the estimate of total value of Nevada minerals because the ore is from out of state.

Cement

Based on U.S. Geological Survey data, in 2004 about 95 million metric tons (105 million short tons) of cement was produced in the U.S. at an average mill price of about $85 per metric ton ($79 per short ton). The only major Nevada producer, the Nevada Cement Co. (part of Texas-based Eagle Materials Inc.) in Fernley, Lyon County, has annual production of about 600,000 tons of cement. The cement is manufactured from Tertiary lacustrine limestone mined a few miles south of Fernley, and other ingredients come from northern Nevada. The deposit near Fernley has limited reserves, and Nevada Cement is drilling limestone of the Natchez Pass Formation in its Echo Canyon Claim Group in the Humboldt Range of Pershing County. The limestone is being evaluated as raw material for possible use in a new cement plant on mill site claims near the Rye Patch exit on Interstate 80.

Limestone suitable for cement production is widespread near Las Vegas, and several attempts have been made to initiate cement production in the area, without long-term success. In 1999, Royal Cement Co. restarted an idle cement plant near Logandale in Clark County. Limestone was mined at a site near the plant, and other raw materials were purchased from regional suppliers. Production was reported by the operator and the USGS between 2000 and 2002, and the plant was closed in 2003. The Directory of Nevada Mine Operations listed American Cement and Aggregate, Lake Forrest, California, as the operator in 2001.

In July 2004, Ash Grove Cement Co., a Kansas firm, announced an agreement with the Moapa Band of Paiute Indians to build a 1.5 million-tons/year capacity cement plant on the Moapa reservation northeast of Las Vegas. Limestone for the cement would be quarried from a site on the east flank of the Arrow Canyon Range near the western border of the reservation. The mine site would include approximately 1,300 acres in Sections 5–8, T16S, R64E. The limestone would be crushed and delivered by belt conveyor to the proposed cement plant located east of the mine near the Union Pacific Railroad. The rock is thought to be relatively pure Devonian limestone, and to be part of the same Sultan Formation unit that is quarried for lime manufacture at Apex about 15 miles to the southwest. Other materials used in the cement manufacturing process (mainly coal, iron, silica, clay, alumina, and gypsum) would be delivered by truck or rail, or if found to be available on the reservation, could be mined under separate agreements. In addition to land and water payments, as well as limestone royalties, Ash Grove would pay substantial tribal taxes. Construction of the plant, which is projected to cost $250 million, is expected to begin in early 2006 with completion projected for late 2007 or early 2008. Ash Grove operates nine U.S. cement plants, but the Moapa facility would be the company's first plant in the Southwest. Also in 2004, Cementos Pacasmayo, a large Argentinian cement company, decided not to pursue plans to build a cement plant in the Las Vegas area.

Clay

Nevada clay production is estimated at 36,000 short tons in 2004, about the same as in 2003. This does not include clay mined in Washoe County for Nevada Cement (which is included in the cement figure). According to the U.S. Geological Survey, in 2002 Nevada ranked fifth in production of non-swelling bentonite and seventh in the production of swelling bentonite in the United States.

IMV Nevada, owned by Mud Camp Mining Company, LLC, produced more than 32,000 tons of sepiolite, saponite, and bentonite from deposits in lacustrine sediments in the Ash Meadows-Amargosa Flat area of Nye County. The clay occurs in shallow, flat-lying deposits in Pliocene lacustrine rocks. It is processed at a plant in Amargosa Valley, and clay products are exported worldwide. The sepiolite and saponite deposits are unusual, and are considered to have originated in a Pliocene playa with an area of at least 22 square miles. The sepiolite, which yields most of the profits for the operation, occurs in an almost continuous bed with an average thickness of about 7 feet. Sepiolite is rare in playa sediments elsewhere in the western United States, but these other occurrences have not been of economic importance.

Two companies mine and ship relatively minor amounts of Nevada clay from several sites on an irregular basis for use in high-cost specialty products. At its White Caps Mill near Beatty in Nye County, Vanderbilt Minerals Co. processes small amounts of clay stockpiled from several Nevada, Arizona, and California deposits. In 2004, the company shipped stockpiled clay from the New Discovery Mine near Beatty, the Blanco Mine in Esmeralda County, and the Buff and Satin Mines in Pershing County. The American Colloid Co. mines white bentonite from Coal Canyon in Pershing County and hectorite from the Disaster Peak Mine in Humboldt County. The clays are shipped to the American Colloid plant in South Dakota, where they are blended into specialty clay products.

Art Wilson Company mines clay sporadically from the Jupiter Mine near Wabuska in Lyon County; it is mostly used as pond liner. Specialty Clays Corporation has been evaluating a deposit of bentonite in Churchill County about ten miles southeast of Fallon. This bentonite is reported to have expansive qualities similar to that of Wyoming bentonite.

In 1999, Oil-Dri, the world's largest manufacturer of cat litter, announced discovery of a large calcium montmorillonite deposit in Hungry Valley north of Reno. The clay, considered to be excellent for making clumping cat litter, occurs as an extensive, near-surface deposit of clay-rich strata as much as 98 feet thick. In 2001, the U.S. Bureau of Land Management issued a final environmental impact statement for a clay mine and plant with a capacity of 200,000 tons per year. In 2002, Washoe County denied operating permits on the basis of local opposition to the plan, and the decision is in litigation. Oil-Dri also holds the Capricorn clay deposit in northern Washoe County, which is also considered to contain good cat litter material but to be too remote to be competitive.

Nevada Cement Co. staked 12 placer claims in the Terraced Hills north of Pyramid Lake in 2004. The claims were staked near the company's clay mine, where halloysite is mined as a source of alumina in portland cement that is manufactured in the Fernley Plant about 50 miles to the southwest.

Diatomite

Diatomite production in Nevada, which accounts for more than 30% of domestic production, was virtually unchanged from 2003 to 2004. About two-thirds of the diatomite produced is used in filtration with the remainder largely used in absorbents, fillers, and cement. Emerging small-scale uses include pharmaceutical processing and nontoxic insecticides. According to the U.S. Geological Survey, the average domestic price in 2004 was about $285 per metric ton ($259 per short ton) f.o.b. plant.

Eagle-Picher Minerals, Inc., a division of Eagle-Picher Industries, Inc., produces most of Nevada's diatomite at three different locations. The company's Colado operation in Pershing County is the most productive. It consists of a plant at Lovelock that mostly makes filtration products, and diatomite mines about 15 miles northwest of Lovelock. The company also produces diatomite used in fillers and absorbents at its Clark plant and mine in Storey County about 20 miles east of Reno and diatomite used in insulation from a pit near Hazen in Lyon County. Eagle-Picher Minerals is a wholly owned subsidiary of Granaria Holdings Ltd. of the Netherlands. It is reportedly for sale.

Moltan Co. of Tennessee produces absorbent products, cat litter, and soil conditioner at a mine and plant complex in Churchill County about 20 miles northeast of Fernley. The diatomite resource is reported to contain 100 years of reserves. Moltan ships diatomaceous earth absorbents under several labels. In 2001, the Celite Corp., a subsidiary of World Minerals Inc. with a large diatomite facility in California, acquired the CR Minerals mine at Hazen and plant in Fernley, which produces functional filler. The Grefco diatomite operation near the Esmeralda/Mineral County line is small relative to other Nevada diatomite producers. American Diatomite Inc., which staked four claims in 2003 in the Monte Cristo Range in Esmeralda County about ten miles north of Coaldale, staked another 24 claims in the same area in 2004. The claims are in the vicinity of the Shu Fly diatomite deposit.

Dimension Stone

Nevada is not well known as a producer of dimension stone, and high-quality, cut and polished products are not currently produced from stone mined in the state. However, split dimension stone products are produced at two localities in Nevada, new dimension stone operations are being evaluated, and oversize stone blocks are used in wall construction.

Las Vegas Rock produces flagstone, ashlar, boulders, and crushed landscape rock from its Rainbow Quarries near Goodsprings, about 20 miles southwest of Las Vegas. The stone is quartz-cemented sandstone that is part of the Jurassic Aztec Sandstone, which crops out extensively in Clark County, but is generally too friable for building stone.

Mt. Moriah Stone quarries flaggy, light-gray quartzite from the Cambrian Prospect Mountain Quartzite about 15 miles north of Baker in White Pine County. This material, which naturally splits into slabs up to 5 feet by 8 feet by 4 inches thick, is used for flagstone and other types of uncut building stone. The company typically operates from April to December each year.

Gemstones

Precious opal has been produced from the Virgin Valley district in Humboldt County since its discovery in the early twentieth century, and is mined today by several small operations. The best known are the Royal Peacock, Rainbow Ridge, Bonanza, and Hidden Valley Mines. Much of the opal comes from pay-to-dig operations and is unreported. Eight individuals and groups staked a total of 43 claims in the Virgin Valley district in 2004. The largest 2004 claim group is the 29-claim WRT Rainbow Ridge Opal et al. group staked by the Wentzell Revocable Trust.

Turquoise has come from many Nevada locations in the past. No turquoise production was reported in 2004, although turquoise and the related gemstone faustite were mined from one site in 2003.

Gypsum

In 2004, gypsum production in Nevada was an estimated 2.1 million short tons, about 10% more than in 2003. According to the USGS, Nevada accounts for about 10% of domestic gypsum production, and ranked third in the nation in 2004. The three largest Nevada producers, PABCO Gypsum, BPB PLC, and USG, utilize most of this gypsum in local wallboard plants.

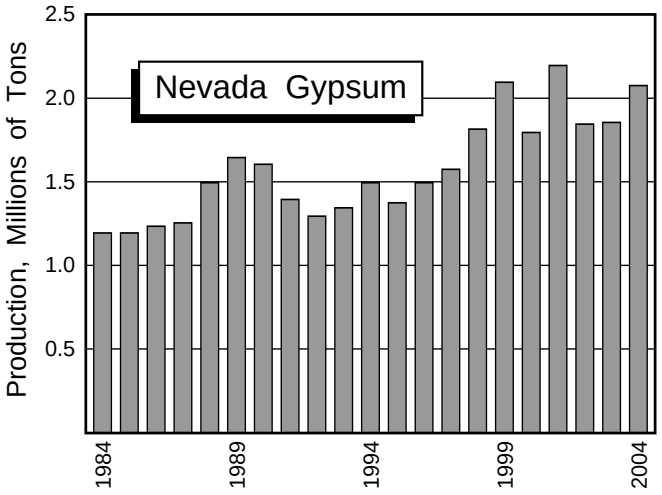
PABCO Gypsum in Clark County northeast of Las Vegas mined and processed about 1.1 million tons of

gypsum ore in 2004. Although processing yields only about 70% by weight gypsum from the ore, the company still ranks as the largest producer in Nevada. The total gypsum production figure reported here reflects the 70% recovery from this deposit. The gypsum, which is in a nearly flat-lying gypsite blanket in excess of 120 feet thick in places, occurs atop a 5-square-mile mesa.

The Blue Diamond operation of BPB PLC southwest of Las Vegas in Clark County was the second largest producer, at about 730,000 short tons. The gypsum deposit is the largest of several Permian deposits in the Las Vegas area. It consists of more-or-less flat-lying beds of pure gypsum as much as 30 feet thick on a table mountain that overlooks the city. The Blue Diamond area has been the site of gypsum mining since 1925, but is now in the path of metropolitan growth, and gypsum mining there is scheduled to cease in 2005 to make way for an upscale housing development. The adjacent BPB wallboard plant will continue to operate on gypsum imported from southern Utah.

USG, the nation's largest wallboard producer, was the third largest Nevada producer in 2004, at about 355,000 tons. The company mines gypsum in western Pershing County and processes it into wallboard and plaster at a plant at Empire in Washoe County. The gypsum is of Triassic or Jurassic age and forms several masses in a 2-square-mile area. The largest mass, the Selenite orebody, contains 85 to 95% gypsum and is generally well bedded with variable dips.

The Art Wilson Company of Carson City ships gypsum and anhydrite from the Adams Mine in Lyon County, and the D.L. Denman Construction Company mines gypsum at the Pioneer Mine about 10 miles east of Las Vegas. Material from these relatively small operations is used in cement and agricultural applications. The Adams deposit is a folded, diapiric mass associated with limestone in Triassic metavolcanic rocks. The Pioneer Mine is in the same gypsite deposit as the PABCO operation about 5 miles to the north.



Lime, Limestone, and Dolomite

In 1997, lime supplanted diatomite as Nevada's second most valuable industrial mineral. According to the U.S. Geological Survey, in 2004 Nevada was one of seven states that produced more than 1 million tons of lime. Limestone is mined for lime production at two sites in Nevada that are nearly at opposite ends of the state; however, the high-calcium limestone that is utilized at both sites is from the same Devonian limestone unit (although it is assigned to different stratigraphic formations). In addition to lime, relatively minor amounts of crushed limestone are also shipped from both sites, and dolomite is mined at one of the sites.

The Pilot Peak high-calcium lime operation of Graymont Western US, Inc. (formerly Continental Lime, Inc.) 10 miles northwest of Wendover in Elko County is Nevada's largest producer, mainly marketing lime to gold-mining operations for use in cyanide-solution pH control. The Pilot Peak plant has three kilns with a combined capacity of more than 700,000 tons of quicklime per year and a hydrated lime plant capable of producing 350 tons per day. In 2000, the Pilot Peak plant was rated the ninth largest producer in the country.

Chemical Lime Co. produces lime at Apex about 20 miles northeast of Las Vegas. The Apex operation makes high-calcium quicklime used in metallurgical processing, paper manufacturing, and environmental markets, and also produces hydrated lime that is mainly used in construction. The Chemical Lime dolomite quarry at Sloan ceased operating in 1997, but in 2004 the company's Henderson plant processed dolomite from Apex into Type S lime for construction uses.

In addition to lime, both Graymont Western U.S. and Chemical Lime ship crushed limestone. Other carbonate rock producers in Nevada are Min-Ad, Inc., and Nutritional Additives Corp., producers of agricultural and nutritional dolomite products near Winnemucca. Columbus S.M. LLC, a small California-based company, is evaluating the production of calcium carbonate and magnesium hydroxide from the Columbus Salt Marsh in Esmeralda County. The company plans to leach the commodities from material mined from the playa, and to market the calcium carbonate as a food additive.

Lithium

Chemetall Foote Corp., a subsidiary of Chemetall GmbH, produces lithium carbonate, lithium hydroxide monohydrate, and lithium hydroxide anhydrite at Silver Peak in Esmeralda County. This operation, the only primary lithium producer in the United States, produces these chemicals from brine that is pumped from beneath Clayton Valley playa, where 50 production wells as deep as 350 m tap six stratigraphically and structurally controlled aquifer systems. Lithium preconcentration is carried out in evaporation ponds that cover more than 4,000 acres. Production figures are confidential; the most

recent public information, from 1998 Securities and Exchange Commission data, reported annual production of about 12 million pounds of lithium carbonate and 5 million pounds of lithium hydroxide. Lithium carbonate is the main feedstock for major uses of the element in glass, ceramics, aluminum production, lubricants, and batteries. Lithium use in rechargeable batteries is a rapidly expanding market. The most recent lithium feedstock prices reported by the USGS were in 2000 at $2.30 per pound for lithium carbonate and $2.60 per pound for lithium hydroxide monohydrate. Lithium prices decreased in 1998 due to the entry of a low-cost Chilean producer into the market. Since then, the U.S. has been a net importer of lithium feedstock commodities, rather than a net exporter as it was prior to 1998.

Magnesia

Premier Chemicals LLC of Cleveland, Ohio, owns the Gabbs magnesia operation in Nye County. Magnesium minerals have been mined at Gabbs since 1935. In the 1940s, ore from Gabbs was processed into magnesium metal in Henderson, Nevada. From the 1950s to the 1980s, mining and processing was mostly by Basic Industries, a major producer of refractory magnesia. During the 1990s, the availability of cheap foreign refractory magnesia caused production at Gabbs to be switched to light-burned (caustic) magnesia that is mainly marketed for wastewater treatment and agricultural uses. Although production of magnesia at Gabbs is still substantially below its peak in 1981, magnesia shipments from the Gabbs operation have increased steadily since 1996.

Slightly more than half of U.S. magnesia production comes from seawater and natural brines, and the mine at Gabbs is the only place in the country where magnesite is mined. Current magnesia minerals mined domestically include olivine mined in North Carolina and Washington and brucite mined in Texas. The Gabbs brucite, which is shipped in relatively small amounts, is mainly sold as a by-product mined from pods in magnesite pits. Magnesite and brucite at Gabbs occur over an area of about 2 square miles in complex replacement bodies in Triassic dolomite, and the remaining resource is very large.

Perlite

Although the U.S. is the world's largest producer of perlite, domestic perlite suffers transportation cost disadvantages in the eastern U.S. compared to perlite from Greece, which ranks second in the world in perlite production. Prior to 2004, domestic production had slipped for four years in a row while imports increased; this trend ended in 2004 with a decrease in perlite imports of more than 25%. Perlite is mined in eight western states, led by New Mexico. Nevada has large perlite resources and several deposits of perlite were mined extensively in the past. The largest historical producer was the Hollinger Mine near Pioche in Lincoln County. Current perlite production in Nevada is restricted to relatively small-scale mining of two deposits for niche markets, and the state produces less than 1% of the domestic total.

Wilkin Mining and Trucking Inc. mines perlite from the Tenacity Perlite Mine about 25 miles west of Caliente in Lincoln County. The company has been mining perlite in the area for more than 25 years. In the past, most of the perlite was shipped as crude; however, the company has a small popping plant in Caliente, and present sales of 1,500 to 2,000 tons per year are of expanded perlite that is mostly sold into horticultural markets. In 2003 the company filed a plan to mine perlite from the Sunny Mine, which is near the Hollinger Mine in the Wilson Creek Range northeast of Pioche.

Eagle-Picher Minerals Inc. produces expanded perlite at its Colado diatomite plant in Pershing County from perlite mined at the Popcorn Mine about 15 miles south of Fallon in Churchill County. The perlite is marketed as a filter aid, and plant capacity is reportedly about 8,000 tons per year.

Salt

The Huck Salt Company produced about 14,000 tons of salt in 2004, up 55% from 2003. Because the salt is mainly used for deicing roads, production levels are dependent on weather. The heavy winter of 2004/2005 sent production higher. The salt comes from a playa in Fourmile Flat about 25 miles southeast of Fallon in Churchill County, where it has been harvested almost continuously since the 1860s when it was hauled to the mills that processed Comstock silver and gold ore.

Silica

The U.S. is by far the world's largest producer of silica sand. Annual domestic production has hovered around 31 million tons for the past nine years. In 2004, Simplot Silica Products at Overton in Clark County shipped about 750,000 tons of silica sand, up more than 10% over 2003 shipments. The sand is mined from an open pit 1.5 miles long and 300 feet deep in the relatively friable Cretaceous Baseline Sandstone, washed in the pit, and transported via a 5-mile slurry pipeline to a plant where it is screened and bagged. Silica sand has been produced from the deposit since the 1930s; Simplot acquired the operation in 1955.

American Cement and Aggregate produces silica sand from the Silica LLC pit near Mercury in Nye County. A Plan of Operations submitted to the BLM in 2001 called for annual production of as much as 80,000 tons. The silica-rich rock mined is the Ordovician Eureka Quartzite. The quartzite is crushed, sieved, and bagged in several sizes, and sold mostly as stucco sand. However, the product is relatively pure, at more than 98% SiO_2, and the company is seeking other markets.

James Hardie Building Materials Inc., an Australian company, staked eight claims about 2 miles south of

Golconda in Humboldt County on a probable silica deposit in the Prospect Mountain Quartzite. The company, which once mined gypsum and made wallboard near Las Vegas, manufactures highly durable fiber-cement building materials. It opened a siding manufacturing plant in Reno in late 2004 and is exploring for raw materials. The company also staked small claim groups in the vicinity of the Stone Corral Silica Mine in Humboldt County about ten miles north of Golconda and in the vicinity of the Lucky Boy silica property in Mineral County.

Vermiculite

In 2004, IBI Corp., a junior international mining and investment company, through its subsidiary North American Vermiculite Inc., was scheduled to evaluate unpatented claims near Mica Peak in Clark County for vermiculite deposits. Minor amounts of vermiculite were mined from a deposit in the area in the 1940s, and Oglebay Norton leased the property in the 1980s. The ore, which consists of altered ultramafic rock, has been described as containing 20–35% of “good to superior exfoliating vermiculite.”

Zeolites

Nevada contains several large zeolite deposits that were discovered and evaluated during a flurry of zeolite exploration activity in the 1950s and 1960s; however, natural zeolite production never evolved into a major industry in the state. Ash Meadows Zeolite LLC, a subsidiary of Badger Mining Corp., ships 1,000 to 5,000 tons annually of clinoptilolite used in water filtration, odor control, and nuclear clean-up from a plant in Amargosa Valley in Nye County. The clinoptilolite is mined from a deposit of white zeolitized tuff in California, but the company also holds nearby claims in Nevada underlain by green zeolite in Nevada that have been mined in the past.

Moltan Company mines chabazite and mordenite from a deposit in the Trinity Range in Churchill County about 40 miles northeast of Fernley. The company uses the mineral in absorbents that are produced at its Fernley plant.

Geothermal Energy

by Ronald H. Hess

Twenty-seven geothermal well permits were issued during 2004 by the Nevada Division of Minerals: one project area permit, four industrial production well permits, two industrial injection well permits, four domestic well permits, and sixteen gradient/observation well permits. Nineteen geothermal wells, of all types, were reported as drilled during 2004. (Nevada Division of Minerals, 2005)

During 2004 there were 143 federal non-competitive leases covering 215,956 acres and 55 federal competitive leases covering 83,656 acres in Nevada. At the end of 2004 the U.S. Bureau of Land Management had 129 pending lease applications totaling 224,104 acres. Total lease rental revenue value for 2004 was $239,800. (R. Hoops, BLM, oral commun., 2005)

Total gross electrical production during 2004 from geothermal resources on public lands was 1.21 million megawatt-hours (MWh), an increase of 90,000 MWh over 2003; net production was approximately 1.01 MWh, a increase of 70,090 MWh from 2003. Gross electrical sales from federal lands was $57 million, an increase of $4.6 million over 2003. Production royalties on that amount equaled $2.1 million. By regulation, half of all Federal geothermal lease rental fees and production royalties are returned to the state. For 2004, $119,900 in lease rental fees and $1,050,250 in royalty production fees should be transferred to the State of Nevada. (R. Hoops, BLM, oral commun., 2005)

Total Nevada geothermal electrical production in 2004 from both federal and fee lands combined was 1,670,364 MWh gross and net production was 1,284,746 MWh (Nevada Division of Minerals, 2005) with an approximate sales value of $73 million. Production capacity from the currently developed geothermal resources at ten existing geothermal power production sites in Nevada is 221.5 megawatts (MW); currently installed equipment, or nameplate, capacity for the same sites total 244.3 MW. The table of Nevada geothermal power plants lists operators, plant locations, and energy production for individual Nevada geothermal power producers. The table of proposed electrical generation plants in Nevada lists conventional, geothermal, and other renewable energy power projects that are currently under construction or planned for Nevada. If all of these power projects are completed as planned they will add approximately 4,870 MW of gross electrical production to the Nevada grid by 2010.

NONDOMESTIC GEOTHERMAL WELLS REPORTED AS DRILLED, REDRILLED, OR COMPLETED IN NEVADA DURING 2004

Area	Company	Well name	Permit#	Location	Type
Churchill County					
Bradys Hot Springs	Ormat Nevada, Inc. 9 LLC	Observation Well 88-11	535	SE^{1}_{4} SE^{1}_{4}, S11, T22N, R26E	Observation
Desert Peak	Ormat Nevada, Inc. 3 LLC	Industrial Production Well 74-21	536	SE^{1}_{4} NE^{1}_{4}, S21, T22N, R27E	Production
Desert Peak	Ormat Nevada, Inc. 3 LLC	Industrial Production Well 77-21	538	NE^{1}_{4} SE^{1}_{4}, S21, T22N, R27E	Production
Dixie Valley	Caithness Dixie Valley	Industrial Injection Well SW Lamb No. 2	539	NE^{1}_{4} NE^{1}_{4}, S13, T24N, R36E	Injection
Elko County					
Hot Sulphur Springs	Earth Power Resources	Industrial Production Well 46-8 (57-8)	527	SW^{1}_{4} SW^{1}_{4}, S8, T41N, R52E	Production
Hot Sulphur Springs	Earth Power Resources	Observation Well 67-8 (65-8)	528	NE^{1}_{4} SE^{1}_{4}, S8, T41N, R52E	Observation
Humboldt County					
Blue Mountain	Noramex Corp.	Observation Well Deep Blue No. 2	532	SW^{1}_{4} NE^{1}_{4}, S14, T36N, R34E	Observation
Blue Mountain	Noramex Corp.	Thermal Gradient TG-1	545	SE^{1}_{4} NW^{1}_{4} SW^{1}_{4}, S1, T36N, R34E	Gradient
Blue Mountain	Noramex Corp.	Thermal Gradient TG-2	547	SW^{1}_{4} SE^{1}_{4} SE^{1}_{4}, S1, T36N, R34E	Gradient
Blue Mountain	Noramex Corp.	Thermal Gradient TG-3	548	NE^{1}_{4} SE^{1}_{4} SW^{1}_{4}, S11, T36N, R34E	Gradient
Blue Mountain	Noramex Corp.	Thermal Gradient TG-4	550	NE^{1}_{4} SW^{1}_{4} SE^{1}_{4}, S11, T36N, R34E	Gradient
Blue Mountain	Noramex Corp.	Thermal Gradient TG-5	552	NW^{1}_{4} NW^{1}_{4} NW^{1}_{4}, S13, T36N, R34E	Gradient
Blue Mountain	Noramex Corp.	Thermal Gradient TG-8A	554	NE^{1}_{4} NE^{1}_{4} SE^{1}_{4}, S14, T36N, R34E	Gradient
Blue Mountain	Noramex Corp.	Thermal Gradient TG-9	555	NE^{1}_{4} SW^{1}_{4} SE^{1}_{4}, S23, T36N, R34E	Gradient
Blue Mountain	Noramex Corp.	Thermal Gradient TG-14A	559	SE^{1}_{4} SE^{1}_{4} SE^{1}_{4}, S15, T36N, R34E	Gradient
Washoe County					
Steamboat Hot Springs	Steamboat Hills	Industrial Injection Well 64A-32	560	NW^{1}_{4} SE^{1}_{4}, S32, T18N, R20E	Injection

PROPOSED ELECTRICAL GENERATION PLANTS IN NEVADA - 2005
Public Utilities Commission of Nevada, 2005

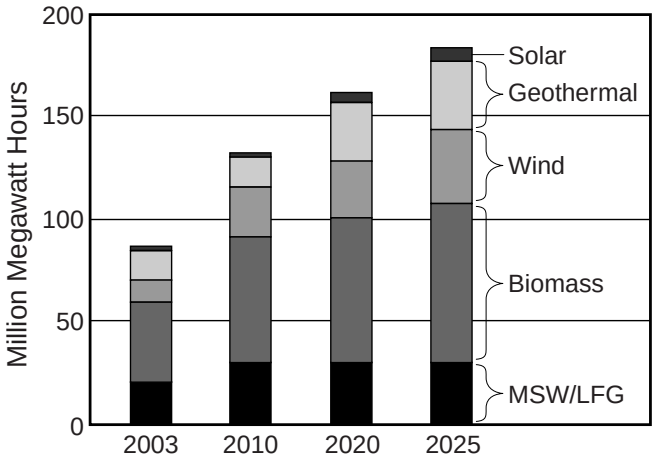
Name/Owner	Gross Megawatts	Plant Type	Location	Date Announced	Construction Status	Proposed On-line Date
Desert Peak 2/Ormat	25	Geothermal	Desert Peak KGRA, Churchill County	Nov. 2002	Expected Aug. 2005	Feb. 2006
Galena 1/Ormat	20	Geothermal	Steamboat KGRA, Washoe County	July 2004	Under Construction	Mar. 2006
Galena 2/Ormat	13	Geothermal	Steamboat KGRA, Washoe County	Nov. 2002	Expected Nov. 2005	Aug. 2006
Boulder City Solar Project/ Solargenix Energy	50	Solar	El Dorado Valley, Clark County	Dec. 2002	Expected Mid-2005	Fall 2006
Ely Wind Generation Facility/ Carlson & Associates	50	Wind	Ruth, White Pine County	Nov. 2002	Expected 2006	Early 2007
Hot Sulphur Springs/ Earth Power Resources	25	Geothermal	Hot Sulphur Springs, Elko County	Nov. 2002		Power Purchase Contract Terminated
Chuck Lenzie Generating Station/ Nevada Power Company	1200	Natural Gas-Fired Combined Cycle	Moapa Valley, Clark County	Jun. 2004	Under Construction	Late 2005
Harry Allen Unit 4/ Nevada Power Company	80	CombustionTurbine Peaking Plant	Harry Allen Plant, Clark County	Jul. 2003	Under Construction	Summer 2006
Blue Mountain Geothermal/ Nevada Geothermal Power	30	Geothermal	Blue Mountain, Humboldt County	Oct. 2002	Ongoing Drilling	Mid 2006
Granite Fox Power Project/ Sempra Energy	1450	Coal Fired	Gerlach, Washoe County	Winter 2004		
Western 102 Generation Project/ Barrick Goldstrike Mines	115	Gas Fired Reciprocating Engines	Near Tracy, Storey County	Spring 2004	Under Construction	Sep. 2005
Salt Wells Geothermal Project/ Nevada Geothermal Specialists	10	Geothermal	Salt Wells, Churchill County	Spring 2004	Ongoing Drilling	Late 2005
White Pine Project/LS Power	1600	Coal Fired	White Pine County	Winter 2004		Expected 2010
TS Power Plant/ Newmont Mining Corporation	200	Coal Fired	Eureka County	Spring 2004	Expected 2005	Mid 2007

National Outlook

The national outlook for growth in renewable electric energy technologies is good. According to the Annual Energy Outlook 2005, produced by the Energy Information Administration, total renewable energy generation (including hydro, geothermal, wind, solar, and biomass) will grow from 359 million MWh in 2003 to 489 million MWh in 2025, which is a 1.4% increase annually. It is anticipated that the current geothermal electrical production in the western United States of 13 million MWh will increase to 33 million MWh by 2025. (Annual Energy Outlook 2005 With Projections to 2025, February 2005, Energy Information Administration, U.S. Department of Energy, www.eia.doe.gov/oiaf/aeo/) Currently Nevada is second only to California in total installed geothermal generating capacity.

Honey and Geothermal Heat

John Roth, a beekeeper in the Stillwater area, plans to use geothermal water to heat and thin raw honey before filtration and mixing. He will be circulating geothermal water through a small honey storage room raising the ambient air temperature to 110°F. The warmed honey will then be filtered and some batches of honey mixed before packaging and sale. He will be running about 1,700 hives during 2005 with an estimated production of 2,750 gallons of honey. (Bulletin Geothermal Resources Council, January/February 2005, v. 34, no. 1) This is not the first use of geothermal water to aid in the production of Nevada honey. During the 1940s, Herbert Hess, a beekeeper in the Reno area, used hot water at Steamboat Springs south of Reno to liquefy large batches of crystallized honey before shipment to market.



Projected nonhydroelectric renewable electricity generation, 2003–2025. MSW/LFG is municipal solid waste and landfill gas.

(Annual Energy Outlook 2005 with Projections to 2025, February 2005, Energy Information Administration, U.S. Department of Energy, www.eia.doe.gov/oiaf/aeo/)

Blue Mountain Geothermal Area, Humboldt County

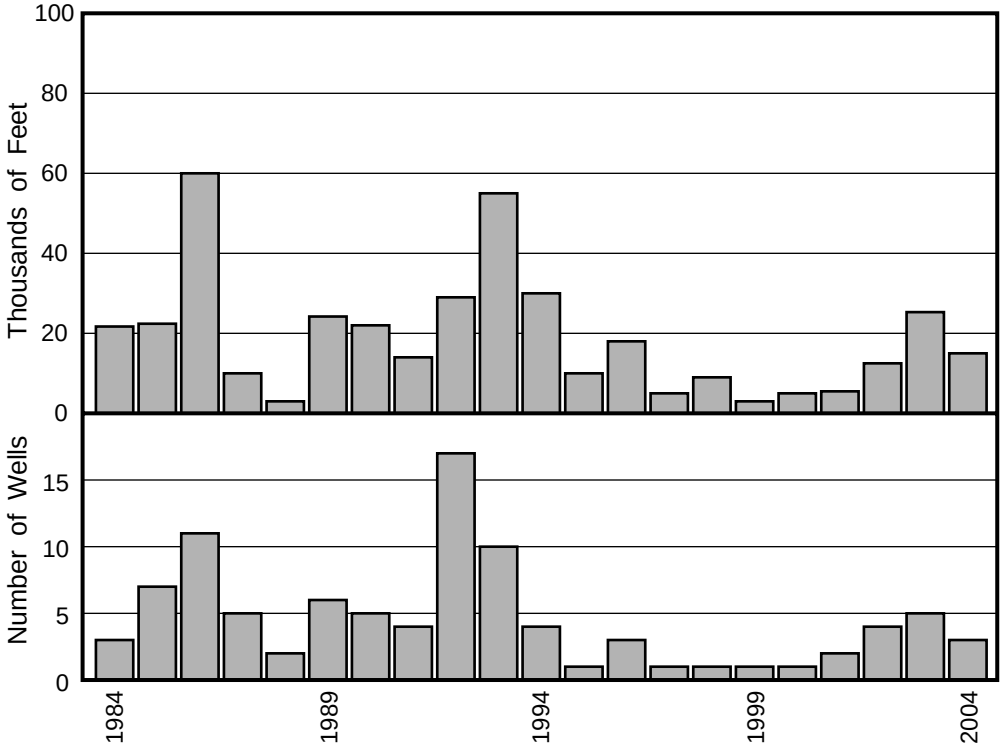
Noramex Corp., a wholly owned subsidiary of Nevada Geothermal Power, Inc. (NGP), drilled the observation Well Deep Blue No. 2 (DB 2), permit number 532, to 3,700 feet. This well recorded a high temperature of 333°F at 1,900 feet and a zone from 656 to 1,920 feet with temperatures above 302°F. This well has since been deepened to approximately 4,993 feet. The well has also been successfully injection tested. Results from the injection test and geothermal fluid chemistry "indicate a shallow, 302 to 329°F geothermal zone at 656 to 1,920 feet, fed by a deeper and probably higher temperature resource." It is possible that a deeper, high temperature (392 to 464°F) reservoir may exist at about 4,920 to 6,560 feet. NGP is planning to drill three 13-inch production test wells to better define production capacity and reservoir response. One of these wells will probably go deeper, 4,500 to 5,900 feet, to explore for a possible higher temperature resource at depth. If successful, these test wells will be converted to production wells for a power plant. Currently, NGP believes that the resource will support a 30-MW power plant, and this number will be refined by test results from the three large diameter test wells. (Bulletin Geothermal Resources Council, January/February 2005, v. 34, no. 1 and Nevada Division of Minerals, 2005)

DB 2 was a step-out well from observation Well Deep Blue No. 1 (DB 1), permit number 500, which is about 0.5 mile away and was drilled to 2,205 feet. This well recorded temperatures of 293°F at 2,115 feet and a zone of 1,200 feet of high permeability rock in the highest temperature portion of the well.

The U.S. Department of Energy (DOE) under the Geothermal Resource Exploration and Definition II (GRED II) program awarded Noramex Corp. a grant of $659,000, with Noramex to provide $164,000 in cost share, to assist in the DB 2 drilling project. Preliminary results from earlier exploration data and the above drilling indicate that a 30-MW geothermal power plant is feasible at Blue Mountain. (Bulletin Geothermal Resources Council, May/June 2004, v. 33, no. 3)

Noramex Corp. applied to the Nevada Division of Minerals for and received an additional 15 geothermal well drilling permits for a series of 500-foot thermal gradient test wells in the Blue Mountain area (State permit numbers 545 through 559).

The Blue Mountain area, located at T36N, R34E in south-central Humboldt County, was originally explored for gold potential. During exploratory drilling they noted high temperatures when pulling the drill steel. Because of this near surface temperature anomaly the property was explored for geothermal potential in the late 1990s to present. Nevada Geothermal Power, Inc., holds the geothermal leases to 7,680 acres and has reported that it believes the property to have a potential resource capable of producing 100 MW. (Nevada Geothermal Power Inc. Web Informational Flyer, 2003)



Industrial-class (power generating) wells drilled in Nevada, 1984–2004. Depth taken from original drilling permit.

Beowawe Geothermal Area, Lander/Eureka Counties

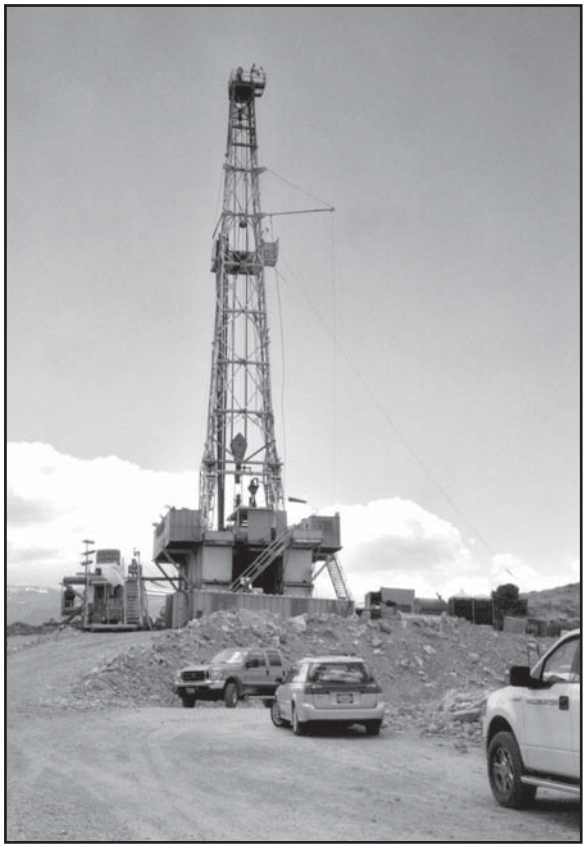
Beowawe Power LLC/Caithness Operating has signed a 20-year power sales contract with Sierra Pacific Power Company. The contract takes effect January 2006. Their existing contract with Southern California Edison expires in December of 2005. Well permit number 565 was issued to Beowawe in January of 2005 for a new production well number 57-13. Drilling is expected to start in August 2005. The Beowawe power plant came online in December of 1985 and has an equipment generating capacity of 16.6 MW. In 2004, electrical production at the plant was 124,501 MWh gross with 101,696 MWh net generation. (Nevada Division of Minerals, 2005)

Steamboat Hot Springs, Washoe County

Ormat Nevada Inc. (ORMAT) purchased the Yankee Caithness Steamboat geothermal power plant and associated geothermal resources for a reported purchase price of $20.15 million. The 14.4-MW power plant was wholly-owned and operated by Caithness, which had a long-term power sales agreement with Sierra Pacific Power Company. All operations have been turned over to ORMAT. ORMAT now owns and operates the Yankee plant, and through earlier acquisitions, Steamboat plants 1 and 1A (purchased June 2003) and plants 2 and 3 (purchased February 2004). It is hoped that through this consolidation of the power plants and resources the geothermal resource as a whole can be more efficiently managed. (ORMAT News Release, Sparks, NV, May 20, 2004)

ORMAT has broken ground on the Galena Geothermal Project at Steamboat. This project will include the construction of two new binary power plants and associated geothermal production and injection facilities. The last geothermal power plant constructed at Steamboat was brought online in 1991. These two 10-MW plants will use geothermal fluids from existing wells complemented by fluid from a new production well that is currently being tested. It was determined that the production field for the existing plants, with better flow management, would be capable of supplying a large portion of the fluid required for the new plants. ORMAT already has a power purchase agreement in place with Sierra Pacific Power Company for the energy that will be generated from the Galena Project. (Nevada Division of Minerals, 2005)

Construction of the Galena project at Steamboat Hot Springs is underway. This photo shows the ongoing construction of one of the two banks of condenser towers that will be part of the new geothermal power plant. *Photo by R. Hess, June 2005.*



Drill rig putting down Industrial Production Well 78-29 (State Permit Number 563) at Steamboat Hot Springs in preparation for the Galena project expansion. *Photo by R. Hess, June 2005.*

Stillwater Geothermal Area, Churchill County

AMP Resources, LLC. purchased the Stillwater Power Plant and associated geothermal resources from Stillwater Holdings, LLC., effective 12/31/2004. The Stillwater power plant came online in December of 1989 and has an equipment generating capacity of 21 MW. In 2004 electrical production at the plant was 104,686 MWh gross and 65,218 MWh net generation.

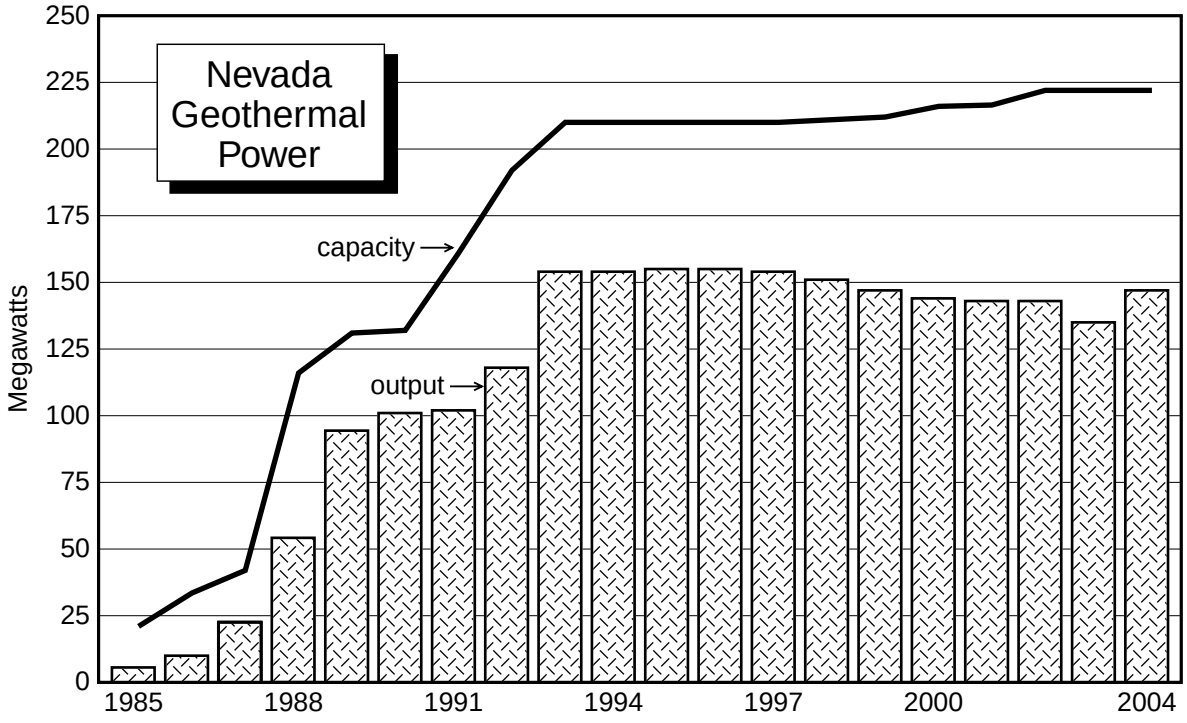
Desert Peak Geothermal Area, Churchill County

Ormat Nevada, Inc. is constructing a new binary power plant near the existing 9.9 MW dual flash geothermal power plant at Desert Peak. The new project, Desert Peak 2, is currently planned to consist of two independently operated Ormat Energy Converter (OEC) units. OEC-1 will be a 15-MW gross binary power plant cooled by a bank of air condensers. OEC-2 will be an 11-MW gross binary power plant unit cooled by a new two-cell condenser tower. The Desert Peak 2 project may be down sized to 10-15 MW gross depending on an ongoing project evaluation. Power generated from this project will be sold to Nevada Power Company. (The Public Utilities Commission of Nevada, Docket No. 05 3024, April 27, 2005 and Nevada Division of Minerals, 2005)

The existing geothermal power plant at Desert Peak produces from two production wells with an average depth of 3,683 feet and fluid temperature of 312°F. Desert Peak has two injection wells with an average depth of 4,000 feet and injection temperature of 198°F. In 2004, this plant had a gross output of 62,345 MWh and a net production of 52,125 MWh. (Nevada Division of Minerals, 2005)

Eight Mile Flat (Salt Wells), Churchill County

Nevada Geothermal Specialists, LLC has received approval from the U.S. Bureau of Land Management to construct a 20-MW power plant at Eight Mile Flat near Salt Wells. As part of the Salt Wells project they currently plan to build a 10-MW power plant by the end of 2005 and bring a second 10-MW facility on-line by the end of 2006. A new 6-mile-long, 230-KV power line will link the plants to the Sierra Pacific Power Company grid. At the end of 2004, AMP Resources, LLC. purchased the Salt Wells geothermal project, including all associated resource assets, from Nevada Geothermal Specialists, LLC. (Lahontan Valley News and Fallon Eagle Standard, March 1, 2005 and Nevada Division of Minerals, 2005) This geothermal area was originally drilled by Anadarko Petroleum Corporation in the early 1980s. (Bulletin Geothermal Resources Council, March/April 2004, v. 33, no. 2)



Currently developed resource capacity and average net output of Nevada geothermal plants, 1985–2004. Average net output is annual sales in megawatt-hours divided by the number of hours in a year (8,760). No commercial geothermal power was produced in Nevada before 1985.

Prior to AMP Resources, LLC's taking over the Salt Wells project the Nevada Division of Minerals issued a geothermal project area permit (#564PA) to Nevada Geothermal Specialists, LLC for this project. It anticipates development of six production wells with an estimated depth of 1,000 feet, four injection wells with an estimated depth of 3,000 feet, and ten observation wells with an estimated depth of 1,000 feet. One of the first wells drilled under this geothermal project area permit was the Industrial Production Well PW-2 (permit #568), which was drilled in the spring of 2005 to a depth of 471 feet (143.6 m) by Amp Resources, LLC. Static temperature surveys showed a peak temperature of 145°C and a flowing temperature of 140°C. The well flowed at a rate of 2,500 gallons per minute for 46 hours with no drawdown. (Nevada Division of Minerals, 2005, and Geothermal Resources of Nevada as updated on the web at "*www.nbmg.unr.edu/geothermalsite.php?sid=Eightmile%20Flat*")

Hot Sulphur Springs, Elko County

Earth Power Resources, Inc. announced in November 2002 that they had received a power purchase agreement from Nevada Power Co. and would build a 25-MW binary geothermal plant at Hot Sulphur Springs geothermal area located 60 miles northwest of Elko in Elko County. It was anticipated that the plant would come on line in 2005. However, due to delays in project development, the power purchase agreement has been terminated. (Nevada Power news release, November 26, 2002 and Public Utilities Commission of Nevada, 2005)

Hot Springs (Tipton) Ranch, Pumpernickel Valley, Humboldt County

Noramex Corporation, a wholly owned subsidiary of Nevada Geothermal Power, Inc. (NGP) has undertaken a geothermal development project in Pumpernickel Valley, Humboldt County, at the Hot Springs - Tipton Ranch geothermal area. They have acquired the leases for and surrounding an area where near boiling hot springs occur. Based on chemistry, NGP believes, that at depth the temperature of the source fluids for a series of hot springs that lay along a one-mile section of a fault running through the geothermal area could be as high as 170°C (338°F). (Nevada Geothermal Power Inc., Pumpernickel Geothermal Project Development Program Outlined, May 6, 2004, press release)

NGP announced on Oct. 14, 2004 that Inovision Solutions Inc., will fund exploration and development for the Pumpernickel Valley project to earn a 50% joint venture interest. Noramex has also been awarded a U.S. Department of Energy (DOE) cost-sharing contract where the DOE will fund 80% and Noramex will be responsible for 20% of an initial field evaluation program at the Pumpernickel project. Total budget for this work is $740,340 and will include a 3-D "E-SCAN" resistivity survey and six temperature gradient holes. In July of 2005 the Nevada Division of Minerals granted drilling permits for nine thermal gradient wells in sections 5, 9, 27, and 33 of Township 33 North , Range 40 East. (Nevada Division of Minerals, 2005)

Black Warrior Peak, Washoe County

Noramex Corporation, a wholly owned subsidiary of Nevada Geothermal Power, Inc. (NGP), has filed a geothermal lease application for 640 acres located in Section 8, T23N R25E, a project area they are calling Black Warrior Peak. The application is currently pending. This is in the same area that Noramex has acquired lease rights on 7 square miles of private land near Black Warrior Peak. The leases on private land are subject to a 3.5% royalty on gross revenue from electricity sales; however, NGP can purchase the royalty for $1,000,000. The private leases include surface and water rights. (Nevada Division of Minerals, 2005)

Nevada Geothermal Resources Map

The map entitled "Nevada Geothermal Resources," NBMG Map 141 second edition, is authored by Lisa Shevenell and Larry J. Garside. The color map, 1:750,000-scale, shows active direct-use applications and power plants as of 2004 and all known thermal springs and wells on a topographic base map. This map may be purchased at the Nevada Bureau of Mines and Geology publications office or on the Web at *www.nbmg.unr.edu/sales/*. An Acrobat pdf file format version of this map can also be viewed and downloaded for free from the Web at www.nbmg.unr.edu/dox/m141.pdf

An interactive version of this map can be accessed at *www.nbmg.unr.edu/geothermal/gtmap.pdf*. You can pan around on the interactive map, click on a geothermal area, and it will present detailed information on the particular geothermal resource, with many sites having additional links to detailed maps and photos.

Geothermal Bibliography

An on-line searchable bibliography of approximately 1,400 geothermal references can be accessed on the Nevada Bureau of Mines and Geology Web site at www.nbmg.unr.edu/geothermal/biblio/find.htm . The full list of references can also be downloaded as a Microsoft Word file.

The Geothermal Resources map and the online bibliography are just two of the many online resources and links that are available under the general geothermal information Web page at the Nevada Bureau of Mines and Geology Web site *www.nbmg.unr.edu/geothermal/*.

Web Links to Other Geothermal Information

For further information on geothermal resources in Nevada check the following Web sites or contact Ron Hess at 775-784-6691 ext. 121 or via e-mail at *rhess@unr.edu*.

- Nevada Division of Minerals at *http://minerals.state.nv.us/programs/ogg.htm*
- Great Basin Center for Geothermal Energy at *www.unr.edu/geothermal/index.html*
- GEO-HEAT CENTER, at *http://geoheat.oit.edu/*, Oregon Institute of Technology, Klamath Falls, Oregon
- DOE/INEEL Geothermal Resource Location Maps for 13 Western States at *http://geothermal.id.doe.gov/maps-software*
- Geothermal biz.com *www.geothermal-biz.com/* is part of the U.S. Department of Energy-led GeoPowering the West initiative to dramatically increase the use of geothermal energy in the western United States, Alaska, and Hawaii.
- GeoPowering the West Web site at *http://www.eere.energy.gov/geothermal/deployment_gpw.html*
- Southern Methodist University Geothermal Lab Web page *www.smu.edu/geothermal/*
- Geothermal Site Identification And Qualification Report, prepared for: California Energy Commission, Public Interest Energy Research (PIER) Program. Report prepared by GeothermEx, Inc. This report provides summary information on potential power producing geothermal resources within California and Western Nevada that could supply additional power to the California market. The report can be found at *www.geothermex.com/CEC-PIER_Reports.htm*
- Geothermal Industry Temperature Profiles from the Great Basin, by J.H. Sass, S.S. Priest, A.J. Blanton, P.C. Sackett, S.L. Welch, and M.A. Walters; USGS Open-File Report 99-425 online version 1.0 at *http://pubs.usgs.gov/of/1999/of99-425/webmaps/home.html*
- Nevada Public Utilities Commission *www.puc.state.nv.us/*

NEVADA GEOTHERMAL POWER PLANTS 2004

Plant name (year on line)	Production capacity[1] (MW)	2004 Production (MWh) Gross	Net (sales)	Location	Operator
Beowawe (1985)	16.7 (16.6)	124,501	101,696	S13,T31N,R47E	Caithness Operating Beowawe Power, LLC 9790 Gateway Dr., Suite 220 Reno, NV 89521
Bradys Hot Springs (1992)	26.1 (26.1)	224,308	122,403	S12,T22N,R26E	Brady Power Partners/ORMAT 980 Greg Street Sparks, NV 89431
Desert Peak (1985)	9.9 (12.5)	62,345	52,125	S21,T22N,R27E	Brady Power Partners/ORMAT 980 Greg Street Sparks, NV 89431
Dixie Valley (1988)	66.0 (62.0)	561,998	506,851	S7,T24N,R37E S33,T25N,R37E	Caithness Dixie Valley, LLC 9790 Gateway Dr. Suite 220 Reno, NV 89521
Empire (1987)	4.6 (4.8)	32,182	21,574	S21,T29N,R23E	Empire Energy, LLC P.O. Box 40 Empire, NV 89405
Soda Lake No. 1 (1987) and Soda Lake No. 2 (1991)	16.6 (26.1)	103,037	71,409	S33,T20N,R28E	Constellation Operating Services 5500 Soda Lake Road Fallon, NV 89406
Steamboat I, I-A (1986) and Steamboat II, III (1992)	53.0 (58.6)	396,006	292,426	S29,T18N,R20E	Steamboat Development Corp./ORMAT 980 Greg Street Sparks, NV 89431
Stillwater (1989)	13.0 (21.0)	104,686	65,218	S1,T19N,R30E S6,T19N,R31E	Amp Resources Stillwater Holdings, LLC 1755 East Plumb Ln. #160 Reno, NV 89509
Wabuska (1984)	1.2 (2.2)	10,473	6,436	S15,16,T15N,R25E	Homestretch Geothermal P.O. Box 1150 Leeds, UT 84746
Steamboat Hills formerly Yankee Caithness (1988)	14.44 (14.44)	50,828	44,608	S5,6,T17N,R20E	Steamboat Hills, LP 980 Greg Street Sparks, NV 89431
TOTAL	221.5 (244.3)	1,670,364	1,284,746		

1. Production capacity from currently developed geothermal resources (equipment capacity in parentheses).
Sources: Plant operators, Nevada Division of Minerals, and NBMG files.

Oil and Gas

by David A. Davis

PRODUCTION

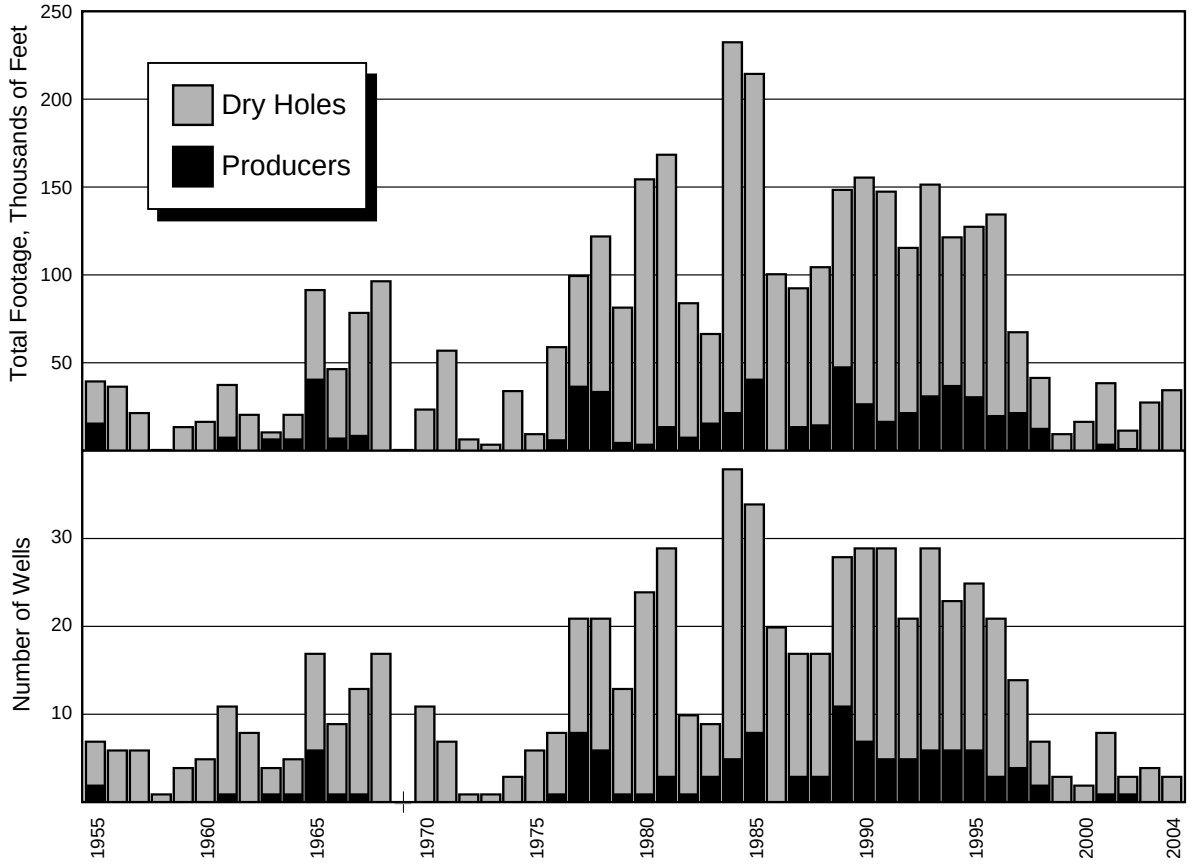
According to the Nevada Division of Minerals, Nevada's net oil production in 2004 was 462,109 barrels (0.023% of total U.S. production) from 67 actively producing wells in 10 fields in Railroad Valley (Nye County, 86.9%) and three fields in Pine Valley (Eureka County, 13.1%), the same as in 2003. Two other minor fields were shut in throughout 2004. Nevada ranked 28 out of the 31 oil producing states in the country in 2004 (www.eia.doe.gov). The average net wellhead price for Nevada crude oil increased 30.3% to $31.98 in 2004 from $24.54 per barrel in 2003. The sales volume increased 22.3% to $14.8 million in 2004 from $12.1 million in 2003.

Ninety-nine wells in 14 fields were listed as producers in 2004. Of these, 32 were shut in for the entire year. At year's end, seven wells had been shut in for 6 to 12 months, two wells had been shut in for 1 to 2 years, one well had been shut in for 2 to 3 years, one well had been shut in for 3 to 4 years, three wells had been shut in for 4 to 5 years, and 24 wells had been shut in for more than 5 years.

Nevada's highest volume producer was Grant Canyon No. 9, which averaged 172 barrels of oil and 495 barrels of water per day during 2004, decreases of 6.1% and 5.7% respectively. Grant Canyon No. 9 has held this ranking since 1996. For the third year in a row, Nevada's second highest volume producer was Blackburn No. 19, which averaged 68 barrels of oil and 1,173 barrels of water per day in 2004.

The Bacon Flat Field, which produces from the Devonian Guilmette Formation (carbonate) between about 4,960 and 5,350 feet, averaged about 29 barrels of oil and about 10 barrels of water per day in 2004 and accounted for 2.3% of Nevada's total oil production. Oil production decreased 9.8%, and water production decreased 31.5%. Only one of its three producers was active. One well has been shut in since 1993 and the other since 1988.

The Blackburn Field, which produces from the Oligocene Indian Well Formation (tuff and tuffaceous sandstone), Mississippian Chainman Shale (sandstone unit within the largely shale formation), and Devonian



Number and total footage of Nevada oil wells completed as producers or as plugged and abandoned dry holes, 1955–2004.

Nevada Formation (carbonate) between about 6,700 and 6,750 feet, averaged about 140 barrels of oil and about 29,312 barrels of water per day in 2004 and accounted for 11.1% of Nevada's total oil production. Oil production decreased 6.0%, and water production increased 494%. Of the five active producers, oil production decreased in three and increased slightly in one. One well active throughout 2003 was shut in throughout 2004. Of the two inactive producers, one has been shut in since 2001 and the other since 1998.

The Eagle Springs Field, which produces from Oligocene ignimbrites, the Eocene Sheep Pass Formation (lacustrine carbonates), and the Pennsylvanian Ely Limestone between about 5,780 and 7,360 feet, averaged about 123 barrels of oil and about 975 barrels of water per day in 2004 and accounted for 9.8% of Nevada's total oil production. Oil and water decreased 22.0% and 33.7% respectively. Of the 15 active producers, oil production decreased in 11 and increased in four. One well was shut in for 2 months, four were shut in for 3 months, one was shut in for 6 months, and three were shut in for 7 months. Of the six inactive producers, one has been shut in since August 2003, three since 1997, one since 1996, and one since 1986.

The Ghost Ranch Field, which produces from the Devonian Guilmette Formation between about 4,350 and 4,620 feet, averaged 96 barrels of oil and 696 barrels of water per day in 2004 and accounted for 7.7% of Nevada's total oil production. Oil and water production increased 35.4% and 105.6% respectively. Oil production decreased in three of the four producers, but a well shut in since 1997 was brought back on line in August and more than made up for that decline.

The Grant Canyon Field, which produces from the Devonian Guilmette Formation between about 2,160 and 4,300 feet, averaged 201 barrels of oil and 1,199 barrels of water per day in 2004 and accounted for 16.0% of Nevada's total oil production. Oil production decreased 6.8%, and water production increased 3.1%.Oil production decreased in both active producers. Of the two inactive producers, one has been shut in since 1993 and the other since 1992.

OIL WELL DRILLING ACTIVITY IN NEVADA IN 2004

Company	Well	Permit No.	Location	Permit Date	Spud Date	Completion Date	Depth (Ft.)	Status
ELKO COUNTY								
Westwood Petroleum, LLC	Dalton No. 1	847	NW¼, NE¼, S4, T34N, R62E	Oct-02	Dec-02	May-04	2,200	P&A
V.F. Neuhaus Properties	Stampede 7-1	855	NE¼, SW¼, S7, T34N, R67E	Nov-03				Not Drilled
Foreland Corp.	Toano Drive No. 15-19	856	NW¼, SW¼, S19, T39N, R66E	Nov-03	Nov-03			Suspended
Fasken Oil and Ranch, LP	Pinon No. 5 Federal No. 1	859	NE¼, NE¼, S5, T27N, R53E	Jul-04				Not Drilled
EUREKA COUNTY								
V.F. Neuhaus Properties	Tomera Ranch 4-1	851	NW¼, NW¼, S4, T30N, R52E	May-03	Aug-03			TA
Noble Energy, Inc.	Diamond Federal 11-22	853	NW¼, NW¼, S22, T24N, R54E	Nov-03	Nov-03	Jan-04	7,415	P&A
Trail Mountain, Inc.	Quartz Road Federal No. 1	857	NW¼, SW¼, S12, T24N, R54E	Jun-04	Jun-04	Sep-04	9,082	P&A
LINCOLN COUNTY								
Falcon Energy/Kriac Energy, Inc.	Hamlin Wash No. 18-1R	805	SE¼, SE¼, S18, T8N, R70E	Aug-97	Aug-97	Sep-97		TA
Falcon Energy/Kriac Energy, Inc.	Kriac No. 3	810	SE¼, SE¼, S18, T8N, R70E	Dec-97	Jan-98			Suspended
Conley P. Smith Operating Co.	Trough Springs Federal No. 33-16	827	SE¼, SE¼, S33, T7N, R63E	Jan-00	Jan-00	Feb-00		P&A
NYE COUNTY								
Makoil, Inc.	Munson Ranch No. 11-44	672	SE¼, SE¼, S11, T9N, R56E	Apr-93	Jun-94	Jun-94	3,660	TA
Big West Oil and Gas, Inc.	Federal No. 12-14	673	NW¼, SW¼, S14, T7N, R56E	Apr-93	May-93	Jun-93	6,106	TA
Isern Oil Company	Gigante No. 1-4	837	NW¼, NE¼, S4, T12N, R35E	May-01	Aug-01	Dec-03		TA
Ameryxx Energy, Inc.	Graham No. 11-14	846	SW¼, NW¼, NW¼, S14, T5N, R61E	Oct-02	Oct-02	Jun-04		Drilled
Alpine Inc.	Needle Springs 1-14	852	NW¼, NW¼, S14, T10N, R52E	Oct-03	Oct-03			TA
Eagle Exploration, Inc.	Rio Blanco Federal No. 1	858	NW¼, NW¼, S17, T7N, R62E	Jul-04	Sep-04	Sep-04	7,887	P&A
Makoil, Inc.	East Inselberg No. 36-33	860	NW¼, SE¼, S36, T10N, R56E	Sep-04	Nov-04			Drilling
Tri Valley Oil and Gas	Midland Trail No. 1-32	861	SW¼, SW¼, S32, T6N, R56E	Sep-04				Not Drilled
Trail Mountain, Inc.	Currant Unit No. 1	862	SW¼, SW¼, S14, T10N, R57E	Sep-04				Not Drilled
Trail Mountain, Inc.	Currant Unit No. 2	863	NE¼, SE¼, S31, T10N, R58E	Sep-04				Not Drilled
V.F. Neuhaus Properties	Little Giant No. 36-1	864	NW¼, NE¼, S36, T10N, R56E	Sep-04				Not Drilled
Makoil, Inc.	Radio No. 6-31	865	NE¼, NW¼, S6, T9N, R57E	Sep-04				Not Drilled
Makoil, Inc.	Dry Lake No. 21-21	866	NE¼, NW¼, S21, T8N, R56E	Sep-04				Not Drilled
PERSHING COUNTY								
Evans-Barton Ltd.	Kyle Spring No. 12-13D	759	NW¼, SW¼, S12, T29N, R36E	Jul-95	Jul-95	Oct-96	1,000	Testing
Evans-Barton Ltd.	Kyle Spring No. 11-14	791	SW¼, SW¼, S11, T29N, R36E	Oct-96	Nov-96	Nov-96	2,622	Testing
Evans-Barton Ltd.	Kyle Spring No. 11-43	821	NE¼, SE¼, S11, T29N, R36E	Jul-98	Sep-98	Dec-02		Testing
Evans-Barton Ltd.	Kyle Spring No. 11-42A	838	NE¼, SE¼, S11, T29N, R36E	Jul-01	Aug-01			Testing
Evans-Barton Ltd.	Kyle Spring No. 12-12	868	SW¼, NW¼, S12, T29N, R36E	Oct-04	Dec-04			Testing
WHITE PINE COUNTY								
Paleozoic Prospects, Inc.	PPI Bugs No. 1	809	NE¼, NW¼, S33, T22N, R59E	Nov-97	Nov-97			Suspended
V.F. Neuhaus Properties	Nevada No. 21-1	850	NE¼, SE¼, S21, T19N, R64E	Mar-03	May-04	Jul-04	1,185	P&A
Noble Energy, Inc.	Rattlesnake Federal 12-26	854	SW¼, NW¼, S26, T22N, R55E	Nov-03	Dec-03	Feb-04	7,000	P&A
Pioneer Oil and Gas	Yankee Mine West No. 1	867	NW¼, NE¼, S21, T21N, R57E	Oct-04	Dec-04			Drilling
Richardson Operating Company	Long Valley Federal No. 1	869	SW¼, NW¼, S21, T21N, R58E	Nov-04				Not Drilled

P&A: Plugged and abandoned, TA: Temporarily abandoned

FEDERAL OIL AND GAS LEASES IN EFFECT IN FISCAL YEARS 2003 AND 2004

	NUMBER OF LEASES						ACREAGE					
	Competitive		Noncompetitive		Simultaneous		Competitive		Noncompetitive		Simultaneous[2]	
County	FY03	FY04	FY03	FY04	FY03	FY04	FY03	FY04	FY03	FY04	FY03	FY04
Carson City	0	0	0	0	0	0	0	0	0	0	0	0
Churchill	0	0	0	0	2	2	0	0	0	0	5,278	5,278
Clark	0	0	0	3	0	0	0	0	0	4,133	0	0
Douglas	0	0	0	0	0	0	0	0	0	0	0	0
Elko	67	68	71	165	3	3	61,787	65,196	110,881	298,504	7,545	7,545
Esmeralda	0	0	1	1	0	0	0	0	2,905	2,905	0	0
Eureka	86	91	38	101	3	3	124,325	130,570	57,228	299,060	2,449	2,449
Humboldt	0	0	0	0	0	0	0	0	0	0	0	0
Lander	0	0	0	0	0	0	0	0	0	0	0	0
Lincoln	3	3	20	15	1	1	11,558	11,558	34,292	24,692	1,921	1,921
Lyon	0	0	0	0	0	0	0	0	0	0	0	0
Mineral	0	0	4	4	0	0	0	0	5,997	5,997	0	0
Nye	314	342	119	128	19	19	254,858	293,253	340,399	331,720	7,998	7,998
Pershing	0	0	1	1	0	0	0	0	1,256	1,256	0	0
Storey	0	0	0	0	0	0	0	0	0	0	0	0
Washoe	0	0	0	0	0	0	0	0	0	0	0	0
White Pine	42	49	142	201	0	0	61,455	80,627	461,288	657,188	0	0
TOTAL	512	553	395	616	28	28	513,983	581,204	1,014,246	1,625,455	25,191	25,191

[1]Data from the U.S. Bureau of Land Management. Some FY00 data have been corrected from earlier reports. Fiscal years (FY) run from Oct. 1 to Sept. 30.
[2]These are the remaining leases that were issued under the simultaneous leasing program that was terminated by the December 22, 1987 amendment to the 1920 Mineral Leasing Act.

PRODUCTION OF NEVADA'S OIL FIELDS (barrels)

Compiled from Producer's Reports filed with the Nevada Division of Minerals

Field (year discovered)	1954–1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	Total
Eagle Springs (1954) (Railroad Valley)	4,471,492	171,638	137,278	111,562	82,067	59,394	67,024	67,908	57,946	45,175	5,271,484
Trap Spring (1976) (Railroad Valley)	11,255,653	306,858	288,686	257,921	263,566	246,725	218,198	206,424	193,191	181,937	13,419,159
Currant (1979) (Railroad Valley)	919	0	202	230	28	55	33	21	23	9	1,511
Bacon Flat (1981) (Railroad Valley)	831,193	28,891	22,465	18,757	16,849	14,766	13,898	12,633	11,763	10,612	971,215
Blackburn (1982) (Pine Valley)	4,191,171	239,934	151,151	112,008	89,400	78,136	66,899	62,412	54,623	51,371	5,045,734
Grant Canyon (1983) (Railroad Valley)	19,815,069	168,163	143,707	126,128	112,715	102,113	92,899	85,722	79,293	73,879	20,725,809
Kate Spring (1986) (Railroad Valley)	1,610,405	87,789	76,280	69,768	65,315	57,644	55,198	53,408	49,698	45,656	2,125,505
Tomera Ranch (1987) (Pine Valley)	19,960	387	659	574	398	488	0	11,901	1,981	124	36,348
North Willow Creek (1988) (Pine Valley)	37,602	3,619	1,478	1,502	123	146	144	573	349	476	45,536
Three Bar (1990) (Pine Valley)	23,837	0	0	0	0	0	0	0	0	0	23,837
Duckwater Creek (1990) (Railroad Valley)	14,229	433	168	491	93	116	968	869	436	201	17,803
Sans Spring (1983) (Railroad Valley)	135,931	17,228	45,001	21,759	11,127	6,990	6,356	5,532	4,775	4,169	254,699
Ghost Ranch (1996) (Railroad Valley)		34,166	113,016	65,370	49,348	41,454	36,173	31,814	26,129	35,375	397,470
Deadman Creek (1996) (Elko County)			109	258	0	0	0	0	0	0	367
Sand Dune (1998) (Railroad Valley)				12,465	15,122	12,624	13,461	14,211	13,123	13,125	81,006
Total	42,407,461	1,059,106	980,200	798,793	706,151	620,651	571,251	553,428	493,330	462,109	48,652,480
Change from previous year		-21%	-7%	-19%	-12%	-12%	-8%	-3%	-11%	-6%	

The Kate Spring Field, which produces from the Tertiary Horse Camp Formation (breccia) and the Devonian Guilmette Formation between about 4,450 and 4,820 feet, averaged 125 barrels of oil and 1,139 barrels of water per day in 2004 and accounted for 9.9% of Nevada's total oil production. Oil and water production decreased 8.1% and 7.7% respectively. Oil production decreased in three of the four active producers and remained the same in one. Of the two inactive producers, one has been shut in since 1997 and the other since 1993. A total of 5,478 thousand cubic feet of gas was produced from the Kate Spring Field in 2004, an increase of 2.0% from 2003. The gas is used to operate production and related equipment at the lease sites of Makoil, Inc., and Western General, Inc.

The Sand Dune Field's only producer, which produces from Permian and Pennsylvanian limestones between about 5,970 and 6,200 feet, averaged 36 barrels of oil and 84 barrels of water per day in 2004 and accounted for 2.8% of Nevada's total oil production. Oil production increased by only two barrels, and water production decreased 5.6%.

The Sans Spring Field's only active producer, which produces from the Oligocene Garret Ranch Group (volcaniclastic rocks and ignimbrites) between about 5,640 and 5,770 feet, averaged 11 barrels of oil and 867 barrels of water per day in 2004 and accounted for 0.9% of Nevada's total oil production. Oil production decreased 12.7%, and water production increased 9.0%. Of the two inactive producers, one has been shut in since 1998 and the other since 1993 and has since been temporarily abandoned.

The Trap Spring Field, which produces from the Oligocene tuff of Pritchards Station between about 3,210 and 4,950 feet, averaged 497 barrels of oil and 4,720 barrels of water per day in 2004 and accounted for 39.4% of Nevada's total oil production. Oil and water production decreased 5.8% and 4.2% respectively. Oil production decreased in 27 active producers and increased in five. One well was shut in for 1 month. Of the ten inactive producers, one has been shut in since February 2004, one has been shut in since 2001, one since 1999, two since 1998, two since 1996, one since 1992, one since 1991, and one since 1986.

Four minor fields accounted for about 0.2% of Nevada's total oil production. Oil production from the Currant Field's only producer, which produces from the Eocene Sheep Pass Formation about 6,850-7,080 feet, decreased 61.0%. Currant produces no water. Oil and water production from the Duckwater Creek Field's only producer, which produces from the Oligocene Garrett Ranch Group between about 5,680 and 5,830 feet, decreased 53.9% and 59.5% respectively. Oil and water production from the North Willow Creek Field's only active producer, which produces from the Mississippian Chainman Shale between about 6,290 and 6,470 feet, increased 36.4% and 86.5% respectively. Oil and water production from Tomera Ranch Field's only active producer, which produces from the Oligocene Indian Well Formation (chert and tuffaceous sandstone) between about 1,150 and 1,950 feet, decreased 93.7% and 86.2% respectively. The only other producer in the Tomera Ranch Field has been shut in since 2000.

Two other minor fields recorded no production for 2003. The Three Bar Field's two producers, which produced from the Miocene Humboldt Formation (sandstone and volcanic rock), the Oligocene Indian Well Formation, and the Cretaceous Newark Formation (sandstone and carbonate) between about 5,720 and 7,070 feet, have been shut in since 1992 and 1994, respectively. Deadman Creek's only producer, which produced briefly from the Miocene Humboldt Formation between 8,165 and 8,850 feet, has been shut in since 1998.

PRODUCTION OF WATER FROM NEVADA'S OIL FIELDS (barrels)

Compiled from Producer's Reports filed with the Nevada Division of Minerals

Field (year discovered)	1994–97	1998	1999	2000	2001	2002	2003	2004	Total
Eagle Springs (1954)	1,290,181	410,290	325,574	275,521	421,755	572,541	538,814	357,021	4,191,697
Trap Spring (1976)	12,062,930	2,444,444	2,802,716	2,850,603	2,648,176	1,844,621	1,802,383	1,727,583	28,183,456
Currant (1979)	0	0	0	0	0	0	0	0	0
Bacon Flat (1981)	335,324	14,929	1,756	358,879	613	27	5,080	3,479	720,087
Blackburn (1982)	7,643,942	1,937,981	1,938,408	1,884,096	1,792,102	2,008,218	1,805,820	10,728,237	29,738,804
Grant Canyon (1983)	1,033,793	377,934	397,888	417,564	431,433	435,004	425,905	438,911	3,958,432
Kate Spring (1986)	2,090,815	476,346	483,483	521,464	515,205	457,264	451,878	417,030	5,413,485
Tomera Ranch (1987)	111,282	35,441	31,121	33,245	0	94,643	169,487	23,393	498,612
N. Willow Creek (1988)	2,656	0	4	0	50	0	52	97	2,859
Three Bar (1990)	5,958	0	0	0	0	0	0	0	5,958
Duckwater Creek (1990)	44,568	4,620	840	1,196	4,778	4,442	2,503	1,013	63,960
Sans Spring (1993)	1,022,823	363,845	328,544	240,773	324,585	326,943	290,961	317,230	3,215,704
Ghost Ranch (1996)	102,720	171,921	202,678	208,488	188,592	155,714	123,897	254,781	1,408,791
Deadman Creek (1996)	0	0	0	0	0	0	0	0	0
Sand Dune (1998)		23,335	53,115	33,308	34,369	32,123	32,624	30,807	239,681
Total	25,746,992	6,261,086	6,566,127	6,825,137	6,361,658	5,931,540	5,649,404	14,299,582	77,641,526
Change from previous year		4.00%	4.90%	3.90%	-6.80%	-6.80%	-4.80%	153.1%	

Most Nevada oil is used to make such products as No. 1 and No. 2 diesel fuel, kerosene, stove oil, and asphalt. Nevada crude oil was transported in batches by trucks to the Energy Income Fund, Inc. (EIF) 8,000-barrel-per-day capacity refinery near Currant in Railroad Valley. The EIF refinery and asphalt storage facility at Tonopah was not in operation in 2004.

NEW PRODUCERS

No wells were completed as producers in 2004.

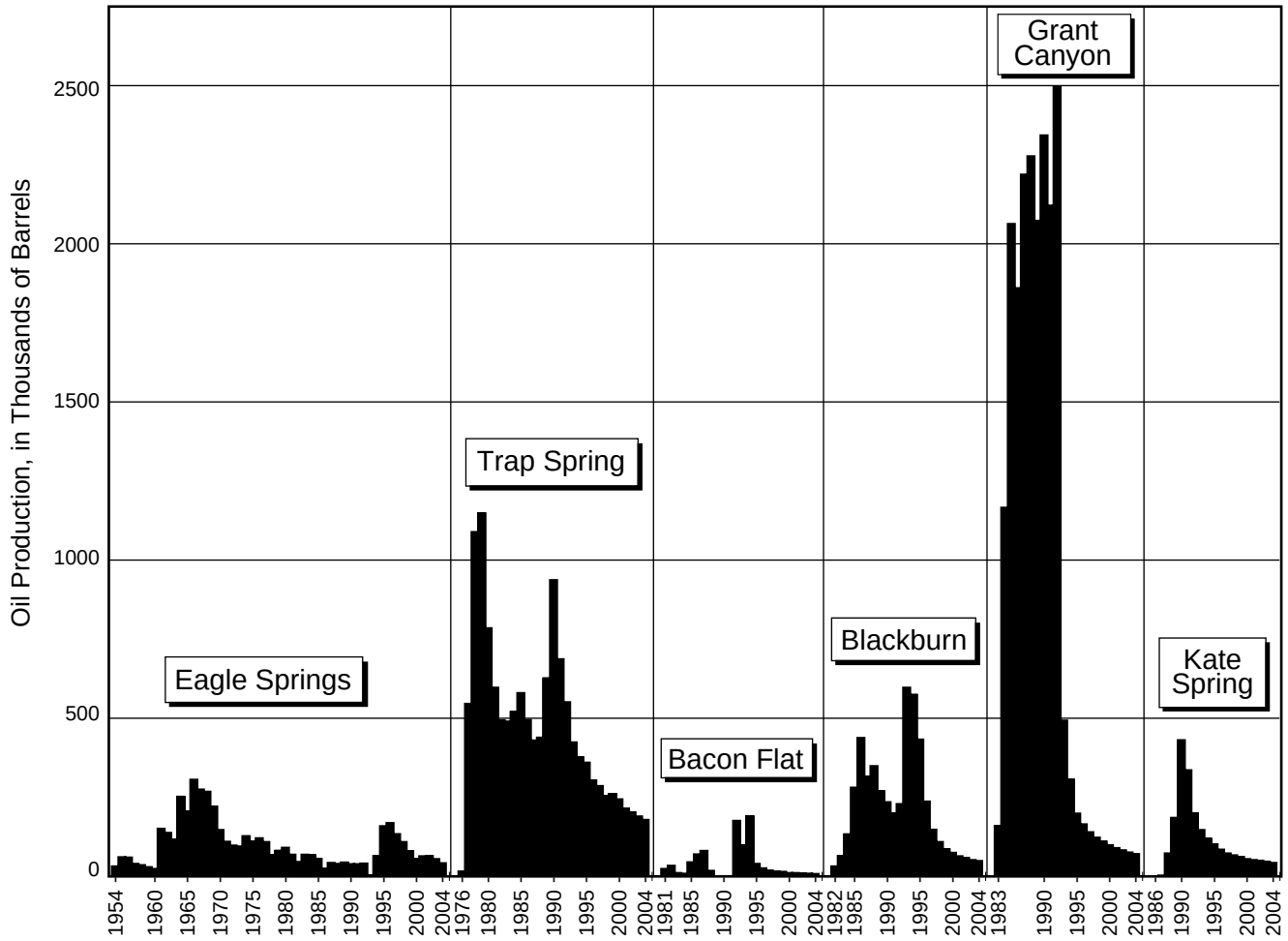
EXPLORATION

Thirteen wells were permitted for oil and gas in 2004, up from eight in 2003. Six wells were spudded in 2004, down from seven spudded in 2003. Drilling was completed on three of these wells, on one spudded in 2002, and one spudded in 2003, totaling 34,769 feet, up 26% from 27,637 feet in 2003. Of the three wells spudded in 2004 but not completed, two were still being drilled and one was being tested. Twelve wells drilled between 1993 and 2003 continued to be listed as either temporarily abandoned, testing, suspended, or drilled with no other information.

One drill rig operated during January/February and July/August. No rigs operated during March/April and May/June. Three rigs operated during September/October. Two rigs operated during November/December.

In 2004, 1,197 oil leases totaling 2,231,850 acres were in effect in Nevada, up 28.0% and 43.7% respectively from 2003. This is about 4.6% of the public lands managed by the U.S. Bureau of Land Management (BLM) in Nevada and covers an area larger than the States of Rhode Island and Delaware combined. Forty-four competitive leases totaling 46,491 acres and 15 noncompetitive leases totaling 25,185 acres expired in 2004. Eighty-four competitive leases totaling 111,548 acres and 222 noncompetitive leases totaling 527,005 acres were issued in 2004.

On March 9, 2004, the Nevada State Office of the Bureau of Land Management held an oil and gas lease sale on 254 parcels covering 426,425 acres in Clark, Elko, Eureka, Nye, and White Pine Counties. The bonus bids totaled $192,346 on 40 parcels covering 46,124 acres, which averaged $4.17 per acre. The highest bid was $43.00 per acre made by The Blanco Company of Santa Fe, NM, for Parcel No. 185 covering 160 acres in NW1/4, Section 16, T7N, R57E. The second highest bid was $42.00 per acre made by Frontier Exploration, Inc., of Salt



NEVADA OIL REFINERIES

Company	Refinery	Address and Phone Number
Energy Income Fund, Inc.	Currant	66 Miles South of Ely Ely, NV 89301 Phone: (775) 863-0229
Energy Income Fund, Inc.	Tonopah	105 Refinery Road Tonopah, NV 89049 Phone: (775) 482-3555

NEVADA OIL PRODUCERS

Company	Field	Contact	Address and Phone and FAX Numbers
Deerfield Production Co.	Deadman Creek Eagle Springs Ghost Ranch North Willow Creek Sand Dune	Robert Imel	5949 Sherry Lane, Suite 260 Dallas, TX 75225 Phone: (214) 692-7777 FAX: (214) 692-7820
Double D Nevada, LLC	Bacon Flat Sans Spring	Steve Durrett	1500 Poly Drive, Suite 100 Billings, MT 5902 Phone: 406-294-5990 FAX: 406-294-5992
Evans-Barton, Ltd.	Trap Spring	David M. Evans	P.O. Box 3153 Reno, NV 89505 Phone: (775) 827-1613
Frontier Exploration Co.	Trap Spring	Andy Pierce	3006 Highland Drive, Suite 206 Salt Lake City, UT 84106 Phone: (801) 486-5555 FAX: (801) 486-5575
Makoil, Inc.	Currant Duckwater Creek Grant Canyon Kate Spring Trap Spring	Gregg Kozlowski	500 N. Rainbow Blvd., Suite 300 Las Vegas, NV 89107 Phone: (714) 939-7560 FAX: (714) 939-7552
Petroleum Corp. of Nevada	Blackburn	Ken Chattin	P.O. Box 1447 Elko, NV 89801 Phone: (775) 753-6810
Trail Mountain, Inc.	Three Bar		105 South 4th St. Artesia, NM 88210 Phone: (505) 748-1471
V.F. Neuhaus Properties/ Winn Exploration	Tomera Ranch	Mark Richards	P.O. Box 1270 McAllen, TX 78505 Phone: (956) 686-2491
Western General	Kate Spring	Rick Taylor	801 Noahs Star Street Las Vegas, NV 89145 Phone: (702) 233-1490

Lake City, UT, for Parcel No. 184 covering 320 acres in S1/2, Section 9, T7N, R57E. Both are in Railroad Valley in Nye County. Twenty-one other bids were between $3.00 and $27.00 per acre, and the rest were the $2.00 per acre minimum (PI/Dwight Plus Drilling Wire, Rocky Mountain Region, Four Corners Edition, Section I, February 4, 2004; PI/Dwight Plus Drilling Wire, Rocky Mountain Region, Newsletter Edition, Section I, March 12, 2004).

On June 8, 2004, the Nevada State Office of the Bureau of Land Management held an oil and gas lease sale on 186 parcels covering 406,096 acres in Clark, Elko, Eureka, Nye, and White Pine Counties. The bonus bids totaled $114,089 on 22 parcels covering 38,557 acres, which averaged $2.96 per acre. The highest bid was $110.00 per acre made by V. F. Neuhaus Properties, Inc., of McAllen, TX, for Parcel 106 covering 240 acres in three noncontiguous in parts of Sections 24, 25, and 36, T10N, R56E in Nye County. Four other bids were between $3.25 and $6.00 per acre, and the rest were the $2.00 per acre minimum (PI/Dwight Plus Drilling Wire, Rocky Mountain Region, Four Corners, Section I, April 28, 2004; PI/Dwight Plus Drilling Wire, Rocky Mountain Region, Newsletter Edition, Section I, June 11, 2004).

On September 14, 2004, the Nevada State Office of the Bureau of Land Management held an oil and gas lease sale on 45 parcels covering 88,031 acres Eureka, Nye, and White Pine Counties. The high bids totaled $141,875 on 17 parcels covering 29,733 acres, which averaged $4.77 per acre. Only two tracts generated bids of more than the $2.00 per acre minimum. The highest bid was $20.00 per acre made by the Richardson Production Company of Denver, CO, for Parcel 78 covering 1,920 acres covering Sections 11, 12, and 14, T20N, R58E in White Pine County. Eight other bids were between $5.00 and $8.00 per acre, and the rest were the $2.00 per acre minimum (PI/Dwight Plus Drilling Wire, Rocky Mountain Region, Newsletter Edition, Section I, August 6, 2004; PI/Dwight Plus Drilling Wire, Rocky Mountain Region, Newsletter, Section I, September 17, 2004).

On December 14, 2004, the Nevada State Office of the Bureau of Land Management held an oil and gas lease sale on 379 parcels covering 699,141 acres. The bonus bids totaled $55,712 on 15 parcels covering 24,984 acres, which averaged $2.23 per acre. The highest bid was $3.75 per acre made by the Richardson Production Company of Denver, CO, for Parcel 154 covering 1,905 acres covering Sections 5, 6, and 7, T6N, R55E in Nye. Only one other bid was above the $2.00 per acre minimum (PI/Dwight Plus Drilling Wire, Rocky Mountain Region, Wyoming Edition, Section I, December 20, 2004).

In 2004, Wolverine Oil and Gas Corporation of Grand Rapids, Michigan, completed two producers in their Covenant Field in central Utah. The two wells are currently producing about 1,500 barrels per day of low sulfur, 40° gravity oil from the Jurassic Navajo Sandstone. The oil is being trucked to refineries in Salt Lake City. The two wells are in a heretofore non-producing area about 150 miles from the nearest other oil fields. Wolverine estimates the Covenant field may contain 100 to 200 million barrels of oil.

The Wolverine discovery coupled with the high price of oil has sparked renewed interest in oil exploration in eastern Nevada and western Utah. One of the larger projects is Eden Energy Corporation's Noah Project. In 2004, Eden Energy of Vancouver, British Columbia, acquired a Participation Agreement with Nevada based Cedar Strat and also acquired about 211,000 acres in leases covering the Diamond Mountains along the border between Eureka and White Pine Counties. The leases cover a 53-mile-long anticline, and the targeted potential reservoir rock is a 200- to 400-foot thick band of karsted Devonian dolomite. This dolomite is also the producing formation for the Grant Canyon Field about 60 miles to the south (Eden Energy Corporate Overview, 2005).

TRANSFERS

No transfers occurred in 2004.

OTHER DEVELOPMENTS

On November 22, the BLM published in the Federal Register a notice of request for comments seeking public input on terms to be included in leases of small tracts for oil shale research and development in the Piceance Creek Basin of northwestern Colorado, the Uinta Basin of southeastern Utah, and the Green River and Washakie Basins of western Wyoming. The BLM has no regulations for leasing of oil shale on Federal lands despite the authorization to do so in the Mineral Leasing Act (U. S. Code, Title 30-Mineral Lands and Mining, Chapter 3A-Leases and Prospecting Permits, Subchapter V-Oil Shale, Section 241-Leasing of Lands; Federal Register, vol. 69, no. 224, p. 67935-67938, Potential for Oil Shale Development). Though this has to do with oil shale deposits outside of Nevada, it should be noted that northeastern Nevada has an estimated 600 million barrels of shale oil in the lacustrine Eocene Elko Formation (12,000 barrels were produced between 1917 and 1924) and a potentially large but unestimated resource in related rocks (L.J. Garside, 1983, Nevada Oil Shale, Nevada Bureau of Mines and Geology Open-File Report 83-5).

According to the Kansas Secretary of State Office, Paleozoic Prospects, Inc., has ceased to exist. Paleozoic Prospects spudded the PPI Bugs No. 1 well in White Pine County in 1997 and then suspended operations. No paperwork or cuttings were ever turned in. The proposed depth of the well was 7,000 feet.

U.S. FOSSIL FUEL PRODUCTION AND CONSUMPTION

According to the Energy Information Agency (EIA) of the U.S. Department of Energy (www.eia.doe.gov), crude oil imports accounted for 64.9% of U.S. consumption in 2004, a new all time peak. U.S. crude oil consumption

increased 0.8% in 2004 after increasing 3.1% in 2003, and production averaged 5.43 million barrels per day, down about 4.4% from 5.68 million barrels per day in 2003. The annual production from 2000 through 2004 has been the lowest since 1950 when production was 5.407 million barrels per day. Oil provided about 40.3% of the nation's total energy supply in 2004, up from 39.8% in 2003. This is the highest percentage since 1989 when it was also 40.3%.

The use of oil for electrical production increased 0.5% in 2004 after increasing 22.6% in 2003. It accounted for 3.0% of electrical production and 3.2% of oil consumption in 2003, about even with 3.1% and 3.2% respectively in 2003. Oil-fired generators accounted about 1.5% of the electricity produced in Nevada in 2004, up from 0.1% in 2003. Gasoline production increased 0.5% and accounted for 43.9% of all oil products consumption in 2004, down slightly from 44.4% in 2003. This percentage has hovered near 43% since 1982. The price of oil increased 33.4% from an average of $27.56 per barrel in 2003 to $36.77 per barrel in 2004 for domestic oil (www.eia.doe.gov).

In comparison to oil, natural gas consumption increased 0.2% to 22,432 billion cubic feet (bcf) in 2004 from 22,372 bcf in 2003. Consumption peaked at 23,333 bcf in 2000. Production decreased 0.2% to 24,008 bcf in 2004 from 24,056 bcf in 2003. Production peaked at 24,501 bcf in 2001. Natural gas provided 23.1% of the nation's total energy supply in 2004, down slightly from 23.5% in 2003, and a peak of 25.0% in 1995. It accounted for 16.9% of electrical production and 23.3% of natural gas consumption in 2004, up from 16.7% and 21.9% respectively in 2003. The use of natural gas for electrical production peaked at 17.9% in 2002. Industrial consumption increased 3.7%, while residential and commercial consumption decreased 3.9% and 6.9% respectively in 2003. The average wellhead price increased 12.5% from $4.88 per million feet (mcf) in 2003 to $5.49 per mcf in 2004. The monthly average price of natural gas has been consistently above $3 per mcf since October 2002. Though Nevada produces no commercial quantities of natural gas, gas-fired generators provided 38.3% of the electricity produced in Nevada in 2004, up from 24.4% in 2003 (www.eia.doe.gov).

Coal consumption increased 0.9% in 2004 to a record 1,104,300,000 short tons from 1,094,900,000 tons in 2003. Consumption has remained above 1 billion tons since 1996. Coal production increased 3.7% to 1,111,500,000 tons in 2004 from 1,071,800,000 tons in 2003. Production peaked at 1,127,689,000 short tons in 2001. Production has remained over 1 billion tons since 1994. Coal provided 22.4% of the nation's total energy supply in 2004, down from 22.7% in 2003. This percentage has hovered between 22% and 23% since 1983. Production of electricity accounted for 91.9% of coal consumption in 2004, up slightly from 91.7% in 2003. The use of coal for electrical production increased 1.0% in 2004 and is over 1 billion tons for the second year in a row. It accounted for 50.0% of electrical production in 2003, down slightly from 50.8% in 2003. This share peaked at 56.9% in 1998, but has remained consistently over 50% since 1980. The average price of coal delivered to electrical utilities increased 6.1% to $27.28 per ton in 2004 from $25.72 in 2003. Though Nevada (which has a few small low-grade deposits) produces no coal, coal-fired generators provided 53% of the electricity produced in Nevada in 2004, down from 68% in 2003 (www.eia.doe.gov).

Directory of Mining and Milling Operations

by David A. Davis

Compiled from information supplied by the Nevada Division of Minerals and Mine Safety and Training Section.
Sand and gravel operations with less than 100,000 tons annual production are not listed.
CIL = carbon-in-leach, CIP = carbon-in-pulp, HL = heap leach, ML = mill, OP = open-pit mine, OS = other surface, UG = underground mine.

Mine/plant name	Operator	Location	Commodity	Type	Process/ activity	Employees	Address
CARSON CITY							
Goni Pit	Cinderlite Trucking Co.	S28,T16N,R20E	decomposed granite	OP,ML	mining crushing screening	3	1665 South Sutro Terrace Carson City, NV 89706 775-882-4483 Fax: 882-1671 www.cinderlite.com
CHURCHILL COUNTY							
Celite Mine	World Minerals, Inc.	S8,17,T19N,R26E	diatomite	OP,ML	mining classification drying milling	17	100 Front St. Fernley, NV 89408 775-575-2536 Fax: 575-4857 www.worldminerals.com
Desert Mountain Aggregate Pit	A and K Earthmovers	S9,16,17,T16N,R28E	aggregate	OP,ML	mining crushing screening	10	P.O. Box 1059, 1200 Auction Rd. Fallon, NV 89407 775-423-6085 Fax: 775-423-8410 www.akearthmovers.com
Huck Salt	Huck Salt Co.	S11,12,13, T16N,R31E; S7,T16N,R32E	salt	OS	mining solar evaporation	5	2900 Phritzie Lane Fallon, NV 89406 775-423-2055 Fax: 423-0467
Moltan Mine and Plant	Moltan Co., LP	S28,32, T23N,R27E	diatomite clay	OP,ML	mining crushing drying screening	50	P.O. Box 860 I-80 Frontage Rd. Fernley, NV 89408-0860 775-423-6668 Fax: 423-6411
Popcorn Mine	Eagle-Picher Filtration and Minerals, Inc.	S24,T16N,R28E; S19,T16N,R29E	perlite	OP	mining	1	640 Clark Station Rd. Sparks, NV 89434 775-824-7700 Fax: 824-7715 www.epcorp.com
CLARK COUNTY							
American Sand and Gravel Pit No. 1 (Salt Lake Highway Pit)	American Sand and Gravel, LLC	S24,T19S,R62E	sand gravel	OP,ML	mining crushing	11	5260 Beesley Dr. Las Vegas, NV 89115 702-452-1900 Fax: 651-0375
American Sand and Gravel Pit No. 2 (Lone Mountain)	American Sand and Gravel, LLC	S36,T19S,R59E	sand gravel	OP,ML	mining crushing	7	5260 Beesley Dr. Las Vegas, NV 89115 702-452-1900 Fax: 651-0375
Apex Landfill Pit	Las Vegas Paving Corp.	S19,T18S,R64E	sand gravel	OP,ML	mining crushing screening	22	4420 S. Decatur Boulevard Las Vegas, NV 89103 702-251-5800
Apex Quarry and Plant	Chemical Lime Co.	S14,22,23,26,27,34,35 T18S,R63E	limestone	OP,ML	mining calcining crushing screening	110	P.O. Box 3609 North Las Vegas, NV 89036 702-643-7702 Fax: 643-9517
Apex Quarry	Granite Construction Co.	S14,22,23,26,27,34,35 T18S,R63E	aggregate sand	OP,ML	mining crushing screening washing	18	P.O. Box 2087 1900 Glendale Ave. Sparks, NV 89432 775-355-3434 Fax: 329-2803 www.graniteconstruction.com
Blue Diamond Mine	BPB Gypsum, Inc.	S24-26, T21S, R58E; S20, 29-31, T21S, R59E; S5-8, T22S, R59E	gypsum	OP,ML	mining calcining grinding	28	HCR 89033 Box 2900 Las Vegas, NV 89124 Phone: 702-875-4111 FAX: 702-875-4213 www.bpb-na.com
Blue Diamond (Jones) Pit	Las Vegas Paving Corp.	S26,T22S,R60E	sand gravel	OP,ML	mining crushing screening	17	4420 South Decatur Blvd. Las Vegas, NV 89103 702-251-5800
Bootleg Pit	Boulder Sand and Gravel, Inc.	S8,T23S,R64E	sand gravel landscape rock	OP,ML	mining crushing screening	9	P.O. Box 62186 Boulder City, NV 89005 702-294-1156 Fax: 294-0676

continued

Mine/plant name	Operator	Location	Commodity	Type	Process/ activity	Employees	Address
CLARK COUNTY (continued)							
East Pit	Various (BLM own pit)	S2,11,12,14 T21S,R62E	sand gravel	OP,ML	mining crushing screening		Bureau of Land Management 4701 North Torrey Pines Drive Las Vegas, NV 89130-2301 702-515-5000 www.blm.gov
El Dorado Canyon (Railroad Pass) Quarry	Rinker Materials Corp.	S11,T23S,R63E	sand gravel	OP,ML	mining crushing screening	41	7150 Pollock Dr. Las Vegas, NV 89119 702-260-9900 Fax: 702-260-9901 www.csra.com/nevada
Henderson Plant	Chemical Lime Co.	S12,T22S,R62E	lime	ML	hydration	29	P.O. Box 127 BMI Complex Henderson, NV 89015 702-565-8991 Fax: 565-5902
Hidden Valley South Pit	Southern Nevada Liteweight, Inc.	S9,T25S,R59E	sand	OP,ML	mining	14	1101 E. Alexander Rd. Las Vegas, NV 89030 702-399-8621 Fax: 702-633-5787 www.snlsand.com
Infinition	Infinition, LLC	S19,T13S,R66E	sand gravel	OP	mining	18	7885 Westwind Rd. Las Vegas, NV 89139 702-617-1893 Fax: 644-6541
Jean Pit	Various (BLM own pit)	S14,15,21,23,26, 27,28,33,34,35 T24S,R60E	sand gravel	OP,ML	mining crushing screening		Bureau of Land Management 4701 North Torrey Pines Drive Las Vegas, NV 89130-2301 702-515-5000 www.blm.gov
Jetco Enterprises	Jetco Enterprises, Inc.	S30-31S,R65E	decorative rock	OP	mining	3	2076 Mohigan Way Las Vegas, NV 89109 702-734-2129 Fax: 369-9294
Lone Mountain	Diamond Const.	S36,T19S,R59E	sand gravel	OP,ML	mining gravity	22	7885 Westwind Road Las Vegas, NV 89139 702-644-1016 Fax: 644-6541
Lone Mountain	Hollywood Gravel, Inc.	S35,T19S,R59E,	sand gravel	OP,ML	mining crushing screening	11	5145 South Rogers St., Suite A-1 Las Vegas, NV 89118 702-870-7094 Fax: 870-8114
Lone Mountain	Las Vegas Paving Corp.	S35,T19S,R59E	sand gravel	OP,ML	mining crushing screening	10	4420 South Decatur Blvd. Las Vegas, NV 89103 702-251-5800
Lone Mountain	Nevada Ready Mix Corp.	S36,T19S,R59E	sand gravel	OP,ML	mining crushing screening	90	601 West Bonanza Las Vegas, NV 89106 702-457-1115
Lone Mountain Stocks Pit	Southern Nevada Paving	S34,35,T19S,R59E; S3,4,11,T20S,R59E	sand gravel	OP,ML	mining crushing screening	9	3555 Polaris Avenue Las Vegas, NV 89102 702-876-5226
Lone Mountain Community Pit	Various (BLM manages pit)	S36,T19S,R59E; S1,T20S,R59E	sand gravel	OP,ML	mining crushing screening		Bureau of Land Management 4701 North Torrey Pines Drive Las Vegas, NV 89130-2301 702-515-5000 www.blm.gov
Moapa Pit	Ready Mix, Inc.	S22,27;T14S,R66E	aggregate decorative rock	OP,ML	mining milling	20	3430 East Flamingo Road, Suite 100 Las Vegas, NV 89021 702-433-2090 Fax: 433-0189
PABCO Gypsum-Apex Pit	Pacific Coast Building Products, Inc.	S7,18,T20S,R64E	gypsum	OP,ML	mining crushing washing	129	1973 N. Nellis Boulevard No. 328 Las Vegas, NV 89115 702-643-1016 Fax: 643-6249 www.paccoast.com
Pioneer Gypsum Mine	D.L. Denman Construction Co.	S30,T19S,R64E	gypsum	OP	mining	7	4880 Donovan Way North Las Vegas, NV 89031 702-399-5939 Fax: 399-8353
Pipes Pit	Pipes Paving	S1,T20S,R59E	sand gravel	OP,ML	mining crushing screening	73	3529 Clayton North Las Vegas, NV 89032 702-647-1162 Fax: 647-2387
Rainbow Quarries	Las Vegas Rock, Inc.	S34,T25S,R58E	stone	OP,ML	mining crushing	15	11635 Bermuda Rd. Las Vegas, NV 89052 702-429-4103 Fax: 702-896-4533

continued

DIRECTORY OF MINING AND MILLING OPERATIONS (continued)

Mine/plant name	Operator	Location	Commodity	Type	Process/ activity	Employees	Address
CLARK COUNTY (continued)							
Salt Lake Highway Pit	Various (BLM manages pit)	S13,24,T19S,R62E; S17,18,19,T19S,R63E	sand gravel	OP	mining		Bureau of Land Management 4701 North Torrey Pines Drive Las Vegas, NV 89130-2301 702-515-5000 www.blm.gov
Sandia Pit	Sandia Aggregates/ Pacific Coast Building Products, Inc.	S8,T20S,R64E	sand gravel	OP,ML	mining crushing washing	12	1973 North Nellis Blvd., No. 328 Las Vegas, NV 89115 702-643-1016 Fax: 643-6249
Simplot Silica Products Pit	Simplot Silica Products	S11,T17S,R67E	silica sand	OP,ML	mining drying flotation screening	45	P.O. Box 308 Overton, NV 89040 702-397-2667 Fax: 397-2798
Sloan Quarry & Mill	Frehner Construction Co.	S13,T23S,R60E	sand gravel	OP,OS, ML	mining crushing screening	17	124 West Brooks Avenue North Las Vegas, NV 89030 702-649-6250 Fax: 642-2213 www.frehnerconstruction.com
Spring Mountain Pit	Wells Cargo, Inc.	S10,15,T21S,R60E	sand gravel	OS,ML	mining gravity	12	P.O. Box 81170 Las Vegas, NV 89160 702-873-7440 Fax: 873-1696 www.wellscargoconstruction.com
DOUGLAS COUNTY							
Dresslerville Pit	Cinderlite Trucking Co.	S27,T12N,R20E	decomposed granite	OP	mining screening	1	1665 South Sutro Terrace Carson City, NV 89706 775-882-4483 Fax: 882-1671 www.cinderlite.com
ELKO COUNTY							
Boehler Pit	Boehler Construction Co.	S12,T34N,R55E	aggregate sand gravel	OP,ML	mining crushing	7	P.O. Box 789 2755 Last Chance Rd. Elko, NV 89803 775-738-8155, Fax: 738-8851
Capstone Mine	Newmont Mining Corp.	S10,T36N,R49E	gold silver mercury	OP,HL, ML	mining heap leach milling	1641[1]	P.O. Box 669 Carlin, NV 89822-0669 775-778-4000 Fax: 778-4757 www.newmont.com
Dunphy Mill	BAROID/Halliburton Energy Services, Inc.	S26,T33N,R48E	barite	ML	crushing gravity grinding	38	912 Dunphy Ranch Road Battle Mountain, NV 89820 775-468-0515 Fax: 468-2060 www.halliburton.com
Elburz Pit	Vega Construction and Trucking Co.	S9,T33N,R52E	sand gravel	OP,ML	mining crushing screening	23	P.O. Box 1630 Elko, NV 89803 775-738-5381 Fax: 738-6311
Jerritt Canyon Mine	Queenstake Resources USA, Ltd.	T39-41N,R52-54E	gold silver	UG,ML	mining heap leach milling	500	HC31 Box 78 Elko, NV 89801 775-738-5006 Fax: 758-9231 www.queenstake.com
Meikle Mine	Barrick Goldstrike Mines, Inc.	S12,13,T36N,R50E	gold silver	UG,ML	mining milling roasting	536	P.O. Box 29 Elko, NV 89803 775-738-8043 Fax: 738-6543 www.barrick.com
Midas (Ken Snyder) Mine	Newmont Mining Corp.	S21,22,27,28,33,34; T39N,R46E	gold silver	UG,ML	mining milling	167	HC66 Box 125 Midas, NV 89414 775-635-6423 Fax: 635-6460 www.newmont.com
Pilot Peak Quarry and Plant	Graymont Western U.S., Inc.	S14,15,22,23,26, T34N,R68E	limestone	OP,ML	mining grinding roasting rotary kiln	52	P.O. Box 2520 West Wendover, NV 89883 775-483-5463 Fax: 483-5149
Rain Mine	Newmont Mining Corp.	S33,T32N,R53E	gold silver mercury	UG HL,ML	mining heap leach milling	1641[1]	P.O. Box 669 Carlin, NV 89822-0669 775-778-4000 Fax: 778-4757 www.newmont.com
Rossi Mine	BAROID/Halliburton Energy Services, Inc.	S14-16,21-23,26-28, 34-35;T37N,R49E	barite	OP,ML	mining	24	912 Dunphy Ranch Road Battle Mountain, NV 89820 775-468-0515 Fax: 468-2060 www.halliburton.com

[1]**Combined Newmont Carlin Trend Operations.**

DIRECTORY OF MINING AND MILLING OPERATIONS (continued)

Mine/plant name	Operator	Location	Commodity	Type	Process/ activity	Employees	Address
ESMERALDA COUNTY							
Basalt Mine and Plant	Grefco Minerals, Inc.	S23-26,T2N,R33E; S28,29,32,T2N,R34E	diatomite	OP,ML	drying milling	4	P.O. Box 288 Mina, NV 89422-0288 775-573-2422 Fax: 573-2422 www.grefco.com
Blanco Mine	Vanderbilt Minerals Corp.	S22,T1N,R37E	clay	OP	bagging grinding screening	4	3561 Burgundy Dr. Pahrump, NV 89048 775-537-6976 Fax: 537-6879 www.rtvanderbilt.com
Heart of Rulco (Alum Mine)	Rulco, LLC	S32,33,T1N,R38.5E	potassium sulfate	OP,ML	crushing milling shipping	4	1019 CR330 Ignacio, CO 81137 970-883-2468 Fax: 970-883-2469
Mineral Ridge Mine	Golden Phoenix Minerals, Inc.	S1,2,12,T2S,R38E; S6,T2S,R39E	gold silver	OP,UG, HL	mining heap leach	39	1675 East Prater Way, Suite 102 Sparks, NV 89434 775-853-4919 Fax: 853-5010 www.golden-phoenix.com
Silver Peak Operations	Chemetall Foote Corp.	S22,T2S,R39E	lithium carbonate	OS,ML	mining solar evaporation precipitation	57	P.O. Box 98 Silver Peak, NV 89047 775-937-2222 Fax: 937-2250 www.chemetall.com
EUREKA COUNTY							
Betze/Post Mine	Barrick Goldstrike Mines, Inc.	S23-26,T36N,R49E; S12,20,29,30; T36N,R50E	gold	OP,CIL, HL,ML	mining heap leach milling	1099	P.O. Box 29 Elko, NV 89803 775-738-8043 Fax: 738-6543 www.barrick.com
Carlin North Genesis Complex	Newmont Mining Corp.	S33,T36N,R50E	gold	OP,HL, ML	mining bioleaching heap leach milling, roasting	1641[1]	P.O. Box 669 Carlin, NV 89822-0669 775-778-4000 Fax: 778-4757 www.newmont.com
Carlin North-Post and adjacent mines	Newmont Mining Corp.	S19,T36N,R50E	gold	OP,HL, ML	mining bioleaching milling milling, roasting	1641[1]	P.O. Box 669 Carlin, NV 89822-0669 775-778-4000 Fax: 778-4757 www.newmont.com
Carlin South-Carlin and adjacent mines	Newmont Mining Corp.	S14,T35N,R50E	gold	UG,HL, ML	mining bioleaching milling milling, roasting	1641[1]	P.O. Box 669 Carlin, NV 89822-0669 775-778-4000 Fax: 778-4757 www.newmont.com
Carlin South-Gold Quarry and adjacent mines	Newmont Mining Corp.	S3,T33N,R51E	gold	OP,HL, ML	mining bioleaching milling milling, roasting	1641[1]	P.O. Box 669 Carlin, NV 89822-0669 775-778-4000 Fax: 778-4757 www.newmont.com
Ruby Hill Mine	Barrick Gold Corp.	S9-11,14,15 T19N,R53E	gold silver	OP,CIL, CIP,HL, ML	heap leach milling	16	P.O. Box 676 Eureka, NV 89316 775-237-6060 Fax: 237-5408 www.barrick.com
HUMBOLDT COUNTY							
Hycroft Mine	Hycroft Resources and Development, Inc.	S26,T35N,R29E	gold silver	OP,HL	heap leach	7	P.O. Box 3030 Winnemucca, NV 89446 775-623-5260 Fax: 623-0215 www.vistagold.com
Lone Tree Mine (Lone Tree Complex)	Newmont Mining Corp.	S1,11,13,15,23, T34N,R42E	gold silver	OP,HL, ML	mining flotation heap leach milling	509[2]	P.O. Box 388 Valmy, NV 89438-0388 775-635-9000 Fax: 635-0111 www.newmont.com
Marigold Mine	Glamis Gold, Inc.	S8,9,18-20, T33N,R43E	gold silver	OP,HL, ML	mining heap leach milling	153	P.O. Box 160 Valmy, NV 89438 775-635-2317 Fax: 635-2551 www.glamis.com
MIN-AD Mine	MIN-AD, Inc.	S28,T35N,R38E	dolomite	OP,ML	mining grinding	20	P.O. Box 39 Winnemucca, NV 89446 775-623-5944 Fax: 623-9028 www.min-ad.com

[1]**Combined Newmont Carlin Trend operations.**
[2]**Combined Lone Tree and Mule Canyon.**

continued

DIRECTORY OF MINING AND MILLING OPERATIONS (continued)

Mine/plant name	Operator	Location	Commodity	Type	Process/ activity	Employees	Address
HUMBOLDT COUNTY (continued)							
Rainbow Ridge Opal Mine	Rainbow Ridge Opal Mines, Inc.	S22,23,T45N,R26E	opalized wood precious opal	OP	mining	1	P.O. Box 97 Denio, NV 89404 775-941-0270 (summer) 541-548-4810 (winter) www.nevadaopal.com
Royal Peacock Opal Mine	Walter Wilson	S30,T45N,R26E	precious opal	OP	mining	1	P.O. Box 165 Denio, NV 89404 775-941-0374 (summer) 775-272-3246 (winter) www.royalpeacock.com
Sage Mine	West Coast Mining/ Dale E. Huett	S12,T43N,R35E	chalcedony	OP	mining extraction grading	1	P.O. Box 133 College Place, WA 99324 509-522-4851 Fax: 527-1233 www.wcmining.com
Thomas Canyon and Sonoma Pits	H.E. Hunewill Construction Co.	S24,T35N,R37E; S19,T35N,R38E	sand gravel	OP,ML	mining crushing screening	8	1410 West Railroad Rd. Winnemucca, NV 89445 775-623-2888 Fax: 623-2992
Turquoise Ridge Joint Venture	Placer Dome US, Inc.	S33, T39N,R42E	gold silver	UG	mining	372	HC 66 Box 220 Golconda, NV 89414-9702 775-529-5001 Fax: 529-0753 www.placerdome.com
Twin Creeks Mine	Newmont Mining Corp.	S3-10,15-22,27-32 T39N,R43E	gold silver	OP,HL, ML	mining heap leach milling	539	P.O. Box 69 Golconda, NV 89414 775-623-4300 Fax: 635-4602 www.newmont.com
LANDER COUNTY							
Argenta Mill	Baker Hughes INTEQ	S6,T32N,R47E	barite	OP,ML	gravity grinding	6	P.O. Box 277 Battle Mountain, NV 89820 775-635-5441 Fax: 635-5455 www.bakerhughes.com
Argenta Mine	Baker Hughes INTEQ	S13,14,T32N,R46E S18,19,T32N,R47E	barite	OP,ML	mining	13	P.O. Box 277 Battle Mountain, NV 89820 775-635-5441 Fax: 635-5455 www.bakerhughes.com
Battle Mountain Grinding Plant	M-I Swaco	S18,T32N,R45E	barite	ML	gravity grinding	35	P.O. Box 370 Battle Mountain, NV 89820 775-635-5135 Fax: 635-2191 www.midf.com
Blue Ridge Mine	Jay and Grace Wintle	S19,20,29,30, T28N,R47E	turquoise	OP	mining screening sorting washing	2	810 Sheep Creek Road Battle Mountain, NV 89820 775-635-5231
Cortez/Pipeline Mines	Placer Dome U.S., Inc.	S31,33,34, T28N,R47E	gold	OP,CIL, HL,ML	mining heap leach milling	436	HC66 Box 1250 Crescent Valley, NV 89821 775-468-4400 Fax: 468-4496 www.placerdome.com
Greystone Mine	M-I Swaco	S35,T28N,R45E	barite	OP,ML	mining gravity milling shipping	48	P.O. Box 370 Battle Mountain, NV 89820 775-635-5135 Fax: 635-2191 www.midf.com
McCoy/Cove Mine	Newmont Mining Corp.	S1–11,T28N,R42E; S36,T29N,R42E	silver gold	OP,UG	reclamation	11	P.O. Box 1658 McCoy Mine Road, No. 1 Battle Mountain, NV 89820 775-635-4923 Fax: 635-4921 www.newmont.com
Mule Canyon Mine (Lone Tree Complex)	Newmont Mining Corp.	S4,T31N,R47E	gold silver	OP	mining	509[2]	P.O. Box 388 Valmy, NV 89438-0388 775-635-9000 Fax: 635-0111 www.newmont.com
Phoenix Project	Newmont Mining Corp.	S22,27,33,34, T31N,R43E	gold silver	OP,HL, ML	heap leach		P.O. Box 388 Valmy, NV 89438-0388 775-635-9000 Fax: 635-0111 www.newmont.com

[2]**Combined Lone Tree and Mule Canyon.**

DIRECTORY OF MINING AND MILLING OPERATIONS (continued)

Mine/plant name	Operator	Location	Commodity	Type	Process/ activity	Employees	Address
LINCOLN COUNTY							
Feller No. 1, No. 102	Feller Stone, Inc.	S13,14,T7S,R70E	stone	OP	mining		688 East Chad Road Veyo, UT 84782-4141 435-574-9300 Fax: 574-9333 www.fellerstone.com
Tenacity Perlite Mine and Mill	Wilkin Mining and Trucking Co.	S34,T4S,R62E	perlite	OP,ML	mining milling	7	P.O. Box 829 Panaca, NV 89042 775-728-4463 Fax: 728-4456
LYON COUNTY							
Adams Claim Gypsum Mine	Art Wilson Co.	S25,T16N,R20E	gypsum limestone	OP,ML	mining crushing screening	41	P.O. Box 20160 Carson City, NV 89702 775-882-0700 Fax: 882-0790 www.awgypsum.com
Hazen Pit	Eagle-Picher Filtration and Minerals, Inc.	S6,9, T19N,R26E	diatomite	OP	mining	2	640 Clark Station Rd. Sparks, NV 89434 775-824-7700 Fax: 824-7715 www.epcorp.com
Nevada Cement Mine	Nevada Cement Co.	S3-6,9,T19N,R25E; S31-33,T20N,R25E	limestone clay	OP,ML	mining	11	P.O. Box 840 Fernley, NV 89408 775-575-2281 Fax: 575-4387
Nevada Cement Plant	Nevada Cement Co.	S10,11,T20N,R24E;	limestone clay	ML	crushing dry milling rotary kiln	109	P.O. Box 840 Fernley, NV 89408 775-575-2281 Fax: 575-4387
MINERAL COUNTY							
Denton-Rawhide Mine	Kennecott Rawhide Mining Co.	S4,5,8,16,17, T13N,R32E	gold silver	OP,HL	heap leach	21	P.O. Box 2070 Fallon, NV 89407 775-945-1015 Fax: 945-1213 www.kennecottminerals.com
NYE COUNTY							
Ash Meadows Plant	Ash Meadows Zeolite, LLC	S25,T18S,R50E	zeolite	ML	crushing screening packaging	5	HCR 70, Box 7006 Amargosa Valley, NV 89020 775-372-5524 Fax: 764-0090 www.badgerminingcorp.com
Bolling Pit	Bolling Construction, Inc.	S26,T19S,R53E	rock sand	OP,ML	mining milling	4	Box 31 Pahrump, NV 89048 775-727-7070 Fax: 727-6432
Borasky Pit	A. Borasky Excavating	S29,T20S,R53E	sand	OP,ML	mining screening	2	1640 Manse Road Pahrump, NV 89048 775-751-1862 Fax: 751-2649
Cinder Cone Pit	Allied Building Materials, Inc./ Cind-R-Lite Co.	S36,T14S,R48E; S31,T14S,R49E; S1,T15S,R48E; S6,T15S,R49E	cinder	OP,ML	mining screening	9	4745 Mitchell St. North Las Vegas, NV 89031 702-651-1550 Fax: 651-1551
Gabbs Mine	Premier Chemicals, LLC	S22,23,25-27,34-36, T12N,R36E	magnesite	OP,ML	mining calcining	78	P.O. Box 177 Gabbs, NV 89409 775-285-2601 Fax: 285-4030 www.premierchemicals.com
IMV Pits	Mud Camp Mining Co., LLC	S28,29,T17S,R49E	clay	OP,ML	mining milling	30	Route Box 549 Amargosa Valley, NV 89020 775-372-5341 Fax: 372-5640
Lathrop Mill	American Borate Co.	S36,T17S,R49E	calcium borate	ML	calcination flotation	25	American Borate Co. HCR 70 Box 610 Amargosa Valley, NV 89020 775-372-5339
New Discovery Mine/ White Caps Mill	Vanderbilt Minerals Corp.	S13,14,T12S,R46E; S18,19,T12S,R47E	clay	OP,UG, ML	bagging grinding screening	8	3561 Burgundy Dr. Pahrump, NV 89048 775-537-6976 Fax: 537-6879 www.rtvanderbilt.com
P & S	Standard Industrial Minerals, Inc.	S14,T13N,R45E	barite	OP	shipping	1	P.O. Box 10477 Reno, NV 89509 775-324-1334 Fax: 324-2458

continued

DIRECTORY OF MINING AND MILLING OPERATIONS (continued)

Mine/plant name	Operator	Location	Commodity	Type	Process/ activity	Employees	Address
NYE COUNTY (continued)							
Pahrump Community Pit	Various (BLM owns pit)	S28,29,T20S,R54E	sand gravel	OP	mining		Bureau of Land Management 4765 Vegas Dr. Las Vegas, NV 95901 702-647-5000 Fax: 647-5023 www.blm.gov
Round Mountain Mine (Smoky Valley Common Operation)	Round Mountain Gold Corp.	S19,20,29,30, T10N,R44E	gold silver	OP,HL, ML	mining gravity heap leach milling	640	P.O. Box 480 Smoky Valley Mine Rd. Round Mountain, NV 89405 775-377-2366 Fax: 377-3224 www.kinross.com
PERSHING COUNTY							
Buff-Satin Mine	Vanderbilt Minerals Corp.	S2,T27N,R32E	clay	OP	processing shipping	4	3561 Burgundy Dr. Pahrump, NV 89048 775-537-6976 Fax: 537-6879 www.rtvanderbilt.com
Coeur Rochester Mine	Coeur Rochester, Inc.	S9-11,15,16,21,27, 28,T28N,R34E	silver gold	OP,HL, ML	mining heap leach milling	255	P.O. Box 1057 Lovelock, NV 89419 775-273-7995 Fax: 273-7050 www.coeur.com
Colado Mines	Eagle-Picher Filtration and Minerals, Inc.	S6,7,16,18,21,25, T28N,R29E	diatomite perlite	OP,OS	mining	30	P.O. Box 959 150 Coal Canyon Road Lovelock, NV 89419 775-824-7540 Fax: 824-7582 www.epcorp.com
Colado Plant	Eagle-Picher Filtration and Minerals, Inc.	S33,T28N,R32E	diatomite perlite	ML	drying classification grinding calcining	94	P.O. Box 959 150 Coal Canyon Road Lovelock, NV 89419 775-824-7540 Fax: 824-7582 www.epcorp.com
Empire Quarry	United States Gypsum Co.	S31,T31N,R24E	gypsum	OP	mining	11	P.O. Box 130 Empire, NV 89405 775-557-2341 Fax: 557-2212 www.usg.com
Florida Canyon Mine	Apollo Gold, Inc.	S1-4,9-15,T31N,R33E; S37-39,T31½N,R33E; S33-35,T32N,R33E	gold	OP,HL, ML	mining heap leach milling	127[3]	P.O. Box 330 Imlay, NV 89418 775-538-7300 Fax: 538-7324 www.apollogold.com
Section 8 Mine	American Colloid Co.	S8,T27N,R33E	clay	OP	shipping	4	1500 West Shure Drive Arlington Heights, IL 60004 847-392-4600 Fax: 506-6199 www.colloid.com
Standard Mine	Apollo Gold, Inc.	S1,12,T30N,R33E; S35,T31N,R33E	gold	OP,HL ML	mining heap leach milling	127[3]	P.O. Box 330 Imlay, NV 89418 775-538-7300 Fax: 538-7324 www.apollogold.com
W. Glen Sexton Family Trust	Nutritional Additives Co.	S5,8,T34N,R38E	dolomite	OP,ML	mining milling	3	415 Wellington Street Winnemucca, NV 89445 775-623-1151 Fax: 623-1153
STOREY COUNTY							
Basalite Dayton Pit	Basalite Division of Pacific Coast Building Products	S8,9,16,17, T17N,R22E	sand gravel	OS,ML	mining crushing milling	5	2600 Boeing Way Carson City, NV 89701 775-882-9336 Fax: 887-1025 http://basalite.paccoast.com
Billie the Kid Mine	The Plum Mining, Co., LLC	S6,T16N,R21E	gold silver	OP,HL, ML	mining heap leach milling	43	P.O. Box 1118 Virginia City, NV 89440 775-847-5272 Fax: 847-4762 www.goldspring.us
Clark Mill	Eagle-Picher Filtration and Minerals, Inc.	S35,T20N,R23E	diatomite	OP,ML	mining	54	640 Clark Station Rd. Sparks, NV 89434 775-824-7700 Fax: 824-7715 www.epcorp.com
Clark Mine	Eagle-Picher Filtration and Minerals, Inc.	S27,33,34, T20N,R23E	diatomite	ML	calcining classification drying grinding	15	640 Clark Station Rd. Sparks, NV 89434 775-824-7700 Fax: 824-7715 www.epcorp.com
Mustang Pit	Gopher Construction, Inc.	S14,T19N,R21E	decorative rock	OP	mining crushing	4	P.O. Box 801 Fernley, NV 89408 775-575-4333 Fax: 575-1137

[3]**Combined Florida Canyon and Standard Mines.**

continued

DIRECTORY OF MINING AND MILLING OPERATIONS (continued)

Mine/plant name	Operator	Location	Commodity	Type	Process/ activity	Employees	Address
STOREY COUNTY (continued)							
Sierra Stone Quarry	RMC Nevada, Inc.	S26,33,34 T19N,R22E	sand gravel	OS,ML	mining crushing screening	53	333 Galletti Way Reno, NV 89512 775-329-5585 Fax: 329-8693 www.rmcnevada.com
WASHOE COUNTY							
Bella Vista Pit	A and K Earthmovers	S3,4,T18N,R20E; S33,34,T19N,R20E	sand gravel	OS,ML	mining crushing screening	10	P.O. Box 1059 1200 Auction Rd. Fallon, NV 89407 775-423-6085 Fax: 423-8410
Clay Mine and Mill	Art Wilson Co.	S13,14,T27N,R19E	clay	OP,ML	mining milling	3	P.O. Box 20160 Carson City, NV 89721 775-882-0700 Fax: 882-0790 www.awgypsum.com
Empire Mill	United States Gypsum Co.	S11,13,T31N,R23E	gypsum	ML	calcining crushing	120	P.O. Box 130 Empire, NV 89405 775-557-2341 Fax: 557-2212 www.usg.com
Golden Valley Pit	A and K Earthmovers	S11,12,T19N,R20E	aggregate	OS,ML	mining screening	2	P.O. Box 1059 1200 Auction Rd. Fallon, NV 89407 775-423-6085 Fax: 423-8410 www.akearthmovers.com
Hidden Canyon	Granite Construction Co.	S16,T20N,R20E	aggregate	OP,ML	mining crushing screening washing	5	P.O. Box 2087 1900 Glendale Ave. Sparks, NV 89432 775-355-3434 Fax: 329-2803 www.graniteconstruction.com
Lemon Valley Pit	Martin Marietta Minerals	S23,24,T21N,R19E	sand gravel		shipping	2	11059 Pyramid Lake Rd. Sparks, NV 89436 775-425-4455 Fax: 425-5131 www.martinmarietta.com
Lockwood Quarry	Granite Construction Co.	S17,T19N,R21E	aggregate	OP,ML	mining crushing screening washing	17	P.O. Box 2087 1900 Glendale Ave. Sparks, NV 89432 775-355-3434 Fax: 329-2803 www.graniteconstruction.com
Mustang Pit	Frehner Construction Co.	S4,T19N,R21E	aggregate	OP,ML	mining crushing screening	6	55 Coney Island Dr., Suite 100 Sparks, NV 89431 775-356-5200 www.frehnerconstruction.com
Paiute Pit	RMC Nevada, Inc.	S2,27,34, T21N,R24E	sand gravel	OP	mining	13	333 Galletti Way Reno, NV 89512 775-329-5585 www.rmcnevada.com
Rilite Aggregate Pit	Rilite Aggregate Co.	S23,T18N,R20E	aggregate	OP,ML	mining grinding crushing	11	3025 Mill St. Reno, NV 89502 775-329-8842 Fax: 329-3593
Spanish Springs Plant No. 6	Martin Marietta Minerals	S15, T21N,R20E	sand gravel	OP,ML	mining crushing screening	26	11059 Pyramid Lake Rd. Sparks, NV 89436 775-425-4455 Fax: 425-5131 www.martinmarietta.com
Wade Sand Pit	Granite Construction Co.	S3,T20N,R24E	sand	OP,ML	mining screening	6	P.O. Box 2087 1900 Glendale Ave. Sparks, NV 89432 775-355-3434 Fax: 329-2803 www.graniteconstruction.com
WHITE PINE COUNTY							
Bald Mountain Mine	Placer Dome U.S. Inc.	S14,15,19,20 T24N,R57E	gold	OP,HL, ML	mining heap leach milling	135	P.O. Box 2706 Elko, NV 89803 775-237-7100 Fax: 237-7101 www.placerdome.com
Mount Moriah Quarry	Mt. Moriah Stone Quarries, LLC	S22,23,26,27,34-36 T16N,R70E	building stone decorative stone	OP	mining	23	P.O. Box 35 No. 10 Hatch Rock Rd. Baker, NV 89311 435-855-2232 Fax: 855-2332
Robinson Mine	Robinson Nevada Mining Co.	S6,8,17,18, T16N,R62E	copper gold	OP,ML	mining milling	343	P.O. Box 382 Ruth, NV 89319 775-289-7000 Fax: 289-7103 www.placerdome.com

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Statewide Commodity Bulletins

Antimony (B61)
Barite (B98)
Fluorspar (B93)
Gypsum (B103)
Iron (B53)
Mercury (B41)
Montmorillonite, bentonite, and fuller's earth (B96)
Oil and gas (B104)
Radioactive minerals (B81)
Talcose minerals (B84)
Thermal waters (B91)
Tungsten (B105)
Zeolites (B79)

County Mineral Resource Bulletins

Carson City (B75)
Churchill (B83)
Clark (B62)
Douglas (B75)
Elko (B106)
Esmeralda (B78)
Eureka (B64)
Humboldt (B59)
Lander (B88)
Lincoln (B73)
Lyon (B75)
Mineral (B58)
Nye (B77, B99B)
Pershing (B89)
Storey (B70)
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White Pine (B85)

Other Publications

Index to geothermal well files housed at NBMG (L-5)
Gold and silver resources in Nevada (M120)
Nevada geothermal resources (M126)
Geothermal resources (M141)
Industrial mineral deposits (M142)
Oil and gas wells drilled in Nevada since 1907 (L-8)
Nevada mining and you (SP8)
Major mines of Nevada 2004 (P-16)
Outline of Nevada mining history (SP15)
Mining districts of Nevada (R47)

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NBMG, USGS, USBM, and DOE open-file reports on Nevada geology and mineral resources
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