

Major Mines of Nevada 2022

Mineral Industries in
Nevada's Economy



University of Nevada, Reno

NEVADA COMMISSION ON MINERAL RESOURCES

Division of Minerals

The seven-member Commission on Mineral Resources is a public body appointed by the Governor that provides advice and recommendations to the Governor and Legislature on matters relating to mineral resources. The Division's mission is to encourage and assist in the responsible exploration for, and the production of, minerals, oil, gas, and geothermal energy which are economically beneficial to the State.

The Division is involved in activities relating to mineral, oil, gas, and geothermal development. Staff compiles annual data on all active mines in Nevada and maintains the State's mine registry. Information concerning mining operations and production is made available to the public through this yearly publication. Educational documents and materials concerning the minerals industry are also produced. The Division often acts as a cooperating agency in federal land use actions at the request of the Governor's office.

The Division is the fluid minerals permitting agency for drilling activities on both public and private lands in Nevada. Staff also monitors production of oil, gas, and geothermal resources to ensure proper management and conservation. Nevada is a member of the Interstate Oil and Gas Compact Commission.

The Division's abandoned mine lands program provides for public safety by identifying and ranking dangerous conditions at mines that are no longer operating, and by securing dangerous orphaned mine openings. The program continually urges the public to recognize and avoid hazardous abandoned mines.

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Cover photo: Assay lab at the Lone Tree gold mine, Humboldt County. (i-80 Gold Corp. photo).



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By Rob Ghiglieri and Lucia Patterson
The Nevada Division of Minerals

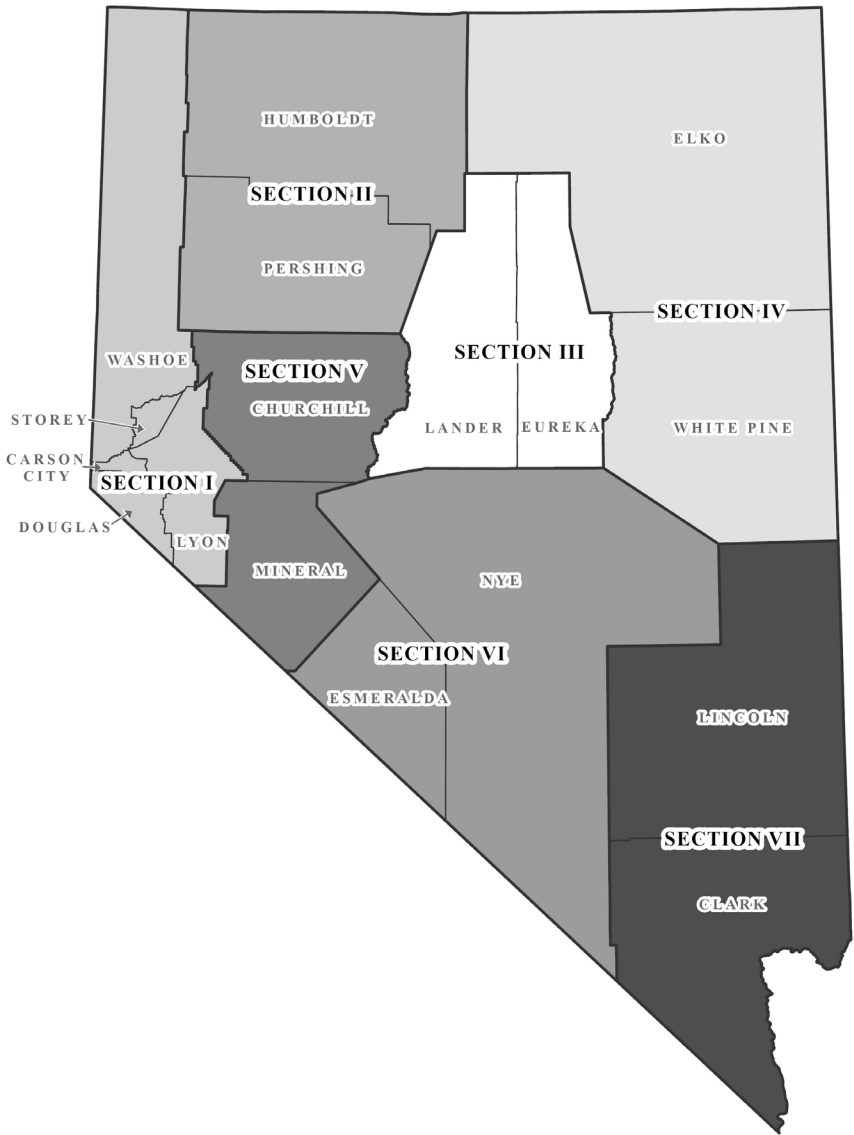
2023

This is the thirty-fourth of an annual series of summary reports on major mines of Nevada. Aggregate operations are not included. Information on employment and production for the calendar year 2022 was provided by the individual mine operators. The Nevada Division of Minerals maintains a complete register of Nevada mines. For further information, contact them at 400 W. King, Suite 106, Carson City, Nevada 89703 or call (775) 684-7040, fax (775) 684-7052, or visit their Web site at <https://minerals.nv.gov>.

College of Science
Mackay School of Earth Sciences and Engineering



University of Nevada, Reno



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Section I

Lyon County

Adams Claim Gypsum Mine (1)

Operator:

Art Wilson Co.
P.O. Box 20160
Carson City, NV 89721
775-882-0700

Company employees: 35

Production:

Gypsum - 249,558 tons
Limestone - 1,451 tons

Ludwig Mine (2)

Operator:

Art Wilson Co.
P.O. Box 20160
Carson City, NV 89721
775-882-0700

Company employees: 1

Production:

No mining occurred in 2022

NCC Fernley Operations (3)

Operator:

Nevada Cement Co.
1290 West Main Street
Fernley, NV 89408
775-575-2281 Fax: 575-4387

Company employees: 110

Production:

Limestone - 25,882 tons

NCC Mustache Mine (4)

Operator:

Nevada Cement Co.
1290 West Main Street
Fernley, NV 89408
775-575-2281 Fax: 575-4387

Company employees: 2

Production:

Pozzolan - 23,393 tons

Pumpkin Hollow (5)

Operator:

Nevada Copper, Inc.
61 East Pursel Ln.
Yerington, NV 89447
775-463-3510

Production:

Copper - 2,011,000 pounds

Storey County

Clark Mine (6)

Operator:

US Silica
640 Clark Station Rd.
Sparks, NV 89434
775-824-7600 Fax: 824-7601

Company employees: 67

Contract employees: 2

Production:

No mining occurred in 2022

Washoe County

NCC Flanigan Mine (7)

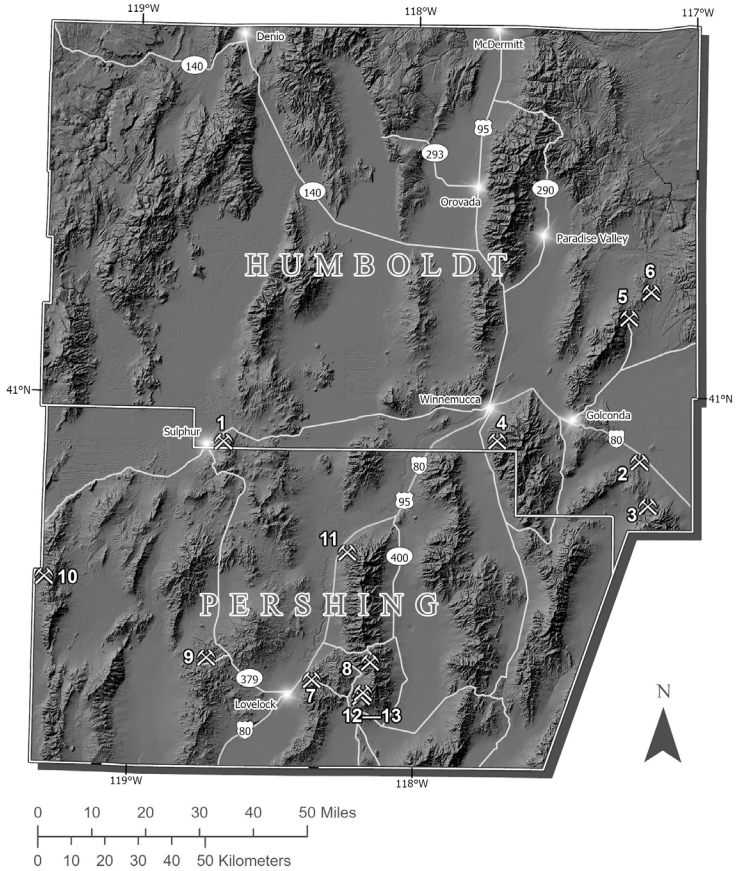
Operator:

Nevada Cement Co.
1290 West Main Street
Fernley, NV 89408
775-575-2281 Fax: 575-4387

Company employees: 1

Production:

Specialty Clay - 16,164 tons



Section II

Humboldt County

Hycroft Mine (1)

Operator:

Hycroft Mining, Corp.
 P.O. Box 3030
 Winnemucca, NV 89446
 775-623-5260

Company employees: 74
 Contract employees: 0

Production:

Gold - 15,837 oz
 Silver - 38,744 oz

Lone Tree Complex (2)

Operator:

i-80 Gold Corp.
 5190 Neil Road, Suite 460
 Reno, NV 89502
 775-525-6450

Company employees: 20
 Contract employees: 2

Production:

Gold - 9,200 oz
 Silver 1,700 oz

Marigold Mine (3)

Operator:

SSR Mining

P.O. Box 160

Valmy, NV 89438

775-502-4800

Company employees: 458

Contract employees: 20

Production:

Gold - 194,668 oz

Silver - 2,619 oz

MIN-AD Mine (4)

Operator:

MIN-AD, Inc.

P.O. Box 39

Winnemucca, NV 89446

775-623-5944 Fax: 623-9028

Company employees: 12

Production:

Dolomite - 50,510 tons

**Turquoise Ridge Underground Mine (5)
& Twin Creeks Open Pit (6)**

Operator:

Nevada Gold Mines, LLC

HC 66 Box 220

Golconda, NV 89414

775-388-1551 Fax: 775-748-3125

Company employees: 805

Contract employees: 300

Production:

Gold - 458,619 oz

Silver - 87,393 oz

Pershing County

Buff/Satin Mine (7)

Operator:

Vanderbilt Minerals, LLC
P.O. Box 6660
Pahrump, NV 89041
775-253-0064

Company employees: 3

Production:

Specialty clay: 2,220 tons

Coeur Rochester Mine (8)

Operator:

Coeur Rochester, Inc.
P.O. Box 1057
Lovelock, NV 89419
775-273-7995

Company employees: 350

Contract employees: 408

Production:

Gold - 34,735 oz

Silver - 3,061,924 oz

Colado Mine (9)

Operator:

US Silica
P.O. Box 959
Lovelock, NV 89419
775-824-7600 Fax: 824-7601

Company employees: 38

Production:

Diatomite - 191,522 tons

Empire Gypsum Mine (10)

Operator:

Empire Mining Co., LLC
P.O. Box 157
Gerlach, NV 89412
775-600-4569 Fax: 702-921-9552

Company employees: 70

Contract employees: 2

Production:

Gypsum - 731,880 tons

Florida Canyon Mine (11)

Operator:

Florida Canyon Mining, Inc.
Argonaut Gold
P.O. Box 330
Imlay, NV 89418
775-259-4579

Company employees: 261

Contract employees: 39

Production:

Gold - 49,440 oz

Silver - 30,414 oz

Relief Canyon (12)

Operator:

Gold Acquisition Corp.
P.O. Box 1033
Lovelock, NV 89419
775-273-7019 Fax: 273-7063

Company employees: 15

Production:

Gold - 2,246 oz

Silver - 5,193 oz

Relief Canyon Limestone Quarry (13)

Operator:

Nevada Cement Company
1290 West Main Street
Fernley, NV 89408
775-575-2281 Fax: 575-4387

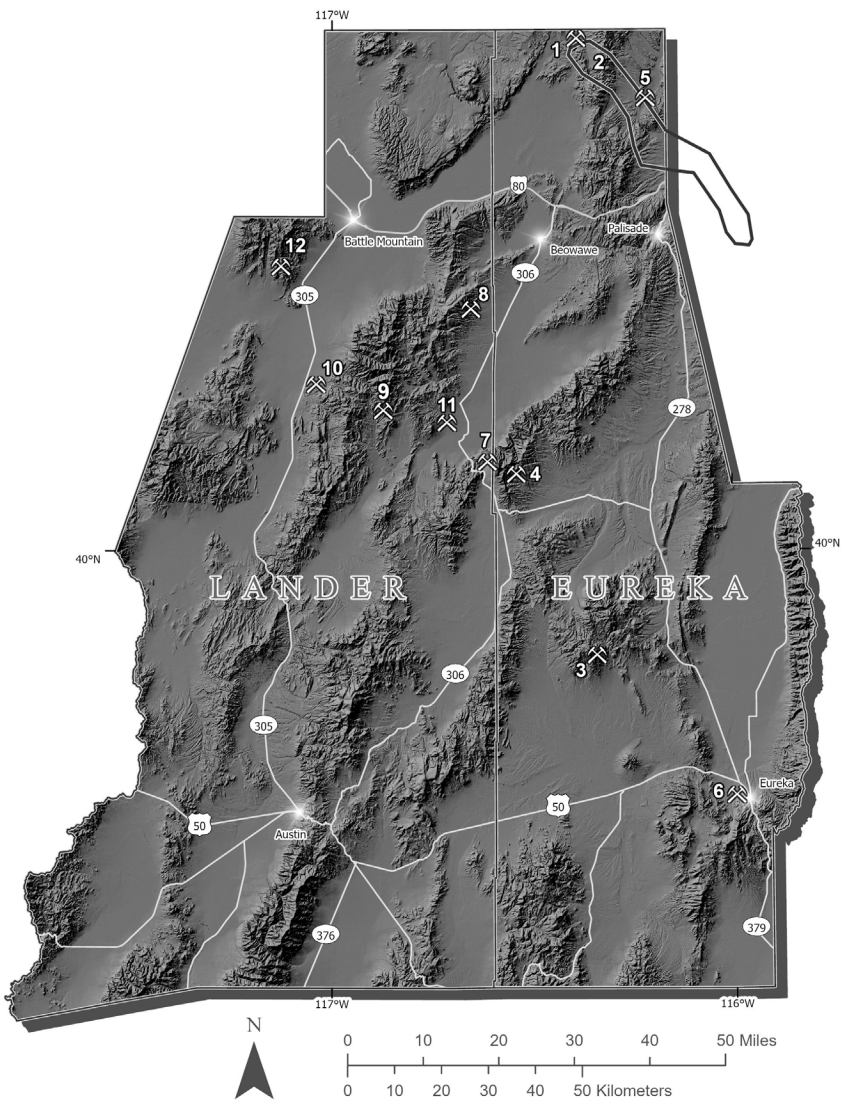
Company employees: 2

Production:

Limestone - 116,012 tons



*Marigold gold mine,
Humboldt County (Rachel Micander photo).*



Section III

Eureka County

Betze-Post Mine (1)

Operator:

Nevada Gold Mines, LLC
1655 Mountain City Highway
Elko, NV 89801
775-748-1001

Company employees: 733

Production:

Gold - 401,388 oz
Silver - 16,259 oz

Eastern Nevada Operations (2) (Carlin Operations)

Operator:

Nevada Gold Mines, LLC
1655 Mountain City Highway
Elko, NV 89801
775-748-1001

Company employees: 2,024

Production:

Gold - 895,299 oz
Silver - 59,301 oz

Gold Bar Mine (3)

Operator:

McEwen Mining Nevada, Inc.
2215 N. 5th Street
Elko, NV 89801
775-777-9977

Company employees: 78

Contract employees: 66

Production:

Gold - 26,663 oz
Silver - 648 oz

Goldrush (4)

Operator:

Nevada Gold Mines, LLC
HC 66 Box 1250
Crescent Valley, NV 89821
775-468-4400 Fax: 468-4496

Company employees: 136

Contract employees: 56

Production:

Gold - 59,810 oz

Maggie Creek Operation (5)

Operator:

Progressive Contracting, Inc.
P.O. Box 1930
St. George, UT 84771
435-628-6662 Fax: 628-7314

Company employees: 7

Production:

Barite - 63,740 tons

Ruby Hill Mine (6)

Operator:

i-80 Gold Corp.
P.O. Box 676
Eureka, NV 89316
775-304-0286

Company employees: 20

Contract employees: 2

Production:

Gold - 14,300 oz
Silver - 7,300 oz

Lander County

Cortez Hills Underground Mine (7)

Operator:

Nevada Gold Mines, LLC
HC 66 Box 1250
Crescent Valley, NV 89821
775-468-4400 Fax: 468-4496
Company employees: 319
Contract employees: 90

Production:

(underground only, excluding the open-pit)

Gold - 340,419 oz
Silver - 7,876oz

Fire Creek Mine (8)

Operator:

Klondex Gold and Silver Mining Co.
(Hecla Mining Co.)
4000 W. Winnemucca Blvd.
Winnemucca, NV 89445
775-621-5535
Company employees: 3

Production:

Gold - 2,205 oz

Greystone Mine (9)

Operator:

M-I LLC
P.O. Box 370
2 North Second Street
Battle Mountain, NV 89820
775-635-5135
Company employees: 10

Production:

No mining occurred in 2022

Mountain Springs Mine (10)

Operator:

M-I LLC
P.O. Box 370
2 North Second Street
Battle Mountain, NV 89820
775-635-5135
Company employees: 10

Production:

No Mining occurred in 2022

Pipeline Mine (11)

Operator:

Nevada Gold Mines, LLC
HC 66 Box 1250
Crescent Valley, NV 89821
775-468-4400 Fax: 468-4496
Company employees: 706
Contract employees: 247

Production:

(includes the Cortez Hills open pit)

Gold - 330,684 oz
Silver - 100,469 oz

Phoenix Mine (12)

Operator:

Nevada Gold Mines
P.O. Box 1657
Battle Mountain, NV 89820
775-635-6514
Company employees: 474
Contract employees: 351

Production:

Gold - 176,561 oz
Silver - 1,032,206 oz
Copper - 31,341,857 pounds



*Cortez - Pipeline gold mine,
Lander County (Garrett Wake photo).*



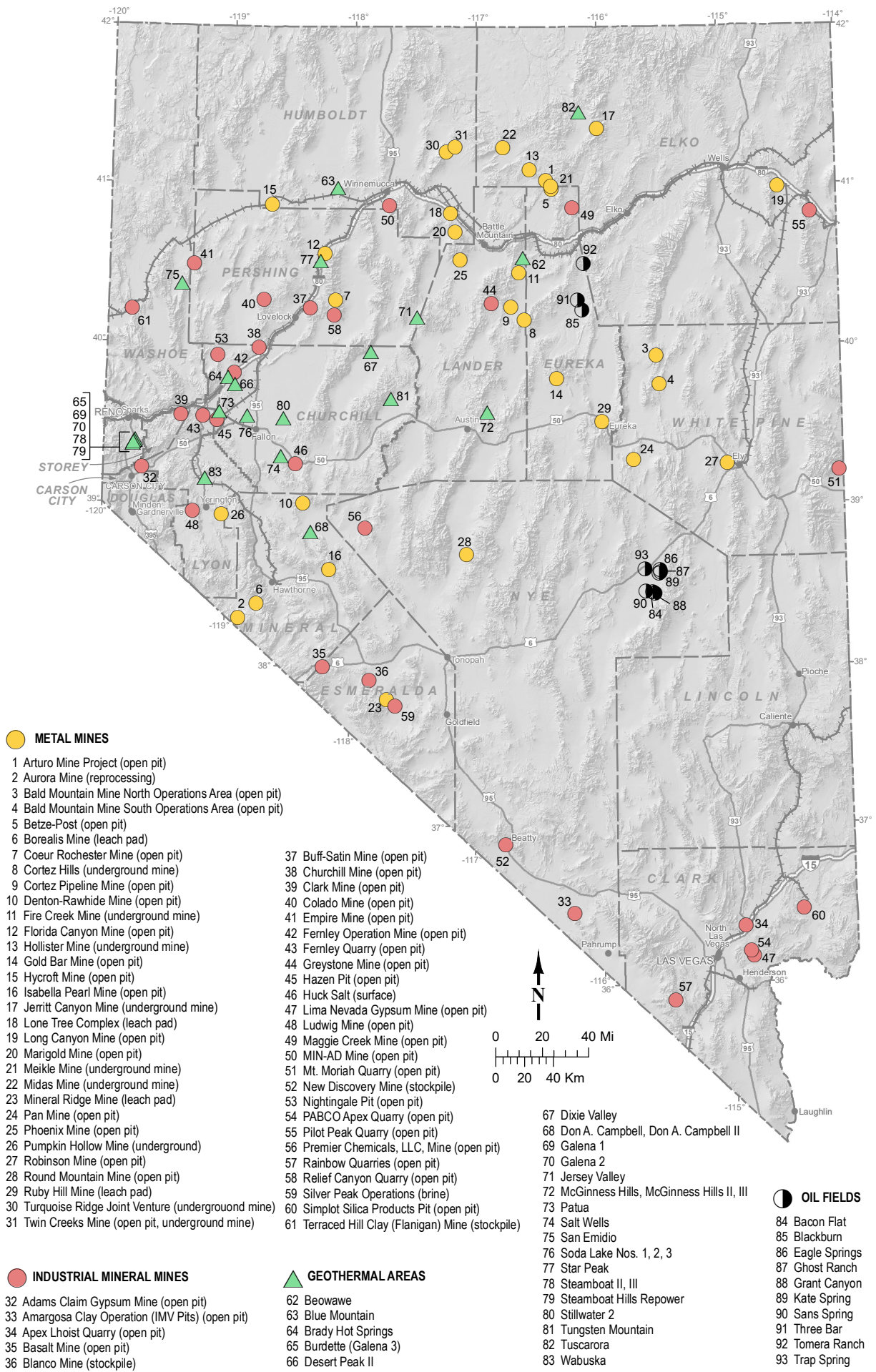
*Granite Creek gold mine,
Humboldt County (Garrett Wake photo).*



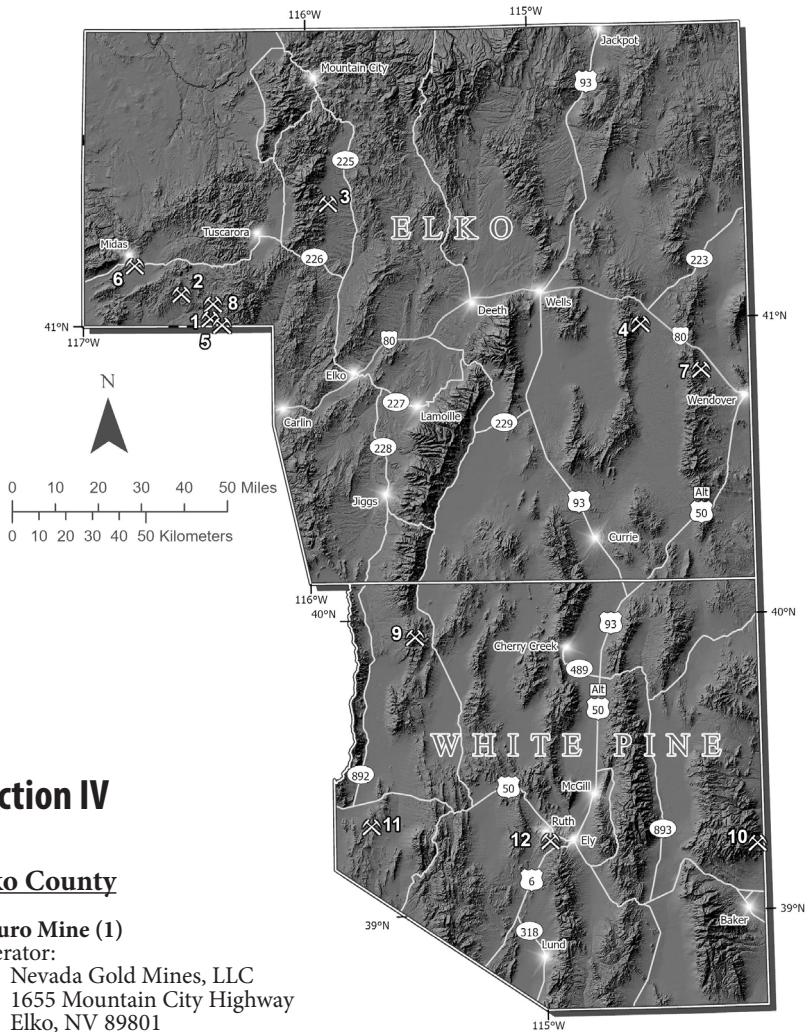
2023 Teacher Mineral Education Workshop, Simplot Silica mine, Clark County (Rachel Micander photo).



Isabella Pearl gold mine, Mineral County (Garrett Wake photo).



Major mines, oil fields, and geothermal areas, 2022.



Section IV

Elko County

Arturo Mine (1)

Operator:
Nevada Gold Mines, LLC
1655 Mountain City Highway
Elko, NV 89801
775-748-1001

Company employees: 66

Production:
Gold - 35,982 oz

Hollister Mine (2)

Operator:
Klondex Hollister Mine, Inc.
(Hecla Mining Co.)
4000 W. Winnemucca Blvd.
Winnemucca, NV 89445

775-304-3779

Company employees: 8

No mining occurred in 2022

Jerritt Canyon Mine (3)

Operator:
First Majestic Silver
P.O. Box 2778
Elko, NV 89803
775-738-5600 Fax: 551-9810
Company employees: 300
Contract employees: 300

Production:
Gold - 72,411 oz
Silver - 1,617 oz

Elko and White Pine continued on page 15
after the centerfold.

Section IV (continued)

Long Canyon Mine (4)

Operator:

Nevada Gold Mines, LLC
688 Johnson Ranch Rd.
Oasis, NV 89835
775-748-1001

Company employees: 45
Contract employees: 40

Production:

Gold - 89,988 oz
Silver - 2,054 oz

Meikle Mine (5)

Operator:

Nevada Gold Mines, LLC
1655 Mountain City Highway
Elko, NV 89801
775-748-1001

Company employees: 501

Production:

Gold - 246,587 oz
Silver - 9,989 oz

Midas Mine (6)

Operator:

Klondex Midas Operations, Inc.
(Hecla Mining Co.)
4000 W. Winnemucca Blvd.
Winnemucca, NV 89445
775-304-3779

Company employees: 8

No mining occurred in 2022

Pilot Peak Quarry (7)

Operator:

Graymont
P.O. Box 2520
West Wendover, NV 89883
775-483-5460

Company employees: 69

Production:

Limestone - 805,000 tons

Rossi Mine (8)

Operator:

Halliburton Energy Services
912 Dunphy Ranch Rd.
Battle Mountain, NV 89820
281-840-6535

Company employees: 6
Contract employees: 15

Production

Barite - 398,569 tons

White Pine County

Bald Mountain Mine North & South Operations (9)

Operator:

KG Mining (Bald Mountain), Inc.
Kinross Gold Corp.
435 Jiggs Hwy., Unit 16
Spring Creek, NV 89815
775-237-7100 Fax: 237-7101

Company employees: 590
Contract employees: 259

Production:

Gold - 213,210 oz
Silver - 73,554 oz

Mt. Moriah Quarry (10)

Operator:

Mt. Moriah Stone
#10 Hatch Rock Road
P.O. Box 70
Baker, NV 89311
435-855-2232 Fax: 855-2332
Company employees: 26

Production:

Quartzite - 2,857 tons

Pan Mine (11)

Operator:

GRP Pan, LLC
(Calibre Mining Corp.)
P.O. Box 150278
Ely, NV 89315
775-386-1900

Company employees: 62
Contract employees: 135

Production:

Gold - 43,186 oz

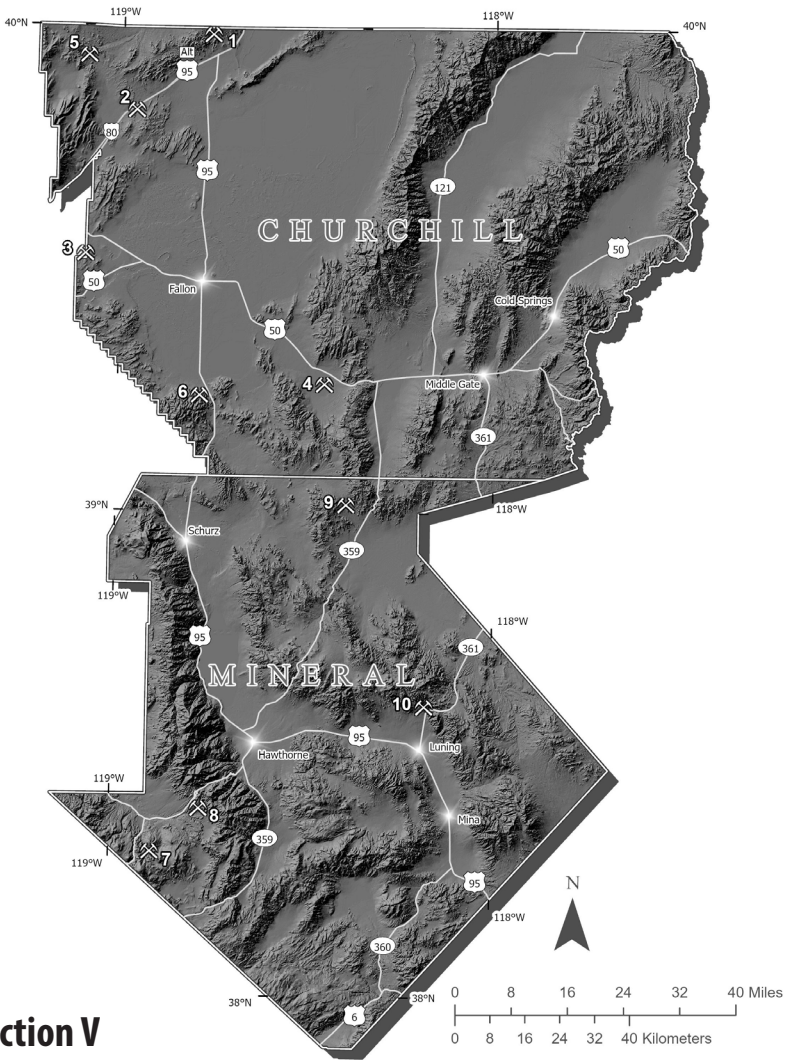
Robinson Mine (12)

Operator:

KGHM International, Ltd.
4342 W. White Pine County Road 44
Ruth, NV 89319
775-289-7000 Fax: 289-7349
Company employees: 615

Production:

Copper - 108,416,295 pounds
Gold - 41,346 oz
Silver 256,312 oz
Molybdenite - 275,620 pounds



Section V

Churchill County

Churchill Limestone Quarry (1)

Operator:

Nevada Cement Co.
 1290 West Main Street
 Fernley, NV 89408
 775-575-2281

Company employees: 2

Production:

Limestone - 491,602 tons

Fernley Diatomite Operations (2)

Operator:

US Silica
 9785 Gateway Drive
 Reno, NV 89521
 775-824-7600 Fax: 824-7601

Company employees: 40

Production:

Diatomite - 51,456 tons

Mineral County

Hazen Mine (3)

Operator:

US Silica
640 Clark Station Rd.
Sparks, NV 89434
775-824-7600 Fax: 824-7601
Company employees: 0

No mining occurred in 2022

Huck Salt (4)

Operator:

Huck Salt Company
5033 Austin Highway
Fallon, NV 89406
775-423-2055 Fax: 423-0467
Company employees: 13

Shipped:

Salt - 19,994 tons

Nightingale Mine (5)

Operator:

Imerys of California, Inc.
100 Front Street
Fernley, NV 89408
775-575-2536
Company employees: 16
Contract employees: 5

Production:

Diatomite - 23,894 tons

Perlite Mine (6)

Operator:

US Silica
P.O. Box 959
Lovelock, NV 89419
775-824-7600 Fax: 824-7601
Company employees: 0

No mining occurred in 2022

Aurora Mine (7)

Operator:

Klondex Aurora Mine, Inc.
(Hecla Mining Co.)
4000 W. Winnemucca Blvd.
Winnemucca, NV 89445
775-304-3776

Company employees: 2

No mining occurred in 2022

Borealis Mine (8)

Operator:

Borealis Mining Company, LLC
P.O. Box 11340
Reno, NV 89510
775-319-4248

Company employees: 20

Contract employees: 20

Production:

Gold - 11,957 oz

Silver - 19,815 oz

Denton-Rawhide Mine (9)

Operator:

Rawhide Mining, LLC
2040 Reno Hwy. #212
Fallon, NV 89406
775-945-1015

Company employees: 38

Contract employees: 2

Production:

Gold - 13,441 oz

Silver - 56,847 oz

Isabella Pearl (10)

Operator:

Fortitude Gold Corp.
P.O. Box 247
Mina, NV 89422
775-238-7159

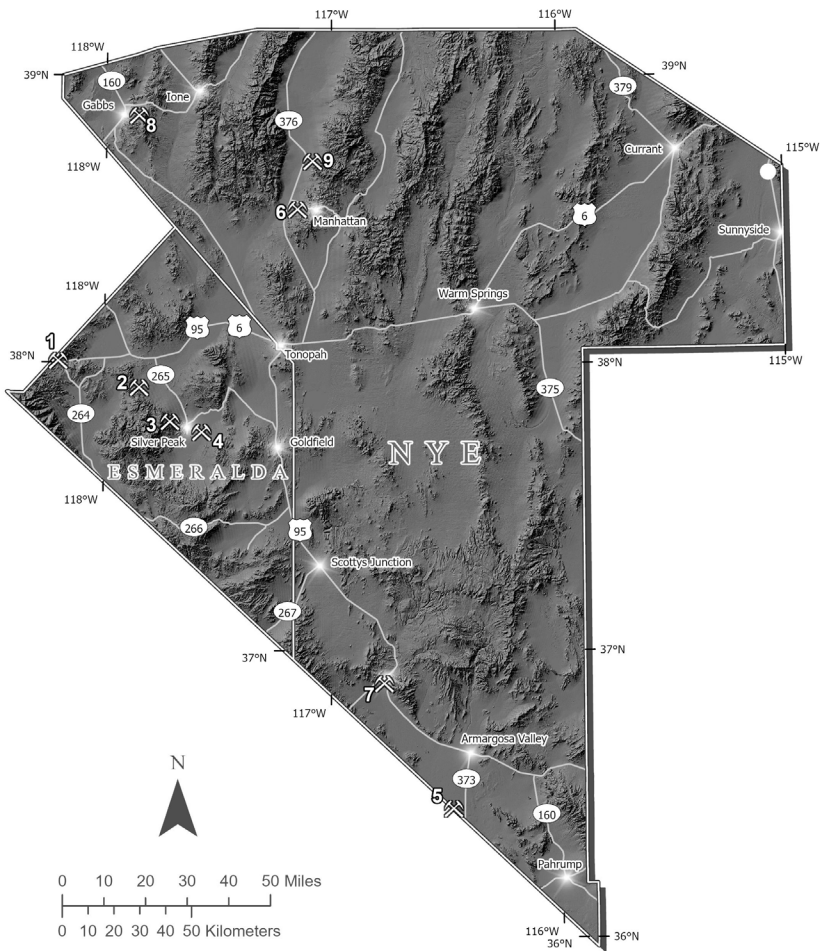
Company employees: 55

Contract employees: 37

Production:

Gold - 41,232 oz

Silver - 57,058 oz



Section VI

Esmeralda County

Basalt Diatomite Mine (1)

Operator:

Grefco Minerals, Inc.
 P.O. Box 278
 Dyer, NV 89010
 775-573-2422

Company employees: 15
 Contract employees: 3

Production:

Diatomite - 7,585 tons

Blanco Mine (2)

Operator:

Vanderbilt Minerals, Inc.
 P.O. Box 6660
 Pahrump, NV 89041
 775-253-0064

Company employees: 1

Production:

Specialty clays - No mining
 occurred in 2022

Mineral Ridge Mine (3)

Operator:

Mineral Ridge Gold, LLC
1910 Idaho St., Ste. 102-550
Elko, NV 89801
775-753-4778 Fax: 775-753-4780
Company employees: 10

No mining occurred in 2022

Silver Peak Lithium Operations (4)

Operator:

Albemarle U.S., Inc.
P.O. Box 98
Silver Peak, NV 89047
775-937-2222 Fax: 937-2317
Company employees: 70
Contract employees: 15

Shipped:

Lithium compounds - 8,180,690 lbs

Nye County

Amargosa Clay Operation (5)

Operator:

Lhoist North America
P.O. Box 86
Amargosa Valley, NV 89020
775-372-5341
Company employees: 45

Production:

Specialty clays - 42,830 tons

Manhattan Gulch (6)

Operator:

Manhattan Gulch, LLC
2060-D E Ave De Los Arboles #510
Thousands Oaks, CA 91362
775-298-8120

Production:

Not reported

New Discovery Mine (7)

Operator:

Vanderbilt Minerals, LLC
P.O. Box 6660
Pahrump, NV 89041
775-253-0064

Production:

Specialty clays - No mining
occurred in 2022

Premier Magnesia (8)

Operator:

Premier Magnesia, LLC
P.O. Box 177
Gabbs, NV 89409
775-285-2601 Fax: 285-4021
Company employees: 120
Contract employees: 10

Shipped:

Magnesium compounds - 122,483 tons

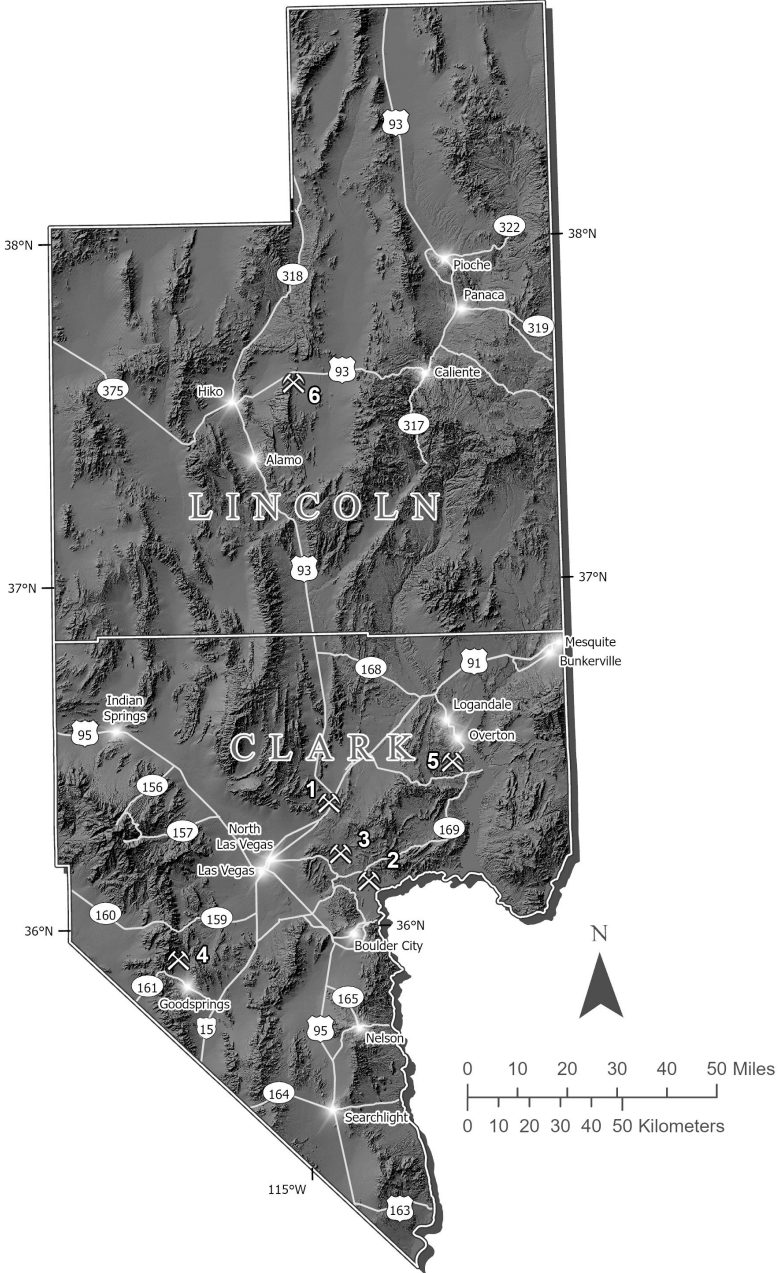
Round Mountain Mine (9)

Operator:

Round Mountain Gold Corp.
P.O. Box 480
Round Mountain, NV 89045
775-377-2366 Fax: 377-3224
Company employees: 842
Contract employees: 166

Production:

Gold - 219,823 oz
Silver - 546,097 oz



Section VII

Clark County

Apex Quarry (1)

Operator:

Lhoist North America
12101 N. Las Vegas Blvd.
Las Vegas, NV 89165
702-643-7702

Company employees: 105

Production:

Limestone - 2,124,754 tons
Dolomite - 442,201 tons

Lima Nevada Gypsum Mine (2)

Operator:

H. Lima Nevada, LLC
704 E. Yosemite
Manteca, CA 95336
209-239-6787 Fax: 239-6778

Company employees: 12

Production:

Gypsum - 149,500 tons

PABCO Gypsum Mine (3)

Operator:

Pacific Coast Building Products, Inc.
8000 E. Lake Mead Blvd.
Las Vegas, NV 89115
702-407-3700 Fax: 643-6249

Company employees: 16

Contract employees: 3

Production:

Gypsum - 1,508,626 tons

Rainbow Quarry (4)

Operator:

Las Vegas Rock, Inc.
P.O. Box 19118
2 Jean Prison Rd.
Jean, NV 89019

702-791-7625 Fax: 896-4533

Company employees: 10

Contract employees: 4

Production:

Meta-quartzite blocks - 483 tons

Simplot Silica Products (5)

Operator:

J.R. Simplot Company
P.O. Box 308
Overton, NV 89040
702-397-2667 Fax: 397-2798

Company employees: 39

Shipped:

Silica sand - 771,800 tons

Lincoln County

Tenacity Perlite Mine (6)

Operator:

Wilkin Mining & Trucking, Inc.
HC 34 Box 199
Caliente, NV 89008
775-728-4463

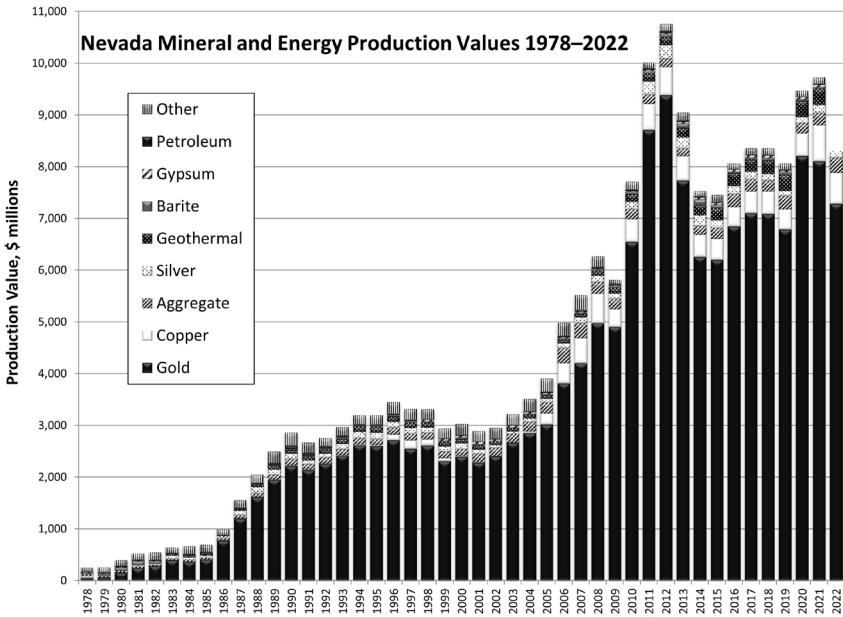
Company employees: 1

Production:

Perlite - 819 tons

Summary of 2022 Production

Gold	4,044,977	ounces
Silver	5,473,775	ounces
Barite (mined)	398,569	tons
Copper	141,769,152	pounds
Diatomite	327,293	tons
Dolomite	492,711	tons
Gypsum	2,639,564	tons
Limestone	3,564,701	tons
Lithium compounds (shipped)	8,180,690	pounds
Magnesium compounds (shipped)	122,483	tons
Molybdenite	275,620	pounds
Perlite	819	tons
Pozzolan	23,393	tons
Quartzite	3,341	tons
Salt (shipped)	18,000	tons
Silica sand (shipped)	771,800	tons
Specialty clays	84,592	tons



Economic Impacts of Mining in Nevada—2022

As of the date of this publication, the “2022–2023 Net Proceeds of Minerals Bulletin” had not been finalized. As a result, any numbers or statistics reported here that originate from the bulletin are subject to change. Nevada’s mining industry recorded approximately \$8.8 billion in total value of all commodities in 2022, representing a 9.3% decrease from the \$9.7 billion dollar value recorded in 2021. Increased cost of sales per ounce was the main reason for this decrease. Nearly 82% of the value was driven by gold and silver, which contributed over \$7 billion, based on the actual gross proceeds reported to the Nevada Department of Taxation. According to Kitco Metals Inc. (www.kitco.com), the average prices for gold and silver in 2022 were \$1,800.09 and \$21.71, per troy ounce, respectively. Nevada led the nation in 2022 in the production of gold, barite, lithium compounds and magnesite. Nevada produced a wide variety of other mineral and energy commodities such as clays, copper, dolomite, geothermal energy, gypsum, lapidary and gemstones, limestone, molybdenite, oil, perlite, salt, silica sand, silver, and specialty aggregates. A summary of commodity

production amounts, value, and year-over-year percentage changes can be seen in table 1.

Production Highlights

Nevada’s gold production was 4,044,977 troy ounces in 2022 compared to 4,502,365 troy ounces in 2021, a decrease of 10%. According to the U.S. Geological Survey, Nevada remains the nation’s top gold producer with about 72% (125 metric tons) of the U.S. total (170 metric tons) and would rank 5th in world gold production behind China (330), Australia (320), Russia (320), and Canada (220). A summary of 2022 metal production, ranked by producer, is shown in table 2.

Employment

According to the Nevada Department of Employment, Training, and Rehabilitation, the Nevada minerals industry, including support activities and oil and gas extraction, directly employed an average of 15,008 people in 2022. The average yearly pay for mineral industry employees during this time was \$109,000, the third highest average

Table 1. Summary of 2022 Nevada Mineral Commodity Production

Commodity	Production		YOY		YOY Value
	Amount	Unit	Change (%)	Value (\$)	Change (%)
Gold*	4,044,977	ounces	-10.2%	\$7,202,998,713	-11.1%
Silver*	5,473,775	ounces	-12.0%	\$120,111,955	-22.9%
Barite (shipped)	453,746	tons	59.9%	\$35,890,645	31.5%
Copper*	141,769,152	pounds	-13.4%	\$507,725,582	-26.2%
Diatomite	327,293	tons	5%	\$60,206,058	17.4%
Dolomite*	50,510	tons	28.9%	\$4,606,561	17.6%
Gypsum	2,639,564	tons	4%	\$48,726,481	-1.8%
Limestone*	4,006,902	tons	23.6%	\$96,591,580	-3.9%
Lithium compounds (shipped)	8,301,221	pounds	-36%	\$104,231,347	150%
Magnesium compounds (shipped)	122,483	tons	-5.2%	\$9,404,624	16.7%
Molybdenite*	275,620	pounds	14.8%	\$1,928,091	-3.2%
Perlite	819	tons	-78%	\$81,904	-89.3%
Salt (shipped)	18,000	tons	9.1%	\$1,533,473	173.4%
Silica sand (shipped)	771,800	tons	17.3%	\$23,320,237	28.3%
Specialty clays*	107,985	tons	-15.9%	\$15,049,337	27.1%
Geothermal energy (sold)	3,964,419	megawatt hours	-0.2%	\$322,617,269	1.2%
Oil (sold)*	234,256	barrels	-18.8%	\$19,294,008	26.8%
Aggregates (USGS)	29,600,000	tons	-8.7%	\$285,000,000	21.3%
			Total Value	\$8,793,304,622	

*Differences in production and value amounts due to differing accounting methodologies between state agencies.

private employment sector in the state, behind Company Management and Utilities. Mining employment remains an important factor in the economic diversity of Nevada.

Permitting and Reclamation

Before mining can begin, plans of operation must be submitted and permits obtained from federal, state, and local governments to ensure that resources such as wildlife, air, and water are protected. Nevada and federal laws and regulations require that lands disturbed by mining activities be rehabilitated so they can be used for other activities once mining is completed. This process, called reclamation, returns mined areas to other productive practices such as livestock grazing, wildlife habitat, recreation opportunities, or other natural resource uses. To ensure that reclamation is completed, mine operators are required to post reclamation bonds with government agencies prior to commencement of operations. The bonds are released only after the mined area is stabilized and all the reclamation requirements have been met. According to the Nevada Division of Environmental Protection, approximately \$3.6 billion in reclamation

bonds and other financial assurance are currently posted. Mine operators are proud of their efforts and are constantly seeking ways to enhance their reclamation technology while addressing environmental concerns. In 2022, one operator received the Nevada Excellence in Mine Reclamation Award for their exemplary efforts. Kinross Gold Corporation received an award for Leadership in Concurrent Mine Reclamation for their work at the Bald Mountain Gold Mine, in White Pine County, and Coeur Mining received recognition for its Innovative Revegetation Strategy for their work at the Sterling Gold Mine in Nye County. Information on the award and past award winners can be found at <https://minerals.nv.gov/Programs/Mining/MiningExcMineRec/>.

Gold Reserves

Gold reserves are defined as that portion of a gold deposit known to be economically feasible for extraction. The amount of stated reserves changes with commodity prices and operating costs or when new reserves are added through exploration. Extensive gold resources are known to exist at or near many mining operations in Nevada.

Table 2. 2022 Nevada Metal Production, by Producer

Operator	Gold (ozs)	Silver (ozs)	Copper (lbs)	Moly (lbs)
Nevada Gold Mines	3,035,337	1,315,546	31,341,857	
Kinross	433,033	619,651		
SSR Mining	194,668	2,619		
First Majestic Silver	72,411	NR		
Florida Canyon Mining (Argonaut Gold)	49,440	30,414		
Calibre Gold	43,186	NR		
KGHM International	41,346	256,312	108,416,295	275,620
Fortitude Gold	41,232	57,058		
Coeur	34,735	3,061,924		
i80 Gold	27,236	9,000		
McEwen Mining	26,663	648		
Hycroft	15,837	38,744		
Rawhide Mining	13,440	56,847		
Borealis Mining	11,957	19,815		
Gold Acquisition Corp.	2,246	5,193		
Klondex (Hecla)	2,205	NR		
Nevada Copper	NR	NR	2,011,000	
Geo-Nevada	4	4		
Totals	4,044,977	5,473,776	141,769,152	275,620

An increase in the gold price with all else being equal would mean many companies would be able to reclassify their resources into a reserve category. An increase in the cost of regulatory compliance or the application of gross royalties levied on production can have the same effect as a lowering of the gold price, thereby reducing reserves. For the larger operating mines, the publicly reported reserves for the year ending 2022 totaled approximately 40 million ounces of gold. Assuming similar economic conditions without any reserve replacement, current reserves are sufficient to sustain gold production near current levels in Nevada for about ten years (table 3).

Exploration

Exploration for new deposits is an ongoing effort by both the existing operating companies and many others who do not yet operate mines in the state. Exploration geologists, drillers, assayers, and others who support exploration activities represent a significant positive economic impact, particularly in Nevada’s rural areas. Exploration activity and funding are

closely tied to economic conditions and commodity prices. To quantify the level of exploration activity and the factors responsible for those levels, the Division contracted with the Nevada Bureau of Mines and Geology, who released the results of the biennial exploration survey in mid 2023, using 2021 and 2022 data received from companies involved in metal, geothermal, oil and gas exploration in the State. This informative report, which can be downloaded at <https://pubs.nbmng.unr.edu/NV-exploration-survey-2022-p/es2022.htm>, revealed that exploration spending in 2022 increased by 13%, from \$309 million in 2021 to \$350 million in 2022. These are minimum spending amounts, because not all companies reported their expenditures. In 2021, 93% (\$287 million) of exploration expenditures were spent targeting precious metals, which decreased to 79% (\$275 million) in 2022 following a mid-year decrease in gold prices. Expenditures for lithium exploration showed a 141% increase from 4% (\$13 million) in 2021 to 9% (\$30 million) in 2022, following significant increases in lithium prices. Expenditures in the base metal exploration sector also increased from 3% (\$10 million) in 2021

Table 3. Nevada Mine Reserves (Proven and Probable) Reported for End of Year 2022

Company	Mine	Gold (ozs)	Silver (ozs)	Copper (lbs)
Argonaut Gold	Florida Canyon	930,000		
Coeur	Rochester	1,173,000	179,975,000	
Calibre	Pan	264,000		
Gold Acquisition	Relief Canyon	584,000	1,577,000	
Fortitude Gold	Isabella Pearl	59,400	640,600	
Hecla	Fire Creek			
Hecla	Hollister			
Hecla	Midias			
KGHM	Robinson	263,000		716,000,000
Kinross	Bald Mountain	625,000		
Kinross	Round Mountain	2,246,000	298,000	
McEwen	Gold Bar	499,000		
Nevada Copper	Pumpkin Hollow	419,000	14,544	6,503,000
NV Gold Mines	Carlin Operations (Includes Goldstrike & Arturo)	10,000,000		
NV Gold Mines	Cortez & Goldrush	9,600,000		
NV Gold Mines	Long Canyon	55,000		
NV Gold Mines	Phoenix	2,000,000	21,000,000	510,000,000
NV Gold Mines	Turquoise Ridge & Twin Creeks	8,000,000		
SSR	Marigold	3,410,000		
	Totals	40,127,400	203,505,144	1,232,503,000

to 12% (\$44 million) in 2022, an increase attributable to several large property acquisitions. Employment numbers increased as well from a minimum of 524 people being directly employed by companies doing exploration activities in Nevada in 2021, to a minimum of 619 in 2022.

Oil and Geothermal Activity

Economic activity from oil and gas exploration and production is relatively minor compared to mining, but is locally important to the economy of east-central Nevada. In oil field terms, Nevada is considered a frontier state, meaning its potential is yet to be realized. According to the U.S. Energy Information Administration, the price for a barrel of West Texas Intermediate crude in 2022 ranged from a monthly average low of \$76.44 to a high of \$114.84 and averaged \$94.79 for the year, versus \$67.99 in 2021. Nevada's oil production in 2022 decreased by 12% from 288,342 barrels (42 gallons

per barrel) in 2021 to 234,686 barrels sold in 2022, worth approximately \$19.2 million. Table 4 summarizes the number of producing wells and the number of barrels sold by operator and oil field in 2022.

Nevada is rich in geothermal resources and is second only to California in the production of geothermal energy. For 2022, Nevada had 26 plants in 17 geothermal fields that sold approximately 4 million megawatt hours of electricity, worth approximately \$323 million (table 5). According to the U.S. Energy Information Association, this is sufficient to power approximately 377,000 residential homes in Nevada for a year. Geothermal heat is also used for a variety of commercial, domestic, and public applications in Nevada. Schools in Elko County, a casino in Washoe County, and homes in Lincoln and Washoe counties are examples of public and private facilities using this renewable energy resource.

Table 4. Nevada Oil Production in 2022

Operator	Producing Field	# of Producing Wells	Total Barrels Sold
Makoil	Trap Spring	32	120,158
Grant Canyon	Grant Canyon	3	33,316
Kirkwood	Eagle Springs	12	32,463
Grant Canyon	Blackburn	8	15,875
Western General	Kate Spring	4	14,470
Kirkwood	Ghost Ranch	3	6,420
Grant Canyon	Three Bar	2	5,677
Grant Canyon	Bacan Flat	1	4,597
Makoil	Ghost Ranch	1	899
Grant Canyon	Sans Spring	1	429
Tomera Oil Fields	Tomera Ranch	2	382
Kirkwood	Sand Dune	-	-
Totals		69	234,686

Table 5. Nevada Geothermal Production in 2022 by Company

Company (including all subsidiaries)	Total Output (Sales) MWh	% of Total
Ormat Nevada Inc.	3,332,176	83%
Cyrq Energy	472,700	11.8%
Enel North America Inc.	179,141	4.5%
Homestretch Energy/Whitegrass No. 1 LLC	23,295	0.6%
Star Peak Geothermal	19	0.0%
Total		4,007,331

Conclusion

Nevada's mineral industry continues to be a major economic force in the state. Nevada is a major natural resource producer and has significant mineral and energy resources. Given a stable price, proactive regulatory environment, and high environmental standards this situation should continue for many years to come. Major factors affecting the stability of the minerals industry are potential future withdrawals of resource-rich federal lands from mineral entry and leasing, special land designations that make it challenging or unfeasible to proceed with mineral development, and uncertainty surrounding mining laws and regulations.

As exploration for critical minerals takes a front seat, Nevada's rich mineral endowment makes this state a prime location to explore. Of the 50 critical minerals published in the Federal Register on February 24, 2022, 33 minerals have known occurrences or deposits in Nevada. With its rich mineral endowment and favorable regulatory environment,

Nevada ranked as the 1st best mining jurisdiction in the world based on the Investment Attractiveness Index in the Fraser Institute's 2022 annual survey.

Data

The Nevada Division of Minerals and the Nevada Bureau of Mines and Geology continuously strive to provide data for the mineral, oil-gas, and geothermal exploration and mining community. The websites listed below have been developed to provide spatial data for Nevada explorers and beyond. The websites are free to use, and the data are free to download.

Nevada Division of Minerals
Open Data Site

<https://data-ndom.opendata.arcgis.com/>

Nevada Bureau of Mines and Geology
Open Data Site

<https://data-nbmg.opendata.arcgis.com/>

C.L.A.I.M.S.
miningclaim.org



*McGinness Hills,
Lander County (Garrett Wake photo).*

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The Nevada Bureau of Mines and Geology

The Nevada Bureau of Mines and Geology (NBMG) is a research and public service unit of the University of Nevada, Reno (UNR) and is the state geological survey, applying its expertise across the entire state. NBMG is part of the Mackay School of Earth Sciences and Engineering within the College of Science at UNR.

NBMG scientists conduct research and publish reports on mineral resources, engineering geology, environmental geology, hydrogeology, geologic hazards, and geologic mapping. Individuals interested in Nevada geology are encouraged to visit, call, write NBMG, or visit our website.

<https://www.nbmг.unr.edu>

Most NBMG scientists (Director and research faculty), cartographic, and administrative staff are located on the **University of Nevada, Reno, campus, 775-794-6691**.

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