

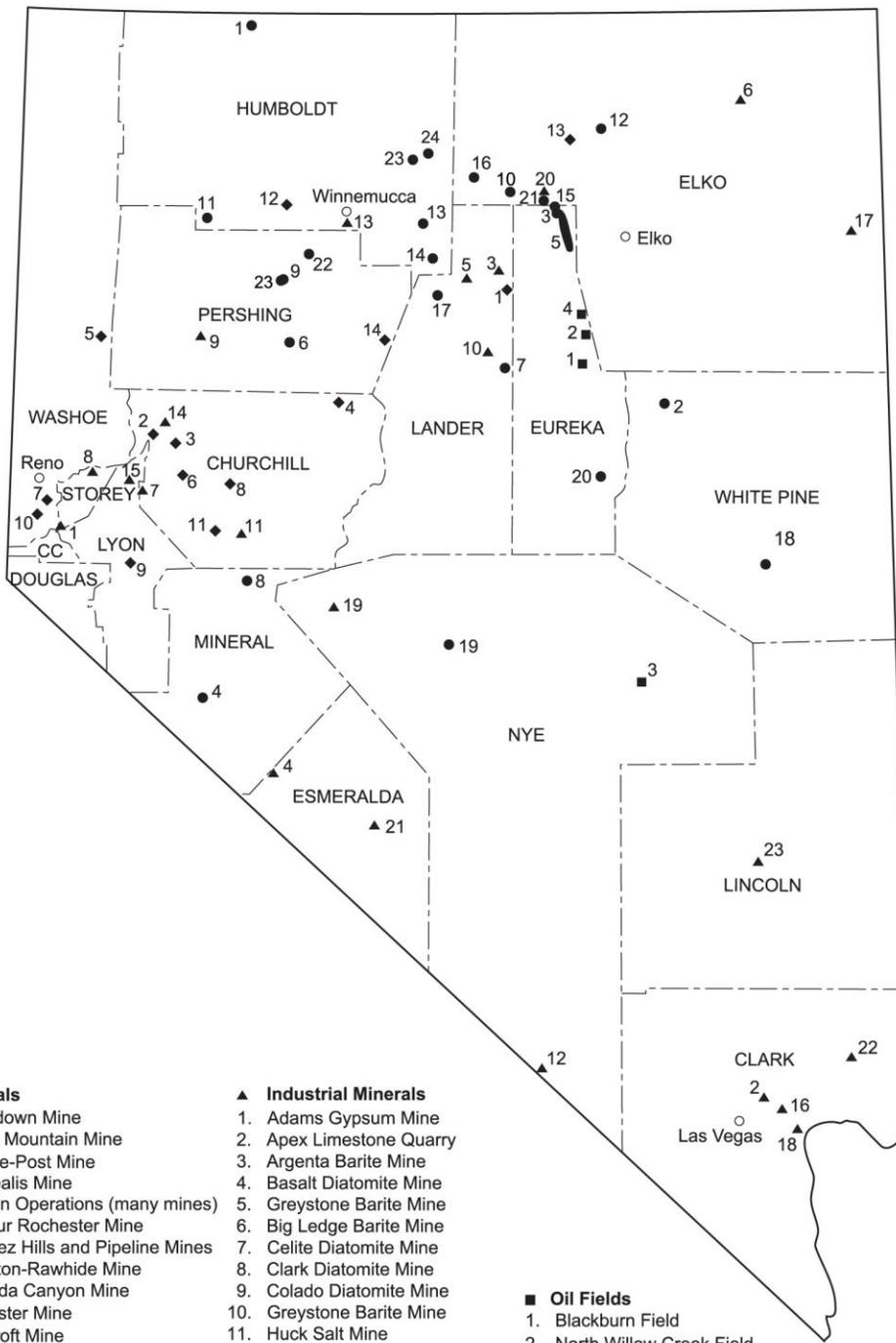
**Nevada Bureau of Mines and Geology
Special Publication MI-2011**

**The Nevada Mineral Industry
2011**

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3. Railroad Valley (Eagle Springs, Trap Spring, Currant, Sand Dune, Grant Canyon, Bacon Flat, Kate Spring, Duckwater Creek, Sans Spring, and Ghost Ranch Fields)
4. Tomera Ranch Field

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- | | |
|---|-----------------------|
| 1. Beowawe | 8. Stillwater 1 and 2 |
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| 3. Desert Peak 2 | 10. Steamboat Hills |
| 4. Dixie Valley | 11. Salt Wells |
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| 6. Soda Lake 1 and 2 | 13. Tuscarora |
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Major mines, oil fields, and geothermal plants, 2011.

Overview

By John L. Muntean

This report highlights activities during 2011 as well as recent trends 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 increased to an all-time high of \$10.01 billion, up substantially from the previous high of \$7.72 billion in 2010 (table 1, fig. 1). Gold production increased for the second consecutive year to 5.5 million ounces in 2011, after more or less steadily decreasing from a high of 8.86 million ounces in 1998 to 5.0 million ounces in 2009. 2011 was the 23rd consecutive year with production in excess of 5.0 million ounces. Nevada led the nation in the production of gold and barite and was the only state that produced magnesite, lithium, and the specialty clays, sepiolite and saponite. Other commodities mined and produced in Nevada in 2010, more or less in order of value, included copper, silver, construction aggregate (sand, gravel, and crushed stone, including limestone and dolomite), geothermal energy, petroleum, diatomite, molybdenum, gypsum, lime (produced from limestone and dolomite), cement (produced from limestone, clay, gypsum, and iron ore), silica (industrial sand), , clays, perlite, iron ore, dimension stone, salt, semiprecious gemstones (turquoise and opal), and mercury (as a byproduct of gold and silver processing). Locations of many of the sites mentioned in the text of this report are shown on NBMG map E-49, *Nevada Active Mines and Energy Producers*, which is available at www.nbmgu.unr.edu/dox/e49.pdf.

As was the case in 2010, Nevada ranked first in the United States in value of overall nonfuel (excluding oil, gas, coal, uranium, and geothermal) mineral production in 2011 (according to the U.S. Geological Survey, Mineral Commodity Summaries 2012, <http://minerals.usgs.gov/minerals/pubs/mcs/2012/mcs2012.pdf>). Arizona, the country's leading copper producer, retained second place. Minnesota, the leading iron producer in the U.S., was third. Utah, a major producer of copper and molybdenum, primarily from the Bingham Canyon Mine near Salt Lake City, was fourth. Alaska, a significant producer of zinc, silver, and gold, was fifth. Florida, mainly because of its phosphate production, rose to sixth. California, with its significant mining of borates and its large population and commensurate demands for construction raw materials, dropped to seventh.

Nevada's production of gold, valued at \$8.7 billion, accounted, for 74% of the U.S. total and helped again make the U.S. the third leading gold producer in the world in 2011. Nevada alone accounted for 6.4% of world production of gold. China, Australia, South Africa, and Russia, each produced more gold than the state of Nevada in 2011. Second to gold in terms of Nevada's mineral value in 2011 was copper (\$503 million), followed by silver (\$251 million), chiefly as a byproduct or co-product of gold production. Construction aggregate ranked as the fourth leading mineral commodity in 2011, with a value of \$180 million. Electrical power from geothermal energy production in Nevada in 2011 was valued at \$153 million.

TABLE 1. MINERAL, GEOTHERMAL POWER, AND PETROLEUM PRODUCTION IN NEVADA^{1,3}

Commodity	2010		2011		Change from 2010 to 2011	
	Quantity	Value (millions)	Quantity	Value (millions)	Quantity	Percentage
Gold (thousand troy ounces)	5,339	\$6,537.2	5,536	\$8,700.7	3.7	33.1
Silver (thousand troy ounces)	7,361	148.6	7,141	250.8	-3.0	68.8
Copper (thousand pounds)	127,976	437.7	123,791	502.6	-3.3	14.8
Molybdenum (thousand pounds)	591	9.3	1,910	29.5	223.2	217.2
Aggregate (thousand short tons)	26,780	190.8	25,190	180.4	-5.9	-5.5
Barite (thousand short tons)	657	49.3	698	38.1	6.2	-22.7
Gypsum (thousand short tons)	1,056	11.7	1,001	12.7	-5.2	8.5
Geothermal energy (net, thousand megawatt-hours)	2,060	145.3	2,173	153.3	5.5	5.5
Petroleum (thousand 42-gallon barrels)	427	26.7	408	28.9	-4.4	8.2
Other minerals ²	-----	160.2	-----	115.5	-----	-27.9
Total	-----	\$7,716.8	-----	\$10,012.5	-----	29.7

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

²Building stone, cement, clay, diatomite, lime, lithium, magnesite, mercury, molybdenum, iron ore, perlite, salt, and silica sand.

³The value of minerals and energy were calculated as follows: Gold and silver: production reported by NDOM using average annual prices for gold (\$1224.53/oz for 2010, \$1571.52/oz for 2011) and silver (\$20.19/oz for 2010, \$35.12/oz for 2011), as reported by www.kitco.com. Copper and molybdenum: production reported by NDOM using average annual prices for copper (\$3.42/lb for 2010, \$4.06/lb for 2011) and molybdenum (\$15.80/lb for 2010, \$15.44/lb for 2011), as reported by USGS. The values of all the other commodities were the gross proceeds in 2010 and 2011 reported by the Nevada Department of Taxation.

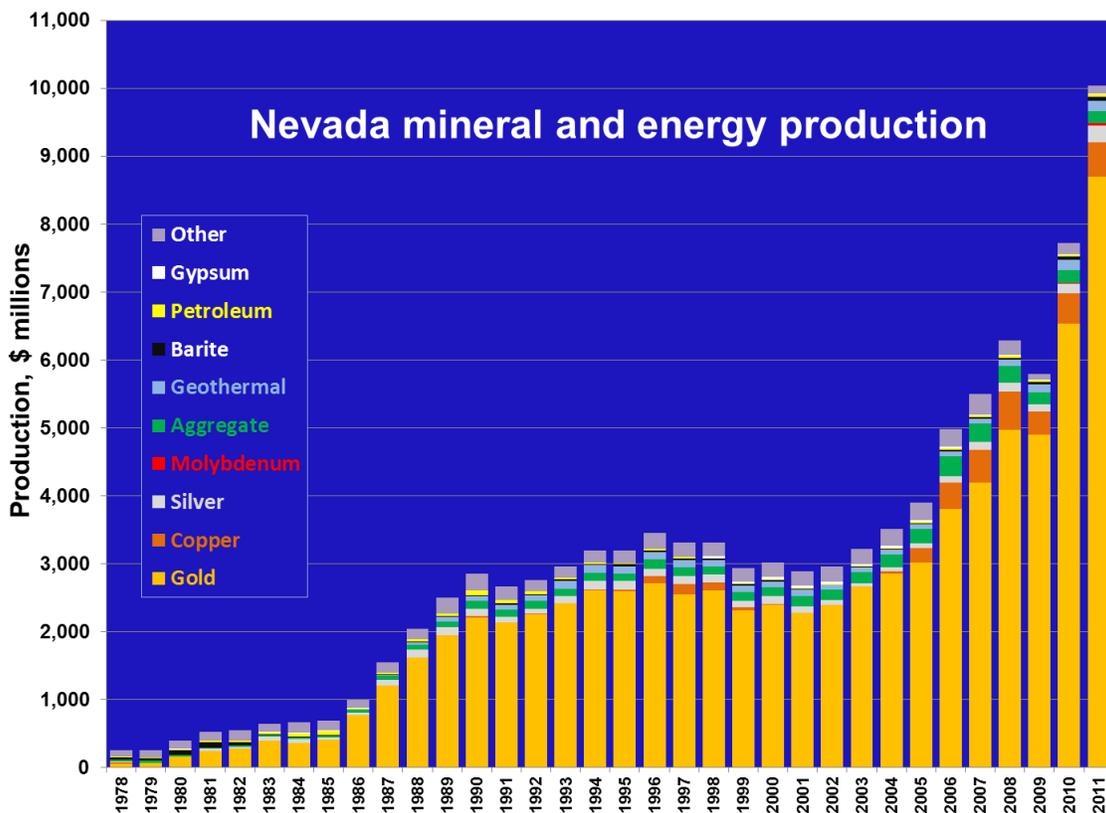


Figure 1. Chart showing annual dollar value of various mineral and energy commodities produced from Nevada from 1978 to 2011.

The contributions that mining makes to the economies of Nevada and the U.S. are significant in terms of jobs, commerce, taxes, improvements to the infrastructure, and lowering of the U.S. trade deficit. According to the U.S. Geological Survey, in 2011 the U.S. was a net importer of gold, most of which is sold on the international market for bullion, jewelry, and arts, and some of which is sold for its conductive and non-corrosive qualities in computers and other electronics, for its heat-reflecting quality as a coating on windows, and for use in dental work.

Through a survey conducted early in 2012, the Nevada Division of Minerals (NDOM) collected data for the Nevada Bureau of Mines and Geology Special Publication P-23, *Major Mines of Nevada 2011*. 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 are available free of charge on the World Wide Web (www.nbmng.unr.edu), as are the contents of this report. The data from the NDOM survey are used in this publication and, along with information from other sources, are used to update, revise, and check preliminary statistics collected and released by the U.S. Geological Survey.

The section on **Metals** and the tables of **Major Precious-Metal Deposits** and **Other Metallic 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 continues to be the leading commodity produced in Nevada. Production of gold in 2011 came from 20 major mining operations. The Carlin trend in northeastern Nevada accounted for 36% of the total production, down from 41% in 2010 and about 50% in recent previous years. Ten mining operations not on the Carlin trend each produced over 100,000 ounces of gold from mostly multimillion-ounce deposits, many of which are of the Carlin type.

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 approximately 167,000 metric tons (5.3 billion troy ounces). Although this seems like a large quantity,

all the gold ever mined would fit into a cube only 20.4 meters (67 feet) on a side. Interestingly, about 85% of that gold is still in use (in bullion, coins, jewelry, electronics, etc.), and most gold currently being used will be recycled. Through 2011, cumulative gold production in Nevada (beginning with the Comstock Lode in 1859) stands at 6,141 metric tons (197.44 million ounces). Cumulative Nevada gold production will reach the milestone of 200 million ounces in 2012. Remarkably, 87% has been produced since the Carlin Mine began production in 1965; 85% has been produced during the current boom from 1981 to the present; and 32% has been produced in the last ten years. Cumulative U.S. production, primarily since 1835, is approximately 17,200 metric tons (561 million ounces or approximately 10% of total world gold production), and total Nevada production is 3.8% of cumulative world production. The Carlin trend alone accounts for 1.5% of all the gold ever mined in the world. By the end of 2011, cumulative production from the Carlin trend had reached 2,435 metric tons of gold (78.3 million ounces), assuring its place as one of the most productive gold-mining districts in the world.

Nevada continues to be in the midst of the biggest gold boom in U.S. history (figs. 2, 3). 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 gold occurs primarily in grains that are too small to be visible to the naked eye. These deposits are mostly in Nevada. The U.S. production so far in the current boom, the period since 1981, has been 240 million ounces. This is significantly greater than the total U.S. production during the era of the California gold rush (1849 to 1859, with 29 million ounces, although some estimates of unreported production may bring that figure up to 70 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 byproduct gold production from copper mines in Arizona and Utah contributed to cumulative production of 95 million ounces. U.S. production in the period from 2002 through 2011 alone was 91 million ounces. The current boom is bigger than previous booms not only in terms of cumulative production but also in terms of

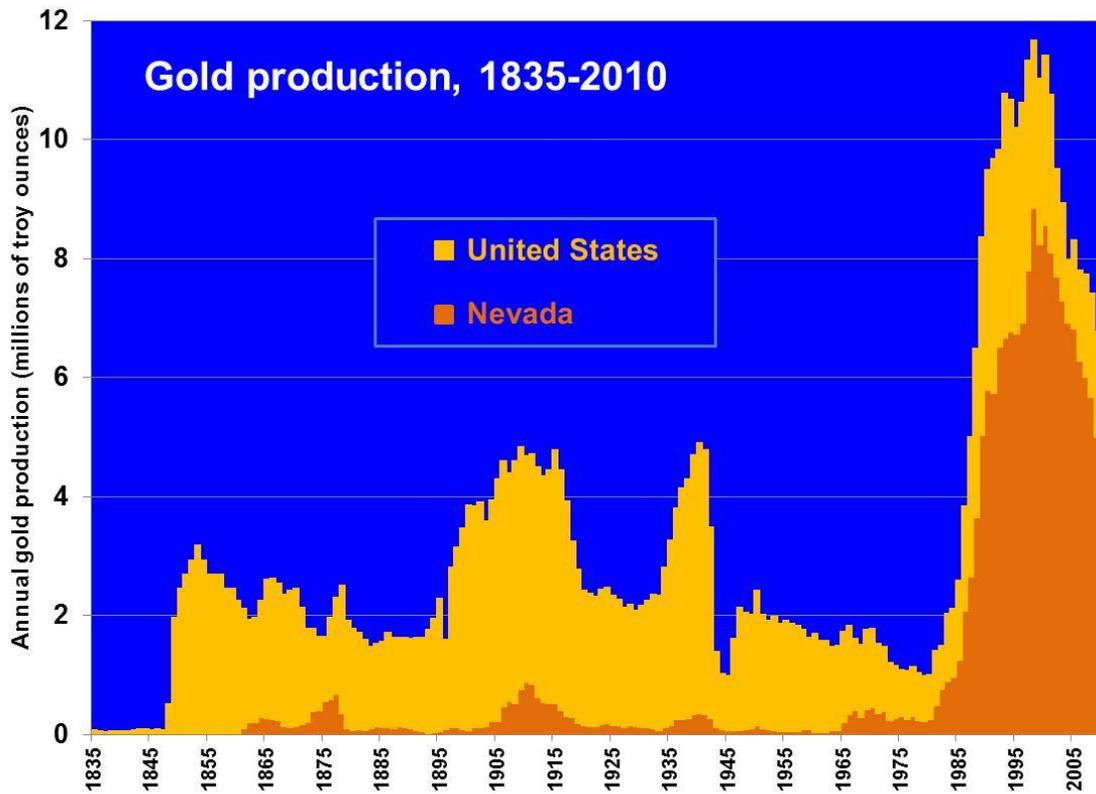


Figure 2. Graph of historical U.S. and Nevada gold production since 1835.

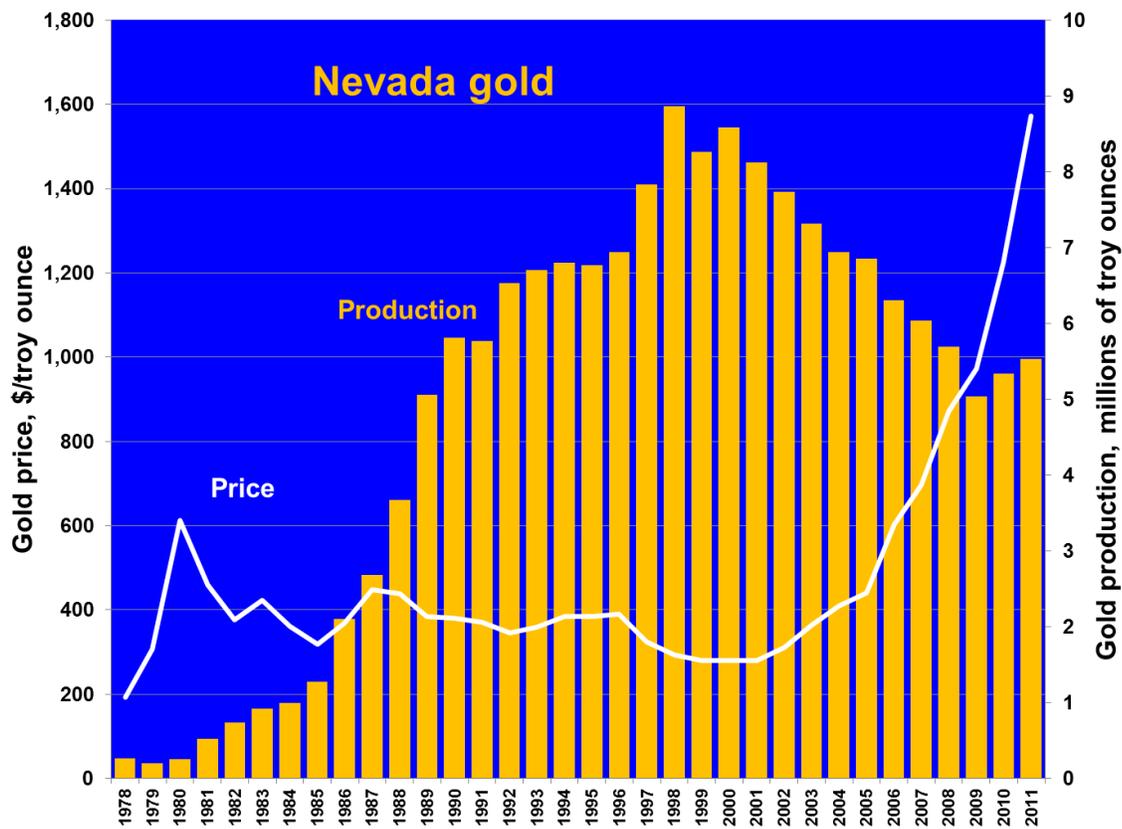


Figure 3. Graph of Nevada gold production and price of gold (US dollars per troy ounce) from 1978 to 2011.

peak annual production (11.6 million ounces in 1998 versus 4.8 million ounces in 1909, 2.6 million ounces in 1866, and 3.1 million ounces in 1853) and duration (at least 32 years for the current boom versus no more than 24 years for any of the earlier booms).

In 2011, gold production from Barrick Gold Corporation's Pipeline and Cortez Hills mines at their Cortez operations (1,421,039 ounces) surpassed for the first time production from its Carlin trend mines (1,087,391 ounces). Other large gold operations were Newmont Mining Corporation's mines on the Carlin trend (917,973 ounces) in Eureka and Elko Counties, Newmont's Twin Creeks mine (484,449 ounces) in Humboldt County, and the Kinross-Barrick Smoky Valley joint venture Round Mountain mine (360,020 ounces) in Nye County. Combined,

Barrick and Newmont accounted for 87% of Nevada gold production in 2011.

Much of Nevada's silver production in 2011, which totaled 7.14 million ounces, was a co-product or byproduct of gold mining (fig. 4). With a ratio of value (average price of gold to average price of silver) of 45:1 in 2011, only those deposits with more than 45 times as much silver as gold can be considered primary silver deposits. Only one such deposit operated in Nevada in 2011—the Coeur Rochester Mine in Pershing County (with a silver-to-gold production ratio of 222:1 and total silver production of 1.26 million ounces). It produced 19% of Nevada's silver in 2011. Nevada's silver production in 2011 accounted for 20% of the U.S. total and 0.9% of the world total.

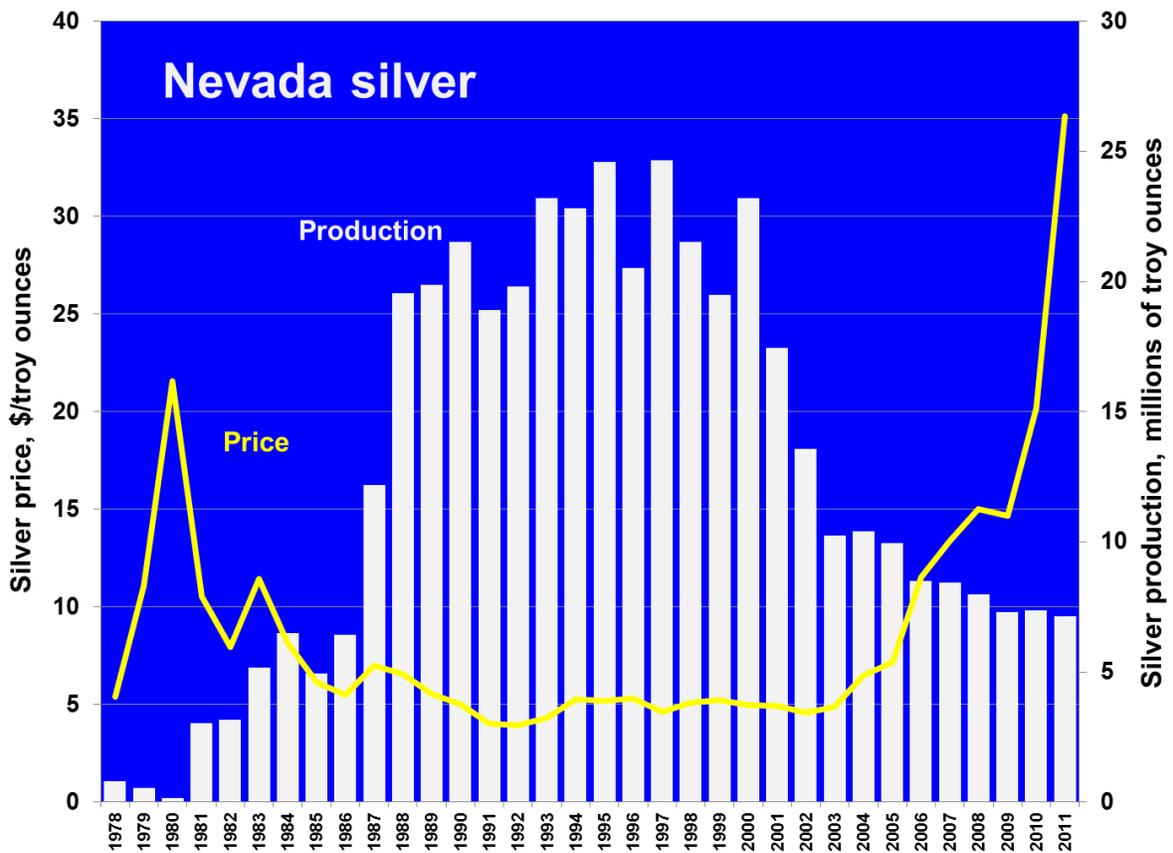


Figure 4. Graph of Nevada silver production and price of silver (US dollars per troy ounce) from 1978 to 2011.

Nevada's copper production (fig. 5) was dominated by the Robinson copper-gold-silver-molybdenum mine, operated by KGHM International, LTD. near Ely in White Pine County. Byproduct copper was also produced at Newmont's Phoenix project near Battle Mountain in Lander County. The Robinson mine was largely responsible for the 223% increase in molybdenum production in 2011.

Exploration activity in 2011 is summarized in the section on **Metals**. Most exploration focused on gold, which maintained high prices throughout the year; some companies explored for copper, molybdenum, silver, lithium, limestone for cement, diatomite, uranium, and rare earth elements. The average gold price in 2011 was \$1,572 per ounce, a 28% increase over 2010. Gold's continued rise in price and an improving global economy have stimulated exploration.

New discoveries and promising drilling results were reported in several districts. To help guide exploration for concealed deposits below alluvial or young volcanic cover, geologists are successfully employing various geophysical methods (seismic, electrical, magnetic, gravity). Exploration activity, including new claims staked, was reported in most of

Nevada's 17 counties (fig. 6). Advanced exploration projects show promise for major developments, particularly for gold along the Carlin and Battle Mountain-Eureka (Cortez) trends in Eureka and Elko Counties and in the Pequoop Mountains in Elko County, in the Yerington district in Lyon County (at the Pumpkin Hollow copper-iron deposits and at the Ann Mason and MacArthur copper deposits) and at the Mount Hope molybdenum deposit in Eureka County.

According to a survey of exploration activities for metals, industrial minerals, geothermal energy, and oil and gas by the Nevada Mines and Geology (J.L. Muntean, L.J. Garside and D.A. Davis., Nevada Exploration Survey 2011, available at <http://www.nbmjg.unr.edu/dox/es2011.pdf>), exploration expenditures totaled at least \$674.7 million in Nevada in 2011, with over 80-90% of this amount for gold. According to the report, exploration expenditures are projected to remain at similar levels in 2012. The Bureau of Land Management's LR2000 database indicated 209,113 active mining claims at the end of 2011. The number of mining claims has held steady for the last 5 years.

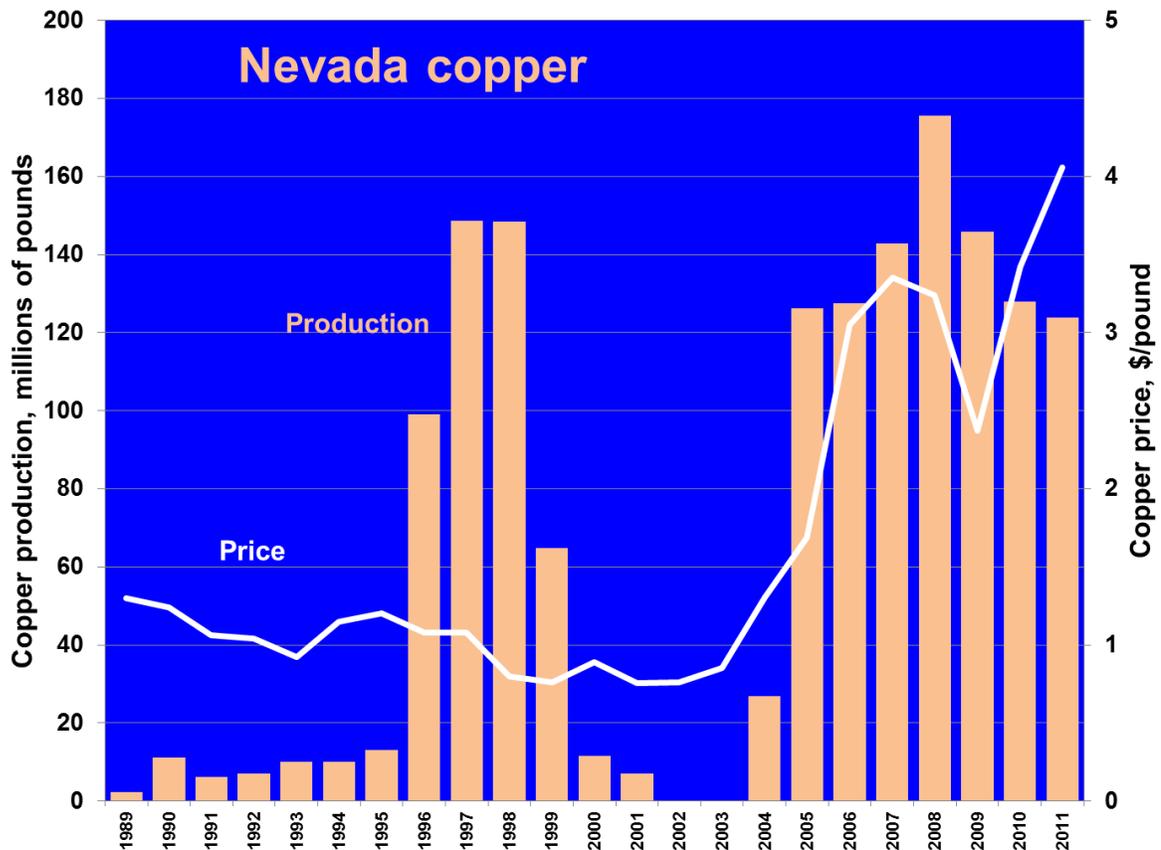


Figure 5. Graph of Nevada copper production and price of copper (US dollars per pound) from 1989 to 2011.

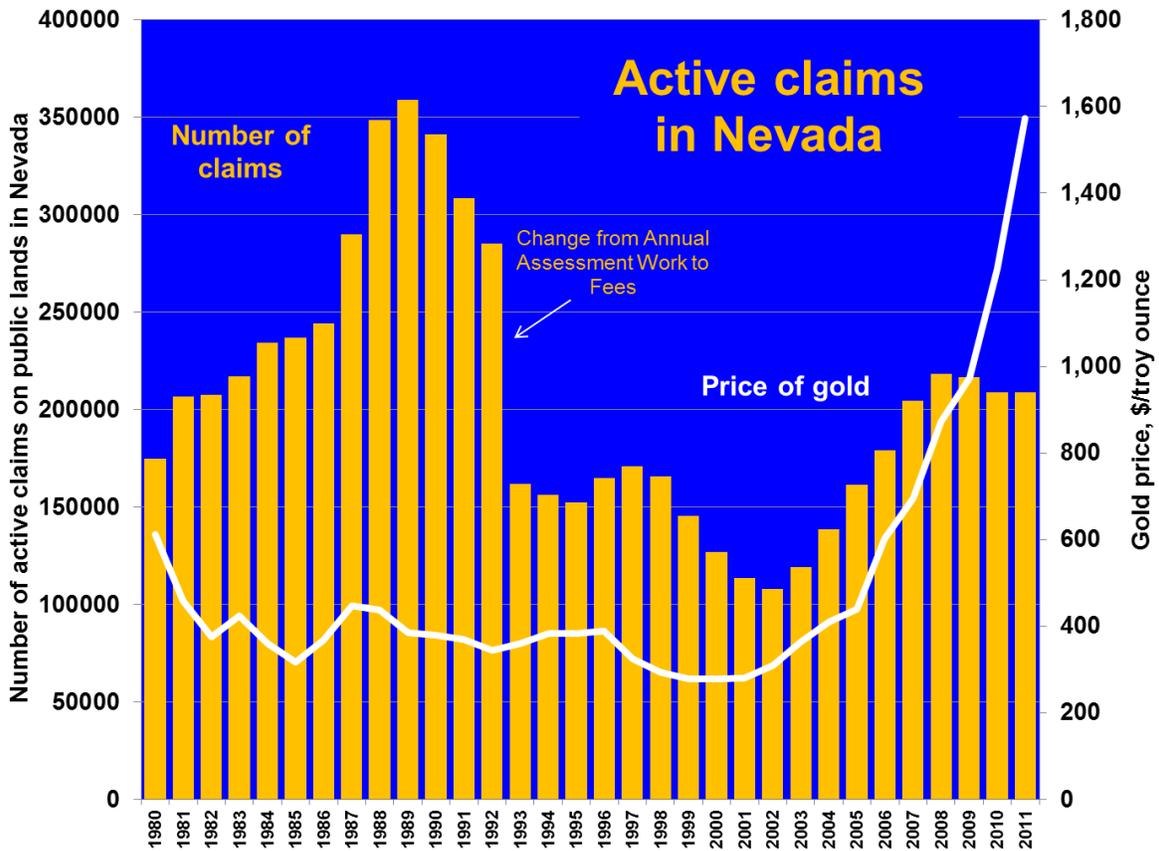


Figure 6. Graph of the number of active mining claims in Nevada from 1980 to 2011. For comparison, the price of gold (US dollars per troy ounce) over that period is shown as well.

The section on **Industrial Minerals** covers developments during 2011 and gives details on important commodities produced from or processed in Nevada, including aggregate, barite, cement, clays, diatomite, dimension stone, dolomite, gypsum, lime, limestone, lithium, magnesite and brucite, perlite, potassium, alum (kaolinite), pozzolan, salt, semiprecious gemstones (opal and turquoise), silica, and zeolites.

Aggregate production declined slightly from 2010 to 2011 (fig. 7). As a result of Nevada's expanding population and need for construction materials for homes, schools, streets, highways, airports, resort hotels, and other businesses, it had been increasing until the recession hit Nevada particularly hard.

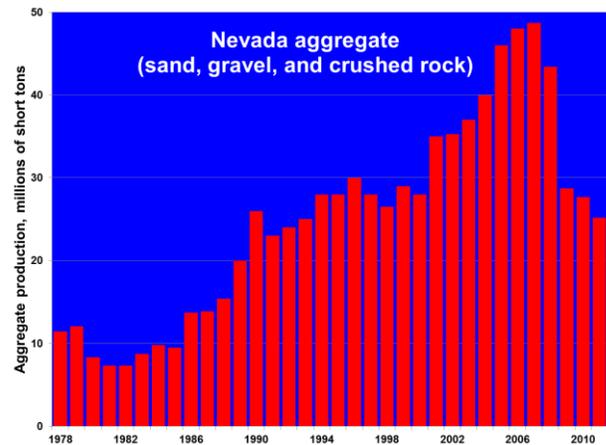


Figure 7. Chart showing estimated annual production of aggregate in Nevada from 1978 to 2011.

Similarly, the production of gypsum declined in 2011, relative to 2010, because of the continuing effects of the economic recession on construction in Nevada and California. Nonetheless, demand for construction raw materials is likely to remain strong because of Nevada's population and need for highways. The U.S. Census Bureau (www.census.gov) reported Nevada's population as 2.701 million in 2010, up 35% from 1.998 million in the 2000 census.

Chemetall Foote Corporation's Silver Peak lithium operation in Clayton Valley, Esmeralda County, where subsurface brines are evaporated on a playa, is the nation's only domestic lithium producer. Similarly, Premier Chemicals' (now Premier Magnesia) Gabbs Mine in Nye County is currently the nation's only hard-rock producer of magnesite. Four major operations in Lander and Elko Counties combined to produce most of the barite mined in the U.S.; production increased 6% in 2011 (fig. 8).

Developments in the geothermal industry are covered in the section on **Geothermal Energy**. Approximately 21 plants operating at 13 sites sold a record amount of electricity in 2011 (fig. 9).

Additionally, geothermal energy is used at numerous places in Nevada for space heating, domestic warm water, recreation, dehydrating vegetables, and other agricultural applications. Programs in the U.S. Department of Energy, energy bills passed by the Nevada and California legislatures, and activities of researchers at the University of Nevada, Reno are stimulating geothermal development in Nevada. One new plant went into production early in 2011 (Ormat's Jersey Valley plant in Pershing County), and several new plants are under construction or planned to meet Nevada's renewable energy portfolio standard.

At a 2005 meeting of a task force set up by the Western Governors' Association to assess geothermal resource potential, geothermal energy experts estimated that by 2025 Nevada could add

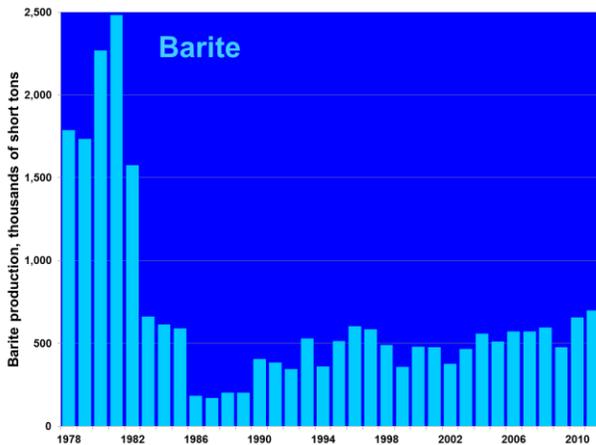


Figure 8. Chart showing annual barite production in Nevada from 1978 to 2011.

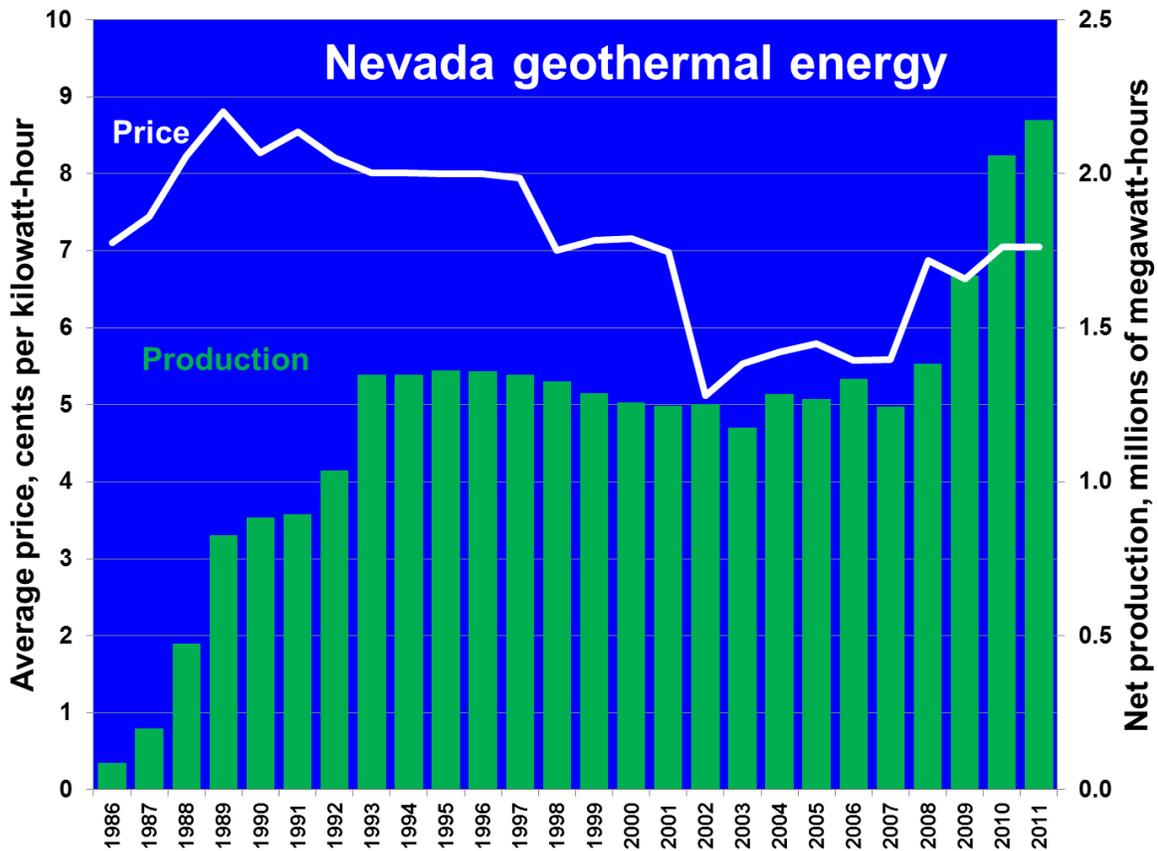


Figure 9. Graph of geothermal energy production from Nevada (millions of megawatt-hours) and price of geothermal energy (U.S. cents per kilowatt hour) from 1986 to 2011.

approximately 1,500 to 2,900 megawatts of geothermal power-generating capacity. If this potential were realized, and if energy prices continue to rise, geothermal power could become a billion-dollar per year business in Nevada. Current projects under development in Nevada should result in construction of between 2,100 and 2,400 megawatts of capacity within 10 years. Production capacity stood at 475.6 megawatts at the end of 2011. Additional maps and data on Nevada's geothermal energy can be found at the Nevada Bureau of Mines and Geology website (<http://www.nbmgs.unr.edu/Geothermal/index.html>)

Nevada has great potential for renewable energy (particularly geothermal, wind, and solar energy for electricity). Currently, of all the energy consumed by people in Nevada, approximately 91.8% comes from fossil fuels (12.6% from coal, 42.7% from natural gas, and 36.5% from petroleum

products). Hydroelectric dams account for 3.6%, followed by geothermal power (2.6%), biomass (1.5%), and solar (0.5%). (Data are from the latest, 2009 statistics of the Energy Information Administration, Table CT2, <http://www.eia.gov/>). New solar plants are being constructed, primarily in southern Nevada, and new wind farms are planned for several areas.

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 \$28.9 million in 2011) is a minor part of U.S. production. The amount of Nevada oil production decreased slightly from 2010, and no new fields were discovered (fig. 10). Small amounts of co-produced natural gas are used to fuel equipment used for oil production. The value of Nevada oil production increased from 2010 to 2011 as a result of higher oil prices.

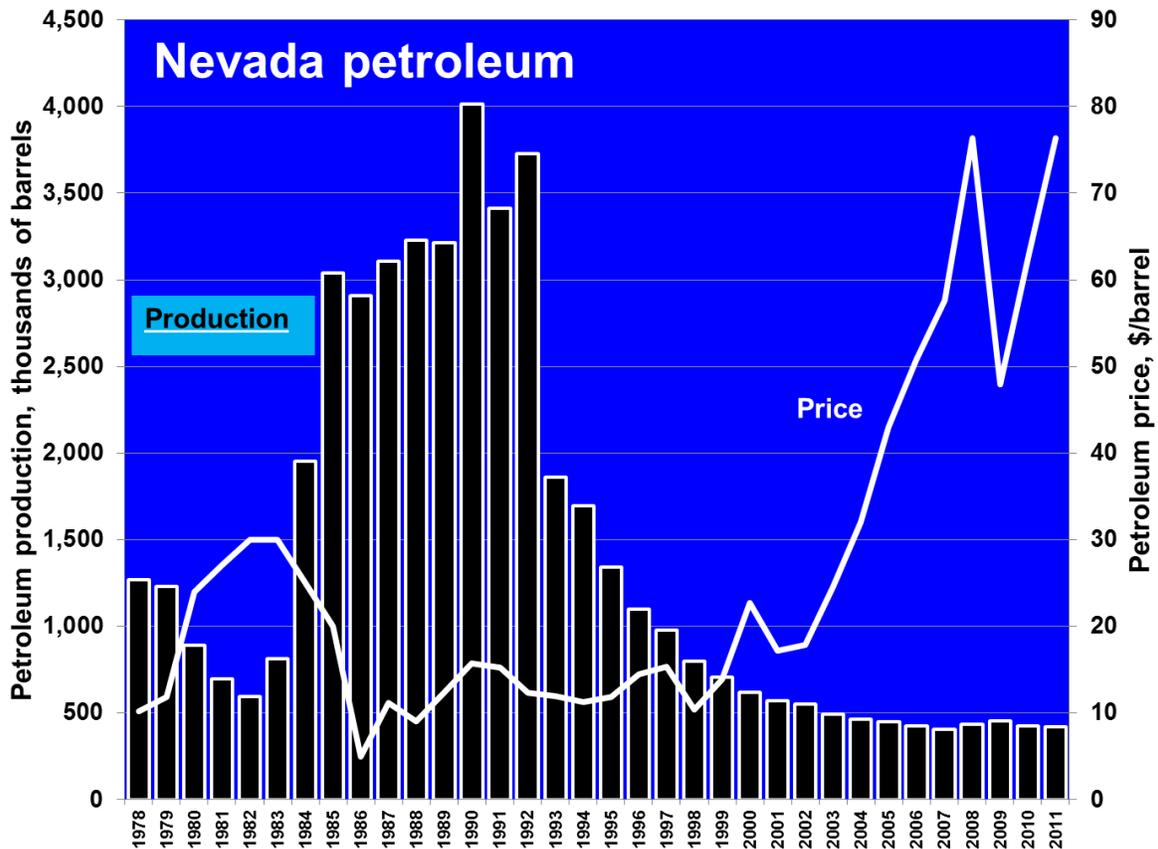


Figure 10. Graph of petroleum production from Nevada (thousands of barrels) and price of geothermal energy (U.S. dollars per barrel) from 1978 to 2011.

In 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 estimated 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. In 2011, the Nevada Bureau of Mines and Geology released Open-File Report 11-2, *Qualitative Petroleum Potential Map of Nevada* (available at http://www.nbmj.unr.edu/dox/of112_text.pdf) and <http://www.nbmj.unr.edu/dox/of112.pdf>), which highlights areas of relative potential for discovery of oil in Nevada, based primarily on the presence and thermal maturity of likely source rocks.

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 14 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, Nevada has the

potential for discovery of more multimillion-barrel fields. Five wells were permitted for oil and gas in 2011, up from four permitted in 2010. Four wells were spudded in 2011, the same number as were spudded in 2010. Drilling was completed on two of these wells in 2011, and both were shut in. In addition, Noble Energy Inc., a medium-sized oil company began purchasing land in Elko County with the hope of finding oil and gas in the Tertiary shales with hydraulic fracturing technology, which is revolutionizing the oil and gas industry throughout the United States.

Local economies benefit from mining in Nevada. Construction of new homes, hotels, casinos, other businesses, schools, and roads requires 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 16,177 people in 2011 (including oil; according to the Nevada Department of Employment, Training and Rehabilitation, <http://www.nevadaworkforce.com/>), and the industry is responsible for another 65,000 jobs related to providing the goods and services needed by the industry and its employees (M. Visser and A.R. Coyner, 2011, *Major Mines of Nevada 2011*, Mineral Industries in Nevada's Economy, Nevada Bureau of

Mines and Geology Special Publication P-23, 28 p.; available at www.nbmjg.unr.edu/dox/mm/mm10.pdf). Of these, companies directly employed 1,040 people in 2011 to carry out exploration for minerals and energy in Nevada, mainly for gold (J.L. Muntean, L.J. Garside, and D.A. Davis, Nevada Mineral and Energy resource Exploration Survey, 22 p.; available at <http://www.nbmjg.unr.edu/dox/es2011.pdf>).

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.nbmjg.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, solar, wind, hydroelectric, and other energy sources. The Nevada Bureau of Mines and Geology supports several interactive maps on the Web that are backed by periodically updated databases on mineral and energy resources and potential, exploration activity, land ownership and restrictions, and other geographic information.



Photo of the Round Mountain open pit. Photo courtesy of Steve Howell.

CONVERSION FACTORS

1 metric ton = 1.1023113 short ton = 1,000 kilograms = 2,204.6226 pounds = 32,150.7 troy ounces.

31.1035 metric tons = 1 million troy ounces (31.1035 grams = 1 troy ounce).

453.592 grams = 1 pound (avoirdupois) = 16 ounces (avoirdupois) = 14.5833 troy ounces.

34.2857 grams per metric ton = 34.2857 parts per million by weight = 1 troy ounce per short ton.

Metals

by David A. Davis and John L. Muntean

PRODUCTION

Nevada produced 5,536,482 ounces of gold, 7,141,489 ounces of silver, 123,791,237 pounds of copper and 1,910,162 pounds of molybdenum from 27 active mines in 2011. Production of two of these four metals increased from 2010, a 3.7% increase for gold, and a 223% increase for molybdenum. Silver production decreased 3.2%, and copper production decreased 3.0%.

Gold production increased for the second year in a row after a nine-year decline in production. Based on the number of projects that are planned to be made into mines, gold production is anticipated to continue to increase in the near term. The Carlin trend helped Barrick Gold Corp. and Newmont Mining Corp. continue their dominance of Nevada's gold production. Barrick and Newmont accounted for 87% of production in 2011, up from 81% in 2010. The Carlin trend share of gold production decreased to only 36% of Nevada's total production, and has been declining annually since 2008 when the share was 54%. The decreasing share of the production from the Carlin trend is due largely to a major increase in the already considerable production from the Cortez mine; major increases in production of smaller mines such as Bald Mountain, Marigold, and Ruby Hill; and an 8% decrease in production along the trend, from 2,174,219 to 2,005,364 ounces. The increase in Barrick and Newmont's share of the ounces produced is mainly due to increased production from the Cortez area, and an overall 6% decrease production from properties not owned by Barrick and Newmont, despite modest increases in production at Hycroft, Marigold, and Jerritt Canyon.

Barrick remained the leading producer of gold in 2011, with production coming from its Goldstrike, Bald Mountain, Ruby Hill, Cortez, and Turquoise Ridge mines (75% share), plus its 50% share of the Round Mountain mine's production and 33% share of the production from the Marigold mine. The company's production increased 8% from 2010, to 3,092,704 ounces of gold. Most of this increase was the result of a 25% upsurge in production to 1,421,039 ounces from its cluster of open pit and underground mines at Cortez, one-quarter of Nevada's output. The surge in production at Cortez was primarily due to a 41% increase in production from open-pit mining at the Cortez Hills deposit.

Newmont produced 1,782,458 ounces of gold, a 0.8% increase from 2010, from seven open pit and eight underground mines. Underground mines accounted for 23% of the total production. Newmont reported production from its Carlin trend mines and from the Twin Creeks, Phoenix, and Midas Mines, plus its 25% share of the Turquoise Ridge mine. The slight increase in production was due to commencement of production at

the Exodus and Pete-Bajo underground mines and the Pay Raise and Widge open pit mines; increases in production at Lantern, Twin Creeks, and Turquoise Ridge; and re-leaching of ore at Lone Tree. Production also resumed at Gold Quarry after remediation of a giant pit wall failure in December 2009. Production ended at the Deep Star underground mine in 2011 and is due to end at Widge in 2012, and East Carlin in 2013. However, the company expects to more than make up for it with the projected opening of the Emigrant open pit mine in 2012. Production, which was halted at the Chukar underground mine due to the pit wall failure at Gold Quarry, is due to resume in 2012. The BLM approved the Newmont's Genesis Project which will involve the resumption of mining at the Silver Star (formerly Genesis) open pit.

In 2011, Jipangu, Inc., shut down the Florida Canyon Mine, and moved production to the nearby Standard Mine. Gryphon Gold's Borealis Mine and Scorpio Gold's Mineral Ridge Mine began pre-production in 2011 with possible full production to start in 2012. Klondex Mines Ltd. officially began mining at its underground Fire Creek Mine with production set for the middle of 2012. At Jerritt Canyon, Starvation Canyon, Murray, Burns Basin, and Wright Window are scheduled to commence production in 2013. Other gold mines that are in the permitting or development stages and should begin production in 2012 or 2013 include the Gold Hill deposit near Round Mountain (50% Kinross Gold Corp., 50% Barrick), Comstock Mining's Lucerne deposit in Storey County, Atna Resources Ltd.'s Reward deposit near Beatty in Nye County and its Pinson deposit in Humboldt County, and Imperial Metals Corp.'s underground Sterling deposit near Beatty. All bodes well for annual increases in gold production in Nevada for at least the next few years.

Newmont was the leading silver producer in 2011, producing 3,032,367 ounces, primarily from its Midas and Phoenix mines, a 0.9% increase from 2010. Coeur d'Alene Mines Corp. produced 1,392,433 ounces of silver from the Rochester mine, where mining stopped in 2007 but recommenced in February 2011. Production was by recovery from the leach pads during that period. KGHM International's (formerly Quadra FNX) Robinson mine produced 81% of Nevada's copper in 2011, which amounted to 99,893,372 pounds, an 8.3% decrease from 2010. Newmont's Phoenix mine made up the balance of the 2011 copper production, producing 23,897,865 pounds, a 26% decrease from 2010. Newmont is in the process of permitting a copper-leach circuit at Phoenix, which should increase production starting in 2014. KGHM International reported 1,261,309 pounds of molybdenum from its Robinson Mine in 2011, a 234% increase from 2010. Win-Eldrich Mines Ltd. Reported 648,853 pounds of molybdenum production in 2011 from its underground Ashdown mine, a 189% increase from 2010.

EXPLORATION

Exploration in Nevada continued to rebound in 2011. Nevada county recorders registered 196,977 claim filings in fiscal year 2011, a 3.8% increase from fiscal year 2010 (which started in July 2009). These included new claims and annual maintenance of existing claims. The distribution of active claims, as of the end of 2010, is shown in figure 1. The U.S. Bureau of Land Management (BLM) listed 27,703 new claims that were located in calendar year 2011 and still active at the end of 2011 (fig. 2), a whopping 37% increase from 2010. Table 1 shows the ten companies that staked the most claims in 2011.

At least 130 projects were drilled in 2011, compared to 99 in 2010 and 64 in 2009. Table 2 shows the breakdown of the drill projects by size of company and size of drill program. Four “major” companies—Barrick, Newmont, Kinross Gold Corp., and Goldcorp Inc.—and ten “mid-tier” companies drilled at least 37 projects in 2011¹. The mid-tier companies included Agnico-Eagle Mines, Ltd., Allied Nevada Gold Corp., Atna Resources Ltd., Centerra Gold Corp., Coeur d’Alene Mines Corp., Great Basin Gold Ltd., Imperial Metals Corp. International Minerals Corp., Quadra FNX Mining Ltd (now KGHM International, Ltd.), and Yamana Gold Inc. The remaining 93 projects were drilled by 58 different “junior” companies. Although junior companies still experienced difficulties raising money to finance drilling in 2011, they drilled 50% more projects than they did in 2010 and almost four times as many as in 2009. Importantly, the number of major drill programs completed by junior companies increased from 8 in 2010 to 29 in 2011. Actually, more than the 130 projects reported here were likely drilled in 2011, especially small drill programs carried out by major or mid-tier companies, because these companies only occasionally release information on such projects. Figure 3 shows the distribution of projects across the state, which were drilled in 2011. For comparison figure 4 shows the distribution of projects in 2010. Comparison of the two figures shows a noticeable increase in the number of drill projects in Elko and Esmeralda Counties in 2011.

¹ The classification of companies into major, mid-tier, or junior in this section of the report is arbitrarily based on gold production and market capitalization. The loose criteria are as follows: 1) major companies produce greater than 1 million ounces of gold worldwide, and have market capitalizations of over \$3 billion, 2) mid-tier companies produce between 50,000 and 1 million ounces of gold and/or have market capitalizations less than \$3 billion but more than \$500 million, and 3) junior companies produce less than 50,000 ounces of gold and/or have market capitalizations less than \$500 million.

The main exploration objective in Nevada continued to be gold. Only 17 of the 130 projects drilled

in 2011 targeted metals other than gold. Eleven were drilled primarily for copper with most also being tested for molybdenum and some for gold and silver. These included Contact (International Enxco Ltd.), New Boston (Pilot Gold Corp.), Copper Basin (Newmont Mining Corp.), Pine Tree (IEMR Resources Inc.), the Robinson mine (Quadra FNX), Dolly Varden (Viking Minerals), Majuba Hill (Max Resource Corp.) and four in the Yerington district—Ann Mason (Entrée Gold Inc.), MacArthur and Yerington (Quaterra Resources Inc.), and Pumpkin Hollow (Nevada Copper Corp.). Silver projects drilled in 2011 included Nivloc (International Millennium), Silver Queen (MGold Resources), Taylor (Silver Predator, Inc.), Rose Mine (Navaho Gold Ltd.), and Rochester (Coeur d’Alene Mines Corp.). At Rochester, Coeur shifted from ore control to exploration and conducted drilling programs in the Nevada Packard area and on the LM target just northwest of the Rochester Mine. The Alibisu project in northern Humboldt County was drilled for uranium by Concordia Resource Corp. Important molybdenum projects that were not drilled in 2010 or 2011 were General Moly Inc.’s Mount Hope project north of Eureka and its Liberty project north of Tonopah. General Moly continued its aggressive permitting and financing efforts at Mount Hope in 2011. Except for releasing a new technical report, the company continued to leave Liberty idle for the time being.

The major companies that drilled for gold in 2011 continued to focus on its active mine sites. Barrick carried out major drill programs at Bald Mountain, Cortez, Goldstrike, Meikle, Rodeo, and Turquoise Ridge. At Turquoise Ridge, Barrick kept twelve drill rigs busy defining and updating reserves and resources in support of the prefeasibility study of developing a large-scale open pit to mine the lower grade mineralization that envelops the high-grade ores currently being mined underground. In the Bullion and Cortez districts, the company also conducted a major drilling of the Gold Acres, Pipeline, and Cortez Hills area and revised and upgraded existing resources in those areas. The company announced two gold discoveries, Red Hill and Goldrush, about four miles southeast of the Cortez Hills Mine and continued drilling them. The company also spent \$7.6 million and continued drilling on the Spring Valley project (joint venture with Midway Gold Corp.) located near the Rochester mine in Pershing County. Newmont focused much of its effort on drilling the northern Carlin Trend, including Leeville, Mike, Turf, and Exodus. The company spent \$52 million alone on underground development at Leeville and Turf. In addition, the company spent \$7 million at Twin Creeks and continued drilling the Fiberline deposit located adjacent and below the east high wall of the Megapit. Newmont acquired Fronteer Gold, Inc., in April which included the Long Canyon deposit. The company conducted a large drilling program at Long Canyon and issued a technical report for an open pit mine and processing facilities, with mining potentially starting in 2015. The company also continued exploration and

drilling at Phoenix and Copper Basin in the Battle Mountain area and at the Sandman project west of Winnemucca. At Marigold, Goldcorp Inc. conducted development drilling at the Target II, Target III and Red Dot deposits and added 500,000 ounces of gold to the reserve, mainly through the conversion of resources to reserves at Red Dot. Kinross Gold Corp. drilled the Deep Northwest deposit as a potential expansion of the Round Mountain pit. Deep Northwest is directly under the operation's administrative offices, but the price of gold may make moving buildings feasible.

Several major drill programs were conducted by mid-tier companies. At its Hycroft Mine, Allied Nevada Gold Corp. conducted step out drilling of the Brimstone, Central, and Vortex zones, geotechnical drilling on the reserve pit, and condemnation drilling at the proposed West and South Dump and South Leach pad areas. The company also spent \$12.2 million on exploration of the Hasbrouck Mountain property which included drilling at Hasbrouck Mountain and another area within the larger Hasbrouck claim block. At its underground Hollister Mine, Great Basin Gold Ltd. spent \$8 million on exploration which included drilling the Clementine and Southeast Gwenivere vein systems and the Upper Level (formerly Blanket Zone). International Minerals Corp. spent \$4.9 million in the Goldfield district including drilling the Gemfield, Goldfield Main, and McMahon Ridge deposits.

Other drill projects of interest in 2011 include the following. Yukon-Nevada Gold Corp. (now Veris Gold Corp.) conducted a major drill program around its Jerritt Canyon property mainly to convert underground and open pit resources to reserves. The underground resources included East Mahala, Mahala, West Mahala, Starvation Canyon, and MCE. The open pit resources included Burns Basin, Steer Canyon, Pie Creek, and West Generator. Comstock Mining Inc. drilled over 300 holes in 2011 pushing forward its plans to mine the resource it controls on the Comstock. The drilling concentrated on development of the Dayton Resource Area and some infilling and exploration around the Lucerne Resource Area. Bravada Gold Corp. drilled its Wind Mountain property in the San Emidio Desert to further delineate the resource and continued metallurgical studies to see if crushing could improve the economics as compared to the run-of-mine heap-leaching method as proposed in a 2010 Preliminary Economic Assessment. Meadow Bay Gold Corp. drilled its Atlanta property in northern Lincoln County and prepared a 43-101 technical report upgrading the resource for release in 2012. Atlanta was last mined by open pit between 1975 and 1985. Midway Gold Corp. drilled its Pan property in the Pancake District and

released a 43-101 feasibility study for a potential open pit. Timberline Resources Corp. drilled its Lookout Mountain/South Lookout Mountain project in the Ratto Canyon area in the south part of the Eureka district and prepared a 43-101 technical report upgrading the resource. US Gold Corp. (now McEwen Mining, Inc.) drilled its Gold Bar Complex focusing on the extensions to the Gold Pick, Gold Ridge, and Cabin Creek mineralization in Eureka County. US Gold Corp. also continued its drilling program on its Limousine Butte (Limo) project focusing on the Cadillac and Continental targets in White Pine County.

The average price of gold price hit \$1,571.52 per ounce in 2011. Gold prices fluctuated throughout 2011 peaking at \$1895 per ounce in early September but ending the year at \$1531 per ounce. Still, the 2011 average price marks a 28% increase from 2010 and a 463% increase since 1998 when the price had its last major "bottoming out" at \$278.98 per ounce and has increased annually since then. At the prices of the last several years, many projects long considered "dogs," as well as some new deposits in Nevada, have a very good chance of being put into production in the near future. Not counting resources around operating mines, 28 new resource estimates were released in 2011 or early 2012, driven mainly by the high gold price. Nine were upgrades from the previous year and include Buffalo Valley, Dayton Resource Area, Gold Bar, Goldfield Main, Lucerne Resource Area, Pan, Pine Grove, Reward, and South Arturo. Twelve were new resource estimates that superseded those done between 2003 and 2009 and include Afghan, Converse, Gemfield, Hasbrouck, McMahon Ridge, Midway, Mount Hamilton, North Bullfrog, Pinson, Robertson, Sleeper, and Wind Mountain. Three were new resources that superceded estimated done in the 1980s and 1990s and include Atlanta, Gold Rock (Easy Junior), and Longstreet. Four were resources for either new deposits or deposits worked in the distant past and include Goldfield West, Lookout Mountain, Nivloc, and Red Hill/Goldrush.

Exploration activity is summarized on pages **28-48** by county and mining district. Projects that were drilled in 2011 are emphasized. Please refer to NBMG Report 47, "Mining Districts of Nevada", which is available online at <http://www.nbmgs.unr.edu/dox/r47>. Production, reserves and resources of gold and silver are updated in the section **Major Precious-Metal Deposits**. Recent production, reserves, and resources from projects producing or targeting other metals are listed in the section **Other Metallic Deposits**.

Table 1. Claimants that staked the most new claims in 2011.

Claimant	Number of Claims	Main Areas of Staking
SILVER INTERNATIONAL CORP./SILVER VIKING CORP.	3435	1) Lodi and Gabbs Districts, northwestern Nye Co. 2) Troy District, Grant Range, Nye Co. 3) Freiberg District, north end of Worthington Mtns., Lincoln Co. 4) Reveille District in Nye Co. 5) Reese and Berry Mine and McCullough Buttes areas, Fish Creek Range, Eureka Co.
RENAISSANCE GOLD INC.	1230	1) Spruce Mountain District, Elko Co. 2) Arabia District, Pershing Co. 3) Gold Point District, Esmeralda Co. 4) Several other areas
NEWMONT MINING CORP.	1076	1) Long Canyon deposit and Pequop Mountains, Elko Co. 2) Western end of the Delano District, Elko Co. 3) Tybo Canyon, Tybo District, Hot Creek Range, Nye, Co.
BARRICK GOLD CORP.	773	1) Around the Red Hill/Goldrush discovery and east into Horse Valley 2) North end of the Bald Mountain, including northward into Ruby Valley 3) Pediment east of Kinsley District in Antelope Valley, Elko Co.
AURION RESOURCES US LLC	740	1) Pediment east of the Pan gold deposit in Newark Valley, White Pine Co. 2) Quinn Canyon district, eastern Nye Co. 3) Pahrangat District, Lincoln Co.
ODYSSEY MINING & EXPLORATION LLC	584	1) Areas surrounding Winnemucca Lake, Washoe Co.
WEST KIRKLAND MINING INC.	532	1) WK Mining's 12 Mile project located near Murdock Mountain in the Montello District, Elko Co.
ALTAN RIO INC.	496	1) Queen City District, along Highway 375, Nye Co.
PILOT GOLD INC.	491	1) Pilot Gold's Regent project in the Rawhide District in Mineral Co.
GREAT WESTERN MINING CORP.	486	1) Excelsior Mountains and areas surrounding Huntoon Valley, Mineral Co.

Table 2. Breakdown of 2011 Drill Programs.

	Major/Mid-Tiers	Juniors	Total
Major Drill Program	31	29	60
Minor Drill Program	6	64	70
Total	37	93	130

Major programs are arbitrarily defined as ≥25 drill holes.

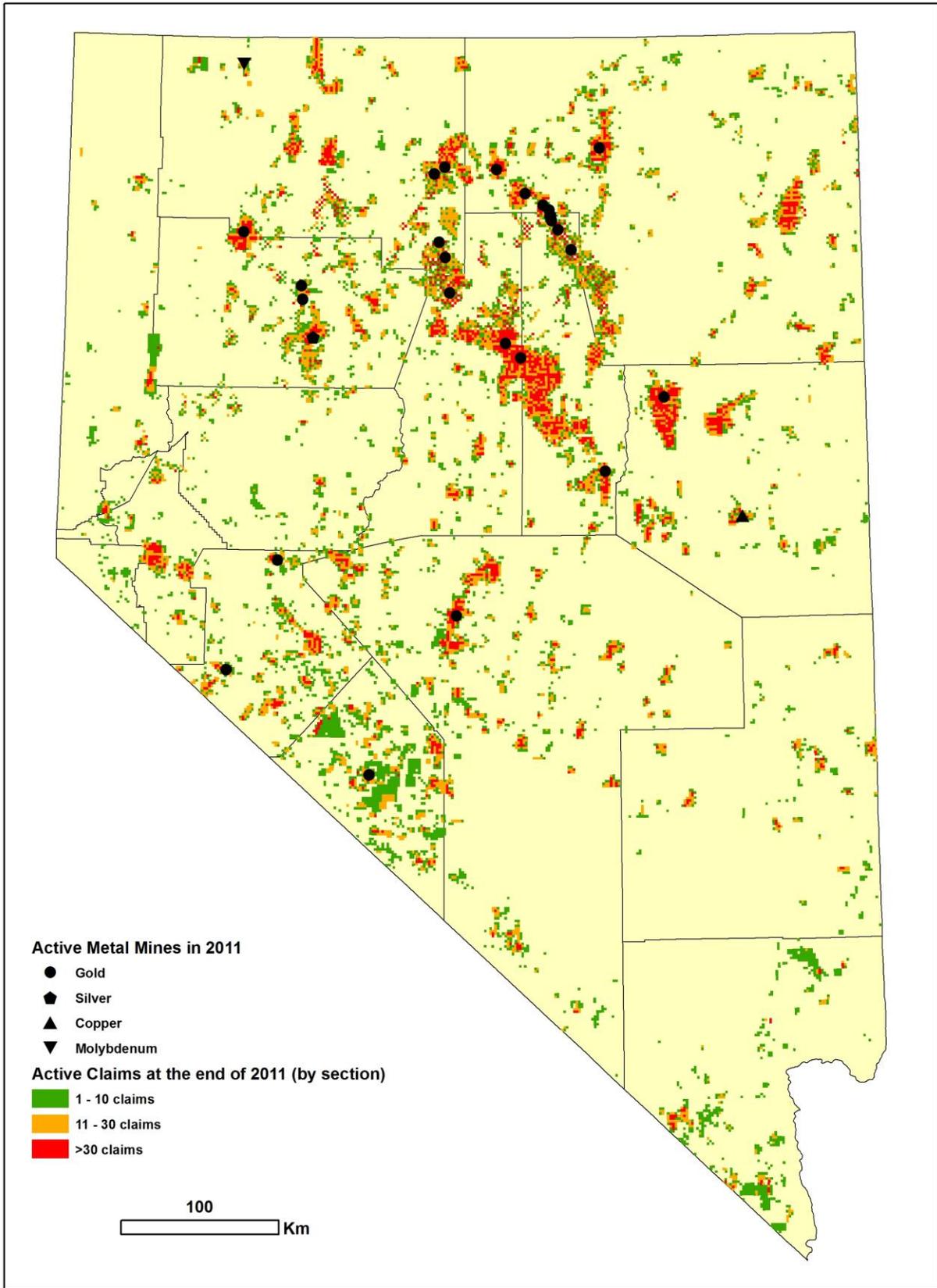


Figure 1. Map showing distribution of active mining claims by township at the end of 2011. Source of data is the U.S. Bureau of Land Management's LR2000 database.

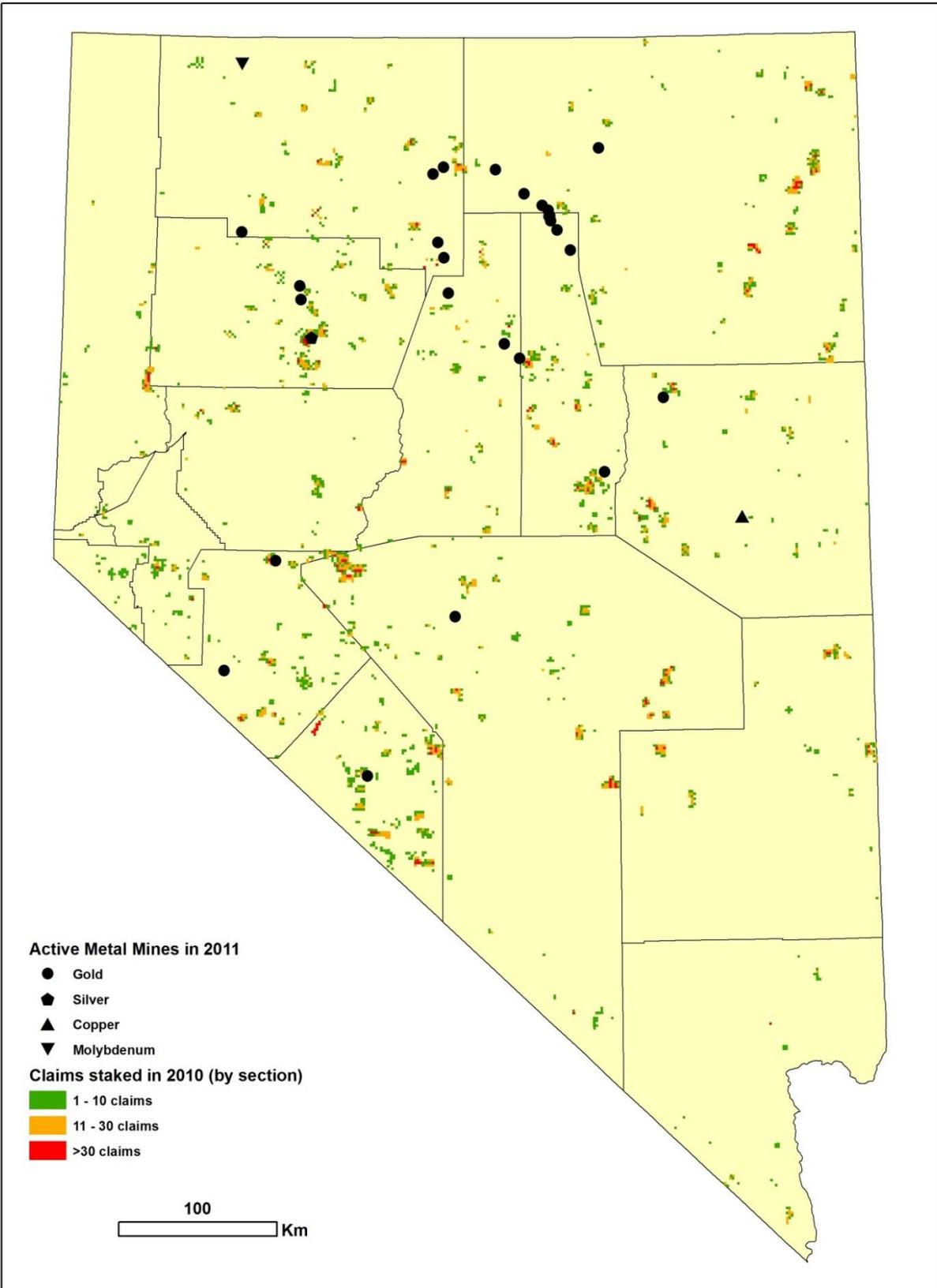


Figure 2. Map showing distribution of active mining claims by township that were staked in 2011. Source of data is the U.S. Bureau of Land Management's LR2000 database.

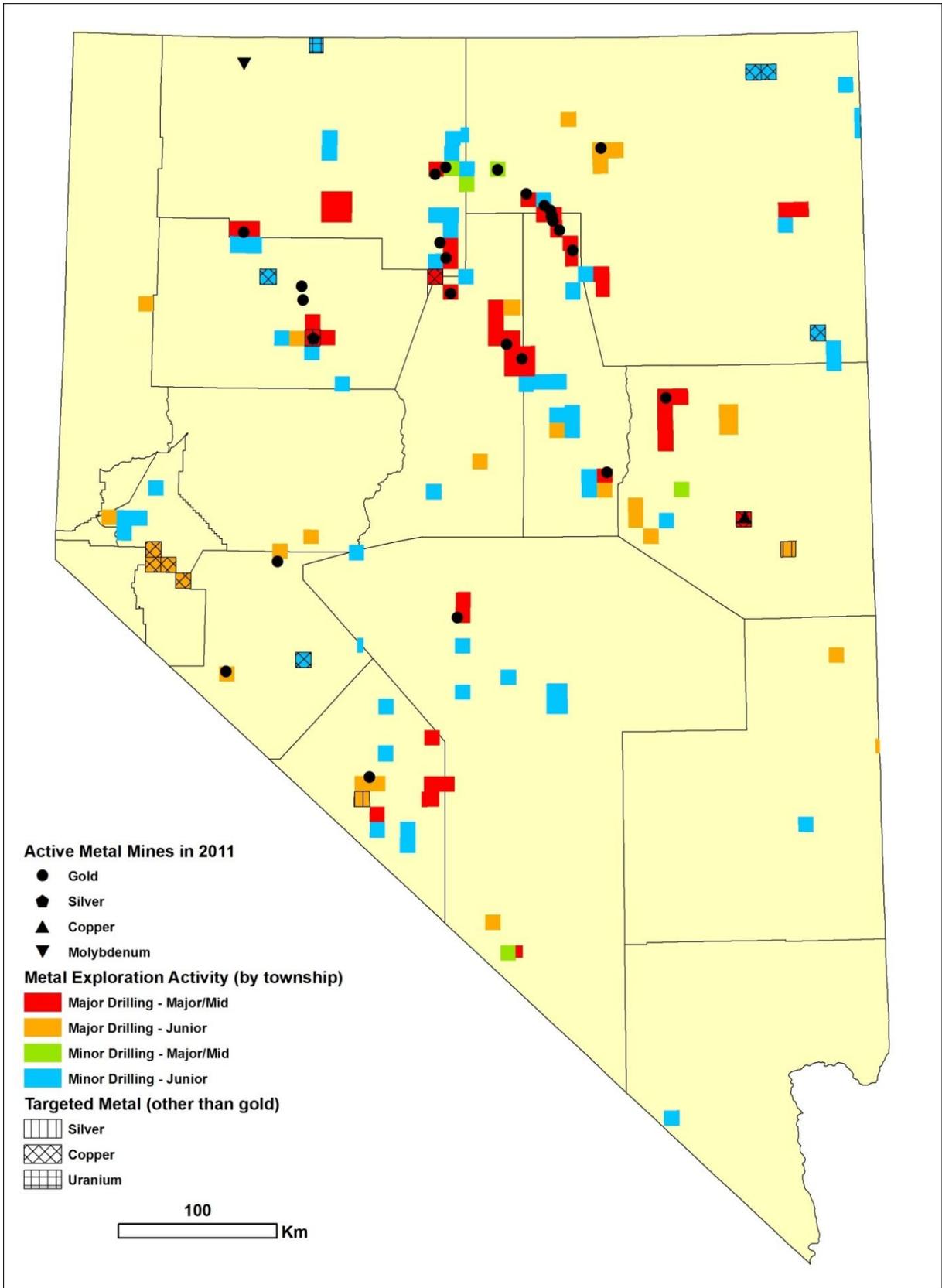


Figure 3. Map summarizing drilling and mine development activity by township in 2011.

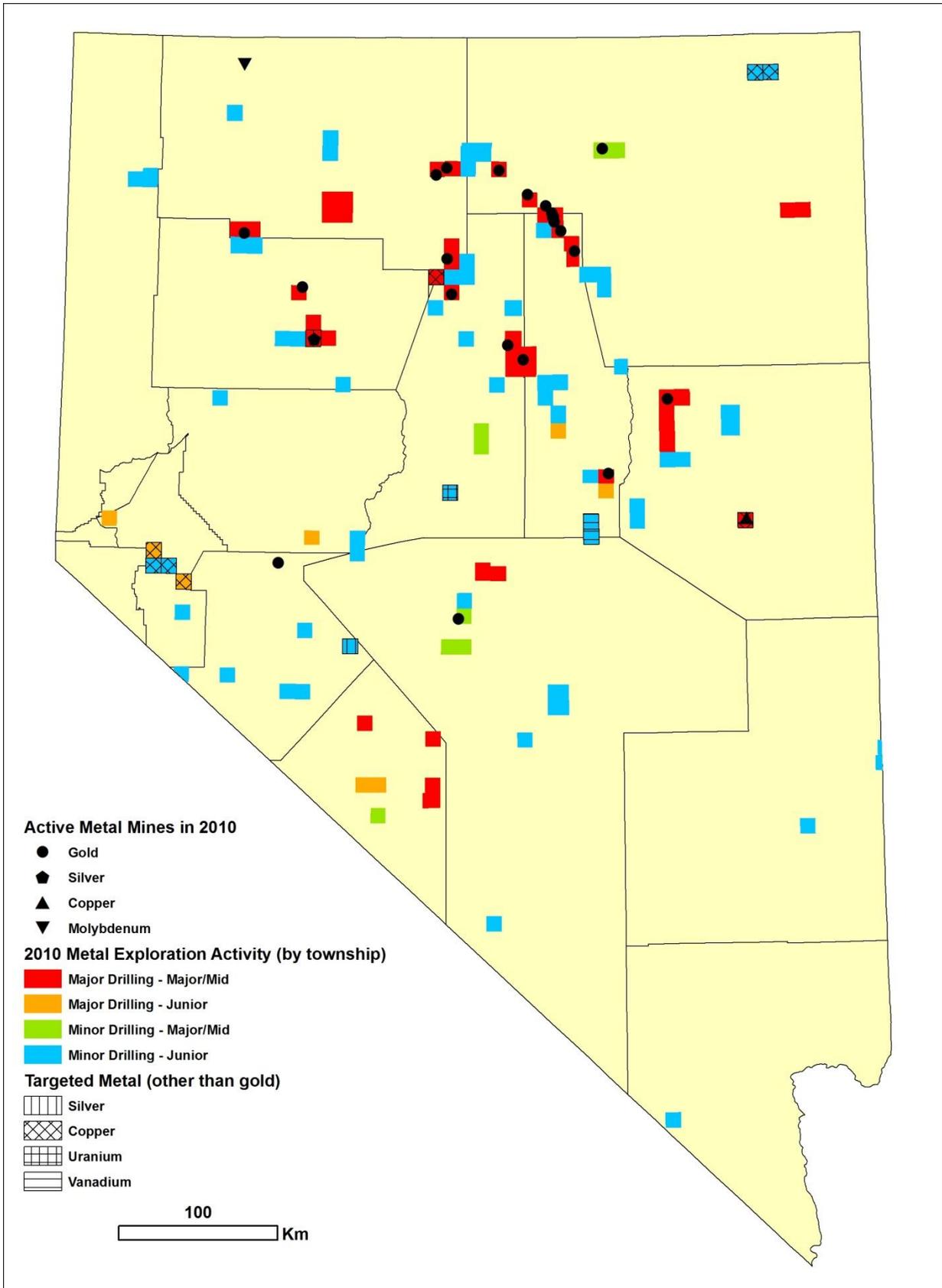


Figure 4. Map summarizing drilling and mine development activity by township in 2010.

CHURCHILL COUNTY

Bell Mountain District

Bell Mountain. Late in 2011, Laurion Mineral Exploration Inc. commenced a program to drill 4,000 feet of reverse circulation holes, 2,700 feet of which were to be drilled on the Sphinx Zone. Three holes were completed on the Sphinx Zone at year's end with the best intercept being 20 feet grading 0.015 opt gold and 0.41 opt silver between 180 and 200 feet. Project geologists examined the East Ridge vein system about one mile east of and on strike with the Varga and Spurr zones. The Varga and Spurr zones had been the targets of a 56-hole program completed in 2010, and the examination was done to establish any continuity between them and East Ridge and to expand the Bell Mountain resource. In 2012, Lincoln Mining Corp. signed a purchase option with Laurion for Bell Mountain. (Laurion Mineral Exploration Inc. news release, 2/17/2011, 11/14/2011, 1/26/2012, 9/13/2012; Laurion website, www.laurion.ca; Lincoln Mining Corp. news release, 9/13/2012)

CLARK COUNTY

Goodsprings District

Boss. As part of an on-going drilling program, Boxxer Gold Corp. completed six more core holes in the Boss Extension copper-gold skarn and the Oro Amigo zone. Five of the holes intercepted multiple intervals of copper-gold-silver mineralization. Though not true thicknesses, the intervals reported varied between 27 and 141 feet. Assays ranged between 0.06% and 0.27% copper, 0.001 and 0.02 opt gold, and 0.015 opt and 0.36 opt silver. DDH-07-2011 also contained intervals assaying 0.043% and 0.053% molybdenum. Copper oxide, malachite, and azurite were visible in some intercepts, and bornite-hematite mineralization was intersected between 774 and 782 feet in DDH-09-2011 on the Boss Extension skarn. At 784 feet in this hole, pyroxene skarn and marble was in gradational contact with underlying recrystallized limestone. A Titan-24 DCIP and MT geophysical survey was conducted which outlined 42 new geophysical targets, six of which were given high priority. (Boxxer Gold Corp. news releases, 6/28/2011, 7/12/2011, 7/26/2011, 9/6/2011, 11/29/2011, 2/9/2011, 5/14/2012; Boxxer Gold Corp. website, www.bosxergold.com)

ELKO COUNTY

Bootstrap District

South Arturo. Barrick Gold Corp. (joint venture with Goldcorp, Inc.) drilled at least four exploration holes

at its South Arturo project. At the end of 2011, Barrick reported probable reserves of 45,317,000 tons grading 0.05 opt gold (and 0.23 opt silver) for a total 2,328,000 ounces of gold, indicated resources of 34,472,000 tons grading 0.039 opt gold (and 0.26 opt silver) for a total of 1,378,000 ounces of gold, and an inferred resource of 16,788,000 tons grading 0.027 opt gold (and 0.2 opt silver) for a total of 396,000 ounces of gold. (Barrick Gold Corp. Annual Information Form, 3/28/2012; Barrick Gold Corp. website, www.barrick.com; Goldcorp, Inc. Annual Information Form, 3/28/2012; Goldcorp, Inc. website, www.goldcorp.com)

Rodeo Creek. Amarak Resources, Inc., (joint venture with Trio Gold Corp.) completed one core hole to 3,030 feet on the Rodeo Creek property, northeast of and adjacent to Barrick Gold's Storm gold mine at the north end of the Carlin trend. The hole was drilled on the south edge of the Flower Zone where drilling in 2010 intercepted several zones grading above 0.024 opt gold. The 2011 hole intercepted no gold of economic grade but at a depth of 2,755 feet intersected 207 feet of very intense Carlin-style brecciation and silicification in the Popovich Formation. (Trio Gold Corp. news release 10/26/2011; Trio Gold Corp. Management and Discussion Analysis, 7/30/2012; Amarak Resources, Inc. news release 9/23/2011; Amarak Resources, Inc. website, www.amarakresources.com)

Carlin District

Carlin. Evolving Gold Corp. drilled four vertical and three wedge diamond holes and deepened an earlier hole on the Carlin portion of its Carlin/Humboldt project south of the town of Carlin. In 2009, the company discovered deep high-grade gold in hole CAR-007 northwest of Newmont's inactive Rain Mine. In 2011, hole CAR-010, located 85 feet west-southwest of CAR-007, intercepted 73 feet grading 0.166 opt gold including 10.2 feet grading 0.869 opt gold and 17.7 feet grading 0.573 opt gold. CAR-011, located 377 feet north of CAR-007, intercepted 107 feet grading 0.032 opt gold. CAR-012, located 426 feet southwest of CAR-007 intercepted 20 feet grading 0.071 opt gold, which included five feet grading 0.221 opt gold. CAR-013, located 1,148 feet northeast of CAR-007 intercepted 198 feet grading 0.037 opt gold, which included 20 feet grading 0.11 opt gold. Two wedge holes were drilled from the earlier hole CAR-002, and CAR-003 was deepened to 4,580 feet. A wedge hole was also subsequently drilled from CAR-010. These and earlier holes define the 3,300-foot by 1,970-foot Arch Gold Zone at depths of mainly 2000 to 3000 feet. Mineralization is open in all directions.

Three miles south of the Arch Gold Zone, the company drilled Hole EHB-004 to about 3,600 feet to test one of 24 targets on the Humboldt portion of the project. This target is on the northwesterly projection of the Rain-Saddle gold trend. A core tail was also drilled but failed to reach its intended target depth of 3,300 feet. It encountered artesian water at 2,230 feet, which threatened the stability of the drill site. (Evolving Gold Corp., 2011 year-end Management and Discussion Analysis, Evolving Gold Corp., news releases 4/14/2011, 6/20/2011, 11/21/2011; Evolving Gold Corp. website, www.evolvinggold.com)

Carlin Vanadium. After releasing a 43-101 compliant resource estimate in 2010, EMC Metals Corp. reported no further work in 2011 on its vanadium project located on the northwestern flank of the Piñon Range near Cole Creek. (EMC Metals Corp. SEC Form 10-K, 12/31/2011; EMC Metals website, www.emcmetals.com)

Emigrant. The BLM issued a Record of Decision and approved the Emigrant Project near the old Rain Mine for Newmont Mining Corp. Construction of the mine began in May with production start-up projected for the second quarter of 2012. A leach pad, haul road, processing plant, small lab, and stream diversion channel were under construction by year's end. The administrative and shop buildings located at the old Rain Mine, renamed Emigrant, were also being renovated and upgraded. Three rigs were on site in August, two of which were working on definition of the gold reserves and one on water wells. The operation will consist of a series of eight small open pits that will be backfilled as they are mined out. Ore will be placed on a leach pad and processed on site. The reserve of this low-grade oxide deposit is estimated to contain 1.6 million ounces of gold. The mine life is expected to be 8 years with 15 years of heap leaching. (Elko Daily Free Press Mining Quarterly, Fall 2011, Spring 2012; Newmont Mining Corp. presentation, 7/11/2011; Newmont Mining Corp., Investor Day presentation, 5/23/2012; Newmont Mining Corp., website, www.newmont.com)

Saddle: Premier Gold Mines, Ltd., completed 45 combined reverse circulation holes with core tails totaling 74,531 feet on its Saddle property about 1.5 miles northwest of the old Rain Mine. Significant intercepts from two of the holes were 48.4 feet grading 0.57 opt gold, including 9.5 feet grading 2.35 opt gold, and 292 feet grading 0.07 opt gold, including 25.6 feet grading 0.24 opt gold. Two types of mineralization occur at Saddle. One consists of wider low-grade zones occurring along the contact between the Webb and Devil's Gate Formations,

and the other is higher grade mineralization occurring in the Webb Formation along the plane of the Rain Fault. Mineralization at Saddle, which was never mined, is sulfide-rich and will require roasting or pressure oxidation. (Premier Gold Mines, Ltd., news release, 11/8/2011; Premier Gold Mines, Ltd., annual information form, 3/31/2012; Premier Gold Mines, Ltd., 43-101 technical report, 3/21/2011; Premier Gold Mines, Ltd., website, www.premiergoldmines.com)

Contact District

Contact. International Enxco Ltd. began metallurgical testing on sample material representing the initial two years of their mine plan for its Contact copper deposit. The company acquired properties totaling 8,400 acres held by Allied Nevada Gold Corp. adjacent to their Contact Project. This increases the company's land holdings in the district to about 15,000 acres encompassing 155 patented claims and 609 unpatented lode claims. Prior to this acquisition, the company's 4,000-foot by 1,500-foot plan area containing the reserve and the planned mine were restricted on the east side by the project's boundaries. The acquisition will allow the mine design to expand to its full economic depth eastward. In November, the company commenced a 20,000-foot in-fill drilling program to develop the resources in the newly acquired area and potentially extend them eastward. (International Enxco Ltd. Management and Discussion Analysis, 12/31/2011; International Enxco Ltd. website, www.enxco.ca)

Delano District

Claim Staking. Newmont Mining Corp. staked 210 claims at the west end of the Delano District in an area that extensively covered by Tertiary sedimentary rocks with some exposures of poorly studied Paleozoic sedimentary rocks. (BLM LR2000 Database)

Dolly Varden District

Dolly Varden. Viking Minerals completed at least three core holes totaling 1,375 feet on its Dolly Varden property on the east side of the Dolly Varden Mountains near Dolly Varden Spring. One hole cut three zones (Upper, Lower, Deep) of mineralization of which the Upper Zone had the best intercept reported at 20 feet grading 0.41 opt silver and 1.55% copper, which included 6.5 feet grading 0.52 opt silver and 3.12% copper and 5 feet grading 0.89 opt silver and 1.51% copper. Gold grades were 0.001 opt in these intervals. (Viking Minerals news releases, 10/24/2012, 10/25/2011, 11/1/2011; Viking Minerals website, www.vikingmineralsinc.com)

Eastern Elko County

Angel Wing. Ramelius Resources Ltd. (joint venture with Miranda Gold Corp.) completed three core holes totaling 790 feet and 12 reverse circulation holes totaling 5,420 feet. The drill program was designed to test down-dip extensions of veins containing anomalous gold (including the Botticelli, Rossetti, and DaVinci Veins) and various strong induced-polarization/resistivity trends. Hole AW11-C03 intercepted 20 feet grading 0.007 opt gold and 1.5 opt silver. Extensive proximal argillic alteration and quartz-carbonate stockwork and brecciation were also observed in the hole. This anomalous zone falls within a broader anomalous gold and silver corridor defined at the intersection of the Botticelli and DaVinci veins. Deeper reverse circulation and core drilling is planned to further evaluate the hydrothermal system and explore for bonanza grade gold mineralization at depth. (Ramelius Resources Ltd. 2011 Q3 report, 10/28/2011, 2011 Q4 report 1/27/2012; Ramelius Resources Ltd. website, www.rameliusresources.com.au; Miranda Gold Corp. website, www.mirandagold.com)

Gold Circle District

Clover. Yamana Gold Inc., (joint venture with Atna Resources Ltd.) completed 15 reverse circulation holes totaling 14,740 feet on the Clover property. The results were not released. The drilling failed to extend mineralization encountered in earlier drilling. The prospect is a low-sulfidation epithermal, vein-hosted gold prospect situated along the northern margin of the Midas trough within the Northern Nevada Rift. (Atna Resources, Ltd., Gold Management Discussion and Analysis, 3/26/2012; Atna Resources, Ltd., website, www.atna.com)

Jake Creek. Evolving Gold Corp. completed 11 reverse circulation holes totaling 11,745 feet. Hole JC-005 drilled in 2010 intersected 95 feet grading 0.04 opt gold including five feet grading 0.33 opt gold. The 2011 holes stepped out east and west from JC-005. Reported intercepts in 2011 ranged between 5 and 120 feet and graded between 0.01 and 0.09 opt gold. The drill program outlined an epithermal, volcanic-hosted gold system at least 1,800 feet wide in and east-west direction, and open to the north, south, and east. The system contains sub-horizontal and laterally extensive low-grade gold mineralization, which locally includes banded epithermal veins and quartz-stockwork zones. The easternmost hole passed through sulfidized basalt dikes and multiple zones of epithermal veins with banded quartz and pyrite. The gold-bearing zones contain elevated concentrations of arsenic, selenium, antimony, mercury, and silver, and occur

in bleached, clay-altered, silicified tuff that overlies Paleozoic siliciclastic rocks. A 43-101 technical report is planned for 2012. (Evolving Gold Corp. press release, 2/24/2012; Evolving Gold Corp. Gold Management Discussion and Analysis, 7/3/2012; Evolving Gold Corp. website, www.evolvinggold.com)

Midas. At year's end, proven and probable reserves were reported at 800,000 tons grading 0.226 opt gold and 7.201 opt silver for a total of 160,000 ounces of gold and 5.25 million ounces of silver. Metallurgical recoveries are estimated to be 95% for gold and 88% for silver. The BLM sent out a notice seeking public comment on a proposal by Newmont Mining Corp. to expand the Midas underground mine. The proposal includes constructing and operating up to seven ventilation raises, one portal, access roads, a haul road from the portal, power lines to the ventilation raises, and surface exploration activities that would disturb about 80 acres (56.6 acres of public land). The scheduled life of the mine would be five years, well beyond the previously reported 2012. It is unknown how much if any exploration drilling was carried out in 2011. (Newmont Mining Corp. 2011 Q3 report, 10/27/2011; Newmont Mining Corp. annual report, 2/24/2012; Newmont Mining Corp. website, www.newmont.com; BLM news release 2011-23, 4/7/2011)

Independence Mountains District

Jerritt Canyon. The plant processed 628,418 tons of ore producing 76,585 recovered ounces of gold. The average recovery of contained gold was 85.8%. Production was from mined ore, processing of ore purchased from Newmont, and the processing of stockpiles. In 2011, production took place only from the Smith and the SSX-Steer mines. The Smith underground mine produced 269,745 tons of ore containing 46,971 ounces of gold. The SSX-Steer Mine produced only 9,051 tons of ore. Shipments of 254,221 tons containing 33,968 ounces of gold were purchased from Newmont USA, Ltd. Production from stockpiled ore was discontinued during the first quarter and amounted to 95,351 tons containing 7,182 ounces of gold.

In 2011, Yukon-Nevada Gold Corp. budgeted \$18 million for drilling and completed 208 surface reverse circulation holes totaling 120,130 feet, 12 surface core holes totaling 14,147 feet, 37 underground core holes totaling 23,492 feet, and 809 production holes totaling 93,753 feet. The vast majority of the drilling targeted conversion of both open pit and underground resources to reserves. The underground resource targets were at East Mahala (18 reverse circulation holes totaling 19,370 feet with 5 core tails totaling 2,608 feet), Mahala (16 reverse circulation holes totaling 18,175 feet with 4

core tails totaling 2,175 feet), West Mahala (20 reverse circulation holes totaling 24,015 feet with 6 core tails totaling 4,113 feet), Starvation Canyon (13 reverse circulation holes totaling 7,490 feet and 12 core totaling 5,251 feet), and MCE (3 reverse circulation holes totaling 1,020 feet). The open pit resource targets were Burns Basin (61 reverse circulation holes totaling 23,740 feet), Steer Canyon (23 reverse circulation holes totaling 12,520 feet), West Generator (37 reverse circulation holes totaling 8,200 feet), and Pie Creek (17 reverse circulation holes totaling 5,600 feet).

At Starvation, the best two intercepts were 95 feet grading 0.55 opt gold and 55 feet grading 0.37 opt gold. Mineralization at Starvation Canyon occurs along a major northwest-trending structure, which projects northwestward into the undrilled West Starvation target, located at its intersection with a major northeast-trending fault zone.

Drilling at East Mahala was done in four zones. Two exploration holes targeted the southeasterly extension of Zone 1, which is a mineralized structural zone parallel to and north of the northwesterly-trending mineralized Coulee dike zone (from which ore was mined in the past in the Smith Mine, termed Zone 2). Four holes were drilled in Zone 3, which is a structural zone parallel to and north of the northwesterly-trending mineralized Mahala dike zone, which also hosted past production (Zone 4) from the Smith Mine. Five exploration holes were drilled in Zone 4 along the southeasterly extension of Mahala dike zone. In Zone 9 (East Dash), two resource conversion holes were drilled to fill in historic drill data, and five exploration holes were drilled to expand the known mineralization. The best intercepts were 50 feet grading 0.139 opt gold, which included 10 feet grading 0.259 opt gold, and 16 feet grading 0.252 opt gold and 35 feet grading 0.346 opt gold in another hole.

Seven holes were drilled at Zone 8 at Mahala targeting mineralization associated with the northwest extension of the Coulee dike zone. Nine holes targeted mineralization associated with a structural zone that is parallel to the Coulee dike zone. The drilling fills in historic data for a distance of about 600 feet northwest of the existing Zone 8 reserves. The best intercepts were 105 feet grading 0.135 opt gold, which included 10 feet grading 0.244 opt and 50 feet grading 0.182 opt gold, and, from another hole, 38 feet grading 0.277 opt gold.

West Mahala consists of two mineralized areas that are about 1,000 feet and 2,000 feet northeast of the SSX-Steer underground mine infrastructure. The two best intercepts reported were 30 feet grading 0.358 opt gold in one hole and 35 feet grading 0.346 opt gold in another hole.

Encouraging intercepts were also reported in other areas. At Burns Basin, 70 feet grading 0.118

opt gold were encountered in one hole, and 75 feet grading 0.099 opt gold in another hole. At Pie Creek, the best intercept was 30 feet grading 0.121 opt gold. At Saval, one hole returned 120 feet grading 0.072 opt gold, and another intercepted 55 feet grading 0.228 opt gold. At Smith, the best intercepts reported were 50 feet grading 0.211 opt gold in one hole and 213 feet grading 0.208 opt gold in another. At West Generator, 50 feet grading 0.053 opt gold were encountered.

At the end of 2011 Yukon-Nevada reported a total proven and probable reserve at Jerritt Canyon of 6,056,900 tons grading 0.175 opt containing 1,060,800 ounces, nearly 90% of which are underground reserves. Construction of a new tailings storage facility began in the summer of 2011 with completion scheduled for September 2012. Starvation Canyon, Murray, Burns Basin, and Wright Window are scheduled to be put into production in 2013. Saval (underground) and Mill Creek are scheduled to start production in 2014, and production from the Saval open pit is scheduled to start in 2015. In 2012, Yukon-Nevada Gold Corp. changed its name to Veris Gold Corp. (Yukon-Nevada Gold Corp. Management Discussion and Analysis, 12/31/2011; Yukon-Nevada Gold Corp. Form 40-F, 12/31/2011; Veris Gold Corp. press releases, 1/9/2012, 1/11/2012, 1/31/2012, 3/21/2012, 10/5/2012; Yukon-Nevada Gold Jerritt Canyon Property 43-101 Reports, 6/28/2011, 4/27/2012; Veris Gold Corp. website, www.verisgold.com)

Ivanhoe District

Hollister. Great Basin Gold Ltd. continued trial mining at its underground Hollister Mine, mining 105,853 tons of ore with 86,518 contained ounces of gold and 711,493 contained ounces of silver. In 2011, 108,100 tons of ore were processed with 86,444 ounces of gold and 521,099 ounces of silver being extracted. Recoveries were 92% for gold and 72% for silver. As of January 2012, total proven and probable reserves were 942,900 tons grading 0.79 opt gold and 5.74 opt silver for total of 745,656 ounces of gold and 4,464,901 ounces of silver, at a cut-off grade of 0.25 opt gold.

Great Basin Gold reported spending \$17,703,000 on pre-development and \$8,069,000 on exploration in 2011. The company completed 246 underground core holes totaling 103,184 feet for exploration and stope delineation. The program consisted of 79 holes totaling 42,580 feet at the Clementine and Southeast Gwenivere vein systems, and 59 holes totaling 24,078 feet targeting the Upper Level (formerly Blanket Zone). High intercepts from the Clementine vein system included 0.4 feet grading 3.308 opt gold, 0.5 feet grading 2.026 opt gold, 2.5 feet grading 2.405 opt gold, and 4 feet

grading 1.69 opt gold from separate holes. High intercepts from the Gwenivere target included 0.4 feet grading 2.221 opt gold and 0.7 feet grading 11.187 opt gold from one hole, and 1.6 feet grading 2.728 opt gold and 0.4 feet grading 4.139 opt gold from other holes.

A ramp and the Alimak raise were completed to the 5,278 level, allowing access to the Upper Level mineralization zones at the Tertiary-Ordovician unconformity. From that level, drifting progressed towards high-grade gold shells (>1 opt) formed above the Clementine and Gwenivere vein systems.

Detailed surface mapping was completed during the summer and was integrated with airborne magnetic, CSAMT and gravity data. This work showed that resistivity anomalies correlate with volcanic vents/geyserites and hydrothermal breccias zones mapped at the surface, providing evidence for the western extension of the Gwenivere/Clementine vein system. (Great Basin Gold Ltd. Annual Information Form, 3/30/2012; Great Basin Gold Ltd. 2011 annual report, 3/30/2012; Great Basin Gold Ltd. Q2 report, 6/30/2011; Great Basin Gold website, www.greatbasingold.com)

Kinsley District

Claim Staking. Barrick Gold Corp. staked 133 claims on the pediment east of the Kinsley District in Antelope Valley. (BLM LR2000 Database)

Kinsley. Pilot Gold, Inc., (joint venture with Nevada Sunrise Gold Corp.) completed six core holes totaling 4,167 feet to confirm mineralization identified in old holes drilled within and near the margins of the old open pits. Significant intercepts include 29 feet grading 0.18 opt gold and 25 feet grading 0.20 opt gold. Mineralization is controlled by both stratigraphy and faults. It is mainly hosted in dissolution breccias in the Cambrian Big Horse Limestone, Candland Shale, and Notch Peak Limestone. The gold is accompanied by very fine-grained disseminated arsenian pyrite in variably silicified rocks. Near-surface mineralization is strongly oxidized, and higher-grade unoxidized mineralization has been drilled below and adjacent to the pits. (Pilot Gold, Inc., news release, 11/19/2011; Pilot Gold, Inc., 43-101 technical report, 3/26/2012; Nevada Sunrise Gold Corp. website, www.nevadasunrise.com)

White Horse Flats. Navaho Gold, Ltd., (joint venture with Columbus Gold Corp.) conducted a ground gravity survey and completed 11 reverse circulation holes totaling 7,237 feet on the White Horse Flats property about seven miles north-northeast of the Kinsley Mine. The drill program tested down-dip extensions of silicified outcrops which were highly anomalous in gold. The property covers three small

hills and part of the surrounding pediment. Outcrops on the hills are composed of Permian limestone and siltstone capped by an up to 500-foot wide discontinuous belt of silicification striking north-south for about 7,000 feet. Significant intercepts reported include 45 feet grading 0.013 opt gold and 25 feet grading 0.01 opt gold. Navaho Gold can earn a 51% interest in the property by completing agreed upon minimum exploration expenditures. (Columbus Gold Corp. news releases, 11/10/2011, 2/16/2012; Columbus Gold Corp., website, www.columbusgoldcorp.com; Navaho Gold website, www.navahogold.com)

Lime Mountain District

Deep Creek. Ashburton Ventures Inc. budgeted \$1.4 million for an exploration project at its Deep Creek project located on the west flank of Wilson Peak in the southern Bull Run Mountains. The company completed 32 core holes totaling 11,855 feet with follow-up mapping and sampling conducted over several rock and soil anomalies. The drill program mainly focused on the Upper Vein area, where 18 holes totaling 6,910 feet were completed. Four of the holes intersected a zone that graded greater than 0.029 opt gold over 3-foot intervals. The best intercept was 4 feet grading 0.2 opt gold in a siliceous breccia with quartz veining, starting at a depth of 208 feet. One hole intersected two intervals containing quartz veins. One interval averaged 0.031 opt over 4 feet at a depth of 354 feet and the other graded 0.038 opt gold over 4 feet at a depth of 468 feet. This confirmed the extension of the Upper Vein northward along strike. Holes along the southward strike of the Upper Vein and in a saddle between the Upper Vein and Waterfall-Range Front areas returned assays of mostly less than 0.003 opt gold. The Upper Vein zone strikes north-northwest for over 2,100 feet. The drill data suggest that the Upper Vein presently exposed on the surface originally formed in or near the axis of a fold where structural weakness allowed greater vein widths to develop as gold-bearing fluids moved through limestone in the Proterozoic McCoy Group.

At the Waterfall-Range Front area, which is about 2,300 feet south of the Upper Vein area, 13 holes totaling 4,825 feet were completed targeting a potential disseminated gold deposit along a broad north-northwest structural zone. Disseminated mineralization is hosted in silicified limestone in the McCoy Group with higher gold values hosted in highly brecciated zones. Hole DC-11-C-5 was drilled westward into the structural zone and intersected 242 feet grading 0.013 opt gold that included 4 feet grading 0.28 opt gold at a depth of 36 feet and 4 feet averaging 0.41 opt gold at 72 feet. About 4,600 feet due north of DC-11-C-5, hole DC-11-C-28 was drilled eastward into the structural zone. The entire

225 feet of the hole averaged 0.006 opt gold. Three holes drilled 2,300 feet south of DC-11-C-28 tested for mineralization east of the structural zone, but did not hit any significant gold assays. Two holes drilled 1,300 feet to the north intercepted zones of anomalous gold that graded less than 0.006 opt.

One 120-foot-deep hole was completed on the Hobbit target about a mile south of the Waterfall-Range Front area. The hole tested a zone of exposed argillic alteration east of a resistivity anomaly that Kennecott Exploration drilled in 1986. Drilling was stopped due to technical problems, and no intervals grading more than 0.029 opt gold were encountered. (Ashburton Ventures Inc. news releases, 1/20/2011, 3/8/2011, 1/5/2012; Ashburton Ventures Inc. Management Discussion and Analysis, 12/28/2011; Ashburton website, www.ashburtonventures.com)

Montello District

12 Mile. West Kirkland Mining Inc. staked 532 claims in the Murdock Mountain area of the Montello district, in what has become its 12 Mile project. Surface sampling encountered gold grades as high as 0.05 opt gold in oxidized material. (West Kirkland Mining Inc. website, www.wkmining.com; BLM LR2000 Database)

Northeastern Elko County

Viper. Pilot Gold, Inc. completed 18 reverse circulation holes totaling 11,152 feet on its Viper property about 35 miles southeast of Jackpot. Seven were drilled on the Baja Target, and the rest in a 4,900-foot by 2,300-foot area of quartz veining and alteration to the south. Significant intercepts reported include 110 feet grading 0.032 opt gold and 0.61 opt silver and 45 feet grading 0.018 opt gold and 0.22 opt silver in two holes. The property contains a low-sulfidation epithermal gold system with mineralization hosted in north- and northwest-striking quartz-calcite veins and associated jasperoids. The veins and jasperoids are mainly hosted in Mississippian-Permian carbonate rocks and to a lesser extent in Tertiary conglomerate and sandstone. Trace sulfides are present in the veins and jasperoids as finely disseminated pyrite with local arsenopyrite and sulfosalts. (Pilot Gold, Inc., news release, 6/28/2011; Pilot Gold, Inc., website, www.pilotgold.com)

Pequop District

Long Canyon. In April 2011, Newmont Mining Corp. acquired Fronteer Gold Inc. for approximately \$2.3 billion, which included the acquisition of the Long Canyon property. In 2011, Newmont completed over 235,000 feet of drilling focused on defining and

extending the ore body and increasing the reserves and resources around Long Canyon. This included 190 core holes, totaling about 130,000 feet. Better intercepts included 100 feet grading 0.20 opt gold, 105 feet grading 0.092 opt gold, and 75 feet averaging 0.10 opt gold. The drilling continues to intercept oxidized mineralization. Newmont staked 688 claims throughout the Pequop Mountains.

In early 2011, Fronteer estimated a measured (1%) and indicated (99%) resource of 20,250,000 tons grading 0.069 opt gold for a total of 1,324,000 ounces and an inferred resource of 12,313,000 tons grading 0.065 opt gold and totaling 803,000 ounces.

Newmont's 2011 preliminary plan called for an open pit mine, mill, tailings facility, leach pad, and waste rock facility. Construction is expected to begin in mid-2015 and take 18 months with about 700 people employed. Production is expected to start up in 2016 with full production in 2017. The mine life from construction to post closure monitoring is estimated to be between 8 and 14 years. Over its life time, the mine is expected to yield between 2 million to 2.5 million ounces of gold and employ between 300 and 500 people. (BLM News Release No. ELDO 2012-056, 7/18/2012; Elko Daily Free Press, 12/09/2011, 4/28/2012, 7/20/2012; Elko County Economic Diversification Authority, 11/11/2011; Fronteer Gold Long Canyon Technical Report, February 25, 2011; Newmont Mining Corp., SEC Form 10-K, 2/24/2012; R. Reid, Newmont Mining Corp., oral communication, AIPG meeting, 12/20/2011; BLM LR2000 Database)

Pequop South. Working to earn a 70% interest in the Pequop South property from Newmont Mining Corp., Golden Dory Resources, Ltd., conducted soil sampling, prospecting, an aeromagnetic survey, and trenching and completed seven reverse circulation holes. The drilling tested the JT claim block, but failed to intersect economic concentrations of gold. Drilling intersected numerous cave/collapse areas. One hole intercepted 5 feet grading 0.005 opt gold. (Golden Dory Resources, Ltd. News releases, 8/23/2011, 12/6/2011; Golden Dory Resources, Ltd. website, www.goldendoryresources.com)

West Pequop. Agnico-Eagle Mines, Ltd., carried out a major drill program on the West Pequop property. No results were reported. Newmont Mining's acquisition of Fronteer Gold Inc. in April 2011 included Fronteer's 49% interest the West Pequop property. (BLM News Release No. ELDO 2011-63, 9/19/2011; Elko Daily Free Press, 9/22/2011, Agnico Eagle Mines, Ltd., Management Discussion and Analysis, 3/28/2012; Agnico Eagle Mines, Ltd., website, www.agnico-eagle.com)

Wood Hills South. In December 2011, NuLegacy Gold Corp. commenced drilling reverse circulation holes on its Wood Hills South property, located 8 miles southwest of the Long Canyon and West Pequop properties. The program calls for 20 holes totaling 6,600 feet to test targets identified through geologic mapping and geophysical and geochemical surveys conducted in 2010 and early 2011. (NuLegacy Gold Corp. news releases, 3/21/2011, 12/2/2011; NuLegacy Gold Corp. Management Discussion and Analysis 4/2/2012; NuLegacy Gold Corp. website, www.nulegacygold.com)

Railroad District

Railroad. Gold Standard Ventures Corp. completed 12 holes totaling 16,455 feet of reverse circulation and 9,432.5 feet of core drilling. The three major targets tested were North Bullion, the Railroad Fault, and Historic Bullion (Central Bullion district).

North Bullion was the main target with six combined reverse circulation and core holes completed. Significant intercepts reported included 20 feet grading 0.053 opt gold, 730 feet grading 0.018 opt gold, 95 feet grading 0.061 opt gold, and 5 feet grading 1.1 opt silver. The 730-foot intercept appears to be a thick zone of shallow-dipping, tabular-style mineralization in locally silicified, barite-bearing sandstones, mudstones, and dolomitized limestone collapse breccia that seems to represent the peripheral halo to higher-grade gold mineralization. The north-south-trending North Bullion Fault Zone appears to be on the east flank of this halo.

Two holes were completed on the Railroad Fault target, which lies along the flank and just to the north of the POD gold deposit. One hole intercepted 150 feet grading 0.008 opt gold hosted in a very gossanous clay-rich rock containing myriad fragments of jasperoid and barite. This zone overlies highly brecciated Devils Gate limestone.

Three core holes were drilled on the Historic Bullion target. One hole encountered 18 feet grading 2.45 opt silver and 14 feet grading 2.06 opt silver, 15.5 feet grading 0.59% copper, 6 feet grading 4.41% zinc, and 13 feet grading 1.53% lead. (Gold Standard Ventures Corp. news releases, 4/5/2011, 11/15/2011; Gold Standard Ventures Corp. Management Discussion and Analysis, 4/13/2012; Gold Standard Ventures Corp. Technical report, 3/28/2012; Gold Standard Ventures website, www.goldstandardv.com)

Snowstorm Mountains

Golden Repeat. Dynasty Gold Corp. completed three reverse circulation holes totaling 2,676 feet on its Golden Repeat property in the Snowstorm Mountains about 10 miles west-southwest of Midas.

The holes tested the down-dip extension of outcropping fault-hosted quartz veins cutting basalt and the extension of rhyolite-hosted fault zones encountered by previous exploration programs. One hole intercepted a 35 foot-thick zone of abundant pyrite in argillized basalt, which averaged 0.008 opt gold and 0.032 opt silver. Another hole intercepted a 40 foot-thick zone in silicified, oxidized rhyolite with local pyrite that averaged 0.033 opt gold and 0.26 opt silver, which included 5.5 feet grading 0.1 opt gold and 1.3 opt silver. (Dynasty Gold Corp. news releases, 12/10/2010, 5/10/2011, 11/22/2011; Dynasty Gold Corp. Management Discussion and Analysis, 11/29/2011, 4/30/2012; Dynasty Gold Corp. website, www.dynastygoldcorp.com)

Tecoma District.

KB/TUG. KB and TUG are two properties immediately adjacent to one another. West Kirkland Mining, Inc. (joint venture with Newmont Mining Co.) completed three reverse circulation holes totaling 2,324 feet at KB and seven core holes totaling 7,818 feet at TUG. The best intercept at KB was 51 feet grading 0.09 opt gold and 2.76 opt silver, which included 10 feet grading 0.19 opt gold and 6.25 opt silver. At TUG the best intercept was 74 feet grading 0.045 opt gold and 1.71 opt silver, which included 4 feet grading 0.19 opt gold and 2.39 opt silver. At KB, the mineralization is hosted by calcareous sandstone of the Upper Permian Loray Formation. The mineralized rocks are decalcified and silicified with a core zone of white chalcedony containing minor amounts of sulfide minerals and limonite. The core zone is surrounded by a low-grade halo of moderate decalcification, decarbonization, and dolomitization. The Tertiary volcanic rocks overlying the Loray Formation are argillically altered. At TUG, the mineralization is stratabound within the Tripon Pass Limestone at or near the lower contact with the Guilmette Formation. It has a tabular morphology with abundant decarbonization and silicification of the calcareous host rocks. Jasperoid and late calcite veins are common, and gold is found disseminated throughout highly silicified hematitic zones, as well as in zones quartz veinlets. The mineralization appears to be focused along the axis of an anticline at the Tripon and Guilmette contact where it is cut by a fault. (West Kirkland Mining, Inc., 43-101 Technical Report, 1/12/2012; West Kirkland Mining, Inc., website, www.wkmining.com)

ESMERALDA COUNTY

Divide District

Hasbrouck Mountain. Allied Nevada Gold Corp. spent \$12.2 million on exploration of the Hasbrouck Mountain property. The company located and

acquired an additional 456 claims and drilled 43 core holes totaling 29,454 feet and 72 reverse circulation holes totaling 63,925 feet at Hasbrouck Mountain. Another 19 reverse circulation holes totaling 31,940 feet were also drilled south of Hasbrouck Mountain within the larger Hasbrouck claim block.

Higher gold grades are hosted in intensely silicified, veined, and hydrothermally brecciated sedimentary and tuffaceous volcanic rocks of the Miocene Siebert Formation below hot-spring sinter deposits. Drilling confirmed and extended mineralization on the Franco Zone and connected it with the Crossroads Zone. Mineralization was also encountered on the south and east sides of the hill in areas that had been sparsely drilled in the past. Significant intercepts reported include 180 feet averaging 0.02 opt gold and 0.35 opt silver, including 10 feet grading 0.24 opt gold and 0.9 opt silver, 561 feet averaging 0.032 opt gold and 0.98 opt silver, including 105 feet grading 0.07 opt gold and 1.02 opt silver in three separate holes.

A new 43-101 technical report proposes a conventional open pit and heap leach operation that would include both the Hasbrouck Mountain and Three Hills deposits (Three Hills is located near Tonopah, about 5 miles north). The inferred resource at a 0.005 opt equivalent gold cut-off grade is 128,608,197 tons grading 0.009 opt gold and 0.228 opt silver for a total of 1,157,474 ounces of gold and 29,322,669 ounces of silver. (Allied Nevada Gold Corp. press releases 12/13/2011, 2/27/2012; Allied Nevada Gold Corp. 42-101 technical report, 4/11/2012; Allied Nevada Gold Corp. SEC Form 10-K, 12/31/2011; Allied Nevada Gold Corp. website, www.alliednevada.com)

Tonopah Divide. Centerra Gold Corp. (joint venture with Tonogold Resources Inc.) spent \$404,283 on the property in 2011. No drilling was done, but work included logging holes drilled in 2010, constructing a 3-D model of the geology and mineralization, additional geologic mapping, and sampling of seven target areas. A comprehensive review of the results to date was conducted to evaluate the continuation of the project. Tonogold Resources regained 100% control of the property when Centerra Gold withdrew from the joint venture in 2012. (Tonogold Resources Inc. press release, 10/19/2012; Tonogold Resources Inc. 2011 annual project report, 1/2012; Tonogold Resources Inc. website, www.tonogold.com)

Gilbert District

Eastside. Columbus Gold Corp. completed 12 rotary holes totaling 7,405 feet on its Eastside property located on the northeast end of the Monte Cristo Range. Gold mineralization is localized in quartz veins and stockworks associated with four rhyolite flow-dome complexes, ranging between 1,300 and

2,300 feet in diameter. The gold is hosted both in the rhyolite and adjacent wall rocks, which consist of layers of Tertiary andesitic tuffs and lahars and felsic tuffs and tuff breccias. The best intercepts were 45 feet averaging 0.07 opt gold, which included 20 feet grading 0.151 opt gold and 5 feet grading 0.377 opt gold, and 40 feet averaging 0.02 opt gold, which included 10 feet grading 0.046 opt gold. The company staked 30 new claims to the north to cover possible extensions of the mineralization along strike. (Columbus Gold Corp. news releases, 3/9/2011, 5/17/2011; Columbus Gold Corp., website, www.columbusgoldcorp.com)

Goldfield District

Goldfield. International Minerals Corp. spent \$4.9 million on Goldfield and continued its major aggressive drill program, which it started in 2010. Fifty-four core holes totaling 29,288 feet and 58 reverse circulation holes totaling 26,405 feet were drilled on the Florence, Kendall, Tailings, and North Gemfield targets.

At the Goldfield Main deposit, 15 core holes totaling 10,463 feet were also drilled. The best intercepts were 37 feet grading 0.11 opt gold, 7 feet averaging 0.06 opt gold, and 20 feet grading 0.06. The indicated resource for Goldfield Main was estimated to be 9.42 million tons grading 0.045 opt gold for a total of 421,000 ounces of gold. The inferred resource is estimated to be 7.26 million tons grading 0.05 opt gold for a total of 360,000 ounces of gold.

At Gemfield, eight core holes totaling 3,112 feet were completed. These were metallurgical holes designed to maximize the amount of mineralized material intercepted. The best intercept was 160 feet averaging 0.69 opt gold, including 5 feet grading 15.2 opt gold and 5 feet grading 2.75 opt gold. The estimated proven and probable reserve at a cut-off grade of 0.009 opt gold is 15,748,000 tons grading 0.0325 opt gold for a total of 511,000 ounces of gold. The measured and indicated resource is estimated to be 18.78 million tons grading 0.031 opt gold and 0.098 opt silver for a total of 574,000 ounces of gold and 1,846,000 ounces silver. The inferred resource is 4.6 million tons grading 0.016 opt gold and 0.059 opt silver for a total of 74,000 ounces of gold and 272,000 ounces silver.

During 2011, 15 core holes totaling 10,463 feet were completed at McMahon Ridge, some of which were metallurgical holes. Significant intercepts were 26 feet averaging 0.33 opt gold, which included 5 feet grading 1.38 opt gold, 16 feet averaging 0.09 opt gold, and 171 feet averaging 0.27 opt gold, which included 5 feet grading 5.75 opt. The estimated measured and indicated resource at McMahon Ridge is 6.07 million tons grading 0.039

opt gold for a total of 328,000 ounces of gold. (International Minerals Corp. news release, 6/16/2010; International Minerals Corp. Management Discussion and Analysis, 5/15/2012; International Minerals Corp. 43-101 technical report 7/17/2012; International Minerals Corp. website, www.intlminerals.com)

Goldfield Bonanza. ICN Resources Ltd. drilled 26 core holes totaling 5,600 feet and 63 reverse circulation holes totaling 27,640 feet throughout the property. The core holes were mainly drilled in the Church Zone, and about half of the reverse circulation holes focused on the 600 foot strike length of the Northeast Corridor between the Church Zone and the Combination Pit. The remaining reverse circulation holes tested the January area just west of the Combination Pit. Drill intercepts containing numerous low-grade intercepts with short high-grade intervals suggests the structure and alteration containing gold mineralization persists throughout the Northeast Corridor away from the Church Zone. Significant drill intercepts were 150 feet averaging 2.81 opt gold, which included 10 feet grading 42.4 opt gold, 76 feet averaging 0.31 opt gold, which included 6 feet grading 3.48 opt gold, and 150 feet averaging 0.16 opt gold, which included 5 feet grading 1.14 opt gold in three holes. ICN Resources has since been bought out and become a subsidiary of Corazon Gold Corp. (ICN Resources, Ltd., news release, 10/18/2012; ICN Resources, Ltd., Management Discussion and Analysis, 12/30/2012; ICN Resources, Ltd., 43-101 technical report 8/1/2012)

Goldfield West. TAC Gold Corp. drilled five angled reverse circulation holes totaling 3,510 feet. Four holes were drilled in the South target in an attempt to identify major feeder faults interpreted from geophysical surveys. The remaining hole was drilled 4,500 feet to the north near a historic hole that contained a significant thickness of anomalous gold. The best intercepts in the South target holes include 20 feet grading 0.18 opt gold, and 145 feet grading 0.016 opt gold. The hole on the North target intercepted 10 feet grading 0.019 opt gold. A 43-101 technical review and resource assessment was completed. The estimated inferred resource is 5,052,444 tons grading 0.015 opt gold and 0.12 opt silver containing 85,898 ounces of gold and 589,078 ounces of silver. (TAC Gold Corp. news release, 1/12/2012; TAC Gold Corp. Management Discussion and Analysis, 3/1/2012; TAC Gold Corp. 43-101 technical report 10/23/2011; TAC Gold website, www.tacgold.com)

Lida District

South Lida. Western Pacific Resources Corp. completed 11 reverse circulation holes totaling 8,495 feet on its South Lida property about 22 miles southwest of Goldfield. Nine holes encountered anomalous gold values, which were mostly less than 0.007 opt. The best intercept was 60 feet averaging 0.008 opt gold, which included 10 feet grading 0.038 opt gold. (Western Pacific Resources Corp. news releases, 12/2/2010, 2/23/2011; Western Pacific Resources Corp. Management Discussion and Analysis, 6/28/2011; Western Pacific Resources Corp. website, www.westernpacificresources.com)

Palmetto District

Excelsior Springs. Global Geoscience (joint venture with Nubian Resources, Ltd.) completed 23 reverse circulation holes totaling 11,995 feet on the Excelsior Springs property about 25 miles southwest of Goldfield. The best intercepts were 25 feet grading 0.15 opt gold and 10 feet grading 0.14 opt gold. The mineralization occurs within an east-west trending zone between 650 feet and 1,300 feet wide and at least 2 miles long. The drilling intersected multiple zones of shallow, oxidized gold mineralization along 1.4 miles of strike, whereas, previously, the mineralization had only been targeted in a small area referred to as the Buster Zone. (Nubian Resources, Ltd., press release, 7/14/2011, 9/30/2011; Nubian Resources, Ltd., website, www.nubianr.com)

Oasis. Centerra, Inc. (joint venture with Redstar Gold Corp.) drilled 11 reverse circulation holes totaling 8,028 feet on Redstar's Gold's Oasis project. The drilling focused around the eastern and western edges of the known gold system where 2010 drilling intersected possibly structurally controlled, stronger disseminated mineralization. Better intercepts included 60 feet averaging 0.015 opt gold and 17.5 feet grading 0.052 opt gold. Copper grades increased with depth. The deepest drilling has been to 1,200 feet, and Redstar Gold believes deeper drilling has the potential to intersect an economic porphyry gold-copper deposit. Centerra withdrew from the joint venture. (Redstar Gold Corp. news releases, 12/15/2011, 5/30/2012; Redstar Gold Corp. Management Discussion and Analysis, 2/28/2012; Redstar Gold Corp. website, www.redstargold.com)

Red Mountain

Nivloc. International Millennium Mining Corp. (joint venture with Infrastructure Materials Corp.) completed 34 core holes totaling 31,416 feet. The drilling targeted an unmined part of the Nivloc Vein

located between the 900-foot level and the 200-foot level of the old workings and between partially mined areas near the west end and center of the vein structure. Significant intercepts included 66 feet grading 0.04 opt gold and 4.9 opt silver, 40 feet grading 0.055 opt gold and 3.0 opt silver, and 66 feet grading 0.065 opt gold and 7.8 opt silver.

Between 1937 and 1943, the Nivloc mine milled 364,064 tons of ore averaging 12.84 opt silver and 0.0516 opt gold and produced 4,675,408 ounces of Ag and 18,794 ounces of gold. Silver and gold mineralization occurs in epithermal quartz veins and stockwork zones hosted within the northeast-striking, northwest dipping normal fault zone referred to as the Nivloc Structure. It ranges between 80 feet and 230 feet wide with a vertical displacement of up to 600 feet. Most of the holes intersected the altered, crushed and quartz-bearing zone within the Nivloc Structure. Fourteen holes intersected mineralized quartz vein material. The veins are probably splays oblique to the Nivloc Structure emplaced along cross-cutting faults. The mineralized zone is 1,200 feet long and 600 feet wide. (International Millennium Mining Corp. Management Discussion and Analysis, 4/30/2012; International Millennium Mining Corp. 43-101 Technical report, 7/31/2012; International Millennium Mining Corp. website, www.immc.ca)

Silver Queen. MGold Resources, Inc., (joint venture with Silver Reserve Corp.) completed five reverse circulation holes totaling 3,490 feet that tested targets below the historic Mohawk Mine as well silver anomalies at the surface. Significant intercepts included 10 feet grading 4.7 opt silver and 10 feet grading 8.44 opt silver. (Infrastructure Materials Corp. news release, 2/6/2012; Infrastructure Materials Corp. 10-K Annual Report, 9/12/2012)

Silver Peak District

Mineral Ridge. Scorpio Gold Corp. drilled 242 reverse circulation holes totaling 62,285 feet. In the Drinkwater area, 42 holes were completed with 28 drilled as in-fill holes, and 14 targeting down-dip extensions of known mineralization. Better intercepts included 5 feet grading 0.202 opt gold, 15 feet grading 0.164 opt gold, and 35 feet grading 0.119 opt gold in separate holes. At the Mary area, 64 holes were completed with 57 holes drilled as in-fill holes, and seven targeting down-dip extensions. Some significant intercepts included 15 feet grading 0.381 opt gold, 5 feet grading 0.628 opt gold, and 15 feet grading 0.253 opt gold. The average hole spacing in Drinkwater and Mary is about 75 feet, and the average hole depth is 246 feet. Exploration drilling focused on the Mary LC, Gold Wedge/Oromonte, Gordon Brodie, Solberry, and

Coyote prospects. Between 1939 and 2010, 1,885 holes have been drilled totaling 332,125 feet.

The BLM issued a "Finding of No Significant Impact" approving the company's Environmental Assessment for conducting additional exploration drilling on public lands within the permitted mine boundary. The BLM also approved exploration notices for further exploration of targets outside of the current plan of operations boundary. The company commenced pre-production mining at the Drinkwater pit and pre-stripping operations in the Mary pit. Initial ore production is scheduled for the second quarter of 2012.

A 43-101 technical report for the life of the mine was released in 2012 based on work completed through 2011. The proposed plan calls for production at Drinkwater and Mary with a 3-year mine life, a throughput of 66,000 tons per month, and an annual production of 33,000 ounces of gold. Proven and probable reserves at a cut-off grade of 0.2 opt gold are 2,101,000 tons grading 0.062 opt gold containing 131,000 ounces of gold. The estimated indicated resource is 3,231,000 tons grading 0.059 opt gold. (Scorpio Gold Corp. Management Discussion and Analysis, 11/17/2011, 4/30/2012; Scorpio Gold Corp. 43-101 Technical Report, 7/15/2012; Scorpio Gold Corp. website, www.scorpogold.com)

Tonopah District

Three Hills. Allied Nevada Gold Corp. did no work on the Three Hills deposit in 2011, but Three Hills is included in the 43-101 technical report prepared for a proposed conventional open pit and heap leach operation for the Hasbrouck Mountain deposit. Three Hills had been under an option since 2003 for Newmont Capital to purchase a 51% interest, but the option lapsed in August 2010. The estimated indicated resource at a 0.01 opt equivalent gold cut-off grade is 5,736,000 tons grading 0.023 opt gold and containing 133,600 ounces of gold. (Allied Nevada Gold Corp. press release 2/27/2012; Allied Nevada Gold Corp. 42-101 technical report, 4/11/2012; Allied Nevada Gold Corp. SEC Form 10-K, 12/31/2011; Allied Nevada Gold Corp. website, www.alliednevada.com)

Weepah District

Weepah. In early 2011, Columbus Gold Corp. completed 15 reverse circulation holes totaling 7,895 feet. The holes were located east of the historical open pit. Significant intercepts included 25 feet averaging 0.067 opt gold, which contained 5 feet grading 0.128 opt gold, 55 feet averaging 0.038 opt gold, which contained 10 feet grading 0.132 opt gold, and 15 feet averaging 0.101 opt gold, which contained 5 feet grading 0.273 opt gold.

Mineralization occurs in Precambrian siltstone and limestone immediately beneath gravel cover. Columbus Gold Corp. formed a joint venture with Sniper Resources, Ltd. to further explore the property. (Columbus Gold Corp. news releases, 1/13/2012, 4/7/2011, 9/27/2011, 6/14/2012; Columbus Gold Corp., website, www.columbusgoldcorp.com; Sniper Resources, news release, 4/24/2012; Ltd., Sniper Resources, Ltd., website, www.sniperresources.com)

EUREKA COUNTY

Antelope District

Afgan-Kobeh. NV Gold Corp. drilled 23 reverse circulation holes totaling 8,397 feet as in-fill and step-out holes on the Afgan portion of the property as well as to test new targets on the Kobeh portion. At least nine holes in the Afgan portion intersected economic mineralization. One hole intercepted 55 feet averaging 0.118 opt gold that included 30 feet grading 0.197 opt gold. The Afgan project contains a semi-continuous zone of gold mineralization that lies along the contact of thinly bedded siltstones of the Mississippian Webb Formation with the underlying Devonian Devils Gate Limestone. This contact dips east at shallow to moderate angles, with the bulk of the mineralization occurring in brecciated Webb sedimentary rocks that are commonly altered to jasperoid. An updated 43-101 technical report was issued in June that included updated resource estimates. The indicated resource at a cut-off grade of 0.006 opt gold is 3,206,000 tons grading 0.021 opt gold for a total of 66,000 ounces of gold. The inferred resource is 3,972,000 tons grading 0.014 opt gold for a total of 55,000. (NV Gold Corp. news release, 11/18/2011; NV Gold Corp. Management Discussion and Analysis, 2/24/2012; NV Gold Corp. 43-101 updated technical report, 6/13/2011; NV Gold website, www.nvgoldcorp.com)

Gold Bar Complex. US Gold Corp. drilled 41 reverse circulation holes, totaling 7,245 feet at its Gold Bar Complex. The drilling focused on the extensions to the Gold Pick, Gold Ridge, and Cabin Creek mineralization along with other targets identified through geologic mapping and sampling. Mineralization is localized in an apparent northwest-trending horst of McColley Canyon Formation which is cut by a series of northeast-trending structures. Better intercepts were 70 feet averaging 0.028 opt gold, which included 5 feet grading 0.087 opt gold and 10 feet grading 0.067 opt gold, 67.5 feet averaging 0.034 opt gold, and 25 feet grading 0.042 opt gold.

A 43-101 technical report was released on the reserves and resources of the Gold Pick, Gold Ridge, and Cabin Creek deposits. The total proven

and probable reserves are estimated to be 16,629,081 tons grading 0.29 opt gold for a total of 484,379 ounces of gold. The measured and indicated resource at a 0.3 opt gold cut-off grade is 21,486,000 tons grading 0.027 opt gold for a total of 592,928 ounces of gold. The inferred resource is 7,575,000 tons grading 0.027 opt gold for a total of 212,168 ounces. Metallurgical recovery is estimated to be 82%. At the beginning of 2012, US Gold Corp. and Minera Andes, Inc., combined and changed their names to McEwen Mining, Inc. (US Gold Corp. press release 1/20/2012; US Gold Corp. 2011 SEC Form 10-K, 3/9/2012; US Gold Corp. 43-101 Technical Report, 11/28/2011; McEwen Mining, Inc. website, www.mcewenmining.com)

Red Canyon. CMQ Resources, Inc. leased the Red Canyon property from Miranda Gold Corp. CMQ drilled 13 reverse circulation holes totaling 7,395 feet. The holes tested the Ice prospect and the structural corridor trending southeast from it. Significant intercepts included 20 feet grading 0.205 opt gold and 30 feet grading 0.115 opt. Potential stratigraphic host horizons for disseminated gold occur in debris flow units within the Devonian Denay and McColley Canyon Formations. (CMQ Resources, Inc. Management and Discussion Analysis, 4/13/2012; CMQ Resources, Inc., website, www.cmqresources.com).

TAZ. Navaho Gold, Ltd. (joint venture with Miranda Gold Corp.) completed one core hole to 2,400 feet on the TAZ property in the Roberts Mountains. The hole was drilled to test lower plate carbonate rocks, but no results were released. Navaho Gold also continued mapping and collecting surface samples and can earn up to a 75% interest in the property. (Navaho Gold news releases 9/15/2011, 10/24/2012; Navaho Gold 2012 annual report, 9/28/2012; Navaho Gold website, www.navahogold.com).

Cortez District

Garden Gate Pass. Rye Patch Gold Corp. completed six reverse circulation holes totaling 12,955 feet at its Garden Gate Pass project located in the far southwest end of Pine Valley 10 miles southeast of the Cortez Hills deposit. The two targets drilled were the Eastern zone (3 holes) and the Western Zone (3 holes). The two targets are under pediment gravel and were identified through geologic mapping and geophysical surveys that indicated two gravity highs. The drill holes intersected lower plate siltstones and carbonates of the Devonian Horse Canyon and Wenban Formations, which included several altered and dike zones containing anomalous gold, arsenic, and antimony. (Rye Patch Gold Corp. news releases,

8/9/2011, 9/13/2011, 1/5/2012; Rye Patch website, www.ryepatchgold.com)

Red Hill/Goldrush. Barrick Gold Corp. announced two gold discoveries about 4 miles southeast of the Cortez Hills Mine. An initial drill program in 2007 at Red Hill was conducted to test for deeper sulfide mineralization below an area of shallow oxide mineralization, which resulted in identifying favorable carbonate stratigraphy. An initial inferred resource of 3.5 million ounces from 28,756,602 tons grading 0.123 opt gold was defined at Red Hill with mineralization open in all directions. By the end of 2011, the resource was defined at 1.27 million indicated ounces and 3.3 million inferred ounces gold. Subsequent drilling about 1.25 miles south-southeast along the projected strike from Red Hill intersected 67.2 feet grading 0.894 opt gold. Follow-up drilling confirmed a new mineralized zone called Goldrush. Later in-fill drilling between Red Hill and Goldrush showed these two deposits were actually parts of one larger deposit. Some of the better intercepts during this phase included 128 feet grading 0.316 opt gold and 91 feet grading 0.77 opt gold. The majority of the mineralization intersected to date is refractory and occurs at depths between 500 and 1,650 feet. The 2011 drill program in this area planned for 264,000 feet of drilling with a \$26 million budget. By early September, 160,000 feet had been drilled. In 2011, Barrick staked 276 claims, solidifying their land position in the Red Hill/Goldrush area and extending its position several miles eastward into Horse Valley. (Barrick Gold Corp. press release, 9/7/2011; Barrick Gold Corp. Q4 financial and operating report, 2/16/2012; Barrick Gold Corp. 2011 Annual Report; Barrick Gold Corp. website, www.barrick.com; E. Cope, Barrick Gold Corp., oral communication, AIPG meeting, 12/20/2011)

Eureka District

Lookout Mountain/South Eureka. For the fiscal year ending in September 30, 2011, Timberline Resources Corp. spent almost \$3.7 million for exploration on its Lookout Mountain property. In 2010 and 2011, the company drilled 93 reverse circulation holes totaling 57,510 feet and nine core holes totaling 5,827 feet mainly in and around its Lookout Mountain and South Adit deposits. Better intercepts included 240 feet grading 0.016 opt gold, 20 feet grading 0.021 opt gold, and 75 feet grading 0.022 opt gold at Lookout Mountain, and 80 feet grading 0.021 opt gold, and 55 feet grading 0.033 opt gold at South Adit.

An updated 43-101 technical report on the Lookout Mountain was released in early 2012. The estimated measured and indicated resources at cut-off grades of 0.006 opt gold for oxidized material and

0.03 opt gold for unoxidized material are 20,765,000 tons grading 0.019 opt gold, and containing 390,000 ounces of gold. The inferred resource is 18,385,000 tons grading 0.012 opt gold, and containing 221,000 ounces of gold. The resources are open in along strike in both directions and down dip. (Timberline Resources Corp., press releases, 9/8/2011, 1/17/2012; SEC Form 10-K, 12/15/2011; Timberline Resources Corp. 43-101 Technical Report, 4/15/2012; Timberline Resources Corp. website, www.timberline-resources.com)

Ruby Hill. Barrick Gold Corp. continued drilling, mainly in-fill holes, on the Bullwhacker gold deposit just west of the Archimedes open pit within the antiform that runs along Mineral Ridge. The measured and indicated resource is 56.9 million tons grading 0.02 opt gold for a total of 1.12 million ounces of gold. The inferred resource is 11.7 million tons grading 0.019 opt gold for a total of 230,000 ounces of gold. In-fill drilling continued on the West Archimedes deposit in the 426 expansion area just north of the open pit.

In 2011, the Ruby Hill mine produced 127,089 ounces of gold and 42,754 ounces of silver. Production was up 57% due to an increase in the amount of refractory grade ore that was processed, resulting in higher head grades. The total cash cost was \$334 per ounce of gold, down from \$535 in 2010. The metallurgical recovery was 73% at a cut-off grade between 0.004 and 0.012 opt gold. The proven and probable reserve at the end of 2011 was 16,778,000 tons grading 0.058 opt gold containing 978,000 ounces of gold. (Barrick Gold Corp., annual information form, 3/28/2012; Barrick Gold Corp., annual report 2011; Barrick Gold Corp., Investor Day presentation, 9/11/2011; Barrick Gold Corp. website, www.barrick.com)

Fish Creek District

Browns Canyon. Columbus Gold Corp. completed 17 reverse circulation holes totaling 11,358 feet on its Browns Canyon property about 12 miles west of the Ruby Hill Mine. Gold mineralization occurs along two stratigraphic horizons, one at the contact between Mississippian siltstone and sandstone and underlying Devonian limestone and the other about 100 feet above the contact along the top of a limestone bed in the Mississippian section. The mineralization extends at least 2,950 feet along strike and 490 feet down dip from the surface and remains open to the northwest along strike. Better intercepts were 25 feet averaging 0.024 opt gold, 40 feet grading 0.02 opt gold, and 30 feet grading 0.023 opt gold, which included 5 feet grading 0.05 opt gold. (Columbus Gold Corp. news releases, 9/28/2011, 6/14/2012; Columbus Gold Corp. website, www.columbusgoldcorp.com)

Rose Mine. Navaho Gold, Ltd., (joint venture with Renaissance Gold, Inc.) completed ten reverse circulation holes totaling 4,960 feet at the Rose Mine property about 8 miles southwest of the Ruby Mine. Three holes cut three 5-foot to 15-foot zones grading around 0.002 opt gold and one 50-foot zone grading 0.033 opt silver. Several holes also intersected elevated arsenic, antimony, barium, thallium, and bismuth. The drilling tested geophysical and soil geochemistry targets on the covered pediment of the basin east and north of the Rose Mine area. (Renaissance Gold, Inc. press release, 9/21/2011, 1/18/2012; Renaissance Gold, Inc. website, www.rengold.com)

Stevens Basin. Navaho Gold (joint venture partner with Columbus Gold Corp.) completed 22 reverse circulation holes totaling 12,110 feet on the Stevens Basin property about 6 miles southwest of the Ruby Hill Mine. The best intercepts were 15 feet grading 0.009 opt gold and 5 feet grading 0.01 opt gold. Stevens Basin is a 4-square mile, gravel-filled, semi-circular basin. The hills along the northern margin consist mainly of Devonian limestone containing areas of altered and mineralized intrusive rock and siltstone float. The target was calcareous siltstone under the gravel cover down dip from the limestone. (Columbus Gold Corp. news releases, 8/3/2011, 10/13/2012; Columbus Gold Corp., website, www.columbusgoldcorp.com; Navaho Gold 2011 annual report; Navaho Gold 2011 news releases, 10/13/2011, 2/8/2012)

Gibellini District

Gibellini. American Vanadium Corp. continued to advance its Gibellini vanadium project towards feasibility. No drilling was conducted, but the company spent almost \$2.6 million on exploration and evaluation in 2011, and released a 43-101-compliant feasibility study. The study proposes an oval pit 2,275 feet by 1,650 feet with a maximum depth of 180 feet. The ore would be crushed and vanadium extracted through heap leaching with an average recovery rate of 66%. Over the 7-year life of the mine, 79.5 million pounds of vanadium pentoxide would be produced. In August 2011, the company's pilot scale metallurgical testing successfully resulted in the first production of vanadium pentoxide and vanadium electrolyte. (American Vanadium Corp. press releases, 8/22/2011; American Vanadium Corp. Management Discussion and Analysis 4/24/2012; American Vanadium Gibellini Vanadium Project 43-101 report, 8/31/2011; American Vanadium Corp. website, www.americanvanadium.com)

Lynn District

Northern Carlin Trend. Newmont Mining Corp. continued its huge exploration and development program on its properties in the northern Carlin trend. An amount of \$52 million was spent on underground development at the Leeville/Turf deposit. The planned life of the mine will last through 2024, with an estimated grade between 0.27 and 0.4 opt gold. In 2011 production started at the Exodus underground mine, the portal of which is in the Lantern open pit. The mine is expected to produce between 65,000 and 75,000 ounces of gold annually for at least 5 years. Production started up at the Pete-Bajo underground mine, the portal of which is in the Pete open pit where open-pit mining ceased in December 2009. The portal to the Deep Star underground mine is through the Silver Star pit (formerly Genesis pit), but Small Mine Development ended mining there at the end of 2011.

Open-pit mining by Newmont took place at Lantern, the original Carlin, and the new Pay Raise open pits. Mining at the new layback at the Carlin Pit is being referred to as the East Carlin surface pit and is expected to continue until 2013. Mining will remove the East Carlin portal to the Leeville underground mine, but secondary access to Leeville will be through Pete-Bajo. Widge, which is part of the Blue Star pit, went into production in 2011, but will cease mining in April 2012. The BLM approved Newmont Mining's Genesis Project. The project involves expanding the Silver Star pit (formerly Genesis pit) and back-filling the Blue Star and Beast pits. The life of the mine is expected to be 12 years. (Elko Daily Free Press, 5/26/2011; Elko Daily Free Press Mining Quarterly, Fall 2011, Spring 2012; Newmont Mining Corp. 2011 SEC Form 10-K, 2/14/2012; Newmont Mining Corp. presentation, 7/11/2011; Newmont Mining Corp. website, www.newmont.com)

Goldstrike Open Pit. Production at Barrick Gold Corp.'s Goldstrike open pit mine decreased to 1,090,000 ounces of gold in 2010, down by 12% from 2009, largely due to lower average head grades due to mine sequencing and lower throughput at the autoclave. Total cash cost was \$511 per ounce, up from \$490 per ounce in 2010. At the end of 2011, the total resources of the Goldstrike property were proven and probable reserves 109,220,000 tons grading 0.113 opt gold containing 12,337,000 ounces of gold, and measured and indicated mineral resource 10,689,000 tons grading 0.185 opt gold containing 1,975,000 ounces of gold. (Barrick Gold Corp., 2011 Annual Report, 3/26/2012; Barrick Gold Corp., 43-101 technical report, 3/16/2012; Barrick Gold website, www.barrick.com)

Meikle, Banshee, North Post, Ren, Rodeo Underground Mines. Barrick Gold Corp. extended the Meikle underground mine northwards towards the Banshee deposit. Reserve conversion using mostly reverse circulation drilling included 171 holes totaling 24,953 feet; this total included 38 holes totaling 8,994 feet at Meikle and 129 holes totaling 23,227 feet at Rodeo, but none were drilled at Banshee. Four exploration holes were completed at Ren, and two underground core holes were completed at Deep North Post, a new orebody in the Meikle zone. The underground proven and probable reserves at Meikle/Rodeo announced at the end of 2011 were 11,861,000 tons grading 0.255 opt gold for a total of 3,026,000 ounces of gold. (Elko Daily Free Press Fall 2011 Mining Quarterly; Barrick Gold Corp., 40-F Form, 3/28/2012; Barrick Gold Corp., 43-101 technical report, 3/16/2012; Barrick Gold website, www.barrick.com)

Maggie Creek District

Gold Quarry/Chukar/Mike. Newmont Mining Corp.'s Gold Quarry open pit came back on-line in 2011 after remediation of a giant pit wall failure that occurred in December of 2009. The Chukar underground mine, whose portal is in a pit wall of Gold Quarry, was shut down during the failure and remedial work, and the miners moved over to the Exodus Mine. Construction began on a new access ramp and new portal for the Chukar Mine, which is set to reopen in 2012. In 2011, a drilling program was started at the Mike deposit about 5 miles northwest of Gold Quarry. (Elko Daily Free Press Fall 2011 Mining Quarterly; Newmont Mining Corp. 2011 SEC Form 10-K, 2/14/2012; Newmont Mining Corp. presentation, 7/11/2011; Newmont Mining Corp. website, www.newmont.com)

Mount Hope District

Mount Hope. General Moly Inc. (joint venture with POS-Minerals) continued its efforts at permitting and financing the development of the Mount Hope porphyry molybdenum deposit. The BLM released a preliminary draft environmental impact statement. (General Moly Inc. news release, 9/5/2012; General Moly Inc. SEC Form 10-K, 4/12/2012; General Moly Inc. website, www.generalmoly.com)

Northern Simpson Park Mountains

Red Hill. NuLegacy Gold Corp. (joint venture with Miranda Gold Corp.) drilled eight reverse circulation holes totaling 8,380 feet. The drilling focused on the east-northeast-trending Long Fault. The best intercept was 15 feet grading 0.027 opt gold, which included 5 feet grading 0.055 opt gold. (Miranda Gold Corp. news release, 11/4/2011; NuLegacy

Gold Corp. Management Discussion and Analysis 4/2/2012; NuLegacy Gold Corp. website, nulegacygold.com)

Tonkin Springs. US Gold Corp. drilled one reverse circulation hole totaling 2,190 feet, at the north end of the property and continued geologic mapping and sampling. The hole did not intersect ore-grade mineralization, but did reach favorable host rocks of the lower-plate Roberts Mountains Formation. The company filed a mine closure plan with the BLM at the end of 2010, which was under review in 2011, and reclaimed some access roads and disturbed areas. (McEwen Mining Management Discussion and Analysis, 4/2/2012; McEwen Mining website, www.mcewenmining.com)

Safford District

Crescent Valley North. Gold Standard Ventures Corp. spent about \$187,000 on exploration of its Crescent Valley North property, located about 12 miles south-southwest of the town of Carlin. The company drilled two angled core holes on the Safford portion of the property. Workings from the 1880's went down about 150 feet. The holes were drilled through, down-dip, and along strike of the old workings, but no significant gold assays were encountered. The company also conducted geologic mapping and collected 1,800 soil samples on the Iron Blossom portion of the property. (Gold Standard Ventures Corp. Management Discussion and Analysis, 4/13/2012; Gold Standard Ventures website, www.goldstandardv.com)

HUMBOLDT COUNTY

Awakening District

Awakening. Nevada Exploration Inc. completed 10 core holes totaling 5,160 feet on its Shine Claims that lie within the Awakening Project area about 3 miles north of the Sleeper Mine. In another area of the Awakening project, Northgate Minerals Corp. (joint venture with Nevada Exploration Inc.) completed seven holes totaling 7,198 feet. In October, AuRico Gold Inc. acquired Northgate Minerals. Because of low assays, AuRico Gold Inc. terminated the agreement with Nevada Exploration. (Nevada Exploration Inc. news release, 6/23/2011, 1/6/2012; Nevada Exploration Inc., Management Discussion and Analysis, 3/28/2012; Nevada Exploration Inc. website, www.nevadaexploration.com; AuRico Gold Inc. news release, 10/26/2011)

Sleeper. Paramount Gold and Silver Corp. completed nine sonic holes on three dumps to collect samples for assay and metallurgical testing of

the waste dump material. The results were encouraging and an additional 65 reverse circulation holes totaling 7,613 feet were completed on the dumps. Of the 65 holes, 47 returned intercepts grading above 0.006 opt gold and 18 returned intercepts grading above 0.012 opt gold. One hole returned 59 feet grading 0.024 opt gold. Paramount released a new resource estimate that included the dump material. The estimated measured and indicated resource, using a cut-off grade of 0.003 opt, is 360 million tons grading 0.026 opt gold for a total of 3,479,000 ounces of gold. Just less than 80% of that resource is sulfide material. (Paramount Gold and Silver Corp. press releases, 11/22/2011, 2/7/2012; Paramount Gold and Silver Corp. 43-101 technical report, 10/28/2011; Paramount Gold and Silver Corp. website, www.paramountgold.com)

Battle Mountain District

BMX. US Gold Corp. completed 3 reverse circulation holes totaling 2,205 feet on the Medea prospect on its BMX property, which straddles the Humboldt/Lander County line. The company also conducted extensive geologic mapping and soil and rock sampling. No results had been released by year's end. US Gold Corp. and Minera Andes, Inc., combined and changed their names to McEwen Mining, Inc. (US Gold Corp. press release 1/20/2012; McEwen Mining Inc., SEC Form 10-K, 3/9/2012; McEwen Mining, Inc. website, www.mcewenmining.com)

Marigold. Goldcorp Inc. (2/3 Goldcorp, 1/3 Barrick Gold Corp.) produced 153,741 ounces of gold in 2011 at an average grade of 0.017 opt gold. Gold production was up 12% from 2010, primarily because of a 39% increase in ore tonnage processed due to mining of the Basalt Phase 7 open pit into the ore body. Total cash cost was \$784 per ounce of gold. Exploration activity focused on development drilling in the Target II, Target III and the Red Dot deposits where positive results added 500,000 ounces of gold to the reserve. The estimated proven and probable reserves at the end of 2011 were reported to be 149.6 million tons grading 0.015 opt gold for a total of 2.32 million ounces of gold. The measured and indicated resources totaled 270,000 ounces of gold. (Goldcorp Inc. news release, 2/15/2012; (Goldcorp Inc. news release, 2/15/2012; Goldcorp Inc. 2011 annual report; Management Discussion and Analysis, 2/15/2012; Elko Daily Free Press Mining Quarterly Winter 2011, Spring 2012; Goldcorp Inc. website, www.goldcorp.com)

Buffalo Mountain District

Converse. In 2011, International Minerals Corp. spent \$600,000 on drilling eight core holes totaling 13,946 feet and ten reverse circulation holes totaling 4,220 feet. Prior to 2011, 312 holes totaling 205,380 feet had been drilled by previous property owners. Significant intercepts reported include 476 feet grading 0.030 opt gold, which included 85 feet grading 0.05 opt gold, 46 feet grading 0.045 opt gold, and 30 feet grading 0.052 opt gold. In December, the company completed a preliminary economic assessment for a proposed open pit mine. The measured and indicated resource at a cut-off grade of 0.008 opt gold is estimated to be 353 million tons grading 0.015 opt gold and 0.11 opt silver for a total of 5.17 million ounces of gold and 37.95 million ounces of silver. (International Minerals Corp. news release, 7/5/2011, 5/29/2012; International Minerals Corp. Management Discussion and Analysis, 5/15/2012; International Minerals Corp. 43-101 technical report 2/2/2012; International Minerals Corp. website, www.intlminerals.com)

Golden Edge. Ashburton Ventures Inc. signed a letter of intent with Premier Gold Mines, Ltd., to option the Golden Edge property located about 30 miles east of Winnemucca. Work done between 2001 and 2004 on the property included CSAMT, seismic, and soil geochemical surveys and six reverse circulation holes totaling 5,576 feet. The holes never reached targeted formations but may have drilled into the Valmy Quartzite and Antler Sequence rocks. (Ashburton Ventures Inc. Management Discussion and Analysis, 12/28/2011; Ashburton website, www.ashburtonventures.com)

Hot Pot. Bridgeport Ventures, Inc. completed 6 reverse circulation holes totaling 9,138 feet on its Hot Pot property about 19 miles northwest of Battle Mountain. No significant assays were returned, and the best intercept reported was 5 feet grading 0.0088 opt gold. The drilling tested for a buried, bulk tonnage, sediment-hosted gold deposit. (Bridgeport Ventures, Inc. news release, 10/5/2011; Management Discussion and Analysis, 7/19/2012)

Disaster District

Albisu. In April 2011, Western Uranium Corp. changed its name to Concordia Resource Corp. In July, Concordia Resource commenced drilling 2 angled core holes at its Albisu (formerly Kings Valley) property to test potentially mineralized structures along the west side of the extensive low-grade gold mineralization identified from the drilling of 12 core holes in 2008 and 2009. The drilling was suspended in September when the company redirected its exploration priorities and resources elsewhere. (Concordia Resource Corp. press

release, 4/4/2011, 7/20/2011, 9/30/2011; Concordia Resource Corp. Management Discussion and Analysis, 1/27/2012; Concordia Resource Corp. website, www.concordiaresourcecorp.com)

Potosi District

Pinson. In August, Atna Resources, Ltd., acquired Barrick Gold Corp.'s 70% interest in the Pinson Mine. An agreement was also signed to allow Atna Resources to process ore from the Pinson Mine at Barrick's Goldstrike processing facilities. The Pinson mine produced 985,000 ounces of gold between 1980 and 1999 by open pit mining.

The company reported a new measured and indicated open pit resource of 25,466,300 tons grading 0.039 opt gold containing 981,700 ounces of gold at a cut-off grade of 0.01 opt. The measured and indicated underground resources at a cut-off grade of 0.1 opt gold was estimated to be 5,553,300 tons grading 0.261 opt gold for a total of 1,450,100 ounces of gold. (Atna Resources, Ltd., news release, 8/11,2011; Atna Resources, Ltd., 43-101 technical report, 3/16/2012; Atna Resources, Ltd., website, www.atna.com)

Turquoise Ridge. Barrick Gold Corp.'s Turquoise Ridge Mine (75% Barrick, 25% Newmont Mining Corp.) produced 178,283 ounces of gold in 2011, an increase of 10% from 2010. Most of the underground mining occurred in the North Zone. The ore is processed at the Sage Mill at Twin Creeks Mine. The metallurgical recovery was 92% with a cut-off grade between 0.204 opt and 0.238 opt gold.

Much of Barrick Gold Corp.'s exploration activity at its Turquoise Ridge mine focused on testing the potential to develop a large-scale open pit to mine the lower grade mineralization that forms a halo around the high-grade ores that are currently being mined underground. Twelve drill rigs were busy defining and updating the reserves and resources in support of the prefeasibility study of the proposed open pit.

At the end of 2011, the proven and probable underground reserve at Turquoise Ridge property was reported to be 11,986,000 tons grading 0.442 opt gold for a total of 5,294,000 ounces of gold. The measured and indicated resource was estimated to be 62,394,000 tons grading 0.122 opt gold containing 7,641,000 ounces of gold. The inferred resource was estimated to be 25,494,000 tons grading 0.13 opt gold for a total of 3,303,000 ounces of gold. The life of the underground mine is projected to last until 2039. (Barrick Gold Corp., 2011 Annual Report, 3/26/2012; Barrick Gold Corp. 2011 annual report; Elko Daily Free Press Mining Quarterly, Spring 2011, Spring 2012; Barrick Gold Corp. website, www.barrick.com; Newmont Mining Corp. SEC Form 10-K, 2/24/2012)

Twin Creeks. Newmont Mining Corp. produced 484,449 ounces of gold and 290,802 ounces of silver at Twin Creeks in 2011. The company budgeted \$7 million for drilling at Twin Creeks in 2011. Drilling continued at the Fiberline deposit located adjacent to and below the east highwall of the Mega Pit underneath stock piles and dumps; this has the potential to add 8 million ounces of gold to the Twin Creeks reserve. The best intercept at Fiberline in 2011 was 350 averaging 0.084 opt gold that started at a depth of 1124 feet. The intercept included 30 feet grading 0.302 opt gold. As part of Phase 1 of Newmont's Vista Vein Project located at the bottom of the Vista Pit, Small Mine Development constructed surface infrastructure and a portal and drove a 1,700-foot exploration drift with drill stations during the first half of 2011. Exploration drilling verified the presence of an ore body that could be mined underground. At the end of 2011, the total reserves of the Twin Creeks Ridge property were reported to be proven and probable 43.3 million tons grading 0.078 opt gold for a total of 3,780,000 million ounces of gold. (Elko Daily Free Press Spring 2011 Mining Quarterly; Newmont Mining Corp. SEC Form 10-K, 2/24/2012; Newmont website, www.newmont.com; Small Mine Development website, www.undergroundmining.com; R. Reid, Newmont Mining Corp., oral communication, AIPG meeting, 12/20/2011)

Snowstorm Mountains District

Snowstorm. Snowstorm Exploration LLC drilled several core holes on its large property north-northeast of Twin Creeks. (R. Thomason, Newmont Mining Corp., oral communication, NWMA meeting, 12/7/2011)

Sulphur District

Hycroft. Allied Nevada Gold Corp. produced 104,002 ounces of gold and 479,440 ounces of silver from their Hycroft Mine in 2011. The mine moved 34,007,000 tons of material, including 16,628,000 tons of ore placed on the leach pad at average grades of 0.013 opt gold and 0.34 opt silver. The company completed 287 holes totaling 267,977 feet. Of these, 182 reverse circulation holes totaling 138,754 feet and 83 core holes totaling 116,791 feet focused on metallurgical and geotechnical sampling and step out drilling of the Brimstone, Central, and Vortex zones. Holes were drilled for geotechnical tests on the reserve pit and condemnation work at the proposed West and South Dump and South Leach pad areas. Significant mill-grade intercepts included 203 feet grading 0.033 opt gold and 0.968 opt silver and 89 feet grading 0.023 opt gold and 3.8 opt silver. Better intercepts of heap-

leach material included 275 feet grading 0.026 opt gold and 0.508 opt silver and 134 feet grading 0.027 opt gold and 0.7 opt. Drill data indicates the mineralization extends to depths of at least 330 feet from the northwest corner of the Bay Area to over 1,000 feet in the Brimstone zone in the eastern part of the property and to over 2,000 feet in the Vortex zone to the southeast. At the end of 2011, the total proven and probable reserve for the Hycroft property was 1,134,669,000 tons grading 0.011 opt gold and 0.42 opt silver for a total of 12,651,000 ounces of gold and 481,881,000 ounces of silver. (Allied Nevada Gold Corp. news release, 1/9/2012; Allied Nevada Gold Corp. SEC Form 10-K, 2/27/2012; Allied Nevada Gold Corp. 43-101 technical reports, 3/31/2011, 10/5//2011, 4/9/2012; Allied Nevada Gold Corp. website, www.alliednevada.com; BLM news release, 7/6/2012)

Tenmile District

Sandman. In April 2011, Newmont Mining Corp. acquired Fronteer Gold Inc. for approximately \$2.3 billion, which included the acquisition of the Sandman Project. The company continued drilling at Sandman after the acquisition, but no details were available. (Elko Daily Free Press Summer 2011 Mining Quarterly)

Table Top. Max Resource Corp. drilled six core holes totaling 1,630 feet. Significant intercepts reported include 5 feet grading 0.043 opt gold, 31 feet grading 0.030 opt gold, and 10 feet grading 0.024 opt gold in three holes. The drilling extends the mineralized zone almost 300 feet to the northeast and extends the total strike length to 1,650 feet. The mineralization remains open along strike. The mineralization is hosted in the Triassic Raspberry Formation mainly in the form of quartz veinlets and small pods of jasperoid in limestone. It occurs along a northeast-trending fault zone at the southwestern edge of Little Tabletop Mountain. (Max Resource Corp. News Release, 5/31/2011; Max Resource Corp. Management Discussion and Analysis, 4/24/2012; Max Resource Corp. website, www.maxresource.com)

Vicksburg District

Ashdown. Win-Eldrich Mines Ltd. produced 648,853 pounds of molybdenite concentrate in 2011 from its underground Ashdown mine, up 77% from 2010. On November 1, 2011, the company decided to phase out molybdenum production and return to its original plan to mine the property for gold. Molybdenum production would afterwards be reconsidered if the price stabilized above \$20 per pound. (Win-Eldrich Mines Ltd. Management and Discussion Analysis, 5/24/2012)

LANDER COUNTY

Battle Mountain District

Copper Basin. Newmont Mining Corp. carried out a major drill program at its Copper Basin project. No results were reported. (R. Reid, Newmont Mining Corp., oral communication, AIPG meeting, 12/20/2011)

Phoenix. In 2011, Newmont Mining Corp. mined the Fortitude, Glory Hill, and Bonanza open pits at its Phoenix mine. Phoenix produced 23,897,965 pounds of copper, an increase of 27% from 2010. The metallurgical recovery was 58%. Gold production was 205,658 ounces, a decrease of 4% from 2010. The metallurgical recovery was 72%. Silver production was 1,152,312 ounces. Newmont had three active drill rigs for most of the year, but no results were released. At year's end, the proven and probable reserves for gold were 447.1 million tons grading 0.16 opt gold for a total of 3.78 million ounces of gold. Reserves increased by 1.5 million ounces of gold mainly by conversion of resources into reserves. The proven and probable reserves for copper were 620.5 million tons grading 0.16% copper containing 2.04 million pounds of copper. (Elko Daily Free Press Winter 2011 Mining Quarterly; Newmont Mining Corp. SEC Form 10-K, 2/24/2012; Newmont website, www.newmont.com; BLM Final Environmental Impact Statement 1/2012)

Big Creek District

Porter Canyon. Late in 2011 Highway 50 Gold Corp. (formerly Tatmar Ventures, Inc.) completed two reverse circulation holes totaling 3,211 feet late on its Porter Canyon property a few miles west of the old Quito gold mine on the west side of the Toiyabe Range. Geophysical surveys indicate the existence of a shallowly buried horst block about one mile west of the range front. A series of gold-bearing jasperoids along structures trending southeastward back to the old Quito open pit gold mine define the target area. Both holes tested the pediment target west of the range front, but lost circulation in alluvium before encountering bedrock. However, the bottom 130 feet of one hole contained anomalous concentrations of arsenic and antimony in alluvium. That alluvial intercept also contained 110 feet grading 61 ppb gold. (Highway 50 Gold Corp. news release 3/5/2012; Highway 50 Gold Corp. 2011 annual report, 4/26/2012; Highway 50 Gold Corp. website, www.highway50gold.com)

Buffalo Valley District

Buffalo Valley. Newmont Mining Corp. (joint venture with Fairmile Goldtech Inc.) continued to explore its Buffalo Valley project. It is unknown whether any drilling was carried out. At year's end the resources were reported as indicated 16.5 million tons grading 0.019 opt gold and inferred 2.9 million tons grading 0.014 opt gold. (PR Newswire, 2/23/2012; Newmont website, www.newmont.com)

Bullion District

Fire Creek. In April Klondex Mines Ltd. began underground test-mining and exploration of its Fire Creek deposit. On the surface, the company drilled 14 reverse circulation holes, totaling 22,263 feet, and 19 core holes, totaling 29,336 feet. The drilling program tested for extensions of the known mineralized zones at the Fire Creek project, particularly geophysical anomalies south of the main portion of the vein system (Main Zone), targets on the east side of the Main Zone, and areas along projections of the Far North zone. Better intercepts were 16 feet grading 0.026 opt gold, 5 feet grading 0.41 opt gold and 4 feet grading 0.031 opt gold. The drilling program significantly extended the east Main Zone veins, discovered two vein extension zones at north Main Zone, and intersected a new vein zone between the Main and Far North Zones. Also, 28 underground core holes were completed totaling 21,625 feet. The underground drilling program tested in greater detail the continuity of mineralized areas in the Main Zone previously outlined from earlier widely spaced surface drilling. (Klondex Mines Ltd. news releases, 11/10/2011, 2/14/2012; Klondex Mines Ltd. Management Discussion and Analysis, 3/30/2012; Klondex Mines Ltd. Annual Information Form, 2/17/2012; Klondex Mines Ltd. website, www.klondexmines.com)

Gold Acres Window. Barrick Gold Corp. re-evaluated the resources for Gold Acres and included them in a new 43-101 technical report on the Cortez Joint Venture operation. The measured and indicated resource is estimated to be 5,032,000 tons grading 0.097 opt gold containing 487,000 ounces of gold. The proven and probable reserve at the Pipeline/South Pipeline, Gap, and Crossroads deposits is 5,416,000 ounces of gold. Barrick carried out a drill program around the Pipeline deposit and other targets in the Gold Acres window. No results were released. (Barrick Gold Corp. 43-101 technical report, 3/16/2012; Barrick Gold Corp. Annual Information Form, 3/28/2012; Barrick Gold Corp. website, www.barrick.com)

Utah Clipper. Navaho Gold, Ltd. (joint venture with Columbus Gold Corp.) drilled the Utah Clipper property just west of the Gold Acres Mine in late 2011. The drill was still operating at year's end. The

first hole hit silver mineralization in upper plate rocks near the surface. The best intercept was 27 feet grading 0.79 opt silver and (Columbus Gold Corp. press release, 2/28/2012; Navaho Gold, Ltd., website, www.navahogold.com)

Callaghan Ranch District

Big Blue. Ramelius Resources Ltd. (joint venture with Miranda Gold Corp.) completed seven reverse circulation holes totaling 4,349 feet. The property lies within the Callaghan carbonate window in the Toiyabe Range north of Austin. Previous exploration defined two areas containing elevated metal values and hydrothermal alteration consistent with sediment-hosted gold systems within a west-northwest structural trend. The drilling targeted potential high grade Carlin-style vertical feeder structures below the surface where rock chips contained assays up to 1.6 opt gold. The drilling returned no significant gold assays, but did report significantly anomalous amounts of the pathfinder trace elements arsenic, mercury and antimony. Concentrations of >1% arsenic, 45.2 ppm mercury, and 212 ppm antimony were encountered where the drilling pierced the Roberts Mountain Thrust. (Ramelius Resources Ltd. 2011 Q2 report, 7/29/2011, 2011 Q3 report, 10/28/2011, 2011 Q4 report 1/27/2012; Ramelius Resources Ltd. website, www.rameliusresources.com.au; Miranda Gold Corp. website, www.mirandagold.com)

Cortez District

Cortez Hills. In 2011, the total production at Barrick Gold Corp.'s Cortez Mine, which also includes production from the Pipeline and Gap pits, was 1,421,000 ounces of gold, an increase of 25% from 2010, at a total cash cost of \$245 an ounce. Of that total, 301,129 ounces were produced from underground mining at Cortez Hills in a drift-and-fill operation, a decrease of 13% from 2010. The metallurgical recovery was 81.7%. The existing mine life was estimated to be 13 years for underground mining and 14 years for open pit mining.

In 2011, Barrick completed 228 exploration holes totaling 295,945 feet in the combined Cortez Complex, Pipeline Complex, Hill Top, Buckhorn, and South Cortez Basin areas. At Cortez Hills mineralization remains open at depth, to the south, and to the west. Core holes spaced at 50-foot intervals were drilled to delineate underground ore with in-fill reverse circulation holes drilled as required to define ore boundaries. At the end of 2011, the proven and probable open-pit reserve at Cortez Hills was 32,591,000 tons grading 0.131 opt gold for a total of 4,275,000 ounces of gold. The proven and probable underground reserve is 6,516,000 tons grading 0.446 opt gold for a total of 2,908,000

ounces of gold (Barrick Gold Corp. Annual Information Form, 3/28/2012; Barrick Gold Corp. 2011 Annual Report; Barrick Gold Corp. 43-101 technical report, 3/16/2012; Barrick website, www.barrick.com)

Hilltop District

Hilltop. Barrick Gold Corp. has completed 49 holes for 19,000 feet of drilling at the previously drilled out Hilltop deposit. It estimated a potential of 1 to 1.5 million ounces of gold. The deposit remains open in several directions. The next step will be to complete fill-in drilling for grade continuity and metallurgical test-work, and extension drilling to expand the mineralization. The objective is to establish a reportable resource at Hilltop. (Barrick Gold Corp. 43-101 technical report, 3/16/2012)

Kingston District

Golden Brew. Tatmar Ventures, Inc., completed four reverse circulation holes totaling 8,800 feet on its Golden Brew property about seven miles west of Kingston. The mineralization consists of a 2,500-foot long by 200-foot wide zone of jasperoid with anomalous gold assays that is hosted in thinly bedded platy carbonates and limy siltstones of the Cambrian Crane Canyon sequence. The zone is exposed on the western slope of the Toiyabe Range and is truncated on the west by a north-south-trending range front fault. Gravity and other geophysical surveys located a potential uplifted carbonate window (horst block) along the projection of the jasperoid zone, potentially extending through it under a gravel-covered area west of the range front fault. The drill program tested structural intersections under the gravel and confirmed the existence of the horst block. The results of the drilling were not reported except for a 150-foot interval in one hole containing pathfinder element anomalies of up to 290 ppm arsenic and up to 24 ppm antimony. Tatmar Ventures, Inc. changed their name to Highway 50 Gold Corp. (Highway 50 Gold Corp. news release, 2/17/2011, 6/2/2011, 7/28/2011; Highway 50 Gold Corp. website, www.highway50gold.com)

LINCOLN COUNTY

Atlanta District

Atlanta. Meadow Bay Gold Corp. completed 21 core holes totaling 17,914 feet and 18 reverse circulation holes totaling 12,940 feet at its Atlanta property. Significant intercepts included 20 feet grading 0.35 opt gold and 14.6 opt silver, 190 feet grading 0.11 opt gold and 0.62 opt silver, and 210 feet grading 0.032 opt gold and 0.59 opt silver, which contained

23 feet grading 0.14 opt gold and 2.9 opt silver. Atlanta was most recently mined with open pits between 1975 and 1985. Mineralization is hosted by a north-south trending fault zone (Main Zone) and by a cross-cutting east-west trending fault zone (East-West Zone). The Main Zone is about 100 feet wide with a strike length of up to 4,000 feet and a known depth of at least 900 feet. It is mainly a fault breccia consisting of quartzite and limestone fragments in a silicified matrix with quartz-pyrite veinlets. The East-West Zone is where an east-west fault/breccia zone intersects the Main Zone. Gold mostly occurs as electrum in the breccia matrix and in small quartz veinlets. Based on drilling through 2011, an indicated resource for both zones at a cut-off grade of 0.015 opt is estimated to be 8,002,018 tons grading 0.047 opt gold and 0.22 opt silver for a total of 375,869 ounces of gold and 1,781,842 ounces of silver. (Meadow Bay Gold Corp., 43-101 technical report, 7/16/2012; Meadow Bay Gold Corp. website, www.meadowbaygold.com)

Delamar District

Easter. La Quinta Resources Corp. (joint venture with Pilot Gold Inc.) commenced a 23-hole drill program totaling 11,000 feet targeting the down-dip side of the Main Vein outcrop and the West Vein area. In addition to drilling, about five miles of a pole-dipole IP survey were completed. Two reverse circulation holes totaling 435 feet were completed on the down-dip section of the Main Vein, and one hole intercepted 55 feet grading 0.03 opt gold. Three shallow reverse circulation holes were also completed in 2011 in the West Vein area, where no previous drilling had been done. The West Vein area consists of a hanging wall vein and a footwall vein separated by about 150 feet of stockwork quartz veinlets. Shallow angled drilling encountered intercepts with assays as high as 0.12 opt gold and 1.0 opt silver in the hanging wall vein and 0.03 opt gold and 0.38 opt silver in the footwall vein. (La Quinta Resources Corp. news releases, 6/16/2012, 7/25/2011; La Quinta Resources Corp. Management Discussion and Analysis, 4/30/2012; La Quinta Resources Corp. website, www.laquintaresources.com)

Eagle Valley District

Brik. Pilot Gold, Inc. completed 27 reverse circulation holes totaling 11,420 feet on its Brik property. At the Hidden Treasure target area, five holes intercepted significant gold assays in a near-surface, sub-horizontal, massively silicified zone and a deeper, higher-grade, southwest-dipping zone. All holes bottomed in strong chalcidonic alteration and quartz veining. The best intercept reported was 55 feet averaging 0.07 opt gold, which included 5 feet

grading 0.436 opt gold. Shallow mineralization was also intersected in eight holes at the Sinter target area, where the best intercept was 25 feet grading 0.029 opt gold. (Pilot Gold, Inc., news release, 8/3/2011; Pilot Gold, Inc., website, www.pilotgold.com)

Gold Springs. High Desert Gold Corp. (joint venture with Pilot Gold Inc.) completed 17 reverse circulation holes totaling 5,353 feet and two core holes totaling 921 feet at its Gold Springs project located along the border with Utah about 22 miles east of Pioche. Of these, ten reverse circulation holes were drilled on the Gray Eagle target, five on the Homestead target, adjacent and west of the Gray Eagle, two reverse circulation and one core hole on the Thor target along the state line, and one core hole on the Jumbo Target in Utah. The best intercept at Thor was 50 feet grading 0.039 opt gold and 1.07 opt silver, which included 10 feet grading 0.1 opt gold and 2.59 opt silver, and 10 feet grading 0.067 opt gold and 1.23 opt silver. The best intercepts at Gray Eagle were 35 feet grading 0.036 opt gold and 0.49 opt silver and 135 feet grading 0.015 opt gold and 0.15 opt silver, 40 feet averaging 0.035 opt gold and 0.32 opt silver, and 15 feet grading 0.079 opt gold and 0.58 opt silver. The epithermal mineralization at Gold Springs is hosted by complex sheeted veins, breccias, and stockwork veins, which consist of quartz, adularia, and bladed calcite with minor sulfides. The veins mainly strike north-south but significant high-grade gold values occur at intersections with second-order northeast and northwest trending faults. (High Desert Gold Corp. Management Discussion and Analysis, 4/10/2012; High Desert Gold Corp. 43-101 Technical Report, 2/1/2012; High Desert Gold Corp. website, www.highdesertgoldcorp.com)

Freiberg District

Claim Staking. Silver International Corp. staked 320 claims at the north end of Worthington Mountains in northwestern Lincoln County, presumably targeting silver mineralization. (BLM LR2000 Database)

LYON COUNTY

Como District

Blackrock. Bridgeport Ventures, Inc. completed 10 core holes totaling 10,834 feet on its Blackrock property. Significant intercepts included 17 feet grading 0.053 opt gold and 1.76 opt silver and 15 feet grading 0.033 opt gold and 0.18 opt silver. The drilling was conducted to verify previous drill results on the southern portion of the property and to test targets on the northern, undrilled portion of the property. (Bridgeport Ventures, Inc. news release,

10/5/2011; Management Discussion and Analysis, 7/19/2012)

Hercules. Iconic Minerals, Ltd., (joint venture with Willow Creek Enterprises, Inc.) completed 20 reverse circulation holes totaling 6,168 feet on its Hercules property. Of the 20, eight were drilled on the Hercules target, two on the Northeast target, nine on the West Cliff target, and one on the Loaves target. Epithermal mineralization on the Hercules project is mainly associated with pervasive silicification with local quartz-calcite veining and quartz-cemented breccias. Significant intercepts included 55 feet grading 0.036 opt gold and 0.96 opt silver at Hercules and, at West Cliff, 70 feet averaging opt 0.026 gold and 0.28 opt silver and 10 feet grading opt 0.09 gold and 1.52 opt silver in one hole on the West Cliff Target. (Iconic Minerals, Ltd., news release, 9/21/2011; Iconic Minerals, Ltd., website, www.iconicmineralsltd.com)

Talapoosa District

Talapoosa. Gunpoint Exploration Ltd. completed seven core holes on its Talapoosa property. The main objective of the drilling was to confirm existing resources, test geophysical IP targets peripheral to the Talapoosa structure, and test the SE portion of the Appaloosa structure. Significant intercepts reported include 389 feet grading 0.041 opt gold and 0.53 opt silver, which contained 94 feet grading 0.081 opt gold and 1.1 opt silver, and 267 feet grading 0.035 opt gold and 0.66 silver, which contained 10 feet grading 0.28 opt gold and 0.49 opt silver. The mineralization occurs in a zone of hydrothermal breccia and quartz veins hosted in andesite and dacite near the base of the Kate Peak Formation. The zone is at least 2,200 feet long, 1,000 feet wide and 500 feet thick. Gold is generally associated with silicification and occurs as native gold and electrum. (Gunpoint Exploration, Ltd., news releases, 10/12/2011, 2/15/2012; Gunpoint Exploration, Ltd., 43-101 technical report, 9/17/2010; Gunpoint Exploration, Ltd., website, www.gunpointexploration.com)

Wilson District

Pine Grove. Lincoln Mining Corp. drilled no holes in 2011, but released a 43-101 technical report in March and a preliminary economic assessment in December. The assessment proposed two pits, Wilson and Wheeler, which would be mined for 6 years and would produce between 26,500 and 28,500 ounces of gold annually. At year's end, the measured and indicated resource at Wilson, at a cut-off grade of 0.007 opt gold, is 6,055,000 tons, grading 0.034 opt gold, and containing 203,900 ounces of gold. The measured and indicated

resource at Wheeler is 2,867,000 tons, grading 0.038 opt gold, and containing 109,900 ounces. (Lincoln Gold Corp. Management Discussion and Analysis, 4/30/2012; Lincoln Gold Corp. 43-101 Technical Reports, 3/16/2011, 12/8/2011; Lincoln Gold Corp. website, www.lincolnmining.com)

Yerington District

Ann Mason. At the Ann Mason deposit, Entrée Gold Inc. completed 22 holes totaling 78,533 feet. Significant intercepts included 2,490 feet grading 0.45% copper, 2,303 feet grading 0.41% copper, and 702 feet grading 0.48% copper. Entrée released a pit-restrained indicated resource estimate, at a cut-off grade of 0.2% copper, of 1.253 billion tons grading 0.35% copper and containing 8.15 billion pounds of copper and 150 million pounds of molybdenum. The known 0.15% copper envelope covers a 0.8-mile by 1.4-mile, west-northwest-trending, area to a depth of over 3,300 feet. The deposit remains open to the north and west, and along several sections to the east and south.

At the Blue Hills target, located about 2 miles northwest of the Ann Mason deposit, the company drilled 10 reverse circulation and 7 core holes totaling 14,730 feet. Significant intercepts included 872 feet grading 0.18% copper and 138 feet grading 0.31% copper. Entrée released an inferred resource of 79.5 Mt grading 0.17% Cu in oxide and mixed zones and 55 million tons grading 0.23% copper in sulfide zones. The cut-off grades were 0.1% copper for the oxide and mixed zones and 0.15% for the sulfide zone. Drilling at Blue Hills has defined a shallow zone of copper oxide mineralization over an area of 2,130 feet by 1,640 feet to an average depth of 600. Copper oxides and minor chalcocite occur in granitic intrusions. The oxide mineralization in places overlies a zone of porphyry copper-style sulfide mineralization which was intersected at the bottom of several holes. (Entrée Gold Inc. news release, 7/28/2011; Entrée Gold Inc. annual information form, 3/30/2012; Entrée Gold Management Discussion and Analysis, 3/30/2012; Entrée Gold, Inc. 43-101 Report, 10/24/2012; Entrée Gold website, www.entreegold.com)

MacArthur. Quaterra Resources Inc. completed 147 reverse-circulation holes totaling 69,890 feet, and 6 core holes totaling 11,760 feet. The program was conducted to enlarge and upgrade the status of the inferred resources through step-out and in-fill drilling and to explore for primary sulfide mineralization at depth. The drill program comprised step-out and in-fill holes along the northern and western margins of the deposit and progressed eastward, where 40-foot or more thick zones of high grades of continuous chalcocite and copper oxide mineralization were

intersected in the Ridge Zone area. The drill program intersected some of the highest grades and best intercepts of acid soluble copper mineralization ever encountered on the property. One hole drilled 2,000 feet north of the MacArthur pit, intersected 90 feet of mainly chalcocite mineralization grading 1.66% copper starting at a depth of 310 feet, which included 40 feet grading 3.49% copper. A hole along the northwestern margin of the known resource intercepted 40 feet grading 1.37% copper at a depth of 360 feet. Near the northern pit outline, a hole intercepted 150 feet grading 0.62% copper at a depth of 60 feet. During drilling for a deep porphyry system one hole intercepted 64 feet of disseminated chalcopyrite mineralization in sodic-altered granodiorite at a depth of 1,673 feet that graded 1.31% copper, and which included 29 feet grading 2.21% copper. Another hole intercepted 96.5 feet of shallower chalcopyrite that graded 0.34% copper at a depth of 685 feet. This hole extended the mineralization 1,000 feet to the north where it remains open. (Quaterra Resources Inc. press release. 12/12/2011; Quaterra Resources Inc. annual information form, 3/30/2012; Quaterra Resources Inc. 43-101 Technical Report, 6/29/2012; Quaterra Resources, Inc., website, www.quaterra.com)

Pumpkin Hollow. Nevada Copper Corp. completed 57 drill holes totaling 116,953 feet, most of which were core holes. Forty-two holes were drilled at the North, South and Southeast deposits, and 11 holes were drilled at the East and E2 deposits. Significant intercepts in the North deposit include 148 feet grading 0.71% copper and 86 feet grading 1.33% copper. The best intercept in the South deposit was 84 feet grading 0.4% copper. A hole in the E2 deposit intercepted 35 feet grading 0.85% copper. At the end of 2011, the proven and probable mineable reserves underground were 35,777,000 tons grading 1.53% copper, 0.008 opt gold, and 0.174 opt silver containing 1.09 billion pounds of copper, 271,685 ounces of gold, and 6,223,253 ounces of silver.

As part of the project, the company owns 1,500 acres of patented land and 3,800 acres of unpatented claims on public land. The company, in conjunction with the City of Yerington and Lyon County, has proposed acquiring 11,630 acres of public land, including that covering the claims which would be transferred to the city. Among the benefits of this land transfer are more efficient development of the mine and its infrastructure, the use of the mine's infrastructure to support other local commercial and industrial interests, as well as recreational development. The land would also provide open space buffers between the mine and existing agricultural and residential lands. The transfer would require an act of Congress, which was introduced as the Yerington Land Conveyance

and Sustainable Development Act early in 2012. (Nevada Copper Corp. press releases, 9/19/2011, 10/19/2011, 2/16/2012; Nevada Copper Corp. Annual Information Form, 9/27/2012; Nevada Copper Corp. 43-101 technical report, 2/3/2012; Nevada Copper Corp. website, www.nevadacopper.com)

Yerington Mine. Through their subsidiary Singatse Peak Services LLC, Quaterra Resources Inc. purchased all of the assets of Arimetco, Inc. in the Yerington District, which included 4.2 square miles of patented claims and fee mineral properties centered on the former Anaconda open pit copper mine. Singatse Peak Services completed 28 reverse circulation holes totaling 15,016 feet and 14 core holes totaling 6,871 feet. The core holes and four reverse circulation holes were drilled to twin old Anaconda core holes, while the remaining holes targeted expansion of known mineralization laterally and below historic Anaconda drill intercepts along the perimeter of the Yerington pit. The company released a new 43-101 technical report with an updated resource estimate based on both 2011 and previous drill data. The measured and indicated resource for oxide and chalcocite material, at a cut-off grade of 0.12% copper, is 18,391,000 tons grading 0.23% for a total of 85,886,000 pounds of copper. The measured and indicated resource for primary copper ore is 102,526,000 tons grading 0.26% for a total of 531,495,000 pounds of copper. (Quaterra Resources Inc. press release, 4/27/2011; Quaterra Resources Inc. 43-101 Technical Report, 2/17/2012; Quaterra Resources, Inc., website, www.quaterra.com)

MINERAL COUNTY

Bell District

Golden Mile. Roscan Minerals Corp. (joint venture with Columbus Gold Corp.) completed five core holes totaling 3,146 feet on the Golden Mile property. Four of the holes were drilled as twin holes to reverse circulation rotary holes drilled by previous explorers, in order to compare assay results and to determine controls on gold mineralization. One hole was drilled to test a mapped north-northwest trending shear zone. Significant intercepts included 20 feet grading 1.353 opt gold, 10 feet grading 0.212 opt gold, and 10 feet grading 0.105 opt gold in three holes. The mineralization is in a skarn developed between Jurassic sedimentary rocks and a Mesozoic granodiorite with associated quartz porphyry dikes. The mineralized zone strikes at least 2,400 feet and is locally up to 1,000 feet wide. Low-grade mineralization continues northward under Tertiary andesitic flows and felsic tuffs and remains open in that direction. (Roscan Minerals Corp. news release,

8/17/2011; Roscan Minerals Corp. Management and Discussion Analysis, 2/24/2012; Columbus Gold Corp. website, www.columbusgoldcorp.com)

Borealis District

Borealis. Gryphon Gold Corp. completed 32 reverse circulation holes totaling 4,485 feet over the backfilled Borealis Pit and 27 reverse circulation holes totaling 1,295 feet in the historic East Pit. The two programs were conducted to confirm estimated grades and metallurgical recoveries, and to compare fire assays with cyanide-recoverable assays. No results were released. Construction of the Borealis project began in early June. The leaching cycle commenced in late September, and 529,729 tons of ore were placed on the leach pad and 605 ounces of gold were loaded on carbon and delivered to a refiner by the end of 2011. (Gryphon Gold Corp. press release, 6/26/2012; Gryphon Gold Corp. 43-101 Report, 4/25/2011; Gryphon Gold Corp. SEC Form 10-K, 6/28/2012; Gryphon Gold Corp. website, www.gryphongold.com)

Garfield District

New Boston. Pilot Gold, Inc., completed six core holes totaling 6,560 feet on its New Boston property on Black Dyke Mountain about 4 miles southwest of Luning. No results were released. Mineralization in the area can be divided into three general categories: (1) a shallow mixed oxide-sulfide copper skarn and porphyry, (2) a deep porphyry molybdenum stockwork, and (3) a tungsten-copper-silver-zinc skarn. (Pilot Gold, Inc., news release, 6/28/2011; Pilot Gold, Inc. website, www.pilotgold.com)

Huntoon District

Claim Staking. Great Western Mining Corp. staked 486 claims in the Excelsior Mountains and areas surrounding Huntoon Valley. (BLM LR2000 Database)

Pilot Mountains District

Pine Tree. IEMR Resources, Inc., formerly Trans National Minerals, Inc., completed 9 core holes totaling 18,546 feet on its Pine Tree copper and molybdenum property. Significant intercepts reported included 740 feet grading 0.88% copper equivalent including 82.5 feet grading 2.53% copper equivalent and 130 feet grading 0.47% copper equivalent in two holes. The indicated resource using a cut-off grade of 0.01% molybdenum was estimated to be 240,840,000 tons containing 173.3 million pounds of molybdenum oxide, 428.7 million

pounds of copper, and 10.68 million ounces of silver. (IEMR Resources, Inc., news release, 8/11/2011; IEMR Resources, Inc., 43-101 technical report, 2/20/2012; IEMR Resources, Inc., website, www.iemr.ca)

Rawhide District

Regent. Pilot Gold, Inc. completed almost 33,000 feet of reverse circulation and core drilling on its Regent property located about 1.5 miles northwest of the Denton-Rawhide Mine. Significant intercepts reported included 30 feet grading 0.075 opt, 47 feet averaging 0.041 opt gold, and 10 feet grading 0.22 opt gold. The low-sulfidation epithermal mineralization at Regent occurs in and around a north-trending, upward-flaring, rhyolite flow dome complex. Pilot Gold staked an additional 172 claims in the Regent area in 2011. (Pilot Gold, Inc., news release, 6/28/2011; Pilot Gold, Inc., website, www.pilotgold.com; BLM LR2000 Database)

NYE COUNTY

Bare Mountain District

Reward. Atna Resources Ltd. completed 15 reverse circulation holes totaling 8,880 feet. Significant intercepts included 385 feet averaging 0.053 opt gold, which included 90 feet grading 0.13 opt gold, 150 feet averaging 0.026 opt gold, which included 55 feet grading 0.04 opt gold, and 90 feet averaging 0.034 opt gold. The mineralization is associated with minor white bull quartz veins and disseminated and fracture-controlled limonite after pyrite. Mineralization is hosted in siltstone of the Cambrian Wood Canyon Formation. The Good Hope fault zone is a high-angle normal fault and is considered to be the main conduit for hydrothermal fluids.

The company released a 43-101 technical report with a new resource estimate and a proposed open pit mine and heap leach operation. The operation would consist of several small pits starting in the Good Hope area and moving into the Gold Ace and Bull Moose areas. Metallurgical recovery is estimated to be about 80% with a planned 265,810 ounces of gold to be produced over the life of the operation, which is estimated to be 7.5 years. The total proven and probable resources are 11,856,200 tons grading 0.0224 opt gold for a total 265,800 ounces of gold. Measured and indicated and inferred resources total about 425,000 ounces. (Atna Resources Ltd. news releases, 10/24/2011, 11/15/2011; Atna Resources Ltd. Management and Discussion Analysis, 3/26/2011; Atna Resources Ltd. 43-101 technical report, 6/29/2012; Atna Resources Ltd. website, www.atna.com)

Sterling. In 2011, Imperial Metals Corp. spent \$6.1 million on exploration and development on its

Sterling Mine. The company completed 26 underground core holes totaling 3,009 feet. Most of this drilling was conducted on the 3180 level to outline the northern limb of the 144 zone. Other targets north and south of the current 144 zone were drilled for outlying mineralization. The company also completed 28 reverse circulation holes totaling 12,990 feet to outline the extent of the known ore bodies underneath water tank hill and around the old Sterling pits and underground workings. Results were not released.

The company's board of directors approved a plan to restart gold production, and construction began on a new leach pad and recovery plant. Support buildings were erected, and 2,290 feet of underground development were completed on the 144 zone on the 4100 ramp and 3260 and 3292 levels. A drift from the 3180 foot level to the base of a designed 685 foot vent raise to the surface was also completed. Metallurgical testing of underground run-of-mine material confirmed a gold recovery of 70% after 30 days of cyanide leaching. (Imperial Metals Corp. news release, 11/14/2011, 3/30/2012; Imperial Metals Corp. 2011 annual report, 3/30/2012; Imperial Metals Corp. Annual Information From, 3/30/2012; Imperial Metals Corp. website, www.imperialmetals.com)

Bruner District

Bruner. Canamex Resources Corp. completed 13 angled reverse circulation holes totaling 7,985 feet at its Bruner project about 25 miles east of Rawhide. Three holes were drilled into the Penelas East Vein system and five were drilled in the historic Penelas Mine area. Significant intercepts from the Penelas East Vein included 4.6 feet grading 0.729 opt gold and 4.41 opt silver at a downhole depth of 400 feet, 4.8 feet grading 0.336 opt gold and 1.06 opt silver at a depth of 180 feet, and 5 feet grading 0.163 opt gold and 0.11 opt silver at a depth of 125 feet. Historic production at Bruner, most of which came from the Penelas Mine, was reportedly 100,000 tons grading 0.56 opt gold. (Canamex Resources Corp. news release 3/8/2012; Canamex Resources website, www.canamex.us)

Bullfrog District

North Bullfrog. Between October 2010 and June 2011, Corvus Gold Inc. completed 75 reverse circulation holes totaling 58,465 feet drilled at Connection, Jolly Jane, Savage Valley, Sierra Blanca, Yellow Jacket, and Arsenic Vein. Significant intercepts included 990 feet averaging 0.01 opt gold, which included 265 feet grading 0.17 opt gold, 100 feet grading 0.033 opt gold, 135 feet grading 0.013 opt gold, and 70 feet grading 0.033 opt gold. The mineralization commonly occurs in two styles: 1)

locally high-grade structurally-controlled epithermal quartz-calcite veins, and 2) low-grade stratabound quartz-adularia replacement deposits. Most of the mineralization is hosted in the Tertiary Crater Flat Tuff. Based on drilling through 2011, the indicated resource is 26,268,000 tons, grading 0.0085 opt gold, and containing 233,880 ounces of gold. (Corvus Gold Inc. 43-101 technical report, 2/28/2012; Corvus Gold Inc. website, www.corvusgold.com)

Lodi and Gabbs Districts

Claim Staking. Silver International Corp. staked nearly 1,400 claims in the Lodi and Gabbs districts in northwestern Nye County, presumably targeting silver mineralization. (BLM LR2000 Database)

Longstreet District

Longstreet. Star Gold Corp. completed 16 reverse circulation holes totaling 5,270 feet on its Longstreet property. Significant intercepts included 10 feet grading 0.086 opt gold, 78 feet grading 0.013 opt gold, and 60 feet averaging 0.017 opt gold and 1.26 opt silver, which contained 5 feet grading 0.134 opt gold and 8.06 opt silver. Nine targets around the property have been identified, mostly veins consisting of quartz and adularia, with pyrite at deeper levels and limonite at upper oxidized levels. The veins are hosted by a hydrothermally altered, welded ash-flow tuff of Oligocene age. Based on drilling through 2011, the indicated resource was 4,369,836 tons grading 0.024 opt gold and 0.66 opt silver for a total of 103,969 ounces of gold and 2,879,863 ounces of silver. (Star Gold Corp. news release, 10/26/2011, 1/9/2012; Star Gold Corp., 43-101 technical report, 4/18/2012; Star Gold Corp. website, www.stargoldcorp.com)

Manhattan District

East Manhattan. Bravada Gold Corp. drilled five core holes totaling 3,319 feet at its East Manhattan property about 12 miles south-southeast of Round Mountain. The drill program extended shallow portions of the main mineralized zone 1,400 feet along strike. The veins exposed at the East Manhattan Project occur within an east-west graben located within and along the southern margin of the Manhattan caldera. Significant drill intercepts included 5.5 feet grading 0.028 opt gold, 38 feet grading 0.029 opt gold, and 5.5 feet grading 0.053 opt gold. (Bravada Gold Corp. news release, 6/30/2012; Bravada Gold Corp. website, www.bravadagold.com)

Gold Wedge. Royal Standard Minerals, Inc. spent \$397,626 on mine development plus \$40,206 more

on drilling on its Gold Wedge property. However, no details were released. (Royal Standard Minerals, Inc., Audited Annual Financial Statement, 3/30/2012; Royal Standard Minerals, Inc., website, www.royalstandardminerals.com)

Queen City District

Claim Staking. Altan Rio Inc. staked 446 claims in the Queen City District, an old gold-mercury district along Highway 375. (BLM LR2000 Database)

Round Mountain District

Round Mountain. The Round Mountain gold mine is operated by Kinross Gold Corp. in a 50%-50% joint venture with Barrick Gold Corp. In 2011, gold production at Round Mountain was 360,020 ounces, about the same as 2010. Most of the ore goes directly to the leach pad with only about one-eighth of the ore going to the mill. The mill grade ore is about twice the average ore grade of 0.016 opt. The mine also produced 644,329 ounces of silver in 2011.

Development continued on the nearby Gold Hill deposit for production start-up in 2012. The Gold Hill project has an estimated cost of about \$50 million. Gold Hill is a satellite deposit, but will have its own leach pad, processing facilities, and waste dump. These were under construction late in 2011. Most of the ore will be run-of-mine with some needing crushing. The pit will require minimal dewatering.

Crews mined Phase E and deeper into the main pit and worked on the Phase H layback and Fairview area. The Round Mountain and Gold Hill expansions are expected extend the life of the mine out to 2019 and production from stockpiles out to 2021. The company conducted drilling as well as hydrogeologic and geotechnical work on the Deep Northwest deposit as a potential expansion of the pit and had three drill rigs operating there in August. Deep Northwest is near the edge of the town and directly under the operation's administrative offices, but the price of gold may make moving buildings feasible.

At year's end, the reserves were estimated to be proven and probable 165.4 million tons grading 0.017 opt gold for a total of 2.8 million ounces of gold. (Kinross Gold Corp. Annual Information Form, 3/30/2012, Kinross Gold Corp. Annual Information Form, 3/30/2012; Kinross Gold Corp. Management Discussion and Analysis, 2/15/2012; Elko Daily Free Press Mining Quarterly, fall 2011, summer 2012; Kinross Gold Corp. website, www.kinross.com; Barrick Gold Corp. website, www.barrick.com)

Rye Patch District

Tonopah. Midway Gold Corp. completed 26 core holes totaling 13,000 feet on its Tonopah (formerly known as Midway) property. The drilling tested the Discovery, 121, Dauntless, and 63-77 areas. Significant intercepts reported include 150 feet averaging 0.22 opt gold, which contained 1.5 feet grading 9.77 opt gold and 5 feet grading 2.29 opt gold, 157 feet averaging 0.059 opt gold, which included 1.5 feet grading 2.57 opt gold, and 71 feet averaging 0.14 opt gold, which included 9 feet grading 0.51 opt gold. The property contains a low-sulfidation epithermal gold system hosted by black argillite of the Ordovician Palmetto Formation and Tertiary rhyolitic volcanic rocks and consists of near vertical quartz-adularia-gold veins occurring in a series of en echelon clusters along a 1.5-mile northwest-trending zone of mineralization. The main altered and mineralized zones are overlain by alluvium. The company released a 43-101 technical report with an upgraded inferred underground resource of 114,000 tons grading 0.3017 opt gold for a total of 34,394 ounces of gold, at a cut-off grade of 0.1 opt gold. (Midway Gold Corp. news release 12/8/2011; Midway Gold Corp., Management Discussion and Analysis, 11/9/2011; Midway Gold Corp., 43-101 Technical report 4/1/2011; Midway Gold Corp. website, www.midwaygold.com)

San Antone District

Liberty. General Moly Inc. did no drilling on its Liberty molybdenum project in 2011 but released a new 43-101 technical report that evaluated two mine plans. Over the life of the mine, 598 million pounds of molybdenum and 535 pounds of copper are expected to be extracted with metallurgical recoveries of 92% for molybdenum and 70% for copper. Production is projected to commence in 2017 with the life of the open pit estimated at 26 years. As of September 19, 2011, the proven and probable reserves, at a 0.02% molybdenum cut-off grade, were 541,420,000 tons grading 0.068% molybdenum and 0.08% copper. (General Moly Inc. news release, 12/5/2011; General Moly Inc. SEC Form 10-K, 4/12/2012; General Moly Inc. 43-101 technical report, 11/15/2011; General Moly Inc. website, www.generalmoly.com)

Troy District

Claim Staking. Silver Viking Corp. staked just over 500 claims in the Troy District in the Grant Range in northeastern Nye County, presumably targeting silver mineralization. (BLM LR2000 Database)

Tybo District

Claim Staking. Newmont Mining Corp. staked 105 claims in the Tybo District, centered on Tybo Canyon. Barrick Gold Corp. staked 39 claims in this area as well. (BLM LR2000 Database)

Guild. Sniper Resources Ltd. (joint venture with Columbus Gold Corp.) completed 21 reverse circulation holes drilled between December 2010 and March 2011 totaling 11,810 feet at its Guild property located in the Hot Creek Range. At the northern and southern ends of the property, exposed Paleozoic rocks contain highly anomalous gold. An area of Tertiary volcanic rocks separates the two areas of Paleozoic rocks. Some of the holes tested geophysics-indicated high-angle structure targets beneath the Tertiary volcanic cover and showed that the cover is locally deeper than expected, which led to an interpretation of a northwest-trending Tertiary paleovalley filled with volcanic rocks. The best intercepts (all from the Trench Zone) were 35 feet averaging 0.01 opt gold, including 5 feet grading 0.024 opt gold, in hole GI-11, and 40 feet averaging 0.011 opt gold, including 5 feet grading 0.038 opt gold, in hole GI-16. The results were considered encouraging with mineralization appearing to remain open along strike, especially to the southeast. (Sniper Resources, Ltd., news releases, 3/23/2011, 9/13/2011; Sniper Resources, Ltd., Management Discussion and Analysis, 1/27/2012; Sniper Resources website, www.sniperresources.com)

PERSHING COUNTY

Antelope District

Majuba Hill. Max Resource Corp. drilled 12 core holes totaling 6,036 feet and collected 834 soil samples over a 3-mile by 1.5-mile area. Significant drill intercepts included 165 feet averaging 0.31% copper, which contained 65 feet grading 0.53% copper, 0.016 opt gold, and 2.92 opt silver, and 315 feet averaging 0.57% copper, which contained 145 feet grading 1.14% copper and 2.07 opt silver. There was also an intercept of 382 feet grading 0.013% molybdenum. The Majuba Hill property is centered on the Majuba Hill intrusive complex which consists of a cross-cutting series of rhyolite to latite intrusions of Oligocene age emplaced into Triassic-Jurassic argillite. (Max Resource Corp. news releases, 3/4/2011, 2/7/2012, 3/15/2012; Max Resource Corp. Management Discussion and Analysis, 4/24/2012; Max Resource Corp. website, www.maxresource.com)

Antelope Springs District

Relief Canyon. In August 2011, Sagebrush Gold, Ltd. acquired the Relief Canyon Gold Project. The property includes five heap leach pads, two solution ponds, mine offices, processing facilities, and a furnace and retort for the production of gold doré. The operation was constructed and mined by Pegasus Mining in the 1980s and was completely updated with new equipment installed in 2007-2008.

Sagebrush completed eight core and five reverse circulation holes totaling 12,386 feet to upgrade and expand the resource. Five holes were drilled on the Range Front Target, six holes on the North Target, and two holes on the Southwest Target. Significant intercepts included 53 feet averaging 0.067 opt gold, which contained 5 feet grading 0.345 opt gold, and 80 feet averaging 0.045 opt gold, which contained 25 feet grading 0.121 opt gold. Sagebrush Gold, Ltd. has since changed its name to Pershing Gold Corp. (Pershing Gold Corp. news releases, 8/31/2011, 10/5/2011, 3/5/2012, 3/29/2012; Pershing Gold Corp. website, www.pershinggold.com)

Imlay District

Florida Canyon. Jipangu Inc. temporarily shut-down the Florida Canyon Mine in March and shifted mining to the Standard Mine about five miles to the south. The shut-down was due in part to the company's effort to plan and get permitted a new leach pad to accommodate more ore, which will take about three years. Ore on the old pad will continue to leach for at least four years. Reserves at Florida Canyon total 832,000 ounces of gold. No information was uncovered on whether there was a 2011 drill program. (Elko Daily Free Press Mining Quarterly, Summer 2011, Spring 2012; Jipangu, Inc., website www.jipangu.co.jp)

Standard. Jipangu, Inc. produced 41,161 ounces of gold and 46,896 ounces of silver. Mining was conducted at the North Pit and Intermediate Pit and began in the South Pit. All the ore was sent to the crusher. Mining was occurring as stripping and construction of a new leach pad were underway. Mining at the North Pit and Intermediate Pit was to be done by year's end, and the pits were being backfilled as they were mined out. Development at the South and South-South pits will combine the two into one large pit that will consume the old Standard Pit. The ore is higher grade at Standard than that at Florida Canyon but tends to be erratically distributed compared to Florida Canyon, where it tends to be low grade but more evenly and widely distributed. Reserves at Standard total 292,000 ounces. No information was uncovered on whether there was a 2011 drill program. (Elko Daily Free Press Mining

Quarterly, Summer 2011, Spring 2012; Jipangu, Inc., website www.jipangu.co.jp)

Indian District.

Moonlight. Terraco Gold Corp. completed 19 reverse circulation totaling 13,050 feet on its Moonlight property. The drilling targeted the northern extension of the Black Ridge Fault zone, which was delineated by aeromagnetic and ground geophysical surveys. The best intercept was 10 feet grading 0.04 opt gold. The intercept was associated with quartz veining in sheared, altered volcanic rock of the Limerick Formation. (Terraco Gold Corp. news releases, 10/25/2011, 3/26/2012; Terraco Gold Corp. Management Discussion and Analysis, 11/9/2012; Terraco Gold Corp. website, www.terracogold.com)

Mill City District.

Springer Mine/Mill. After refurbishing the mill and releasing a resource estimate in 2009, EMC Metals Corp. suspended work on the property and placed it on care and maintenance until the global financial markets and tungsten prices improved. According to the U.S. Geological Survey, estimated tungsten prices increased 37% in 2011, and due to this rise, EMC Metals planned to resume work for restarting the mine and mill in 2012. (EMC Metals Corp., SEC Form 10-K, 12/31/2011, news release, 4/10/2012; EMC Metals website, www.emcmetals.com)

Rochester District

Gold Ridge. Rye Patch Gold Corp. completed 12 reverse circulation holes totaling 8,075 feet at its Gold Ridge project located less than a mile north of its resource at Lincoln Hill. The drilling centered on two geologic targets. The first target was a low-angle thrust fault containing mineralized quartz breccia and veins. The second target was bodies of silicification in the hanging wall of the thrust structure. Five of the holes had assays above 0.01 opt gold with the highest intercept being 10 feet grading 0.11 opt gold. Three of the holes had assays above 1.0 opt silver with the highest intercept being 5 feet grading 5.3 opt silver. (Rye Patch Gold Corp. news release, 2/1/2012; Rye Patch website, www.ryepatchgold.com)

Lincoln Hill. Rye Patch Gold Corp. drilled 40 reverse circulation holes totaling 27,185 feet and five core holes totaling 4,126 feet. The drilling program was designed to test several new targets, expand existing resources, and upgrade the Lincoln Hill resource. At the Washington target, 3.6 feet of 0.17 opt gold and 1.9 opt silver was encountered. The best intercept in the Central Jefferson target was

155 feet averaging 0.007 opt gold and 0.8 opt silver, which contained 5 feet grading 0.025 opt gold and 3.5 opt silver. In the North Jefferson zone, the best intercepts were 10 feet grading 0.007 opt gold and 14.9 opt silver and 40 feet grading 0.01 opt gold. At the Lincoln Hill resource, nine of the drill holes had intercepts that graded above 0.01 opt gold, with the two highest intercepts being 5 feet grading 0.09 opt gold and 15 feet grading 0.05 opt gold. Seven drill holes had intercepts that graded above 1 opt silver, with the two highest assays being 5 feet grading 10.4 opt silver and 10 feet grading 9.5 opt silver.

Rye Patch also discovered two new target areas. The 1,300-foot by 165-foot Roosevelt target was defined by soil values between 25 ppb and 200 ppb gold and grab samples of silicified rhyolite that assayed up to 2.9 opt gold and 44.5 opt silver. It is about 1,600 feet southeast of the Lincoln Hill resource. The 1,000-foot by 800-foot North Anomaly was defined by a zone containing soil assays greater than 25 ppb gold around quartz stockwork veining in rhyolite similar to that of the Lincoln Hill resource. (Rye Patch Gold Corp. press release, 10/3/2011, 12/08/2011; Rye Patch website, www.ryepatchgold.com)

Rochester. Following through on its 2010 feasibility study, Coeur d'Alene Mines Corp. built a new leach pad in 2011 for \$27 million. The pad went into production in the fourth quarter and was expected to help boost production significantly in 2012. Drilling programs commenced in the second quarter of 2011 with a shift from ore control to exploration. In the second quarter, reverse circulation drilling totaling 22,347 feet was completed in the Nevada Packard area 1.4 miles south of the Rochester Mine and at the LM target northwest of the Rochester Mine. In the third quarter, reverse circulation drilling totaling 42,000 feet was completed on both the Nevada Packard and Rochester deposits. At Nevada Packard, drilling was focused on expanding the deposit to the west. At Rochester, drilling was focused on the Northwest Rochester zone on the north side of the mine and was expected to continue through the fourth quarter and into 2012. The Nevada Packard and Rochester deposits both remain open for expansion. The exploration program around Nevada Packard and Rochester is planned to cost \$4 million in 2012, double the \$2 million spent in 2011.

On August 31, 2011, Coeur Rochester, Inc. failed to pay the claim maintenance fees for unpatented claims that were part of the Rochester Mine. By Federal law, failure to pay the claim maintenance fee is grounds for voiding unpatented claims. Between October 27 and November 2, 2011, Rye Patch Gold Corp. staked 402 unpatented claims (LH claim group) on the ground that Coeur failed to pay the claim maintenance fees and then informed

Coeur about it on November 28, 2011. On December 2, 2011, Coeur began re-staking its claims over Rye Patch's claims. This subsequently resulted in lawsuits and counter-suits involving claim jumping, trespassing, and slander of title. Coeur obtained an order restraining Rye Patch from working the aforementioned 402 LH claims. Coeur disclosed that these 402 claims cover up to 20% of the Rochester Mine's reserves and a "significant" portion of the resource. (Coeur d'Alene Mines Corp., press releases 8/8/2011, 11/7/2011, 12/05/2011, 12/21/2011, 2/8/2012; Coeur d'Alene Mines Corp., 2011 Annual Report 12/31/2011, Coeur d'Alene Mines Corp., website www.coeur.com; Rye Patch Gold Corp. news releases, 12/6/2011, 12/16/2011, 12/21/2011; Rye Patch website, www.ryepatchgold.com)

Rosebud District

Rosebud. Harvest Gold Corp. completed 22 reverse circulation holes totaling 15,160 feet. Most of the drilling focused on the Valley and Southern Extension targets, but some holes also tested the South target and three other targets. At the Southern Extension target, visible gold was encountered. The best intercepts at Southern Extension were 145 feet averaging 0.009 opt gold, which included 30 feet grading 0.018 opt gold, and 50 feet averaging 0.012 opt gold, which included 10 feet grading 0.047 opt gold. At the Valley target, the best intercepts were 30 feet grading 0.02 opt gold and 25 feet averaging 0.009 opt gold and 1.21 opt silver, which included 3 feet grading 0.029 opt gold and 4.49 opt silver. One hole at the South target intercepted 35 feet averaging 0.041 opt gold and 0.22 opt silver, including 5 feet grading 0.11 opt gold and 1.76 opt silver. (Harvest Gold Corp. news release, 6/20/2011; Harvest Gold Corp. Management Discussion and Analysis, 11/28/2011; Harvest gold website, www.harvestgoldcorp.com)

Spring Valley District

Spring Valley. Barrick Gold Corp. (joint venture with Midway Gold Corp.) completed 32 reverse circulation holes totaling 47,435 feet and 14 core holes totaling 15,357 feet to expand the resources and to evaluate the property. Barrick Gold is funding the exploration as part of an agreement to acquire a 60% interest in the property. Barrick spent \$7.6 million in 2011 at Spring Valley. Significant intercepts include 70 feet averaging 0.14 opt gold, which included 5 feet grading 1.82 opt gold, 20 feet grading 0.2 opt, and 5 feet grading 0.64 opt gold in three holes. Gold has been intercepted over an area 5,200 feet long by 3,500 feet wide to a depth of 1,400 feet. The deposit is hosted by rhyolite flows, breccias, and volcanoclastic sediments of the Permo-

Triassic Koipato Group rocks and an intrusive complex predominantly composed of fine grained feldspar porphyry. Hydrothermal alteration includes quartz-sericite-pyrite alteration associated with gold, argillic alteration in hydrothermal breccias, and lesser secondary potassium feldspar, iron carbonate, and hematite-quartz alteration. Mineralization occurs in sheeted quartz veins, hydrothermal breccias, and open fractures; gold is distributed along the top of the intrusive complex, and in the overlying volcanic rocks. Free gold grains up to 3 mm across have been observed along the edges of sulfide grains. (Midway Gold Corp. SEC Form 10-K, 3/9/2012; Midway Gold Corp. website, www.midwaygold.com)

Willard District

Wilco. Rye Patch Gold Corp. completed 18 core holes totaling 16,620 feet to depths ranging between 365 feet and 1,413. The drilling targeted the Section Line resource (8 holes) and the North Basin zone (10 holes). The core drilling program was intended to build on the successful results of the 2010 reverse circulation drilling program, which identified a 300-foot by 650-foot high-grade gold zone in the east-northeast trending structural corridor with potential for expansion along strike to the southwest. In the Section Line Resource, the three highest intercepts were 7 feet grading 0.9 opt gold and 3.1 opt silver, 9 feet grading 0.12 opt gold, and 6 feet grading 2.7 opt silver. In the North Basin zone, the best intercepts were 7 feet grading 1.2 opt gold and 5.1 opt silver, 5 feet grading 0.5 opt gold, and 6 feet grading 2.5 opt silver. A 16,000-foot follow-up reverse-circulation drill program was planned and permitted. (Rye Patch Gold Corp. news releases, 3/2/2011, 5/9/2011, 6/2/2011; Rye Patch website, www.ryepatchgold.com)

STOREY/LYON COUNTIES

Comstock/Silver City Districts

Comstock. Comstock Mining Inc. (formerly known as GoldSpring Inc.) spent \$9,324,097 for reclamation, exploration, and test mining on its Comstock properties. The company acquired patented and unpatented claims on the Oest and Comet lodes west of Silver City, the Dondero property adjoining their Dayton Resources Area, and the historic Gold Hill Hotel in Gold Hill.

Between October 2010 and August 2011, the company completed 374 reverse circulation holes totaling 128,711 feet and 15 core holes totaling 3,584 feet. Exploration focused on the Dayton Resource Area, the Lucerne Resource Area, especially the East Side target within the Lucerne Resource Area and Spring Valley. At the Dayton

Resource Area the first and second phase of development drilling was completed on that resource (303 reverse circulation holes totaling 94,840 feet and 13 core holes totaling 2,477 feet). The best intercepts in the Dayton Resource Area were 135 feet grading 0.218 opt gold and 0.685 opt silver, 100 feet grading 0.119 opt gold and 0.149 opt silver, and 80 feet grading 0.051 opt gold and 0.226 opt silver. At the Lucerne Resource Area program (62 reverse circulation holes totaling 27,646 feet and 2 core holes totaling 1,106 feet), in-fill drilling was completed on the Hartford, Lucerne, and Justice claims for the starter mine and the first phase of development drilling was completed on the East Side target. Significant intercepts on the East Side target were 100 feet averaging 0.309 opt gold and 0.911 opt silver, which included 30 feet grading 0.838 opt gold and 1.41 opt silver, 30 feet grading 0.128 opt gold and 0.391 opt silver, and 65 feet grading 0.12 opt gold and 0.371 opt silver.

The company released metallurgical evaluation reports, and construction was underway for the start-up of commercial mining in the Lucerne Resource Area in 2012. Mining will be from one or more open pits encompassing previously mined smaller pits and some old underground workings. The company was upgrading existing processing plants. A new leach pad, pregnant solution pond, and crushing, agglomeration, and conveying system were under construction as part of the upgrades.

The company released a 43-101 technical report in September with a new resource estimate. The measured and indicated resource is 51,260,000 tons grading 0.029 opt gold and 0.28 opt silver containing 1,508,000 ounces of gold and 14,360,000 ounces of silver. (Comstock Mining Inc. press releases, 8/11/2011, 9/7/2011, 10/11/2012, 11/2/2011; Comstock Mining, Inc. SEC Form 10-K, 3/30/2012; Comstock Mining Inc. 43-101 Technical Reports, 1/14/2011, 8/5/2011, 9/30/2011; Comstock Mining, Inc. website, www.comstockmining.com)

WASHOE COUNTY

San Emidio District

Wind Mountain. Bravada Gold Corp. drilled 50 reverse circulation holes totaling 13,476 feet at its Wind Mountain property on the east side of the San Emidio Desert. Drilling delineated a new near-surface zone of strongly oxidized mineralization at the North Hill target about 1,650 feet north of the existing Wind Mountain resource area. Shallow oxidized mineralization was also drilled at the South Pit target to determine if the Wind Pit, about 660 feet to the north, could be extended southward. Significant intercepts included 20 feet grading 0.013 opt gold and 0.25 opt silver, 20 feet grading 0.018 opt gold and 0.52 opt silver, and 31 feet grading

0.013 opt gold and 0.15 opt silver. Metallurgical studies were continued to evaluate whether crushing can further improve the economics compared to the run-of-mine material as proposed in the 2010 Preliminary Economic Assessment. The indicated resource of oxide ore, at a 0.005 opt gold cut-off grade, is 58,816,000 tons grading 0.01 opt gold and 0.25 opt silver for a total of 564,000 ounces of gold and 14,539,000 ounces of silver. The indicated resource for mixed and unoxidized material at a 0.01 opt gold cut-off is 498,000 tons grading 0.012 opt gold and 0.4 opt silver for a total of 5,900 ounces of gold and 197,000 ounces of silver. (Bravada Gold Corp. news releases, 8/6/2011, 11/16/2011; Bravada Gold Corp. 43-101 technical report, 5/2/2012; Bravada Gold Corp. website, www.bravadagold.com)

WHITE PINE COUNTY

Bald Mountain District

Bald Mountain. Barrick Gold Corp. produced 92,818 ounces of gold at an average total cash cost of \$558 per ounce at its Bald Mountain Mine in 2011. The reserves are all oxide, and all of the ore was run-of-mine that went directly to the leach pads. Gold production was 54% higher than in 2010 because of an increase in tons mined and processed due to mine expansion. The metallurgical recovery for gold was 70.1%. The company carried out its expansion plans at its Bald Mountain gold mine as approved by the BLM in 2010. Stripping of mostly waste rock was conducted at the Top. The Top Pit will eventually be the center of activity at Bald Mountain during the remainder of the mine's life. As part of further expansion, the company proposed incorporating the Casino/Winrock Plan of Operations into the North Operations Area Project and establishing a South Operations Area Project that would encompass and expand the existing Yankee and Alligator Ridge mine sites (respectively, 18 and 16 miles south of the Bald Mountain Mine). None of these mining areas are presently active, but recent drilling activity has uncovered new reserves and resources, prompting company interest in restarting mining operations there. The BLM will begin preparing an environmental impact statement in 2012. At year's end, the proven and probable reserve at Bald Mountain Mine was 307,162,000 tons, grading 0.017 opt gold, and containing 5,102,000 ounces of gold. Barrick staked 230 claims, mainly around deposits at the north end of the project, including the very north end of Mooney Basin, where it opens up into Ruby Valley. (BLM News Release, 4/16/2012; Elko Daily Free Press Spring 2011 Mining Quarterly; Barrick Gold Corp., Annual Report, 3/26/2012; Barrick Gold Corp.,

Annual Information Form, 3/28/2012; Barrick Gold Corp. website, www.barrick.com)

Butte Valley District

Limousine Butte (Limo). US Gold Corp. completed 70 reverse circulation holes totaling 56,623 feet and 10 core holes totaling 2,534 feet. The drilling was focused on the Cadillac and Continental targets, outside the existing mineralization, and was a continuation of the drilling program started on these targets in 2010. Significant intercepts included 55 feet averaging 0.095 opt gold, which contained 20 feet grading 0.187 opt gold, 270 feet averaging 0.075 opt gold, which contained 40 feet grading 0.209 opt gold, and 25 feet grading 0.225 opt gold. At the beginning of 2012, US Gold Corp. and Minera Andes, Inc., combined and changed their names to McEwen Mining, Inc. (US Gold Corp. press release 1/20/2012; McEwen Mining Inc., SEC Form 10-K, 3/9/2012; McEwen Mining, Inc. website, www.mcewenmining.com)

Illipah District

Illipah. Allied Nevada Gold Corp. carried out a small drill program in the fourth quarter of 2011. No results were released. (D. Flint, Allied Nevada Gold Corp., oral communication, AIPG meeting, 12/20/2011)

Pancake District

Claim Staking. Aurion Resources LLC staked 335 claims on the pediment east of the Pan gold deposit in Newark Valley. (BLM LR2000 Database)

Pan. Midway Gold Corp. released a 43-101 feasibility study on its Pan property. The deposit is a shallow oxide deposit above the water table and would be mined as open pits with heap-leach processing. Metallurgical recovery for gold will average 75% with an annual production of 81,000 ounces for a total of 864,000 ounces of gold recovered over the nine-year life of the mine. Initial capital costs are estimated to be \$99 million. The company completed 33 reverse circulation holes totaling 27,745 feet to update the resource estimate (17 holes) and for condemnation (16 holes). In South Pan, significant intercepts included 100 feet averaging 0.092 opt gold, which contained 45 feet grading 0.169 opt gold, and 250 feet grading 0.04 opt gold. As of November 2011, the proven and probable reserves were 53,254,000 tons grading 0.016 opt gold and containing 864,000 ounces of gold. (Midway Gold Corp. news releases, 2/3/2011, 6/13/2011, 10/4/2011, 11/3/2011; Midway Gold Corp. SEC Form 10-K, 3/9/2012; Midway Gold Corp. 43-101 technical reports, 11/1/2011, 12/19/2011; Midway Gold Corp. website, www.midwaygold.com)

Reef. In late 2011, Golden Dory Resources Corp. (joint venture with Renaissance Gold Inc.) completed five reverse circulation holes totaling 4,210 feet at its Reef project located three miles south of Midway Gold Corp.'s Pan project. The program tested interpreted faults in the eastern part of the property including a possible southwest extension of the Pan fault. Alluvium and/or volcanic rocks were found to be deeper than expected, suggesting the target horizon was eroded; however, weakly anomalous gold up to 35 ppb was found in bedrock from two holes. (Golden Dory Resources Corp. news release, 11/17/2011, 3/1/2012; Golden Dory Resources Corp. website, www.goldendoryresources.com)

Robinson District

Robinson. Quadra FNX Mining Ltd. mined 99.9 million pounds of copper and 30,000 ounces of gold, mainly from the Ruth pit, down 8% and 59% respectively from 2010. Production decreased mainly due to lower head grade in the Ruth pit ore as compared to ore in Veteran pit, which was mined and then shut down in 2010. The average grade of ore processed was 0.42% copper and 0.0055 opt gold, and metallurgical recovery was 73.6% for copper and 37.6% for gold. Gold recovery was also hindered by fine gold grains associated with pyrite reporting to tailings. Also, 1.26 million pounds of molybdenite (60% molybdenum by weight) were also produced.

Production from the Ruth Pit was also hampered by slope stability problems earlier in the year which were resolved in part by dewatering. Production at the Ruth Pit began to improve with the resolution of the stability problem, continued dewatering at the rate of 14,000 gallons per day, the removal of mud at the bottom of the pit, and the movement of mining into the higher grade benches at the bottom of the pit. Towards year's end mining also began moving into the East Ruth Pit. Ruth and East Ruth share a high wall. Quadra FNX Mining carried out a drill program at the Liberty Pit. No details were released but "a significant number of ore grade intercepts" were noted resulting in the development of a new resource block model especially at depth and south of the Liberty Pit. The life of the mine is estimated to last until 2021. Concentrates from the mill are trucked to the railroad at Wendover and loaded onto trains headed for the Port of Vancouver. They are shipped mainly to China, India, and Japan. In early 2012, KGHM Polska Miedz S.A. headquartered in Lubin, Poland, acquired Quadra FNX Mining Ltd., for \$2.9 billion, and its name was changed to KGHM International, Ltd. (KGHM Polska Miedz S.A. press release, 3/5/2012; Quadra FNX Mining Ltd. Management Discussion and Analysis, 11/10/2011; Elko Daily

Free Press Mining Quarterly Fall 2011, Winter 2011, Spring 2012, Summer 2012; KGHM International website www.quadrafnx.com)

Taylor District

Taylor. Silver Predator Mines Inc. completed 35 reverse circulation holes totaling 11,572 feet on its Taylor property. Significant intercepts, all within 300 feet of the surface, included 45 feet grading 3.93 opt silver, 20 feet grading 3.25 opt silver, and 140 feet grading 2.92 opt silver. The drilling both extended the mineralization to the northeast of the currently defined resource and at depth and along strike in the Bishop and Argus pit areas. The deposit is mainly argentiferous jasperoid replacement bodies, mostly in the upper part of the Devonian Guilmette Limestone. (Silver Predator Mines Inc. news release, 11/17/2011; Silver Predator Mines Inc. annual information form, 8/30/2012; Silver Predator Mines Inc. website, www.silverpredator.com)

White Pine District

Gold Rock. Midway Gold Corp. completed 25 reverse circulation holes totaling 21,000 feet and six core holes totaling 5,260 feet in the Resource Area of its Gold Rock property (formerly known as Easy Junior). The program was conducted to confirm the geology and mineralization defined by the historic drilling. Significant intercepts included 75 feet grading 0.068 opt gold, 110 feet grading 0.06 opt gold, and 80 feet grading 0.046 opt gold. The company released a 43-101 technical report on the property. The indicated resource is 14,294,000 tons grading 0.022 opt gold and containing 310,000 ounces of gold. (Midway Gold Corp. SEC Form 10-K, 3/9/2012; Midway Gold Corp. 43-101 Technical Report, 4/10/2012; Midway Gold Corp. website, www.midwaygold.com)

Mount Hamilton. Solitario Exploration and Royalty Corp. (joint venture with Ely Gold and Minerals, Inc.) completed 11 core holes totaling 6,250 feet in January and conducted a second drilling program with few details released in October on its Mount Hamilton property, also known as the Centennial deposit. Significant intercepts in the earlier program included 20 feet grading 0.045 opt gold and 0.809 opt silver and 111 feet grading 0.044 opt gold and 0.3 opt silver. Intrusion-related mineralization consisting of tungsten, molybdenum, and copper is overprinted by epithermal-like gold and silver mineralization. The gold mineralization forms a south-dipping tabular body between 20 and 250 feet thick which is mainly hosted in a 200 to 300-foot thick skarn horizon bounded on the top and bottom by hornfels units. The host formations are the Middle

Cambrian Secret Canyon Shale and the Upper Cambrian Dunderberg Shale.

Mount Hamilton is an advanced project having a planned mine with a single pit and heap leach pads. The planned strip ratio is 2.4:1. The life of the mine is estimated to be 8 years with metallurgical recoveries of 79% for gold and 90% for silver. Annual production is estimated to be 48,000 ounces of gold and 330,000 ounces of silver; the initial capital cost is \$71.9 million. The proven and probable reserves are 22,527,000 tons grading 0.022 opt gold and 0.134 opt silver for a total of 487,100 ounces of gold and 3,028,200 ounce of silver. (Solitario Exploration and Royalty Corp. news release, 2/7/2011, 6/2/2011; Solitario Exploration and Royalty Corp. 43-101 Technical Report, 2/22/2012; Solitario Exploration and Royalty Corp. website, www.solitarioresources.com; Ely Gold and Minerals, Inc. website, www.elygoldandminerals.com)

Major Precious-Metal Deposits

by David A. Davis and John L. Muntean

The information in this compilation was obtained from the Nevada Division of Minerals and from published reports, articles in mining newsletters, and company websites, annual reports, and press releases. Locations of most of these deposits are shown on NBMG Map 149, 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
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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 2011 (May): 10,760,000 tons, 0.015 opt Au, 0.514 opt Ag (measured and indicated resource) 2,255,000 tons, 0.013 opt Au, 0.387 opt Ag (inferred resource)		rhyolitic tuff	Miocene
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Buffalo Valley gold property (Eastgate district)	1996: 96,000 oz Au		rhyolitic ash-flow tuff	Tertiary
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Dixie Comstock (Dixie Valley district)	1991: 2.4 million tons, 0.049 opt Au 1995: 100,000 oz Au		Tertiary rhyolite	Miocene?
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Fondaway Canyon (Shady Run district)	1988: 400,000 tons, 0.06 opt Au 1990: 400,000 tons, 0.06 opt Au 2001: 396,000 tons, 0.428 opt Au (indicated resource) 372,849 tons, 0.409 opt Au (inferred resource)	1989: 1,065 oz Au, 87 oz Ag 1990: 12,000 oz Au	Triassic slate and phyllite	
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Jessup (Jessup district)	1998: 8,376,564 tons, 0.024 opt Au, 0.25 opt Ag ("global resource") 2007: 5,432,000 tons, 0.022 opt Au, 0.31 opt Ag (indicated resource); 1,265,000 tons, 0.017 opt Au, 0.23 opt Ag (inferred resource) 2009: 8,571,000 tons, 0.015 opt Au, 0.255 opt Ag (measured resource); 13,936,000 tons, 0.012 opt Au 0.209 opt Ag (indicated resource); 4,954,000 tons, 0.016 opt Au, 0.231 opt Ag (inferred resource)			
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New Pass property (New Pass district)	1994: 3.4 million tons, 0.042 opt Au 1997: 3.1 million tons, 0.055 opt Au 2006: 11.5 million tons, 0.0226 opt Au, 0.0041 opt Ag (inferred resource) 2009: 11,142,000 tons, 0.028 opt Au, 0.24 opt Ag (measured and indicated resource)		Triassic siltstone	
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CLARK COUNTY

Crescent property (Crescent district)	1992: 390,000 tons, 0.05 opt Au; 3.3 million tons, 0.022 opt Au			
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Keystone (Goodsprings district)	1990: <i>estimated geologic resource</i> - 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
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MAJOR PRECIOUS-METAL DEPOSITS, ELKO COUNTY

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
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 2005 (inferred resource, 0.025 opt Au cut-off): 15.145 million tons, 0.078 opt Au 2005 (inferred resource, 0.3 opt Au cut-off): 468,000 tons, 0.45 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: <i>geologic resource</i> -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 at the end of this section 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 2005: 3,849 oz Au, 322 oz Ag 2006: 2,019 oz Au, 436 oz Ag	dacitic dikes, Paleozoic siltstone and laminated limestone/chert	Eocene
Burns Basin (Jerritt Canyon, Independence Mountains district)	2005-2007: 29,700 tons, 0.134 opt Au (open pit indicated resource) 30,700 tons, 0.194 opt Au (underground indicated resource), 50,600 tons, 0.23 opt Au (underground inferred resource) 2011: 348,800 tons, 0.078 opt Au (proven and probable reserves, open pit) 344,500 tons, 0.096 opt Au (measured and indicated resource, includes reserves) 14,000 tons, 0.079 opt Au (inferred resource)		Hanson Creek and Roberts Mountains Formations	
California Mountain (Jerritt Canyon, Independence Mountains district)	2005-2007: 8,000 tons, 0.11 opt Au (open pit indicated resource) 32,100 tons, 0.38 opt Au (underground indicated resource), 9,400 tons, 0.33 opt Au (underground inferred resource) 2011: 4,500 tons, 0.184 opt Au (indicated resource, underground) 29,500 tons, 0.192 opt Au, 5,700 oz Au (inferred resource)		Hanson Creek and Roberts Mountains Formations	
Coyote Zone (Jerritt Canyon, Independence Mountains district)	2005-2007: 45,200 tons, 0.21 opt Au (underground indicated resource) 2,700 tons, 0.18 opt Au (underground inferred resource) 2006-2007: 20,100 tons, 0.104 opt Au (open pit inferred resource)		Hanson Creek and Roberts Mountains Formations	
Cobb Creek (Mountain City district)	1988: <i>geologic resource</i> -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	

MAJOR PRECIOUS-METAL DEPOSITS, ELKO COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
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 carbonate rocks, dacitic dikes	Eocene
Doby George (Aura district)	1995: 3.7 million tons, 0.060 opt Au 1997: 250,000 oz Au		Schoonover	
Hollister (Ivanhoe district)	1989: oxide-18.4 million tons, 0.035 opt Au; estimated mineral inventory 83.5 million tons, 0.034 opt Au, with 52.8 million tons of oxide and 30.7 million tons of sulfide 1995: 1,300,000 oz Au; 42 million tons of 0.031 opt Au (geologic resource, combined oxide and sulfide) 2001: 719,000 tons, 1.29 opt Au, 7 opt Ag 2007 (May, 0.25 opt Au cut-off grade): 903,000 tons, 1.03 opt Au, 5.71 opt Ag (measured and indicated resource) 805,000, tons, 1.08 opt Au, 3.94 opt Ag (inferred resource) 2008 (June, 0.25 opt Au cut-off grade): 1,615,000 tons, 0.87 opt Au, 4.57 opt Ag (measured and indicated resource) 1,252,000 tons, 0.51 opt Au, 1.43 opt Ag (inferred resource) 2009 (June, 0.25 opt Au cut-off grade): 1,111,200 tons, 1.167 opt Au, 8.59 opt Ag (measured and indicated resource, includes reserves) 1,035,300 tons, 1.340 opt Au, 2.72 opt Ag (inferred resource) 2010 (August, 0.25 opt Au cut-off grade): 1,121,000 tons, 1.305 opt Au, 10.35 opt Ag (measured and indicated resource, includes reserves) 1,487,000 tons, 0.690 opt Au, 11.1 opt Ag (inferred resource)	1990: 6,000 oz Au 1991: 60,000 oz Au 2007: 4,066 oz Au, 38,885 oz Ag 2008: 41,890 oz Au, 192,000 oz Ag 2009: 31,174 oz Au, 243,148 oz Ag 2010: 105,144 oz Au 578,855 oz Ag 2011: 86,518 oz Au 711,493 oz Ag	rhyolitic tuff, flows	Miocene
Jerritt Canyon Property (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 resource; 1.035 million oz Au inferred resource 2003: 820,104 oz Au, proven and probable reserves; 2.295 million oz Au measured and indicated resource; 1.034 million oz Au inferred resource 2004: 9.988 million tons, 0.241 opt Au measured and indicated resource; 4.1 million tons, 0.219 opt Au inferred resource 2005: 3.723 million tons, 0.24 opt Au (proven and probable reserves); 8.812 million tons, 0.24 opt Au (measured and indicated resource, includes proven and probable reserves), 2.6465 million tons, 0.23 opt Au (inferred resource)	1981: ~2.6 million oz Au 1991: 1,380,000 oz Au, 25,000 oz Ag 1995: 1,296,492 oz Au 1999: 363,000 oz Au 2000: 334,747 oz Au 2001: 295,328 oz Au, 7,752 oz Ag 2002: 338,660 oz Au, 8,154 oz Ag 2003: 302,095 oz Au 2004: 243,333 oz Au 2005: 202,911 oz Au, 6,322 oz Ag 2006: 169,862 oz Au, 7,154 oz Ag 2007: 121,700 oz Au, 17,560 oz Ag 2008: 35,936 oz Au, 4,620 oz Ag 2009: 9,770 oz Au 2010: 65,104 oz Au 2011: 67,453 oz Au	Hanson Creek and Roberts Mountains Formations	Eocene

MAJOR PRECIOUS-METAL DEPOSITS, ELKO COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Jerritt Canyon (cont.)	2006: 1.9849 million tons, 0.245 opt Au (proven and probable reserves); 8.2032 million tons, 0.232 opt Au (measured and indicated resource, includes proven and probable reserves), 2.4148 million tons, 0.226 opt Au (inferred resource) 2007: 3.1552 million tons, 0.227 opt Au (proven and probable reserves); 8.1969 million tons, 0.239 opt Au (measured and indicated resource, includes proven and probable reserves); 2.3197 million tons, 0.224 opt Au (inferred resource) 2010: 4.3658 million tons, 0.164 opt Au (proven and probable reserves); 11.6923 million tons, 0.217 opt Au (measured and indicated resource, includes proven and probable reserves); 4.4901 million tons, 0.198 opt Au (inferred resource) 2011: 6,056,900 tons, 0.175 opt Au (proven and probable reserves); 12,289,500 tons, 0.189 opt Au (measured and indicated resource, includes reserves); 4.115,700 tons, 0.182 opt Au (inferred resource)			
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?
Long Canyon (Pequop district)	2009 (March, 0.012 opt Au cut-off grade): 5,300,000 tons, 0.069 opt Au (indicated resource) 9,678,000 tons, 0.048 opt au (inferred resource) 2010 (May, 0.006 opt Au cut-off grade): 13,492,000 tons, 0.050 opt Au (measured and indicated resource) 11,457,000 tons, 0.048 opt au (inferred resource) 2010 (year-end, 0.006 opt Au cut-off grade): 20,250,000 tons, 0.069 opt Au (measured and indicated resource) 12,313,000 tons, 0.056 opt au (inferred resource)			
Maverick Springs (Maverick Springs area)	2002: 350,000 oz Au, 32.3 million oz Ag, indicated resource; 747,000 oz Au, 68.8 million oz Ag, inferred resource 2004: 69.63 million tons, 0.01 opt Au, indicated resource; 85.55 million tons, 0.008 opt Au, inferred resource			
Meikle (Lynn district)	1992: 7.9 million tons, 0.613 opt Au (geologic resource) 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	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,	Popovich and Roberts Mountains Formations	Eocene

MAJOR PRECIOUS-METAL DEPOSITS, ELKO COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Meikle (cont.)	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 resource 4,261,000 tons, 0.423 opt Au indicated resource 7,725,000 tons, 0.366 opt Au inferred resource 2004: 7,575,000 tons, 0.392 opt Au proven and probable reserves; 6,268,000 tons, 0.379 opt Au mineral resource 2005 (includes all underground resources at Goldstrike): 7,319,000 tons, 0.379 opt Au proven and probable reserves; 3,234,000 tons, 0.386 opt Au measured and indicated resource; 3,034,000 tons, 0.386 opt Au inferred resource 2006 (includes all underground resources at Goldstrike): 7,662,000 tons, 0.370 opt Au proven and probable reserves; 4,143,000 tons, 0.338 opt Au measured and indicated resource; 2,159,000 tons, 0.301 opt Au inferred resource 2007 (includes all underground resources at Goldstrike): 7,423,000 tons, 0.364 opt Au proven and probable reserves; 4,129,000 tons, 0.329 opt Au measured and indicated resource; 2,747,000 tons, 0.371 opt Au inferred resource 2008 (includes all underground resources at Goldstrike): 6,923,000 tons, 0.368 opt Au proven and probable reserves; 4,467,000 tons, 0.323 opt Au measured and indicated resource; 3,424,000 tons, 0.393 opt Au inferred resource 2009 (includes all underground resources at Goldstrike): 8,998,000 tons, 0.318 opt Au proven and probable reserves; 4,436,000 tons, 0.334 opt Au measured and indicated resource; 1,858,000 tons, 0.341 opt Au inferred resource 2010 (includes all underground resources at Goldstrike): 10,872,000 tons, 0.272 opt Au (proven and probable reserves); 6,771,000 tons, 0.298 opt Au (measured and indicated resource) 3,047,000 tons, 0.298 opt Au (inferred resource) 2011 (includes all underground resources at Goldstrike): 11,895,000 tons, 0.255 opt Au, 3,055,000 contained oz Au (proven and probable reserves); 6,077,000 tons, 0.325 opt Au, 1,828,000 contained oz Au (measured and indicated resource); 2,698,000 tons, 0.298 opt Au, contained 805,000 oz Au (inferred resource)	129,520 oz Ag 2005 (includes all underground production at Goldstrike): 509,568 oz Au, 133,979 oz Ag 2006 (includes all underground production at Goldstrike): 477,035 oz Au, 58,345 oz Ag 2007 (includes all underground production at Goldstrike): 413,186 oz Au, 74,000 oz Ag 2008 (includes all underground production at Goldstrike): 424,687 oz Au, 51,434 oz Ag 2009 (includes all underground production at Goldstrike): 388,548 oz Au, 30,198 oz Ag 2010 (includes all underground production at Goldstrike): 281,308 oz Au, 22,628 oz Ag 2011 (includes all underground production at Goldstrike): 279,348 oz Au, 16,345 oz Ag		
MCE (Jerritt Canyon, Independence Mountains district)	2005-2007: 4,400 tons, 0.20 opt Au (underground measured and indicated resource) 7,800 tons, 0.19 opt Au (underground inferred resource)		Hanson Creek and Roberts Mountains Formations	
Midas (Ken Snyder) Mine (Gold Circle district)	1995: 13 million tons, 0.16 opt Au, 2.7 opt Ag, announced resource, proven Au reserves<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 resource; 700,000 tons, 0.31 opt Au inferred resource	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 2005: 167,297 oz Au, 2,166,396 oz Ag 2006: 140,884 oz Au, 1,694,060 oz Ag 2007: 79,133 oz Au, 1,040,059 oz Ag	Tertiary volcanic rocks	Miocene

MAJOR PRECIOUS-METAL DEPOSITS, ELKO COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Midas (cont.)	2005: 1.5 million tons, 0.58 opt Au, proven and probable reserves; 600,000 tons, 0.42 opt Au, inferred resource 2006: 1.2 million tons, 0.47 opt Au, proven and probable reserves (which includes 6,800,000 oz Ag); 800,000 tons, 0.33 opt Au, inferred resource 2007: 1.0 million tons, 0.493 opt Au, proven and probable reserves (which includes 7,500,000 oz Ag); 200,000 tons, 0.345 opt Au, measured and indicated resource; 100,000 tons, 0.3013 opt Au, inferred resource 2008: 900,000 tons, 0.436 opt Au, proven and probable reserves 200,000 tons, 0.186 opt Au, measured and indicated resource; 100,000 tons, 0.321 opt Au, inferred resource 2009: 700,000 tons, 0.425 opt Au, proven and probable reserves (also includes 4.6 Moz Ag) 100,000 tons, 0.193 opt Au, measured and indicated resource; 100,000 tons, 0.248 opt Au, inferred resource 2010: 500,000 tons, 0.319 opt Au (proven and probable reserves, 95% recovery, also includes 2,800,000 oz Ag); 120,000 tons, 0.167 opt Au (measured and indicated resource) 2011: 800,000 tons, 0.226 opt Au, 7.201 opt Ag, 160,000 oz Au, 5,250,000 oz Ag (proven and probable reserves, 95% Au and 88% Ag recovery); 110,000 tons, 0.070 opt Au; 100,000 tons 4.352 opt Ag (measured and indicated resource); 100,000 tons, 0.049 opt Au, 9.56 opt Ag (inferred resource)	2008: 150,608 oz Au 1,872,883 oz Ag 2009: 123,621 oz Au, 1,634,601 oz Ag 2010: 127,196 oz Au, 1,710,318 oz Ag 2011: 111,476 oz Au; 1,512,287 oz Ag		
Mill Creek (Jerritt Canyon, Independence Mountains district)	2005-2007: 78,400 tons, 0.12 opt Au (measured and indicated resource) 2011: 186,000 tons, 0.09 opt Au (proven and probable reserves, open pit) 276,200 tons, 0.094 opt Au (measured and indicated resource, includes reserves) 3,400 tons, 0.154 opt Au (inferred resource)		Hanson Creek and Roberts Mountains Formations	
Murray (incl. Zone 9) (Jerritt Canyon, Independence Mountains district)	2005: 243,300 tons, 0.26 opt Au (proven and probable reserves) 789,200 tons, 0.29 opt Au (measured and indicated resource, includes reserves) 2006: 18,400 tons, 0.266 opt Au (proven and probable reserves); 393,300 tons, 0.290 opt Au (measured and indicated resource, includes reserves); 152,000 tons, 0.220 opt Au (inferred resource) 2007: 393,300 tons, 0.290 opt Au (measured and indicated resource); 152,000 tons, 0.220 opt Au (inferred resource) 2011: 412,400 tons, 0.221 opt Au (proven and probable reserves, underground) 590,200 tons, 0.213 opt Au (measured and indicated resource, includes reserves) 86,000 tons, 0.215 opt Au (inferred resource)		Hanson Creek and Roberts Mountains Formations	
Pie Creek (Jerritt Canyon, Independence Mountains district)	2005-2007: 190,200 tons, 0.16 opt Au (measured and indicated resource) 28,300 tons, 0.14 opt Au (inferred resource) 2011: 205,400 tons, 0.087 opt Au (indicated resource, open pit) 4,900 tons, 0.09 opt Au (inferred resource)		Hanson Creek and Roberts Mountains Formations	

MAJOR PRECIOUS-METAL DEPOSITS, ELKO COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
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 resource		Webb Formation siltstone Devils Gate Limestone	
Pony Creek (Robinson Mountain district)	1994: 1.1 million tons, 0.057 opt Au (geologic resource) 2004: 32.41 million tons, 0.044 opt Au (inferred resource)			
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
Emigrant Springs deposit	2005: 1,531,165 oz Au (proven and probable reserves)		Webb Formation	Eocene
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 2005: 404 oz Au, 90 oz Ag		
SMZ deposit	1989: 1.6 million tons, 0.019 opt Au (geologic resource)			
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			
REN (Bootstrap district)	2003: 2.1 million tons, 0.43 opt Au (inferred resource) 2005: 2.1 million tons, 0.38 opt Au (indicated resource); 1.4 million tons, 0.37 opt Au (inferred resource) 2006: 2,713,000 tons, 0.37 opt Au (indicated resource); 758,000 tons, 0.47 opt Au (inferred resource) 2007: 2,991,000 tons, 0.37 opt Au (indicated resource); 835,000 tons, 0.47 opt Au (inferred resource)			
Road Canyon (Jerritt Canyon, Independence Mountains district)	2005-2007: 148,600 tons, 0.14 opt Au (measured and indicated resource); 74,300 tons, 0.13 opt Au (inferred resource) 2011: 17,500 tons, 0.069 opt Au (indicated resource, open pit) 185,100 tons, 0.082 opt Au (inferred resource)		Hanson Creek and Roberts Mountains Formations	

MAJOR PRECIOUS-METAL DEPOSITS, ELKO COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Saval (Jerritt Canyon, Independence Mountains district)	2005: 104,400 tons, 0.23 opt Au (proven and probable reserves) 460,500 tons, 0.25 opt Au (measured and indicated resource, includes reserves) 270,000 tons, 0.25 opt Au (inferred resource) 2006: 120,200 tons, 0.246 opt Au (proven and probable reserves); 369,300 tons, 0.254 opt Au (measured and indicated resource, includes reserves); 191,200 tons, 0.238 opt Au (inferred resource) 2007: 120,200 tons, 0.246 opt Au (proven and probable reserves); 379,800 tons, 0.252 opt Au (measured and indicated resource, includes reserves); 107,400 tons, 0.206 opt Au (inferred resource) 2010: 169,100 tons, 0.210 opt Au (proven and probable reserves, underground) 656,000 tons, 0.227 opt Au (measured and indicated resource, includes reserves) 201,700 tons, 0.209 opt Au (inferred resource) 2011 underground: 169,100 tons, 0.210 opt Au, 35,500 oz Au (proven and probable reserves) 333,600 tons, 0.224 opt Au, (measured and indicated resource, includes reserves); 95,400 tons, 0.2 opt Au, 19,100 oz Au (inferred resource) open pit: 144,900 tons, 0.092 opt Au, (proven and probable reserves) 654,300 tons, 0.074 opt Au, 48,600 oz Au (measured and indicated resource, includes reserves) 222,200 tons, 0.142 opt Au, 31,600 oz Au (inferred resource)		Hanson Creek and Roberts Mountains Formations	
Smith (Jerritt Canyon, Independence Mountains district)	2005: 949,300 tons, 0.29 opt Au (proven and probable reserves) 1,863,300 tons, 0.28 opt Au (measured and indicated resource, includes reserves) 677,000 tons, 0.24 opt Au (inferred resource) 2006: 269,000 tons, 0.332 opt Au (proven and probable reserves); 1,064,400 tons, 0.290 opt Au (measured and indicated resource, includes reserves); 541,600 tons, 0.231 opt Au (inferred resource) 2007: 954,100 tons, 0.282 opt Au (proven and probable reserves); 1,236,900 tons, 0.278 opt Au (measured and indicated resource, includes reserves); 534,000 tons, 0.221 opt Au (inferred resource) 2010: 1,631,700 tons, 0.172 opt Au (proven and probable reserves, underground) 4,186,200 tons, 0.235 opt Au (measured and indicated resource, includes reserves) 1,157,300 tons, 0.195 opt Au (inferred resource) 2011: 2,056,600 tons, 0.212 opt Au (proven and probable reserves, underground) 4,231,500 tons, 0.22 opt Au (measured and indicated resource, includes reserves) 979,500 tons, 0.196 opt Au, (inferred resource)		Hanson Creek and Roberts Mountains Formations	
Smith East (Jerritt Canyon, Independence Mountains district)	2006: 997,400 tons, 0.281 opt Au (measured and indicated resource, includes reserves) 120,400 tons, 0.264 opt Au (inferred resource) 2007: 1,065,500 tons, 0.287 opt Au (measured and indicated resource); 125,200 tons, 0.280 opt Au (inferred resource)		Hanson Creek and Roberts Mountains Formations	

MAJOR PRECIOUS-METAL DEPOSITS, ELKO COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
South Arturo (Bootstrap district)	2006: 21,073,000 tons, 0.060 opt Au (indicated resource) 1,310,000 tons, 0.053 opt Au (inferred resource) 2007: 29,880,000 tons, 0.070 opt Au (indicated resource); 1,020,000 tons, 0.022 opt Au (inferred resource) 2008: 36,857,000 tons, 0.045 opt Au (indicated resource); 3,253,000 tons, 0.013 opt Au (inferred resource) 2009: 43,857,000 tons, 0.051 opt Au (proven and probable reserve) 5,628,000 tons, 0.048 opt Au (indicated resource) 4,232,000 tons, 0.018 opt Au (inferred resource) 2010: 45,597,000 tons, 0.051 opt Au (proven and probable reserve) 26,735,000 tons, 0.043 opt Au (indicated resource) 11,623,000 tons, 0.018 opt Au (inferred resource) 2011: 47,062,000 tons, 0.05 opt Au 2,330,000 contained oz Au (probable reserve); 35,803,000 tons, 0.039 opt Au, 1,380,000 contained oz Au (indicated resource) 17,430,000 tons, 0.023 opt Au, 472,000 contained oz Au (inferred resource)		Popovich Formation Bootstrap Limestone Rodeo Creek Formation	
SSX-Steer (Jerritt Canyon, Independence Mountains district)	2005: 1,333,300 tons, 0.25 opt Au (proven and probable reserves) 2,597,500 tons, 0.28 opt Au (measured and indicated resource, includes reserves) 1,052,200 tons, 0.23 opt Au (inferred resource) 2006: 739,400 tons, 0.266 opt Au (proven and probable reserves); 2,332,500 tons, 0.266 opt Au (measured and indicated resource, includes reserves); 929,700 tons, 0.23 opt Au (inferred resource) 2007: 900,000 tons, 0.226 opt Au (proven and probable reserves); 2,561,400 tons, 0.259 opt Au (measured and indicated resource, includes reserves); 959,200 tons, 0.236 opt Au (inferred resource) 2010: 1,215,400 tons, 0.189 opt Au (proven and probable reserves, underground) 4,012,200 tons, 0.224 opt Au (measured and indicated resource, includes reserves) 479,100 tons, 0.194 opt Au (inferred resource) 2011: 1,280,900 tons, 0.191 opt Au (proven and probable reserves, underground) 3,699,200 tons, 0.209 opt Au (measured and indicated resource, includes reserves) 371,700 tons, 0.198 opt Au (inferred resource)		Hanson Creek and Roberts Mountains Formations	
Starvation Canyon (Jerritt Canyon, Independence Mountains district)	2005: 400,500 tons, 0.30 opt Au (probable reserves) 676,400 tons, 0.28 opt Au (measured and indicated resource, includes reserves) 51,400 tons, 0.31 opt Au (inferred resource) 2006: 369,600 tons, 0.305 opt Au (probable reserves); 636,500 tons, 0.290 opt Au (measured and indicated resource, includes reserves); 51,200 tons, 0.278 opt Au (inferred resource)		Hanson Creek and Roberts Mountains Formations	

MAJOR PRECIOUS-METAL DEPOSITS, ELKO COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Starvation Canyon (cont.)	2007: 571,600 tons, 0.282 opt Au (probable reserves); 697,300 tons, 0.287 opt Au (measured and indicated resource, includes reserves) 25,500 tons, 0.252 opt Au (inferred resource) 2010: 363,000 tons, 0.264 opt Au (proven and probable reserves, underground) 502,400 tons, 0.285 opt Au (measured and indicated resource, includes reserves) 256,300 tons, 0.276 opt Au (inferred resource) 2011: 343,400 tons, 0.265 opt Au (proven and probable reserves, underground) 525,200 tons, 0.251 opt Au (measured and indicated resource, includes reserves) 244,400 tons, 0.253 opt Au (inferred resource)			
Storm Mine (Rossi) (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 resource; 1 million tons, 0.0335 opt Au inferred resource 2005 and 2006: 500,000 tons, 0.449 opt Au (measured and indicated resource) 800,000 tons, 0.376 opt Au, inferred resource	2008: 52,000 oz Au 2009: 64,558 oz Au 50,069 oz Ag 2010: 74,429 oz Au 63,309 oz Ag 2011: 86,508 oz Au 73,588 oz Ag	Popovich Formation Bootstrap Limestone Rodeo Creek Formation	
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	Eocene
Twelvemile Ranch (Tecoma district)	1986: 4,000,000 tons, 0.01 opt Au, (resource)		volcanic and sedimentary rocks	
Waterpipe II (Jerritt Canyon, Independence Mountains district)	2005-2007: 37,400 tons, 0.21 opt Au (underground inferred resource)		Roberts Mountains Formation	
West Mahala (Jerritt Canyon, Independence Mountains district)	2005 and 2006: 368,100 tons, 0.22 opt Au (underground measured and indicated resource); 141,900 tons, 0.21 opt Au underground inferred resource) 2007: 197,500 tons, 0.218 opt Au (underground indicated resource); 129,600 tons, 0.206 opt Au (inferred resource) 2010: 225,800 tons, 0.189 opt Au (measured and indicated resource, underground); 1,956,900 tons, 0.191 opt Au (inferred resource) 2011: 199,300 tons, 0.188 opt Au (proven and probable reserves, underground) 388,700 tons, 0.19 opt Au (measured and indicated resource, includes reserves) 1,854,600 tons, 0.175 opt Au (inferred resource)		Hanson Creek and Roberts Mountains Formations	
West Pequop (Pequop district)	2010: 1,349,700 tons, 0.0475 opt Au (measured and indicated resource) 6,055,500 tons, 0.0411 opt Au (inferred resource)			
Winters Creek (Jerritt Canyon, Independence Mountains district)	1986: 1.4 million tons, 0.146 opt Au 2005-2007: 148,900 tons, 0.22 opt Au underground measured and indicated resource; 37,200 tons, 0.2 opt Au, underground inferred Resource		lower Paleozoic carbonate rocks	Eocene

MAJOR PRECIOUS-METAL DEPOSITS, ELKO COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
	2011: 90,300 tons, 0.162 opt Au (indicated resource, underground) 9,200 tons, 0.186 opt Au (inferred resource)			
Wright Window (Jerritt Canyon, Independence Mountains district)	1986: 1.3 million tons, 0.095 opt Au 2005-2007: 32,600 tons, 0.226 opt Au, (probable reserves); 97,800 tons, 0.16 opt Au, (measured and indicated resource, includes reserves); 19,000 tons, 0.23 opt Au (inferred resource) 2010: 84,500 tons, 0.127 opt Au (probable reserve, open pit) 97,800 tons, 0.156 opt Au (measured and indicated resource, includes reserves); 19,000 tons, 0.229 opt Au (inferred resource) 2011: 112,900 tons, 0.096 opt Au (proven and probable reserves, open pit) 125,800 tons, 0.094 opt Au (measured and indicated resource, includes reserves) 4,800 tons, 0.093 opt Au (inferred resource)	1992: 3,500 oz Au	lower Paleozoic carbonate rocks	Eocene
ESMERALDA COUNTY				
Boss (Gilbert district)	1987: 500,000 tons, 0.07 opt Au 1990: <i>reserves</i> -637,500 tons, 0.023 opt Au <i>geologic resource</i> -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	
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 resource); 1,001,000 tons, 0.022 opt Au (inferred resource) 2006: 12,459,000 tons, 0.031 opt Au (measured and indicated resource); 88,000 tons, 0.116 opt Au (inferred resource) 2011: 18,772,000 tons, 0.031 opt Au, 438,000 oz Au, 0.098 opt Ag, 1,846,000 oz Ag (measured and indicated resource, 0.009 opt Au cut-off grade); 4,596,000 tons, 0.016 opt Au, 74,000 oz Au, 0.059 opt Ag, 272,000 oz Ag (inferred resource, 0.009 opt Au cut-off grade)		Sandstorm Rhyolite	21 Ma?
Goldfield Project (Goldfield district)	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 resource) 10,239,100 tons 0.024 opt Au inferred resource (includes Goldfield Main, McMahan Ridge, and Gemfield) 2006: 16,856,000 tons, 0.034 opt Au (measured, indicated, and inferred resource, includes McMahan 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 resource; 2,129,000 tons, 0.038 opt Au inferred resource			

MAJOR PRECIOUS-METAL DEPOSITS, ESMERALDA COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Goldfield Main (cont.)	2010 (Goldfield Main, 0.012 opt cut-off grade) 9,424,000 tons, 0.044 opt Au (indicated resource) 7,267,000 tons, 0.050 opt Au (inferred resource) 2011: 9,425,000 tons, 0.045 opt Au, 421,000 oz Au, (indicated resource, 0.009 opt Au cut-off grade); 7,264,000 tons, 0.05 opt Au, 360,000 oz Au (inferred resource, 0.009 opt Au cut-off grade)			
Goldfield West (Goldfield district)	2011: 5,042,444 tons, 0.015 opt Au, 76,080 oz Au, 0.12 opt Ag, 589,078 oz Ag (inferred resource, 0.009 opt Au cut-off grade)		rhyolite tuff	
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 2003: 26,036,00 tons, 0.023 opt Au (indicated resource); 8,200,000 tons, 0.021 opt Au (inferred resource) 2011: 128,608,197 tons, 0.009 opt Au, 0.228 Ag, 1,157,474 oz Au, 29,322,699 oz Ag (inferred resource, 0.005 opt Au cut-off grade)		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 resource) 171,000 tons, 0.019 opt Au (inferred resource) 2006: 4,138,000 tons, 0.042 opt Au (measured and indicated resource); 172,000 tons, 0.038 opt Au (inferred resource) 2011: 6,074,000 tons, 0.039 opt Au, 238,000 oz Au (indicated resource, 0.009 opt Au cut-off grade) 121,000 tons, oz, 0.032 opt Au, 4,000 oz Au (inferred resource, 0.009 opt Au cut-off grade)			
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 reserves 2002: 2.66 million tons, 0.079 opt Au total reserves 2003: 8.3 million tons, 0.061 opt Au resource (includes 2.66 million tons, 0.079 opt Au reserves) 2010 (May): 4,697,000 tons, 0.047 opt Au (measured and indicated resource Drinkwater and Mary deposits) 2010 (May): 3,793,000 tons, 0.036 opt Au (inferred resource, Drinkwater and Mary deposits) 2011: 3,231,000 tons, 0.059 opt Au, 190,800 oz Au (indicated resource, 0.02 opt Au cut-off grade, Drinkwater, Mary, and Last Chance deposits) 89,000 tons, 0.043 opt Au, 3,800 oz Au (inferred resource, 0.02 opt Au cut-off grade, Drinkwater, Mary, and Last Chance deposits)	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 2005: 1,589 oz Au, 1,073 oz Ag 2011: 11,932 oz Au, 6,918 oz Ag	Wyman Formation	Mesozoic?

MAJOR PRECIOUS-METAL DEPOSITS, ESMERALDA COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Monte Cristo (Gilbert district)	2006: 363,760 tons, 0.190 opt Au, 0.583 opt Ag (inferred resource) 2010: 2,545,980 tons, 0.11 opt Au (inferred resource, McLean Lode, 0.02 opt cut-off grade) 888,685 tons, 0.04 opt Au (inferred resource, Upper Zone, 0.02 opt cut-off grade) 999,966 tons, 1.27 opt Ag (inferred silver resource, McLean Lode, 0.36 opt cut-off grade) 123,948 tons, 0.78 opt Ag (inferred silver resource, Upper Zone, 0.36 opt cut-off grade)	late 1980s: 300,000 tons, 0.072 opt Au	Tertiary andesite, lithic tuff	Tertiary
Nivloc (Red Mtn. district)	2011: 1,807,000 tons, 0.023 opt Au, 41,000 oz Au, 3.11 opt Ag, 5,633,000 oz Ag (inferred resource, 1.17 opt Ag cut-off grade)	1937-43: 4,675,408 oz Ag, 18,794 oz Au	Alaskite Complex, rhyolite, and metasediments	Late Cenozoic
Three Hills (Tonopah district)	1996: 3.2 million tons, 0.036 opt Au 1997: 6.3 million tons, 0.023 opt Au 2003: 5,736,000 tons, 0.023 opt Au (indicated resource)		Miocene Siebert Formation and Oddie Rhyolite	
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 2009: 388,920 tons, 0.096 opt Au (indicated resource) 323,230 tons, 0.072 opt Au (inferred resource)		Tertiary quartz latite	
Weepah (Weepah district)	1986: 200,000 tons, 0.1 opt Au, 0.4 opt Ag	1986-87: 58,000 oz Au	Wyman Formation	Cretaceous

EUREKA COUNTY

Afgan (Antelope district)	1996: 80,000 oz Au drill-indicated resource 1999: 2.8 million tons, 0.037 opt Au oxide resource 2004: 1.85 million tons, 0.027 opt Au (indicated resource) 1.29 million tons, 0.026 opt Au (inferred resource) 2011 (oxide): 3,206,000 tons, 0.021 opt Au, 66,000 oz Au (indicated resource, 0.006 opt Au cut-off grade) 3,972,000 tons, 0.014 opt Au, 55,000 oz Au (inferred resource, 0.006 opt Au cut-off grade)		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 resource; 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 2005: 1,514,320 oz Au, 114,248 oz Ag 2006: 1,432,698 oz Au,		Eocene

MAJOR PRECIOUS-METAL DEPOSITS, EUREKA COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age	
Betze-Post (cont.)	2005: 114,512,000 tons, 0.128 opt Au (proven and probable reserves); 21,115,000 tons, 0.050 opt Au (measured and indicated resource); 417,000 tons, 0.089 opt Au (inferred resource) 2006: 105,206,000 tons, 0.125 opt Au (proven and probable reserves); 20,184,000 tons, 0.050 opt Au (measured and indicated resource); 489,000 tons, 0.078 opt Au (inferred resource) 2007: 94,914,000 tons, 0.128 opt Au (proven and probable reserves); 34,532,000 tons, 0.052 opt Au (measured and indicated resource); 5,014,000 tons, 0.064 opt Au (inferred resource) 2008: 86,254,000 tons, 0.119 opt Au (proven and probable reserves); 15,751,000 tons, 0.055 opt Au (measured and indicated resource); 479,000 tons, 0.092 opt Au (inferred resource) 2009: 82,902,000 tons, 0.112 opt Au (proven and probable reserves); 16,687,000 tons, 0.052 opt Au (measured and indicated resource); 3,568,000 tons, 0.116 opt Au (inferred resource) 2010: 95,865,000 tons, 0.101 opt Au (proven and probable reserves); 4,694,000 tons, 0.037 opt Au (measured and indicated resource) 1,344,000 tons, 0.065 opt Au (inferred resource) 2011 97,325,000 tons, 0.096 opt Au, 9,342,000 contained oz Au (proven and probable reserves); 4,612,000 tons, 0.032 opt Au, 147,000 contained oz Au (measured and indicated resource); 564,000 tons, 0.055 opt Au, 31,000 contained oz Au (inferred resource)	121,032 oz Ag 2007: 1,215,447 oz Au, 140,923 oz Ag 2008: 1,281,450 oz Au, 152,886 oz Ag 2009: 901,002 oz Au, 120,736 oz Ag 2010: 884,200 oz Au, 138,931 oz Ag 2011: 721,534 oz Au, 94,572 oz Ag			
Buckhorn property (Buckhorn district)	1984: 5 million tons, 0.044 opt Au, 0.585 opt Ag 1990: 700,000 tons, 0.05 opt Au; <i>geologic resource</i> -200,350 oz Au 1993: <i>geologic resource</i> -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		
Cabin Creek (Antelope district)	2009-2010 (Feb., 0.012 opt Au cut-off grade) 3.2 million tons, 0.024 opt Au (indicated resource) 0.1 million tons, 0.015 opt Au (inferred resource) 2011: 2,348,000 tons, 0.028 opt Au, 60,005 oz Au (measured and indicated resource, 0.009 opt Au cut-off grade) 1,117,000 tons, 0.025 opt Au, 25,391 oz Au (inferred resources, 0.009 opt Au cut-off grade)				
Carlin North, Newmont (Lynn district)					
Blue Star	1987: 1.95 million tons, 0.066 opt Au 1989: <i>geologic resource</i> -22.2 million tons, 0.030 opt Au	1974-84: intermittent 1988-2011: included in Newmont Gold production at the end of this section	lower Paleozoic sandy siltstone and carbonate rocks, granodiorite	Eocene	
Bobcat	1988: <i>geologic resource</i> -17.7 million tons, 0.029 opt Au		lower Paleozoic rocks	Eocene	
Bullion Monarch	1987: 1 million tons, 0.10 opt Au	1977-84: 17,779 oz Au	lower Paleozoic sedimentary rocks	Eocene	
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 1997-2011: included in Newmont Gold production at the end of this section	Popovich Formation	Eocene	

MAJOR PRECIOUS-METAL DEPOSITS, EUREKA COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Genesis	1989: <i>geologic resource</i> -35.8 million tons, 0.044 opt Au 1990: 32 million tons, 0.047 opt (includes Blue Star) 2004: 1,065,000 oz Au (proven and probable reserves)	1986: production commenced 1988-2011: included in Newmont Gold production at the end of this section	Ordovician-Devonian limestone, argillite, chert	Eocene
Genesis/North Star	1996: 22.7 million tons, 0.034 opt Au proven and probable reserves; 11 million	1994-95: 684,600 oz Au 1996-2011: included in Newmont Gold production at the end of this section	Ordovician-Devonian limestone, argillite, chert	Eocene
Genesis Complex	2000:14.1 million tons, 0.026 opt Au proven and probable open-pit reserves 2004: 1,065,000 oz Au (proven and probable reserves) 2005: 1,193,058 oz Au (proven and probable reserves)			
Leeville	2004: 2,612,000 oz Au (proven and probable reserves) 2005: 2,433,000 oz Au (proven and probable reserves)	2005-2011: included in Newmont Gold production at the end of this section	Roberts Mountains Formation	Eocene
North Lantern	2004: 199,940 oz Au			
North Star	1989: <i>geologic resource</i> -6.9 million tons, 0.052 opt Au 1990: 3.9 million tons, 0.052 opt Au	1988: 4,250 oz Au 1989-2011: included in Newmont Gold production at the end of this section	lower Paleozoic sedimentary rocks	Eocene
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	1999-2011: included in Newmont Gold production at the end of this section	lower Paleozoic sedimentary rocks	Eocene
Deep Post	2000: 3.1 million tons, 0.814 opt Au proven and probable underground reserves 2004 (includes Deep Star) 1,462,000 oz Au (proven and probable reserves) 2005 (includes Deep Star) 942,000 oz Au (proven and probable reserves)	included in Newmont Gold production at the end of this section		
Turf	1996: 2.5 million tons, 0.367 opt Au mineralized material	included in Newmont Gold production at the end of this section	Roberts Mountains Formation	Eocene
West Leeville (Newmont)	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 1997-2011: included in Newmont Gold production at the end of this section	Roberts Mountains Formation	Eocene
West Leeville (Newmont-Barrick)	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
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 2004: 940,040 oz Au (proven and probable reserves) 2005: 1,044,841 oz Au (proven and probable reserves)	1994-96: 68,700 oz Au 1997-2011: included in Newmont Gold production at the end of this section	Roberts Mountains Formation	Eocene
Carlin Underground	2004: 163,000 oz Au 2005: 123,000 oz Au (proven and probable reserves)			
Carlin North-other	2000: 19.8 million tons, 0.052 opt Au, proven and probable open-pit reserves			

MAJOR PRECIOUS-METAL DEPOSITS, EUREKA COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Carlin North area total	2000: 8.2 million tons, 0.495 opt Au, proven and probable underground reserves			
Carlin North area, total 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, total underground	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, Newmont (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, <i>geologic resource</i> -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 2004: 5,984,000 oz (proven and probable reserves) 2005: 6,554,297 oz (proven and probable reserves)	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 1994-96: 2,978,000 oz Au 1997-2011: included in Newmont Gold production at the end of this section	Ordovician to Devonian chert, shale, siltstone, and impure carbonate rocks; in part, Vinini Formation	Eocene
Mike	1999: 408,000,00 tons, 0.006 opt Au 151,000,000 tons, 0.10 % Cu 19,000,000 tons, 1.00 % Zn (drill-indicated mineral inventory)			
Tusc	1988: <i>geologic resource</i> -15.8 million tons, 0.059 opt Au 1990: 13.3 million tons, 0.062 opt Au	included in Newmont Gold production at the end of this section	lower Paleozoic sedimentary rocks	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 2004: 172,000 oz Au (proven and probable reserves) 2005: 256,000 oz Au (proven and probable reserves)			
Carlin North and South combined (includes all Newmont's 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 reserves 203,300,000 tons, 0.044 probable reserves 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 2005: 238.3 million tons, 0.043 opt Au (proven and probable reserves); 28.1 million tons, 0.04 opt Au (measured and indicated resource); 4.2 million tons, 0.024 opt Au (inferred resource)	2004-2011: included in Newmont Gold production at the end of this section		Eocene

MAJOR PRECIOUS-METAL DEPOSITS, EUREKA COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Carlin open pit (cont.)	<p>2006: 271.6 million tons, 0.042 opt Au (proven and probable reserves); 35.1 million tons, 0.035 opt Au (measured and indicated resource); 6.3 million tons, 0.022 opt Au (inferred resource)</p> <p>2007: 213.5 million tons, 0.045 opt Au (proven and probable reserves); 14.6 million tons, 0.020 opt Au (measured and indicated resource); 3.7 million tons, 0.037 opt Au (inferred resource)</p> <p>2008: 202.4 million tons, 0.045 opt Au (proven and probable reserves); 88.4 million tons, 0.040 opt Au (measured and indicated resource); 21.1 million tons, 0.023 opt Au (inferred resource)</p> <p>2009: 259.3 million tons, 0.044 opt Au (proven and probable reserves); 28.8 million tons, 0.021 opt Au (measured and indicated resource); 10.4 million tons, 0.034 opt Au (inferred resource)</p> <p>2010: 263,500,000 tons, 0.043 opt Au (proven and probable reserve, 75% recovery); 91,800,000 tons, 0.020 opt Au (measured and indicated resource) 22,100,000 tons, 0.034 opt Au (inferred resource)</p> <p>2011: 331,700,000 tons, 0.038 opt Au (proven and probable reserve, 77% recovery); 112,600,000 tons, 0.026 opt Au (measured and indicated resource) 15,300,000 tons, 0.02 opt Au (inferred resource)</p>			
Carlin underground	<p>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</p> <p>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</p> <p>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</p> <p>2005: 7.7 million tons, 0.49 opt Au (proven and probable reserves); 300,000 tons, 0.33 opt Au (measured and indicated resource); 3.7 million tons, 0.46 opt Au (inferred resource)</p> <p>2006: 7.4 million tons, 0.44 opt Au (proven and probable reserves); 1.1 million tons, 0.28 opt Au (measured and indicated resource); 3.0 million tons, 0.47 opt Au (inferred resource)</p> <p>2007: 7.2 million tons, 0.388 opt Au (proven and probable reserves); 110,000 tons, 0.482 opt Au (measured and indicated resource); 2.6 million tons, 0.480 opt Au (inferred resource)</p> <p>2008: 11.7 million tons, 0.313 opt Au (proven and probable reserves); 340,000 tons, 0.330 opt Au (measured and indicated resource); 3.1 million tons, 0.327 opt Au (inferred resource)</p> <p>2009: 9.7 million tons, 0.311 opt Au (proven and probable reserves); 810,000 tons, 0.180 opt Au (measured and indicated resource); 7.4 million tons, 0.289 opt Au (inferred resource)</p> <p>2010: 14,600,000 tons, 0.307 opt Au, 12,620,000 oz Au (proven and probable reserve, 88% recovery) 4,200,000 tons, 0.290 opt Au (measured and indicated resource); 1,300,000 tons, 0.345 opt Au (inferred resource)</p> <p>2011: 18,000,000 tons, 0.282 opt Au, 5,090,000 oz Au (proven and probable reserve, 88% recovery) 7,600,000 tons, 0.241 opt Au (measured and indicated resource); 1,300,000 tons, 0.264 opt Au (inferred resource)</p>	2004-2011: included in Newmont Gold gold production at the end of this section		Eocene
Gold Bar (Antelope district)	<p>1984: 2.8 million tons, 0.09 opt Au</p> <p>1990: mined out in December</p> <p>1994: 240,000 oz Au</p> <p>1995: 190,000 oz Au</p> <p>2001: 473,000 oz Au in 6 deposits</p> <p>2002: 3.6 million tons, 0.100 opt Au resource</p>	<p>1987-90: 238,262 oz Au</p> <p>1991: 80,727 oz Au, 3,000 oz Ag</p> <p>1992-94: 155,080 oz Au</p>	Devonian Nevada Formation	Eocene?

MAJOR PRECIOUS-METAL DEPOSITS, EUREKA COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Gold Bar (cont.)	2009 (Feb.): 21.5 million tons, 0.032 opt Au (measured and indicated resource, 0.012 opt Au cut-off grade, Gold Pick and Gold Ridge deposits) 8.7 million tons, 0.021 opt Au (inferred resources, 0.012 opt Au cut-off grade, Gold Pick and Gold Ridge deposits) 2010: 33,300,000 tons, 0.027 opt Au (measured and indicated and resource, 0.012 opt Au cut-off grade, Gold Pick and Gold Ridge deposits); 1,200,000 tons, 0.016 opt Au (inferred resource, 0.012 opt Au cut-off grade, Gold Pick and Gold Ridge deposits) 2011: 21,486,000 tons, 0.028 opt Au, 592,928 oz Au (measured and indicated resource, 0.009 opt Au cut-off grade, Cabin Creek, Gold Pick, and Gold Ridge deposits); 7,758,000 tons, 0.027 opt Au, 212,168 oz Au (inferred resources, 0.009 opt Au cut-off grade, Cabin Creek, Gold Pick, and Gold Ridge deposits)			
Gold Canyon (Antelope district)	1992: reserves-86,500 oz Au, <i>geologic resource</i> -131,000 oz Au 1993: 770,000 tons, 0.080 opt Au 2001: <i>see</i> Gold Bar 2002: 2.5 million tons, 0.056 opt Au resource	reported with Gold Bar	Devonian Upper Denay Limestone Formation	Eocene?
Gold Pick (Antelope district)	1988: 10 million tons, 0.06 opt Au 1993: 1.4 million tons, 0.079 opt Au 2001: <i>see</i> Gold Bar 2002: 5 million tons, 0.057 opt Au measured mineral resource 2005: 7,874,000 tons, 0.041 opt Au (indicated resource) 2011: 16,553,000 tons, 0.028 opt Au, 459,165 oz Au (measured and indicated resource, 0.009 opt Au cut-off grade) 5,649,000 tons, 0.029 opt Au 161,761 oz Au (inferred resource, 0.009 opt Au cut-off grade)	reported with Gold Bar	Devonian McColley Canyon Formation	Eocene?
Gold Ridge (Antelope district)	1988: 4 million tons, 0.06 opt Au 1993: 426,000 tons, 0.059 opt Au 2001: <i>see</i> Gold Bar 2002: 584,164 tons, 0.046 opt Au resource 2011: 2,585,000 tons, 0.028 opt Au, 73,100 oz Au (measured and indicated resource, 0.009 opt Au cut-off grade) 992,000 tons, 0.025 opt Au 25,016 oz Au (inferred resource, 0.009 opt Au cut-off grade)	reported with Gold Bar	Devonian McColley Canyon Formation	Eocene?
Goldstone (Antelope district)	1988: 1.7 million tons, 0.08 opt Au 1993: 130,928 tons, 0.104 opt Au 2001: <i>see</i> Gold Bar	reported with Gold Bar	Devonian Upper Denay Limestone Formation	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	Wenban Limestone	35 Ma?
Hunter (Antelope district)	2009 (Feb., 0.013 opt Au cut-off grade) 0.5 million tons, 0.031 opt Au (indicated resource) 0.1 million tons, 0.015 opt Au (inferred resource)			

MAJOR PRECIOUS-METAL DEPOSITS, EUREKA COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Ratto Canyon (Lookout Mountain) (Eureka district)	1984: ~200,000 oz Au (entire Ratto Ridge area): 2006: 836,000 tons, 0.24 opt Au (measured and indicated resource) 2010: 13,640,000 tons, 0.021 opt Au (measured and indicated resource) 16,420,000 tons, 0.012 opt Au (inferred resource) 2011: 20,745,000 tons, 0.019 opt Au 390,000 oz Au (measured and indicated resource, 0.006 opt Au oxidized cut-off grade, 0.03 opt unoxidized cut-off grade) 18,385,000, 0.012 opt Au, 221,000 oz Au (inferred resource, 0.006 opt Au oxidize cut-off grade, 0.03 opt unoxidized cut-off grade)	1987: 180,000 tons 0.12 opt Au, 81% recovery 1987-88: 17,000 oz Au	Dunderberg Shale, Eocene Hamburg Dolomite	
Red Hill/Goldrush (Cortez district)	2011: 11,221,000 tons, 0.113 opt Au, 1,273,000 contained oz Au (indicated resource); 41,290,000 tons 0.139 opt Au, 5,748,000 contained oz Au (inferred resource)			
Rock Creek (Eureka-Lander Co. line)	1997: 800,000 tons, 0.045 opt Au		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 2005-2010: reserves are combined with Meikle reserves	included with Meikle production, Elko County		Eocene
Ruby Hill (Eureka district)	1994: <i>geologic resource</i> -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 2006: (East Archimedes) 19,479,000 tons, 0.055 opt Au (proven and probable reserves); 601,000 tons, 0.088 opt Au (measured and indicated resource) 2007: (East Archimedes) 18,763,000 tons, 0.055 opt Au (proven and probable reserves); 3,202,000 tons, 0.076 opt Au (measured and indicated resource); 6,000 tons, 0.333 opt Au, (inferred resource) 2008: (East Archimedes) 18,844,000 tons, 0.044 opt Au (proven and probable reserves); 11,919,000 tons, 0.04 opt Au (measured and indicated resource); 3,495,000 tons, 0.037 opt Au, (inferred resource) 2009: 13,933,000 tons, 0.050 opt Au (proven and probable reserves); 8,960,000 tons, 0.057 opt Au (measured and indicated resource); 2,928,000 tons, 0.051 opt Au, (inferred resource)	1997-98: 133,100 oz Au, 8,686 oz Ag 2000: 125,193 oz Au, 7,984 oz Ag 1999: 123,841 oz Au, 7,688 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 2007: 142,856 oz Au, 8,368 oz Ag 2008: 102,553 oz Au, 7,572 oz Ag 2009: 103,523 oz Au, 39,110 oz Ag 2010: 81,382 oz Au, 43,276 oz Ag 2011: 127,089 oz Au, 42,754 oz Ag	Goodwin Limestone	

MAJOR PRECIOUS-METAL DEPOSITS, EUREKA COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Ruby Hill (cont.)	2010: 17,182,000 tons, 0.065 opt Au (proven and probable reserves) 61,530,000 tons, 0.023 opt Au (measured and indicated resource); 12,885,000 tons, 0.024 opt Au (inferred resource) 2011: 16,778,000 tons, 0.058 opt Au, 978,000 contained oz Au (proven and probable reserves); 107,626,000 tons, 0.021 opt Au 2,245,000 contained oz Au (measured and indicated resource); 5,779,000 tons, 0.034 opt Au 196,000 contained oz Au (inferred resource)			
Tonkin Springs (Antelope district)	1983: 1.84 million tons, 0.089 opt Au, 0.204 opt Ag 1987: <i>oxide</i> -1.5 million tons, 0.05 opt Au; <i>sulfide</i> -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 2006: 29,672,000 tons, 0.043 opt Au (measured and indicated resource); 3,466,000 tons, 0.044 opt Au, (inferred resource) 2008 (May): 35,584,000 tons, 0.041 opt Au (measured and indicated resource) 9,290,000 tons, 0.033 opt Au, (inferred resource)	1987-88: 10,265 oz Au 1989-90: 3,821 oz Au, 1,872 oz Ag	Vinini Formation	Eocene?
Mineral Ridge (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	16 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: <i>see</i> 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: <i>see</i> Twin Creeks	upper Paleozoic sedimentary rocks	
Converse/Redline (Buffalo Valley district)	2003: 77,459,000 tons, 0.020 opt Au measured and indicated resource 2004: 263 million tons, 0.0150 opt Au, 0.0582 opt Ag (measured and indicated resource) 35 million tons, 0.0143 opt Au, 0.0524 opt Ag 2011: 352,990,000 tons, 0.015 opt Au, 0.108 opt Ag, containing 5,170,000 oz Au, 37,950,000 oz Ag (measured and indicated resource, 0.008 opt Au cut-off grade); 34,440,000 tons, 0.015 opt Au, 0.087 opt Ag, containing 510,000 oz Au, 3,010,000 oz Ag (inferred resource, 0.008 opt Au cut-off grade)		Havallah Formation, granodiorite	Tertiary

MAJOR PRECIOUS-METAL DEPOSITS, HUMBOLDT COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Getchell (Potosi district)	<p>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</p> <p>1999: 18.1 million tons, 0.359 opt Au</p> <p>2000: 2.8 million oz Au measured resource, 5.5 million oz Au indicated resource, and 6.7 million oz inferred resource</p> <p>2002: 2.69 million oz Au proven and probable reserves; 1.51 million oz Au measured and indicated mineral resource</p> <p>2003: (Turquoise Ridge) 6,000,000 tons, 0.570 opt Au proven reserves; 2,400,000 tons, 0.620 opt Au probable reserves; 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</p> <p>2005: Turquoise Ridge Mine (included Turquoise Ridge and Getchell Footwall deposits) 7.6 million tons, 0.56 opt Au (proven and probable reserves); 5.6 million tons, 0.42 opt Au (measured and indicated resource); 400,000 tons, 0.54 opt (inferred resource)</p> <p>2006: Turquoise Ridge Mine (included Turquoise Ridge and Getchell Footwall deposits) 8.436 million tons, 0.544 opt Au (proven and probable reserves); 4.801 million tons, 0.432 opt Au (measured and indicated resource); 1.961 million tons, 0.493 opt (inferred resource)</p> <p>2007: Turquoise Ridge Mine (included Turquoise Ridge and Getchell Footwall deposits) 11.239 million tons, 0.458 opt Au (proven and probable reserves); 3.291 million tons, 0.409 opt Au (measured and indicated resource); 2.000 million tons, 0.444 opt (inferred resource)</p> <p>2008: Turquoise Ridge Mine 10.614 million tons, 0.501 opt Au (proven and probable reserves); 3.289 million tons, 0.435 opt Au (measured and indicated resource); 4.440 million tons, 0.505 opt (inferred resource)</p> <p>2009: Turquoise Ridge Mine 10.680 million tons, 0.507 opt Au (proven and probable reserves); 2.307 million tons, 0.431 opt Au (measured and indicated resource); 5.033 million tons, 0.456 opt (inferred resource)</p> <p>2010 Turquoise Ridge Mine: 12,339,000 tons, 0.456 opt Au (proven and probable reserve, 92% recovery); 85,625,000 tons, 0.131 opt Au (measured and indicated resource); 43,427,000 tons, 0.160 opt Au (inferred resource)</p> <p>2011 Turquoise Ridge Mine: 15,981,000 tons, 0.442 opt Au, 7,054,000 oz Au, (proven and probable reserve, 92% recovery); 83,192,000 tons, 0.122 opt Au, 10,188,000 oz Au (measured and indicated resource); 33,992,000 tons, 0.13 opt Au, 4,404,000 oz Au (inferred resource)</p>	<p>1938-50, 1962-67: 788,875 oz Au</p> <p>1987-88: ~35,000 oz Au</p> <p>1989: 120,730 oz Au, 9,407 oz Ag</p> <p>1990-91: 372,987 oz Au</p> <p>1992-95: 790,600 oz Au, 258,700 oz Ag</p> <p>1996-97: 348,517 oz Au</p> <p>1998: 175,302 oz Au, 52,490 oz Ag</p> <p>1999: 111,000 oz Au</p> <p>2002: 54,600 oz Au, 5,400 oz Ag</p> <p>2003: 93,337 oz Au</p> <p>2004: 162,637 oz Au</p> <p>2005: 208,492 oz Au, 54,419 oz Ag</p> <p>2006: 233,127 oz Au, 30,473 oz Ag</p> <p>2007: 251,133 oz Au</p> <p>2008: 168,808 oz Au</p> <p>2009: 177,333 oz Au</p> <p>2010: 161,579 oz Au</p> <p>2011: 178,283 oz Au</p>	<p>Comus and Preble Formations, dikes, granodiorite</p>	<p>37-41 Ma</p>
Hycroft (formerly Crofoot/Lewis) (Sulphur district)	<p>1988: 25 million tons, 0.025 opt Au</p> <p>1999: 23.8 million tons, 0.0204 opt Au proven and probable reserves; 2.3 million tons, 0.0177 opt Au indicated reserves</p> <p>2000: 41.9 million tons, 0.0196 opt Au measured and indicated resource; 14.1 million tons, 0.0152 opt Au inferred resource</p> <p>2004: 47,479,000 tons, 0.016 opt Au measured and indicated; 12,029,000 tons, 0.011 opt Au inferred resource</p> <p>2005: 33.32 million tons, 0.02 opt Au (proven and probable reserves) 52.7 million tons, 0.019 opt Au (measured and indicated resource) 8.7 million tons, 0.015 opt Au (inferred resource)</p>	<p>1988: 75,800 oz Au</p> <p>1989-98: 868,544 oz Au, 2,717,170 oz Ag</p> <p>1999: 40,075 oz Au, 183,190 oz Ag</p> <p>2000: 13,493 oz Au, 38,418 oz Ag</p> <p>2001: 3,232 oz Au, 2,000 Ag</p> <p>2002: 1,771 oz Au, 217 oz Ag</p> <p>2003: 644 oz Au, 100 oz Ag</p> <p>2004: 61 oz Au</p> <p>2008: 1,000 oz Au, 3,000 oz Ag</p> <p>2009: 53,189 oz Au, 65,753 oz Ag</p> <p>2010: 102,483 oz Au, 233,974 oz Ag</p> <p>2011: 104,002 oz Au, 479,440 oz Ag</p>	<p>Camel conglomerate, rhyolite dikes</p>	<p>1-2 Ma</p>

MAJOR PRECIOUS-METAL DEPOSITS, HUMBOLDT COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Hycroft (cont.)	<p>2007: 33.320 million tons, 0.020 opt Au (proven and probable reserves, January 2008); 19.780 million tons, 0.018 opt Au (measured and indicated resource, January 2008); 283.392 million tons, 0.019 opt Au (inferred resource, May 2008)</p> <p>2008 (October 2008): 73,159,508 tons, 0.016 opt Au (proven and probable reserves; 141.3 million tons, 0.014 opt Au (measured and indicated resource, 0.005 opt Au cut-off grade); 180.2 million tons, 0.012 opt Au (oxide inferred resource, 0.005 opt Au cut-off grade) 199.4 million tons, 0.20 opt Au (sulfide inferred resource, 0.013 opt Au cut-off grade)</p> <p>2010: 177,228,000 tons, 0.014 opt Au, 0.18 opt Ag (proven and probable oxide reserves) 366,991,000 tons, 0.013 opt Au, 0.22 opt Ag (measured and indicated oxide resource) 143,927,000 tons, 0.018 opt Au, 0.72 opt Ag (measured and indicated sulfide resource) 95,510,000 tons, 0.011 opt Au, 0.33 opt Ag (inferred oxide resource) 148,804,000 tons, 0.017 opt Au, 0.85 opt Ag (inferred sulfide resource)</p> <p>2010 (year-end): 196,000,000 tons, 0.013 opt Au, 0.25 opt Ag (proven and probable oxide heap leach reserves); 720,000,000 tons, 0.007 opt Au, 0.15 opt Ag (measured and indicated oxide and transitional heap leach resource); 620,000,000 tons, 0.014 opt Au, 0.71 opt Ag (measured and indicated oxide, transitional and sulfide mill resource); 181,000,000 tons, 0.015 opt Au, 0.56 opt Ag (inferred oxide, transitional and sulfide resource)</p> <p>2011: 1,134,669,000 tons, 0.011 opt Au, 12,651,000 oz Au, 0.42 opt Ag, 481,881,000 oz Ag (proven and probable reserves, 0.004 opt Au heap leach cut-off grade, 0.01 opt Au mill cut-off grade); 939,619,000 tons, 0.009 opt Au, 8,170,000 oz Au, 0.25 opt Ag, 236,851,000 oz Ag (measured and indicated resource, 0.004 opt Au heap leach cut-off grade, 0.01 opt Au mill cut-off grade); 534,938,000 tons, 0.01 opt Au, 0.253 opt Ag (inferred resource, 0.004 opt Au heap leach cut-off grade, 0.01 opt Au mill cut-off grade)</p>			
Lone Tree (Buffalo Mountain district)	<p>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</p> <p>1994: 4 million oz Au</p> <p>2000: 40.8 million tons, 0.060 opt Au proven and probable reserves (Lone Tree Complex)</p> <p>2001: 29.2 million tons, 0.065 opt Au proven and probable reserves; 7.9 million tons, 0.032 opt Au mineralized material</p> <p>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</p> <p>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</p> <p>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</p> <p>2005: 4 million tons, 0.080 opt Au (proven and probable reserves); 3 million tons, 0.032 opt Au (measured and indicated resource);</p>	<p>1991-99: 546,335 oz Au</p> <p>1995: 240,000 oz Au, 11,000 oz Ag</p> <p>1996-97: 536,820 oz Au</p> <p>1998: 257,702 oz Au, 27,484 oz Ag</p> <p>1999: 191,975 oz Au, 35,617 oz Ag</p> <p>2000: 281,022 oz Au, 38,346 oz Ag</p> <p>2001: 260,518 oz Au, 29,974 oz Ag</p> <p>2002: 327,160 oz Au, 65,905 oz Ag</p> <p>2003: 434,704 oz Au, 80,094 oz Ag</p> <p>2004: 497,065 oz Au, 140,144 oz Ag</p> <p>2005: 339,187 oz Au, 46,934 oz Ag</p> <p>2006: 357,787 oz Au, 26,601 oz Ag</p> <p>2007: 182,768 oz Au, 37,172 oz Ag</p> <p>2008: 16,775 oz Au, 1,897 oz Ag</p> <p>2009: 12,011 oz Au</p>	<p>Havallah Formation, Antler sequence, and dacite porphyry</p>	<p>38 Ma</p>

MAJOR PRECIOUS-METAL DEPOSITS, HUMBOLDT COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Lone Tree (cont.)	2007: 4.2 million tons, 0.022 opt Au (measured and indicated resource)	2,309 oz Ag 2011: 19,619 oz Au 28 oz Ag		
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 resource 2001: 75.5 million tons, 0.027 opt Au proven and probable reserves; 109.9 million tons, 0.014 opt Au measured and indicated resource 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 reserves; 83,909,000 tons, 0.023 opt Au probable reserves; 19,937,000 tons, 0.020 opt Au measured reserves; 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 resource; 21,000,000 tons, 0.014 opt Au inferred resource 2005: 98.21 million tons, 0.021 opt Au (proven and probable reserves); 157.48 million tons, 0.020 opt Au (measured and indicated resource, includes reserves); 163.23 million tons, 0.013 opt Au (inferred resource) 2006: 102.87 million tons, 0.021 opt Au (proven and probable reserves); 94.587 million tons, 0.018 opt Au (measured and indicated resource); 88.212 million tons, 0.011 opt Au (inferred resource) 2007: 84.66 million tons, 0.020 opt Au (proven and probable reserves); 46.41 million tons, 0.020 opt Au (measured and indicated resource); 122.53 million tons, 0.013 opt Au (inferred resource) 2008: 69.6 million tons, 0.020 opt Au (proven and probable reserves); 42.66 million tons, 0.016 opt Au (measured and indicated resource); 44.81 million tons, 0.013 opt Au (inferred resource) 2009: 150 million tons, 0.016 opt Au (proven and probable reserves) 42.19 million tons, 0.015 opt Au (indicated resource) 75 million tons, 0.015 opt Au (inferred resource) 2010: 143,529,000 tons, 0.016 opt Au (proven and probable reserves); 80,526,000 tons, 0.014 opt Au (indicated resource); 46,638,000 tons, 0.014 opt Au (inferred resource) 2011: 226,889,000 tons, 0.015 opt Au (proven and probable reserves); 32,935,000 tons, 0.012 opt Au (measured and indicated resource); 11,037,000 tons, 0.013 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 2005: 205,663 oz Au, 1,723 oz Ag 2006: 149,805 oz Au, 1,986 oz Ag 2007: 140,840 oz Au, 2,233 oz Ag 2008: 144,106 oz Au, 5,037 oz Ag 2009: 146,842 oz Au, 4,239 oz Ag 2010: 136,754 oz Au, 3,729 oz Ag 2011: 153,741 oz Au, 4,162 oz Ag	Paleozoic chert, argillite, and carbonate rocks	
North Stonehouse (Buffalo Mountain district)	1991: 2.5 million tons, 0.103 oz Au mill ore		Havallah Formation and porphyry dikes	39 Ma
Pinson (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 2005: 1,692,000 tons, 0.421 opt Au (measured and indicated resource) 3,097,000 tons, 0.34 opt Au (inferred resource)	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	Comus Formation	Eocene?

MAJOR PRECIOUS-METAL DEPOSITS, HUMBOLDT COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Pinson (cont.)	2006: (includes Range Front, Ogee and CX-West zones) 2,505,000 tons, 0.454 opt Au (measured and indicated resource) 3,374,500 tons, 0.340 opt Au (inferred resource) 2012 (open pit): 25,466,300 tons, 0.039 opt Au, 981,700 oz Au (measured and indicated resource, 0.01 opt Au cut-off grade, Mag Pit and South Zone deposits); 824,000 tons 0.034 opt Au, 28,300 oz Au (inferred resource, 0.01 opt Au cut-off grade, Mag Pit and South Zone deposits) 2012 (underground): 2,919,800 tons, 0.368 opt Au, 1,078,000 oz Au (measured and indicated resource, 0.2 opt Au cut-off grade); 2,236,200 tons, 0.378 opt Au, 845,000 oz Au (inferred resource, 0.2 opt Au cut-off grade)	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		
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 of 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?
Sandman (Tenmile district)	2007: 8.033 million tons, 0.034 opt Au (measured and indicated resource) 1,418,000 million tons, 0.027 opt Au (inferred resource)			
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 2008: 29,718,000 tons, 0.025 opt Au (indicated resource) 22,046,000 tons, 0.017 opt Au 2011(oxide): 47,167,350 tons, 0.011 opt Au, 511,872 oz Au, 0.12 opt Ag, 5,781,121 oz Ag (measured and indicated resource, 0.006 opt Au cut-off grade) 14,541,139 tons, 0.009 opt Au, 136,145 oz Au, 0.1 opt Ag, 1,450,516 oz Ag (inferred resource, 0.006 opt Au cut-off grade) 2011 (sulfide): 143,269,803 tons, 0.015 opt Au, 2,113,527 oz Au, 0.15 opt Ag, 19,556,454 oz Ag (measured and indicated resource, 0.007 opt Au cut-off grade) 75,409,000 tons, 0.013 opt Au, 0.09 opt Ag (inferred resource, 0.006 opt Au cut-off grade)	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 (includes Valmy and North Peak) (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 2006: 1,937 oz Au, 38 oz Ag 2007: 1,768 oz Au, 360 oz Ag		
Trout Creek (Battle Mountain district)	1989: 50,000 oz Au			

MAJOR PRECIOUS-METAL DEPOSITS, HUMBOLDT COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
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 reserves; 48,200,000 tons, 0.074 opt Au probable reserves; 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 2005: 61.2 million tons, 0.074 opt Au (proven and probable reserves); 19.9 million tons, 0.049 opt Au (measured and indicated resource); 3.1 million tons, 0.033 opt Au (inferred resource) 2006: 64.8 million tons, 0.077 opt Au (proven and probable reserves); 25.0 million tons, 0.058 opt Au (measured and indicated resource); 3.1 million tons, 0.033 opt Au (inferred resource) 2007: 52.1 million tons, 0.078 opt Au (proven and probable reserves); 21.0 million tons, 0.063 opt Au (measured and indicated resource); 2.6 million tons, 0.030 opt Au (inferred resource) 2008: 51.7 million tons, 0.077 opt Au (proven and probable reserves); 31.1 million tons, 0.051 opt Au (measured and indicated resource); 10.8 million tons, 0.018 opt Au (inferred resource) 2009: 50.2 million tons, 0.077 opt Au (proven and probable reserves); 35.0 million tons, 0.050 opt Au (measured and indicated resource); 11.3 million tons, 0.018 opt Au (inferred resource) 2010: 57,800,000 tons, 0.076 opt Au (proven and probable reserve, 79% recovery); 37,900,000 tons, 0.039 opt Au (measured and indicated resource); 12,000,000 tons, 0.0194 opt Au (inferred resource) 2011: 48,700,000 tons, 0.078 opt Au (proven and probable reserve, 80% recovery); 46,000,000 tons, 0.045 opt Au (measured and indicated resource); 13,500,000 tons, 0.026 opt Au (inferred resource)	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 2005: 267,620 oz Au, 144,172 oz Ag 2006: 354,484 oz Au, 43,467 oz Ag 2007: 488,457 oz Au, 99,344 oz Ag 2008: 512,190 oz Au, 57,913 oz Ag 2009: 437,830 oz Au, 84,159 oz Ag 2010: 452,744 oz Au, 211,935 oz Ag 2011: 484,449 oz Au, 290,802 oz Ag	Paleozoic	41-43 Ma
Winnemucca Mountain (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

MAJOR PRECIOUS-METAL DEPOSITS, LANDER COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
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 2010: 18,300,000 tons, 0.020 opt Au (indicated resource); 900,000 tons, 0.017 opt Au (inferred resource) 2011: 16,500,000 tons, 0.019 opt Au (indicated resource); 2,900,000 tons, 0.014 opt Au (inferred resource)	1988-90: 39,668 oz Au		Eocene?
Cortez Joint Venture (Bullion district) CJV includes original Cortez Mine, Pipeline, South Pipeline, Gold Acres (2007 and on includes Cortez Hills)	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, 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 resource 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 resource 2003: 88,131,000 tons, 0.061 opt Au proven reserves; 49,623,000 tons, 0.045 opt Au probable reserves; 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 2005 (Sept 1): 275.8 million tons, 0.040 opt Au (proven and probable reserves); 309 million tons, 0.033 opt Au (measured and indicated resource); 39.2 million tons, 0.058 opt Au (inferred resource) 2006: 184.0 million tons, 0.061 opt Au (proven and probable reserves); 44.47 million tons, 0.041 opt Au (measured and indicated resource); 6.54 million tons, 0.131 opt Au (inferred resource) 2007: 144.09 million tons, 0.080 opt Au (proven and probable reserves); 76.24 million tons, 0.045 opt Au (measured and indicated resource); 19.34 million tons, 0.153 opt Au (inferred resource) 2008: 222,125,000 tons, 0.060 opt Au (proven and probable reserves); 81,088,000 million tons, 0.046 opt Au (measured and indicated resource); 29,912,000 million tons, 0.129 opt Au (inferred resource) 2009: 243,669,000 tons, 0.058 opt Au (proven and probable reserves); 46,622,000 million tons, 0.074 opt Au (measured and indicated resource); 30,128,000 million tons, 0.144 opt Au (inferred resource) 2010: 317,081,000 tons, 0.046 opt Au (proven and probable reserves); 60.463,000 tons, 0.072 opt Au (measured and indicated resource); 50,337,000 tons, 0.103 opt Au (inferred resource)	1942-84: 2.4 million tons, 0.13 opt Au; 2 million tons, 0.041 opt Au leached. Little Gold Acres: 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 2005: 915,889 oz Au, 52,160 oz Ag 2006: 408,255 oz Au, 25,065 oz Ag 2007: 534,173 oz Au, 47,240 oz Ag 2008: 464,253 oz Au (6,804 oz Au from Cortez Hills), 69,278 oz Ag 2009: 517,512 oz Au, 74,080 oz Ag 2010 (open pits): 791,978 oz Au, 45,477 oz Ag 2010 (underground): 47,988 oz Au 2011 (open pits): 1,119,910 oz Au, 19,721 oz Ag 2011 (underground): 301,129 oz Au, 4,775 oz Ag	Roberts Mountains Formation, Wenban Limestone, Valmy Formation, quartz porphyry dikes	

MAJOR PRECIOUS-METAL DEPOSITS, LANDER COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Cortez Joint Venture (cont.)	2011: 306,879,000 tons, 0.047 opt Au, 14,488,000 contained oz Au (proven and probable reserves); 54,391,000 million tons, 0.069 opt Au, 3,757,000 contained oz Au (measured and indicated resource); 21,881,000 million tons, 0.074 opt Au, 1,615,000 contained oz Au (inferred resource)			
Cortez Hills	2005 (Sept 1): 71.3 million tons, 0.079 opt Au 5,545,000 oz Au (proven and probable reserves); 5.75 million tons, 0.42 opt Au, 2,421,667 oz Au (measured and indicated resource, underground); 13.8 million tons, 0.13 opt Au, 1,856,667 oz Au (inferred resource, open pit and underground) 2006: 8.5 million oz Au (proven and probable reserves) 2008 (Nov.): 15,620,000 tons, 0.127 opt Au, 1,983,740 oz Au (proven reserve); 128,150,000 tons, 0.074 opt Au, 9,483,000 oz Au (probable reserve) 2010 (open pit): 31,531,000 tons, 0.139 opt Au (proven and probable reserve) 2010 (underground, breccia zone): 2,251,000 tons, 0.595 opt Au (proven and probable reserve) 2010 (underground, middle zone): 3,173,000 tons, 0.370 opt Au (proven and probable reserve) 2011 (open pit): 32,591,000 tons, 0.131 opt Au, 4,275,000 oz Au (proven and probable reserve, 0.004-0.075 opt Au cut-off grade); 237,000 tons, 0.08 opt Au, 19,000 oz Au (measured and indicated resource); 1,351,000 tons, 0.025 opt gold, 33,000 oz Au (inferred resource) (underground): 6,516,000 tons, 0.446 opt Au, 2,908,000 oz Au (proven and probable reserve, 0.004-0.075 opt Au cut-off grade); 6,476,000 tons, 0.379 opt Au, 2,456,000 oz Au (measured and indicated resource); 3,197,000 tons, 0.337 opt gold, 1,078,000 oz Au (inferred resource)	2010-2011: Production combined with Cortez Joint Venture	Roberts Mountains Formation, Wenban Limestone	
Cortez NW Deepes (Bullion district)	2011: 4,689,000 tons, 0.047 opt Au, 218,000 oz Au (measured and indicated resource); 3,951,000 tons, 0.065 opt gold, 259,000 oz Au (inferred resource)		Roberts Mountains Formation, Hanson Creek Formation	
Crescent Pit	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 reserves-8 million cu yd, 0.031 oz Au/cu yd 1995: placer resource-6 million cu yd, 0.03 oz Au/cu yd			
Crossroads (Bullion district)	2010: 125,842,000 tons, 0.027 opt Au (proven and probable reserve) 2011: 129,391,000 tons, 0.03 opt Au, 3,937,000 oz Au (proven and probable reserve, 0.004-0.075 opt Au cut-off grade); 23,895,000 tons, 0.015 opt Au, 370,000 oz Au (measured and indicated resource); 7,273,000 tons, 0.015 opt gold, 112,000 oz Au (inferred resource)			
Dean (Lewis district)	1995: proven reserves-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

MAJOR PRECIOUS-METAL DEPOSITS, LANDER COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Fire Creek (northeast of Bullion district)	1982: 350,000 tons, 0.06 opt Au 2005 (May): 1,779,196 tons, 0.328 opt Au (indicated resource) 2006: 1,961,195 tons, 0.576 opt Au (indicated resource) 2008 (April): 2,654,650 tons, 0.479 opt Au (indicated resource, 0.233 opt Au cut-off grade) 1,184,202 tons, 0.396 opt Au (inferred resource, 0.233 opt Au cut-off grade) 2011: 2,364,770 tons, 0.513 opt Au (indicated resource, 0.204 opt Au cut-off grade); 611,830 tons, 0.366 opt Au (inferred resource, 0.204 opt Au cut-off grade) 2011: 5,705,619 tons, 0.289 opt Au (indicated resource, 0.117 opt Au cut-off grade); 1,910,096 tons, 0.240 opt Au (inferred resource, 0.117 opt Au cut-off grade)	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: <i>geologic resource</i> -900,000 oz Au 1996: included in Battle Mountain Complex			
Independence (Battle Mountain district)	2010: 14,802,000 tons, 0.014 opt Au, 0.27 opt Ag (measured and indicated oxide resource) 5,997,000 tons, 0.011 opt Au, 0.066 opt Ag (inferred oxide resource) 4,182,000 tons, 0.19 opt Au (inferred sulfide resource, 0.25 opt Au cut-off grade, skarn mineralization)			
Fortitude Extension (Battle Mountain district)	1992: 500,000 oz Au 1993: <i>geologic resource</i> -900,000 oz Au 1996: included in Battle Mountain Complex			
Gap (Bullion district)	2010: 53,571,000 tons, 0.015 opt Au (proven and probable reserve) 2011: 48,151,000 tons, 0.016 opt Au, 772,000 oz Au (proven and probable reserve, 0.004-0.075 opt Au cut-off grade); 9,259,000 tons, 0.013 opt Au, 124,000 oz Au (measured and indicated resource); 2,504,000 tons, 0.013 opt gold, 32,000 oz Au (inferred resource)	2011: Production combined with Cortez Joint Venture	Wenban Limestone	
Gold Acres (Bullion district)	2011: 5,032,000 tons, 0.097 opt Au, 487,000 oz Au (measured and indicated resource); 778,000 tons, 0.092 opt Au, 72,000 oz Au (inferred resource)	1942-1993: Production included with Cortez Joint Venture	Roberts Mountains Formation, Wenban Limestone, Valmy Formation	
Hilltop (Hilltop district)	1984: 10.3 million tons, 0.073 opt Au 1989: 10 million tons, 0.049 opt Au 2005: 121 million tons, 0.019 opt Au (measured and indicated resource)		Valmy Formation	Oligocene?
Klondike property	1989: 100,000 oz Au equivalent			

MAJOR PRECIOUS-METAL DEPOSITS, LANDER COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
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 <i>geologic resource</i> -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 2010 (Helen Zone): 684,855 tons, 0.77 opt Au (inferred resource) 2011 (Helen Zone): 391,600 tons, 0.59 opt Au (inferred resource)	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 2005: 2,740 oz Au, 776 oz Ag 2006: 2,939 oz Au, 596 oz Ag	Panther Canyon Formation (conglomerate, sandstone), Augusta Mountain Formation (limestone), granodiorite	39.5 Ma
Mud Springs (Bald Mtn. Zone) (Bullion district)	1993: <i>geologic resource</i> -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, 1,490 oz Ag 2004: 2,289 oz Au, 645 oz Ag 2005: 47,896 oz Au, 5,449 oz Ag 2006: 30,732 oz Au, 3,248 oz Ag 2007: 22,466 oz Au, 4,565 oz Ag	basalt and basaltic andesite	15-16 Ma
Pediment (Cortez district)	2010: 47,316,000 tons, 0.024 opt Au (proven and probable reserve) 2011: 49,469,000 tons, 0.024 opt Au, 1,163,000 oz Au (proven and probable reserve, 0.004-0.075 opt Au cut-off grade); 805,000 tons, 0.008 opt Au, 6,000 oz Au (inferred resource)			
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;	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 2005: 6,406 oz Au, 1,156 oz Ag 2006: 67,394 oz Au, 38,112 oz Ag, 6,235,096 lbs Cu 2007: 181,313 oz Au, 664,787 oz Ag, 10,808,206 lbs Cu 2008: 175,259 oz Au, 1,040,563 oz Ag, 15,853,706 lbs Cu 2009: 218,732 oz Au, 1,212,153 oz Ag, 23,733,389 lbs Cu 2010: 214,142 oz Au, 921,350 oz Ag, 19,008,818 lbs Cu		Eocene

MAJOR PRECIOUS-METAL DEPOSITS, LANDER COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Phoenix (cont.)	<p>14,300 tons, 0.11% Cu inferred material</p> <p>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</p> <p>2005: 308.4 million tons, 0.029 opt Au (proven and probable reserves); 22.2 million tons, 0.023 opt Au (measured and indicated resource); 16.5 million tons, 0.026 opt Au (inferred resource)</p> <p>2006: 295.2 million tons, 0.027 opt Au (proven and probable reserves); 92.8 million tons, 0.017 opt Au (measured and indicated resource) 23.2 million tons, 0.022 opt Au (inferred resource)</p> <p>2007: 278.1 million tons, 0.027 opt Au (proven and probable reserves); 92.8 million tons, 0.017 opt Au (measured and indicated resource); 22.9 million tons, 0.022 opt Au (inferred resource)</p> <p>2008: 299.8 million tons, 0.021 opt Au (proven and probable reserves); 61.6 million tons, 0.015 opt Au (indicated resource); 34.0 million tons, 0.019 opt Au (inferred resource)</p> <p>2009: 285.0 million tons, 0.020 opt Au (probable reserves); 158.4 million tons, 0.013 opt Au (indicated resource); 35.4 million tons, 0.015 opt Au (inferred resource)</p> <p>2010: 329,800,000 tons, 0.018 opt Au (probable reserve, 73% recovery); 150,900,000 tons, 0.013 opt Au (indicated resource); 54,300,000 tons, 0.015 opt Au (inferred resource)</p> <p>2011: 447,100,000 tons, 0.016 opt Au, 7,250,000 oz Au (proven and probable reserve, 72% recovery); 450,300,000 tons, 0.244 opt Ag, 109,980,000 oz Ag (proven and probable reserve, 36% recovery); 216,400,000 tons, 0.012 opt Au, 0.173 opt Ag (indicated resource); 132,300,000 tons, 0.012 opt Au, 0.197 opt Ag (inferred resource)</p>	<p>2011: 205,658 oz Au 1,152,312 oz Ag 23,897,865 lbs Cu.</p>		
Pipeline (Bullion district)	<p>1991: <i>geologic resource</i>-11.3 million tons, 0.237 opt Au</p> <p>1996: 136.7 million tons, 8.7 million oz Au measured resource, includes South Pipeline</p> <p>1997: included in Cortez Joint Venture</p> <p>2010: 41,453,000 tons, 0.017 opt Au (proven and probable reserve)</p> <p>2011: 35,704,000 tons, 0.02 opt Au, 707,000 oz Au (proven and probable reserve, 0.004-0.075 opt Au cut-off grade, Pipeline/South Pipeline); 4,803,000 tons, 0.018 opt Au, 84,000 oz Au (measured and indicated resource); 2,022,000 tons, 0.012 opt gold, 24,000 oz Au (inferred resource)</p>	<p>included in Cortez Joint Venture</p>	<p>Roberts Mountains Formation</p>	<p>Eocene?</p>
Robertson (Bullion district)	<p>1988: 11 million tons, 0.04 opt Au</p> <p>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</p> <p>2005-2006: 22.9 million tons, 0.031 opt Au (measured and indicated resource) 9,408,000 tons, 0.046 opt Au (inferred resource)</p> <p>2007: 91.3 million tons, 0.025 opt Au (inferred resource)</p> <p>2009: 178,924,188 tons, 0.0189 opt Au (inferred resource, used higher gold price than in 2007)</p>	<p>1989: 3,700 oz Au</p>	<p>Valmy Formation</p>	<p>early Oligocene</p>

MAJOR PRECIOUS-METAL DEPOSITS, LANDER COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Robertson (cont.)	2011: 191,725,418 tons, 0.0143 opt Au 2,741,673 oz Au (inferred resource, 0.0067 opt Au cut-off grade)			
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: <i>geologic resource</i> -76.5 million tons, 0.048 opt Au 1996: <i>see</i> Pipeline 1997: included in Cortez Joint Venture		Roberts Mountains Formation	Eocene?
Surprise (Battle Mountain district)	1987: 225,000 oz Au 1988-91: production and reserves included in Fortitude figures 1994: mined out	1987: 2,000 oz Au	skarn	37 Ma
Toiyabe	1988: 813,400 tons, 0.066 opt Au 2009: 4,975,000 tons, 0.035 opt Au (indicated resource)	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 <i>additional geologic resource</i> -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 2011 Main Zone: 6,391,000 tons, 0.047 opt Au, 302,797 oz Au, 0.25 opt Ag, 1,569,689 oz Ag (indicated resource, 0.015 opt Au cut-off grade) 4,330,227 tons, 0.031 opt Au, 133,662 oz Au, 0.56 opt Ag, 2,404,717 oz Ag (inferred resource, 0.015 opt Au cut-off grade) East-West Zones: 1,610,800 tons, 0.046 opt Au, 73,072 oz Au, 0.13 opt Ag, 212,154 oz Ag (indicated resource, 0.015 opt Au cut-off grade) 830,783 tons, 0.039 opt Au, 32,479 oz Au, 0.23 opt Ag, 190,083 oz Ag (inferred resource, 0.015 opt Au cut-off grade)	1954: 22,000 tons ore 1960s: 27,000 tons ore 1975-1985: 1,500,000 tons, 0.09 opt Au, 1.25 opt 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: <i>geologic reserves</i> -50,000 tons, 0.03 opt Au, 0.80 opt Ag; <i>geologic</i>		Tertiary diorite Tertiary andesite	
Easter and Delamar Project (Delamar district)	1994: <i>geologic resource</i> -3.36 million tons, 0.069 opt Au 1995: 1.5 million tons, 0.069 opt Au 2010 (Easter project): 2,640,000 tons, 0.0386 opt Au, 0.408 opt Ag (indicated resource) 200,000 tons, 0.0333 opt Au, 0.350 opt Ag (inferred resource)		Cambrian quartzite	Miocene

MAJOR PRECIOUS-METAL DEPOSITS, LYON COUNTY

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
LYON COUNTY				
Dayton Resource Area (Comstock Mine Project) (Silver City District)	2010: 4,970,000 tons, 0.034 opt Au, 0.244 opt Ag (measured and indicated resource) 1,210,000 tons, 0.026 opt Au, 0.298 opt Ag (inferred resource) 2011 (Alhambra, Dayton, and Kossuth Mines): 8,330,000 tons, 0.029 opt Au, 0.213 opt Ag (measured and indicated resource, 0.007 opt Au, cut-off grade); 8,590,000 tons, 0.024 opt Au, 0.131 opt Ag (inferred resource, 0.007 opt Au, cut-off grade)		Santiago Canyon tuff; Alta Formation	
Fire Angel (Como district)	1989: 5,600 oz Au, <i>geologic resource</i> –148,500 oz Au			
Hydra-Hercules (Como district)	1997: 259,329 oz Au, 1,956,511 oz Ag		Tertiary andesite	
Pine Grove (Wilson district)	1994: 2.5 million tons, 0.061 opt Au 2008 (0.010 opt Au cut-off grade): 2,738,000 tons, 0.25 opt Au (inferred resource, Wilson deposit) 3,321,000 tons, 0.075 opt Au (inferred resource, Wheeler deposit) 2011 (0.010 opt Au cut-off grade, Wilson and Wheeler deposits): 5,316,000 tons, 0.033 opt Au (indicated resource) 4,136,000 tons, 0.028 opt Au (inferred resource) 2012 Wheeler: 2,867,000 tons, 0.038 opt Au, 109,900 oz Au (measured and indicated Resource, 0.007 opt Au cut-off grade) 96,000 tons, 0.027 opt Au, 7,500 oz Au (inferred resource, 0.007 opt Au cut-off grade) Wilson: 3,189,000 tons, 0.03 opt Au, 96,100 oz Au (measured and indicated Resource, 0.007 opt Au cut-off grade) 732,000 tons, 0.026 opt Au, 34,300 oz Au (inferred resource, 0.007 opt Au cut-off grade)			
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: <i>geologic resource</i> –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 2010 Bear Creek Zone (sulfide): 20,130,000 tons, 0.027 opt Au, 549,000 oz Au, 0.35 opt Ag, 7,053,000 oz Ag (measured and indicated resource, 0.015 opt Au cut-off grade); 10,401,000 tons, 0.027 opt Au, 277,000 oz Au, 0.326 opt Ag, 3,391,000 oz Ag (inferred resource, 0.015 opt Au cut-off grade); Main Zone (oxide): 2,921,000 tons, 0.028 opt Au, 83,000 oz Au, 0.4 opt Ag, 1,169,000 oz Ag (measured and indicated resource, 0.015 opt Au cut-off grade); 2,194,000 tons, 0.03 opt Au, 49,000 oz Au, 0.391 opt Ag, 858,000 oz Ag (inferred resource, 0.015 opt Au cut-off grade)		Kate Peak Formation	Miocene

MAJOR PRECIOUS-METAL DEPOSITS, MINERAL COUNTY

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
MINERAL COUNTY				
Aurora Mine (Aurora district)	1989: 347,000 tons, 0.253 opt Au 1996: 900,000 tons, 0.1 opt Au 2003: <i>see</i> 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
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: <i>see</i> 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 2005 (May): 44.7 million tons, 0.03 opt Au (measured and indicated resource) 34.8 million tons, 0.02 opt Au (inferred resource) 2006: 8.235 million tons, 0.022 opt Au, 0.158 opt Ag (measured and indicated resource, oxide) 35.157 million tons, 0.032 opt Au, 0.164 opt Ag (measured and indicated resource, oxide, partially oxidized, sulfides) 16.909 million tons, 0.028 opt Au, 0.106 opt Ag (inferred resource, oxide, partially oxidized, and sulfides) 2008: 29,560,000 tons, 0.045 opt Au, 0.273 opt Ag (measured and indicated resource, combined sulfide, partially oxidized and oxide); 36,161,000 tons, 0.027 opt Au, 0.196 opt Ag (inferred resource, combined sulfide, partially oxidized and oxide); 8,546,000, 0.028 opt Au, 0.222 opt Ag (measured and indicated resource, oxide and partially oxidized, 13,706,000 tons, 0.018 opt Au, 0.096 opt Ag (inferred resource, oxide and partially oxidized, 2009: 16,650,000 tons, 0.023 opt Au, 0.19 opt Ag (measured and indicated resource, oxide, partially oxidized) 2010: 14,294,000 tons, 0.023 Au (proven and probable reserve, in situ, oxide, partially oxidized); 16,650,000 tons, 0.023 Au (proven and probable reserve, in situ leach pads and dumps, oxide, partially oxidized); 35,643,000 tons, 0.040 opt Au (measured and indicated resource, in situ leach pads and dumps, oxide, partially oxidized, and sulfide); 50,225,000 tons, 0.022 opt Au (inferred resource, in situ leach pads and dumps, oxide, partially oxidized, and sulfide)	1981-84: 170,000 oz Au 1986-88: 116,256 oz Au 1989-90: 107,495 oz Au 52,401 oz Ag 2011: 3,171 oz Au 1,992 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

MAJOR PRECIOUS-METAL DEPOSITS, MINERAL COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
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; <i>geologic resource</i> -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 2005: 33,820 oz Au, 311,760 oz Ag 2006: 26,334 oz Au, 235,870 oz Ag 2007: 19,597 oz Au, 160,964 oz Ag 2008: 17,731 oz Au, 150,493 oz Ag 2009: 19,370 oz Au, 209,528 oz Ag 2010: 20,159 oz Au, 342,382 oz Ag 2011: 24,828 oz Au, 438,023 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 resource 9,206,300 tons, 0.025 opt Au bulk-minable inferred resource 192,152 tons, 0.50 opt Au underground-minable resource	2009: 5,212 oz Au, 24,980 oz Ag (no new mining)	andesite rhyolite	10 Ma
Mina Gold (Bell district)	1997: 1.77 million tons, 0.055 opt Au <i>geologic resource</i>	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: <i>geologic resource</i> -5 million tons 0.050 opt Au			
Bruner property, Duluth zone (Bruner district)	1992: <i>geologic resource</i> -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 <i>geologic resource</i> -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

MAJOR PRECIOUS-METAL DEPOSITS, NYE COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Golden Arrow (Golden Arrow district)	1997: 12.4 million tons, 0.039 opt Au resource 2009: 12,172,000 tons, 0.024 opt Au, 0.33 opt Ag (measured and indicated resource, oxide and sulfide); 3,790,000 tons, 0.013 opt Au, 0.33 opt Ag (inferred resource, oxide and sulfide); 6,736,000 tons, 0.019 opt Au, 0.23 opt Ag (measured and indicated resource, oxide) 2,040,000 tons, 0.009 opt Au, 0.25 opt Ag (inferred resource, oxide)		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 2005: 333,000 tons, 0.310 opt Au (measured and indicated resource)	2008: 406 oz dore		
Longstreet property (Longstreet district)	1989: 4 million tons, 0.024 opt Au, <i>geologic resource</i> -9.6 million tons, 0.024 opt Au 2011: 4,369,836 tons, 0.024 opt Au, 103,969 oz Au, 0.66 opt Ag, 2,879,683 oz Ag (indicated resource, 0.01 opt AuEq cut-off grade); 867,050 tons, 0.024 opt Au, 20,809 oz Au, 0.66 opt Ag, 606,935 oz Ag (inferred resource, 0.01 opt AuEq cut-off grade)		rhyolitic volcanic rocks	Oligocene
Manhattan property (Manhattan district)	1989: <i>geologic resource</i> -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 2005: 5,526,000 tons, 0.039 opt Au (inferred resource) 2011: 114,000 tons, 0.3017 opt Au, 34,394 oz Au (inferred resource, 0.1 opt Au cut-off grade))		Ordovician Palmetto Formation Tertiary volcanic rocks	
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: <i>geologic resource</i> -50,000 oz Au			
North Bullfrog (Bullfrog district)	2008 :2,226,600 tons, 0.026 opt Au (indicated resource) 1,047,200 tons, 0.023 opt Au (inferred resource) 2011: 26,268,000 tons, 0.0085 opt Au, 223,880 oz Au, 0.011 opt Ag, 300,460 oz Ag (Jolly Jane and Mayflower oxide indicated resource, 0.003 opt Au cut-off grade) 515,380,000 tons, 0.0055 opt Au, 2,834,566 oz Au, 0.023 opt Ag, 12,007,678 oz Ag (Connection oxide and Mayflower and Sierra Blanca oxide and unoxidized inferred resource, 0.003 opt Au cut-off grade)		Miocene Crater Flat Tuff	
Northumberland (Northumberland district)	1988: 12 million tons, 0.06 opt Au 2005 (July): 30,910,000 tons, 0.067 opt Au (measured and indicated resource) 4,381,000 tons, 0.091 opt Au (inferred resource)	1939-42: 32,700 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,	

MAJOR PRECIOUS-METAL DEPOSITS, NYE COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Northumberland (cont.)	2008 (June): 36.518 million tons, 0.06 opt Au (measured and indicated resource); Au (measured and indicated resource); 7.418 million tons, 0.10 opt Au (inferred resource)	1981-1990: ~230,000 oz Au, 485,000 oz Ag	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 Au (Ketchup Flat)	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 2007: 5,181,340 tons, 0.0266 opt Au (proven and probable reserves); 6,423,571 tons, 0.0245 opt Au (measured and indicated resource) 2009: 7,147,721 tons, 0.0243 opt Au (proven and probable reserves) 2010: 7,709,000 tons, 0.023 opt Au (proven and probable reserves) 2011: 11,856,200 tons, 0.0224 opt Au, 265,800 oz Au (proven and probable reserves) 18,055,000 tons, 0.0201 opt Au, 362,000 oz Au (measured and indicated resource, 0.006 opt Au cut-off grade) 4,757,000 tons, 0.0138 opt Au, 65,600 oz Au (inferred resource, 0.006 opt Au cut-off grade)		Cambrian Wood Canyon Formation	
Round Mountain (Smoky Valley) (Round Mountain district)	1977: 12 million tons, 0.061 opt Au, 0.07 opt Ag 1989: <i>geologic resource</i> -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 reserves; 49,838,000 tons, 0.020 opt Au probable reserves; 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 2005: 275,608,000 tons, 0.017 opt Au (proven and probable reserves); 35,412,000 tons, 0.017 opt Au (measured and indicated resource); 35,374,000 tons, 0.013 opt Au (inferred resource) 2006: 226,084,000 tons, 0.017 opt Au (proven and probable reserves); 26,134,000 tons, 0.019 opt Au (measured and indicated resource); 32,898,000 tons, 0.013 opt Au (inferred resource) 2007: 141,736,000 tons, 0.018 opt Au (proven and probable reserves); 30,632,000 tons, 0.022 opt Au (measured and indicated resource); no released inferred resource 2008: 185,162,000 tons, 0.018 opt Au (proven and probable reserves); 57,140,000 tons, 0.019 opt Au (measured and indicated resource); 12,982,000 tons, 0.012 opt Au (inferred resource) 2009: 157,614,000 tons, 0.019 opt Au (proven and probable reserves); 87,824,000 tons, 0.021 opt Au (measured and indicated resource); 57,208,000 tons, 0.017 opt Au (inferred 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 2005: 736,886 oz Au, 636,361 oz Ag 2006: 657,911 oz Au, 644,017 oz Ag 2007: 587,445 oz Au, 955,681 oz Ag 2008: 477,499 oz Au, 931,368 oz Ag 2009: 414,941 oz Au, 850,878 oz Ag 2010: 358,614 oz Au, 651,457 oz Ag 2011: 360,020 oz Au, 644,329 oz Ag	rhyolite ash-flow tuff	26 Ma

MAJOR PRECIOUS-METAL DEPOSITS, NYE COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Round Mountain (cont.)	2010: 146,034,000 tons, 0.018 opt Au (proven and probable reserves); 101,736,000 tons, 0.022 opt Au (measured and indicated resource); 49,740,000 tons, 0.018 opt Au (inferred resource) 2011: 165,376,000 tons, 0.017 opt Au, 2,822,000 contained oz Au (proven and probable reserves); 166,840,000 tons, 0.016 opt Au 2,672,000 contained oz Au (measured and indicated resource); 77,694,000 tons, 0.012 opt Au 928,000 contained oz Au (inferred resource)			
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 2006: 214,554 tons, 0.216 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	
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: <i>geologic reserves</i> -600,000 tons, 0.04 opt Au 1990: 500,000 tons, 0.04 opt Au		rhyolite	Miocene?
Colado Gold (Willard district)	1997: 15 million tons, 0.022 opt Au resource 2007 (May 2008): 22,707,000 tons, 0.012 opt Au (oxide, measured and indicated resource); 594,000 tons, 0.070 opt Au (sulfide, measured and indicated resource); 79,129,000 tons, 0.015 opt Au (inferred resource)		Triassic-Jurassic metasedimentary rocks	
Florida Canyon/Standard (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 2010 reserve: 832,000 oz Au; resource: 746,700 oz Au ("resource")	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) 2005 (Florida Canyon): 29,186 oz Au, 7,571 oz Ag 2005 (Standard): 21,522 oz Au, 51,751 oz Ag 2006 (Florida Canyon): 16,061 oz Au, 12,423 oz Ag 2006 (Standard): 46,070 oz Au, 64,497 oz Ag 2007 (Florida Canyon): 31,916 oz Au, 28,152 oz Ag 2007 (Standard): 11,814 oz Au, 24,735 oz Ag 2008 (Florida Canyon): 47,095 oz Au, 40,745 oz Ag 2008 (Standard): 2,625 oz Au, 3,644 oz Ag 2009 (Florida Canyon): 44,814 oz Au, 39,760 oz Ag 2009 (Standard): 1,510 oz Au, 3,270 oz Ag 2010 (Florida Canyon): 54,975 oz Au, 39,903 oz Ag 2011 (Florida Canyon/Standard): 41,161 oz Au, 46 896 oz Ag	Grass Valley Formation	2 Ma

MAJOR PRECIOUS-METAL DEPOSITS, PERSHING COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
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 resource 2000: 569,000 oz Au and 1.7 million oz Ag indicated reserves 2006: 28,310,000 tons, 0.02 opt Au (inferred resource, Main and KW zones)			
Lincoln Hill (Rochester district)	2010: 17,215,000 tons, 0.02 opt Au, 0.5 opt Ag			
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 2009: 92 oz Au, 342 oz Ag	Natchez Pass Limestone, Grass Valley Formation	Tertiary
Rochester (Rochester district)	1981: 75 million tons, 1.5 opt Ag 1989: <i>geologic resource</i> -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 resource; 8,551,000 tons, 0.010 opt Au, 0.96 opt Ag indicated resource; 308,000 tons, 0.003 opt Au, 1.73 opt Ag inferred resources 2005: 10,168,000 tons, 0.011 opt Au, 0.86 opt Ag (probable reserves) 15,646,000 tons, 0.010 opt Au, 1.03 opt Ag (measured and indicated resource) 2006: 3,720,000 tons, 0.007 opt Au, 0.66 opt Ag (proven reserves) 15,235,000 tons, 0.010 opt Au, 0.94 opt Ag (measured and indicated resource) 2007: 32,664,000 tons, 0.010 opt Au, 0.86 opt Ag (measured and indicated resource) 2008: 114,058,000 tons, 0.005 opt Au, 0.54 opt Ag (measured and indicated resource) 2010: 48,271,000 tons, 0.005 opt Au, 0.57 opt Ag (proven and probable reserve) 215,602,900 tons, 0.003 opt Au, 0.44 opt Ag (measured and indicated resource) 21,984,300 tons, 0.003 opt Au, 0.65 opt Ag (inferred resource)	1986-98: 810,329 oz Au, 59.3 million oz Ag 1999: 70,396 oz Au, 6.2 million oz Ag 2000: 75,886 oz 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 2005: 70,298 oz Au, 5,720,489 oz Ag 2006: 71,891 oz Au, 5,113,504 oz Ag 2007: 50,408 oz Au, 4,614,779 oz Ag 2008: 21,041 oz Au, 3,033,720 oz Ag 2009: 12,633 oz Au, 2,181,788 oz Ag 2010: 9,641 oz Au, 2,023,423 oz Ag 2011: 6,276 oz Au, 1,392,433 oz Ag	Koipato Group, Weaver Rhyolite, Rochester 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

MAJOR PRECIOUS-METAL DEPOSITS, PERSHING COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Spring Valley (Spring Valley district)	2005-2006: 10,030,000 tons, 0.024 opt Au (measured and indicated resource) 7,753,000 tons, 0.025 opt Au (inferred resource) 2007: 50,600,000 tons, 0.0196 opt Au (inferred resource) 2008: 87,750,000 tons, 0.021 opt Au (inferred resource) 2011: 159,641,000 tons, 0.014 opt Au (measured and indicated resource) 114,567,000 tons, 0.017 opt Au (inferred resource)			
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) 2010 reserve: 292,000 oz Au; resource: 14,300 oz Au	1939-42, 1946-49: 45,743 oz Au, 127,451 oz Ag 2004-2011: included with Florida Canyon	Natchez Pass Limestone, Grass Valley Formation argillite	
Tag-Wildcat (Farrel district)	1989: <i>geologic resource</i> -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 Sulfide resource: ~4 million tons, 2.5 opt Ag	1987-89: ~5-6 million oz Ag	rhyolite porphyry, rhyolite tuff	26 Ma
Wildcat (Farrel district)	2003: 38.108 million tons, 0.018 opt Au indicated resource; 28.355 million tons, 0.015 opt Au inferred resource		Tertiary volcanic	Miocene
Willard (Willard district)	2007: 17,295,000 tons, 0.016 opt Au (oxide, measured and indicated resource) 448,000 tons, 0.070 opt Au (sulfide, measured and indicated resource) 20,849,000 tons, 0.015 opt Au (inferred resource)	~90,000 oz Au (late 1980s to early 1990s)	Jurassic-Triassic Grass Valley Formation	6 Ma

STOREY COUNTY

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			
Comstock Mine Project (Comstock/Silver City districts)	2011 (Lucerne and Dayton Resource Areas): 51,260,000 tons, 0.029 opt Au, 1,508,000 oz Au, 0.28 opt Ag, 14,360,000 oz Ag (measured and indicated resource, 0.007 opt Au, cut-off grade) 33,580,000 tons, 0.026 opt Au, 881,000 oz Au, 0.179 opt Ag, 6,030,000 oz Ag (inferred resource, 0.007 opt Au, cut-off grade)	2004-2006: Production under Lucerne Resource Area	Santiago Canyon tuff; Alta Formation	
Flowers (Golden Eagle) (Comstock district)	1989: 1 million tons, 0.037 opt Au 1993: 362,000 tons, 0.064 opt Au, 0.97 opt Ag, <i>geologic resource</i> -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
Lucerne Resource Area (Comstock Mine Project/Hartford Hill Complex) (Comstock district)	2010 (Billy the Kid and Lucerne Mines): 26,540,000 tons, 0.028 opt Au, 0.354 opt Ag (measured and indicated resource) 12,660,000 tons, 0.023 opt Au, 0.252 opt Ag (inferred resource) 2011 (Billy the Kid, Hartford, and Lucerne Mines): 42,930,000 tons, 0.03 opt Au, 0.293 opt Ag	2004: 2,836 oz Au, 12,695 oz Ag 2005: 5,715 oz Au, 26,488 oz Ag 2006: 5,000 oz Au, 20,000 oz Ag (estimated)	Santiago Canyon tuff; Alta Formation	

MAJOR PRECIOUS-METAL DEPOSITS, STOREY COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Lucerne Resource Area (cont.)	(measured and indicated resource, 0.007 opt Au, cut-off grade); 26,990,000 tons, 0.027 opt Au, 0.196 opt Ag (inferred resource, 0.007 opt Au, cut-off grade)			
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, <i>geologic resource</i> -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: 23.219 million tons, 0.013 opt Au indicated resource; 4.466 million tons, 0.039 opt Au inferred resource		rhyolite	Miocene
Olinghouse (Olinghouse district)	1994: <i>geologic resource</i> -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 <i>geologic resource</i> 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
Wind Mountain (San Emidio)	1988: 15 million tons, 0.021 opt Au, 0.42 opt Ag 2007: 33,657,553 tons, 0.012 opt Au (measured and indicated resource) 9,758,547 tons, 0.009 opt Au (inferred resource) 2011 Oxide: 58,816,000 tons, 0.1 opt Au, 564,000 oz Au, 0.25 opt Ag, 14,539,000 oz Ag (indicated resource, 0.005 opt Au cut-off grade); 19,866,000 tons, 0.006 opt Au, 125,200 oz Au, 0.17 opt Ag, 3,443,000 oz Ag (inferred resource, 0.005 opt Au cut-off grade) Mixed and unoxidized: 498,000 tons, 0.12 opt Au, 5,900 oz Au, 0.4 opt Ag, 197,000 oz Ag (indicated resource, 0.01 opt Au cut-off grade); 14,595,000 tons, 0.016 opt Au, 229,100 oz Au, 0.16 opt Ag, 6,672,000 oz Ag (inferred resource, 0.01 opt Au cut-off grade)	1989: 30,900 oz Au, 335,000 oz Ag 1991: 91,000 oz Au, 405,000 oz Ag 1992: 54,690 oz Au, 297,403 oz Ag 1993: 19,570 oz Au, 92,630 oz Ag	Tertiary sedimentary rocks	late Tertiary or Quaternary

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; <i>geologic resource</i> -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 (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	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	quartz porphyry, Cambrian shale and limestone	Jurassic?

MAJOR PRECIOUS-METAL DEPOSITS, WHITE PINE COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Bald Mountain (cont.)	<p>2000: 509,000 oz Au proven and probable; 2.03 million oz Au measured and indicated resource</p> <p>2002: 508,000 oz Au proven and probable reserves; 2.03 million oz Au measured mineral resource</p> <p>2003: 10,143,000 tons, 0.033 opt Au proven reserves; 8,549,000 tons, 0.040 opt Au probable reserves; 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</p> <p>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</p> <p>2005 (includes Alligator Ridge): 105,050,700 tons, 0.032 opt Au (proven and probable reserves) 35,000,000 tons, 0.023 opt Au (measured and indicated resource) 14,868,000 tons, 0.026 opt Au (inferred resource)</p> <p>2006 (includes Alligator Ridge): 109,922,000 tons, 0.031 opt Au (proven and probable reserves) 23,289,000 tons, 0.035 opt Au (measured and indicated resource) 17,290,000 tons, 0.023 opt Au (inferred resource)</p> <p>2007 (includes Alligator Ridge): 128,093,000 tons, 0.024 opt Au (proven and probable reserves) 36,493,000 tons, 0.024 opt Au (measured and indicated resource) 24,648,000 tons, 0.017 opt Au (inferred resource)</p> <p>2008 (includes Alligator Ridge): 157,675,000 tons, 0.018 opt Au (proven and probable reserves) 90,374,000 tons, 0.019 opt Au (measured and indicated resource) 71,004,000 tons, 0.021 opt Au (inferred resource)</p> <p>2009 (includes Alligator Ridge): 227,346,000 tons, 0.020 opt Au (proven and probable reserves) 99,338,000 tons, 0.012 opt Au (measured and indicated resource) 40,184,000 tons, 0.012 opt Au (inferred resource)</p> <p>2010 (includes Alligator Ridge): 246,711,000 tons, 0.019 opt Au (proven and probable reserves); 151,944,000 tons, 0.011 opt Au (measured and indicated resource) 60,636,000 tons, 0.011 opt Au (inferred resource)</p> <p>2011 (includes Alligator Ridge): 307,162,000 tons, 0.017 opt Au, 5,102,000 contained oz Au (proven and probable reserves); 123,191,000 tons, 0.013 opt Au 1,623,000 contained oz Au (measured and indicated resource); 72,491,000 tons, 0.011 opt Au 787,000 contained oz Au (inferred resource)</p>	<p>1995-96: 221,908 oz Au, 62,460 oz Ag</p> <p>1997-98: 243,500 oz Au, 63,416 oz Ag</p> <p>1999: 105,475 oz Au, 18,058 oz Ag</p> <p>2000: 134,469 oz Au, 14,400 oz Ag</p> <p>2001: 108,392 oz Au, 18,321 oz Ag</p> <p>2002: 172,328 oz Au, 21,547 oz Ag</p> <p>2003: 90,602 oz Au, 26,810 oz Ag</p> <p>2004: 46,685 oz Au, 27,635 oz Ag</p> <p>2005: 77,767 oz Au, 32,652 oz Ag</p> <p>2006: 277,615 oz Au, 32,121 oz Ag</p> <p>2007: 125,998 oz Au, 21,702 oz Ag</p> <p>2008: 103,610 oz Au, 15,352 oz Ag</p> <p>2009: 75,037 oz Au, 12,389 oz Ag</p> <p>2010: 60,333 oz Au, 15,000 oz Ag</p> <p>2011: 92,818 oz Au, 14,615 oz Ag</p>		
Bellview (White Pine district)	<p>1988: 277,000 tons, 0.04 opt Au, <i>geologic resource</i>-1 million tons, 0.036 opt Au</p>			
Casino/Winrock (Bald Mountain district)	<p>1989: Casino-804,000 tons, 0.054 opt Au; Winrock 1.3 million tons, 0.037 opt Au</p> <p>1990: Winrock-993,000 tons, 39,000 oz Au</p> <p>1992: <i>see Alligator Ridge</i></p>	<p>1990-92: 46,800 oz Au</p>	<p>late Paleozoic sedimentary rocks</p>	<p>Eocene</p>

MAJOR PRECIOUS-METAL DEPOSITS, WHITE PINE COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
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
Gold Rock (Easy Junior/ Nighthawk Ridge) (White Pine district)	1989: 5.68 million tons, 0.031 opt Au 1991: 137,000 oz Au 1997: 510 oz Au, 76 oz Ag 2011: 14,294,000 tons, 0.022 opt Au, 310,000 oz Au (indicated resource, 0.008 opt Au cut-off grade); 19,724,000 tons, 0.017 opt Au, 331,000 oz Au (inferred resource, 0.008 opt Au cut-off grade)	1990: 11,500 oz Au, 900 oz Ag	Devonian and Mississippian rocks	Eocene
Griffon Gold property (White Pine district)	1993: <i>geologic resource</i> -60,000 oz Au 1994: <i>geologic resource</i> -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?
Limousine Butte (Butte Valley district)	1987: 57,000 oz Au 2009 (0.012 opt Au cut-off grade): 10,600,000 tons, 0.023 opt Au (measured and indicated resources) 2,500,000 tons, 0.020 opt Au (inferred resource)	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; <i>geologic resource</i> -260,000 tons, 0.127 opt Au 1993: 140,000 tons, 0.13 opt Au, <i>geologic resource</i> -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 2009: 12,617,000 tons, 0.031 opt Au, 0.144 opt Ag (measured and indicated resource) 1,491,000 tons, 0.012 opt Au, 0.122 opt Ag (inferred resource) 2011 (Centennial deposit): 22,527,000 tons, 0.022 opt Au, 487,100 oz Au, 0.134 opt Ag, 3,028,200 oz Ag (proven and probable reserves, 0.006 opt AuEq cut-off grade); 23,650,000 tons, 0.022 opt Au, 526,854 oz Au, 0.133 opt Ag, 3,152,624 oz Ag (measured and indicated resource, 0.006 opt AuEq cut-off grade); 3,454,000 tons, 0.018 opt Au 60,859, 0.079 opt Ag, 273,457 oz Ag (inferred resource, 0.006 opt AuEq cut-off grade)	1995-97: 99,500 oz Au, 207,500 oz Ag	Dunderberg Shale	Cretaceous
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 resource; 7,986,000 tons, 0.016 opt Au inferred resource		Mississippian rocks	

MAJOR PRECIOUS-METAL DEPOSITS, WHITE PINE COUNTY (continued)

Deposit name	Reserves/resources	Production	Host rock	Mineralization age
Pan (cont.)	2009 (0.006 opt au cut-off grade: 34,650,000 tons, 0.018 opt Au (measured and indicated resource) 1,600,000 tons, 0.017 opt Au (inferred resource) 2010 (0.004 opt au cut-off grade: 42,750,352 tons, 0.016 opt Au (measured and indicated resource); 1,600,000 tons, 0.017 opt Au (inferred resource) 2011: 88,226,224 tons, 0.128 opt Au, 1,129,809 oz Au (measured and indicated resource, 0.004 opt Au cut-off grade); 4,330,080 tons, 0.105 opt Au, 45, 261 oz Au (inferred resource, 0.004 opt Au cut-off grade)			
Robinson (Robinson district)	1989: 46.0 million tons, 0.019 opt Au; <i>geologic resource</i> -1 million oz Au 1991: <i>geologic resource</i> -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 2005: 160,400,000 tons, 0.69% Cu,) 0.073 opt Au (proven and probable reserves) 610,979,000 tons, 0.55% Cu, 0.0064 opt Au (measured resource, 0.2% Cu cut-off) 171,858,000 tons, 0.44% Cu, 0.0041 opt Au (indicated resource, 0.2% Cu cut-off) 98,166,000 tons, 0.32% Cu, 0.0015 opt Au (inferred resource, 0.2% Cu cut-off) 2006: 122,401,000 tons, 0.69% Cu, 0.0076 opt Au (proven and probable reserves) 2007: 103,788,000 tons, 0.68% Cu, 0.0067 opt Au (proven and probable reserves) 2008: 121,693,000 tons, 0.54% Cu, 0.0067 opt Au (proven and probable reserves) 2009: 103,059,000 tons, 0.53% Cu, 0.0062 opt Au (proven and probable reserves) 2010: 121,250,000 tons, 0.50%Cu, 0.0053 opt Au (proven and probable reserves) 716,490,000 tons, 0.33% Cu, 0.0044 opt Au (measured and indicated resource) 154,320,000 tons, 0.29% Cu, 0.0041 opt Au (inferred resource)	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 lbs Cu 1999: 26,250 oz Au, 153,104 oz Ag, 62 million lbs Cu 2004: 12,228 oz Au, 27 million lbs Cu 2005: 80,941 oz Au, 191,479 oz Ag, 126 million lbs Cu 2006: 75,074 oz Au, 156,839 oz Ag, 121,319,197 lbs Cu, 260,000 lbs Mo 2007: 108,118 oz Au, 179,238 oz Ag, 131,986,134 lbs Cu, 62,033 lbs Mo 2008: 137,628 oz Au, 183,903 oz Ag, 159,684,092 lbs Cu, 78,855 lbs Mo 2009: 99,000 oz Au, 200,819 oz Ag, 122,000,000 lbs Cu, 88,711 lbs Mo 2010: 72,998 oz Au, 245,746 oz Ag, 108,967,015 lbs Cu, 226,688 lbs Mo 2011: 31,969 oz Au, 116,774 oz Ag, 88,893,372 lbs Cu, 1,261,309 lbs Mo	Rib Hill Sandstone, Cretaceous Riepe Spring Limestone, intrusions	
Taylor (Taylor district)	1980: 10 million tons, 3 opt Ag 1988: 5.92 million tons, 2.7 opt Ag (resource) 2007: 6,433,000 tons, 2.31 opt Ag (measured and indicated resource) 757,000 tons, 2.54 opt Ag (inferred resource)	1981-1984: 3.8 million oz Ag, 3,000 oz Au	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 1993: see Bald Mountain	1990: ~15,000 oz Au 1992: 10,800 oz Au	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:

<u>Year</u>	<u>Gold (oz)</u>	<u>Silver (oz)</u>
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
2005	1,397,583	227,158
2006	1,310,258	169,212
2007	1,322,001	268,875
2008	1,320,019	149,254
2009	1,172,790	225,431
2010	934,282	69,430
2011	917,973	76,938

NA= not available

Other Metallic Deposits

by David A. Davis and John L. Muntean

This is a compilation, in progress, of metallic deposits other than gold and silver. Initially, active projects with recently released reserves, resources, and production were included and earlier published data are included as found. The information in this compilation was obtained from the Nevada Division of Minerals and from published reports, articles in mining newsletters, and company websites, annual reports, and press releases. Locations of active mines are shown on page 2, and contact information is listed in the Directory of Mining and Milling Operations.

Deposit name	Metals	Reserves/resources	Production
DOUGLAS COUNTY			
Pine Nut (Gardnerville district)	Mo	2007: 82,000,000 tons, 0.06% Mo	
ELKO COUNTY			
Carlin Vanadium (Carlin district)	V	2010: 28,000,000 tons, 0.515% V ₂ O ₅ (inferred resource)	
Contact (Contact district)	Cu	2009: 33,578,000 tons, 0.293% Cu (proven and probable reserve) 89,551,000 tons, 0.268% Cu (measured and indicated resource) 50,520,000 tons, 0.302% Cu (inferred resource)	
Hot Spot No. 1 (Mountain City district)	U	1956: 13,200 tons, 0.137% U ₃ O ₈ in eight small deposits (indicated ore)	
Indian Springs (Delano district)	W	2007: 10.8 million tons, 0.171% WO ₃ (indicated resource); 8.2 million tons, 0.167% WO ₃ (inferred resource)	
Rio Tinto (Mountain City District)	Cu	1976 Footwall deposit: 600,000 tons, 1% copper (one-third mined)	1931-1947: 1,109,878 tons, 9.7% Cu, 0.3 opt Ag, 0.006 opt Au, 216,326,000 lbs. Cu
Victoria (Dolly Varden district)	Cu, Ag	1973: 3,500,000 tons, 2.45% Cu (reserves) 1976 underground: 2,068,650 tons, 3% Cu (proven and probable reserves) 1981: 1,375,425 tons, 2.15% Cu, 0.35 opt Ag (proven and probable reserves)	1975-1977: 6,000 tons Cu 1980-1981: 124,575 tons, 1.56% Cu, 0.32 opt Ag
ESMERALDA COUNTY			
Cucomungo (Tule Canyon district)	Mo	2006 Basalt Cap Zone: 30,000,000 tons, 0.11% MoS ₂ (0.066% Mo, drill-indicated resource); Roper Tunnel Zone: 9,000,000 tons 0.125% to 0.25% MoS ₂ (0.075% to 0.15% Mo, possible resource)	

OTHER METALLIC DEPOSITS (continued)

Deposit name	Metals	Reserves/resources	Production
EUREKA COUNTY			
Gibellini (Gibellini district)	V	2011: 19,970,000 tons 0.30% V ₂ O ₅ (proven and probable reserves, Gibellini Hill, part of the measured and indicated resource); 23,050,000 tons, 0.29% V ₂ O ₅ (measured and indicated resource, Gibellini Hill); 14,230,000 tons, 0.17% V ₂ O ₅ (inferred resource, reduced material)	
Mount Hope (Mount Hope district)	Mo	2007: 965,926,000 tons 0.068% Mo (proven and probable reserves); 109,641,000 tons, 0.030% Mo (measured and indicated resource); 191,308,000 tons, 0.063% Mo (inferred resource)	
HUMBOLDT COUNTY			
Ashdown (Vicksburg district)	Mo	1983: 10,000 tons molybdenite on dump 2006 (Sylvia Vein): 21,550 tons, 8% Mo	2006: 10,500 lbs Mo 2007: 247,466 lbs Mo 2008: 202,597 lbs Mo 2009: 214,714 lbs Mo 2010: 189,035 lbs Mo 2011: 648,853 lbs Mo
Cordero (Opalite district)	Ga	2007: 10 million tons, 47.7 ppm Ga (measured and indicated resource); 6.6 million tons, 43.7 ppm Ga (inferred resource)	
Kings Valley (Disaster district)	U	2006: 2,978,000 tons, 0.081% U ₃ O ₈ (inferred resource)	
LANDER COUNTY			
Apex (Reese River district)	U	2006: 1,119,928 tons, 0.07% U ₃ O ₈ (inferred resource)	1954-1960, 1963-1966: 106,000 lbs. U ₃ O ₈
Buckingham (Battle Mountain district)	Mo (resource)	1984: 1.1 billion tons, 0.06% MoS ₂	
Phoenix (Battle Mountain district)	Cu	2007: 279,600,000 tons, 0.13% Cu (proven and probable reserves); 91,300,000 tons, 0.16% Cu (measured and indicated resource); 23,900,000 tons, 0.16% Cu (inferred resource) 2008: 302,000,000 tons, 0.15% Cu (proven and probable reserves); 91,700,000 tons, 0.20% Cu (measured and indicated resource); 95,953,000 tons, 0.23% Cu (inferred resource) 2009: 287,500,000 tons, 0.16% Cu (proven and probable reserves); 199,687,000 tons, 0.18% Cu (measured and indicated resource); 91,815,000 tons, 0.23% Cu (inferred resource)	2006: 6,235,096 lbs Cu 2007: 10,808,206 lbs Cu 2008: 15,853,706 lbs Cu 2009: 23,733,389 lbs Cu 2010: 19,008,818 lbs Cu 2011: 23,897,865 lbs Cu (See Major Precious Metal Deposits also.)

OTHER METALLIC DEPOSITS (continued)

Deposit name	Metals	Reserves/resources	Production
Phoenix (cont.)		2010 (non-leach): 332,600,000 tons, 0.15% Cu (probable reserve, 61% recovery) 150,900,000 tons, 0.13% Cu (indicated resource); 56,600,000 tons, 0.12% Cu (inferred resource) 2010 (leach): 132,900,000 tons, 0.23% Cu (probable reserve, 53% recovery) 25,900,000 tons, 0.19% Cu (indicated resource); 45,900,000 tons, 0.22% Cu (inferred resource) 2011 (non-leach): 450,300,000 tons, 0.15% Cu, 1,300,000,000 lbs Cu (proven and probable reserve, 61% recovery) 216,400,000 tons, 0.09% Cu (indicated resource); 132,300,000 tons, 0.1% Cu (inferred resource) 2011 (leach): 170,200,000 tons, 0.21% Cu, 690,000,000 lbs Cu, (proven and probable reserve, 52% recovery) 14,100,000 tons, 0.2% Cu (indicated resource); 54,100,000 tons, 0.2% Cu (inferred resource)	
LINCOLN COUNTY			
Pan American (Comet district)	Pb, Zn	1982: 2,196,000 tons, 1.17% Pb, 2.45% Zn, (proven reserve)	
LYON COUNTY			
Ann Mason (Yerington district)	Cu Cu, Mo	2010: 1,409,960,000 tons, 0.336% Cu, (inferred resource, (0.2% Cu cut-off grade) 315,220,000 tons, 0.485% Cu, (inferred resource, 0.4% Cu cut-off grade) 2012: 1,253,000,000 tons, 0.33% Cu, 8,150,000,000 lbs. Cu, 0.006% Mo, 150,000,000 lbs. Mo; 0.0006 opt Au, 0.017 opt Ag (indicated resource, 0.2% Cu cut-off grade); 962,000,000 tons, 0.29% Cu, 5,590,000,000 lbs. Cu, 0.004% Mo, 80,000,000 lbs. Mo; 0.0009 opt Au, 0.019 opt Ag (inferred resource, 0.2% Cu cut-off grade)	
Blue Hill (Yerington district)	Cu, Mo	2012: Oxide Zone: 52,290,000 tons, 0.17% Cu, 179,370,000 lbs. Cu; Mixed Zone: 27,220,000 tons, 0.18% Cu, 98,120,000 lbs. Cu (inferred resource, 0.1% Cu cut-off grade); Sulfide Zone: 54,960,000 tons, 0.23% Cu, 253,460,000 lbs. Cu, 0.005% Mo, 0.0003 opt Au, 0.009 opt Ag (inferred resource, 0.15% Cu cut-off grade)	
MacArthur (Yerington district)	Cu	2008: 57,365,000 tons, 0.239% Cu, (measured and indicated resource, oxide and chalcocite material) 75,832,000 tons, 0.283% Cu, (inferred resource, oxide and chalcocite material) 2010: 143,721,000 tons, 0.192% Cu (measured and indicated resource, oxide and chalcocite material, 0.12% Cu cut-off grade) 215,043,000 tons, 0.197% Cu (inferred resource, oxide and chalcocite material, 0.12% Cu cut-off grade) 74,090,000 tons, 0.256% Cu (inferred resource, primary sulfide material, 0.15% Cu cut-off grade)	

OTHER METALLIC DEPOSITS (continued)

Deposit name	Metals	Reserves/resources	Production
MacArthur (cont.)		<p>2011: 159,094,000 tons, 0.212% Cu, 675,513,000 lbs. Cu (measured and indicated resource, oxide and chalcocite material, 0.12% Cu cut-off grade)</p> <p>243,417,000 tons, 0.201% Cu, 979,510,000 lbs. Cu (inferred resource, oxide and chalcocite material, 0.12% Cu cut-off grade)</p> <p>1,098,000 tons, 0.292% Cu, 6,408,000 lbs. Cu (measured and indicated resource, primary sulfide material, 0.15% Cu cut-off grade)</p> <p>134,900,000 tons, 0.283% Cu 764,074,000 lbs. Cu (inferred resource, primary sulfide material, 0.15% Cu cut-off grade)</p>	
Pumpkin Hollow (Yerington district)	Cu, Fe,	<p>2007: 342,735,000 tons, 0.579% Cu, 0.0019 opt Au, 0.0700 opt Ag, 15.67% Fe (measured and indicated resource)</p> <p>438,164,000 tons, 0.446% Cu, 0.0015 opt Au, 0.0700 opt Ag, 10.23% Fe (inferred resource)</p>	
	Cu	<p>2009 (0.2% Cu cut-off grade):</p> <p>488,228,000 tons, 0.58% Cu, 0.002 opt Au, 0.069 opt Ag (measured and indicated resource)</p> <p>440,826,000 tons, 0.42% Cu, 0.001 opt Au, 0.048 opt Ag (inferred resource)</p>	
	Fe	<p>2009 (10% Fe cut-off grade)</p> <p>306,420,000 tons, 30.04% Fe (measured and indicated resource)</p> <p>440,138,000 tons, 20.67% Fe (inferred resource)</p>	
	Cu	<p>2010: 531,042,000 tons, 0.55% Cu, 0.003 opt Au, 0.079 opt Ag (total measured and indicated resource, 0.2% Cu cut-off grade)</p> <p>495,129,000 tons, 0.37% Cu, 0.001 opt Au, 0.044 opt Ag (total inferred resource, 0.2% Cu cut-off grade)</p> <p>33,544,000 tons, 1.74% Cu, 0.010 opt Au, 0.244 opt Ag (measured and indicated resource, eastern underground deposits, 1% Cu cut-off grade)</p> <p>249,155,000 tons, 0.6% copper, 0.002 opt gold, 0.067opt Ag (measured and indicated resource, western open pitable deposits, 0.3% Cu cut-off grade)</p>	
	Fe	<p>2010: 340,898,000 tons, 32.59% Fe (measured and indicated resource, western open pitable deposits, 20% Fe cut-off grade)</p> <p>29,769,000 tons, 25.6% Fe (inferred resource, western open pitable deposits, 20% Fe cut-off grade)</p>	
	Cu, Au, Ag	<p>2011 Western open pit deposits: 560,599,000 tons, 0.39% Cu, 4,311,274,000 lbs. Cu, 0.002 opt Au, 1,061 oz Au, 0.053 opt Ag, 29,689 oz Ag (measured and indicated resource, 0.15% Cu cut-off grade)</p> <p>387,757,000 tons, 0.3% Cu, 12,288,414,000 lbs. Cu, 0.001opt Au, 385 oz Au 0.039 opt Ag, 14,960 oz Ag (inferred resource, 0.15% Cu cut-off grade)</p> <p>Eastern underground deposits: 50,589,000 tons, 1.45% Cu, 1,459,824,000 lbs. Cu, 0.009 opt Au, 449 oz Au, 0.213 opt Ag, 10,817 oz Ag (measured and indicated resource, 0.75% Cu cut-off grade)</p> <p>12,098,000 tons, 1.11% Cu, 267,533,000 lbs. Cu, 0.002opt Au, 24 oz Au 0.065 opt Ag, 792 oz Ag (inferred resource, 0.75% Cu cut-off grade)</p>	
	Fe	<p>2011: Western open pit deposits: 340,898,000 tons, 32.59% Fe, (measured and indicated resource, western, 20% Fe cut-off grade)</p>	

OTHER METALLIC DEPOSITS (continued)

Deposit name	Metals	Reserves/resources	Production
Yerington (Yerington District)	Cu	2011: 18,391,000 tons, 0.23% Cu, 85,886,000 lbs. Cu (measured and indicated resource, oxide and chalcocite material, 0.12% Cu cut-off grade) 24,703,000 tons, 0.2% Cu, 97,873,000 lbs. Cu (inferred resource, oxide and chalcocite material, 0.12% Cu cut-off grade) 102,526,000 tons, 0.26% Cu, 531,495,000 lbs. Cu (measured and indicated resource, primary material, 0.15% Cu cut-off grade) 160,104,000 tons, 0.2% Cu 629,209,000 lbs. Cu (inferred resource, primary material, 0.12% Cu cut-off grade)	1952-1979: 1,744,000,000 lbs. Cu
MINERAL COUNTY			
New York Canyon (Santa Fe District)	Cu	2010: 26,250,000 tons, 0.43% Cu (indicated resource, 0.2% Cu cut-off grade) 2,900,000 tons, 0.31% Cu (inferred resource, 0.2% Cu cut-off grade)	
Pine Tree (Pilot Mtns District)	Mo, Cu, Ag	2011: 240,840,000 tons, 0.04% MoS ₂ , 173.3 million lbs. MoS ₂ , 0.09% Cu, 428.7 million lbs. Cu, 0.044 opt Ag, 10.68 million oz Ag (indicated resource, 0.01% MoS ₂ cut-off grade) 196,760,000 tons, 0.3% MoS ₂ , 106.2 million lbs. MoS ₂ , 0.09% Cu, 324.4 million lbs. Cu, 0.039 opt Ag, 7.78 million oz Ag (inferred resource, 0.01% MoS ₂ cut-off grade)	
NYE COUNTY			
B and C Springs (Paradise Peak district)	Mo, Cu	1983: 131,000,000 tons, 0.012% Mo 2007 Open pit: 105,902,046 tons, 0.048% Mo, 101,126,000 lbs. Mo., 0.068% Cu, 144,282,000 lbs Cu (indicated resource, \$10 cut-off grade at \$25/lb. Mo); Underground: 2,846,524 tons, 0.234% Mo, 0.334% Cu (indicated resource, \$75 cut-off grade at \$25/lb. Mo)	
Liberty (formerly known as Hall-Tonopah) (San Antone district)	Mo Mo, Cu	2007 (April 2008): 432,951,000 tons 0.071% Mo, 0.07% Cu (proven and probable reserves); 109,336,000 tons, 0.052% Mo, 0.11% Cu (measured and indicated resource); 127,200,000 tons, 0.051% Mo, 0.08% Cu (inferred resource) 2011: 541,420,000 tons, 0.068% Mo, 0.08% Cu (proven and probable reserves, 0.02% Mo cut-off grade) 105,194,000 tons, 0.052% Mo, 0.05% Cu (measured and indicated resource, 0.02% Mo cut-off grade) 252,647,000 tons, 0.04% Mo, 0.13% Cu (inferred resource, 0.02% Mo cut-off grade)	1982-1991: 50,000,000 tons, 0.11% Mo
Tonopah (San Antone district)	Cu	1999: 98,000,000 tons, 0.343% Cu (proven reserve); 137,800,000 tons, 0.314% Cu (resource)	1999-2001: Cu
PERSHING COUNTY			
Springer (Mill City district)	W	1983: 3.59 million tons, 0.446% WO ₃ (historical General Electric resource)	

OTHER METALLIC DEPOSITS (continued)

Deposit name	Metals	Reserves/resources	Production
Springer (cont.)		2009 (Sutton beds): 274,000 tons, 0.619% WO ₃ (indicated resource) 1,097,000 tons, 0.562% WO ₃ (inferred resource)	
WASHOE COUNTY			
Red Bluff (Pyramid district)	U	1991: 200,000 tons, 0.13% U ₃ O ₈ (resource, 0.05% U ₃ O ₈ cut-off grade); 100,000 tons, 0.24% U ₃ O ₈ (resource, 0.1% U ₃ O ₈ cut-off grade)	
WHITE PINE COUNTY			
Monte Cristo (White Pine District)	W, Mo	1980: 5,500,000 tons, 0.3% WO ₃ , 0.2% Mo (estimated reserve)	
Robinson (Robinson district)	Cu, Mo	2006: 122,401,000 tons, 0.69% Cu (proven and probable reserves) 2007: 103,788,000 tons, 0.68% Cu (proven and probable reserves) 2008: 121,693,000 tons, 0.54% Cu (proven and probable reserves) 2009: 103,059,000 tons, 0.53% Cu (proven and probable reserves) 2010: 121,250,000 tons, 0.50% Cu (proven and probable reserves) 716,490,000 tons, 0.33% Cu (measured and indicated resource) 154,320,000 tons, 0.29% Cu (inferred resource)	2006: 121,319,197 lbs Cu, 260,000 lbs Mo 2007: 131,986,134 lbs Cu, 62,033 lbs Mo 2008: 159,684,092 lbs Cu, 78,855 lbs Mo 2009: 122,000,000 lbs Cu, 88,711 lbs Mo 2010: 108,967,015 lbs Cu, 226,688 lbs Mo 2011: 88,893,372 lbs Cu, 1,261,309 lbs Mo (See Major Precious Metal Deposits also.)

Industrial Minerals

by David A. Davis

The total value of industrial minerals produced in Nevada in 2011 was estimated at \$386.1 million, which was a decrease of 10% from 2010. Minus the value of aggregate, the total value in 2011 was \$187.7 million, a decrease of 20% from 2010. In decreasing order of estimated value, Nevada industrial minerals with production values of more than \$10 million in 2011 were aggregate, barite, diatomite, lime and limestone, silica, gypsum, and lithium. Industrial mineral commodities with production values of less than \$10 million were clay, magnesia, dolomite, cement, perlite, iron ore, salt, opal, dimension stone, and turquoise. Zeolite was processed in Nevada but mined in California, and as such was 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 (NDOM), the Nevada Department of Taxation, the U.S. Bureau of Land Management (BLM), the U.S. Geological Survey (USGS) or directly from companies that produced the commodities. Data are given in short tons unless otherwise noted. USGS data cited are from commodity reports on the agency's website at <http://www.minerals.usgs.gov/minerals/pubs/commodity>.

Aggregate (Sand and Gravel, Crushed Stone)

According to the USGS, the United States production of construction sand and gravel decreased 4% in 2011 to an estimated 871 million tons valued at \$5.9 billion, and crushed stone decreased 4% to an estimated 1.22 billion tons valued at \$11 billion. Except for several years of flat production, production of construction sand and gravel increased 86% between 1991 and 2006, and then decreased 42% between 2006 and 2010. 2011 had the first increase in production in five years but was still down 40% from the 2006 peak of 1.46 billion tons. Production of crushed stone had increased 17% between 2002 and 2006, but 2011 marked the fifth straight year of decreased production, down 35% from the high of 1.95 billion tons in 2006. Apparent consumption of construction sand and gravel increased 4% to an estimated 871 million tons. As with production, it marks the first increase in five years but is still 40% down from the 2006 peak of 1.46 billion tons. The apparent consumption of crushed stone has decreased 4% to an estimated 1.27 billion tons. This marks the fifth straight year of decreased apparent consumption,

down 34% from the high of 1.92 billion tons in 2006. The average price of construction sand and gravel decreased 3% to \$6.80 per ton in 2011. It had increased 60% over the previous 10 years, and 2011 marked the first decrease, following annual increases since at least 1970. The average price of crushed stone decreased 2% to \$8.60 per ton in 2011. It had increased 85% between 1999 and 2010 after a decrease in the late 1990s.

According to the USGS, in 2011, Nevada produced an estimated 16.9 million tons of construction sand and gravel valued at \$91 million and an estimated 8.29 million tons of crushed stone valued at \$89.4 million. The production and value of construction sand and gravel decreased 11% and increased 8% respectively, and the production and value of crushed stone decreased 17% and increased 11% respectively. Production from sand and gravel deposits accounted for about 67% of statewide aggregate production, down from 71% in 2010. Crushed stone and lightweight aggregate made up the balance. The total production value of almost \$180.4 million makes construction aggregate the fourth most valuable commodity produced in the state in 2011—well below the value of Nevada's gold production and about 36% of the value of second-ranked copper production, and 72% of that of third-ranked silver.

Aggregate production data is acquired at the state level by sending out annual production request forms, calling the larger known producers, and reviewing sales listed in the BLM LR2000 Database. Time and manpower are limited, and because many companies do not respond, an accurate and complete total production figure is not possible. The estimates made from these incomplete figures are therefore, at best, educated guesses.

An estimated 18.6 million tons of construction aggregate was produced in the Las Vegas area in 2011, which was a decrease of 6% from 2010. Sand and gravel operations accounted for about 75% of the aggregate used in the Las Vegas metropolitan area in 2010. As in past years, the Lone Mountain area in northwest Las Vegas remained the most important source of sand and gravel. The Lone Mountain area produced more than 10 million tons in 2005 and 2006, but annual production is estimated to have been below that from 2007 to 2011. Significant production also came from sand and gravel pits and stone quarries south and northeast of Las Vegas and in Ivanpah Valley south-southwest of Las Vegas. Portable crushers at construction sites were also important producers of base aggregate in Las Vegas.

Companies in the Las Vegas area that produced more than one million tons of aggregate in 2011 were Aggregate Industries and Las Vegas Paving Corp. Companies with production between 500,000 and one million tons per year were Impact Sand and Gravel and Nevada Ready Mix Corp. Both those companies produced over a million tons in 2008 but dropped below that in 2009. Wells Cargo produced more than 500,000 tons in 2009, dropped below that in 2010, and remained below it 2011. CEMEX, which produced over 500,000 tons in 2008, produced nothing in 2009 and 2010 and put its assets up for sale. American Sand and Gravel, which produced more than 500,000 tons annually until 2008 and over 100,000 tons in 2009 and 2010, had minor production and then dropped their leases in 2011. Boulder Sand and Gravel picked up their lease at Lone Mountain.

Las Vegas Paving, a major producer of asphalt concrete, mostly produced sand and gravel from their Blue Diamond, Lone Mountain, and Primm pits. The company also produced crushed stone from the Apex landfill about 10 miles northeast of Las Vegas. Nevada Ready Mix, a subsidiary of the Mitsubishi Corporation, mined most of its aggregate from a complex of pits in alluvium in the Lone Mountain area, with minor production coming from quarries in adjacent bedrock. Aggregate Industries, through their subsidiary Frehner Inc., mined and crushed limestone from its Sloan property a few miles south of Las Vegas. CalPortland ended production in May 2011 at the Construx Aggregate Pit west of Boulder City and reportedly no longer had the pit after the end of the year.

According to the U.S. Bureau of Land Management (BLM) database LR2000, community pits and other aggregate mining facilities administered by the BLM and operated by a number of companies, including some of those already mentioned, contributed an estimated 2.5 million tons to the total production of the Las Vegas and adjacent southern Nevada area in 2011, an increase of 67% from 2010.

The Cind-R-Lite Block Company shipped lightweight aggregate to the Las Vegas market from their cinder operation in a Quaternary basaltic cinder cone near Amargosa Valley in Nye County. Most of the material shipped was minus 3/8-inch aggregate for the manufacture of cinder blocks and pavers. Cind-R-Lite has two manufacturing sites in the Las Vegas Valley and one in the Amargosa Valley.

In 2006, Service Rock Products Corporation of California submitted an application to the BLM to build and operate an aggregate pit called the Sloan Aggregate Mine in N/2, section 32, T23S, R61E. In 2007, CEMEX submitted an application to build and operate an aggregate pit called the Mohave Minerals Project in S/2, section 29, T23S, R61E. Mining from

two pits, expected to eventually grow into one large 2,500-foot deep pit covering about 640 acres, is proposed to produce 100 million tons of mostly limestone and dolomite over a 20- to 30-year period. The sale request for the material, referred to as the Sloan Hills Competitive Minerals Sale, exceeds the volume limitations for noncompetitive sales and has to be done on a competitive basis. The sites would be auctioned as two separate parcels, and there is no guarantee that Service Rock and CEMEX would be the winning bidders. The proposed project also includes batch, processing, and asphalt plants; office buildings; scale houses; parking lots; a control laboratory; and other maintenance and support facilities. The public scoping meetings ended in January 2008, and the mining plan of operation was filed with the BLM in February 2009. The asphalt plant was removed from the proposed action, and the timeline of the process delayed. A draft Environmental Impact Statement was completed in the summer of 2011, and a final Environmental Impact Statement is anticipated for February 2013 with a Record of Decision the following month (http://www.blm.gov/nv/st/en/fo/lvfo/blm_information/nepa/sloan_hills_competitive.html).

Residents in several housing developments within five miles of the proposed pits are opposing the projects, which prompted Senator Harry Reid to propose the Sloan Hills Withdrawal Act in May 2010 to have the project site withdrawn for mining purposes. Senator Reid introduced the Act as Senate Bill 427 in March 2011, and it was "Referred to Committee" where it remained through the rest of the year. The proposed withdrawal of this site for mining purposes could cost the Federal Government up to \$11 million, mainly in the loss of mineral sales revenue (<http://www.gpo.gov/fdsys/pkg/CRPT-111srpt318/pdf/CRPT-111srpt318.pdf>).

An estimated 4.2 million tons of construction aggregate are estimated to have been produced in the Reno-Sparks-Carson City area in 2011, a decrease of about 12% from 2010. Crushed rock accounted for about 75% of the aggregate used in 2010 in the Reno-Sparks-Carson City area. Lightweight aggregate, an important component of crushed rock production in the area, was produced by CEMEX, Rilite, and Basalite.

Production by Granite Construction, which was over one million tons of aggregate in 2007 and fell below that in 2008, was below 500,000 tons in 2010 and 2011. Granite Construction operates several pits in the area, but the bulk of the company's production was crushed andesite and crushed granitic rock from its Lockwood pit.

Of the two pits operated by Martin Marietta Materials, Inc., the Mustang Pit was temporarily shut down in 2010 and 2011, and the Spanish Springs Quarry production was above 500,000 tons in 2011 after falling below that in 2010. Combined production

from these two pits was over 1 million tons in 2006, fell below that in 2007, but remained above 500,000 tons through 2009. The Spanish Springs (Rocky Ridge) Quarry north of Sparks produces crushed granitic rock and some decomposed granite.

The combined annual production from the two pits of A and K Earthmovers was more than one million tons in 2007, but fell below 500,000 tons in 2008. A and K Earthmovers temporarily shut down their Bella Vista Pit near Reno in December 2010 and sold some material from stockpiles in 2011. They reported no production from their Golden Valley pit.

The annual production from the pit of Rilite, Inc., was between 500,000 and 1,000,000 tons in 2007, but fell below 500,000 tons in 2008, and has remained below that level between 2008 and 2011.

The combined annual production from the two pits of CEMEX was between 500,000 and 1,000,000 tons in 2007, but fell below 500,000 tons in 2008, and except for 2010, has remained below that level between 2008 and 2011. CEMEX owns the former All-Lite Aggregate crushed rhyolite pit and also operates the sand and gravel operation at the Paiute pit, which is leased from the Pyramid Lake Paiute Tribe. In 2011, most of the production came from the Paiute pit. Production was minimal from the All-Lite Aggregate pit, but was expected to increase in 2012.

Sierra Nevada Construction, Inc. reopened and produced aggregate from their Mustang Pit in 2011 after it had been temporarily shut down in December 2010. Gopher Construction, Inc. temporarily shut down and did not produce from their Trico Pit in Storey County in 2011.

Cinderlite Trucking, Inc. produced a small amount of decorative rock, and sand and cinder for de-icing, from their Black and Red Cinder pits northeast of Carson City.

After receiving an Environmental Assessment and Finding of No Significant Impact in 2010 from the BLM for their proposed Tracy Pond Project about 15 miles east of Reno, Western Nevada Materials sold their pit on private land. The proposed project was to expand their existing aggregate operations on private land by obtaining acceptance and approval for a competitive material sale contract on public land in sections 22 and 27, T20N, R22E, for production of up to 83 million tons of aggregate over 30 years.

About 2.4 million tons of aggregate were produced outside of the major metropolitan areas in Nevada in 2011, which was an increase of 19% from 2010. Together, operators in Nye County produced almost 485,000 tons in 2011, mostly in the Pahrump area. Elko County produced over 333,000 tons, and Douglas County produced over 329,000 tons.

Churchill County produced almost 244,000 tons. Lyon County produced over 181,000 tons, and Lander and Humboldt Counties each produced a little over 100,000 tons. The remaining counties each produced less than 100,000 tons of aggregate in 2011.

David Gibson proposed to expand the Gibson Road gravel pit from the authorized 5 acres to 15 acres. The pit is located in northwest quarter, sec. 19, T10N, R62E in White Pine County. The present pit has produced 14,000 cubic yards since 2006. The expansion will provide for the mining of another 200,000 cubic yards – 150,000 cubic yards for ON Line Transmission Project and 50,000 cubic yards for local use. The BLM issued a Preliminary Environmental Assessment in May 2011.

Barite

According to the USGS, domestic production of barite decreased 3% to an estimated 705,000 tons of barite valued at about \$40 million in 2011. This is down slightly from 730,000 tons in 2010, which was the highest production since 763,000 tons was produced in 1997. Most of this production comes from Nevada and the remainder comes from a mine in Georgia. Estimated apparent consumption increased 2% to 3 million tons. About 95% of the barite sold in the United States is used as a weighting agent for drilling. Imported barite, mostly from China and some from India, increased 4% to about 2.4 million tons. It was mostly imported into the Gulf Coast for use in oil and gas drilling offshore in the Gulf of Mexico and onshore drilling in Louisiana, Oklahoma, and Texas. The estimated average price of barite in 2011 remained high, increasing 8% to \$55.34 per ton from the mine according to the USGS.

According to Baker Hughes, the average weekly domestic oil and gas drill rig count increased by 29% to 1,878 in 2011, and the Canadian rig count increased 33% to 419. The rig count in the United States continued a general increase started in early June 2009 and increased 19% from 1,700 during the first week of 2011 to 2,026 during the first week in November. The count dipped to 1,987 the first week of December and ended the year at 2,007. The Canadian rig count increased from 228 to 628 from the end of 2010 to early March, decreased to 123 by early May, increased again to 515 by early September, varied between 476 and 541 until mid-December, and then dropped to 221 at the end of 2011. Of the U. S. rig count, the number for drilling gas wells varied between 802 and 936 and averaged 886 throughout 2011. However, the number for drilling oil wells increased steadily from 777 at the beginning of the year to 1,201 by late December before ending the year at 1,193

http://investor.shareholder.com/bhi/rig_counts/rc_in dex.cfm?showpage=na).

According to data from the Nevada Division of Minerals, Nevada's barite production comes from four operations, three of which were actively mining in 2011. Production increased 6% to 697,944 tons shipped in 2011. This is considerably more than the recent low of 377,000 tons produced in 2002, and the highest since 1,765,000 tons were produced in 1982. According to the USGS, shipments of ground barite from Nevada mostly went to Colorado, New Mexico, North Dakota, Utah, and Wyoming gas drilling customers. According to the Nevada Department of Taxation, the gross proceeds reported for 2011 were \$59,481,286, an increase of 21% from \$49,308,940 in 2010.

M-I SWACO was the largest Nevada barite producer in 2011. Their production decreased 6% to 294,961 tons shipped in 2011 of crude and ground barite from the Greystone Mine and Battle Mountain plant, both in Lander County. A small amount of barite was also taken from old stockpiles in the nearby Mountain Springs Mine for blending at the plant. The barite of the Greystone Mine is in black chert and minor argillite and shale of the Middle to Late Devonian Slaven Chert. M-I SWACO is owned by Schlumberger, Ltd.

Baroid Drilling Fluids, a subsidiary of Halliburton Co., was the second largest producer in Nevada. Their production increased 16% to 201,456 tons shipped in 2011. The company mined barite from the Rossi Mine in Elko County and processed it at the Dunphy Mill in Eureka County. Heemskirk Canada, Ltd., a Canadian industrial minerals concern, acquired crude barite from the Rossi Mine and shipped it from Dunphy to their Lethbridge, Alberta, processing plant. The barite was then supplied to the western Canadian drilling mud market. The barite occurs in chert of the Ordovician Vinini Formation.

Baker Hughes Oilfield Operations, Inc., formerly Baker Hughes Drilling Fluids, shipped 113,869 tons of barite from its Argenta operation near Battle Mountain in Lander County in 2011, an increase of 20% from 2010. This was the highest level of production since 131,451 tons was produced in 1996. The barite deposits are in black chert and minor argillite and shale of the Middle to Late Devonian Slaven Chert in the upper plate of the Roberts Mountain thrust.

National Oilwell Varco shipped 87,660 tons of barite previously concentrated at the Big Ledge Mine and the adjacent Dry Creek Jig Plant, an increase of 18% from 2010. The mine was temporarily shut down December 15, 2009, but was expected to resume production in 2012. The barite occurs in argillite and chert of the Ordovician Valmy Formation.

In 2009, Baker Hughes signed an agreement with Bravo Venture Group, Inc., whereby Baker Hughes can acquire 100% of any barite ore at Bravo's Shoshone Pediment Gold Project. Bravo is a spin-off of Bravada Gold Corp. of Vancouver, BC. Baker Hughes will make annual payments of \$25,000 to Bravo and cover the claim maintenance fees; the company can exercise the option by paying Bravo \$150,000 any time during the six-year option period. Also, Bravo would receive a split of any samples Baker Hughes drilled. In 2011, Baker Hughes continued to evaluate the property and planned a delineation drilling project for 2012 (<http://www.bravadagold.com/en/news/37/bravada-outlines-2012-exploration-and-development-plans.php>). The barite on the property is located in Sec. 24, T31N, R46E, and generally occurs interbedded with siltstone and black chert in the Devonian Slaven Chert. It was earlier claimed in 1953, later owned by Milchem, Inc., and explored and developed in the past through drilling, trenching, and a small open pit (NBMG Bulletin 98).

In 2011, Halliburton staked new claims in four areas containing barite deposits. Halliburton staked 13 new claims adjacent to 29 others they owned as part of their REG claim group in sections 2, 3, and 11, T30N, R46E and sections 34 and 35, T31N, R46E in the Bateman Canyon Mining District, Lander County. These claims are in the area of the Pleasant View Mine, which consisted of four pits and produced over 100,000 tons of barite prior to 1979. The barite is bedded and up to 10 feet thick in Devonian Slaven Chert. Halliburton staked eight claims (Tom claims) in section 32, T21N, R42E, in the Ravenswood Mining District, Lander County. The claims are in the area of the old Allen Barite Mine, which included two large pits (one 100 feet by 500 feet and the other 50 feet by 150 feet) and several small pits. Over 100,000 tons of barite were mined from there between 1975 and 1984. Barite occurs as laminations to thin beds in chert and shale of the Ordovician Valmy Formation. Halliburton staked 12 claims (Ventura claims) in section 23, T22N, R44E, in the Iowa Canyon Mining District, Lander County. The claims are in the area of the old Bird Mine, from which over 1,000 tons of barite were mined from a 200-foot by 300-foot shallow pit between 1979 and 1980. Barite occurs in two units in shale, chert, and limestone of the Ordovician Valmy Formation. Halliburton staked 38 claims (Chris claims) in sections 3 and 4, T12N, R46E and sections 27, 33, and 34, T13N, R47E, in the Northumberland Mining District, Nye County. The claims are in the area of the Chris deposit, which underwent periods of trenching and drilling prior to 1981. The claims are also adjacent to claims held by Baker Hughes and Barium, Inc., of Payette, Idaho. Barite occurs with chert, claystone, and mudstone of apparent Devonian age (BLM LR2000; NBMG Bulletin 98; Mine Inspector's Lists, 1975-1985).

Cement

According to the USGS, domestic cement production increased 2% to an estimated 74.6 million tons with a sales value of \$6.6 billion in 2011. Apparent consumption increased 2% to an estimated 79.7 million tons in 2011 with the difference between production and consumption being made up by imports mainly from Canada, China, South Korea, and Mexico. Apparent consumption had peaked at 141.4 million tons at 2005. The average mill price decreased 1% to \$82.60 per ton in 2011. The price ranged between \$68.04 and \$72.12 per ton between 1998 and 2004 but then increased 23% to \$94.35 by 2007. It has dropped each year since then. The drop in consumption is largely due to the severe decline in the housing market, which started in 2006, spread into the commercial and government sectors in 2008, and continued into 2011. Production picked up modestly after the first quarter of 2010, and that increase extended into 2011. From 2008 through 2011, seven plants have closed, nine have been indefinitely idled, and most multi-kiln plants were operating only one kiln. Only one new plant opened in 2011.

In 2010, plant-level reporting of carbon dioxide emissions to the Environmental Protection Agency (EPA) became mandatory. The overall industry strategy was to reduce emissions per ton of cement product rather than by plant, and was in part being addressed by the installation of more energy-efficient kilns, the partial use of noncarbonated sources of calcium oxide, and the partial substitution of supplementary cementitious materials such as pozzolan. In 2009, the acceptable emissions level was lowered for mercury and some other pollutants from cement plants, and after some revisions, rules were finalized by the EPA in 2010. Some plants may not be able to comply with the new limits, and the new mercury standards will make it difficult for plants to continue to burn fly ash for the production of clinker. The cement industry was appealing these new standards in 2011.

The only cement producer in Nevada is Nevada Cement Co. (a subsidiary of Eagle Materials, Inc. of Dallas, Texas), which has a plant in Fernley, Lyon County. Production is confidential, but in 2011, the plant, which was built in 1964, had a rated annual clinker capacity of 505,000 tons and a capacity to produce 560,000 tons of cement. The company website reported over 500,000 tons of cement were produced annually. Also, according to the Nevada Department of Taxation, the gross proceeds reported for 2011 were for \$1,997,591 for limestone, \$3,206,501 for the limestone mine and cement plant, and \$345,026 for clay at Flanagan.

The plant produces Type I/II, low alkali, moderate sulfate-resistant cement; Type II/V, low alkali, high sulfate-resistant cement; IP portland-pozzolan moderate sulfate resistant cement; and Class N Pozzolan (<http://www.nevadacement.com>). The cement is manufactured from limestone mined from two areas, and from other raw materials that come from northern Nevada and elsewhere. Most of the limestone comes from Tertiary lacustrine limestone deposits mined a few miles south of Fernley. Small amounts of marble are also mined from Triassic or Jurassic limestone and marble deposits in the Trinity Range about 40 miles east of the plant.

Nevada Cement serves markets in northern Nevada and California, where they have a rail terminal in Sacramento. Both markets were particularly hard hit by the housing slowdown. Though production from the Fernley facility is confidential, it likely follows the overall trend of the parent company. Eagle Materials reported their overall cement sales volume and overall cement sales revenue were up 7% and 8% respective in 2011. Their average price increased 1% to \$89.60 per ton in 2011. Eagle Materials had planned to expand the Fernley facility, but based on the economic impact of new environmental regulations and the "challenging" markets conditions of northern Nevada and northern California, those plans were shelved in 2011 (<http://www.sec.gov>).

Infrastructure Materials Corporation of Reno, Nevada, staked a large number of claims in 2009, and owns 12 projects for cement grade limestone in Nevada. The company dropped 118 of these claims in 2011. These projects were summarized in NBMG MI2009. In early 2010, Railroad Industries, Inc. prepared a report for Infrastructure Materials, titled *Nevada Cement Study Update*. Because of transportation costs and competitiveness issues of cement and aggregate materials, the report states the typical cement facility serves a market that a truck can reach within a 200-mile radius. The report uses the conservative forecast that full recovery to the peak demand for cement, which was reached in 2006, will take until between 2022 and 2025, and that it takes 8 to 10 years to develop cement facilities. Therefore, the facilities would be coming on line as the demand for cement was recovering to pre-recession levels. The report looked at the potential markets for two projects: Blue Nose in Lincoln County and Morgan Hill in Elko County. Blue Nose appeared to have the higher potential of these two prospects and exploration has been concentrated.

The Blue Nose Claim Group consists of 255 claims located in T8S, R68-69E along the south edge of the Clover Mountains about 25 miles southeast of Caliente, Nevada. The facility would be located adjacent to the Union Pacific Railroad at Lyman's Crossing, Nevada, and could easily serve

the markets in the Las Vegas, Nevada, northwestern Arizona and southeastern California areas. Interstate 15 and connecting rail lines also provide access to markets farther afield in southern Utah; Phoenix and other areas of northern Arizona; and Los Angeles, Bakersfield, and Riverside as well as being exported from ports in California.

The Blue Nose Claim Group covers limestone of the Mississippian Monte Cristo Formation. The property was surface mapped, sampled, and drilled. In a 43-101 technical report released in January and revised in June 2011, results from mapping and 63 holes drilled in 2009 and 2010 defined several limestone units referred from bottom to top as the Lower White limestone, the Blue Nose unit, the Blue limestone, and the Upper Gray limestone. The Lower White limestone contains relatively high-grade calcium oxide and is over 600 feet thick. The low (<5%) MgO resource was estimated to be 227.7 million indicated tons and 30.4 million inferred tons, and the high MgO resource was estimated to be 16.6 million indicated tons and 2.1 million inferred tons. During the next fiscal year, the Company intends to conduct further exploration and development of the prospect (<http://www.sedar.com>).

In 2011, Chaparral Limestone and Cement of Provo, Utah, staked 25 lode and 6 association placer claims in T15S, R67E in the Moapa District in Clark County (LR2000). The claims are in part underlain by limestone, dolomite, sandstone, and gypsum of the Permian Toroweap and Kaibab Formations, Triassic Moenkopi and Chinle Formations, and Tertiary Horse Creek and Muddy Creek Formation (NBMG Bulletin 62). The Company staked the claims to include the quarry on SR-167 near the I-15 Moapa Valley exit and attempted to acquire the old Royal Cement plant north of Logandale. However, problems with the plant hindered negotiations and acquisition attempts were dropped. The Royal Cement plant is now reportedly being dismantled. The company expects to open a new state-of-the-art cement powder plant in the next 5 years, but is also interested in forming a joint venture for the project. The facility would serve the Las Vegas market (<http://mvprogress.com/2012/06/06/company-looks-at-building-cement-plant-in-m-v/>).

Clay

According to the USGS, domestic clay production increased 1% to an estimated 25.9 million tons with a sales value of \$1.56 billion in 2011. The USGS divides output into: ball clay, bentonite, common clay, fire clay, fuller's earth, and kaolin. Nevada was never a large clay producer and the state's 2011 clay production only accounts for 0.1% of that of the nation. According to data from

the Nevada Division of Minerals, Nevada clay production was an estimated 25,000 tons in 2010, an increase of 12% from 22,000 tons in 2009. This production does not include halloysite clay mined in Washoe County for Nevada Cement. According to the Nevada Department of Taxation, the gross proceeds reported for clay in 2011 were \$6,058,597.

In 2011, IMV Nevada, owned by Mud Camp Mining Company, LLC produced about 20,300 tons of sepiolite, saponite, and bentonite from deposits in the Ash Meadows-Armargosa Flat area of Nye County. This is a 2% increase from 20,000 tons produced in 2010. The clay occurs in shallow, flat-lying deposits in Pliocene lacustrine rocks. It is processed at a plant in Armargosa Valley, and clay products are exported worldwide. The sepiolite and saponite deposits have unusual geology; they 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. IMV Nevada is the only commercial producer of sepiolite and saponite in North America.

Two companies mine and ship relatively minor amounts of Nevada clay from several sites for use in high-value specialty products. At its White Caps Mill near Beatty in Nye County, Vanderbilt Minerals Co. processes small amounts of clay stockpiled from several deposits in Nevada, Arizona, and California. In 2011, the company did not actively mine but did ship smectite from the New Discovery Mine just south of Beatty, the Blanco Mine about 40 miles west-southwest of Tonopah in the Coaldale Mining District in Esmeralda County, and the Buff and Satin Mines about 10 miles northeast of Lovelock in the Willard Mining District of Pershing County.

The American Colloid Co. mined about 2,000 tons of calcium bentonite from its Nassau property in Coal Canyon in the Willard Mining District for use in specialty clay products. The clay is in altered rhyolite tuff-breccia of probable Miocene-Pliocene age. American Colloid also mines several thousand tons of hectorite every few years from their Disaster Peak Mine in the Disaster Mining District about 30 miles west of McDermitt in Humboldt County. The hectorite is in moat deposits of the McDermitt Caldera. The Disaster Peak Mine did not produce in 2011 (Form 10-K, 2/29/2012).

The Art Wilson Company mined halloysite on an as-needed basis for the Nevada Cement Co., which owns the Flanagan pit in the Terraced Hills about 8 miles northwest of Pyramid Lake. Because of its high alumina content, it is used in the production of Portland cement at the Nevada Cement Co. plant at Fernley.

Specialty Clays Corp. of Reno began efforts to restart a stalled project to mine a deposit of sodium bentonite in T18N, R30E, sections 23 through 26 and 36 and T18N, R31E, sections 18 and 19 in the Lahontan Mountains. A pilot mining project ran from 2001 through 2003 and then stalled. In 2010, a group of 10 investors reorganized the company and approved the staking of lode claims in 2012. Granite Construction was contracted to do the surface mining. No mill is planned, and the bulk sodium bentonite would be hauled to railcars. The project will require a haul road and needs BLM approval (John Seelmeyer, 6/25/2012, *Northern Nevada Business Weekly*). The area is largely underlain by Quaternary lacustrine clay, silt, and mud deposits and Tertiary claystone, tuffaceous siltstone and sandstone, and tuff (NBMG Map 168).

Between 2004 and 2010, Altenberg Media International, Inc., through Window Peak Trace Minerals, sold some montmorillonite interbedded with silt high in humus and lignite from a quarry on the Robin Nos. 1 and 2 claims (owned by Robins 1 and 2 LLC) in the Panaca mining district about 0.5 miles north of Panaca. No production occurred in 2011. The montmorillonite reportedly contains chelated trace minerals and is sold to producers of food supplements and agricultural soil supplements (<http://www.chelatedtraceminerals.com>). The deposit is in lake sediments of the Tertiary Panaca Formation (NBMG Bulletin 73).

Diatomite

The United States is the largest producer of diatomite worldwide. According to the USGS, the domestic production increased 1% to an estimated 661,000 tons of diatomite in 2011 valued at \$180 million. Production peaked at 881,000 tons in 2006, decreased to 634,000 tons in 2009, and then increased each year since then. Apparent consumption decreased 4% in 2011 to 540,000 tons, but exports increased 40% to 132,000 tons. Production was from seven companies with twelve mining areas and nine processing facilities in California, Nevada, Oregon, and Washington with California and Nevada accounting for most of it. Nevada's production is confidential, but according to the Nevada Department of Taxation, the gross proceeds reported for 2011 were \$38,782,406, a decrease of 55% from \$85,280,013 in 2010. About two-thirds of the diatomite produced in Nevada is used in filtration and the remainder is largely used in absorbents, fillers, and cement. Emerging small-scale uses include pharmaceutical processing and nontoxic insecticides.

The estimated average price at the plant decreased 0.3% to about \$273 per ton in 2011. The 2011 price is an estimate and subject to revision. Between 1990 and 2009, the average price ranged between \$200 and \$245 per ton and averaged about

\$224 per ton, but increased to \$271 in 2010. The world's two largest producers, both of which have operations in Nevada, announced price increases in 2010 that took effect on January 1, 2011. World Minerals, Inc., the world's largest diatomite producer and a subsidiary of Imerys, a large French industrial minerals company, announced price increases of 6% to 12% in North America due to large increases in energy, chemicals, packaging, and transportation costs (http://nonwovens.imerys.com/news/wm_price-increase2010.html). EP Minerals, LLC, a subsidiary of Eagle Picher Corp. and the world's second largest diatomite producer, announced global price increases of 4% to 7% due to cost increases related to regulation, mine development, soda ash, labor, and packing (EP Minerals, press release, November 15, 2010).

EP Minerals, LLC, produced most of Nevada's diatomite. EP Minerals' Colorado operation in Pershing County is the company's most productive Nevada operation. It consists of a plant at Lovelock that mostly makes filtration products from diatomite mined about 15 miles to the northwest in the Velvet Mining District. The diatomite occurs as thick lacustrine beds interbedded with tuffaceous sedimentary rocks of probable Miocene age. In 2011, EP Minerals staked 60 new placer claims in the Velvet District in the area of their Colorado deposit (LR2000). The company also produced diatomite used in fillers and absorbents at its Clark plant and mine in the Clark Mining District (Storey County) about 20 miles east of Reno and diatomite used in insulation from a pit near Hazen in Lyon County. The diatomite at Clark occurs with diatomaceous shale and thin beds of volcanic tuff within the Miocene-Pliocene Kate Peak Formation and consists of about 90% of the diatom *Melosira granulata*.

In 2011, the Celite Corp., a subsidiary of World Minerals Inc., operated a plant in Fernley that produced diatomite fillers and mined their Nightingale deposit north of Fireball Ridge in Churchill County. The diatomite is mainly used in functional fillers. The deposit is of Pliocene lacustrine diatomite interbedded with siliceous tuff and tuffaceous sedimentary rocks. Their Hazen Pit, which had been mined since 1950 and still has reserves, was placed on standby in 2010.

In 2011, the Moltan Company shipped absorbent products, cat litter, and soil conditioner under several labels from their mine and plant complex in Churchill County about 20 miles northeast of Fernley. In 2011, Moltan dropped 102 placer claims staked in 2006 around this operation (BLM LR2000). Diatomite deposits in western Churchill County are interbedded with Pliocene lacustrine tuffaceous shale, sandstone, limestone, and siliceous tuff.

The Grefco Minerals, Inc. diatomite operation near the Esmeralda/Mineral County line is

small relative to other Nevada diatomite companies but has been producing diatomite for many years for fillers. The deposit is in Miocene-Pliocene lacustrine sedimentary rocks consisting of diatomite, argillaceous and calcareous diatomite, clay, sand, and volcanic ash, and the main diatoms are *Melosira granulata*, *Stephanodiscus aslraea*, and *Eunotia robusta*. Since 2004, production has been from stockpiled ore. In 2011, stripping of overburden was done.

Global Silica, LLC, of Las Vegas, Nevada, owns claims in the Monte Cristo Range in northern Esmeralda County where it plans to mine diatomite in section 26, T4N, R37E and process and sell it as amorphous silica. In 2011, the NDOM processed new notice-level bonds and a bond increase for Global Silica (NDOM Activity and Achievements, February 2012), and the BLM worked on a draft environmental assessment (http://www.blm.gov/pgdata/etc/medialib/blm/nv/resources/racs/moso_rac.Par.19904.File.dat/BMDO.DM.Report.July2011.pdf).

In 2011, EP Minerals staked 12 placer claims in sections 29 and 30, T16N, R29E in the Russell Spit area about 18 miles south of Fallon (BLM LR2000). The area is partially underlain by the Pliocene Truckee Formation, which here consists of diatomite, silicic tuff, and tuffaceous shale and sandstone (USGS Professional Paper 401). On August 2, 2011, Golden Gate Capital of San Francisco, CA, acquired EP Minerals through their purchase of EP Management Corp. (Golden Gate Capital, press release, August 2, 2011).

Dimension Stone and Landscape Rock

According to the USGS, the estimated domestic production decreased 2% in 2011 to 1.81 million tons, with its value decreasing 1% to \$321 million.

Mt. Moriah Stone Quarries, LLC, quarried flaggy quartzite of several colors from the Cambrian Prospect Mountain Quartzite at a quarry about 15 miles north of Baker in White Pine County. This material, which naturally splits into large slabs, is used for flagstone, ashlar (uncut facing stone), and other types of uncut building stone. The operation was temporarily shut down on November 30, 2011, with plans to reopen in April 1, 2012.

Las Vegas Rock produced cut decorative slabs, flagstone, ashlar, boulders, and crushed landscape rock from its Rainbow Quarries near Goodsprings, about 32 miles southwest of Las Vegas at the base of Mount Potosi. The operation consists of a main quarry and a number of satellite quarries located according to the color of the stone. The stone is mined from the Jurassic Aztec Sandstone, and technical data including hardness,

strength, and composition are available on Las Vegas Rock's website <http://www.vegasrock.com>.

In 2010, D and H Mining leased their pits, located about 5 miles north of Beatty, to Kalamazoo Materials, Inc. of Tucson, Arizona. Kalamazoo Materials referred to these pits as the Beatty Quarry and mined crushed stone for landscaping. These pits are in Pliocene tuff, which in the past, D and H Mining mined and sold the rock under the name of "Spicerite" (strong, bright white, hydrothermally altered tuff used to make brick and blocks).

Gemstones

Precious opal is produced from several mines in the Virgin Valley area of northern Humboldt County. Virgin Valley is a well-known source of gemstones in North America. The best known mines there are the Royal Peacock, Rainbow Ridge, and Bonanza Mines. In 2011, these three mines combined produced from pay-to-dig operations. The opal occurs in lacustrine sedimentary rock, volcanic ash and tuff, and bentonite of the Miocene Virgin Valley Beds of Merriam. According to the Nevada Department of Taxation, the gross proceeds reported for opal in 2011 were \$150,823, a decrease of 23% from 2010.

In 2011, turquoise was produced from the Damele Mine in Lander County. The Department of Taxation reported gross proceeds of \$10,152 for this mine. The turquoise occurs mainly in argillized zones in shale of the Ordovician Vinini Formation.

The Royston claims in the Royston District of Nye County produced a little turquoise in 2011, but the Blue Ridge Mine in the Bullion District of Lander County did not produce. Both operations are family owned. In the Royston District, turquoise mainly occurs in chert, quartzite, and greenstone of the Permian(?) Pablo Formation. In the Bullion District, turquoise mainly occurs in siliceous shale, chert, and quartzite of the Ordovician Valmy Formation and in the Devonian Slaven Chert.

Gypsum

According to the USGS, domestic crude gypsum production increased 6% to an estimated 10.4 million tons valued at \$65.9 million, and apparent consumption increased 4% to 25.8 million tons in 2011. Apparent consumption in 2011 was still down 44% from its peak of 45.9 million tons in 2006, largely due to the collapse of the housing-construction market. Aside from the market collapse, production of crude gypsum has been offset by production of synthetic gypsum. Synthetic gypsum, another factor in decreasing production of crude gypsum, is largely produced through scrubbed emissions from coal-fired power plants. Except for a

decrease in 2009, the production of synthetic gypsum has increased every year since 2003 and surpassed the production of crude gypsum for the first time in 2010. The production of synthetic gypsum increased 3% to 12.1 million tons in 2011. The difference between production and consumption was mostly made up with imports mainly from Canada and some from Mexico and Spain, which decreased 1% to 3.6 million tons in 2011. In 2011, the price of crude gypsum increased 1% to \$6.35 per ton from the mine. For the previous 20 years, the price has ranged between \$6.08 and \$8.01 per ton and averaged \$6.68 per ton.

In 2011, Nevada ranked fourth in the list of five states which produce 58% of the country's total production. According to data from the Nevada Division of Minerals, Nevada's gypsum production decreased 5% to an estimated 1.01 million tons, which is the eight consecutive annual decline. According to the Nevada Department of Taxation, the gross proceeds reported for gypsum in 2011 were \$12,685,182, an increase of 8% from 2010.

PABCO Gypsum in Clark County northeast of Las Vegas was the largest Nevada producer in 2011. Production increased 4% to 710,033 tons in 2011. This was the first annual increase since production peaked at 1.688 million tons in 2005. Production was still 58% below the 2005 peak. PABCO Gypsum processes the gypsum into wallboard at a plant adjacent to their mining operation. Processing yields about 70% by weight gypsum from the ore, which is in a nearly flat-lying late Miocene gypsum blanket atop a 5-square-mile mesa. Drilling indicates the gypsum is at least 120 feet thick in the area of current mining.

Material from two smaller operations is used in cement and agricultural applications. The Art Wilson Company of Carson City produced 238,802 tons of gypsum and anhydrite from the Adams Mine in Lyon County, a 61% increase in 2011. The Adams deposit is a folded body associated with limestone in Triassic metavolcanic rocks. The Pioneer Gypsum Mining Company produced 61,345 tons of gypsum from the Pioneer Mine about 10 miles east of Las Vegas, a 3% decrease in 2011. The Pioneer Mine exploits the same late Miocene gypsum deposit as the PABCO operation about 5 mi to the north.

Georgia-Pacific Gypsum, LLC, operates a plant at Apex using synthetic gypsum and crude gypsum imported from St. George, Utah, for the production of drywall and related products. Nevada Cogeneration Associates No. 1 has an 85 MW combined cycle natural gas power plant adjacent to the gypsum plant. The power plant produces electricity for sale on the power grid and provides thermal energy and chilled water to the gypsum plant for wallboard production. Georgia-Pacific

Gypsum, LLC, also own the Weiser Ridge quarry about 10 miles west of Overton. They have not actively mined the quarry since 1995 but are planning to resume mining to provide crude gypsum for their Apex plant. The quarry is in gypsum interbedded with limestone of the Permian Toroweap and Kaibab Formations.

USG, the nation's largest wallboard producer, was the second largest Nevada producer in 2010. Because of the collapse in construction, USG shut down and placed their Empire Quarry on "indefinite idling" on January 30, 2011. The operation could be restarted if the economy improved and construction picked up (SEC, 10-K, 2/11/2012;

<http://www.rgj.com/article/20101202/NEWS/10120247>).

Iron Oxide

The USGS reports iron ore that is not used in general iron and steel production as iron oxide pigments (IOP). This includes use in concrete and other construction materials (57%), coatings and paint (29%), foundry uses (6%), animal food (2%), magnetic tapes (2%), and other uses (2%). However, apparent consumption of combined naturally and synthetically produced IOP was an estimated 220,000 tons in 2011, an increase of 2% from 2010. About 80% of IOP consumed was imported. Nevada's production of IOP was not reported but two companies sold iron oxide from stockpiles in 2011. According to the Nevada Department of Taxation, the reported gross proceeds for IOP, which was reported as iron ore, was \$773,510 in 2011, a decline of 7% from 2010.

In 2011, the Saga Exploration Company shipped iron oxide from stockpiles at the old Nevada Barth Mine in Eureka County. The iron ore consists mostly of hematite and some magnetite, and is used in the manufacture of cement by the Nevada Cement Company in Fernley. The American Smelting and Refining Company leased the property from the Central Pacific Railroad Company and mined 544,295 tons of iron ore between 1903 and 1918 for use as flux in their lead smelter in Salt Lake City. Lessees continued to work the property off and on afterwards with some mining in the 1960s and 1970s. Saga Exploration has shipped iron ore from stockpiles since 1993. The Nevada Department of Taxation reported gross proceeds of \$768,400 in 2011, a decline of 6% from 2010.

In 2011, Standard Industrial Minerals, Inc., of Bishop, California, sold several hundred tons of iron oxide from stock piles at the Wabuska Iron Mine (the old Minnesota Mine). The material was sold to a company for used as an additive in agricultural products. The iron oxide is magnetite that replaced

dolomitized limestone of the carbonate member of the Triassic Oreana Peak Formation.

Lime, Limestone, and Dolomite

According to the USGS, domestic production of quicklime and hydrate increased 5% to 21.3 million tons valued at \$2.2 billion in 2011. Apparent consumption increased 6% to 21.6 million tons in 2011. In 2011, the average price at the plant increased 9% to \$102 per ton for quicklime and increased 5% to \$119 per ton for hydrate. Nevada's production is confidential, but it was one of seven states producing more than 1 million tons in 2011. Three of those states produced more than 2 million tons. Except for 2009, Nevada had been on the list of states producing more than 1 million tons from 2002 to 2011. Nevada has two large lime producers and several small specialty dolomite and limestone producers. According to the Nevada Department of Taxation, the reported gross proceeds for these producers were \$31,276,598 in 2011, an increase of 33% from 2010.

Nevada's larger lime producer, the Pilot Peak high-calcium lime operation of Graymont Western US, Inc. (formerly Continental Lime, Inc.) is in Proctor Mining District in the Toano Range about 10 miles northwest of Wendover in Elko County. The 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. Pilot Peak mainly markets lime to gold-mining operations for use in cyanide-solution pH control. Gross proceeds for Pilot Peak reported to the Nevada Department of Taxation decreased 4% to \$15,540,041. Production is mainly from the middle to late Devonian Devils Gate Limestone.

Nevada's other lime producer, Lhoist North America (formerly Chemical Lime Co.) produces lime at Apex in the Apex Mining District about 20 miles northeast of Las Vegas. The operation makes high-calcium quicklime used in metallurgical processing, paper manufacturing, and environmental markets. The company also produces dolomitic lime and hydrated high calcium lime at Apex, mainly for construction uses. The company's Henderson plant processes Type S hydrated dolomitic lime for building and home construction. In addition to lime, Chemical Lime also shipped crushed limestone. Production is confidential, but the gross proceeds reported to the Nevada Department of Taxation increased 1% to \$10,090,200 in 2011. Production is from the Middle to Late Devonian Sultan Limestone.

Of Nevada's specialty dolomite and limestone producers, the Nutritional Additives Corp. produces agricultural and nutritional dolomite products along the northwest edge of the Sonoma Range about five miles south of Winnemucca.

Production is from the Late Triassic Dun Glen Formation, which consists mainly of massive black dolomite with minor limestone and shale in its lower section. Min-Ad, Inc. a subsidiary of Inter-Rock Minerals Inc. of Toronto, Canada, also produced dolomite from the Dun Glen Formation about three miles south of the Nutritional Additives Corp. operation. Their dolomite is mostly sold for use in beef and dairy feed. Along with gypsum and anhydrite, the Art Wilson Company of Carson City also produced some pure calcitic limestone from the Adams Mine. The limestone is used for soil pH control and reportedly contains no detectable magnesium.

In 2011, Sierra Lime LLC of El Paso, Texas, staked 28 lode claims in sections 1 and 12, T31N, R39E, and sections 6 and 7, T31N, R40E in the Tobin and Sonoma Range District, Pershing County (BLM LR2000). The area is mostly underlain by thickly-bedded to massive limestone and dolomite of the Middle Triassic Augusta Mountain and Cane Spring Formations.

Lithium

According to the USGS, the estimated domestic consumption of lithium increased 50% to 2,200 tons in 2011. Estimated consumption averaged 3,100 tons in the late 1990s to 2000, decreased rapidly to 1,200 tons in 2002, increased rapidly to 2,750 tons in 2005 and 2006, and then decreased every year to 1,100 tons by 2010. Nevada accounts for all of the domestic production of lithium. The Nevada Department of Taxation reported the gross proceeds from lithium decreased 30% to \$10.2 million in 2011 from \$14.5 million in 2010.

Subsurface brines have become the dominant raw material for lithium carbonate production worldwide because of low production costs as compared with the mining and processing costs for hard-rock ores. The Silver Peak operation in Esmeralda County, which was started by Cyprus Mines in 1966, was the first to extract lithium as the sole commercial product from brine. This operation was the world's dominant lithium producer until the late 1980s, when it was overtaken by a Chilean lithium brine operation. U.S. lithium imports increased 48% in 2011, while U.S. lithium exports decreased 15% to 1,323 tons. Global production increased 44% between 2009 and 2011 to 37,000 tons. Most of the increase was due to lithium-based rechargeable battery sales, which accounted for 22% of the global lithium market (*Lithium Special 2012: Lithium demand and supply trends to 2020*, in *Industrial Minerals*, March 20, 2012). The price for lithium carbonate delivered in the United States was \$2.30-2.40 per pound throughout 2010 and 2011, a

drop of about 19% from \$2.80–3.00 per pound throughout 2008 and 2009 (*Industrial Minerals*).

Chemetall Foote Co., a subsidiary of Chemetall GmbH and its parent company, Rockwood Holdings, Inc., owns and operates the Silver Peak lithium facility. The company produces lithium carbonate, lithium hydroxide monohydrate, and lithium hydroxide anhydrite. The lithium chemicals are produced by solar evaporation pre-concentration and subsequent refining techniques from brine that is pumped from beneath the playa in Clayton Valley. The brine varies between 100 and 300 ppm lithium. Production figures are confidential; the most recent public information, from 1998 Securities and Exchange Commission data, showed production of about 12 million pounds of lithium carbonate and 5 million pounds of lithium hydroxide. *Industrial Minerals* (July 2008) reported the remaining economic reserves to be about 44,000 tons. Through its subsidiary Sociedad Chilena de Lithio, Chemetall GmbH also runs a lithium operation in Antofagasta, Salar de Atacama, Chile.

In 2009, the U.S. Department of Energy (DOE) awarded to Chemetall Foote \$28.4 million in American Recovery and Reinvestment Act funds to expand and upgrade production of lithium materials for advanced transportation batteries. Part of those funds went to the expansion of lithium carbonate production at Silver Peak, which began in July 2010 and continued through 2011. The expansion will include a well drilling project to double production, and the installation of a geothermal power plant to make the operation self-sufficient for electrical power. Construction of the power plant will depend upon the viability of a geothermal source (<http://www.chemetalllithium.com>). On April 4, 2011, NDOM approved permits for Chemetall to drill nine thermal gradient holes up to 1,000 feet deep in sections 13, 23, 24, and 25, T2S, R39E for geothermal exploration.

In 2011, American Lithium Minerals, Inc., of Henderson, Nevada, staked 72 new lode claims and dropped one in their Borate Hills Project (BLM LR2000). The Borate Hills Project covers over 3,400 acres between 15 and 20 miles west-northwest of Silver Peak. It consists of three separate claim blocks: North Borate Hills and South Borate Hills in the northern Silver Peak Range in T1S, R37E and Fish Lake Deep on the east edge of Fish Lake Valley in T1S, R36E. In the 1980s, U.S. Borax drilled 57 holes up to 2,000 feet deep totaling 50,000 feet in the North Borate Hills and South Borate Hills areas. U.S. Borax identified a large deposit up to 1,300 feet thick ranking it as the second largest boron deposit in the country. Surface mineralization extends for at least 1.5 miles, and recent surface sampling at South Borate Hills assayed over 1% boron and up to 2,750 ppm lithium. The boron and lithium

mineralization is contained in a strata-bound formation consisting of a claystone unit and a unit of volcanic tuff lacking clay.

In early 2011, American Lithium Minerals announced the results of drilling 15 reverse circulation holes (12,000 feet total) starting in November 2010 in the South Borate Hills area. Seven of the holes had two intercepts, six had one intercept, and two were step-outs with weak mineralization. Of the seven with two intercepts, the upper intercept varied between 35 feet and 150 feet of 1,038 ppm to 2,285 ppm lithium and 0.6% to 1.4% boron, and the lower intercept varied between 70 feet and 270 feet of 1,206 ppm to 1,619 ppm lithium and slightly anomalous to 1.4% boron. The six drill holes with one intercept varied between 120 feet and 175 feet of 1,345 ppm to 2,021 ppm lithium and 0.6% to 1% boron (<http://www.investorpoint.com/stock/amlm-American%20Lithium%20Minerals%20Inc./news/39282845>).

In 2011, AmeriLithium Corp. of Henderson, Nevada, completed three holes in a planned eight-hole drilling program on their Paymaster Canyon Project. The Paymaster Canyon Project consists of 78 placer claims covering 5,880 acres in Paymaster Canyon just northeast of Clayton Valley in the eastern portions of T1N, R40E and T1S, R40E (<http://www.amerilithium.com>; <http://lithiuminvestingnews.com/5947/lithium-exploration-nevada-australia-amerilithium/>).

In 2011, AmeriLithium acquired the Jackson Wash property, which consists of 65 placer claims covering about 2,450 acres in the eastern portion of T4S, R41E and the western portion of T4S, R42E west of the Goldfield Hills. The property covers a gravity low, and six obsidian samples from the property averaged 107.6 ppm lithium (<http://www.amerilithium.com>; <http://lithiuminvestingnews.com/5947/lithium-exploration-nevada-australia-amerilithium/>).

AmeriLithium also owns the Clayton Deep and Full Monty projects and conducted gravity surveys conducted in 2010. It followed up with more detailed and focused controlled-source audio-frequency magneto-telluric (CSAMT/MT) surveys in 2011. The Clayton Deep project consists of 83 placer claims covering 6,640 acres, including the entire 2,200-acre southwest gravity low target area, less than 10 miles southwest of Silver Peak (near the common corners of T3-4S, R38-39E). The Full Monty Project consists of 66 placer claims covering 5,400 acres near the center of T5N, R41E in Smoky Valley about 25 miles north of Clayton Valley. (<http://lithiuminvestingnews.com/5947/lithium-exploration-nevada-australia-amerilithium/>).

In January 2011, Blue Lithium Energy, a subsidiary of Black Hawk, expanded their exploration budget, and company geologists recommended evaluating 10 sites on its Clayton

Valley property. The property contains the BMP claim group, which consists of 56 placer claims covering 1,120 acres in T1S, R40E in Clayton Valley just north of Chemetall Foote's Silver Peak operation (<http://black-hawk-exploration.com>). However, 55 of the claims were apparently dropped in 2011 according to BLM's LR2000 database.

In 2011, First Liberty Power, Inc. of Las Vegas, Nevada, completed a (CSAMT/MT) survey on its Lida Valley LVW placer claims group and was planning 3- to 5-hole drill program. The claim group covers 12,800 acres, which mainly covers the playa in Lida Valley (<http://www.thestreet.com/story/11105354/1/first-liberty-power-requests-estimate-for-drill-program-of-nevada-lithium-claims.html>; BLM LR2000).

In 2011, International Lithium Corp., was spun off from TNR Gold Corp. of Vancouver, Canada, and listed on the Vancouver Stock Exchange. International Lithium owns three lithium brine properties in Nevada: Fish Lake, Runway, and Sarcobatus Flats. The Fish Lake Project contains 48 placer claims covering 3,200 acres in portions of T1N, R36E and T1S, R36E in Fish Lake Valley, Esmeralda County, about 47 miles southwest of Tonopah. The U.S. Geological Survey sampled Fish Lake Valley in 1976 and found lithium brines on the surface. One sample was on the project site and contained 200 ppm lithium. The Runway project covers 7,200 acres located about 8 miles east-southeast of Tonopah near the Tonopah Airport in Ralston Valley, Nye County. The Sarcobatus Flats project consists of 105 placer claims covering 2,660 acres located about 66 miles south of Tonopah mostly in southwestern T8S, R44E in Sarcobatus Flat near Bonnie Claire, Nye County. A preliminary sampling program of surface sediments contained assays ranging between 210 and 340 ppm lithium. Drilling programs were being planned for all three properties for 2012 (<http://internationallithium.com>; <http://www.tnrgoldcorp.com>).

In 2009 and 2011, Lithium Corp. of Reno, Nevada, staked a large number of placer claims mostly over playas in three areas of interest designated the Cortez, Fish Lake Valley, Salt Wells and San Emidio properties.

The Cortez property originally covered 4,960 acres mostly within T25N, R47-48E in the Alkali Flat of Grass Valley in Lander County. In July 2011, Lithium Corp. drilled 3,355 feet in 29 holes with one brine sample taken from each hole. The average sampling depth was 98 feet. The drilling outlined a 0.7 by 1.5-mile brine anomaly. However, the lithium contents were low and in September, 2011, the company allowed all 62 placer claims to lapse (<http://internationallithium.com>; http://www.fags.org/sec-filings/120410/Lithium-Corp_10-K.A/; LR2000).

Fish Lake Valley property consists of 92 80-acre placer claims covering 7,360 acres mostly

within T1N-T1S, R36E, about 22 miles northwest of the Silver Peak Operation in Fish Lake Valley, Esmeralda County. Fish Lake Valley is a lithium-enriched playa. Lithium-enriched rhyolitic tuffs of the Tertiary Fish Lake Formation accumulated in a valley or basinal environment, and over time, interstitial formational waters that came in contact with these tuffs become enriched in lithium. In 2011, Lithium Corp. continued geophysical studies of the property. A near-surface brine sampling program was conducted during the spring of 2011, which outlined 1.3 by 2 mile boron/lithium/potassium anomaly. The anomaly contained a smaller higher grade core of lithium mineralization ranging between 100 to 150 mg/L, boron ranging between 1,500 to 2,670 mg/L, and potassium ranging between 5,400 and 8,400 mg/L. The start of a planned drilling program has been delayed until 2012. (<http://internationallithium.com>; http://www.fags.org/sec-filings/120410/Lithium-Corp_10-K.A/; BLM LR2000).

The Salt Wells property originally covered 12,320 acres mostly in T17N, R30-31E mainly within the Salt Wells Basin about 15 miles southeast of Fallon, Churchill County. The area was reduced to 6,400 acres by letting unnecessary claims lapse in 2010 and 2011. Early in 2011, the company discovered a lithium anomaly covering an area about 1.5 by 1.75 miles in the immediate subsurface. The lithium levels were modest but reached 38 mg/l. In August 2011, the company completed a detailed gravity survey over a four-square-mile area covering the anomaly, which was done to help delineate subsurface structures that may influence the development of a lithium brine-enriched reservoir. In October the company completed a drilling project, which involved drilling 3,437 feet across 31 sites. The deepest well went to 155 feet, and the sampling depth averaged 68 feet. Twenty-three samples encountered brine. During the project, temperature anomalies were also noted. Temperature anomalies may indicate nearby faults carrying geothermal fluids, which is considered to be a component needed for the formation of a Silver Peak type lithium-brine deposit (<http://internationallithium.com>; http://www.fags.org/sec-filings/120410/Lithium-Corp_10-K.A/; BLM LR2000).

The San Emidio Property was staked in September 2011 and consists of twenty 80-acre placer claims covering 1,600 acres in sections 5, 6, 7, 8, and 17, T29N, R23E in the San Emidio Desert, Washoe County, about 65 miles north-northeast of Reno. In the spring of 2011, the company conducted a near-surface brine sampling program. A 7-hole drilling program was approved for start-up in February 2012. The company delineated a narrow elongate shallow brine reservoir over 2.5 miles long adjacent to a basinal feature outlined by an earlier gravity survey. Two samples had values over 20

mg/L (<http://internationallithium.com>; http://www.faq.org/sec-filings/120410/Lithium-Corp_10-K.A/; BLM LR2000).

On May 31, 2011, New America Energy Corp. (previously Atheron, Inc.) entered into a property acquisition agreement with GeoXplor Corp. for unpatented claims in Clayton Valley for lithium exploration. The agreement was amended in October to also include a group called the Clayton Ridge or CR claims. In 2010, GeoXplor had run two lines of a gravity survey over the CR claims and generated Bouguer and modeled bedrock and elevation maps and modeled gravity and depth profiles. The CR group consists of fourteen 160-acre placer claims in sections 1, 12, and 13, T4S, R40E and in sections 6, 7, and 18, T4S, R40.5E about 13 miles southeast of Silver Peak, Esmeralda County. New America Energy also has the Mud Lake project which consists of twenty 160-acre placer claims acres in sections 28 through 32, T1N, R44E, at the north end of Mud Lake in Ralston Valley about 14 miles southeast of Tonopah, Nye County (<http://www.newamericaenergycorp.com>).

Rodinia Lithium of Toronto, Canada, owns the Clayton Valley Lithium Project, which consists of 1,012 claims (including the DB Placer and SP Placer Claim blocks) covering 72,340 acres in Clayton Valley immediately surrounding most of Chemetall Foote's Silver Peak operation. In 2011, the company reported a 460-foot intersection starting at a depth of 560 feet, that ranged between 5.4 and 27 mg/L and averaged 18 mg/L boron, ranged between 240 and 400 mg/l and averaged 285 mg/L lithium, ranged between 360 and 550 mg/L magnesium, and ranged between 3,500 and 7,000 mg/L and averaged 4,758 mg/L potassium. This intersection consists of mainly mixed clay, sand, and gravel with significant intersections of dense clay. The intersection also as has fluid flow rates averaging 57 gallons per minute. In 2011, the company was in the process of permitting a third round of exploration drilling in Clayton Valley (<http://www.rodinialithium.com>).

In 2011, Western Lithium USA Corp. continued with exploration, testing, and evaluation of the lithium resources on their Kings River Valley Project, Nevada. The property consists of 1,882 unpatented lode claims covering 37,641 acres mainly in the Disaster Mining District in northern Humboldt County. The company completed their 2010-2011 in-fill drilling program, which resulted in drilling about 120 new holes. A demonstration plant is planned for construction in 2012, and in August 2011, the company conducted bulk sampling of 110 tons of ore for the proposed plant. The company also staked 64 new lode claims in 2011. If all goes according to plan, Western Lithium proposes to have the deposits in production in 2015.

Western Lithium King's River Valley property is within the McDermitt Caldera, and covers several areas containing inferred uranium resources and

broader zones of uranium, molybdenum, and lithium mineralization. The lithium largely occurs in high-lithium clays with significant amounts of clay formed from the hydrothermal alteration of the volcanoclastic sedimentary rocks making up the moat deposits in the western part of the caldera. These lithium-bearing moat deposits extend north through the western Montana Mountains and Disaster Peak into Oregon. Significant lithium mineralization has been defined in five areas referred to as: PCD, South Lens, South Central Lens, North Central Lens, and North Lens by Chevron (who drilled the area in 1985) and Stages I through V respectively by Western Lithium. In each area, the high lithium clay occurs in thick, apparently continuous accumulations with the zones of mineralization varying between about 3 and 300 feet thick. As of December 14, 2011, the overall Kings Valley reserves with a 0.327% lithium cut-off grade were reported to be: proven 16.465 million tons of ore at 0.4% lithium, 3.85% potassium, and 1.37% sodium; probable 13.376 million tons of ore at 0.388% lithium, 3.93% potassium, and 1.36% sodium.

On December 14, 2011, the company announced the completion of a feasibility study. At full production, the estimated cost of production is \$878 per ton of lithium carbonate. The start-up capital is estimated to be \$248 million; the capital then needed to bring to full production is estimated to be \$161 million; and sustaining capital is estimated to be \$40 million. Also, the company will be using a process that has never been tried on a commercial scale before. The high-lithium clays will be combined with gypsum and dolomite and roasted to 1,000 degrees. The lithium can then be leached from the resulting material using water and combined with sodium carbonate to produce lithium carbonate (<http://www.westernlithium.com>).

Magnesia

According to USGS data, the estimated domestic production of magnesium compounds increased 11% to 300,000 tons in 2011. Production peaked at 443,000 tons in 1996 and then generally decreased 41% between 1997 and 2009. Production increased 14% between 2009 and 2011. About 57% of domestic magnesia production came from seawater and natural brines in 2011, and the rest was produced from mining magnesite and minor brucite (Nevada) and olivine (North Carolina and Washington). Apparent consumption increased 11% to 642,000 tons in 2011 with most of the difference between consumption and production being made up by imports, mostly from China. Consumption has averaged 668,000 tons for the 15 years prior to 2011. The average price for calcined magnesite delivered in the United States, which had risen from between \$225 and \$320 per ton in early 2009 to

between \$335 and \$435 per ton in September, 2010, remained stable throughout 2011. The 2009-2010 price increases were partly due to fluctuation in currency rates between the United States and China and a shortage of Chinese export licenses (*Industrial Minerals*).

Premier Chemicals, LLC, of Cleveland, Ohio, owns the Gabbs magnesite operation in Nye County, which is the only place in the country to mine magnesite. Magnesite and some brucite (<5%) have been mined at Gabbs since 1935, and in the 1940s were processed in Henderson, Nevada, to make magnesium metal. From the 1950s to the 1980s, mining and processing was 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 calcined) 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 increased steadily between 1996 and 2005, and has since leveled off. Production is confidential, but the plant capacity is rated at 150,000 tons per year. Also, Premier Chemicals reports their overall annual production is about 300,000 tons of oxide and slurry products from their mine at Gabbs and their seawater extraction plant at Port St. Joe, Florida. The Nevada Department of Taxation reported the 2011 gross proceeds at \$5,763,325, an increase of 3% from 2010. The magnesite and brucite occur as complex replacement bodies in Triassic dolomite in an area of about 1,300 acres in the Paradise Range, just east of the town of Gabbs. The resource was estimated to be about 64 million tons (*Magnesia Supplement, Industrial Minerals*, May 2010, p. 50-67) and is thought to be sufficient for more than 50 years of production at present mining rates.

Molycor Gold Corp. (named changed to Nevada Clean Magnesium, Inc., in 2012) of White Rock, Canada, owns the Tami-Mosi magnesium property in the western foothills of the Schell Creek Range between Tamberlain and Mosier Canyons about 6.5 miles southeast of Ely in White Pine County. The company has drilled 24 holes exploring for magnesium and gold. Early in 2011, the company conducted a surface mapping and channel sampling survey to explore the area north and east of the drill holes. In all, 55 samples were collected and analyzed, which indicated a mineralized zone in excess of 12% magnesium (<http://www.nevadacmi.com>).

On September 15, 2011, the company issued *Preliminary Economic and Technical Assessment Report of the Tami-Mosi Project*,

Nevada, prepared by Wardrop Engineering. The magnesium is in the Simonson Dolomite. The dolomite consistently grades between 9% and 13% magnesium. The dolomite is interpreted to cover 312.5 acres with an average thickness of 472 feet and a strike length of over 2.6 miles. The report notes an inferred resource of about 454 million tons of dolomite with an average grade of 12.3%. The dolomite has a high enough quality for potential use in the production of magnesium based refractories, magnesium metal, cement, and agricultural products. The ore would be mined from an open pit in a mountainside above the water table and would be hauled 130 miles north to a processing site at Wells next to Interstate 80, the railroad, and natural gas and electrical lines. The plant would process the ore into magnesium ingots using an updated and automated Bolzano Process. The ore would be mined at 880 tons per day over a mine life of 30 years (<http://www.nevadacmi.com>).

Perlite

According to the USGS, the estimated U.S. production of perlite decreased 3% in 2011 to 441,000 tons valued at \$20.4 million. Until 2005 the U.S. was the world's largest producer of perlite, but since then, Greece has been the largest producer. Estimated apparent consumption decreased 1% to 595,000 tons, and imports increased 6% to 204,000 tons in 2011. About 55% of perlite production is used in building construction products. The remainder is mainly used in fillers, filters, and horticulture. The estimated average price decreased 2% to \$46 per ton in 2011.

Nevada has large perlite resources, and several deposits in central Pershing, northern Lincoln, and southern Clark Counties have been mined extensively. Current perlite production in Nevada is restricted to relatively small-scale mining of two deposits for niche markets, and the state produced about 2% of the domestic total in 2011. Nevada's actual production is confidential, but according to the Nevada Department of Taxation, the gross proceeds reported for 2011 were \$1.3 million, a decrease of 10% from \$1.4 million in 2010.

In 2011, Wilkin Mining and Trucking Inc. mined 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. The company has a small popping plant in Caliente, and present sales are almost exclusively of expanded perlite that is used for horticultural purposes. Most years, the company ships between 1,500 and 2,000 tons. The deposit consists of a large, flat-lying, 20-foot thick perlite flow with obsidian pellets in Tertiary rhyolitic volcanic

rocks. In the 1950s the deposit was estimated to contain a reserve of over 15 million tons.

In 2011, EP Minerals processed and shipped a small amount of expanded perlite that is marketed as a filter aid from its Colado diatomite plant in Pershing County. Plant capacity is reportedly about 8,000 tons per year. The crude perlite comes from the Popcorn Mine about 15 miles south of Fallon in Churchill County, which is usually mined a week or two per year.

Potassium Sulfate

The Kings Valley Project of Western Lithium Corp. of Vancouver, Canada, is summarized under the section on Lithium in this report. During the lithium extraction process, potassium sulfate would be recovered as a by-product. The 2011 feasibility study noted in that section includes the 2011 overall reserves of potassium. The feasibility study proposes a 77.7% recovery rate and revenue of \$544 per dry ton of potassium sulfate. Over a mine life of 20 years, total production is projected to be 1,026,826 dry tons with revenue of \$559 million under the first scenario and 1,939,078 dry tons with revenue of \$1,055 million under a second scenario. The combined potassium sulfate and sodium sulfate production is estimated to make up about 25% of the proposed revenues of the Kings Valley Project (<http://www.westernlithium.com>).

Pozzolan

In 2011, Nevada produced no pozzolan. In April 2010, the BLM issued an environmental assessment and finding of no significant impact on the plan of operation for Nevada Cement Co. to operate their proposed Mustache Pozzolan Quarry. In 2011, Battleborn Ventures was contracted to survey the proposed access road and areas to be disturbed (<http://www.battlebornventures.com>). The quarry is expected to disturb 49 acres of BLM land and 1.6 acres of private land about 3 miles southwest of Fernley in section 28, T20N, R24E. The quarry is proposed to operate for 25 years and produce up to 100,000 tons of material. The site is largely in Miocene to lower Pliocene Chloropagus Formation, which consists of mainly basaltic and andesitic lava flows and breccias interbedded with rhyolitic tuffs and minor sedimentary rocks. Shale would be mined at the rate of up to 20 dump truck loads (20 to 30 tons each) per day, six days per week, and hauled to the Nevada Cement Co. plant to be heated and turned into pozzolan. This locally produced pozzolan would lower costs by reducing the need to import the fly ash presently being used as pozzolan from coal-fired power plants.

Rare Earths

According to the USGS, no rare earth elements (REE) were mined in the United States in 2011, though previously mined concentrates were processed at Mountain Pass, California. Consumption figures were withheld for 2009 through 2011. The estimated value of imported refined rare earths was \$696 million in 2011, an increase of 30%, though much of this increase may reflect price increases as the supply tightened. Apparent consumption was 8,200 tons in 2008 a drop of 27% from 2007. China contains about half of the world reserves and accounted for 97% of world production of 147,000 tons in 2011 and 79% of U. S. imports between 2007 and 2010.

Largely because of its own increasing consumption, in 2010, China cut its exports by 70% resulting in an overall 40% drop for 2010 and 65% during the first nine months of 2011. China's domestic consumption increased 100% in the first half of 2011 alone. This resulted in price increases ranging from 23% to 1,265% on various rare earth elements especially in the second half of 2010 and continued price increases ranging between 15% and 570% through 2011. The world has little near term production capacity outside of China, with only the startup of Nolans Bore operation in Australia and the restart of Mountain Pass, California, in the later part of 2012, to add to that capacity. This has led to an increase in exploration (*Industrial Minerals*). Nevada had some REE exploration in 2011.

Elissa Resource, Ltd. of Vancouver British Columbia was created as a subsidiary of Red Hill Energy, Inc. and on April 16, 2010 received a number of Red Hill's assets including the Thor Rare Earth Elements Property mostly in T28-29S, R61E in the Crescent District, Clark County, Nevada. Early in 2010, Red Hill conducted reconnaissance radiometric surface transverses and had a 43-101 technical report completed. In 2011, Elissa Resources dropped five lode claims and staked 30 additional lode claims and conducted geophysical survey and assay programs. A drilling program of at least 21 holes was planned for early 2012. The project area is thought to contain some common features with the Mountain Pass REE deposit 16 miles to the west. The project area is in Precambrian rocks but, unlike Mountain Pass where the REEs occur in bastnaesite, the REEs occur in monazite, apatite, and xenotime, (<http://www.elissaresources.com>; <http://www.sedar.com> ; BLM LR2000).

Salt

According to the USGS, the estimated U.S. production of salt increased 2% in 2011 to 48.5 million tons valued at \$1.7 billion. According to data from the Nevada Division of Minerals, Nevada's only

producer, the Huck Salt Co., produced 21,000 tons of salt in 2011, a decrease of 19% from 2010. Between 1995 and 2010, production has ranged between 9,053 tons and 30,502 tons and averaged 17,458 tons. According to the Nevada Department of Taxation, the gross proceeds reported for 2011 were \$728,220, a decrease of 6% from \$776,790 in 2010. The salt is mainly used for de-icing roads, and production levels are dependent on weather. The salt is also used for water softeners. The salt is mined from a playa on 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

According to the USGS, which reports silica as *Industrial Sand and Gravel*, the U.S. is by far the world's largest producer of silica sand. In 2011, the estimated domestic production was up very slightly to 33 million tons valued at \$1.03 billion. Estimated exports increased 1% to 4.4 million tons in 2011. Estimated apparent consumption increased 1% to 29 million tons. The estimated average price in 2011 increased slightly to \$31.31 per ton. The uses of silica include hydraulic fracturing sand, well-packing sand, cement sand, foundry sand, fillers, and building products. Nevada's actual production is confidential, but according to the Nevada Department of Taxation, the gross proceeds reported for 2011 was \$15,108,383, an increase of 40% from \$10,797,148 in 2010.

According to data from the Nevada Division of Minerals, Nevada's major silica producer, Simplot Silica Products at Overton, Clark County, shipped about 400,000 tons of silica sand in 2011, the same as in 2010. The sand is mined from a large open pit 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. The facility produces four grades of sand based on coarseness and the products are used mainly in manufacturing glass and foundry castings.

In 2011, James Hardie Building Products, Inc. mined high purity silica from the Lucky Boy Quarry in the Lucky Boy District about 10 miles southwest of Hawthorne in Mineral County. They mined the Kramer Hill deposit about 1.5 miles south of Golconda in Humboldt County in 2008 but not in 2009 through 2011. Production is confidential, but according to the Nevada Department of Taxation, the gross proceeds reported for 2011 was \$821,535, a decrease of 12% from \$936,884 in 2010. The silica is used as feed for the company's fiber-cement siding manufacturing plant in the Tahoe-Reno

Industrial Park east of Sparks, Nevada. The company leases the mines. The Lucky Boy Quarry is in a 1300-foot by 350-foot body of milky quartz hosted in granodiorite. The Kramer Hill Quarry is in the Cambrian Osgood Mountain Formation, which generally consists of white to light gray, thinly bedded to massive, medium grained quartzite.

In 2011, Southern Nevada Liteweight mined silica sand from the Hidden Valley South quarry about 20 miles south of Las Vegas. The quarry produced mostly plaster and concrete sand for stucco and masonry block and some golf course sand.

Sodium Sulfate

The Kings Valley Project of Western Lithium Corp. of Vancouver, Canada, is summarized under the section on Lithium. During the lithium extraction process, sodium sulfate would be recovered as a by-product. The feasibility study proposes an 82.7% recovery rate and revenue of \$68 per dry ton of sodium sulfate. Over a mine life of 20 years, total production is projected to be 1,175,820 dry tons with revenue of \$80 million under the first scenario and 2,059,970 dry tons with revenue of \$140 million under a second scenario. The combined potassium sulfate and sodium sulfate production is estimated to make up about 25% of the proposed revenues of the Kings Valley Project (<http://www.westernlithium.com>).

Zeolites

Nevada contains large known resources of zeolite; however, zeolite production has been small, and no zeolite is currently mined in Nevada. In 2011, Saint Cloud Mining Co. of Winston, New Mexico, operated the Ash Meadows plant, which ships 1,000 to 5,000 tons annually of clinoptilolite used in water filtration, odor control, and nuclear clean-up from their plant in Armargosa Valley in Nye County. The plant, which has a 40,000 ton annual capacity, also produces zeolite based cement for building materials and oil and gas projects. The clinoptilolite is mined from a small open pit just over the state line in Inyo County, California, in a large area of zeolite deposits that extends into Nevada.

KMI Zeolite, Inc. owns a plant in Sandy Valley about 32 miles southwest of Las Vegas, and a deposit reportedly containing about 60,000,000 tons of largely clinoptilolite in California about 85 miles northwest of the mill. The mill is capable of producing 55,000 tons per year and was in operation in 2011.

Geothermal Energy

by Lisa Shevenell and Richard Zehner

During 2011 the Nevada Division of Minerals issued 90 geothermal well permits (down 19 permits from 2010; 109 fewer than 2009) that included the following: 21 industrial production well permits, seven industrial injection well permits, two domestic well permits, 35 gradient well permits, and 25 observation well permits. A total of 47 geothermal wells of all types (see table of Nondomestic Geothermal Wells below for complete listing) were reported as drilled during 2011: seven were permitted in 2010.

Nevada geothermal electrical production in 2011 from both federal and private lands was 2,717,936 megawatt-hours (MWh) gross and 2,173,481 MWh net. This was an increase in gross production of 83,222 MWh, compared to the 2010 production, and an increase in net production of 113,451 MWh from 2010. According to the Nevada Department of Taxation (2012), the total 2011 gross proceeds from geothermal power generation in Nevada were \$152,934,453 (over \$7.7 million greater than in 2010), with the largest gross proceeds generated by the Steamboat complex at over \$43.6 million, followed by Dixie valley at \$41.2 million. Net proceeds were \$35 million (Department of Taxation, 2012, http://tax.state.nv.us/DOAS_FORMS/2011-12%20NPM%20Bulletin.pdf, pg. 8). These proceeds were not entirely from power generation but also included Elko Heat Company's \$198,268 gross proceeds from commercial heating and Nevada Geothermal Utility Company's \$140,632 (Warren and Manzanita Estates, Moana geothermal system). No taxation information is published by the Department of Taxation for the Peppermill Hotel Casino, which uses geothermal waters produced on site to heat their hotel towers.

Currently installed equipment, or nameplate, capacity at 13 existing geothermal power production sites (21 power plant units) in

Nevada is 475.9 megawatts (MW), a 33.7 MW increase from 2010. Table 1 lists operators, plant locations, and energy production for individual Nevada geothermal power producers at the end of 2011 (however, it includes Tuscarora that was commissioned in 2012). Figure 1 shows the location of these power plants. Nevada is second only to California in total installed geothermal generating capacity in the U.S.

In Nevada during 2011, there were 17 authorized federal leases covering approximately 42,627 acres based on a query of the U.S. Bureau of Land Management's (BLM) LR2000 database, a full order of magnitude fewer leased acres than in 2010. Figure 2 shows the location of active geothermal leases in Nevada, with 2011 data obtained from BLM provided shape files at http://www.blm.gov/nv/st/en/prog/minerals/leaseable_minerals/geothermal0/ggeothermal_leasing/prior_sales.html.

Information for the remainder of the years was created from data obtained by the now defunct online BLM Geocommunicator.

On March 22, 2011, a lease sale was held that resulted in the sale of 17 of 51 parcels offered and yielded a total lease sale income in Nevada of \$456,353 (Table 2; <http://www.blm.gov/pgdata/etc/medialib/blm/nv/minerals/geothermal/leasesales.Par.68186.File.dat/Mar2011.non.competitive.geo.sale.results.pdf>), down substantially from previous years (table 3). Seventy-five percent of this income went to the State of Nevada (25% had gone to the counties of Nevada prior to the 2009 state budget crisis), and 25% went to the U.S. Department of Interior to help support BLM's geothermal program (http://www.blm.gov/nv/st/en/prog/minerals/leaseable_minerals/geothermal0/ggeothermal_leasing/prior_sales.html ; BLM web site, 2012).

Table 1. Nevada geothermal power plants, 2011.

Plant name	Nameplate ¹	Commission Year	2012 Production (MWh)		Location	Operator
	Capacity (MW)		Gross	Net		
Beowawe	16.6	1985	136,717	115,941	S13,T31N,R47E	Terra-Gen Power, LLC
Blue Mountain	49.5	2009	368,000	285,357	S14,T34N, R34E	Nevada Geothermal Power
Bradys	26.1	1992	83,892	71,184	S12,T22N,R26E	Ormat Nevada
Desert Peak Desert Peak II (2006) ²	Decommissioned	1985	0	0	S21,T22N,R27E	Ormat Nevada
	23.0	2006	136,562	108,879		
Dixie Valley	64.7	1988	526,670	474,035	S7,T24N,R37E S33,T25N,R37E	Terra-Gen Power, LLC
Empire	4.8	1987	29,422	19,429	S21,T29N,R23E	USG Nevada LLC
Jersey Valley	22.5	2011	61,027	46,001	S28,T27N,R40E	Ormat Nevada
Salt Wells	23.6	2009	150,041	112,179	S36,T17N,R30E	Enel North America
Soda Lake No. 1	5.1	1987	14,398	9,572	S33,T20N,R28E	Magma Energy Corp
Soda Lake No. 2	18.0	1991	93,860	62,397	S33,T20N,R28E	
Steamboat I*	8.4	1986	0	0	S29,T18N,R20E	Ormat Nevada
Steamboat I-A	2.4	1986	6,489	5,736	S29,T18N,R20E	
Steamboat II	23.9	1992	121,999	80,614		
Steamboat III	23.9	1992	149,568	110,452		
Galena 1	30.0	2005	193,456	163,041		
Galena 2	13.5	2007	70,750	88,483		
Galena 3	30.0	2008	221,210	174,251		
Steamboat Hills	13.2	1988	89,278	75,787	S5,6,T17N,R20E	
(1988, formerly Yankee Caithness)						
Total MW at Steamboat					136.9	
Stillwater (1989) isolated from the grid		1989			S1,T19N,R30E	Enel Stillwater
Stillwater 2	47.2	2009	242,085	155,434	S6,T19N,R31E	
Tuscarora	32.0	2012	11,252	8,152	S2, T41N, R52E	Ormat Nevada
Wabuska	5.6	1984	11,261	6,558	S15,16,T15N,R25E	Homestretch Geothermal
Total:	475.6		2,717,936	2,173,481		

^{*} Ormat decommissioned the Steamboat I plant. The 8.4 MW is not included in the total.

Footnotes to Table 1.

¹Nameplate capacity is the manufacturer's rating of equipment output capacity as reported to the Nevada Division of Minerals by the plant operators (as of February, 2010) and does not necessarily reflect the capability of the currently developed resource. These nameplate capacities are estimates, and several different values can be found in the literature. Generator nameplate capacity actually refers to how big the actual generator is but not the turbines or the actual capacity of the power plant. There are no public documents breaking down nameplate capacity of the turbines or gross power so these numbers may not adequately reflect actual generation (Dan Fleischmann, personal communication, June 2010).

²Desert Peak II is a new binary power plant that was built to replace the original steam turbine power plant at Desert Peak, which was permanently shut down on May 1, 2006. The new power plant came online on August 1, 2006 with a generation capacity of 23 MW, more than twice that of the original power plant.

Addresses and telephone numbers for companies listed in Table 1

Terra-Gen Operating Co., LLC
9590 Prototype Ct., Suite 200
Reno, NV 89521
(775) 829-3900

Nevada Geothermal Power
840-1140 West Pender St.
Vancouver B.C., Canada V6C-1Y
(866) 688-0808

Ormat Technologies, Inc.
6225 Neil Road
Reno, Nevada 89511
(775) 356-9029

USG Nevada LLC
61505 SR 447 Rodeo Creek Road
Empire, NV 89405
(775) 557-2812

Enel North America/Stillwater
1755 East Plumb Lane, Suite 155
Reno, NV 89502
(775) 786-5681

Alterra Power Corp
(Magma Energy Corp)
600-888 Dunsmuir Street
Vancouver, BC V6C 3K4
(604) 669-4999

Homestretch Geothermal
10 Julian Lane
Yerington, NV 89447
(775) 463-4633

Power Plants

- ▲ pre- 2005
- 2005 - 2011
- 2012

- ▲ 1. Beowawe - 16.6 MW
- 2. Blue Mountain - 49.5 MW
- ▲ 3. Bradys - 26.1 MW
- ▲ 4. Desert Peak - 23 MW
- ▲ 5. Dixie Valley - 64.7 MW
- ▲ 6. Empire - 4.8 MW
- 7. Jersey Valley - 22.5 MW
- 8. McGinness Hills - 30 MW
- 9. Patua (Hazen) - 60 MW
- 10. Salt Wells - 23.6 MW
- ▲ 11. Soda Lake - 23.1 MW
- ▲ 12. Steamboat - Binary - 58.6 MW
- 13. Galena 1 - 30 MW
- 14. Galena 2 - 13.5 MW
- 15. Galena 3 - 30 MW
- ▲ 16. Steamboat Hills - Flash - 13.2 MW
- ▲ 17. Stillwater - 47.2 MW
- ▲ 18. Wabuska - 5.6 MW
- 19. Tuscarora - 32 MW

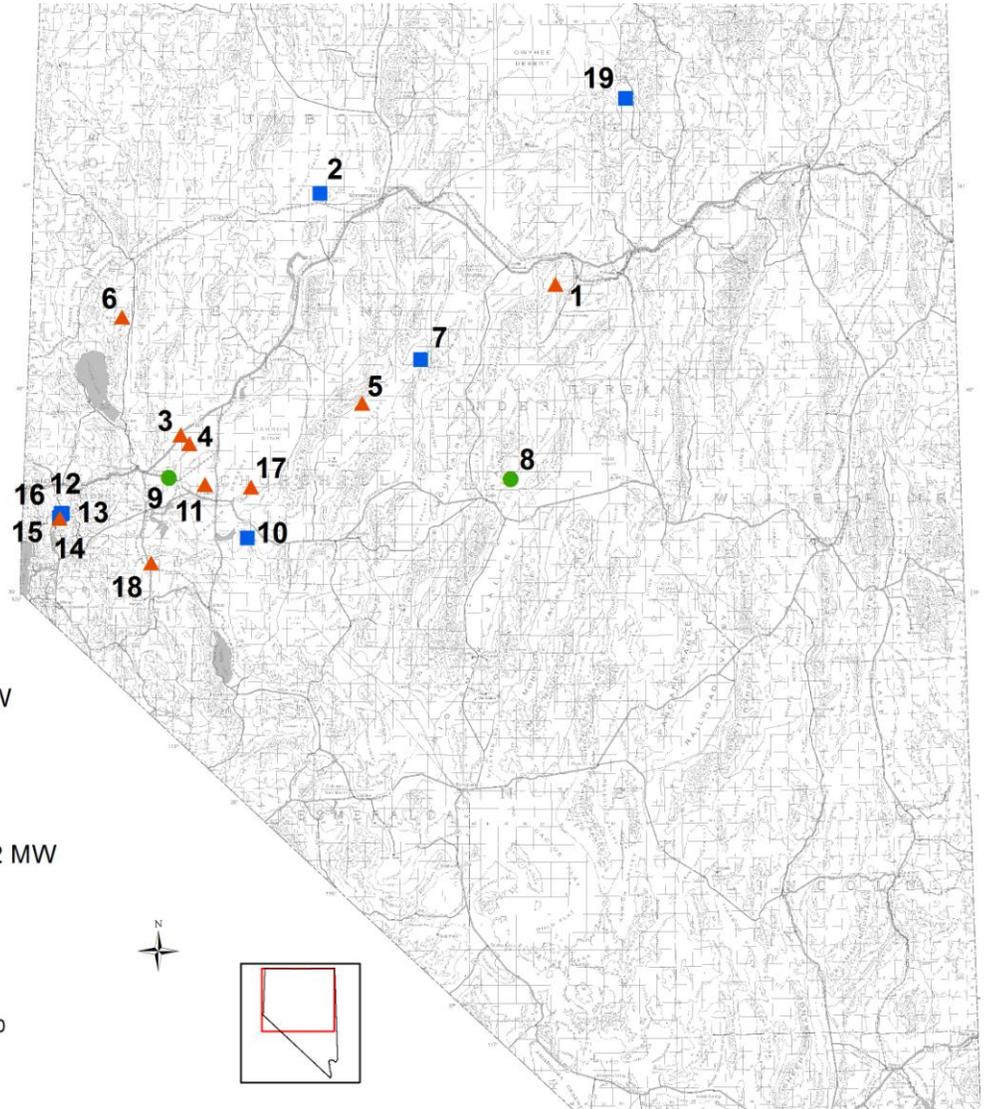


Figure 1. Locations of existing power plants noted in Table 1 (as of October, 2012; modified from Shevenell and Zehner, 2011).

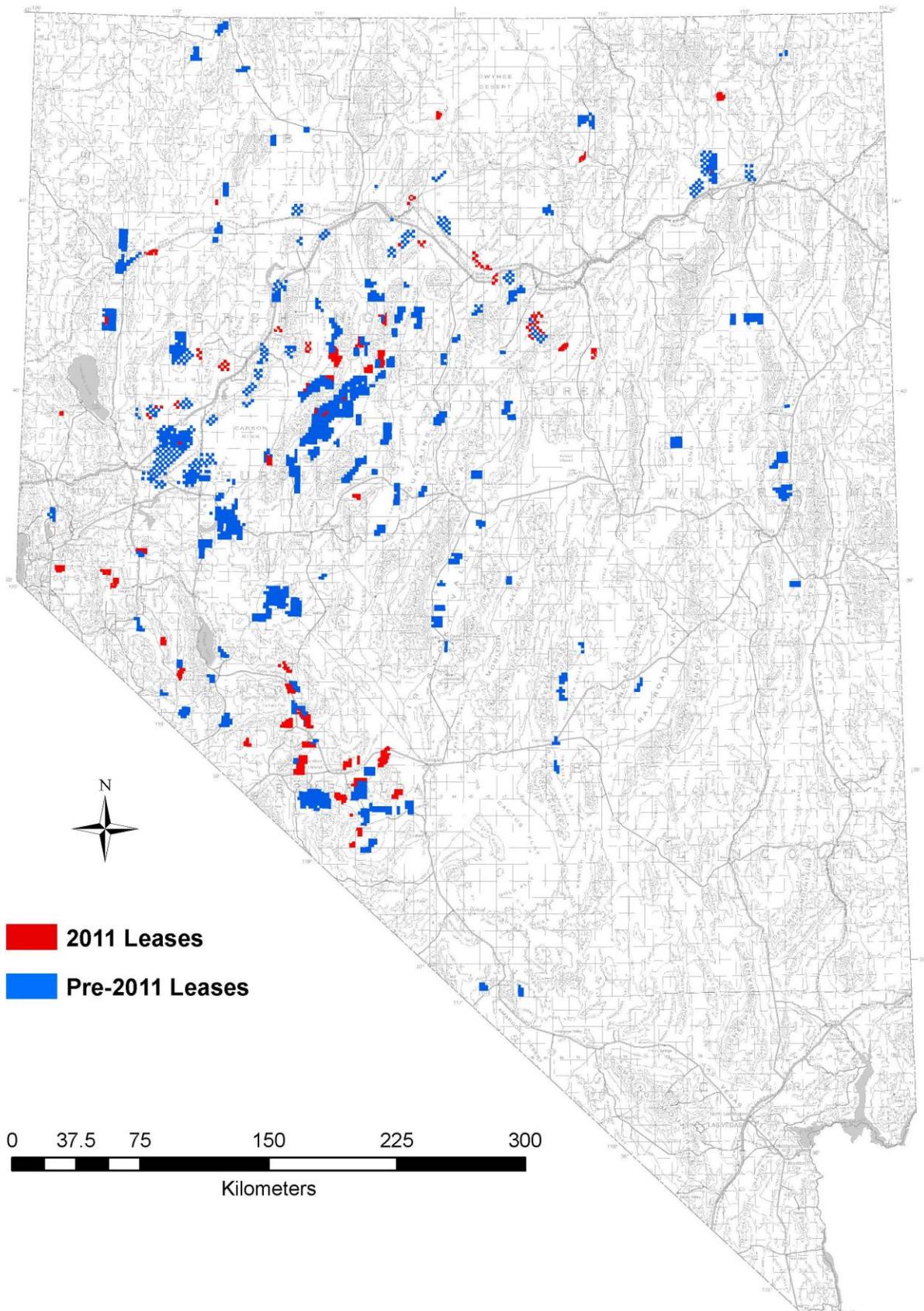


Figure 2. Locations of active leases in Nevada, highlighting the ones from 2011 in red.

Table 2. 2011 BLM competitive lease results from March 22, 2011 lease sale.

PARCEL	LEASE	LOCATION	COMPANY	T (N)	R (E)	Sec	Bid per Acre	ACRES	Total Bonus
2	89598	Warm Springs Valley	MUSTANG GEOTHERMAL CORP	23	20	3	\$2	1,409 (570 ha)	\$2,818
5	89599	Artesia Lake	HOMESTRETCH GEOTHERMAL LLC	14	23	20	\$2	3,200 (1,295 ha)	\$6,400
8	89600	Wabuska	MAGMA ENERGY US CORP	15	25	11	\$2	640 (259 ha)	\$1,280
12	89601	Black Rock Desert	ORMAT NEVADA INC	36	29	17	\$2	1,280 (518 ha)	\$2,560
14	89602	Desert Peak	GEOTHERMAL TECHNICAL PARTNERS	22	27	26	\$2	3,680 (1,489 ha)	\$7,360
15	89603	Hot Springs Flat	ORMAT NEVADA INC	24	27	16	\$60	4,227 (1,711 ha)	\$253,680
25	89604	Rhodes Marsh	GEOTHERMAL TECHNICAL PARTNERS	5	34	19	\$6	4,895 (1,981 ha)	\$29,370
31	89605	Columbus Marsh	TGP DEVELOPMENT COMPANY LLC	30	35	23	\$11	1,280 (518 ha)	\$14,080
34	89606	Rhodes Marsh	TGP DEVELOPMENT COMPANY LLC	5	35	11	\$13	640 (259 ha)	\$8,320
42	89607	Buena Vista Valley	TGP DEVELOPMENT COMPANY LLC	27	36	12	\$2	2,475 (1,002 ha)	\$4,950
43	89608	South Big Smoky Valley	TGP DEVELOPMENT COMPANY LLC	1	37	26	\$2	4,138 (1,675 ha)	\$8,276
46	89609	Buena Vista Valley	TGP DEVELOPMENT COMPANY LLC	27	37	29	\$2	3,022 (1,223 ha)	\$6,044
51	89610	South Big Smoky Valley	ORMAT NEVADA INC	30	38	33	\$2	2,210 (894 ha)	\$4,420
52	89611	Desatoya Mountains area	EARTH POWER RESOURCES INC	19	38	29	\$2	1,804 (730 ha)	\$3,610
53	89612	Dixie Valley	EARTH POWER RESOURCES INC	26	38	12	\$2	3,212 (1,300 ha)	\$6,424
54	89613	Pleasant Valley	EARTH POWER RESOURCES INC	28	38	28	\$2	4,196 (1,698 ha)	\$8,394
58	89614	Silver Peak	STANDARD STEAM TRUST LLC	3(S)	39	4	\$2	320 (129 ha)	\$640

Following the competitive leases on March 22, 2011, 34 parcels were available for non-competitive lease, of which 12 parcels for 44,842 acres were offered for total revenue of \$125,715.

At the end of 2011, there were 59 projects in various stages of development in Nevada, which could result in the construction of between 2,030 and 2,250 MW of additional power generation capacity over the next 5 to 10 years (GEA, 2012). Nameplate capacity by

year appears in Figure 3, price and production appear in Figure 4, and production wells drilled by year appear in Figure 5 through 2011, with these wells being detailed in table 4.

Table 3. Geothermal competitive leasing activity in Nevada, 2007-2012.

Year	Parcels offered	Parcels sold	Acres	Total receipts	Average per acre
2007	43	43	122,849	\$11,669,821	\$95
2008	35	35	105,212	\$28,207,806	\$268
2009	108	82	323,223	\$8,909,445	\$28
2010	114	75	212,370	\$2,762,292	\$13
2011	51	17	42,627	\$456,353	\$11
2012	33	8	27,834	\$112,540	\$4
Totals:	384	260	834,115	\$52,118,257	\$70

Source: http://www.blm.gov/nv/st/en/prog/minerals/leasable_minerals/geothermal0/ggeothermal_leasing.html

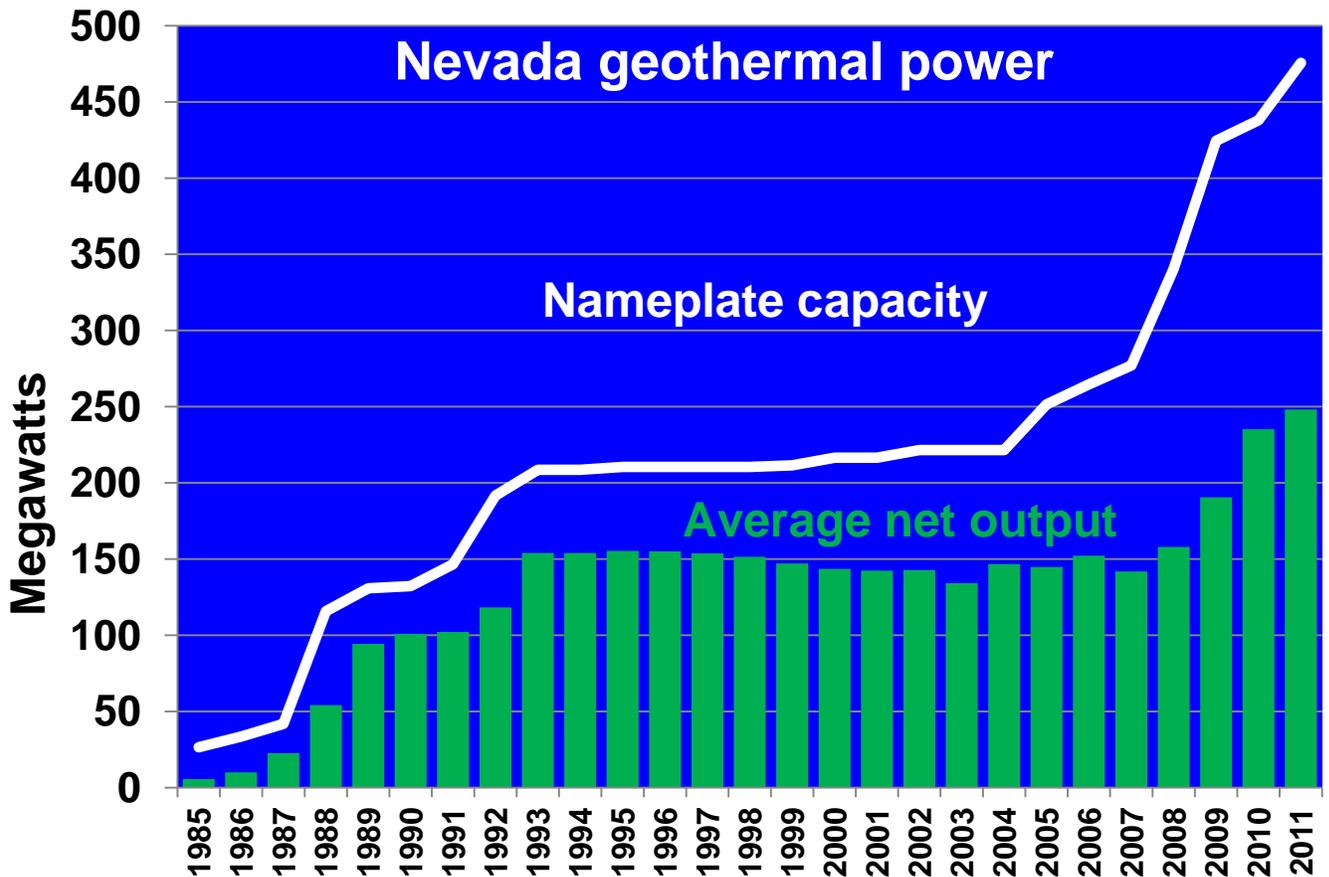


Figure 3. Graph of annual geothermal electric power based on reported name plate capacity to the Division of Minerals by year from 1985-2011. Average net output is annual sales in megawatt-hours divided by the number of hours in a year (8,760). No commercial geothermal power was produced in Nevada before 1985.

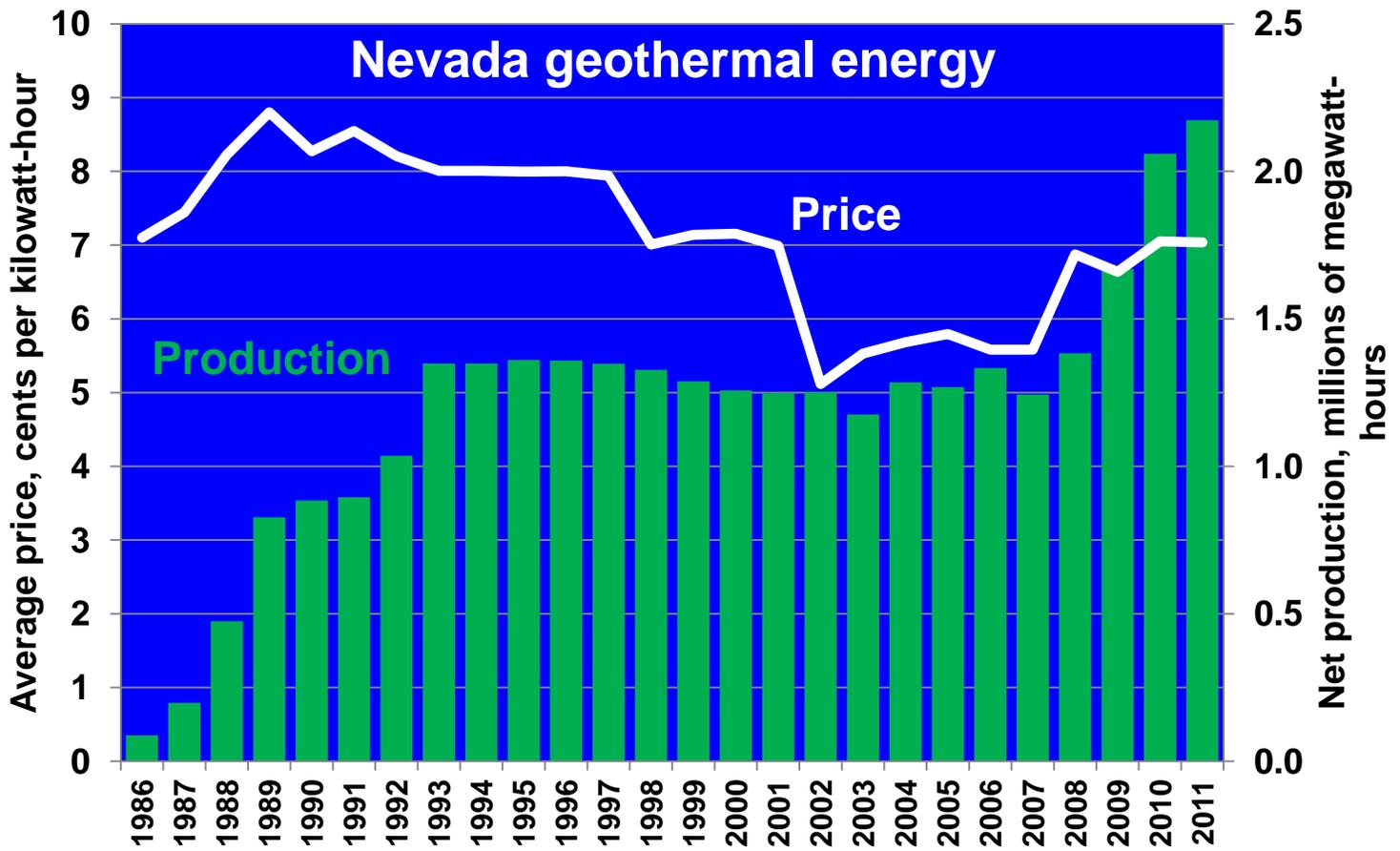


Figure 4. Graph of annual, net geothermal electric power production and average priced-based gross receipts and reported gross production.

Table 4. Geothermal wells reported as drilled, re-drilled or completed in 2011.

Area	COMPANY NAME	Well Type ¹	WELL NUMBER	PRMT #	Location	Permitted Depth (ft)	SPUD DATE
Churchill County							
Coyote	TGP DIXIE DEVELOPMENT	O	58-22	1212	SW/4 SE/4 S 22, T24N, R36E	9500	5/28/2011
Edwards Creek	ORMAT NEVADA	TG	31-18	1237	NE/4 NW/4 S 18, T20N, R38E	1,000	6/25/2011
	ORMAT NEVADA NV GEOTHERMAL POWER	TG	76-24	1238	NE/4 SE/4 S 24, T20N, R37E	1,000	7/17/2011
North Valley	PATUA PROJECT LLC FRM GRADIENT RESOURCES	O	25-31	1234	NW/4 SW/4 S 31, T24N, R25E	3,000	7/16/2011
Patua II	PATUA PROJECT LLC FRM GRADIENT RESOURCES	P	58-29	1249	SW/4 SE/4 S 29, T20N, R26E	11,000	7/24/2011
	PATUA PROJECT LLC FRM GRADIENT RESOURCES	TG	35-33	1251	NE/4 SW/4 S 33, T20N, R26E	1,000	8/18/2011
	PATUA PROJECT LLC FRM GRADIENT RESOURCES	TG	88-33	1252	SE/4 SE/4 S 33, T20N, R26E	1,000	8/22/2011
Salt Wells	ENEL SALT WELLS	O	46-35	1267	NE/4 SW/4 S 35, T17N, R30E	± 500	12/20/2011
Soda Lake	AMOR IX - MAGMA	O	44B-34	1232	SE/4 NW/4 S 34, T20N, R28E	≤4,000	8/25/2011
	MAGMA ENERGY	O	46A-20	1233	S/2 W2 S 20, T20N, R28E	≤4,000	9/27/2011
Tungsten Mountain	ORMAT NEVADA	TG	75-22	1205	NE/4 SE/4 S 22, T21N, R38E	1,000	6/7/2011
	ORMAT NEVADA	TG	35-23	1206	NE/4 SW/4 S 23, T21N, R38E	1,000	5/10/2011
	ORMAT NEVADA	TG	86-22	1207	NE/4 SE/4 S 22, T21N, R38E	1,000	5/27/2011
	ORMAT NEVADA	TG	45-22	1235	NE/4 SW/4 S 22, T21N, R38E	1,000	8/13/2011
	ORMAT NEVADA	TG	65-22	1236	NW/4 SE/4 S 22, T21N, R38E	1,000	7/29/2011
Elko County							
Tuscarora	HSS II	I	87A-5	1204	SE/4 SE/4 S 5, T41N, R52E	3,020	9/26/2011
Humboldt County							
Hot Springs Ranch	OROVACA	O	83-35	1254	SE/4 NE/4 S 35, T37N, R43E	2,000	9/7/2011
Lander County							
McGinness Hills	ORMAT NEVADA	P	28B-10	1268	SW/4 SW/4 S 10, T20N, R45E	3,650	11/12/2011
	ORMAT NEVADA	P	36-10	1269	SW/4 SW/4 S 10, T20N, R45E	4,000	11/22/2011
	ORMAT NEVADA	P	36A-10	1270	SW/4 SW/4 S 10, T20N, R45E	4,000	1/14/2012
Lyon County							
Patua	GRADIENT RESOURCES	P	24-29	1228	SW/4 NW/4 S 29, T20N, R26E	11,000	5/9/2011
	GRADIENT RESOURCES	P	88(18-20)-19	1226	SE/4 SE/4 S 19, T20N, R26E	9,700	4/23/2011
	GRADIENT RESOURCES	P	85-19	1253	SE/4 NE/4 S 19, T20N, R26E	11,000	9/7/2011

Patua II	GRADIENT RESOURCES	TG	77-31	1231	SE/4 SE/4 S 31, T20N, R26E	1,000	8/1/2011
	GRADIENT RESOURCES	TG	87-25	1247	NE/4 SE/4 S 25, T20N, R25E	1,000	7/19/2011
	GRADIENT RESOURCES	TG	26-31	1248	NE/4 SW/4 S 31, T20N, R26E	1,000	8/5/2011
	GRADIENT RESOURCES	TG	36-5	1250	NE/4 SW/4 S 5, T19N, R26E	1,000	8/11/2011
Wabuska	HOMESTRETCH GEOTHERMAL 2010	P	3	1227	NW/4 SW/4 S 15, T15N, R25E	1,500	6/21/2011
	HOMESTRETCH GEOTHERMAL 2010	P	4	1240	NW/4 SW/4 S 15, 15N, R25E	700	7/6/2011
Mineral County							
Wild Rose	ORMAT NEVADA	O	54-11	1241	SW/4 NE/4 S 11, T11N, R32E	4,000	6/26/2011
Pershing County							
Jersey Valley	ORNI 15	I	14-34	1256	SW/4 NW/4 S 34, T27N, R40E	4,000	9/12/2011
Leach Hot Springs	ORMAT NEVADA	O	75-31	1258	NE/4 SE/4 S 31, T32N, R39E	± 3,500	10/27/2011
Washoe County							
Gerlach	GERLACH GEOTHERMAL	O	18-10A	1177	SW/4 SW/4 S 10, T32N, R23E	± 3,000	11/6/2011
	USG NEVADA	O	6	1243	NW/4 SE/4 S 16, T29N, R23E	≤3,000	8/18/2011
San Emidio	USG NEVADA	O	8	1255	NE/4 SW/4 S 16, T29N, R23E	≤3,000	9/15/2011
	USG NEVADA	O	9	1271	SE/4 SE/4 S 16, T29N, R23E	≤3,000	12/15/2011
	LAMB FAMILY TRUST / RANDY LAMB	D, I	DOMESTIC INJECTION	1262	NW/4 NW/4 S 7, T18N, R20E	247	10/24/2011

¹ I = Injection, O = Observation, P = Production, TG = Thermal Gradient, D = Domestic

A comparison shows the steady increase in geothermal activity between federal fiscal years 2007 and 2009 (table 5). Note that wells are not necessarily drilled in the same year in which they are permitted. Drilling permits are valid for two years from the date of approval. Additionally, table 3 shows the changes in BLM permitting results over

six years (one lease sale was conducted each year). The peak in revenue was in 2008, whereas the peak in acres and parcels sold was in 2009, consistently decreasing thereafter. Other temporal changes in geothermal activity are presented in Shevenell and Zehner (2011).

Table 5. Geothermal drilling activity, 2007-2011.

Year	Number of permits	Number of wells drilled	Number of production wells drilled
2007	71	41	5
2008	130	53	16
2009	195	71	16
2010	119	74	19
2011	90	47	12

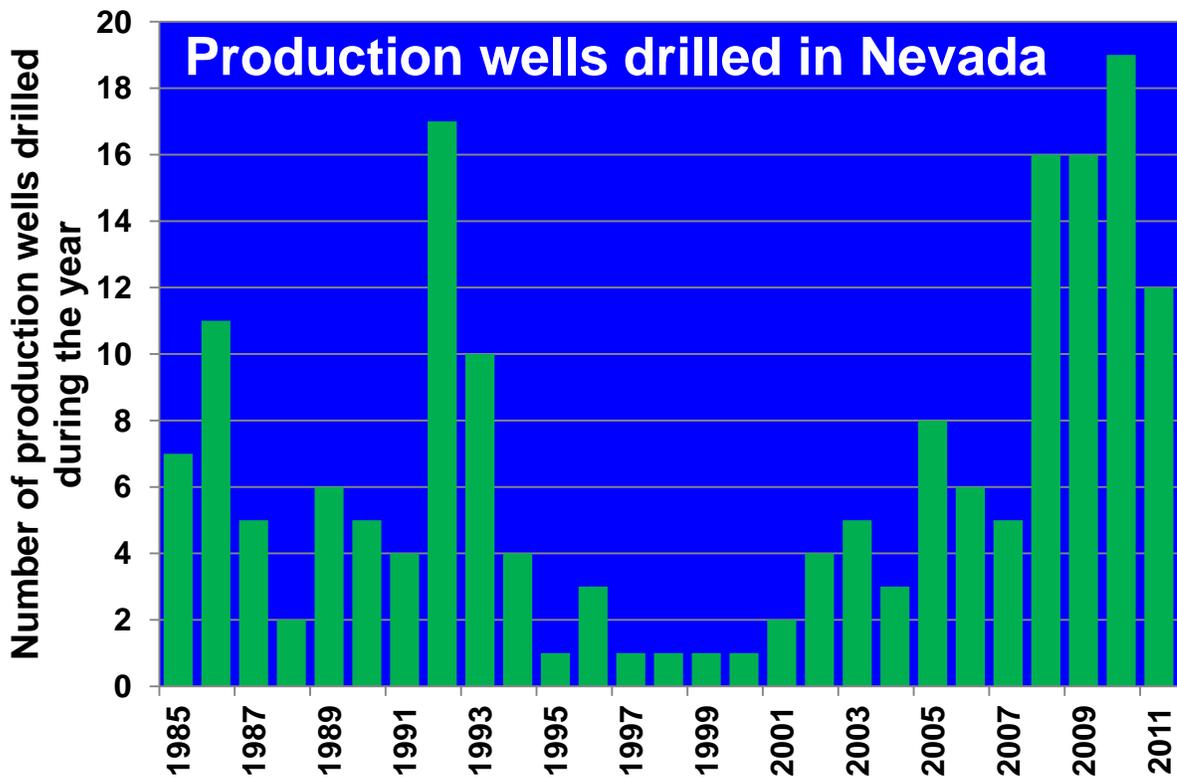


Figure 5. Industrial-class (power-generating) wells drilled in Nevada, 1985–2011 (excludes injection, observation and gradient wells).

ACTIVITY DURING 2011

The following sections summarize activities at specific geothermal areas in Nevada. Table 6 summarizes the status of existing BLM leases, where the information could be ascertained. Figure 6 shows the locations of active leases in Nevada as of December 31, 2011, with circled areas corresponding to those with significant activity in 2011 (Power plant construction, plant expansions, or efficiency improvements). Text descriptions are included for sites for which information was either available publicly or through direct communications with operators. Because of the downturn in the geothermal industry during 2011, it was not possible to ascertain the status of all of the sites that had either been explored or leased in previous years. Table 6 summarizes the information that could be gleaned, with several sites listed as unknown.

Table 6. Summary of geothermal project status in Nevada as of December 31, 2011.

ID	PROJECT	COMPANY	STATUS
5	Baltazor Hot Springs	Alterra Power Corp.	No apparent work during 2011
7	Beowawe	Alterra Power Corp.	Leases apparently sold to ORMAT
9	Buffalo Valley	Alterra Power Corp.	Leases dropped
13	Columbus Marsh	Alterra Power Corp.	Unknown
18	Desert Queen	Alterra Power Corp.	Unknown
20	Dixie Valley	Alterra Power Corp.	Leases apparently sold to TGP
32	Granite Springs	Alterra Power Corp.	Unknown
42	McCoy	Alterra Power Corp.	Unknown
46	Mopung Hills	Alterra Power Corp.	Leases dropped
51	Panther Canyon	Alterra Power Corp.	Leases dropped
55	Quartz Mountain	Alterra Power Corp.	Leases dropped
64	Soda Lake	Alterra Power Corp.	Operating
65	Soda Lake East	Alterra Power Corp.	Operating
71	Upsal Hogback	Alterra Power Corp.	Alterra reduced the size of this lease block
74	Whitehorse	Alterra Power Corp.	Lease indicates Blue Sky Energy Partners
14	Contact	Caldera Geothermal	No work performed during 2011
43	McGee Mountain	Caldera Geothermal	No work performed during 2011
57	Rhodes Marsh	Caldera Geothermal	No work performed during 2012
69	Teels Marsh	Caldera Geothermal	No work performed during 2011
29	Gabbs Valley	GeoGlobal Energy	Unknown
4	Aurora	Gradient Resources	No activity reported
12	Colado	Gradient Resources	No activity reported
35	Hazen	Gradient Resources	See Text
39	Lee Allen	Gradient Resources	No activity reported
47	New York Canyon	Gradient Resources	No activity reported
59	Salt Wells	Gradient Resources	No activity reported
10	Caliente	Gregory Barlow Homestretch Geothermal LLC	Unknown
73	Wabuska	LLC	See Text
24	Edna Mountain	Nevada Geothermal	Active lease; no work during 2011
50	North Valley (Black Warrior)	Nevada Geothermal	Active lease; no work during 2011
53	Pumpnickel	Nevada Geothermal	Active lease; no work during 2011
11	Carson Lake (Fallon NAS)	ORMAT	Unknown
15	Dead Horse	ORMAT	Active drilling - 2010 and 2011
17	Desert Peak	ORMAT	Operating

38	Jersey Valley	ORMAT	Operating; See Text
44	McGuinness Hills	ORMAT	Operating; See Text
70	Tuscarora (Hot Sulphur Springs)	ORMAT	Operating; See Text
2	Alligator Ridge	Oski Energy	No known work during 2011
34	Hawthorne (Whiskey Flat)	Oski Energy	No known work during 2011
36	Hot Pot	Oski Energy	No known work during 2011
63	Silver State	Oski Energy	No known work during 2011
66	Sodaville	Oski Energy	No known work during 2011
58	Rye Patch	Presco Energy	Continued interpretation of well logs g
54	Pyramid Lake Geothermal	Pyramid Lake Paiute Tribe	Drilled several holes
1	Alkali - Clayton Valley	RAM Power	No work performed during 2011
3	Alum - Clayton Valley	RAM Power	No work performed during 2011
6	Barren Hills	RAM Power	Leases dropped
16	Delcer Buttes	RAM Power	No work performed during 2011
21	Dixie Valley	RAM Power	No work performed during 2011
23	Dixie Valley North	RAM Power	No work performed during 2011
30	Gerlach	RAM Power	No work performed during 2011
37	Howard Hot Springs	RAM Power	No work performed during 2011
45	Montezuma - Clayton Valley	RAM Power	No work performed during 2011
	Pearl Hot Springs - Clayton		
52	Valley	RAM Power	No work performed during 2011
56	Reese River	RAM Power	No work performed during 2011
62	Silver Peak - Clayton Valley	RAM Power	No work performed during 2011
67	Spencer Hot Springs	RAM Power	No work performed during 2011
68	Sulphur	RAM Power	No work performed during 2011
	Clayton Valley	RAM Power	No work performed during 2011
25	Edwards Creek	ORMAT	See Text
26	Edwards Creek SW	ORMAT	See Text
40	Mary's River	Standard Steam Trust	No known work during 2011
41	Mary's River SW	Standard Steam Trust	No known work during 2011
8	Beowawe Bottoming Binary	Terra-Gen	See Text
19	Dixie Meadows Comstock	Terra-Gen	No known work during 2011
22	Dixie Valley Bottoming Binary	Terra-Gen	See Text
		TGP Development	
48	New York Canyon	Company	Unknown
31	Gerlach	U.S. Geothermal	See Text
61	San Emidio	U.S. Geothermal	See Text
33	Hawthorne	U.S. Navy	Resource Evaluations
28	Fish Lake Valley	University of Kansas	Unknown
27	Fallon	Vista Verde LLC	Unknown
49	North Salt Wells	Western Geo Partners LLC	Unknown
60	Salt Wells	Western Geo Partners LLC	Unknown
72	Wells	Western Geo Partners LLC	WGP reduced the size of this lease block

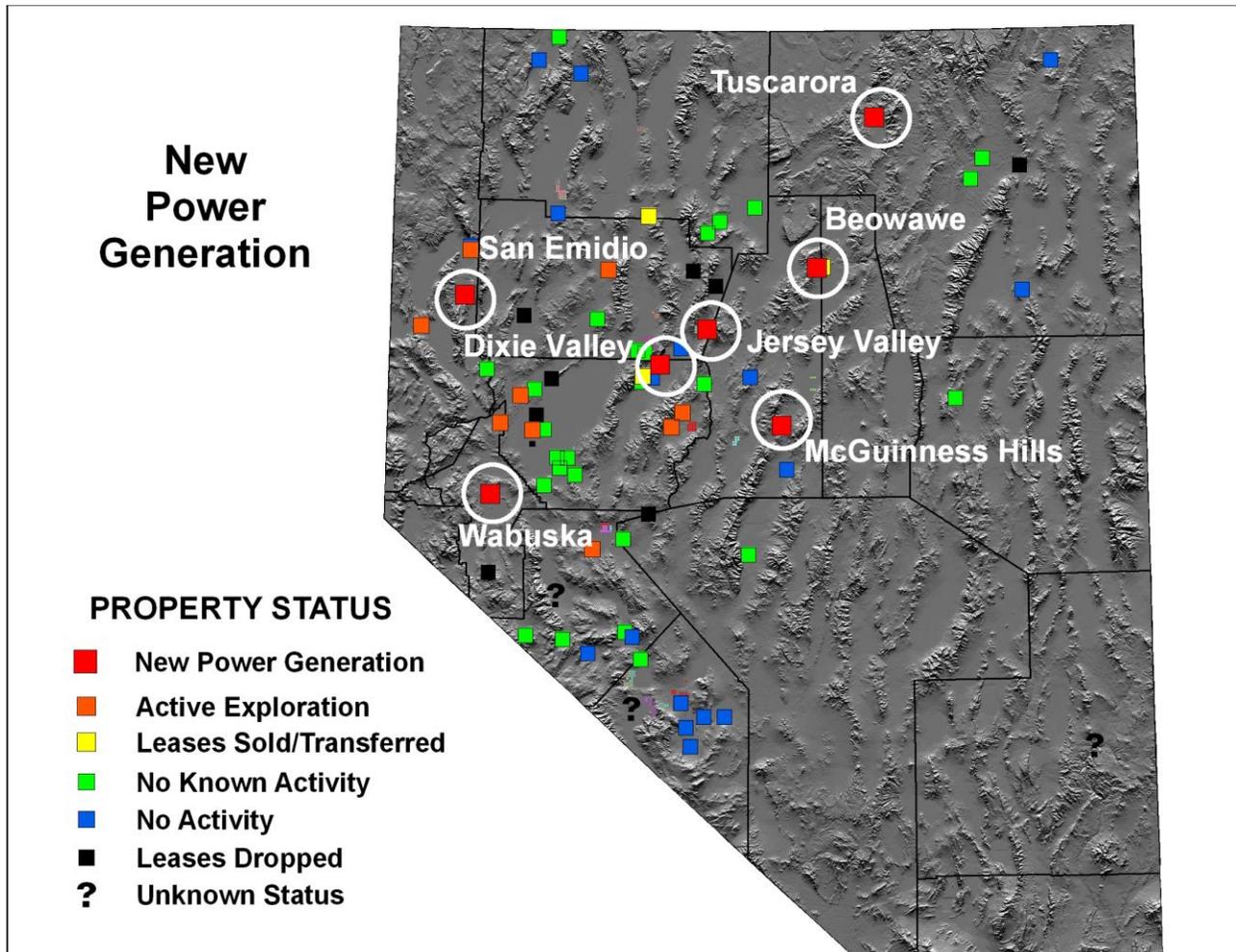


Figure 6. Status of geothermal projects in Nevada as of December 31, 2012.

BLUE MOUNTAIN, HUMBOLDT COUNTY - Nevada Geothermal Power

The **Nevada Geothermal Power, Inc. (NGP)** Blue Mountain project area covers approximately 17.2 square miles (44.5 km²) in T36N, R34E of Humboldt County, encompassing a blind geothermal system with no visible hydrothermal features at the surface. It was located during gold exploration drilling that encountered high temperature water (up to 88°C) in the early 1990s (Parr and Percival, 1991). Maximum temperatures encountered at the site are 188°C (370.4°F) at approximately 2,000 feet (610 m) (Niggemann et al., 2009), although geothermometer values predict reservoir temperatures of up to 250°C (about 482°F) at depth. Waters produced are oversaturated with respect to silica, causing a potential for scaling, which will be mitigated by chemical inhibition (Casteel et al., 2009).

NGP signed a fixed-price, date-certain engineering, procurement, and construction (EPC) contract with Ormat Nevada, a subsidiary of Ormat Technologies Inc., to construct the Faulkner I binary cycle geothermal power plant by December 31, 2009. NGP brought the plant on line in September 2009, with a nameplate capacity of 49.5 MW gross, 39.5 net. This project includes a 20-mile-long 120 kV overhead transmission line that connects to the electric grid just north of Mill City, with an approved capacity of 75 MW. Power production for the year ending June 30, 2011 averaged 45 MW gross and 35 MW net (according to NGP's September 27, 2011 news release), and 42 MW gross and 32 MW net according to Nevada Division of Minerals reports (Table 1 notes nameplate capacity of 49.5 MW).

By the end of 2011, however, production temperatures were declining much more quickly than predicted by the original GeothermEx report. This was attributed to the injection wells having been drilled too close to the production zone, resulting in cooler "spent" geothermal fluids entering the geothermal system. Placing several

unused existing wells into service partially rectified the problem (<http://www.nbw.com/ArticleRead.aspx?storyID=18746>). But the lowered electrical output prevented NGP from servicing its mezzanine financing debt to EIG Global Energy Partners at the end of 2010. This will probably have an effect on future funding for continued exploration work at the site. (Blue Mountain Geothermal Project, Nevada Geothermal Power, Inc., website: <http://www.nevadageothermal.com/s/Home.asp>).

COYOTE CANYON, CHURCHILL COUNTY – Terra-Gen Power

Terra-Gen's (TGP) proposed 62 MW power plant at Coyote Canyon got a boost on March 7, 2011 when BLM placed it on a short list of renewable projects to fast track (<http://www.rechargenews.com/energy/solar/article247755.ece>). The record of decision issued by BLM stated that there would be no significant impact of construction of the power plant (http://www.blm.gov/nv/st/en/fo/carson_city_field/blm_information/nepa/tgp_coyote_canyon.html).

Coyote Canyon is located on 3,960-acres of Federal and 760 acres of private lands within Dixie Valley.

EDWARDS CREEK AREA, CHURCHILL COUNTY - Ormat Technologies Inc.

The Edwards Creek project encompasses 4,160 acres (1,683 ha) along 6 miles (9.6 kilometers) of the Clan Alpine Mountains range-front fault in T21N, R38E, Churchill County. Areas of hydrothermal alteration occur along the fault, and boiling water was encountered at shallow depths by 23 mineral exploration wells. Cation and silica geothermometer temperatures from well waters suggest an approximately 175°C (~347°F) reservoir. The Great Basin Center for Geothermal Energy identified a shallow (2 m) thermal anomaly that is coincident with the location of the hot wells at the site identified at Tungsten Mountain. Standard Steam Trust (SST) completed a detailed gravity survey that showed a southeast dip of ~60° for the range-front fault, which would place the reservoir at feasible depths beneath SST's leaseholds.

Ormat Technologies is currently developing the resource. In the latter part of 2011, Ormat permitted five 1000-foot temperature gradient wells in Sections 22 and 23 of T21N, R38E.

Another project in the Edwards Creek Valley southwest of and contiguous with the above project encompasses 7,617 acres (3,082ha) covering 8 miles (13 km) of the Clan Alpine Mountains range-front fault in T20N and R37 and R38E. SST's 2008 gravity survey identified the location of the Clan Alpine fault as well as a sub-parallel fault that lies basinward of the range-front fault. This sub-parallel fault may be the more significant of the two faults and is believed to be the fault associated with high-temperature ground water encountered by shallow exploration drilling at Edwards Creek in 2005 and 2006.

Ormat Technologies is also developing this portion of the Edwards Creek Valley; two 1000-foot TG wells were permitted in Section 18 of T20N, R38E and Section 24 of T20N, R37E.

FLORIDA CANYON, PERSHING COUNTY - Florida Canyon Mine/ElectraTherm

In 2009 and 2010 a small, 50-kW geothermal plant manufactured by ElectraTherm (Reno, NV) operated for a thousand hours at the Florida Canyon gold mine adjacent to the Humboldt-House/Rye Patch geothermal system. This "Green Machine" is a low-temperature Organic Rankine Cycle (ORC) unit designed to convert low-temperature waste heat into electricity. Although the unit produced less than 5% of the mine's electrical needs, it produced electricity from otherwise unused heat from one of its (hot) wells. ElectraTherm was awarded a \$982,000 Phase 1 DOE research grant at the end of 2010 to optimize their Green Machine to specifically use geothermal brines, with Florida Canyon as the test site. Successful R&D during 2011 caused the DOE to award additional funding for Phases II and III to manufacture and commission a newly developed, more powerful 75 kW "geothermal" Green Machine with a cleanable heat exchanger. The unit has been built and is currently undergoing testing at ElectraTherm. It will be installed at the Florida Canyon Mine in the late 2012 or early 2013 (personal communication with Celeste Dodge, ElectraTherm, 10/24/12).

HAZEN (PATUA), CHURCHILL COUNTY – Gradient Resources

Several exploration drill rigs were observed on ground controlled by Vulcan Power Company (now Gradient Resources) in 2009. Vulcan has drilled seven production wells and eight observation wells at Patua. On

February 11, 2010, Vulcan announced plans to begin construction of a 60 MW power plant immediately, with plant completion expected in 2012, although as of November 2012, the plant had not been constructed but pipe lines were being laid. The project is located about 38 miles (about 61 km) east of Reno and 10 miles (16.1 kilometers) east of Fernley. Gradient has been conducting an extensive exploration program including well drilling and core drilling; geological, geochemical, and geophysical surveys; and well discharge testing. Thirteen hot springs occur in the project area, ranging in temperature from 28 to 96°C (82 to 204°F). In 1962, Magma Power drilled three wells from 300 to 750 feet (91 to 230 m), recording a maximum temperature of 132°C (270°F). (<http://www.vulcanpower.com/Pages/Patua.html>). Gradient Resources indicates a possible resource size up to 120 MW (Jennejohn, 2011). Currently, Gradient is focusing its development efforts on the southwestern portion of the Patua geothermal leases. Construction on the Patua Geothermal Power Plant site began during Q3 2011, with commercial operations slated for the end of 2012.” (<http://www.gradient.com/portfolio/patua-nv/>); however, no independent confirmation of this commissioning date was obtained.

JERSEY VALLEY, PERSHING COUNTY - Ormat Technologies Inc.

Thermal spring water from the Jersey Valley geothermal area, located in Pershing County (T27N, R40E), yielded silica and Na-K-Ca geothermometer values of 142°C and 182°C, respectively (Mariner and others, 1974). Drilling by Ormat Nevada Inc. in this area began in 2007, resulting in a discovery and subsequent negotiation of a 20-year power purchase agreement between Ormat and NV Energy. Construction of the 15 MW generation plant began in 2009, and the facility underwent commissioning and production at partial capacity during 2011. This air-cooled binary plant achieved commercial production in early 2012 (NV Energy <https://www.nvenergy.com/renewablesenvironment/renewables/geothermal.cfm>).

McGINNESS HILLS, LANDER COUNTY - Ormat Technologies Inc.

Precious metal exploration of surface sinter in Lander County identified an otherwise blind geothermal system at this Lander County site. Drilling encountered hot water having high geothermometer temperatures, leading to a November 2009 announcement of a 20-year power purchase agreement (PPA) between Ormat Technologies, Inc. and NV Energy. Construction of a 30 MWe (net) plant began in 2010 and continued through 2012. Commercial production at McGinness Hills commenced July 26, 2012.

MOANA, WASHOE COUNTY– City of Reno

The pool was demolished in 2012 after having been closed for five years due to high maintenance costs.

REESE RIVER, LANDER COUNTY – Ram Power

No work was done on the property in 2011 and 2012, except for minor reclamation work. Ram Power has closed their Reno offices, and there is no current indication that development is proceeding on this property.

SAN EMIDIO GEOTHERMAL AREAS, WASHOE COUNTY- US Geothermal

U.S. Geothermal, Inc. (USG) continued work at its San Emidio facility in Washoe County (T29N, R23E). Construction continued on its 11.75 MW gross (8.6 MW net) replacement of the existing 3.6 MW binary plant through most of 2011, and plant startup and power generation began in the last quarter of 2011. However, various difficulties prevented commercial production from being achieved until June of 2012. To accommodate this expansion, a new 25-year PPA was signed between USG and NV Energy to provide up to 19.9 MW to the grid.

Regarding exploration at San Emidio, USG encountered the highest temperatures found to date at the property (160°C, 320°F) after deepening well 45-21 beyond 800 feet. Also in Section 21, well OW-10 intersected +149°C (300°F) temperatures with accompanying permeability. This well is currently being evaluated as a potential production well for the new plant. Several miles east of the plant area, USG drilled 3 <3,000-foot observation wells in Section 16. One of these wells, OW-8, encountered shallow- and intermediate-depth permeable zones and had a recorded bottom-well temperature of 157°C (315°F).

Some 22 miles (35 km) to the north in the Gerlach geothermal area, existing well 18-10 was twinned with 18A-10. This well was designed to target a lost circulation zone at ~2,800 feet, known from 18-10, but the well was ended ~900' from the target depth due to lack of funds. Still, shallow 135°C (275°F) outflow was encountered. USG is currently evaluating the structure and ownership of the joint venture in hopes of completing the well, where high permeability and temperatures are expected. (Nevada Division of Minerals, unpublished data, 2011; personal communication, Ian Warren of USG, 2012)

SILVER PEAK, ESMERALDA COUNTY – Ram Power

No work was done on the property in 2011 and 2012, except for minor reclamation work. Ram Power has closed their Reno offices, and there is no current indication that development is proceeding on this property or their other Clayton Valley properties.

SODA LAKE, CHURCHILL COUNTY – Magma Energy (Alterra Power Corp.)

In early 2010, Magma received a DOE grant to perform 3D/3C seismic surveys on the property. This seismic survey took fourteen months to permit and another six months to interpret, after the data were collected. The 2011 report to the DOE states that, because of an unexpectedly high Vp/Vs ratio, the shear-wave wavefield was severely under-sampled, resulting in a less-than-successful study. Magma did complete a detailed gravity survey and drilled two <4,000 foot observation wells. With the on-going merger with Altera Power Corp., Magma decided to terminate the DOE grant early and close its Reno office. (http://www4.eere.energy.gov/geothermal/sites/default/files/documents/3D%203C%20Reflection%20Seismic%20Survey%20and%20Data%20Integration%20to%20Identify%20Seismic%20Response_Summary_Benoit_Magma.pdf; personal communication, Dick Benoit, 2012).

TUSCARORA, ELKO COUNTY (HOT SULPHUR SPRINGS) - Ormat Technologies, Inc.

Work on Ormat's 30 MW (gross), 18 MW (net) air-cooled binary plant at Tuscarora continued through 2011 and achieved commercial production in the first quarter of 2012. The plant is located 10 miles (16 kilometers) north of Tuscarora at the north end of Independence Valley, on 3,300 acres of private land leased from Ellison Ranchers. A 24.5-mile (39-kilometers), 120-kV transmission line was constructed to bring the electricity to NV Energy's grid.

The Tuscarora project's success is the result of years of work by several private companies. Earth Power Resources signed a PPA with NV Energy but could not demonstrate commercial viability, and sold the project to TG Power in 2006. TG Power drilled a moderately successful production hole in 2007, but ran out of money and sold the project to the Energy Investment Fund in 2008. After the passage of Nevada's bill AB522 in 2009, ORMAT became interested in Tuscarora and found a way, using tax adjustments, to make the project commercially viable.

http://www.elkocountynv.net/meetings/board_of_commissioners/docs/Ormat.pdf

WABUSKA, LYON COUNTY – Homestretch Geothermal LLC

In 2011 Homestretch Geothermal LLC drilled two shallow production wells (~700 feet) to augment existing production at the Wabuska geothermal plant in T15N, R25E, Lyon County. Both wells are located in the production zone adjacent to the existing binary units in NW/4 SW/4 Section 15. Well PW-4 provided enough additional geothermal fluids to increase capacity at the existing plant by 1.4 MW (gross). (personal communication, Cory Egbert, Homestretch Geothermal).

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- Shevenell, L., and R. Zehner, 2011. Status of Nevada geothermal resource development – Spring 2011: Transactions Geothermal Resources Council, v. 35, p. 67-72.

Geothermal Bibliography and Web Links to Other Geothermal Information

For further information on geothermal resources in Nevada check the following Websites or contact David Davis at (775) 682-8766 or via e-mail at ddavis@unr.edu:

Map of Geothermal Resources in Nevada, NBMG Map 161, available online in PDF-file format: <http://www.nbmj.unr.edu/dox/m161.pdf>. (includes zipped file of GIS layers)

Nevada Bureau of Mines and Geology Geothermal Resources of Nevada Website at <http://www.nbmj.unr.edu/geothermal/gthome.htm>. This site contains geothermal exploration data, interactive maps, lease and information, and numerous geothermal digital data sets. These data are increasingly being made available through the National Geothermal Data System (www.geothermaldata.org)

Nevada Commission on Minerals, Nevada Division of Minerals at <http://minerals.state.nv.us/>.

GEO-HEAT CENTER, at <http://geoheat.oit.edu/>, Oregon Institute of Technology, Klamath Falls, Oregon. This site focuses on direct use applications of geothermal energy.

DOE/INEEL Geothermal Resource Location Maps for 13 Western States in PDF, JPG, and e00 file formats at <http://geothermal.id.doe.gov/maps/index.shtml>.

Nevada Bureau of Mines and Geology geothermal web page: <http://www.nbmj.unr.edu/Geothermal/index.html>

The Nevada Geothermal Resources map in PDF file format is found at <http://geothermal.id.doe.gov/maps/nv.pdf>.

The Renewable Resource Data Center (RReDC) provides access to an extensive collection of renewable energy resource data, maps, and tools. Geothermal, biomass, solar, and wind resource data for locations throughout the United States on the RReDC site at <http://www.nrel.gov/rredc/>.

Southern Methodist University Geothermal Lab, specializing in geothermal gradient data and maps of the entire country, post information at <http://www.smu.edu/geothermal/>.

Summary of Supporting Data for USGS Regional Heat-flow Studies of the Great Basin, 1970-1990, by John H. Sass, Susan S. Priest, Arthur H. Lachenbruch, S. Peter Galanis, Jr., Thomas H.

Moses, Jr., John P. Kennelly, Jr., Robert J. Munroe, Eugene P. Smith, Frederick V. Grubb, Robert H. Husk, Jr., and Charles W. Mase; USGS Open-File Report 2005-1207 online version 1.0 on the Web at <http://pubs.usgs.gov/of/2005/1207/>.

Geothermal Industry Temperature Profiles from the Great Basin, by John H. Sass, Susan S. Priest, Arnold J. Blanton, Penelope C. Sackett, Stephanie L. Welch, and Mark A. Walters; USGS Open-File Report 99-425 online version 1.0 on the Web at <http://pubs.usgs.gov/of/1999/of99-425/webmaps/home.html>.

The Bureau of Land Management Land and Mineral Records-LR2000 system Web address is <http://www.blm.gov/lr2000/>. provides reports on BLM land and mineral use authorizations for oil, gas, and geothermal leasing, rights-of-ways, coal and other mineral development, land and mineral title, mining claims, withdrawals, classifications, and more on federal lands or on federal mineral estate. The U.S. Department of Energy (DOE) Geothermal Technologies Program (<http://www1.eere.energy.gov/geothermal/>) Scientific and Technical Information (OSTI) have scanned approximately 3,300 agency and national lab technical reports. These files are in a PDF, full-text-searchable format and accessible online at <http://www.osti.gov/energycitations/>.

Oil and Gas

by David A. Davis

PRODUCTION

According to the Nevada Division of Minerals, Nevada's net oil production in 2011 was 407,999 barrels (0.02% of total U.S. production), which was down 4% from 427,222 barrels in 2010 and the lowest since 143,101 barrels were produced in 1976 (NBMG Bulletin 104). Production came from 67 actively producing wells in ten fields in Railroad Valley, Nye County, which accounted for 89% of the state's production, and five wells in one field in Pine Valley, Eureka County, which accounted for the remaining production. One other minor field was shut in throughout 2011 and four other minor fields are plugged and abandoned. Nevada ranked 26 out of the 31 oil-producing states in the country in 2011 (<http://www.eia.doe.gov>). According to the Division of Minerals, the average per barrel net wellhead price for Nevada crude oil was \$70.72 in 2011, which was an increase of 13% from \$62.42 in 2010. The sales volume (or gross yield) increased 8% to \$28,855,080 in 2011 from \$26,665,355 in 2010 (2011-2012 Net Proceeds of Minerals Bulletin).

The production of Nevada's 72 actively producing wells ranged between less than 2 and 174 barrels of oil per day and between 0 and 3,000 barrels of water per day. They averaged 16 barrels of oil per day and 232 barrels of water per day. Thirty-one wells were strippers, and 15 produced more than 20 barrels of oil per day. Twenty-seven wells produced less than 50 barrels of water per day, and nine produced more than 500 barrels of water per day.

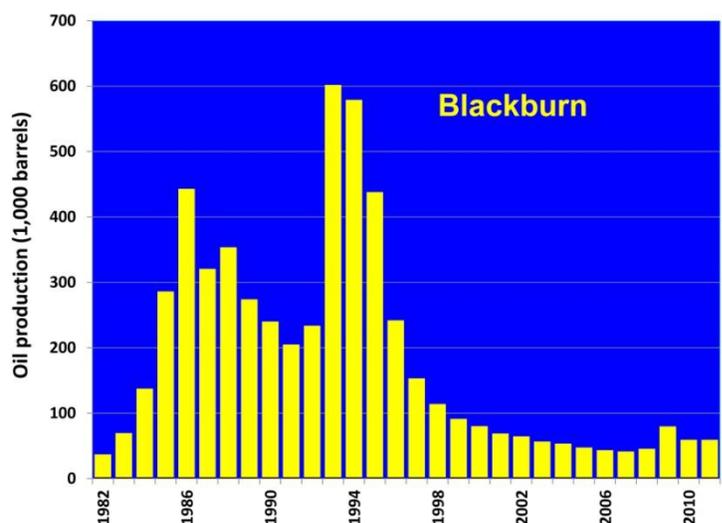
Ninety-six wells in 12 fields were listed as producers in 2011. Of these, 24 were shut in for the entire year. At year's end, two wells had been shut in for less than six months, and two had been shut in for more than six but less than 12 months. One well that produced throughout 2010 was shut in throughout 2011. One well shut-in since 2004 produced in June 2011. One well has been shut in since 2009; four wells had been shut in since between 2002 and 2008; and the rest had been shut in since between 1986 and 1998.

Grant Canyon No. 10, which went into production in May, 2010, was Nevada's highest ranking producer in 2011. It averaged 133 barrels of oil and 193 barrels of water per day. Nevada's second highest volume producer in 2011 was Munson Ranch 12-43. It averaged 82 barrels of oil and less than 1 barrel of water per day. Munson Ranch 12-43 was also the second highest producer in 2009, but slipped to third in 2010. Grant Canyon No. 9 slipped to Nevada's third highest ranking producer in 2011. It averaged 77 barrels of oil and 5

barrels of water per day. Grant Canyon No. 9 had been Nevada's highest ranking producer between 1996 and 2007 and in 2009 and Nevada's second highest volume producer in 2010.

The Bacon Flat Field, which produces from the Devonian Guilmette Formation (carbonate rocks) between about 4,960-5,350 feet, averaged 18 barrels of oil and 5 barrels of water per day in 2011 and accounted for less than 2% of Nevada's total oil production. Oil and water production both decreased 14% and 66% respectively. Only one of its three producers was active and that was for 361 days. One well has been shut in since 1993 and the other since 1988.

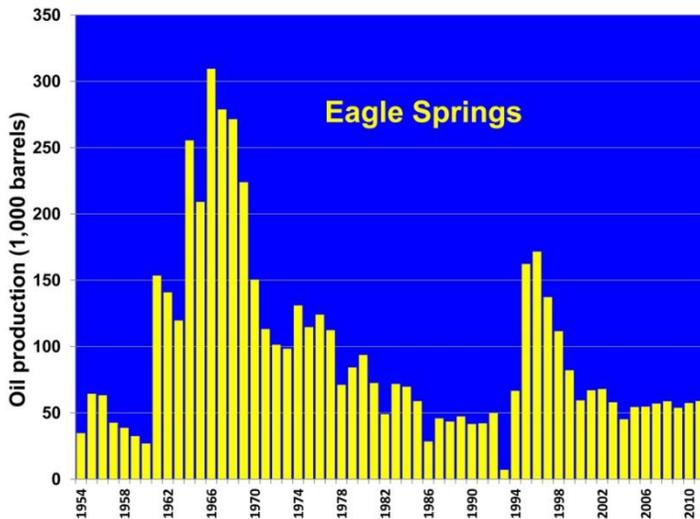
The Blackburn Field produces from the Oligocene Indian Well Formation (tuff and tuffaceous sandstone), Mississippian Chainman Shale (sandstone), and Devonian Nevada Formation (carbonate rocks) between about 6,700-6,750 feet. In 2011, the field had five active producers which averaged 328 days of production each. The field averaged 132 barrels of oil and 4,667 barrels of water per day, and accounted for about 11% of Nevada's total oil production. Oil and water production decreased 25% and 18% respectively. Of the five active producers, oil production increased in one and decreased in four. Daily per well oil production ranged between 4 and 44 barrels and averaged 26 barrels. Daily per well water production ranged between 63 and 2,301 barrels and averaged 813 barrels. The field also had two inactive producers. One of these wells has been shut-in since 2009, and the other, except for a brief production period in November 2005, has been shut in since 1998.



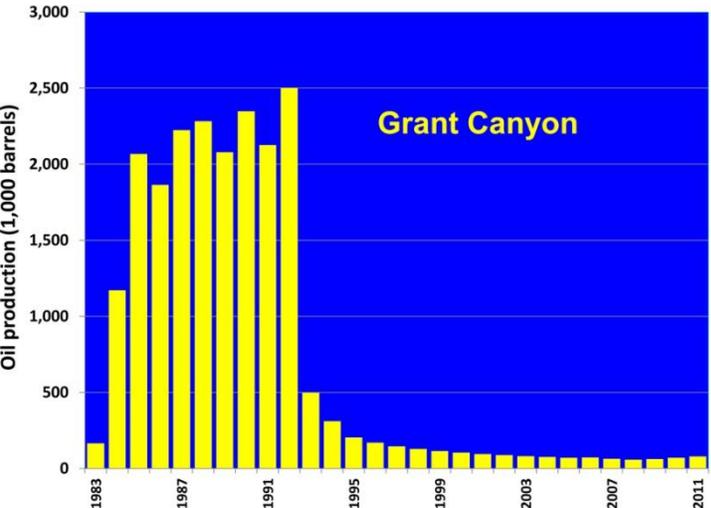
The Eagle Springs Field produces from Oligocene ignimbrites, the Eocene Sheep Pass

Formation (lacustrine carbonates), and the Pennsylvanian Ely Limestone between about 5,780-7,360 feet. In 2011, the field had 15 active producers which averaged 364 days of production each. A 16th well produced during one month. The field averaged 162 barrels of oil and 1,771 barrels of water per day in 2011 and accounted for 14% of Nevada's total oil production. Oil production increased 3% and water production decreased 8%. Daily per well oil production ranged between 2 and 22 barrels and averaged 10 barrels. Daily per well water production ranged between 3 and 568 barrels and averaged 111 barrels. Fifteen active producers had oil production increase in nine wells and decrease in six wells. Eagle Springs Federal No. 44-35, which had been shut-in since 2004, produced during the month of June. The field also had five inactive producers of which one has been shut in since 2008, three since 1997, and one since 1986.

well ranged between 19 and 133 barrels and averaged 61 barrels. Daily per well water production ranged between 5 and 832 barrels and averaged 505 barrels. In the four active producers, oil production increased in two and decreased in the other two. One producer was shut in for four months. The field also has one inactive producer that has been shut in since 1992.

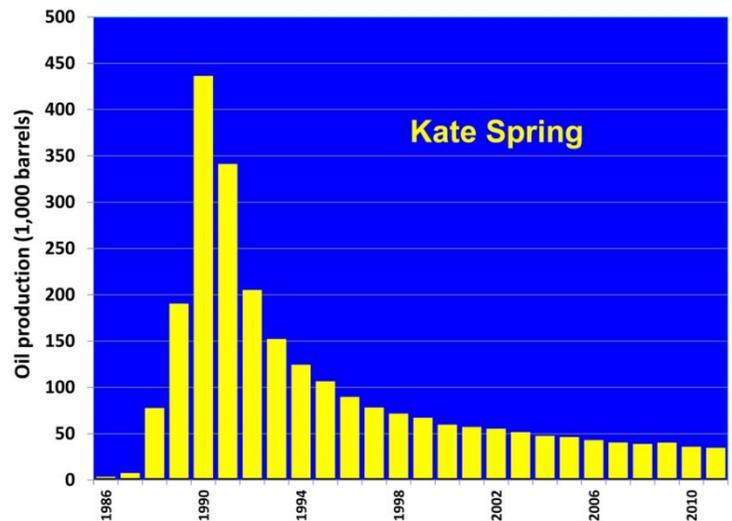


The Ghost Ranch Field produces from the Devonian Guilmette Formation between about 4,350-4,620 feet. In 2011, the field had four active producers which averaged 364 days of production each. The field averaged 51 barrels of oil and 1,413 barrels of water per day in 2011 and accounted for 5% of Nevada's total oil production. Oil and water production decreased 14% and 3% respectively. Daily per well oil production ranged between 9 and 8 barrels and averaged 13 barrels. Daily per well water production ranged between 265 and 425 barrels and averaged 353 barrels. Oil production decreased in all four producers.



The Kate Spring Field, which produces from the Tertiary Horse Camp Formation (breccia) and the Devonian Guilmette Formation between about 4,450-4,820 feet, averaged 89 barrels of oil and 1,233 barrels of water per day in 2011 and accounted for 8% of Nevada's total oil production. Oil and water production decreased 3%, and 9% respectively. Oil production decreased in all four of the field's active producers. Of the field's two inactive producers, one has been shut in since 1997 and the other since 1993. All four active wells also produce natural gas. A total of 3,554 thousand cubic feet of gas was produced in 2011, a decrease of 11%. The gas is used to operate production and related equipment at the lease sites of Makoil, Inc., and Western General, Inc.

The Grant Canyon Field produces from the Devonian Guilmette Formation between about 2,160-4,300 feet. In 2011, the field had four active producers which averaged 319 days of production each. The field averaged 244 barrels of oil and 2,020 barrels of water per day in 2011 and accounted for about 19% of Nevada's total oil production. Oil production increased 13%, and water production decreased 9%. Daily oil production per



The Sand Dune Field's only producer, which produces from Permian and Pennsylvanian

limestones between about 5,970-6,200 feet, was active for 364 days. It averaged 7 barrels of oil and

Production from Nevada's oil fields (barrels of oil)
Compiled from producers' reports filed with the Nevada Division of Minerals

Field (year discovered)	1954-2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
Eagle Springs (1954) (Railroad Valley)	5,006,067	57,946	45,176	54,362	54,708	56,992	58,683	53,851	57,394	58,900	5,504,079
Trap Springs (1976) (Railroad Valley)	13,044,031	193,191	181,937	170,896	163,299	159,821	196,089	181,320	175,352	166,415	14,632,351
Currant (1979) (Railroad Valley)	1,488	23	9	3	0	81	108	111	109	119	2,051
Bacon Flat (1981) (Railroad Valley)	959,466	11,763	10,612	7,556	8,112	8,301	7,968	7,764	7,427	6,358	1,035,327
Blackburn (1982) (Pine Valley)	4,991,111	54,623	51,372	45,369	41,491	39,477	43,600	77,730	57,260	43,198	5,445,231
Grant Canyon (1983) (Railroad Valley)	20,657,516	79,293	73,879	68,944	70,158	62,236	56,247	60,036	68,927	77,683	21,274,919
Kate Spring (1986) (Railroad Valley)	2,075,807	49,698	45,656	44,288	41,124	38,411	36,863	38,347	33,824	32,719	2,436,737
Tomera Ranch (1987) (Pine Valley)	34,367	1,981	124	0	0	0	0	0	0	0	36,472
North Willow Creek (1988) (Pine Valley)	45,187	349	377	2,064	2,552	1,256	56	0	0	0	51,841
Three Bar (1990) (Pine Valley)	23,837	0	0	0	0	0	0	0	0	0	23,837
Duckwater Creek (1990) (Railroad Valley)	17,367	436	200	185	122	150	120	120	118	115	18,933
Sans Spring (1993) (Railroad Valley)	249,924	4,775	4,169	3,324	3,265	2,971	2,407	1,419	1,494	1,404	275,152
Ghost Ranch (1996) (Railroad Valley)	371,341	26,129	36,423	37,874	30,255	26,070	23,615	24,011	21,630	18,605	615,953
Deadman Creek (1996) (Elko County)	367	0	0	0	0	0	0	0	0	0	367
Sand Dune (1998) (Railroad Valley)	67,883	13,123	13,124	11,878	10,618	10,562	10,467	9,883	3,687	2,483	153,708
Toano Draw (2007) (Elko County)						1,916	48	0	0	0	1,964
Total	47,545,759	493,330	463,058	446,743	425,704	408,244	436,271	454,592	427,222	407,999	51,508,922
Change from previous year		-11%	-6%	-4%	-5%	-4%	7%	4%	-6%	-4%	

140 barrels of water per day in 2011 and accounted for 0.6% of Nevada's total oil production. Oil production decreased 33% and water production increased 36%.

The Sans Spring Field's only active producer, which produces from the Oligocene Garrett Ranch Group (volcaniclastic rocks and ignimbrites) between about 5,640-5,770 feet, averaged 47 barrels of oil and no barrels of water per day for 30 days of production in 2011 and accounted for 0.3% of Nevada's total oil production. Oil production increased 6%. Of the field's two inactive producers, one has been shut in since 1998 and the other has been temporarily abandoned since 1993.

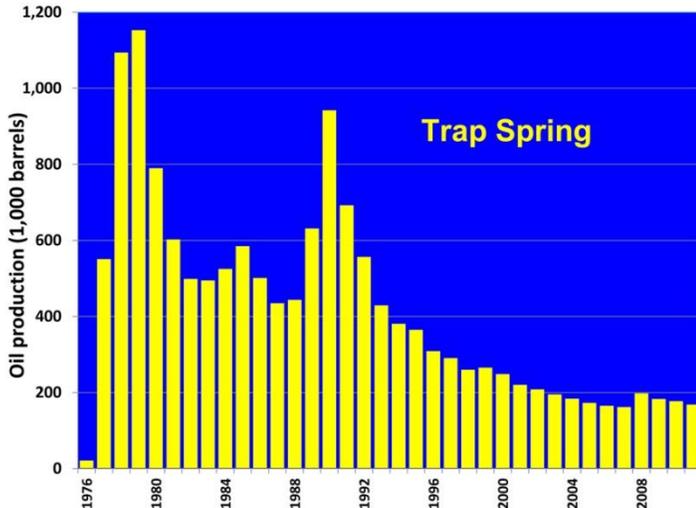
The Trap Spring Field produces from the Oligocene Tuff of Pritchards Station between about 3,210-4,950 feet. In 2011, the field had 34 active producers which averaged 305 barrels of oil production each. The field averaged 546 barrels of

oil and 8,025 barrels of water per day in 2011 and accounted for 41% of Nevada's total oil production. Oil production decreased 5%, and water production increased 7%.

Daily per well oil production ranged between 2 and 82 barrels and averaged 16 barrels. Daily per well water production ranged between 0 and 3,000 barrels and averaged 236 barrels. Oil production increased in 14 active producers and decreased in 20. One producer active throughout 2010 was shut in throughout 2011 and was not included in the active producer count above. One producer was also shut in for 11 months. The field also has eight inactive producers, of which one has been shut in since 2008, one since 1999, one since 1998, two since 1996, one since 1992, one since 1991, and one since 1986.

Two minor fields produced 234 barrels of oil in 2011. The Currant Field's only production well averaged 11 barrels of oil per day and no water for

11 days of production from the Eocene Sheep Pass Formation between about 6,850-7,080 feet. Its oil production decreased 9% in 2011, and it produced no water. The Duckwater Creek Field's only production well averaged 10 barrels of oil and 90 barrels of water per day for 12 days of production from the Oligocene Garrett Ranch Group between about 5,680-5,830 feet. Its oil production decreased 4%, and its water production remained constant.



Five other minor fields recorded no production for 2011. The North Willow Creek Field, which produced from the Mississippian Chainman Shale between about 6,290-6,470 feet, was shut in throughout 2011. One producer has been shut in since 2008, and the other has been shut in since 2002. The Three Bar Field's three production wells, which produced from the Miocene Humboldt Formation (sandstone and volcanic rock), the Oligocene Indian Well Formation, and the Cretaceous Newark Canyon Formation (sandstone and carbonate) between about 5,720-7,070 feet, were plugged and abandoned since 2000 and 2001. The Tomera Ranch Field's two production wells, which had produced from the Oligocene Indian Well Formation (chert and tuffaceous sandstone) between about 1,150-1,950 feet, were plugged and abandoned in 2007. Deadman Creek's only production well, which produced briefly from the Miocene Humboldt Formation between 8,165-8,850 feet, was plugged and abandoned in 1998. Toano Draw's only production well, which produced from the Miocene Humboldt Formation, was plugged and abandoned in October 2008.

Most Nevada oil is used to make such products as No. 1 and No. 2 diesel fuel, kerosene, stove oil, and asphalt. Foreland Refining Corporation owns the two refineries in Nevada. Nevada crude oil was transported in batches by trucks to the 8,000-barrel-per-day capacity refinery near Currant in Railroad Valley in 2011. The refinery and asphalt storage facility at Tonopah has not been in operation since 2002, and the facility is slowly being

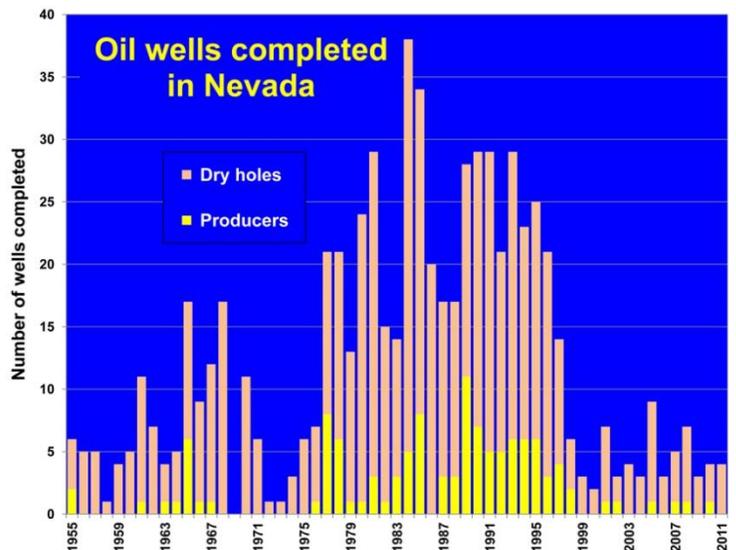
dismantled. In 2011, several tanks were being used for diesel and gasoline storage, and the towers were still standing.

NEW PRODUCERS

No new producers came on-line in 2011.

EXPLORATION

Five wells were permitted for oil and gas in 2011, up from four permitted in 2010. Four wells were spudded in 2011, the same number as were spudded in 2010. Drilling was completed on two of these wells in 2011, and both were shut in. A third well was drilled but was "awaiting orders" before being completed, and a fourth well was still being drilled at the end of the year. The operator of one well permitted in 2009 and listed as not drilled in 2010 reported the well was actually spudded, completed and plugged and abandoned in 2009. A well permitted, spudded, completed, and listed as drilled in 2010 was shut in during 2011. One well spudded and completed in 2001 and then listed as being tested through 2010 was finally reported as plugged and abandoned in 2009. One well spudded in 2004 and listed as being tested since then, was completed and plugged and abandoned in 2011. One well spudded in 2005 was reported to be still waiting for a completion rig. One well spudded in 2008, completed in 2009, and listed as idle in 2010 was shut in in 2011. Seven wells drilled between 1993 and 2008 continued to be listed as either shut in, temporarily abandoned, or testing with no other information available. The wells completed in 2011 totaled 7,751 feet, down 76% from 31,985 feet in 2010, which was up 22% from a revised 26,260 feet drilled in 2009.



One drill rig operated during the January/February through May/June and the

November/December periods. Two rigs operated during the July/August and September/October periods.

Prior to 2011, lease information was obtained directly from personnel at the U.S. Bureau

of Land Management (BLM) and reflected the U.S. Government's fiscal year. Starting in 2011, the information came from the BLM's on-line database LR2000, which can more easily be queried for the

Production of water from Nevada's oil fields (barrels of oil)

Compiled from producers' reports filed with the Nevada Division of Minerals

Field (year discovered)	1994-2004	2005	2006	2007	2008	2009	2010	2011	Total
Eagle Springs (1954)	4,191,697	428,375	501,462	804,428	842,435	699,950	699,147	644,703	8,812,197
Trap Spring (1976)	28,183,456	2,427,226	2,298,300	2,371,513	2,356,016	2,307,911	2,289,505	2,450,742	44,684,669
Currant (1979)	0	0	0	0	0	0	2	0	2
Bacon Flat (1981)	720,087	4,694	4,899	2,153	10,204	33,664	5,331	1,810	782,842
Blackburn (1982)	29,738,804	1,840,581	1,537,556	1,582,937	1,558,039	1,588,194	1,623,338	1,334,105	40,803,554
Grant Canyon (1983)	3,958,432	391,017	506,854	442,826	638,822	624,493	709,918	644,303	7,916,665
Kate Spring (1986)	5,413,485	424,809	416,752	437,983	416,983	520,099	494,605	450,155	8,574,871
Tomera Ranch (1987)	498,612	0	0	0	0	0	0	0	498,612
N. Willow Creek (1988)	2,859	268	83	0	0	0	0	0	3,210
Three Bar (1990)	5,958	0	0	0	0	0	0	0	5,958
Duckwater Creek (1990)	63,960	1,410	855	1,350	1,080	1,080	1,080	1,080	71,895
Sans Spring (1993)	3,215,704	238,854	261,500	244,756	217,288	0	0	0	4,178,102
Ghost Ranch (1996)	1,408,791	569,511	641,022	690,599	711,865	496,553	529,423	514,379	5,562,143
Deadman Creek (1996)	0	0	0	0	0	0	0	0	0
Sand Dune (1998)	239,681	31,935	27,043	31,044	32,684	29,998	37,399	50,857	480,641
Toano Draw (2007)				25,614	3,507	0	0	0	29,121
Total	77,641,526	6,358,680	6,196,326	6,635,203	6,788,923	6,301,942	6,389,748	6,092,134	122,404,482
Change from previous year		-56%	-3%	7%	2%	-7%	1%	-4%	

calendar year. For the calendar year 2011, 1,797 oil leases were in effect in Nevada, which covered 3,627,588 acres. This is almost 8% of the public lands managed by the U.S. Bureau of Land Management (BLM) in Nevada and covers an area slightly larger than the State of Connecticut.

On March 8, 2011, the Nevada State Office of the Bureau of Land Management (NSO-BLM) held an oil and gas lease sale on only one parcel of 2,392 acres covering all of sections 11, 12, and 14 and part of section 13, T27N, R51E in Pine Valley Eureka County. Underground Energy, Inc., of Arroyo Grande, CA, successfully bid \$95,480, or \$40 per acre for the parcel (*IHS Drilling Wire, Four Corners Edition, Section I, December 293, 2010; IHS Drilling Wire, Northern Edition, Section I, March 14, 2011*).

On June 14, 2011, the NSO-BLM held an oil and gas lease sale on 96 parcels covering 186,932 acres in Eureka and Nye Counties. The bids totaled \$591,888 on 25 parcels covering 44,959 acres, which averaged \$13.16 per acre. The highest bid was \$145 per acre by Eagle Exploration of Reno, NV, for Parcel 96 consisting of 920 acres covering portions of sections 16, 21, 31, 32, 33, and 34, T9N, R57E in Nye County. Eagle Exploration also had the second and third highest bids: \$50 per acre for Parcel 95 consisting of 240 acres covering portions

of sections 7, 8, and 9, T9N, R57E; and \$35 per acre for Parcel 94 consisting of 1,957 acres covering portions of sections 1, 2, 3, 6, 11, 12, and 14, T9N, R57E. All three parcels are in Railroad Valley, Nye County. Eagle Exploration paid \$213,930 for all three bids. Four parcels went for bids between \$20 and \$30, four parcels went for bids between \$5 and \$19, and remaining parcels went for the \$2-per-acre minimum bid (*IHS Drilling Wire, Wyoming Edition, Section I, May 17, 2011; IHS Drilling Wire, Newsletter Edition, Section I, June 24, 2011*).

On September 13, 2011, the NSO-BLM held an oil and gas lease sale on 106 parcels covering 216,271 acres in Eureka, Lincoln, Nye, and White Pine Counties. The bids totaled \$2,457,405.50 on 6 parcels covering 137,932 acres, which averaged \$17.82 per acre. The highest two bids were by John L. Osbourn, Jr., of Littleton, CO. Mr. Osbourn's highest bid was \$80 per acre for Parcel 51, consisting of 1,880 acres covering all of sections 29 and 32 and portions of section 31, T7N, R60E. His second highest bid was \$70 per acre for Parcel 50 consisting of 2,560 acres covering all of sections 27, 28, 33, 34, T7N, R60E. Eleven parcels went for bids between \$50 and \$61 per acre, ten parcels went for bids between \$11 and \$35, 17 parcels went for bids between \$2.50 and \$10, and the remaining parcels

went for the \$2-per-acre minimum bid (*IHS Drilling Wire, Northern Edition*, Section I, June 27, 2011; Oil and Gas Competitive Lease Sale Results Summary, September 13, 2011).

On December 13, 2011, the NSO-BLM held an oil and gas lease sale on 137 parcels covering

293,057 acres in Nye and Pershing Counties. The bids totaled \$401,396 on 70 parcels covering 160,339 acres, which averaged \$2.50 per acre. The highest bid was \$8 per acre by Ames Energy Advisors LLC of San Antonio, TX, for Parcel 103

Status of Nevada's oil and gas production wells in 2011

This table gives the amount of oil and water produced and the number of production days in 2011. The sources of information include well records and statistics from the Nevada Division of Minerals. Status abbreviations with dates of the action where applicable: BBL-barrels; MCF-thousand cubic feet; N/A-not available; PA-plugged and abandoned; Prod-production; SI-shut-in; WD-water disposal

FIELD/OPERATOR/WELL	NEVADA PERMIT	DATE COMPLETED	STATUS	LOCATION	PRODUCTION OIL (BBL)	PRODUCTION WATER (BBL)	PRODUCTION GAS (MCF)	PRODUCTION DAYS
EAGLE SPRINGS (Nye Co., 1954)								
Kirkwood Oil and Gas, LLC								
Eagle Springs Federal No. 44-35	813	05/98	SI 2004-2011	SE/4, NW/4, S35, T9N, R57E	365	0		0
Eagle Springs Federal No. 54-35	726	10/94	Prod	SW/4, NE/4, S35, T9N, R57E	4,840	36,718		364
Eagle Springs Unit No. 1-34	107	07/67	SI 1986	SE/4, NE/4, S34, T9N, R57E	0	0		0
Eagle Springs Unit No. 1-35	4	05/54	WD 1978	NE/4, NW/4, S35, T9N, R57E				
Eagle Springs Unit No. 1-36	76	02/65	SI 2008	SW/4, NE/4, S36, T9N, R57E	0	0		0
Eagle Springs Unit No. 2-36	80	07/65	Prod; SI 1996-2006	NW/4, SE/4, S36, T9N, R57E	6,031	69,325		364
Eagle Springs Unit No. 4-36	86	10/65	SI 1997	NW/4, SE/4, S36, T9N, R57E	0	0		0
Eagle Springs Unit No. 5-36	94	04/66	Prod	NW/4, NE/4, S36, T9N, R57E	6,506	2,583		364
Eagle Springs Unit No. 15-35	21	07/55	Prod; SI 1995-2002	NW/4, SW/4, S35, T9N, R57E	1,667	18,682		364
Eagle Springs Unit No. 35-35	17	03/55	Prod	NE/4, SW/4, S35, T9N, R57E	1,266	6,781		363
Eagle Springs Unit No. 43-36	83	08/65	Prod	NE/4, SE/4, S36, T9N, R57E	572	1,034		364
Eagle Springs Unit No. 62-35	46	01/60	Prod	NW/4, NE/4, S35, T9N, R57E	864	24,377		363
Eagle Springs Unit No. 73-35	69	10/63	Prod	SE/4, NE/4, S35, T9N, R57E	5,450	63,459		364
Eagle Springs Unit No. 74-35	71	04/64	Prod; SI 1998-2001	SE/4, NE/4, S35, T9N, R57E	2,940	69,741		364
Eagle Springs Unit No. 84-35	77	01/65	SI 1997	SE/4, NE/4, S35, T9N, R57E	0	0		0
Eagle Springs/Plains Petroleum No. 13-36	744	02/96	Prod	SW/4, NW/4, S36, T9N, R57E	3,966	35,698		364
Eagle Springs/Plains Petroleum No. 23-36	733	10/95	Prod	SW/4, NW/4, S36, T9N, R57E	7,991	5,202		364
Eagle Springs/Plains Petroleum No. 24-36	737	11/94	Prod	SW/4, NW/4, S36, T9N, R57E	572	1,724		364
Eagle Springs/Plains Petroleum No. 55-35	761	11/95	SI 1997	SW/4, NE/4, S35, T9N, R57E	0	0		0
Eagle Springs/Plains Petroleum No. 64-35	755	09/95	Prod	SW/4, NE/4, S35, T9N, R57E	4,636	3,270		364
Eagle Springs/Plains Petroleum No. 82-35	734	10/94	Prod	NE/4, NE/4, S35, T9N, R57E	6,322	206,975		364
Eagle Springs/Plains Petroleum No. 83-35	754	07/95	Prod	SE/4, NE/4, S35, T9N, R57E	4,913	99,235		364
TRAP SPRING (Nye Co., 1976)								
J. N. Oil and Gas Federal No. 1	449	09/85	PA 1999	NE/4, NW/4, S34, T9N, R56E				
Frontier Exploration Co.								
Munson Ranch No. 13-1	435	08/85	Prod	SE/4, NW/4, S13, T9N, R56E	3,108	2,183		364
Munson Ranch No. 13-45	547	08/89	Prod	NW/4, SW/4, S13, T9N, R56E	1,282	4,033		363
Munson Ranch No. 13-46	548	07/89	SI 1992	NE/4, SW/4, S13, T9N, R56E	0	0		0
Munson Ranch No. 14-33	513	07/89	Prod	NW/4, SE/4, S14, T9N, R56E	1,090	1,264		352
Munson Ranch No. 14-49	550	08/89	Prod	NE/4, SE/4, S14, T9N, R56E	0	0		353
Munson Ranch No. 14-49X	562	02/90	Prod	NE/4, SE/4, S14, T9N, R56E	315	0		36
Trap Spring No. 14-42	523	10/88	Prod	SE/4, NE/4, S14, T9N, R56E	1,599	4,978		365
Makoi, Inc.								
Britton No. 13-21	224	04/78	SI 1991	NE/4, NW/4, S13, T9N, R56E	0	0		0
East Inselberg No. 36-33	860	04/05	Prod; SI 2006-2011	NW/4, SE/4, S36, T10N, R56E	32	698		54
Munson Ranch No. 12-14	688	05/95	Prod	SW/4, SW/4, S12, T9N, R56E	485	599		49
Munson Ranch No. 12-23	596	11/90	SI 1998	NE/4, SW/4, S12, T9N, R56E	0	0		0
Munson Ranch No. 12-24	432	04/85	Prod	SE/4, SW/4, S12, T9N, R56E	3,500	10,617		365
Munson Ranch No. 12-32	559	12/89	Prod	SW/4, NE/4, S12, T9N, R56E	4,923	27,193		359
Munson Ranch No. 12-33	423	03/85	SI 1996	NW/4, SE/4, S12, T9N, R56E	0	0		0
Munson Ranch No. 12-34	406	10/84	Prod	SW/4, SE/4, S12, T9N, R56E	2,320	2,347		363
Munson Ranch No. 12-42	572	06/90	PA 2008	SE/4, NE/4, S12, T9N, R56E	0	0		0
Munson Ranch No. 12-43	880	03/08	Prod	NE/4, SE/4, S12, T9N, R56E	29,937	32		365
Munson Ranch No. 12-44X	445	07/85	PA 2008	SE/4, SE/4, S12, T9N, R56E	0	0		0
Munson Ranch No. 13-11	622	11/91	SI 2003	NW/4, NW/4, S13, T9N, R56E	0	0		0
Munson Ranch No. 13-11R	840	11/01	Prod	NW/4, NW/4, S13, T9N, R56E	4,520	33,506		364
Munson Ranch No. 13-14	623	09/91	Prod; SI 2001-2006	SW/4, SW/4, S13, T9N, R56E	5,842	95,180		363
Munson Ranch No. 13-21X	640	05/92	Prod	NE/4, NW/4, S13, T9N, R56E	3,799	27,499		365
Munson Ranch No. 13-24	218	08/79	Prod	SE/4, SW/4, S13, T9N, R56E	304	131		44
Munson Ranch No. 13-31	382	07/84	Prod	NW/4, NE/4, S13, T9N, R56E	2,831	16,213		364
Munson Ranch No. 13-32	373	08/84	Prod	SW/4, NE/4, S13, T9N, R56E	6,259	46,475		361
Munson Ranch No. 13-33	211	11/78	Prod	NW/4, SE/4, S13, T9N, R56E	1,787	7,224		365
Munson Ranch No. 13-41X	448	09/85	Prod	NE/4, NE/4, S13, T9N, R56E	8,403	57,173		365
Munson Ranch No. 13-42	222	11/78	Prod	SE/4, NE/4, S13, T9N, R56E	1,745	70,841		365
Munson Ranch No. 14-23	313	08/81	Prod	NE/4, SW/4, S14, T9N, R56E	2,084	18,963		365
Munson Ranch No. 14-24	354	10/83	SI 1996	SE/4, SW/4, S14, T9N, R56E	0	0		0
Munson Ranch No. 14-32	455	09/87	Prod	SW/4, NE/4, S14, T9N, R56E	4,931	80,015		365
Munson Ranch No. 14-34	287	11/80	SI 2009	SW/4, SE/4, S14, T9N, R56E	775	12,103		349
Munson Ranch No. 14-34X	522	08/88	Prod	SW/4, SE/4, S14, T9N, R56E	2,495	10,088		349
Munson Ranch No. 14-41	538	07/89	Prod	NE/4, NE/4, S14, T9N, R56E	9,534	86,982		365
Munson Ranch No. 14-44	528	08/89	Prod	SE/4, SE/4, S14, T9N, R56E	3,383	96,889		365
Trap Spring No. 2	185	02/77	Prod	SE/4, SW/4, S27, T9N, R56E	8,277	424		357
Trap Spring No. 3	188	04/77	Prod	NW/4, NE/4, S34, T9N, R56E	13,700	1,095,027		365
Trap Spring No. 8	196	09/77	Prod	SE/4, SW/4, S23, T9N, R56E	763	195		95
Trap Spring No. 9	197	09/78	Prod	NW/4, NW/4, S26, T9N, R56E	17,655	401,708		365
Trap Spring No. 16	232	09/78	Prod	NW/4, SE/4, S23, T9N, R56E	1,712	228,317		364
Trap Spring No. 19	219	12/77	Prod	SE/4, NW/4, S23, T9N, R56E	14,017	12,663		361
Trap Spring No. 23-41	574	06/90	Prod	NE/4, NE/4, S23, T9N, R56E	1,967	82		358
Zuspann No. 24-1	198	06/77	SI 1986	NW/4, SW/4, S24, T9N, R56E	0	0		0
Zuspann No. 24-3	208	09/77	Prod	NE/4, NW/4, S24, T9N, R56E	42	0		11
CURRENT (Nye Co., 1979)								
Makoi, Inc.								
Current No. 1	241	10/78	Prod; SI 2005-2007	SE/4, SW/4, S26, T10N, R57E	119	0		11
BACON FLAT (Nye Co., 1981)								
Breck Energy (Nevada), LLC								
Bacon Flat No. 1	316	07/81	SI 1988	C, SW/4, S17, T7N, R57E	0	0		0
Bacon Flat Federal No. 23-17	657	09/92	SI 1993	NE/4, SW/4, S17, T7N, R57E	0	0		0
Bacon Flat Federal No. 23-17A	710	01/94	Prod	NE/4, SW/4, S17, T7N, R57E	6,358	1,810		361

FIELD/OPERATOR/WELL	NEVADA PERMIT	DATE COMPLETED	STATUS	LOCATION	PRODUCTION OIL (BBL)	PRODUCTION WATER (BBL)	PRODUCTION GAS (MCF)	PRODUCTION DAYS
BLACKBURN (Eureka Co., 1982)								
Grant Canyon Oil and Gas, LLC								
Blackburn No. 3	324	03/82	SI 1998	SW/4, SW/4, S8, T27N, R52E	0	0		0
Blackburn No. 10	350	09/83	Prod	SW/4, NW/4, S8, T27N, R52E	7,484	22,081		351
Blackburn No. 14	442	07/85	Prod; SI 2001-2008	NE/4, SE/4, S7, T27N, R52E	14,395	24,067		330
Blackburn No. 16	458	12/85	SI 2009	SE/4, NE/4, S7, T27N, R52E	0	0		0
Blackburn No. 18	660	11/92	Prod	NE/4, SE/4, S7, T27N, R52E	6,469	315,983		293
Blackburn No. 19	724	06/94	Prod	NW/4, SW/4, S8, T27N, R52E	13,388	768,590		334
Blackburn No. 21	802	09/97	Prod	NE/4, SE/4, S7, T27N, R52E	1,462	203,384		332
GRANT CANYON (Nye Co., 1983)								
Grant Canyon No. 4	376	07/84	PA 1992	NE/4, NW/4, S21, T7N, R57E				
Grant Canyon No. 5	400	08/84	PA 1995	E/2, NE/4, S20, T7N, R57E				
Grant Canyon Oil and Gas, LLC								
Grant Canyon No. 3	375	08/84	SI 1992	SW/4, SW/4, S16, T7N, R57E	0	0		0
Grant Canyon No. 7	625	08/91	Prod; SI 1993-2007	NW/4, NW/4, S21, T7N, R57E	6,747	288,067		351
Grant Canyon No. 9	642	04/92	Prod	NW/4, NW/4, S21, T7N, R57E	17,948	1,175		234
Grant Canyon No. 10	706	07/11	Prod; PA 1993-2010	NW/4, NW/4, S21, T7N, R57E	46,448	67,448		349
Grant Canyon No. 22-21	705	01/94	Prod	SE/4, NW/4, S21, T7N, R57E	6,540	287,613		342
KATE SPRING (Nye Co., 1986)								
Makoil, Inc.								
Kate Spring No. 12-2	544	08/89	Prod	NW/4, NW/4, S2, T8N, R57E	7,072	103,401	1,304	365
Western General, Inc.								
Kate Spring No. 1	436	01/86	Prod	W/2, SW/4, S2, T8N, R57E	5,400	51,000	299	N/A
Kate Spring No. 1A	560	12/89	Prod	NW/4, SW/4, S2, T8N, R57E	16,861	153,185	1630	N/A
Kate Spring No. 1C	592	09/91	SI 1997	SW/4, SW/4, S2, T8N, R57E	0	0	0	0
Taylor Federal No. 1	497	10/87	Prod	NE/4, SE/4, S3, T8N, R57E	3,386	142,569	321	N/A
Taylor Federal No. 2	536	06/89	SI 1993	SE/4, NE/4, S3, T8N, R57E	0	0	0	0
TOMERA RANCH (Eureka Co., 1987)								
Tomera Ranch No. 33-1	591	10/90	PA 1997	SW/4, SW/4, S33, T31N, R52E				
Southern Pacific Land Co. No. 1-5R	647	05/92	PA 2007	NE/4, NE/4, S5, T30N, R52E				
Tomera Ranch No. 33-2RR	841	01/02	PA 2007	SW/4, SW/4, S33, T31N, R52E				
Foreland Corp.								
Southern Pacific Land Co. No. 1-5	492	08/87	WD 1992	NE/4, NE/4, S5, T30N, R52E				
NORTH WILLOW CREEK (Eureka Co., 1988)								
North Willow Creek No. 5-27	646	06/93	PA 1998	SE/4, NW/4, S27, T29N, R52E				
Kirkwood Oil and Gas, LLC								
North Willow Creek No. 6-27	648	09/93	SI 2008	NE/4, SW/4, S27, T29N, R52E	0	0		0
Southern Pacific Land Co. No. 1-27	633	01/92	SI 2002	NW/4, SE/4, S27, T29N, R52E	0	0		0
THREE BAR (Eureka Co., 1990)								
Three Bar Federal No. 24-13A	566	09/90	PA 2000	SW/4, SW/4, S24, T28N, R51E				
Three Bar Federal No. 5	679	07/93	PA 2001	SE/4, NE/4, S25, T28N, R51E				
Three Bar Federal No. 25-A	556	10/90	PA 2001	C, NE/4, S25, T28N, R51E				
DUCKWATER CREEK (Nye Co., 1990)								
Makoil, Inc.								
Duckwater Creek No. 19-11	542	03/90	Prod	NW/4, NW/4, S19, T9N, R57E	115	1,080		12
SANS SPRING (Nye Co., 1993)								
Breck Energy (Nevada), LLC								
Federal No. 5-14	635	02/93	SI 1998	SW/4, NW/4, S14, T7N, R56E				
Sans Springs No. 5-14A	792	05/97	Prod	SW/4, NW/4, S14, T7N, R56E	1,404	0		30
Federal No. 12-14	673	06/93	SI 1993	SW/4, SW/4, S14, T7N, R56E				
GHOST RANCH (Nye Co., 1996)								
Makoil, Inc.								
Ghost Ranch Springs No. 2-21X	800	08/97	Prod	NE/4, NW/4, S2, T8N, R57E	6,665	96,711		365
Kirkwood Oil and Gas, LLC								
Ghost Ranch Springs No. 38-35	793	01/97	Prod	SE/4, SW/4, S35, T9N, R57E	3,372	154,827		364
Ghost Ranch Springs No. 47-35	799	03/97	Prod	SE/4, SW/4, S35, T9N, R57E	5,470	112,142		364
Ghost Ranch Springs No. 48-35	779	07/96	Prod	SE/4, SW/4, S35, T9N, R57E	3,098	150,698		364
DEADMAN CREEK (Elko Co., 1996)								
Deadman Creek No. 44-13	342	01/96	PA 1998	SE/4, SE/4, S13, T39N, R65E				
SAND DUNE (Nye Co., 1998)								
Kirkwood Oil and Gas, LLC								
Sand Dune Federal No. 88-35	816	07/98	Prod	SE/4, SE/4, S35, T9N, R57E	2,483	50,857		364
TOANO DRAW (Elko Co., 2007)								
Toano Draw No. 15-19	856	12/06	PA 2008	NW/4, SW/4, S19, T39N, R66E				

Nevada oil producers and refinery *(Nevada Oil Patch; unpublished well files)*

Company	Field/Refinery	Contact	Addresses, Phone and FAX Numbers, and Websites
Kirkwood Oil and Gas	Eagle Springs Ghost Ranch North Willow Creek Sand Dune	Robert Kirkwood	120 South Durbin Street P. O. Box 2859 Casper, WY 82602 Phone: 307-265-5178 FAX: 307-265-1791 Website: http://www.kirkwoodoilandgasltd.com
Breck Energy (Nevada), LLC	Bacon Flat Sans Spring	Stephen Barnes	717 17th Street, No. 1400 Denver, CO 80202 Phone: 303-295-1906 FAX: 303-298-0049
Frontier Exploration Company	Trap Spring	Andy Pierce	3006 Highland Drive, No. 206 Salt Lake City, UT 84106 Phone: 801-486-5555 FAX: 801-486-5575
Makoil, Inc.	Currant Duckwater Creek Ghost Ranch Kate Spring Trap Spring	Gregg Kozlowski	25391 Commercentre Drive, No. 120 Lake Forest, CA 92630 Phone: 949-462-9010 FAX: 949-462-9012 Website: http://www.makoil.com
Grant Canyon Oil and Gas, LLC	Blackburn Grant Canyon	Michael O'Neal Rod Prosceno	717 17th Street, No. 1400 Denver, CO 80202 Phone: 303-297-2777 FAX: 303-298-0049
Western General	Kate Spring	Rick Taylor	801 Noahs Star Street Las Vegas, NV 89145-0609 Phone: 702-233-1490
Foreland Refining Corporation	Currant Refinery		HC 34 Box 34830 Ely, NV 89301 Phone: 775-863-0229

consisting of 2,240 acres covering portions of sections 12, 13, and 24 and a portion of section 1, T3N, R52E at the southern end of Railroad Valley in Nye County. The second highest bid was \$7.00 per acre by Nick Shenondi of Seattle, WA, for Parcel 91 consisting of 2,558 acres covering all of sections 29 and 33 and portions of sections 30 and 31, T7N, R51E. Eight parcels went for bids between \$3 and \$6, and the remaining parcels went for the \$2-per-acre minimum bid (*IHS Drilling Wire, Newsletter Edition, Section I, November 4, 2011; IHS Drilling Wire, Northern Edition, Section I, December 19, 2011*).

V.F. Neuhaus Properties, Inc. spudded their East Hogback 31-2 well in Railroad Valley, Nye County, on June 21, 2011, drilled to 1,856 feet, and then shut the well in on June 29, 2011. The casing was perforated in the Mississippian Joanna Limestone for the following intervals: 1,691-1,701 ft, 1,710-1,718 ft, and 1,750-1,762 ft. Between late August and early October, the well was swabbed a

number of times and over 360 barrels of rust-colored to grayish to black fluid containing up to 10% oil were recovered. The rig was released October 8, 2011, and the well has been shut in since then.

TRANSFERS

On June 12, 2011, Emergent Value Group LLC, Series A transferred ownership of Well FLT No. 1, NDOM Permit No. 918, to Grant Alliance LLC. Both companies have the same Reno address and same officers according to the transfer documents and the Nevada Business Search website. On June 13, 2011, Empire Petroleum Corporation of Tulsa, OK, transferred ownership of Paradise Unit No. 2-12, NDOM Permit No. 916 to Desert Discoveries of South Lake Tahoe, CA.

On December 21, 2011, Berry Petroleum Corporation of Denver, CO, entered into an agreement to sell its proved developed properties in Elko, Eureka, and Nye Counties (referred to as

Nevada Assets) to a group of private buyers for \$16.5 million. The sale was effective January 1, and

was closed on January 31, 2012. The Nevada Assets were taken over by Kirkwood Oil and Gas,

Oil well drilling activity in 2011

Company	Well	Permit No.	Location	Permit Date	Spud Date	Completion Date	Depth (Ft.)	Status
ELKO COUNTY								
Rock Investment Group	Isaiah 16-1	912	SW/4, NW/4, S16, T34N, R54E	MAR 09				Not Drilled
Tetuan Resources Corp.	Marys River 34-26	922	SW/4, SE/4, S26, T38N, R61E	NOV 11			*7,500	Drilled
EUREKA COUNTY								
Andromeda Oil, LLC	Tomera ranch No. 3	923	SE/4, SW/4, S33, T31N, R52E	NOV 11			*1,200	Drilled
HUMBOLDT COUNTY								
KBE Energy	Well No. 1	900	NE/4, NW/4, S10, T34N, R43E	APR 08	MAY 08		*5,500	TA
NYE COUNTY								
Breck Energy (Nevada), LLC	Federal No. 12-14	673	NW/4, SW/4, S14, T7N, R56E	APR 93	MAY 93	JUN 93	6,106	TA
Wester Oil Co.	Gigante No. 1-4	837	NW/4, NE/4, S4, T12N, R35E	MAY 01	AUG 01	Dec 03	*5,000	TA
Tri Valley Oil and Gas	Midland Trail No. 1-32	861	SW/4, SW/4, S32, T6N, R56E	SEP 04	JUN 05	JAN 06	7,063	Testing
Makoil, Inc.	Radio No. 6-31	865	NE/4, NW/4, S6, T9N, R57E	SEP 04	MAY 05	MAY 05	3,433	Drilled
V. F. Neuhaus Properties, Inc.	Currant Creek Ranch 31-1	872	SE/4, SW/4, S31, T10N, R57E	JUL 05	JUL 05		*2,200	TA
Petro World Nevada Corp.	Cobble Questa No. 1-12	876	NW/4, SE/4, S12, T12N, R34E	DEC 05	SEP 06	APR 07	5,200	Shut in
Makoil Inc.	Trap Spring No. 27-41	899	NE/4, NE/4, S27, T9N, R56E	APR 08	DEC 08	JAN 09	7,294	Idle
Makoil Inc.	Munson Ranch No. 12-23X	911	NE/4, SW/4, S12, T9N, R56E	DEC 08				Not Drilled
Desert Discoveries, LLC	Paradise Unit No. 2-12	916	S12, T12N, R34E	APR 10	JUL 10	NOV 10	4,250	Drilled
Geyser Petroleum, Inc.	Santa Maria de Los Angeles	917	NE/4, SW/4, S32, T10N, R57E	JUL 10				Not Drilled
HB Exploration, Inc.	Well No. 1	919	NW/4, SE/4, S9, T7N, R61E	APR 11				Not Drilled
HB Exploration, Inc.	Well No. 2	920	SW/4, NW/4, S33, T7N, R61E	APR 11	JUL 11		1,020	Drilled
V.F. Neuhaus Properties, Inc.	East Hogback 31-2	921	NE/4, SW/4, S31, T10N, R57E	MAY 11	JUN 11		1,800	Drilled
PERSHING COUNTY								
Evans-Barton Ltd.	Kyle Spring No. 11-42A	838	NE/4, SE/4, S11, T29N, R36E	JUL 01	AUG 01		*625	Testing
Evans-Barton, Ltd	Kyle Spring No. 12-12	868	SW/4, NW/4, S12, T29N, R36E	OCT 04	DEC 04	JUL 11	905	P&A
WHITE PINE COUNTY								
Geyser Petroleum	Pipeline Canyon No. 1	870	NE/4, SW/4, S28, T15N, R62E	JAN 05	MAR 05	SEP 05	5,280	Drilled
Emergent Value Group, LLC Series A	FLT-1	918	NE/4, NW/4, S11, T16N, R55E	OCT 10	JAN 2011	MAY 11	4,875	Drilled
P&A: Plugged and abandoned, TA: Temporarily abandoned, *: Permitted depth given when the actual depth is not available.								

LLC, headquartered in Caspar, WY (http://www.bry.com/annual_reports/2011AR/html/Berry-AR11.pdf).

OTHER DEVELOPMENTS

In 2011, Secretary of the Interior Ken Salazar unveiled new initiatives to expedite safe and responsible development of domestic energy resources on U.S. public lands and Indian trust lands nationally. Currently, most APDs (Application for Permit to Drill) are submitted to the BLM in hardcopy, and missing or incomplete information has to also be amended in hardcopy. Neither the public nor industry operators can access them on the current system or directly monitor the BLM actions, slowing the approval process. As part of the BLM's ongoing efforts to ensure efficient processing of oil and gas permit applications, the agency will implement new automated tracking systems that could reduce the review period for drilling permits by two-thirds and expedite the sale and processing of federal oil and gas leases. The new system will track permit applications through the entire review process and quickly flag any missing or incomplete information – greatly reducing the back-and-forth between BLM and industry applicants currently

needed to amend paper applications. An application takes an average of 298 days to approve, and the proposed changes are expected to shorten the average review to about 60 days.

Secretary Salazar also announced the launch of BLM's new National Oil and Gas Lease Sale System (LSS) to provide a standardized format and electronic capabilities, improve workflow process and stream line the phases of competitive oil-and-gas lease sales. The system will electronically track the BLM's leasing process from initial public submittals of Expressions of Interest and pre-sale offers through the issuance of leases. The BLM state offices currently use varying methods and systems in developing their quarterly onshore oil-and-gas lease sales, making it difficult to provide consistent reports and statistics on oil and gas Expressions of Interest and pre-sale offers. The LSS will replace these numerous stand-alone systems and provide a consistent, easy-to-use electronic process for both the oil and gas industry and BLM employees. The system will improve communications, decision making, and interactions with private and industry clients, BLM field offices and non-BLM land management agencies (*IHS Drilling Wire, Northern Edition*, Section I, April 9, 2011; *PN Bakken: BLM to expedite permitting*,

Federal oil and gas leases in effect for the years 2010 and 2011

County	NUMBER OF LEASES ¹						ACREAGE ¹					
	Competitive		Noncompetitive		Simultaneous ²		Competitive		Noncompetitive		Simultaneous ²	
	FY10	C11	FY10	C11	FY10	C11	FY10	C11	FY10	C11	FY10	C11
Carson City	0	0	0	0	0	0	0	0	0	0	0	0
Churchill	2	2	0	0	0	0	5,100	5,100	0	0	0	0
Clark	0	0	1	1	0	0	0	0	480	480	0	0
Douglas	0	0	0	0	0	0	0	0	0	0	0	0
Elko	190	163	215	210	0	0	299,717	270,497	475,282	423,199	0	0
Esmeralda	19	18	6	5	0	0	37,625	35,705	10,812	9,276	0	0
Eureka	131	97	58	56	0	0	220,838	176,716	168,999	161,160	0	0
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	48	74	74	102	0	0	90,464	153,548	238,193	331,494	0	0
Lyon	0	0	0	0	0	0	0	0	0	0	0	0
Mineral	2	2	8	3	0	0	4,149	4,149	14,235	6,511	0	0
Nye	268	292	172	191	20	18	274,987	377,577	403,058	471,408	7,998	7,878
Pershing	0	0	0	3	0	0	0	0	0	4,575	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	152	166	364	394	0	0	264,753	297,666	797,807	890,649	0	0
Total	812	814	898	965	20	18	1,197,633	1,320,958	2,108,866	2,298,752	7,998	7,878

¹Data from the U.S. Bureau of Land Management and LR2000. Starting 2011, data is for calendar year (CY). Prior to 2011, data is for U.S. Government Fiscal years (FY) which run from October 1 through September 30.

²These 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.

a review of commercial rules for the development of oil-shale resources on public lands. The BLM began the process by updating the 2008 programmatic environmental impact statement (PEIS); developing research demonstration and development leases; and developing regulations that reflect current information and fair royalty rates (*IHS Drilling Wire, Wyoming Edition*, Section I, April 19, 2011). The draft of the updated PEIS entitled, *The draft programmatic environmental impact statement and possible land use plan amendments for the allocation of oil shale and tar sands resources on lands administered by the Bureau of Land Management in Colorado, Utah, and Wyoming* was completed January 2012 and is available for public comment at <http://www.ostseis.anl.gov/documents/peis2012/index.cfm>. Though the present focus is on Colorado, Wyoming, and Utah, 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; S. W. Moore, H. B. Madrid, and G. T. Server, Jr., 1982, *Results of Oil-Shale Investigations In Northeastern Nevada*, U.S. Mineral Management Service Administrative Report; G. T. Server, Jr., and B. J. Solomon, 1983,

Geology and Oil Shale Deposits of the Elko Formation, Pinion Range, Elko County, Nevada, U.S. Geological Survey Map MF-1546; B. J. Solomon and S. W. Moore, 1982, *Geology and Oil Shale Deposits of the Elko West Quadrangle, Elko County, Nevada*, U.S. Geological Survey Map MF-1410; B. J. Solomon and S. W. Moore, 1982, *Geology and Oil Shale Deposits of the Elko East Quadrangle, Elko County, Nevada*, U.S. Geological Survey Map MF-1421).

U.S. OIL PRODUCTION AND CONSUMPTION

According to the Energy Information Agency of the U.S. Department of Energy (<http://www.eia.doe.gov>), the total petroleum products supplied to the U.S. averaged 18.8 million barrels per day in 2011, down 2% from 19.2 million barrels per day in 2010, and down 9.5% from the all-time high of 20.8 million barrels per day in 2005. Domestic crude oil production averaged 5.69 million barrels per day in 2011, up 4% from 5.48 million barrels per day in 2010. The annual production for 2011 is the highest since 2002 and the first time since the early 1980s that production has increased three years in a row. The most recent low was 4.95 million barrels per day in 2008. Prior to 2002, the last time production was lower than in 2011 was 1950 when production was 5.41 million barrels per day. Imported crude oil averaged 8.92 million barrels

per day in 2011, down 3.2% from 9.21 million barrels per day in 2010, down 11.9% from the all-time high of 10.13 million barrels per day in 2005. Imported crude oil accounted for 61% of the total in 2011, down from 62.7% in 2009 and 2010. The average price of domestic oil increased 19% to \$94.88 per barrel in 2011 from an average of \$79.48 per barrel in 2010.

Directory of Mining and Milling Operations

By David A. Davis

Compiled from information supplied by the Nevada Div. of Minerals, Mine Safety and Training Section of the Div. of Industrial Relations, and companies. Except for larger BLM community pits, aggregate 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, N/A: not available, OP: open-pit mine, OS: other surface, PL: placer, UG: underground

Mine/Mill Name	Operator	Location	Commodity	Type	Activity	Company/ Contract Employees	Address
CARSON CITY							
Black and Red Cinder Pits	Cinderlite Trucking, Inc.	S21, 22, T16N, R20E	cinder decorative stone	OP, ML	mining screening	2	1665 South Sutro Terrace Carson City, NV 89706 Phone: 775-882-4483 FAX: 775-882-1671 Web: http://www.cinderlite.com
Goni Pit	Cinderlite Trucking Corp.	S28, T16N, R20E	decomposed granite sand gravel	OP, ML	mining crushing screening	6	1665 South Sutro Terrace Carson City, NV 89706 Phone: 775-882-4483 FAX: 775-882-1671 Web: http://www.cinderlite.com
CHURCHILL COUNTY							
Huck Salt	Huck Salt Co.	S11, 12, 13, T16N, R31E; S7, T16N, R32E	salt	OS	mining evaporation	7	2900 Phritzie Lane Fallon, NV 89406 Phone: 775-423-2055 FAX: 775-423-0467
Moltan Mine and Plant	Moltan Company, LP	S28, 32, T23N, R27E	diatomite	OP, ML	mining crushing drying packaging screening	43	P. O. Box 860 I-80 Frontage Rd. Fernley, NV 89408-0860 Phone: 775-423-6668 FAX: 775-423-6411 Web: http://www.moltan.com
Nevada Cement Mine	Nevada Cement Co.	S34, T25N, R28E	limestone	OP	mining	2	P. O. Box 840 Fernley, NV 89408 Phone: 775-575-2281 FAX: 775-575-4387 Web: http://www.nevadacement.com
Nightingale Pit	World Minerals, Inc.	S17, 18, 19, 20, T24N, R26E	diatomite	OP	mining	2	100 Front St. Fernley, NV 89408 Phone: 775-575-2536 FAX: 775-575-1570 Web: http://www.worldminerals.com
Popcorn Mine	EP Minerals, LLC	S24, T16N, R28E; perlite S19, T16N, R29E		OP	mining	1	640 Clark Station Rd. Sparks, NV 89434 Phone: 775-824-7700 FAX: 775-824-7715 Web: http://www.eprminerals.com
Salt Wells/ Eetza Mountain Community Pits	Various (U.S. Bureau of Land Management manages pit)	S27, 28, 34; T18N, R30E	sand gravel	OP	mining	N/A	Bureau of Land Management 5665 Morgan Mill Rd. Carson City, NV 89701 Phone: 775-885-6000 Web: http://www.blm.gov
CLARK COUNTY							
Apex Landfill Pit	Las Vegas Paving Corp.	S19, T18S, R64E	sand gravel	OP, ML	mining crushing screening	40/1	4420 South Decatur Blvd. Las Vegas, NV 89103 Phone: 702-251-5800 FAX: 702-251-1968 Web: http://www.lasvegaspaving.com
Apex Quarry and Plant	Lhoist North America	S14, 22, 23, 26, 27, 34, 35, T18S, R63E	limestone	OP, ML	mining calcining crushing screening	135 (Mine and plant combined)	P. O. Box 363068 North Las Vegas, NV 89036 Phone: 702-643-7702 FAX: 702-643-9517 Web: http://www.lhoist.us
Blue Diamond Pit	Las Vegas Paving Corp.	S26, T22S, R60E	sand gravel	OP, ML	mining crushing screening	15	4420 South Decatur Blvd. Las Vegas, NV 89103 Phone: 702-251-5800 FAX: 702-251-1968 Web: http://www.lasvegaspaving.com

Directory of Mining and Milling Operations (continued)

Mine/Mill Name	Operator	Location	Commodity	Type	Activity	Company/ Contract Employees	Address
Boulder Ranch Quarry	Quarry 187, LLC	S15, 22, T23S, R63E	sand gravel	OP, ML	mining crushing screening	10	250 Pilot Rd., Suite No. 160 Las Vegas, NV 89120 Phone: 702-597-1010 FAX: 702-597-3406 Web: http://www.impactsandandgravel.com
Georgia-Pacific Gypsum Plant	Georgia-Pacific Gypsum, LLC	S34, 35, T18S, R63E	gypsum	ML	crushing	99	P. O. Box 337350 11401 U. S. Highway 91 North Las Vegas, NV 89033 Phone: 702-643-8100 FAX: 702-643-2049 Web: http://www.gp.com
Henderson Community Pits	F2M, Inc.	S14, T21S, R62E	sand gravel	OP	mining	N/A	4725 North Grand Canyon Dr. Las Vegas, NV 89129 Phone: 702-655-5377
Henderson Community Pits	Various (U.S. Bureau of Land Management manages pit)	S14, T21S, R62E	sand gravel	OP	mining	N/A	Bureau of Land Management 4701 North Torrey Pines Dr. Las Vegas, NV 89130-2301 Phone: 702-515-5000 Web: http://www.blm.gov
Henderson Plant	Lhoist North America	S12, T22S, R62E	lime	ML	calcining	121 (Mine and plant combined)	P. O. Box 127 BMI Complex 8000 West Lake Mead Dr. Henderson, NV 89015 Phone: 530-878-7368 Phone: 530-878-7368 Web: http://www.lhoist.us
Jean/South Jean Pits	Various (U.S. Bureau of Land Management manages pit)	S14, 15, 21, 23, 26, 27, 28, 33, 34, 35 T24S, R60E	sand gravel	OP	mining	N/A	Bureau of Land Management 4701 North Torrey Pines Dr. Las Vegas, NV 89130-2301 Phone: 702-515-5000 Web: http://www.blm.gov
KMI Zeolite Plant	KMI Zeolite, Inc.	S3, T25S, R57E	zeolite	ML	processing	5	HCR 37 Box 52 3100 East Sandy Valley Rd. Sandy Valley, NV 89019 Phone: 702-723-5415 Web: http://www.kmizeolite.com
Lone Mountain	Impact Sand and Gravel	S24, 36, T19S, R59E	sand gravel	OP, ML	mining crushing screening	N/A	250 Pilot Rd., Suite No. 160 Las Vegas, NV 89120 Phone: 702-597-1010 FAX: 702-597-3406 Web: http://www.impactsandandgravel.com
Lone Mountain	Las Vegas Paving Corp.	S35, 36, T19S, R59E; S2, T20S, R60E	sand gravel	OP, ML	mining crushing screening	8	4420 South Decatur Blvd. Las Vegas, NV 89103 Phone: 702-251-5800 FAX: 702-251-1968 Web: http://www.lasvegapaving.com
Lone Mountain	Nevada Ready Mix Corp.	S36, T19S, R59E	sand gravel	OP, ML	mining crushing screening	20	601 West Bonanza Las Vegas, NV 89106 Phone: 702-457-1115 Web: http://www.nevadareadymix.com
Lone Mountain Community Pit	Various (U.S. Bureau of Land Management manages pit)	S36, T19S, R59E; S1, T20S, R59E	sand gravel	OP	mining	N/A	Bureau of Land Management 4701 North Torrey Pines Dr. Las Vegas, NV 89130-2301 Phone: 702-515-5000 Web: http://www.blm.gov
Mesquite Community Pit	Various (U.S. Bureau of Land Management manages pit)	S20, T13S, R71E	sand gravel	OP	mining	N/A	Bureau of Land Management 4701 North Torrey Pines Dr. Las Vegas, NV 89130-2301 Phone: 702-515-5000 Web: http://www.blm.gov
Money Pit	Southern Nevada Liteweight, Inc.	S9, T25S, R61E	silica sand	OP, ML	mining milling	6	1101 E. Alexander Rd. Las Vegas, NV 89030 Phone: 702-399-8621 FAX: 702-633-4062 Web: http://www.snlsand.com

Directory of Mining and Milling Operations (continued)

Mine/Mill Name	Operator	Location	Commodity	Type	Activity	Company/ Contract Employees	Address
PABCO Gypsum-Apex Pit	Pacific Coast Building Products, Inc.	S7, 18, T20S, R64E	gypsum	OP, ML	mining crushing washing	108/2	P. O. Box 364329 North Las Vegas, NV 89036 Phone: 702-407-3700 FAX: 702-643-6249 Web: http://www.paccoast.com
Primm Quarry	Las Vegas Paving Corp.	S8, T27S, R59E	sand gravel	OP	mining crushing screening	5	4420 South Decatur Blvd. Las Vegas, NV 89103 Phone: 702-251-5800 FAX: 702-251-1968 Web: http://www.lasvegaspaving.com
Pioneer Gypsum Mine	Pioneer Gypsum Mining Co.	S19, 20, 29, 30, T20S, R64E	gypsum	OP, ML	mining crushing screening	8/1	4880 Donovan Way North Las Vegas, NV 89081 Phone: 702-399-5939 FAX: 702-399-8353
Rainbow Quarries	Las Vegas Rock, Inc.	S34, T25S, R58E	gravel stone	OP, ML	mining crushing sawing	11	2 Prison Rd. P. O. Box 19118 Jean, NV 89019 Phone: 702-791-7625 FAX: 702-874-1881 Web: http://www.vegasrock.com
Sierra Ready Mix Quarry	Sierra Ready Mix, LLC	S6, 7, T25S, R60E	sand gravel	OP, ML	mining crushing screening	4	4150 Smily Rd. North Las Vegas, NV 89081 Phone: 702-664-3000 FAX: 702-664-1736 Web: http://www.sierrareadymix.com
Simplot Silica Products Pit	J. R. Simplot Co.	S11, T17S, R67E	silica sand	OP, ML	mining drying flotation screening	40	P. O. Box 308 Overton, NV 89040 Phone: 702-397-2667 FAX: 702-397-2798 Web: http://www.simplot.com
Sloan Quarry and Mill	Aggregate Industries	S13, T23S, R60E	sand gravel	OP, OS, ML	mining crushing screening	43	3101 East Craig Rd. North Las Vegas, NV 89030 Phone: 702-649-6250 FAX: 702-642-2213 Web: http://www.aggregate-us.com
Spring Mountain Pit and Mill	Wells Cargo, Inc.	S10, 15, T21S, R60E	sand gravel	OP, ML	mining gravity	7	9127 West Russell Rd., Suite 210 Las Vegas, NV 891148 Phone: 702-876-5090 FAX: 702-876-3977 Web: http://www.wcliv.com
DOUGLAS COUNTY							
Bing Materials Pit and Mill	Bing Materials Co.	S16, T12N, R20E	sand gravel	OP, ML	mining crushing screening	9	P. O. Box 487 Minden, NV 89423 Phone: 775-265-3641
Wasbuska Iron Mine	Standard Industrial Minerals, Inc.	S19, T14N, R24E	iron ore	OP	stockpile	N/A	199 1st Street Bishop, CA 93514 Phone: 760-873-6780
ELKO COUNTY							
Big Ledge Mine and Dry Creek Jig Plant	National Oilwell Varco	S26, T42N, R61E	barite	OP, ML	mining gravity jigging	14/15	P. O. Box 900 Wells, NV 89935 Phone: 775-752-2300 FAX: 775-752-2303 Web: http://www.nov.com
Elburz Pit	Vega Construction and Trucking Co.	S9, T33N, R52E	sand gravel	OP, ML	mining crushing screening	26	P. O. Box 1630 Elko, NV 89803 Phone: 775-738-5381 FAX: 775-738-6311
Hollister Mine	Rodeo Creek Gold, Inc., and Great Basin Gold, Inc.	S4, 5, T37N, R48E; S32, T38N, R48E	gold silver	UG	mining	192/67	P. O. Box 2610 Winnemucca, NV 89446 Phone: 775-623-5760 FAX: 775-623-5769 Web: http://www.greatbasinggold.com
Jerritt Canyon Mine	Yukon-Nevada Gold Corp.	T39-41N, R52-54E	gold silver mercury	UG, ML, CIL	mining heap leach milling roasting	295/75	HC31 Box 78 Elko, NV 89801 Phone: 775-738-5600 FAX: 775-758-9233 Web: http://www.yukon-nevadagold.com

Directory of Mining and Milling Operations (continued)

Mine/Mill Name	Operator	Location	Commodity	Type	Activity	Company/ Contract Employees	Address
Meikle Mine	Barrick Goldstrike Mines, Inc.	S12, 13, T36N, R50E	gold silver	UG, ML	mining milling roasting	587	P. O. Box 29 Elko, NV 89803 Phone: 775-748-1001 FAX: 775-748-1240 Web: http://www.barrick.com
Midas Mine	Newmont Mining Corp.	S21, 22, 27, 28, 33, 34; T39N, R46E	gold silver	UG, ML	mining milling	276/58	HC66 Box 125 Midas, NV 89414 Phone: 775-635-6423 FAX: 775-635-6460 Web: http://www.newmont.com
Pilot Peak Quarry and Plant	Graymont Western US., Inc.	S14, 15, 22, 23, 26, T34N, R68E	limestone	OP, ML	mining calcining rotary kiln	60/1	P. O. Box 2520 West Wendover, NV 89883 Phone: 775-483-5463 FAX: 775-483-5149 Web: http://www.graymont.com
Rossi Mine	BAROID/Halliburton Energy Services, Inc.	S14-16, 21-23, 26-28, 34-35, T37N, R49E	barite	OP, ML	mining	55/98 (Mine and plant combined)	912 Dunphy Ranch Rd. Battle Mountain, NV 89820 Phone: 775-468-0515 FAX: 775-468-2060 Web: http://www.halliburton.com
Storm Mine	Barrick Goldstrike Mines, Inc.	S12, 13, T36N, R49E	gold	UG, ML	mining roasting	4	P. O. Box 29 Elko, NV 89803 Phone: 775-748-1001 FAX: 775-748-1240 Web: http://www.barrick.com

ESMERALDA COUNTY

Basalt Plant	Grefco Minerals, Inc.	S29, T2N, R34E	diatomite	OP, ML	drying milling	13	P. O. Box 278 Dyer, NV 89010 Phone: 775-573-2422 FAX: 775-573-2422 Web: http://www.dicalite.com
Blanco Mine	Vanderbilt Minerals Corp.	S22, T1N, R37E	clay	OP	bagging grinding screening	4	3561 East Burgundy Dr. P. O. Box 6660 Pahrump, NV 89048 Phone: 775-537-6976 FAX: 775-537-6879 Web: http://www.rtvanderbilt.com
Mineral Ridge	Mineral Ridge Gold, LLC	S1, T2S, R38E	gold silver	OP, HL, ML	mining heap leach	86/28	No. 1 Coyote Summit Silver Peak, NV 89047 Phone: 775-753-4778 FAX: 775-753-4780 Web: http://www.scorpogold.com
Silver Peak Operations	Chemetall Foote Corp.	T2S, R39-40E	lithium carbonate	OS, ML	mining evaporation precipitation	55/10	P. O. Box 98 Silver Peak, NV 89047 Phone: 775-937-2222 FAX: 775-937-2250 Web: http://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 roasting	1046	P. O. Box 29 Elko, NV 89803 Phone: 775-748-1001 FAX: 775-748-1240 Web: http://www.barrick.com
Carlin North - Genesis Complex	Newmont Mining Corp.	S33, T36N, R50E	gold	OP, HL, ML	mining bioleaching heap leach milling roasting	2376/748 (Combined Newmont Carlin Trend Operations)	1655 Mountain Hwy. Elko, NV 89801 Phone: 775-778-4000 FAX: 775-778-4751 Web: http://www.newmont.com
Carlin North - Post and adjacent mines	Newmont Mining Corp.	S19, T36N, R50E	gold	OP, HL, ML	mining bioleaching heap leach milling roasting	2376/748 (Combined Newmont Carlin Trend Operations)	1655 Mountain Hwy. Elko, NV 89801 Phone: 775-778-4000 FAX: 775-778-4751 Web: http://www.newmont.com
Carlin South - Carlin and adjacent mines	Newmont Mining Corp.	S14, T35N, R50E	gold	UG, HL, ML	mining bioleaching heap leach milling roasting	2376/748 (Combined Newmont Carlin Trend Operations)	1655 Mountain Hwy. Elko, NV 89801 Phone: 775-778-4000 FAX: 775-778-4751 Web: http://www.newmont.com

Directory of Mining and Milling Operations (continued)

Mine/Mill Name	Operator	Location	Commodity	Type	Activity	Company/ Contract Employees	Address
Carlin South - Gold Quarry and adjacent mines	Newmont Mining Corp.	S3, T33N, R51E	gold	OP, HL, ML	mining bioleaching heap leach milling roasting	2376/748 (Combined Newmont Carlin Trend Operations)	1655 Mountain Hwy. Elko, NV 89801 Phone: 775-778-4000 FAX: 775-778-4751 Web: http://www.newmont.com
Nevada Barth Iron Mine and Mill	Saga Exploration Co.	S7, T31N, R51E	iron	OP, ML	screening	3	2339 Dickerson Rd. Reno, NV 89503 Phone: 775-322-9994
Ruby Hill Mine	Barrick Goldstrike Mines, Inc.	S9-11, 14, 15, T19N, R53E	gold silver	OP, CIL, CIP, HL, ML	heap leach milling	130/15	P. O. Box 676 Eureka, NV 89316 Phone: 775-237-6060 FAX: 775-237-5408 Web: http://www.barrick.com
HUMBOLDT COUNTY							
Ashdown Mine	Win-Eldrich Mines, Ltd.	S14, T45N, R29E	molybdenum gold	UG, ML	mining flotation milling	35	P. O. Box 210 Denio, NV 89404 Phone: 775-941-0274 FAX: 775-941-0271 Web: http://www.win-eldrich.com
Bonanza Opal Mine	Bonanza Opal Mines, Inc.	S6, 7, T45N, R26E	precious opal	OP	mining	1	P. O. Box 127 Denio, NV 89404 Phone: (Summer) 775-941-0111 Phone: (Winter) 864-597-1421 Web: http://www.bonanzaopals.net
Hycroft Mine	Hycroft Resources and Development, Inc.	S26, T35N, R29E	gold silver	OP, HL	mining heap leach	260/1700	P. O. Box 3030 Winnemucca, NV 89446 Phone: 775-623-5260 FAX: 775-623-0215 Web: http://www.alliednevada.com/
Lone Tree Mine	Newmont Mining Corp.	S1, 11, 13, 15, 23, T34N, R42E	gold silver	OP, HL, ML	flotation heap leach milling	67/32	P. O. Box 388 Valmy, NV 89438-0388 Phone: 775-635-6423 FAX: 775-635-6460 Web: http://www.newmont.com
Marigold Mine	Goldcorp, Inc.	S8, 9, 18-20; T33N, R43E	gold silver	OP, HL, ML	mining heap leach milling	293/20	P. O. Box 160 Valmy, NV 89438 Phone: 775-635-2317 FAX: 775-635-2551 Web: http://www.goldcorp.com
MIN-AD Mine	MIN-AD, Inc.	S28, T35N, R38E	dolomite	OP, ML	mining grinding	15/3	P. O. Box 39 Winnemucca, NV 89446 Phone: 775-623-5944 FAX: 775-623-9028 Web: http://www.min-ad.com
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 Phone: (Summer) 775-941-0270 Phone: (Winter) 541-548-4810 Web: http://www.nevadaopal.com
Royal Peacock Opal Mine	Walter Wilson	S30, T45N, R26E	precious opal	OP	mining	1	P. O. Box 165 Denio, NV 89404 Phone: (Summer) 775-941-0374 Phone: (Winter) 775-272-3201 Web: http://www.royalpeacock.com
Turquoise Ridge Joint Venture	Barrick Gold Corp.	S33, T39N, R42E	gold silver	UG	mining	371/213	HC 66 Box 220 Golconda, NV 89414-9702 Phone: 775-529-5001 FAX: 775-529-0753 Web: http://www.barrick.com
Twin Creeks Mine	Newmont Mining Corp.	S3-10, 15-22, 27-32, T39N, R43E	gold silver	OP, HL, ML	mining heap leach milling	629/131	P. O. Box 69 Golconda, NV 89414 Phone: 775-635-9400 FAX: 775-635-4602 Web: http://www.newmont.com

Directory of Mining and Milling Operations (continued)

Mine/Mill Name	Operator	Location	Commodity	Type	Activity	Company/ Contract Employees	Address
LANDER COUNTY							
3D Pit	John Davis Trucking Co.	S2, T32N, R45E	sand	OP, ML	mining	4	P. O. Box 457 Battle Mountain, NV 89820 Phone: 775-635-2805 FAX: 775-635-8017
Argenta Mill	Baker Hughes Oilfield Operations, Inc.	S6, T32N, R47E	barite	ML	gravity grinding	41/42 (Mine and plant combined)	P. O. Box 277 Battle Mountain, NV 89820 Phone: 775-635-5441 FAX: 775-635-5455 Web: http://www.bakerhughes.com
Argenta Mine	Baker Hughes Oilfield Operations, Inc.	S13, 14, T32N, R46E; S18, 19, T32N, R47E	barite	OP	mining	41/42 (Mine and plant combined)	P. O. Box 277 Battle Mountain, NV 89820 Phone: 775-635-5441 FAX: 775-635-5455 Web: http://www.bakerhughes.com
Battle Mountain Grinding Plant	M-I Swaco	S18, T32N, R45E	barite	ML	gravity grinding	42	P. O. Box 370 2 North Second Street Battle Mountain, NV 89820 Phone: 775-635-5135 FAX: 775-635-2645 Web: http://www.miswaco.com
Cortez Hills Open Pit Mine	Barrick Cortez, Inc.	S31, T27N, R48E	gold	OP, ML	mining milling	848/292 (Combined Pipeline and Cortez Hills Pit Mines)	HC 66 Box 1250 Crescent Valley, NV 89821-1250 Phone: 775-468-4400 FAX: 775-468-4496 Web: http://www.barrick.com
Cortez Hills Underground Mine	Barrick Cortez, Inc.	S31, T27N, R48E	gold	UG, ML	mining milling	27/49	HC 66 Box 1250 Crescent Valley, NV 89821-1250 Phone: 775-468-4400 FAX: 775-468-4496 Web: http://www.barrick.com
Cortez Pipeline Mine	Barrick Cortez, Inc.	S31, T28N, R47E	gold	OP, HL, ML	mining heap leach milling	848/292 (Combined Pipeline and Cortez Hills Pit Mines)	HC 66 Box 1250 Crescent Valley, NV 89821-1250 Phone: 775-468-4400 FAX: 775-468-4496 Web: http://www.barrick.com
Damele Mine	Tony Cotner	S13, 24, T19N,	turquoise	OP	mining	N/A	P. O. Box 4558 Scottsdale, AZ 85261-4548
Greystone Mine	M-I Swaco	S35, T28N, R45E	barite	OP, ML	mining gravity	52	P. O. Box 370 2 North Second Street Battle Mountain, NV 89820 Phone: 775-635-5135 FAX: 775-635-2645 Web: http://www.miswaco.com
Mountain Springs Mine	M-I Swaco	S8, 9, T28N, R44E	barite	OP, ML	stockpile	N/A	P. O. Box 370 2 North Second Street Battle Mountain, NV 89820 Phone: 775-635-5135 FAX: 775-635-2645 Web: http://www.miswaco.com
Phoenix Mine	Newmont Mining Corp.	S22, 27, 33, 34, T31N, R43E	gold silver	OP, HL, ML	mining heap leach	506/136	P. O. Box 1657 Battle Mountain, NV 89820 Phone: 775-635-6423 FAX: 775-635-6460 Web: http://www.newmont.com
LINCOLN COUNTY							
Tenacity Perlite Mine and Mill	Wilkin Mining and Trucking Co., Inc.	S34, T4S, R62E	perlite	OP, ML	mining crushing	8	HC 34 Box 199 Caliente, NV 89008 Phone: 775-728-4463 FAX: 775-728-4456
LYON COUNTY							
Adams Claim Gypsum Mine	Art Wilson Co.	S25, T16N, R20E	gypsum limestone	OP, ML	mining crushing grinding screening pelletizing	56	P. O. Box 20160 Carson City, NV 89702-1160 Phone: 775-882-0700 FAX: 775-882-0790 Web: http://www.awgypsum.com

Directory of Mining and Milling Operations (continued)

Mine/Mill Name	Operator	Location	Commodity	Type	Activity	Company/ Contract Employees	Address
Celite Plant	World Minerals, Inc.	S11, T20N, R24E	diatomite	ML	classification drying grinding milling	12/1	100 Front St. Fernley, NV 89408 Phone: 775-575-2536 FAX: 775-575-1570 Web: http://www.worldminerals.com
Dayton Materials	Granite Construction Co.	S23, T16N, R21E	aggregate sand	OP, ML	mining crushing screening washing	7	P. O. Box 2087 1900 Glendale Ave. Sparks, NV 89432 Phone: 775-355-3434 FAX: 775-329-2803 Web: http://www.graniteconstruction.com
Hazen Pit	EP Minerals, LLC	S6, 9, T19N, R26E	diatomite	OP	mining	2/4	640 Clark Station Rd. Sparks, NV 89434 Phone: 775-824-7700 FAX: 775-824-7715 Web: http://www.epminerals.com
Mound House Pit	BJ Rees's Enterprise	S19, T16N, R21E	sand gravel	OP, ML	mining crushing screening	7	1045 South Hoytsville Rd. Coalville, UT 84017-9741 Phone: 801-359-9781
Nevada Cement Mine	Nevada Cement Co.	S3-6, 9, T19N, R25E; S31-33, T20N, R25E	limestone	OP	mining	4	P. O. Box 840 Fernley, NV 89408 Phone: 775-575-2281 FAX: 775-575-4387 Web: http://www.eaglematerials.com
Nevada Cement Plant	Nevada Cement Co.	S10, 11, T20N, R24E	limestone clay	ML	crushing dry milling rotary kiln	80	P. O. Box 840 Fernley, NV 89408 Phone: 775-575-2281 FAX: 775-575-4387 Web: http://www.eaglematerials.com
MINERAL COUNTY							
Denton-Rawhide Mine	Rawhide Mining, LLC	S4, 5, 8, 16, 17, T13N, R32E	gold silver	OP, HL	mining heap leach	23/2	P. O. Box 2070 Fallon, NV 89407 Phone: 775-945-1015 FAX: 775-945-1213
Esmeralda Mine	Antler Peak Gold, Inc.	S2-4, 7-11, 15-20, 29-32, T5N, R28E	gold silver	OP, HL	milling	37/15	P. O. Box 2570 Hawthorne, NV 89415 Phone: 775-546-5010
Lucky Boy Quarry	James Hardie Building Products Inc.	S34, T7N, R29E	quartzite	OP	mining	1/6	3000 Waltham Way McCarran, NV 89434 (775) 355-3000 Web: http://www.jameshardie.com
NYE COUNTY							
Ash Meadows Plant	Zeox Mineral Materials Corp.	S25, T18S, R50E	unaltered ash zeolite	ML	crushing screening packaging	5	HCR 70 Box 7006 East Spring Meadows Rd. Amargosa Valley, NV 89020 Phone: 775-372-5524 FAX: 775-372-5524 Web: http://www.zeoxcorporation.com
Beatty Quarry	Kalamazoo Materials, Inc.	S16, T11S, R47E	landscape rock	OP, ML	mining crushing screening	3	6975 North Oracle Rd. Tucson, AZ 85704 Phone: 520-575-9601 FAX: 520-575-9604 Web: http://www.kalamazoomaterials.com
Cinder Cone Pit	Allied Building Materials, Inc. and Cind-R-Lite Company	S36, T14S, R48E; cinder S31, T14S, R49E; S1, T15S, R48E; S6, T15S, R49E	cinder	OP, ML	mining screening	5	4745 Mitchell St. North Las Vegas, NV 89081 Phone: 702-651-1550 FAX: 702-651-1551 Web: http://www.abmnv.com
Gamebird Pit	Wulfenstein Construction Co., Inc.	S2, T20S, R53E	sand gravel	OP	mining crushin screening	1	2281 East Postal Dr. P. O. Box 38 Pahrump, NV 89048 Phone: 702-727-5900 FAX: 702-727-6010
IMV Pits	Mud Camp Mining Co., LLC	S28, 29, T17S, R49E	clay	OP, ML	mining classification crushing grinding screening	27	HCR 70 Box 549 Amargosa Valley, NV 89020 Phone: 775-372-5341 FAX: 775-372-5640 Web: http://www.imvnevada.com

Directory of Mining and Milling Operations (continued)

Mine/Mill Name	Operator	Location	Commodity	Type	Activity	Company/ Contract Employees	Address
New Discovery Mine and White Caps Mill	Vanderbilt Minerals Corp.	S13, 24, T12S, R46E; S18, 19 T12S, R47E	clay	OP, UG, ML	bagging grinding screening	9	3561 East Burgundy Dr. P. O. Box 6660 Pahrump, NV 89048 Phone: 775-537-6976 FAX: 775-537-6879 Web: http://www.rtvanderbilt.com
Pahrump Community Pit	Various (U.S. Bureau of Land Management manages pit)	S28, 29, T20S, R54E	sand gravel	OP	mining	N/A	Bureau of Land Management 4701 North Torrey Pines Dr. Las Vegas, NV 89130-2301 Phone: 702-515-5000 Web: http://www.blm.gov
Premier Chemicals Mine	Premier Chemicals, LLC	S22, 23, 25-27, 34-36, T12N, R36E	magnesite	OP, ML	mining calcining sizing	95/1	P. O. Box 177 Gabbs, NV 89409 Phone: 775-285-260 FAX: 775-285-4021 Web: http://www.premierchemicals.com
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	733/194	P. O. Box 480 Smoky Valley Mine Rd. Round Mountain, NV 89405 Phone: 775-377-2366 FAX: 775-377-3224 Web: http://www.kinross.com
Royston Claims	Dean Otteson and Danny Otteson	S36, T6N, R39E; S6, 8, T6N, R40E	turquoise	OP	mining	1	P. O. Box 564 Tonopah, NV 89049 Phone: 775-482-9889
Tonopah Community Pit	Various (U.S. Bureau of Land Management manages pit)	S11, T20S, R53E	sand gravel	OP	mining	N/A	Bureau of Land Management 50 Bastian Rd. Battle Mountain, NV 89820 Phone: 775-635-4000 Web: http://www.blm.gov
PERSHING COUNTY							
Buff-Satin Mine	Vanderbilt Minerals Corp.	S2, T27N, R32E	clay	OP	bagging grinding screening	4	3561 East Burgundy Dr. P. O. Box 6660 Pahrump, NV 89048 Phone: 775-537-6976 FAX: 775-537-6879 Web: http://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	223/68	P. O. 1057 Lovelock, NV 89419 Phone: 775-273-7995 FAX: 775-273-7423 Web: http://www.coeur.com
Colado Mines	EP Minerals, LLC	S6, 7, 16, 18, 21, 25, T28N, R29E	diatomite perlite	OP, OS	mining	30	P. O. Box 959 150 Coal Canyon Rd. Lovelock, NV 89419 Phone: 775-824-7591 FAX: 775-824-7595 Web: http://www.epminerals.com
Colado Plant	EP Minerals, LLC	S33, T28N, R32E	diatomite perlite	ML	drying classification grinding calcining	95	P. O. Box 959 150 Coal Canyon Rd. Lovelock, NV 89419 Phone: 775-824-7540 FAX: 775-824-7582 Web: http://www.epminerals.com
Florida Canyon Mine	Florida Canyon Mining, Inc.	S1-4, 9-15, T31N, R33E; S37-39, T31.5N, R33E; S33-35, T32N, R33E	gold silver	OP, HL, ML	mining heap leach milling	177/6 (Combined Florida Can. & Standard Mines)	P. O. Box 330 Imlay, NV 89418 Phone: 775-538-7300 FAX: 775-538-7324 Web: http://www.jipangu.co.jp
Nassau (Section 8) Mine	American Colloid Co.	S8, T27N, R33E	clay	OP	mining shipping	N/A	P. O. Box 2010 Belle Fourche, SD 57717 Phone: 605-892-6371 FAX: 605-892-3178 Web: http://www.colloid.com

Directory of Mining and Milling Operations (continued)

Mine/Mill Name	Operator	Location	Commodity	Type	Activity	Company/ Contract Employees	Address
Standard Mine	Florida Canyon Mining, Inc.	S1, 12, T30N, R33E; S35, T31N, R33E	gold silver	OP, HL, ML	heap leach	177/6 (Combined Florida Can. & Standard Mines)	P. O. Box 330 Imlay, NV 89418 Phone: 775-538-7300 FAX: 775-538-7324 Web: http://www.jipangu.co.jp
Sunrise Gold Placer Mine	Sunrise Minerals, LLC	S17, T33N, R36E	gold	PL	mining gravity	5	7343 South Alton Way, Suite 100 Centennial, CO 80112 Phone: 303-779-1800 FAX: 303-770-1995
W. Glen Sexton Family Trust	Nutritional Additives Corp.	S5, T34N, R38E	dolomite	OP, ML	mining milling	2	415 Wellington Street Winnemucca, NV 89445 Phone: 775-623-1151 FAX: 775-623-1153
STOREY COUNTY							
Clark Mill	EP Minerals, LLC	S35, T20N, R22E	diatomite	ML	calcining classification drying grinding	53	640 Clark Station Rd. Sparks, NV 89434 Phone: 775-824-7700 FAX: 775-824-7633 Web: http://www.epminerals.com
Clark Mine	EP Minerals, LLC	S27, 33, 34, T20N, R23E	diatomite	OP	mining	12/9	640 Clark Station Rd. Sparks, NV 89434 Phone: 775-824-7700 FAX: 775-824-7633 Web: http://www.epminerals.com
WASHOE COUNTY							
Lockwood Quarry	Granite Construction Co.	S17, T19N, R21E	aggregate	OP, ML	mining crushing screening washing	19	P. O. Box 2087 1900 Glendale Ave. Sparks, NV 89432 Phone: 775-355-3434 FAX: 775-329-2803 Web: http://www.graniteconstruction.com
Mustang Pit	Sierra Nevada Construction, Inc.	S4, T19N, R21E	aggregate	OP, ML	mining crushing screening	8	P.O. Box 50760 2055 East Gregg St. Sparks, NV 89435-0760 Phone: 775-355-0420 FAX: 775-355-0535 Web: http://www.snc.biz
Paiute Pit and Plant	CEMEX	S2, 27, 34, T21N, R24E	sand gravel	OP	mining crushing screening	31	10 Hill Ranch Rd. Wadsworth, NV 89442 Phone: 775-575-1162 Web: http://www.cemexusa.com
Rilite Aggregate	Rilite Aggregate Co.	S23, T18N, R20E	sand rock	OP, ML	mining crushing	12	3025 Mill St. Reno, NV 89502 Phone: 775-329-8842 FAX: 775-329-3593
Spanish Springs Quarry	Martin Marietta Materials, Inc.	S15, 22, T21N, R20E	aggregate	OP, ML	mining crushing screening	22	11059 Pyramid Lake Rd. Sparks, NV 89436 Phone: 775-425-4455 FAX: 775-425-5131 Web: http://www.martinmarietta.com
Terraced Hill Clay Mine	Nevada Cement Co.	S13, 14, T27N, R19E	clay	OP, ML	mining milling	3	P. O. Box 840 Fernley, NV 89408 Phone: 775-575-2281 FAX: 775-575-4387 Web: http://www.eaglematerials.com
WHITE PINE COUNTY							
Bald Mountain Mine	Barrick Gold U.S., Inc.	S14, 15, 19, 20, T24N, R57E	gold silver mercury	OP, HL, ML	mining heap leach mining	378/200	P. O. Box 2706 Elko, NV 89803 Phone: 775-237-7100 FAX: 775-237-7101 Web: http://www.barrick.com

Directory of Mining and Milling Operations (continued)

Mine/Mill Name	Operator	Location	Commodity	Type	Activity	Company/ Contract Employees	Address
Mount Moriah Quarry	Mount Moriah Stone Quarries, LLC	S22, 23, 26, 27, 33-36, T16N, R70E	building stone landscape rock	OP	mining	20	P. O. Box 70 No. 10 Hatch Rock Rd. Baker, NV 89311 Phone: 435-855-2232 FAX: 435-855-2332 Web: http://mtmoriahstone.com
Robinson Mine	KGHM International, Ltd.	S6, 8, 17, 18, T16N, R62E	copper gold silver molybdenum	OP, ML	mining milling	608	P. O. Box 382 Ruth, NV 89319 Phone: 775-289-7000 FAX: 775-289-7349 Web: http://www.quadramining.com

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Publication Design and Updates

This publication was designed for reading on the web. Updates and corrections may be made before publication of the volume for next year. This version was updated on June 16, 2013.