

Major Mines of Nevada 2019

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: Photo of the Isabella Pearl open pit mining operation in Mineral County. *(Gold Resource Corporation photo).*



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By Mike Visher and Lucia Patterson
The Nevada Division of Minerals

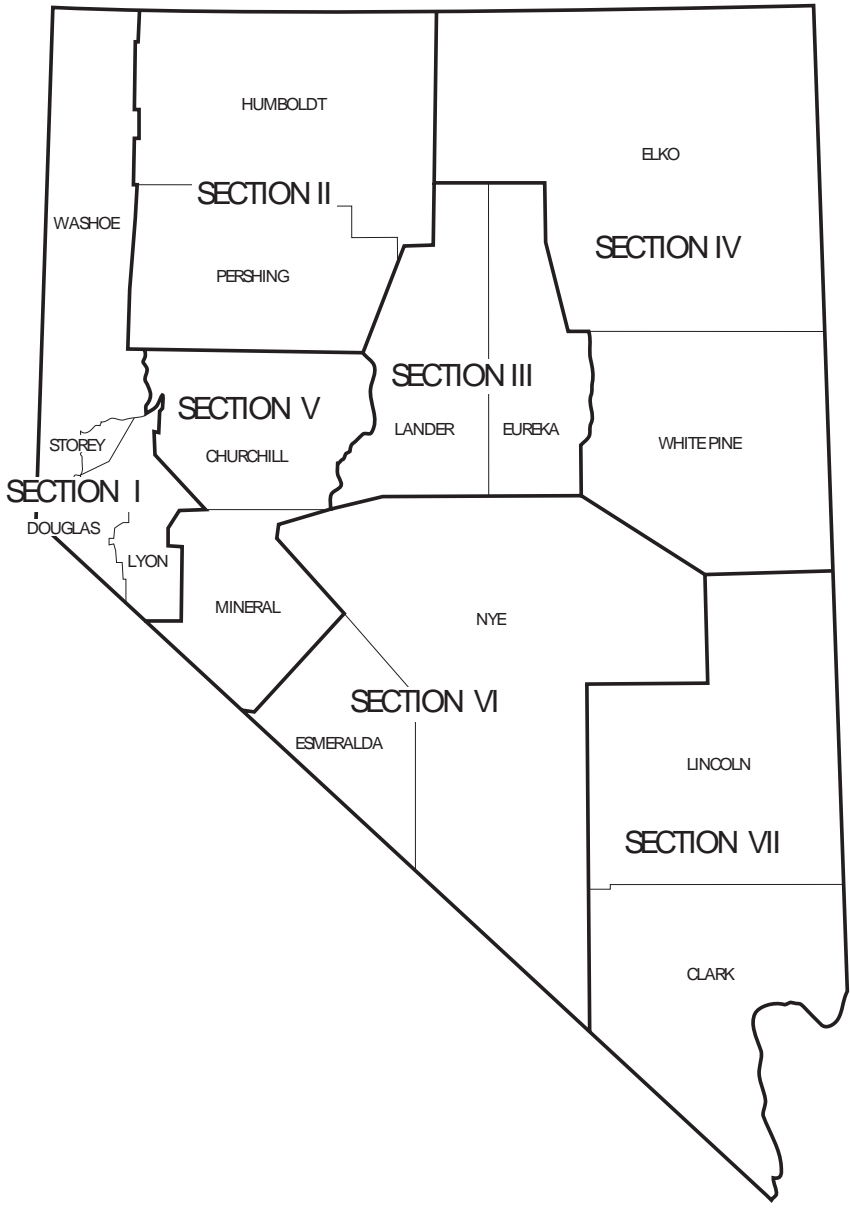
2020

This is the thirty-first 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 2019 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 <http://minerals.nv.gov>.

College of Science
Mackay School of Earth Sciences and Engineering



University of Nevada, Reno



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Major mines, oil fields, and geothermal plants, 2019 (centerfold map)

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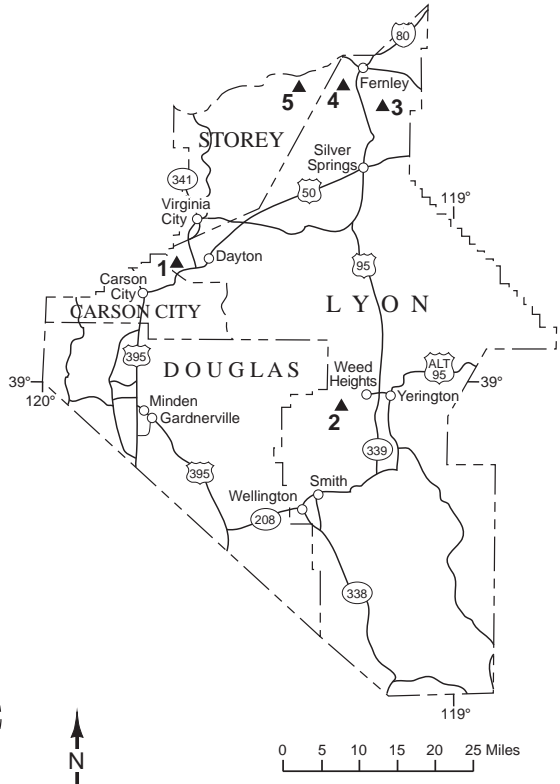
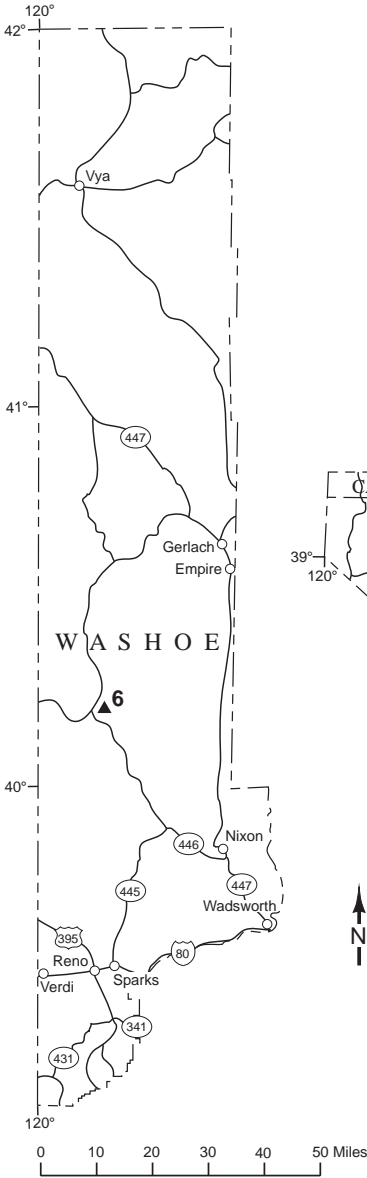
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Section I

Lyon County

Adams Claim Gypsum Mine (1)

Operator:

Art Wilson Co.
P.O. Box 20160
Carson City, NV 89721
775-882-0700 Fax: 882-0790
Company employees: 37

Production:

Gypsum - 290,302 tons
Limestone - 3,648 tons

Ludwig Mine (2)

Operator:

Art Wilson Co.
P.O. Box 20160
Carson City, NV 89721
775-882-0700 Fax: 882-0790
Company employees: 3

Production:

Gypsum - 37,541 tons

NCC Fernley Operations (3)

Operator:

Nevada Cement Co.
1290 West Main Street
Fernley, NV 89408
775-575-2281 Fax: 575-4387
Company employees: 116

Production:

Limestone - 127,158 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 - 959 tons

Storey County

Clark Mine (5)

Operator:

US Silica
640 Clark Station Rd.
Sparks, NV 89434
775-824-7700 Fax: 824-7715
Company employees: 4
Contract employees: 5

Production:

Diatomite - 84,732 tons

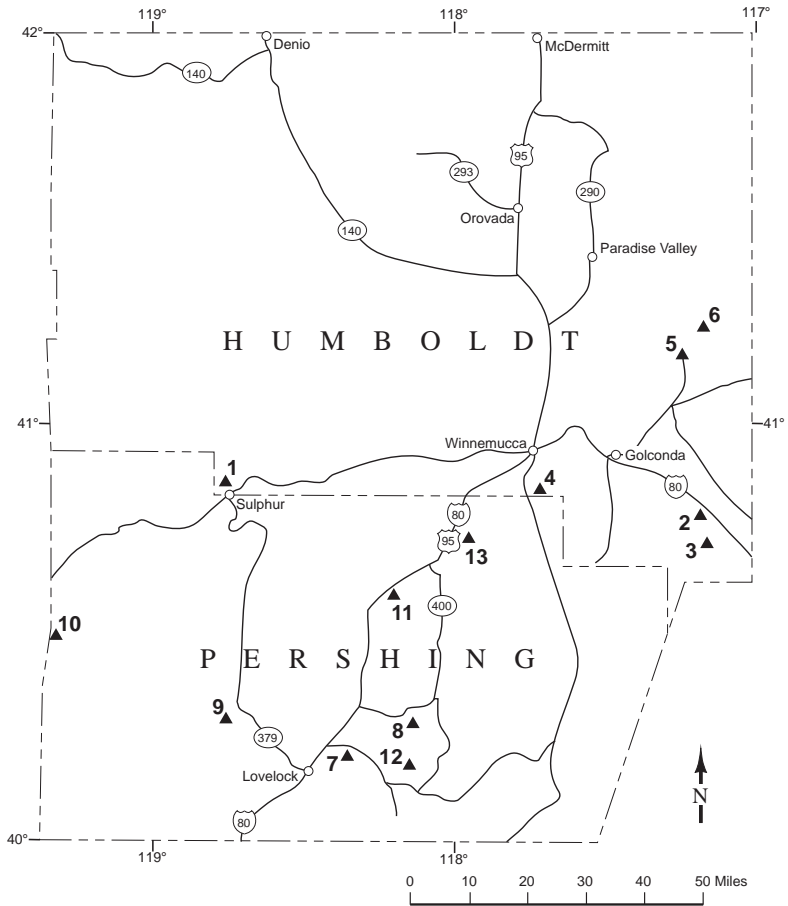
Washoe County

NCC Flanigan Mine (6)

Operator:

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

No mine production in 2019



Section II

Humboldt County

Hycroft Mine (1)

Operator:
 Hycroft Mining, Corp.
 P.O. Box 3030
 Winnemucca, NV 89446
 775-623-5260 Fax: 201-1045
 Company employees: 216
 Contract employees: 45

Production:
 Gold - 8,916 oz
 Silver - 56,783 oz

Lone Tree Complex (2)

Operator:
 Nevada Gold Mines, LLC
 1655 Mountain City Highway
 Elko, NV 89801
 775-778-4000 Fax: 778-4360
 Company employees: 11
 Contract employees: 33

Production:
 Gold - 17,483 oz

Marigold Mine (3)

Operator:

SSR Mining
P.O. Box 160
Valmy, NV 89438
775-502-4800

Company employees: 420

Contract employees: 17

Production:

Gold - 220,227 oz

Silver - 4,223 oz

MIN-AD Mine (4)

Operator:

MIN-AD, Inc.
P.O. Box 39
Winnemucca, NV 89446
775-623-5944 Fax: 623-9028

Company employees: 13

Production:

Dolomite - 44,495 tons

Turquoise Ridge Underground Mine (5)

Operator:

Nevada Gold Mines, LLC
HC 66 Box 220
Golconda, NV 89414
775-529-5001 Fax: 748-3125

Company employees: 509

Contract employees: 160

Production:

Gold - 406,066 oz

Silver - 56,817 oz

Twin Creeks Mine (6)

Operator:

Nevada Gold Mines, LLC
HC 66 Box 220
Golconda, NV 89414
775-529-5001 Fax: 748-3125

Company employees: 442

Contract employees: 218

Production:

Gold - 237,644 oz

Silver - 108,342 oz

Pershing County

Buff/Satin Mine (7)

Operator:

Vanderbilt Minerals, LLC
P.O. Box 6660
Pahrump, NV 89041
775-537-6976 Fax: 537-6879
Company employees: 7

Production:

Specialty Clay - 2,500 tons

Coeur Rochester Mine (8)

Operator:

Coeur Rochester, Inc.
P.O. Box 1057
Lovelock, NV 89419
775-273-7995 Fax: 273-7423
Company employees: 297
Contract employees: 40

Production:

Gold - 35,401 oz
Silver - 3,761,060 oz

Colado Mine (9)

Operator:

US Silica
P.O. Box 959
Lovelock, NV 89419
775-824-7591 Fax: 824-7595
Company employees: 35

Production:

Diatomite - 114,418 tons

Empire Gypsum Mine (10)

Operator:

Empire Mining Co., LLC
P.O. Box 157
Gerlach, NV 89412
775-800-4569 Fax: 702-921-9552
Company employees: 40
Contract employees: 1

Production:

Gypsum - 558,522 tons

Florida Canyon Mine (11)

Operator:

Florida Canyon Mining, Inc.
Alio Gold purchased by
Argonaut Gold in 2020
P.O. Box 330
Imlay, NV 89418
775-259-4581

Company employees: 187

Contract employees: 11

Production:

Gold - 43,305 oz
Silver - 30,877 oz

Relief Canyon Limestone Quarry (12)

Operator:

Nevada Cement Company
1290 West Main Street
Fernley, NV 89408
775-575-2281 Fax: 575-4387
Company employees: 2

Production:

Limestone - 53,834 tons

Sunrise Placer Mine (13)

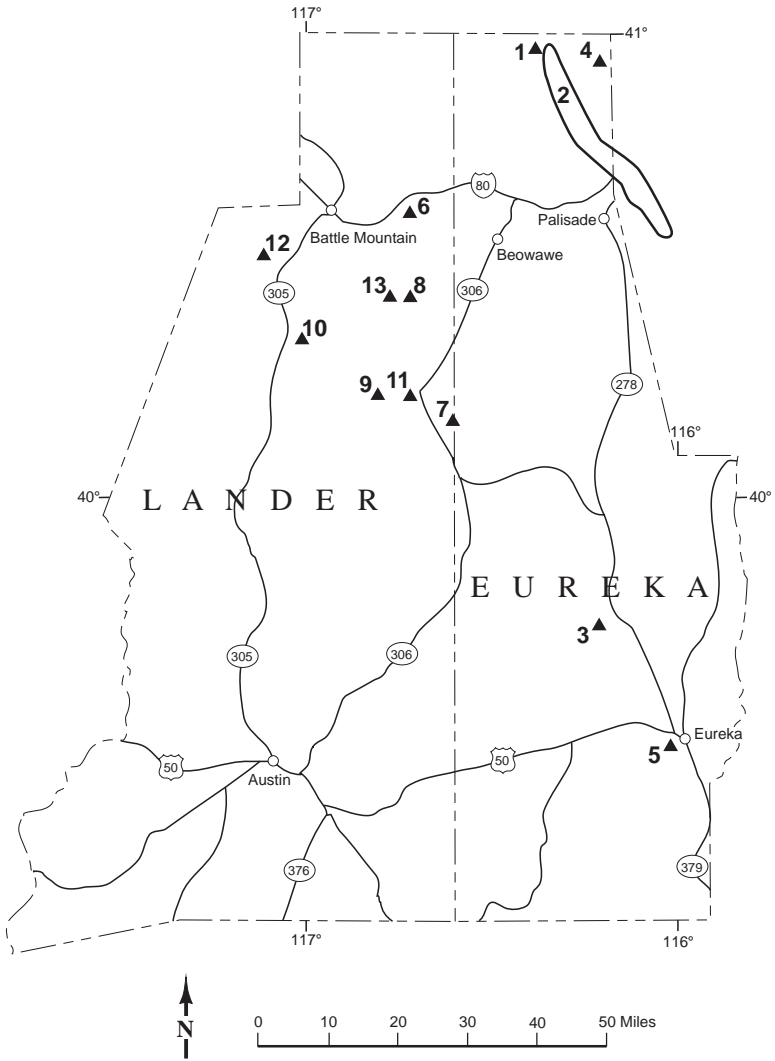
Operator:

Sunrise Minerals, LLC
9405 Betty Ln.
Winnemucca, NV 89445
775-848-2580

No mine production in 2019



*Coeur Rochester Mill Circuit, Pershing County
(Garrett Wake photo).*



Section III

Eureka County

Betze-Post Mine (1)

Operator:

Nevada Gold Mines, LLC
1655 Mountain City Highway
Elko, NV 89803
775-748-1001

Company employees: 1,150

Production:

Gold - 493,546 oz
Silver - 18,781 oz

Eastern Nevada Operations

(Carlin Operations) (2)

Operator:

Nevada Gold Mines, LLC
1655 Mountain City Highway
Elko, NV 89801
775-778-1001

Company employees: 1,886

Production:

Gold - 880,615 oz
Silver - 57,551 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: 95

Production:

Gold - 30,709 oz
Silver - 614 oz

Maggie Creek Operation (4)

Operator:

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

Company employees: 3

Production:

Barite - 88,931 tons

Ruby Hill Mine (5)

Operator:

Ruby Hill Mining Co.
9650 Gateway Drive, Suite 202
Reno, NV 89521
775-826-7567

Company employees: 13

Production:

Gold - 3,356 oz
Silver - 2,540 oz

Lander County

Argenta Mine (6)

Operator:

Baker Hughes Oilfield Operations, LLC
P.O. Box 277
Battle Mountain, NV 89820
775-625-8700 Fax: 635-5455
Company employees: 18
Contract employees: 6

Production:

Barite - 53,750 tons

Cortez Hills Underground Mine (7)

Operator:

Nevada Gold Mines, LLC
HC66 Box 1250
Crescent Valley, NV 89821
775-468-4400 Fax: 468-4496
Company employees: 322
Contract employees: 130

Production:

(underground only, excluding the open-pit)

Gold - 400,389 oz
Silver - 26,056 oz

Fire Creek Mine (8)

Operator:

Hecla Mining Co.
4000 W. Winnemucca Blvd.
Winnemucca, NV 89445
775-621-5535
Company employees: 75
Contract employees: 18

Production:

Gold - 52,616 oz
Silver - 63,279 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: 37

Production:

Barite - 222,000 tons

Mountain Springs Mine (10)

Operator:

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

No mine production in 2019

Pipeline Mine (11)

Operator:

Nevada Gold Mines, LLC
HC66 Box 1250
Crescent Valley, NV 89821
775-468-4400 Fax: 468-4496
Company employees: 932
Contract employees: 425

Production:

(includes the Cortez Hills open-pit)

Gold - 543,335 oz
Silver - 35,754 oz

Phoenix Mine (12)

Operator:

Nevada Gold Mines
1655 Mountain City Highway
Elko, NV 89801
775-778-4000 Fax: 778-4360
Company employees: 480
Contract employees: 107

Production:

Gold - 160,700 oz
Silver - 754,270 oz
Copper - 30,585,072 pounds

Slaven Canyon Mine (13)

Operator:

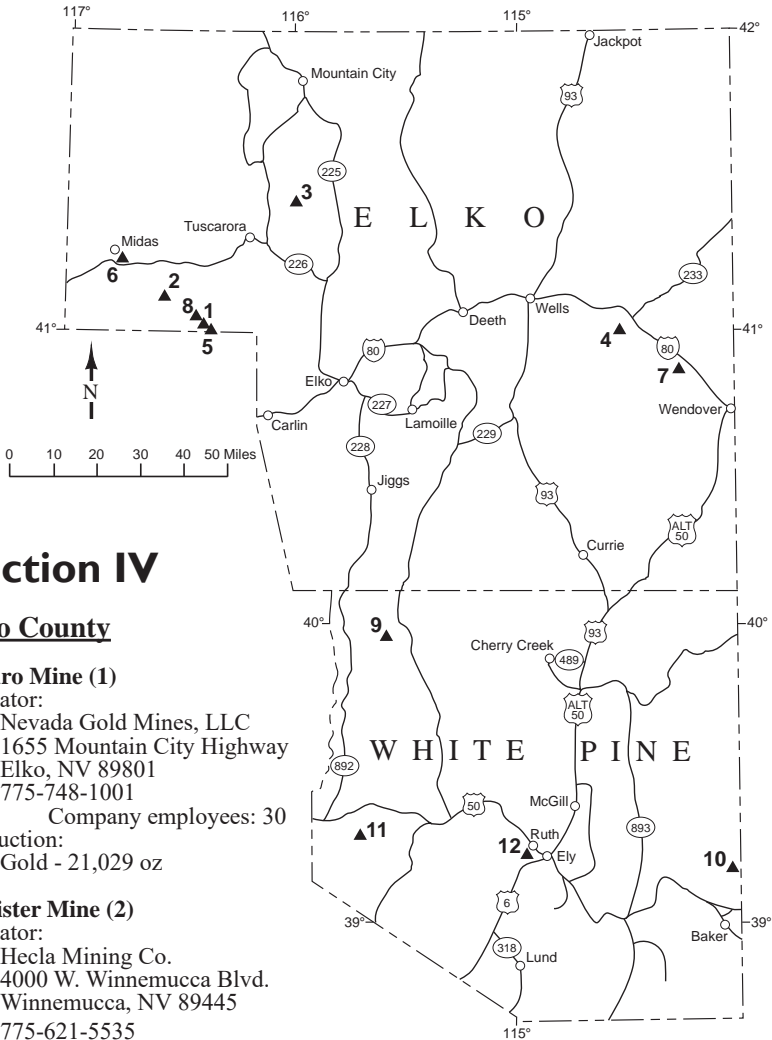
Baker Hughes Oilfield Operations, LLC
P.O. Box 277
Battle Mountain, NV 89820
775-625-8700 Fax: 635-5455
Company employees: 18
Contract employees: 6

Production:

Barite - 211,696 tons



*Isabella Pearl Mine Site, Mineral County
(Gold Resource Corporation photo).*



Section IV

Elko County

Arturo Mine (1)

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

Company employees: 30

Production:
Gold - 21,029 oz

Hollister Mine (2)

Operator:
Hecla Mining Co.
4000 W. Winnemucca Blvd.
Winnemucca, NV 89445
775-621-5535

Company employees: 6

Production:
Gold - 3,264 oz
Silver - 53,025 oz

Jerritt Canyon Mine (3)

Operator:
Jerritt Canyon Gold, LLC
HC31 Box 78
Elko, NV 89801
775-738-5600 Fax: 758-9233
Company employees: 280
Contract employees: 200

Production:
Gold - 117,985 oz

Long Canyon Mine (4)

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

Company employees: 228
Contract employees: 140

Production:
Gold - 189,965 oz

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

Section IV (continued)

Meikle Mine (5)

Operator:

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

Company employees: 563

Production:

Gold - 331,271 oz
Silver - 12,606 oz

Midas Mine (6)

Operator:

Hecla Mining Co.
4000 W. Winnemucca Blvd.
Winnemucca, NV 89445
775-621-5535

Company employees: 27

Contract employees: 12

Production:

Gold - 6,096 oz
Silver - 42,439 oz

Pilot Peak Quarry (7)

Operator:

Graymont
P.O. Box 2520
West Wendover, NV 89883
775-483-5463

Company employees: 69

Production:

Limestone - 1,634,908 tons

Rossi Mine (8)

Operator:

Halliburton Energy Services
912 Dunphy Ranch Rd.
Battle Mountain, NV 89820
720-593-7106

Company employees: 3

No mine production in 2019

Mt. Moriah Quarry (10)

Operator:

Mt. Moriah Stone
P.O. Box 70
Baker, NV 89311
435-855-2232 Fax: 855-2332

Company employees: 29

Production:

Quartzite - 3,482 tons

Pan Mine (11)

Operator:

Fiore Gold (US), Inc.
P.O. Box 150278
Ely, NV 89315
775-386-1900

Company employees: 62

Contract employees: 102

Production:

Gold - 40,499 oz

Robinson Mine (12)

Operator:

KGHM International, Ltd.
P.O. Box 382
Ruth, NV 89319
775-289-7000 Fax: 289-7349

Company employees: 606

Contract employees: 100

Production:

Copper - 113,132,886 pounds
Gold - 51,277 oz
Molybdenite - 766,699 pounds
Silver - 67,634 oz

White Pine County

Bald Mountain Mine North & South Operations (9)

Operator:

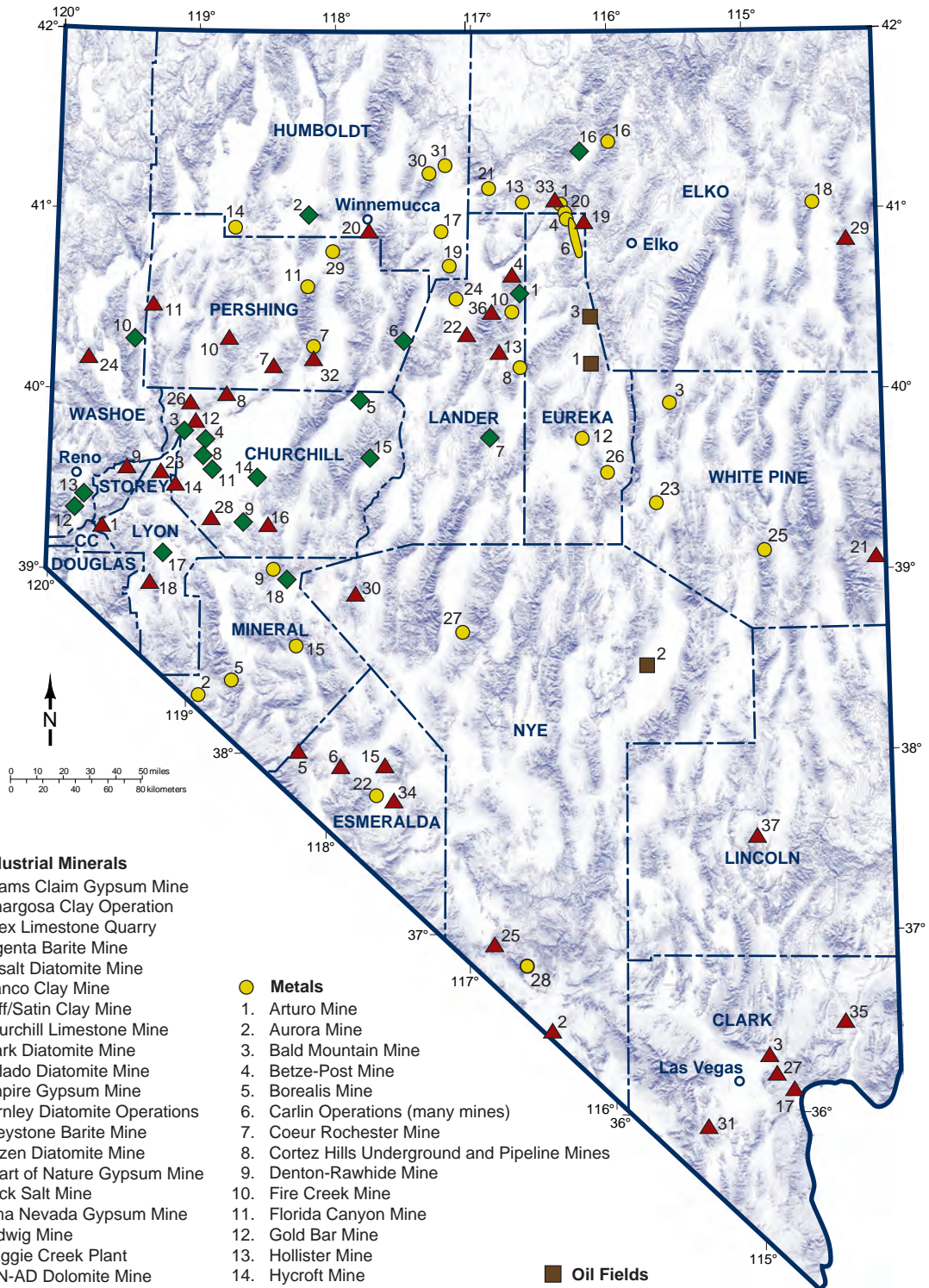
KG Mining (Bald Mountain), Inc.
435 Jiggs Hwy., Unit 16
Spring Creek, NV 89815
775-237-7100 Fax: 237-7101

Company employees: 605

Contract employees: 475

Production:

Gold - 187,585 oz
Silver - 32,464 oz



▲ Industrial Minerals

1. Adams Claim Gypsum Mine
2. Amargosa Clay Operation
3. Apex Limestone Quarry
4. Argenta Barite Mine
5. Basalt Diatomite Mine
6. Blanco Clay Mine
7. Buff/Satin Clay Mine
8. Churchill Limestone Mine
9. Clark Diatomite Mine
10. Colado Diatomite Mine
11. Empire Gypsum Mine
12. Fernley Diatomite Operations
13. Greystone Barite Mine
14. Hazen Diatomite Mine
15. Heart of Nature Gypsum Mine
16. Huck Salt Mine
17. Lima Nevada Gypsum Mine
18. Ludwig Mine
19. Maggie Creek Plant
20. MIN-AD Dolomite Mine
21. Mt. Moriah Quartzite Quarry
22. Mountain Springs Barite Mine
23. NCC Fernley Limestone Ops.
24. NCC Flanigan Clay Mine
25. New Discovery Mine
26. Nightingale Diatomite Mine
27. PABCO Gypsum
28. Perlite Mine
29. Pilot Peak Limestone Quarry
30. Premier Magnesia
31. Rainbow Quarry
32. Relief Canyon Limestone Quarry
33. Rossi Barite Mine
34. Silver Peak Lithium Ops.
35. Simplot Silica Products
36. Slaven Canyon Mine
37. Tenacity Perlite Mine

● Metals

1. Arturo Mine
2. Aurora Mine
3. Bald Mountain Mine
4. Betze-Post Mine
5. Borealis Mine
6. Carlin Operations (many mines)
7. Coeur Rochester Mine
8. Cortez Hills Underground and Pipeline Mines
9. Denton-Rawhide Mine
10. Fire Creek Mine
11. Florida Canyon Mine
12. Gold Bar Mine
13. Hollister Mine
14. Hycroft Mine
15. Isabella Pearl Mine
16. Jerritt Canyon Mine
17. Lone Tree Complex
18. Long Canyon Mine
19. Marigold Mine
20. Meikle Mine
21. Midas Mine
22. Mineral Ridge Mine
23. Pan Mine
24. Phoenix Mine
25. Robinson Mine
26. Ruby Hill Mine
27. Round Mountain Mine
28. Sterling Mine
29. Sunrise Placer Mine
30. Turquoise Ridge Mine
31. Twin Creeks Mine

■ Oil Fields

1. Blackburn Field
2. Railroad Valley (Eagle Springs, Trap Spring, Sand Dune, Grant Canyon, Bacon Flat, Kate Spring, Sans Spring, and Ghost Ranch Fields)
3. Tomera Ranch Field

◆ Geothermal Power Plants

- | | |
|-----------------------|-----------------------------------|
| 1. Beowawe | 11. Soda Lake 1 and 2 |
| 2. Blue Mountain | 12. Steamboat Hills |
| 3. Bradys Hot Springs | 13. Steamboat II, and III, Galena |
| 4. Desert Peak 2 | 14. Stillwater 1 and 2 |
| 5. Dixie Valley | 15. Tungsten Mountain |
| 6. Jersey Valley | 16. Tuscarora |
| 7. McGinness Hills | 17. Wabuska |
| 8. Patua | 18. Wild Rose |
| 9. Salt Wells | |
| 10. San Emidio | |

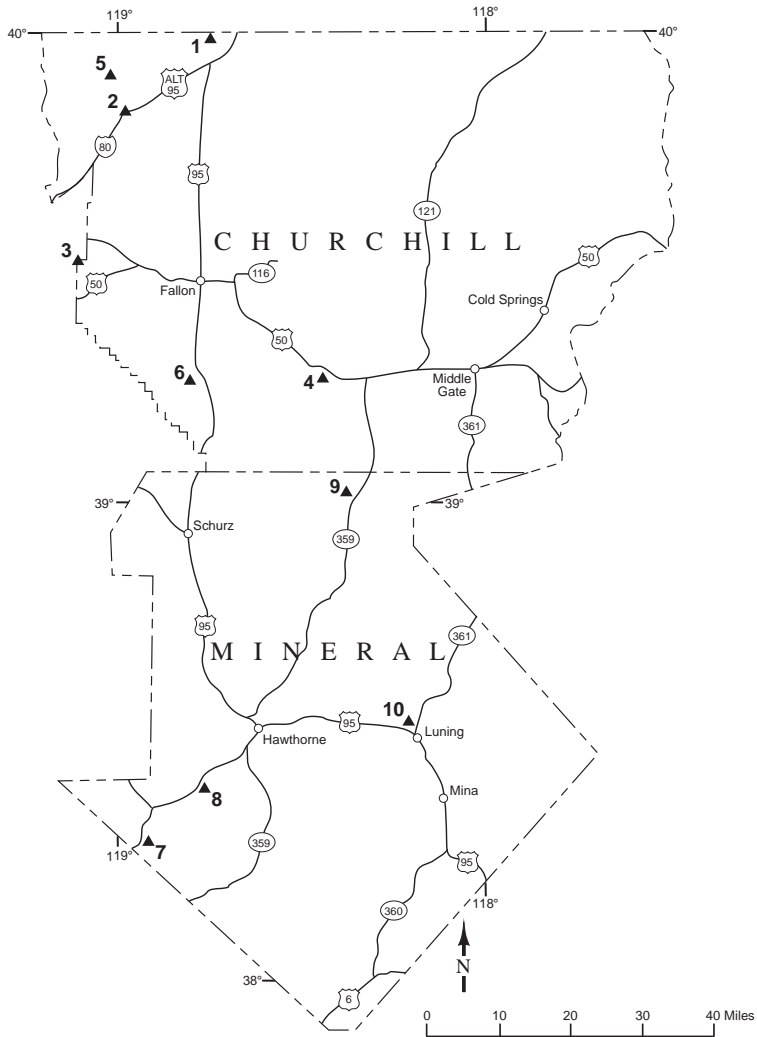
Major mines, oil fields, and geothermal plants, 2019.



*2019 Southern Nevada Teachers Workshop Tour to Lhoist's Apex Plant ,
Clark County (Garrett Wake photo).*



*Silver doré bars from Coeur Rochester,
Pershing County (Garrett Wake photo).*



Section V

Churchill County

Churchill Limestone Quarry (1)

Operator:

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

Company employees: 4

Production:

Limestone - 361,276 tons

Fernley Diatomite Operations (2)

Operator:

US Silica
 P.O. Box 860
 Fernley, NV 89408
 775-423-6668 Fax: 423-6411

Company employees: 35

Production:

Diatomite - 34,875 tons

Hazen Mine (3)

Operator:

US Silica
 640 Clark Station Rd.
 Sparks, NV 89434
 775-824-7700 Fax: 824-7715
 Company employees: 2
 Contract employees: 4

Production:

Diatomite - 13,330 tons

Huck Salt (4)

Operator:

Huck Salt Company
 2900 Phritzie Ln.
 Fallon, NV 89406
 775-423-2055 Fax: 423-0467
 Company employees: 10

Shipped:

Salt - 24,532 tons

Nightingale Mine (5)

Operator:

Imerys of California, Inc.
 100 Front Street
 Fernley, NV 89408
 775-575-2536 Fax: 575-1570
 Company employees: 15
 Contract employees: 5

Production:

Diatomite - 26,426 tons

Perlite Mine (6)

Operator:

US Silica
 640 Clark Station
 Sparks, NV 89434
 775-824-7700 Fax: 824-7715

No mine production in 2019

Mineral County**Aurora Mine (7)**

Operator:

Hecla Mining Co.
 4000 W. Winnemucca Blvd.
 Winnemucca, NV 89445
 775-621-5535
 Company employees: 8

Production:

Gold - 4,190 oz
 Silver - 22,998 oz

Borealis Mine (8)

Operator:

Borealis Mining Company, LLC
 9650 Gateway Drive, STE 202
 Reno, NV 89521
 775-826-7567

Company employees: 7

Production:

Gold - 605 oz
 Silver - 387 oz

Denton-Rawhide Mine (9)

Operator:

Rawhide Mining, LLC
 P.O. Box 2070
 Fallon, NV 89407
 775-945-1015

Company employees: 115

Contract employees: 2

Production:

Gold - 14,381 oz
 Silver - 140,187 oz

Isabella Pearl (10)

Operator:

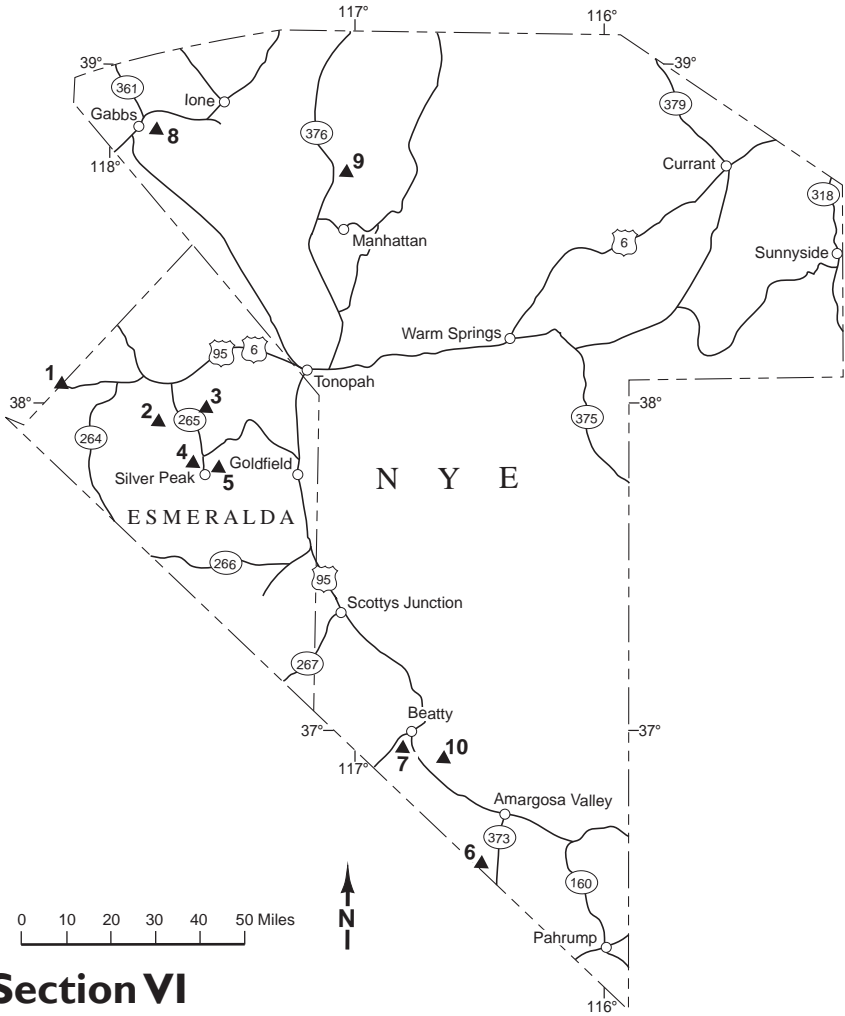
Walker Lane Minerals, Corp.
 P.O. Box 2170
 Fernley, NV 89408
 775-300-1592

Company employees: 58

Contract employees: 12

Production:

Gold - 10,810 oz
 Silver - 9,574 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 - 2,366 tons

Blanco Mine (2)

Operator:

Vanderbilt Minerals, Inc.
 P.O. Box 6660
 Pahrump, NV 89041
 775-537-6976 Fax: 537-6879

Production:

Specialty clays - No mining
 occurred in 2019

Heart of Nature (3)

Operator:

ABM Mining, LLC
 2470 Saint Rose Parkway Suite 301
 Henderson, NV 89074
 661-399-9755 Fax: 399-9758
 Company employees: 2
 Contract employees: 2

Production:

Gypsum/sulfur soil
 amendment - 9,748 tons

Mineral Ridge Mine (4)

Operator:

Mineral Ridge Gold, LLC
 1910 Idaho St., Ste. 102-550
 Elko, NV 89801
 775-753-4778 Fax: 775-753-4780
 Company employees: 23

Production:

Gold - 3,863 oz
 Silver - 2,324 oz

Silver Peak Lithium Operations (5)

Operator:

Albemarle U.S., Inc.
 P.O. Box 98
 Silver Peak, NV 89047
 775-937-2222 Fax: 937-2317
 Company employees: 65
 Contract employees: 15

Shipped:

Lithium compounds - 7,887,994 lbs

Nye County**Amargosa Clay Operation (6)**

Operator:

Lhoist North America
 P.O. Box 86
 Amargosa Valley, NV 89020
 775-372-5341
 Company employees: 41
 Contract employees: 1

Production:

Specialty clays - 116,636 tons

New Discovery Mine (7)

Operator:

Vanderbilt Minerals, LLC
 P.O. Box 6660
 Pahump, NV 89041
 775-537-6976 Fax: 537-6879
 Company employees: 7

Production:

Specialty clays - No mining
 occurred in 2019

Premier Magnesia (8)

Operator:

Premier Magnesia, LLC
 P.O. Box 177
 Gabbs, NV 89409
 775-285-2601 Fax: 285-4021
 Company employees: 109
 Contract employees: 10

Shipped:

Magnesium compounds - 118,698 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: 843
 Contract employees: 346

Production:

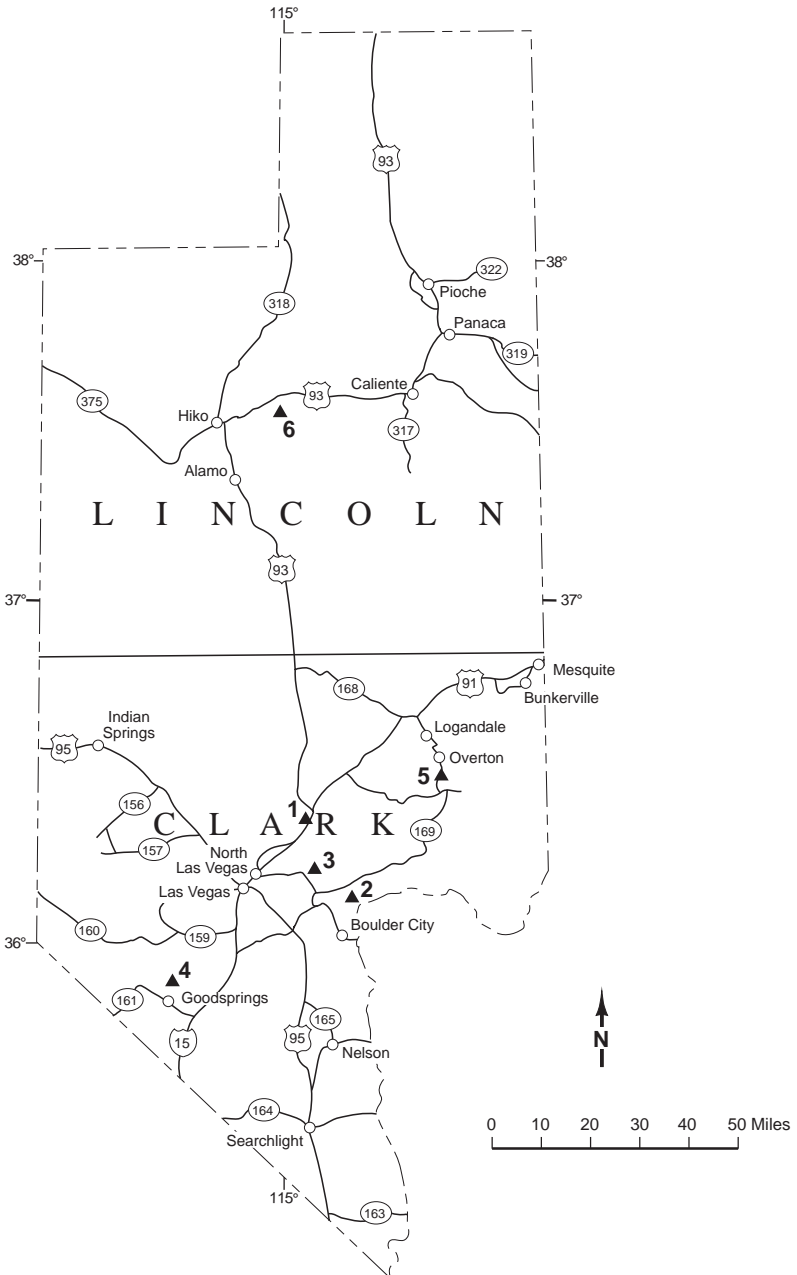
Gold - 350,943 oz
 Silver - 921,881 oz

Sterling Mine (10)

Operator:

Coeur Sterling
 P.O. Box 549
 Beatty, NV 89003
 702-846-2606
 Company employees: 9
 Contract employees: 5

No mine production in 2019



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: 114

Contract employees: 5

Production:

Limestone - 1,370,000 tons

Dolomite - 276,000 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: 10

Production:

Gypsum - 130,000 tons

PABCO Gypsum Mine (3)

Operator:

Pacific Coast Building Products, Inc.
P.O. Box 364329
North Las Vegas, NV 89036
702-407-3700 Fax: 643-6249

Company employees: 20

Contract employees: 3

Production:

Gypsum - 903,514 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

Production:

Meta-quartzite blocks - 1,543 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: 35

Shipped:

Silica sand - 617,553 tons

Lincoln County

Tenacity Perlite Mine (6)

Operator:

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

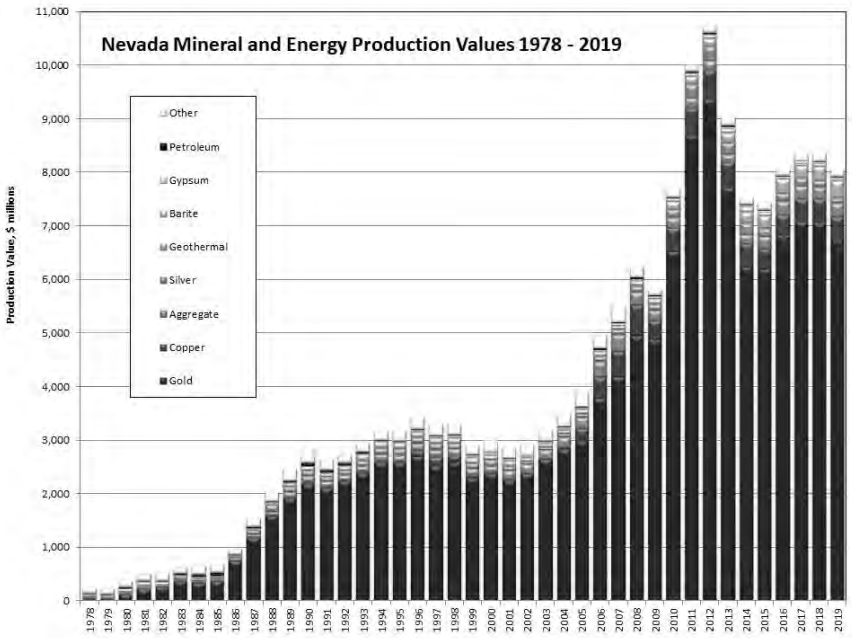
Company employees: 2

Production:

Perlite - 2,213 tons

Summary of 2019 production

Gold	4,868,086	ounces
Silver	6,282,466	ounces
Barite (mined)	576,377	tons
Copper	143,717,958	pounds
Diatomite	276,147	tons
Dolomite	320,495	tons
Gypsum	1,929,627	tons
Limestone	3,550,824	tons
Lithium compounds (shipped)	7,887,994	pounds
Magnesium compounds (shipped)	118,698	tons
Molybdenite	766,699	pounds
Perlite	2,213	tons
Pozzolan	959	tons
Quartzite	5,025	tons
Salt (shipped)	24,532	tons
Silica sand (shipped)	617,553	tons
Specialty clays	119,136	tons



Economic Impacts of Mining in Nevada—2019

Nevada's mining industry recorded approximately \$8.1 billion in total value of all commodities in 2019, representing a 3.8% decrease from the \$8.42 billion value in 2018. Nearly 85% of the value was driven by gold and silver, which contributed over \$7.1 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 2019 were \$1,392.60 and \$16.21 per troy ounce, respectively. Nevada led the nation in 2019 in the production of gold, barite, lithium compounds and magnesium compounds. Nevada produced a wide variety of other mineral and energy commodities such as clays, copper, diatomite, dolomite, geothermal energy, gypsum, lapidary and gem stones, 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 4,868,086 troy ounces in 2019 compared to 5,581,160 troy ounces in 2018, a decrease of 12.8%. According to the USGS, Nevada remains the nation's top gold producer with about 87% (173 metric tons) of the U.S. total (200 metric tons) and would rank 5th in world gold production behind China (420), Australia (330), Russia (310), and Canada (180). A summary of 2019 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 14,887 people in 2019. The average yearly pay for mineral industry employees during this time was \$105,862, the third highest average private employment sector in the state, behind Company Management and Utilities. Mining employment has remained an important factor in Nevada.

Table 1. Summary of 2019 Nevada Mineral Commodity Production

Commodity	Production Amount	Unit	YOY		
			Change (%)	Value (\$)	
					YOY Value Change (%)
Gold	4,868,086	ounces	-13.7%	\$6,779,296,564	-4.4%
Silver	6,282,466	ounces	-25.9%	\$101,838,774	-29.5%
Barite (shipped)	172,157	tons	-56.0%	\$49,449,408	57.0%
Copper	143,717,958	pounds	-1.4%	\$390,912,846	-5.9%
Diatomite	276,147	tons	-0.3%	\$47,593,994	-1.8%
Dolomite	44,495	tons	-6.4%	\$4,544,808	8.4%
Gypsum	1,929,627	tons	-44.6%	\$28,805,229	-32.6%
Limestone	3,826,824	tons	19.0%	\$37,149,758	7.8%
Lithium compounds (shipped)	7,887,994	pounds	-22.9%	\$36,022,907	-9.1%
Magnesium compounds (shipped)	118,556	tons	5.7%	\$6,404,420	-18.9%
Molybdenite	766,699	pounds	17.5%	\$9,062,382	70.0%
Perlite	2,213	tons	-147.5%	\$694,455	-16.5%
Salt (shipped)	24,532	tons	-1.3%	\$834,094	52.2%
Silica sand (shipped)	617,553	tons	-15.1%	\$17,304,879	-12.8%
Specialty clays	119,136	tons	-8.3%	\$13,867,063	23.3%
Geothermal energy (sold)	3,858,208	megawatt hours	16.1%	\$310,949,485	28.3%
Oil (sold)	264,115	barrels	-6.0%	\$14,035,530	8.9%
Aggregates	33,500,000	tons	-7.6%	\$255,000,000	6.3%
			Total Value	\$8,103,766,595	

Permitting and Reclamation

Before mining can begin, plans of operation must be submitted and permits obtained from federal and state agencies 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 that are held by government agencies. The bonds are released only after the mined area is stabilized and the reclamation goals have been met. According to the Nevada Division of Environmental Protection, approximately \$3.1 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.

Gold Reserves

Gold reserves are defined as that portion of a gold deposit known to be economically feasible for extraction. The amount of reserves is always in a state of flux, due to some reserves being mined out, additions of new reserves through exploration, and changing commodity prices and operating costs. The price of gold and the cost of production are the main factors determining reserve. Extensive gold resources are known to exist at or near many mining operations in Nevada. 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 2019 totaled approximately 58 million ounces of gold. Assuming similar economic conditions without any reserve replacement, current reserves are sufficient to sustain gold production

Table 2. 2019 Nevada Metal Production, by Producer

Operator	Gold (ozs)	Silver (ozs)	Copper (lbs)	Moly (lbs)
Nevada Gold Mines	3,682,043	1,070,177	30,585,072	
Kinross	538,528	954,345		
SSR Mining	220,227	4,223		
Jerritt Canyon Gold	117,985	NR		
Hecla	66,166	181,741		
KGHM International	51,277	67,634	113,132,886	766,699
Florida Canyon Mining (Argonaut Gold)	43,305	30,877		
Fiore Gold	40,499	NR		
Coeur	35,401	3,761,060		
McEwen Mining	30,709	614		
Rawhide Mining	14,381	140,187		
Gold Resource	10,810	9,574		
Hycroft Mining	8,916	56,783		
Mineral Ridge Gold	3,863	2,324		
Ruby Hill Mining	3,356	2,540		
Borealis Mining	605	387		
Toquima Gold	15	0		
Totals	4,868,086	6,282,466	143,717,958	766,699

near current levels in Nevada for about ten years, (table 3).

Exploration

Exploration for new deposits is an ongoing effort by both the operating companies and many others who do not 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. In order 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 early 2019, using 2017 and 2018 data. This informative report, which can be downloaded at <http://pubs.nbmgs.unr.edu/NV-exploration-survey-2018-p/es2018.htm>, revealed that gold exploration accounted for 77 percent (\$353 million) of \$461 million total exploration spending, up significantly

from \$351 million total spent in 2017. Two large companies accounted for nearly 40 percent of the total spending. Approximately 784 people were directly employed by companies doing exploration activities in Nevada in 2018, up from 644 in 2017. Exploration for base metals accounted for 15 percent (\$70 million) and exploration for lithium and other energy metals continues to be significant at 5 percent (\$24 million).

Oil and Geothermal Activity

Economic activity from oil and gas exploration and production is relatively minor when compared to mining, but are 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 2019 ranged from a monthly average low of \$16.55 to a high of \$59.88 and averaged \$43.51 for the year, versus \$65.19 in 2018. Nevada's oil production in 2019 increased by 5.2% from 251,021 barrels (42 gallons per

Table 3. Nevada Mine Reserves (Proven and Probable) Reported for End of Year 2019

Company	Mine	Gold (ozs)	Silver (ozs)	Copper (lbs)
Argonaut Gold	Florida Canyon	1,019,000		
Coeur	Rochester	737,000	117,473,000	
Fiore Gold	Pan	275,600		
GRC	Isabella Pearl	220,100	1,310,700	
Hecla	Fire Creek	54,100	50,700	
Hecla	Hollister			
KGHM	Robinson			959,000,000
Kinross	Bald Mountain	1,277,000		
Kinross	Round Mountain	2,262,000	1,622,000	
McEwen	Gold Bar	430,000		
Nevada Copper	Pumpkin Hollow	8,000	194,000	2,060,000
NV Gold Mines	Carlin Operations (Includes Goldstrike & Arturo)	21,138,211		
NV Gold Mines	Cortez & Goldrush	9,918,699		
NV Gold Mines	Long Canyon	634,146		
NV Gold Mines	Phoenix	3,252,033	39,024,390	991,869,919
NV Gold Mines	Turquoise Ridge & Twin Creeks	13,495,935		
SSR	Marigold	3,610,000		
Totals		58,331,824	159,674,790	1,952,929,919

barrel) in 2018 to 264,115 barrels sold, worth approximately \$11.5 million. Table 4 summarizes the number of barrels sold and wells by operator and field in 2019.

Nevada is rich in geothermal resources and is second only to California in the production of geothermal energy. For 2019, Nevada had 25 plants at 17 fields that sold approximately 3.9 million megawatt hours of electricity worth approximately \$311 million, (table 5). According to the U.S. Energy Information Association, this is enough to power about 355,000 Nevada residential homes 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.

Conclusion

Nevada's mineral industry continued to be a major economic force in the state with a total produced value of over \$8 billion in 2019. Given a stable price and regulatory environment this situation should continue for many years to come. Nevada is a major natural resource producer and has significant mineral and energy resources. Major risks to the stability of the minerals industry are withdrawal of federal lands from mineral entry and leasing, and any new state or federal taxes imposed on mineral production.

Table 4. Nevada Oil Production in 2019

Operator	Producing Field	# of Producing Wells	Total Barrels Sold
Makoil	Trap Spring	28	123,111
Kirkwood	Eagle Springs	12	35,525
Grant Canyon	Grant Canyon	3	33,518
Grant Canyon	Blackburn	7	22,648
Western General	Kate Spring	4	20,351
Kirkwood	Ghost Ranch	3	7,718
Grant Canyon	Three Bar	1	5,453
Makoil	Ghost Ranch	1	4,632
Grant Canyon	Bacon Flat	1	4,593
Makoil	Kate Spring	1	5,038
Grant Canyon	Sans Spring	1	1,156
Tomera Oil Fields	Tomera Ranch	2	372
Totals		64	264,115

Table 5. Nevada Geothermal Production in 2019 by Company

Company (including all subsidiaries)	Total Output (Sales) MWh	% of Total
Ormat Nevada Inc.	2,678,389	69%
Terra-Gen Dixie Valley LLC	590,818	15.2%
Cyrq Energy	400,190	10.3%
Enel North America Inc.	200,785	5.2%
Homestretch Energy/Whitegrass No. 1 LLC	14,136	0.4%
Total		3,884,317.9



Pumpjack for the Sand Dune 88-35 oil well in the Sand Dune Oil Field, Nye County (Lowell Price photo).



Geothermal production wells, at McGinness Hills Field, Lander County (Lowell Price photo).

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The Nevada Bureau of Mines and Geology

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