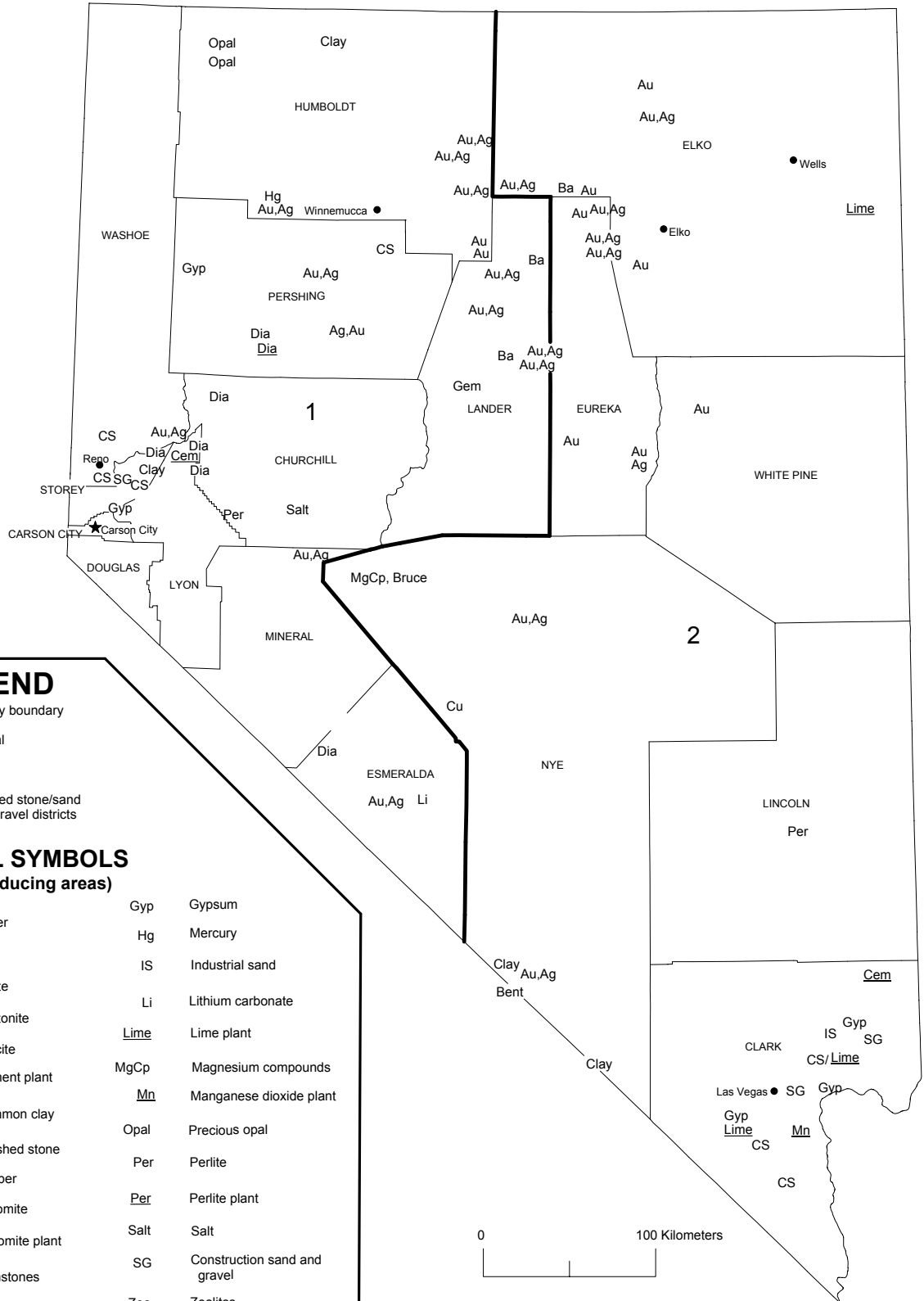


NEVADA



LEGEND

- County boundary
- ★ Capital
- City
- 1 — Crushed stone/sand and gravel districts

MINERAL SYMBOLS (Major producing areas)

Ag	Silver	Gyp	Gypsum
Au	Gold	Hg	Mercury
Ba	Barite	IS	Industrial sand
Bent	Bentonite	Li	Lithium carbonate
Bruce	Brucite	<u>Lime</u>	Lime plant
<u>Cem</u>	Cement plant	MgCp	Magnesium compounds
Clay	Common clay	<u>Mn</u>	Manganese dioxide plant
CS	Crushed stone	Opal	Precious opal
Cu	Copper	Per	Perlite
Dia	Diatomite	<u>Per</u>	Perlite plant
<u>Dia</u>	Diatomite plant	Salt	Salt
Gem	Gemstones	SG	Construction sand and gravel
		Zeo	Zeolites

0 100 Kilometers

THE MINERAL INDUSTRY OF NEVADA

This chapter has been prepared under a Memorandum of Understanding between the U.S. Geological Survey and the Nevada Bureau of Mines and Geology for collecting information on all nonfuel minerals.

In 2001, the estimated value¹ of nonfuel raw mineral production for Nevada was \$2.93 billion, based upon preliminary U.S. Geological Survey (USGS) data. This was a 1.6% decrease from that of 2000² and followed a 3.5% increase in 2000 from 1999. The State continued to be second in the Nation in nonfuel mineral production value, of which Nevada accounted for about 7.5% of the U.S. total.

Nevada, the Nation's leading State in gold production and silver production, provided 75% and 33% of the Nation's gold and silver, respectively. The "Silver State" has been first in silver production since 1987, as well as first in gold since 1981. In 2001, gold accounted for 81% of Nevada's nonfuel raw mineral production value, followed by construction sand and gravel with more than 5% and silver with about 3% of the State's total value. In 2000, increases in the values of gold, up \$100 million, construction sand and gravel, up \$30 million, lime, up \$6 million, portland cement, up \$5 million, and magnesite, up \$2 million, plus some smaller increases from other minerals, more than offset nonfuel mineral commodity decreases, especially those of copper, down about \$40 million, lithium carbonate, down \$5 million, and diatomite, down about \$2 million, resulting in the State's increase in value for the year. All other nonfuel minerals showed changes in value of less than \$1 million (table 1). Copper production and value decreased significantly from 1999 to 2000 because of the closing of BHP Copper Co.'s Robinson Mine, which ceased production at the end of June 1999.

Based upon USGS estimates of the quantities produced in the 50 States during 2001, Nevada continued to be the only State to produce magnesite, lithium minerals, and mercury (descending order of value). The State remained first of three barite-producing States and first of two States that produce brucite, second of four diatomite-producing States, fifth in lead, sixth in perlite, and seventh in lime. While Nevada rose in rank to

¹The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending upon the minerals or mineral products. Production may be measured by mine shipments, mineral commodity sales, or marketable production (including consumption by producers) as is applicable to the individual mineral commodity.

All 2001 USGS mineral production data published in this chapter are preliminary estimates as of August 2002 and are expected to change. For some mineral commodities, such as construction sand and gravel, crushed stone, and portland cement, estimates are updated periodically. To obtain the most current information, please contact the appropriate USGS mineral commodity specialist. Specialist contact information may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals/contacts/comdir.html>; alternatively, specialists' names and telephone numbers may be obtained by calling USGS information at (703) 648-4000 or by calling the USGS Earth Science Information Center at 1-888-ASK-USGS (275-8747). All Mineral Industry Surveys—mineral commodity, State, and country—also may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>.

²Values, percentage calculations, and rankings for 2000 may differ from the Minerals Yearbook, Area Reports: Domestic 2000, Volume II, owing to the revision of preliminary 2000 to final 2000 data. Data for 2001 are preliminary and are expected to change; related rankings may also change.

third from fourth in gypsum, it dropped to eighth from fourth in gemstones. Additionally, significant quantities of construction sand and gravel (11th in State ranking) and industrial sand and gravel (descending order of value) were produced in the State.

The following narrative information was provided by the Nevada Bureau of Mines and Geology (NBMG).³ Production data in the following text are those reported by the NBMG, based upon its own surveys, estimates, and information gathered from company annual reports. The NBMG data are reported by that agency to be nonproprietary data and may differ from some USGS preliminary estimates and production figures as reported to and estimated by the USGS.

Metals

Nevada produced 253,000 kilograms (kg) of gold in 2001 along with 543,000 kg of silver. Production of both metals declined compared with that of 2000. Nevada maintained its place as the leading gold- and silver-producing State in the United States with 29 mines reporting gold production and 25 mines producing silver during 2001 (Tingley and LaPointe, 2002). Newmont Mining Corp.'s Nevada operations, which include all of Newmont's Carlin Trend mines, the Rain, the Twin Creeks, the Lone Tree, the Mule Canyon, and the Trenton Canyon Mines as well as the Phoenix Property at Battle Mountain, reported production of 84,078 kg of gold in 2001, easily maintaining its place as the largest gold-producing company in Nevada. Barrick Gold Corp., with production of 70,376 kg of gold, remained in second place in output in Nevada. On December 14, 2001, Barrick acquired Newmont's Homestake Mining Co.

For the second consecutive year, Barrick's Betze-Post Mine was the largest Nevada gold mine, producing 48,210 kg in 2001. Placer Dome Inc.'s Cortez operation (Pipeline Mine) remained in second place in 2001 with 36,849 kg. Barrick's Meikle underground mine reported 2001 production of 22,167 kg, and Newmont's Twin Creeks Mine produced 25,877 kg. Other major gold producers in 2001 included Smoky Valley Common Operation's Round Mountain Mine, 23,233 kg; AngloGold Limited/Meridian Gold Inc.'s Jerritt Canyon Mine, 9,186 kg; Normandy Mining Ltd.'s Ken Snyder Mine, 6,175 kg; Homestake's Rudy Hill Mine, 4,191 kg; Florida Canyon Mining Co.'s Florida Canyon Mine, 3,770 kg; and Placer Dome's Bald Mountain Mine, 3,371.

The Rochester Mine, operated by Coeur D'Alene Mines Corp., was Nevada's largest silver producer in 2001, producing 201,517 kg. Echo Bay Minerals Co.'s McCoy/Cove Mine produced 200,668 kg, and Normandy's Ken Snyder Mine

³Joseph V. Tingley, Daphne D. La Pointe, and Stephen B. Castor, Research Geologists, and David A. Davis, Geologic Information Specialist, coauthored the text of mineral industry information provided by the Nevada Bureau of Mines and Geology.

produced 74,438 kg. Other large silver-producing operations included the Denton-Rawhide Mine, 22,615 kg; the Round Mountain Mine, 15,835 kg; and Barrick's Meikle Mine, 6,637 kg. Newmont's Carlin operations produced a total of 8,126 kg of silver.

Equatorial Tonopah, Inc. produced 3,256 metric tons (t) of copper in 2001 from the Tonopah Copper Mine in Nye County. Until it closed in July 2001, the mine had been the only copper mine in Nevada.

In 2001, underground mines dominated startups in Nevada. Newmont's Deep Post Mine began production in March, the new Lee Smith Mine at Jerritt Canyon was dedicated in September, and Barrick's Rodeo Mine was moving into production in December. Newmont planned to produce 12,441 kilograms per year (kg/yr) of gold at Deep Post, and Barrick, 10,886 kg/yr of gold at Rodeo.

Late in 2001, Barrick announced that it will close the Ruby Hill Mine near Eureka by the end of 2002. Placer Dome Inc. announced that it would write off the Getchell Property in Humboldt County. Placer Dome will maintain the property, but production plans have been suspended.

Industrial Minerals

The total value of industrial minerals produced in Nevada in 2001, an estimated \$424 million, was about 7% more than the value in 2000. In order of estimated value, the most important industrial minerals in 2001 were construction aggregate, lime, diatomite, cement, gypsum, barite, lithium, magnesia, and silica, each valued at more than \$10 million. Commodities with values of less than \$10 million were dolomite, limestone, perlite, dimension stone, salt, and gemstones. Borate and zeolite were processed in Nevada but mined nearby in California. Data used for these estimates and data reported for individual commodities below were obtained from the Nevada Division of Minerals or directly from companies that produced the industrial minerals.

In 2001, construction aggregate production in Nevada had an approximate total value of \$158 million, far less than that of gold but higher than that of other commodities mined in the State. In 2001, State aggregate production was estimated to be 35 million metric tons (Mt), which was 25% higher than that of 2000 because substantial production capacity was added in the Las Vegas area that had not been part of prior year estimates. Aggregate produced from sand and gravel deposits accounted for about 80% of aggregate production statewide, with crushed stone and lightweight aggregate making up the balance. Construction aggregate produced in the Las Vegas area was estimated to be 26 Mt, an increase of about 35% from 2000. This includes an estimated 8 Mt largely of base aggregate produced by portable crushers in Las Vegas in 2001 that was not part of the data compiled in earlier years. Continued demand in the Las Vegas area will likely maintain production, and the planned new Ivanpah Valley airport and attendant urbanization south of Las Vegas constitute major future markets.

Companies in the Las Vegas area that produced more than 1 Mt of aggregate in 2001, ranked in approximate order of tonnage produced, were Las Vegas Paving Corp., Rinker Materials Corporation, Nevada Ready Mix Corp., and Frehner Construction Co., Inc. Other important producers were Wells

Cargo Inc., CTC Crushing LLC, Hollywood Gravel Co., and Diamond Construction Co.

Las Vegas Paving Corp. produced sand and gravel from the Las Vegas landfill, a pit in the Lone Mountain area, and ran portable crushing operations. Rinker (a subsidiary of CSR Group) produced sand and gravel from the Buffalo Road and the Blue Diamond pits and from granite mined at the El Dorado pit near Railroad Pass, all of which had been previously owned by Hanson Aggregates West. In December, Las Vegas Paving purchased the Blue Diamond pit from Rinker.

Nevada Ready Mix mined all its aggregate from an open pit in an alluvial fan in the Lone Mountain area. Frehner mined and crushed limestone from the Sloan Property originally acquired from Chemical Lime Co. Community pits and other aggregate mining facilities administered by the U.S. Bureau of Land Management (BLM) and operated by several companies provided about 2.5 Mt to the Las Vegas area total in 2001.

Sand and gravel operations accounted for about 89% of the aggregate used in the Las Vegas metropolitan area in 2001, with crushed stone and lightweight aggregate making up the balance. The most important source of sand and gravel aggregate for Las Vegas was the Lone Mountain area northwest of Las Vegas, which accounted for more than 5 Mt in 2001. Significant production came from sand and gravel pits in the long-productive Buffalo Road area in the southwest part of Las Vegas. The Las Vegas landfill in Apex northeast of Las Vegas also has become an important sand and gravel production site. Since about 1994, portable crushers operating at construction sites have become increasingly important producers of base aggregate; in 2001, estimates by industry members put portable crusher production at as much as 30% of the total aggregate production for Las Vegas. The most important crushed stone producers in the Las Vegas area were Rinker near Railroad Pass and Frehner at Sloan. The Southern Nevada Lightweight operation near Jean mainly produced aggregate for lightweight cement block and sand for use in stucco. Lightweight aggregate was also shipped from Nye County into the Las Vegas area by Cind-R-Lite Block Co. from a cinder cone near Amargosa Valley. In 2001, D&H Mining Limited Partnership announced that it intended to produce rhyolitic lightweight near Beatty. The company planned to mine spicerite, a strong, bright white hydrothermally altered tuff that it will market in southern Nevada and southern California for use in block.

Production of aggregate in the Reno-Sparks-Carson City area was about 6 Mt, unchanged from that of 2000. Martin Marietta Materials Inc. and Granite Construction Co. produced more than 1 Mt of aggregate in 2001. Martin Marietta acquired Rocky Ridge Inc. and Sha-Neva Inc., related companies that operated a major crushed stone operation, and smaller sand and gravel pits north of Reno. Granite Construction continued to produce aggregate from four pits in the area. All-Lite Aggregate Co., Rilite Aggregate Co., Paiute Pit Aggregates Co., Frehner Construction, and A&K Earthmovers, Inc. were also important producers. All-Lite and Paiute are part of the U.S. holding company RMC Industries (owned by United Kingdom-based RMC Group PLC). Crushed rock operations of Martin Marietta, Granite Construction, and Frehner Construction and lightweight rhyolite aggregate from All-Lite, Rilite, and Naturalite Aggregate Corp. accounted for about 60% of the aggregate used

in 2001 in the Reno-Sparks-Carson City area.

Aggregate was also produced outside of the major metropolitan area. Operators in Nye County produced an estimated 500,000 t of aggregate in 2001. More than 90% of this material was produced and used in the Pahrump area. Churchill, Elko, Lander, Lyon, and White Pine Counties produced more than 200,000 t of aggregates each; some of this material was sold into the major metropolitan areas. Douglas, Eureka, Lincoln, Mineral, and Pershing Counties produced less than 150,000 t of aggregate each in 2001.

Nevada produced about 478,000 t of barite in 2001, a slight decrease from 2000.

M.I. Drilling Fluids Co. (owned by Smith International Inc. and Schlumberger Ltd.) was again the largest Nevada barite producer in 2001, with combined production of more than 270,000 t of screened and crushed high-grade ore from the Greystone Mine and ground and bagged barite from its Battle Mountain plant, both in Lander County. Baroid Drilling Fluids Division (a subsidiary of Halliburton Co.) mined barite from the Rossi Mine in Elko County and processed it at the Dunphy Mill in Eureka County. Baker Hughes INTEQ (a division of Baker Hughes Inc.) produced barite from its Argenta property near Battle Mountain in Lander County. Standard Industrial Minerals Inc. shipped a small amount of barite in 2000 from a deposit of white, paint-grade barite at the P and S Mine in Nye County to a processing plant in Bishop, CA.

American Borate Co. mined borate minerals from the Billie underground operation in Death Valley, CA. The ore was processed at the Lathrop Wells mill in Nye County, but because the ore was from out of State, this production was not included in the estimate of total value of Nevada minerals.

Nevada Cement Co. (a subsidiary of Centex Construction Products, Inc.) produced portland cement at a plant at Fernley in Lyon County; production exceeds 500,000 metric tons per year (t/yr) of cement. Limestone was mined from Cenozoic lacustrine deposits south of Fernley, and other ingredients came mostly from northern Nevada.

Nevada clay production was about 6% lower in 2001 compared with that of 2000. IMV Nevada (owned by Mud Camp Mining Co. LLC) produced about 32,000 t of sepiolite, saponite, and bentonite from deposits in lacustrine sediments in the Ash Meadows area of Nye County. The company had a processing plant in Amargosa Valley and exported a variety of clay products worldwide. It was the only producer of sepiolite and saponite in the United States in 2001. Art Wilson Co. sold about 150 t of montmorillonite from the Jupiter Mine in Lyon County in 2001. The company also mined about 350,000 t of halloysite from a deposit near Flannigan in Washoe County for Nevada Cement Co.; however, the halloysite was not reported as clay in Nevada mineral production figures because it was included in portland cement.

Two companies mined and shipped relatively minor amounts of Nevada clay from several sites for use in high-cost specialty products. At its White Caps Mill near Beatty in Nye County, Vanderbilt Minerals Co. processed small amounts of clay from several Nevada deposits for use in pharmaceutical and cosmetic products. The clay included white bentonite from the New Discovery Mine near Beatty in Nye County and clay from such other sites in Nevada as the Blanco Mine in Esmeralda County

and the Buff Mine in Pershing County. In 2001, American Colloid Co. mined some white bentonite from Coal Canyon in Pershing County; however, the company's Disaster Peak deposit in Humboldt County was idle.

In 2001, Oil-Dri Corp., the world's largest manufacturer of cat litter, proceeded with development of a montmorillonite deposit with 300 Mt of proven reserves in Hungry Valley north of Reno. The BLM ruled in 2000 that the clay is a locatable mineral, and the company completed its final Environmental Impact Statement in September 2001. The clay, which mainly comprises calcium montmorillonite, occurs in beds as much as 30 meters (m) thick and is considered to be an excellent material for clumping cat litter. The company, which planned to mine about 270,000 t/yr of raw clay material and to process it into 135,000 t/yr of industrial and consumer absorbents and 67,500 t/yr of fine-grained material for use as a flow enhancer for agricultural grain handling operations, planned to employ about 100 people at the Hungry Valley mine and plant. The project will consist of two small open pits on BLM land and a processing plant on company-owned land. At yearend 2001, despite local opposition, the company was in the process of getting Federal, State, and local approvals to operate; production startup was predicted for late 2002. Early in 2002, however, Washoe County denied permits, and the company was reconsidering its plans.

Diatomite production in Nevada decreased slightly in 2001 compared with 2000 but still accounted for about 33% of U.S. production. Nevada was the second largest producer of diatomite in the United States, surpassed only by California. Eagle-Picher Minerals, Inc. (a division of Eagle-Picher Industries, Inc., a wholly owned subsidiary of Granaria Holdings Ltd. of the Netherlands) was the second largest diatomite producer in the United States. It produced most of Nevada diatomite at three different operations that have estimated combined production of 200,000 t/yr. The most productive was the Colado operation in Pershing County, which consisted of a plant at Lovelock that made diatomaceous earth filtration products from diatomite mined northwest of Lovelock. The company also produced diatomite that was mainly used in fillers and absorbents at its Clark plant and mine in Storey County and diatomite that was used in insulation; it produced from a pit near Hazen in Lyon County.

Moltan Co. of Tennessee was the second largest diatomite miner in Nevada, producing absorbent products, cat litter, and soil conditioner at a mine and plant complex in Churchill County northeast of Fernley. Moltan (a family-owned Tennessee company) shipped diatomaceous earth products under several labels. The company produced two cat litter types in Nevada, a nonclumping product made of diatomite and a clumping product comprising diatomite and clay.

Other companies that produced diatomite in Nevada in 2000 were Celite Corp. at Hazen in Lyon County and Grefco Inc. at Basalt near the Esmeralda/Mineral Counties line. Celite (a subsidiary of World Minerals Inc., part of Alleghany Group) has a large diatomite facility in California and acquired the CR Minerals mine at Hazen and the plant in Fernley in 2001.

Las Vegas Rock produced flagstone, ashlar, boulders, and crushed landscape rock from its Rainbow Quarries near Goodsprings southwest of Las Vegas. The stone is quartz-

cemented sandstone that is part of the Jurassic Aztec Sandstone, which outcrops extensively in Clark County but is too friable at most localities for building stone. The company marketed cut stone and planned to produce polished slabs and custom stone shapes.

Mt. Moriah Stone quarried flaggy, light-gray quartzite from the Cambrian Prospect Mountain Quartzite at a quarry north of Baker in White Oine County. This material, which naturally splits into slabs as large as 1.5 m by 2.4 m and 10 centimeters thick, is used for slagstone and other types of uncut building stone.

In 2001, Building Stone Associates quarried purplish to greenish gray and locally blue mottled slate from the Precambrian McCoy Creek Group rocks in Egan Canyon west of Cherry Creek in White Pine County; the operation was small.

In 2001, the Nevada Bureau of Mines and Geology issued Open-File Report 01-6, entitled "Dimension Stone Study, Great Basin Development Association Area, Humboldt, Lander, Eureka, and White Pine Counties" in conjunction with Geomapping Associates Ltd. of Vermont and Converse Consultants of Reno.

Small amounts of precious opal from Virgin Valley in Humboldt County, chalcedony from the Double H Mountains in Humboldt County, turquoise from Tonopah in Nye County and near Cortez in Lander County, and crystalline amethyst and citrine from Peterson Mountain near Hallelujah Junction in Washoe County are recovered mostly as unreported stone from pay-to-dig activity. In addition, thulite has been produced from Douglas County under the trade name Lapis Nevada.

Gypsum production in Nevada decreased to 2.2 Mt in 2001 from 1.9 Mt in 2000 and accounted for 11% of U.S. production. Nevada ranked third after Oklahoma and Iowa in U.S. gypsum production.

PABCO Gypsum (a division of Pacific Coast Building Products Inc.) in Clark County northeast of Las Vegas mined and processed nearly 1 Mt of ore in 2001. Although processing yields only about 70% by weight gypsum from the ore, the company was still the largest producer in Nevada. PABCO processed most of this gypsum into wallboard in a plant adjacent to the mine but also made plaster.

The Blue Diamond operation of James Hardie Gypsum southwest of Las Vegas in Clark County was the second largest producer at about 576,000 t. In 2001, James Hardie Gypsum agreed to sell 890 hectares of mined-out land near Blue Diamond for \$50 million to W.L. Homes (a unit of the United Kingdom-based house builder John Laing PLC). At yearend 2001, James Hardie Gypsum was also negotiating with PBP PLC of the United Kingdom the sale of its U.S. wallboard business, which included the Blue Diamond operation.

USG Corp., the Nation's largest wallboard producer, was the third largest Nevada producer at about 447,000 t. In 2001, USG filed for Chapter 11 bankruptcy protection because of asbestos litigation. The company's operations remained unaffected by the filing. Art Wilson Co. of Arson City shipped about 116,000 t of gypsum and anhydrite in 2001 from the Adams Mine in Lyon County. D.L. Denman Construction Co. mined and sold gypsum from the Pioneer Gypsum Mine east of Las Vegas.

Georgia Pacific Corp., which operated a wallboard plant northeast of Las Vegas at Apex, stopped mining in Nevada

in 1995 and has been purchasing gypsum from a mine in St. George, UT. Citing low wallboard prices, Georgia-Pacific shut down a number of plants and cut back production at its remaining plants in 2001.

In 2001, lime production in Nevada decreased by about 9% compared with that of 2000. The Pilot Peak high-calcium lime operation of Graymont Western US, Inc. (formerly Continental Lime, Inc.) near Wendover in Elko County shipped the most lime in 2000 mainly to Nevada gold-mining operations for use in cyanide-solution pH control. The Pilot Peak plant has three kilns with a combined capacity of more than 700,000 t/yr of quicklime and a hydrated lime plant capable of producing 320 metric tons per day.

Chemical Lime Co. produced lime at Apex northeast of Las Vegas. The operation produced high-calcium quicklime used in metallurgical processing, paper manufacturing, and environmental markets. The company also produced dolomitic lime and hydrated high-calcium lime at Apex mainly for use in construction. The Chemical Lime dolomite quarry at Sloan and the lime kilns at its Henderson plant have ceased operation, although the Henderson plant processed hydrated lime in 2001.

In addition to lime, both Graymont and Chemical Lime ship crushed limestone. Other carbonate producers in Nevada are Min-Ad, Inc. and Nutritional Additives Corp., producers of agricultural dolomite near Winnemucca. Both companies had slightly lower production in 2001 compared with that of 2000.

Chemetall Foote Co. (a subsidiary of Chemetall GmbH) produced lithium carbonate, lithium hydroxide monohydrate, and lithium hydroxide anhydrite at Silver Peak in Esmeralda County. The operation is the only lithium producer in the United States; it produced these chemicals from brine that is pumped from beneath Clayton Valley playa and evaporated in nearby ponds.

Production of magnesia from magnesite at Gabbs in Nye County by Premier Chemicals LLC (formerly Premier Services Corp.) increased slightly compared with 2000, probably because the light-burned magnesia produced at Gabbs is not a refractory commodity. Gabbs, which had been part of Premier Refractories Inc., had been acquired by Cookson Group PLC in 1999. In March 2001, Cookson announced the sale of its magnesia chemicals business to Premier Chemicals.

Magnesium minerals have been mined in the Gabbs area since 1937 when magnesia was shipped to Henderson as a raw material for magnesium metal production. From the 1950s to the 1980s, mining and processing was by Basic Industries, an important producer of refractory magnesia. Because of the impact of low-cost Chinese refractory magnesia, production at Gabbs was switched to light-burned (caustic) magnesia. The commodity is mainly marketed for water and sewage treatment under the name Aquamag, a slow-release pH-control product that has had steadily increasing sales since its introduction about 5 years ago. The mine at Gabbs is the only mine in the United States where magnesite is mined and one of only two locations in the United States where brucite is mined.

The global markets for perlite have been strong in recent years, and although Nevada has abundant resources, only small amounts of perlite were produced from two deposits. Wilkin Mining and Trucking Inc. mined perlite from the Tenacity Perlite Mine in Lincoln County. In the past, most of the perlite

was shipped as crude; however, the company built a small perlite “popping” plant, the Tenacity Perlite Mill, in Caliente in 1987, and sales in 2001 were almost exclusively of expanded perlite. Eagle-Picher Minerals Inc. produced expanded perlite at its Colado diatomite plant in Pershing County from perlite that was mined at the Popcorn Mine in Churchill County. The perlite was marketed as a filter aid, and plant capacity was reportedly about 8,000 t/yr.

Huck Salt Co. produced 15,700 t of salt in 2001, a 20% increase compared with that of 2000. The salt, mined from a playa in Fourmile Flat southeast of Fallon in Churchill County, was mainly used for deicing roads. Salt has been harvested from this deposit more or less continuously since the 1860s when it was hauled to the mills that processed Comstock silver and gold ore.

Simplot Silica Products in Clark County shipped 671,000 t of silica sand in 2001, an increase from that of 2000. The sand was mined from an open pit in the relatively friable Cretaceous Baseline Sandstone, washed in the pit, and transported via a slurry pipeline to a plant near Overton where it was screened and bagged.

In 2001, Silica LLC submitted a plan of operations to the BLM to mine as much as 80,000 t/yr of quartzite from the Sugar mining claims southwest of Mercury in Nye County. The quartzite is strongly brecciated and fractured and can be mined without blasting. A three-stage screening plant, three storage silos, a bagging silo, and a truck scale are also proposed for this operation, which could employ as many as eight people.

Caithness Operating Co. of Reno, in collaboration with the U.S. Department of Energy, has developed a method of producing 99.9%-pure silica from geothermal fluids and has set up a pilot plant in Nevada to evaluate the process. The company is targeting production of silica products that bring prices in excess of \$20 per pound for use in nanoscale materials. Estimated production of such material from a 50-megawatt geothermal powerplant is about 6,000 t/yr.

In 2000, vermiculite deposits in the Gold Butte area of Clark County were explored because they contained high-quality

vermiculite and were near potential markets in Southern California. Stansbury Holdings Corp. explored for vermiculite near the Oglebay Norton Mica Peak deposit in 2000. However, the drilling did not intersect vermiculite, and Stansbury concentrated on deposits in Montana, where the company has mining operations. Environmental groups are lobbying for the area that contains the Gold Butte vermiculite deposits to be designated as wilderness.

Ash Meadows Zeolite LLC (a subsidiary of Badger Mining Corp.) shipped 1,000 to 2,000 t/yr of clinoptilolite from a plant in Amargosa Valley in Nye County; this facility was formerly owned by American Resource Corp. The clinoptilolite, which was used in water filtration, odor control, and nuclear cleanup, was mined from a large deposit in California that extended into Nevada. The company was evaluating plans for mining green clinoptilolite for use in cat litter from the Nevada portion of the deposit. In 2001, Moltan mined no mordenite from its zeolite deposit in the Trinity Range in Churchill County. The company, however, shipped some stockpiled mordenite from its Fernley absorbents and cat litter plant.

Mineral exploration in Nevada continued to decline in 2001. Newmont and Barrick carried out property exploration and development along the Carlin trend, with emphasis being placed on underground targets, and Placer Dome continued exploration at its Crossroads and Pediment deposits in the Bullion and Cortez districts of Lander and Eureka Counties. In 2001, very little exploration within Nevada was aimed at targets other than gold and silver; however, early in the year, some exploration activity was reported for platinum-group elements in the Bunkerville district of Clark County, and a gallium play in the Opalite district of Humboldt County received attention in the press.

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TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN NEVADA 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1999		2000		2001 p/	
	Quantity	Value	Quantity	Value	Quantity	Value
Clays:						
Bentonite	6	W	6	804	6	800
Fuller's earth	25	3,580	28	3,870	27	3,800
Gemstones	NA	205	NA	W	NA	W
Gold 3/ kilograms	256,000	2,310,000	268,000	2,410,000	264,000	2,380,000
Sand and gravel:						
Construction	31,700	142,000	36,800	172,000	33,100	157,000
Industrial	W	W	609	W	621	W
Silver 3/ metric tons	597	101,000	633	102,000	612	98,300
Stone, crushed	7,090	37,900	7,640	37,300	8,400	42,200
Zeolites metric tons	--	--	(4/)	NA	(4/)	NA
Combined values of barite, brucite, cement (portland), clays (kaolin), copper, diatomite, gypsum (crude), iron ore [usable (1999)], lead (2000-01), lime, lithium minerals, magnesite, mercury (1999-2000), perlite (crude), salt, and values indicated by symbol W						
Total	XX	286,000	XX	250,000 r/	XX	247,000
Total	XX	2,880,000	XX	2,980,000 r/	XX	2,930,000

p/ Preliminary. r/ Revised. NA Not available. W Withheld to avoid disclosing company proprietary data; value included with "Combined values" data. XX Not applicable. -- Zero.

1/ Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

2/ Data are rounded to no more than three significant digits; may not add to totals shown.

3/ Recoverable content from ores, etc.

4/ Withheld to avoid disclosing company proprietary data.

TABLE 2
NEVADA: CRUSHED STONE SOLD OR USED, BY KIND 1/

Kind	1999				2000			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone	6	4,690	\$17,400	\$3.71	4	4,800	\$18,900	\$3.93
Dolomite	3	W	W	82.13	4	W	W	33.11
Granite	1	W	W	5.24	1	W	W	3.58
Traprock	2	118	456	3.86	14	93	419	4.51
Volcanic cinder and scoria	2	W	W	4.58	2	W	W	5.11
Miscellaneous stone	4	1,330	10,300	7.75	4	1,390	10,800	7.77
Total or average	XX	7,090	37,900	5.34	XX	7,640	37,300	4.88

W Withheld to avoid disclosing company proprietary data; included in "Total." XX Not applicable.

1/ Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.

TABLE 3
NEVADA: CRUSHED STONE SOLD OR USED BY PRODUCERS
IN 2000, BY USE 1/ 2/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1 1/2 inch):			
Riprap and jetty stone	W	W	\$4.71
Filter stone	W	W	3.38
Coarse aggregate, graded:			
Concrete aggregate, coarse	W	W	14.61
Other graded coarse aggregate	W	W	3.39
Fine aggregate (-3/8 inch), stone sand, concrete	W	W	3.74
Coarse and fine aggregates:			
Graded road base or subbase	W	W	3.56
Unpaved road surfacing	W	W	3.59
Crusher run or fill or waste	83	\$380	4.58
Other coarse and fine aggregates	W	W	3.58
Agricultural:			
Agricultural limestone	W	W	33.18
Other agricultural uses	W	W	31.67
Chemical and metallurgical:			
Cement manufacture	W	W	4.16
Lime manufacture	W	W	3.81
Sulfur oxide removal	W	W	4.24
Other miscellaneous uses and specified not listed	W	W	5.36
Unspecified: 3/			
Reported	1,210	6,360	5.24
Estimated	1,900	5,700	3.06
Total or average	3,070	12,000	3.91
Grand total or average	7,640	37,300	4.88

W Withheld to avoid disclosing company proprietary data; included in "Grand total."

1/ Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.

2/ Includes dolomite, granite, limestone, miscellaneous stone, traprock, and volcanic cinder and scoria.

3/ Reported and estimated production without a breakdown by end use.

TABLE 4
NEVADA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2000,
BY USE AND DISTRICT 1/

(Thousand metric tons and thousand dollars)

Use	District 1		District 2	
	Quantity	Value	Quantity	Value
Construction:				
Coarse aggregate (+1 1/2 inch) 2/	W	W	--	--
Coarse aggregate, graded 3/	W	W	W	W
Fine aggregate (-3/8 inch) 4/	W	W	W	W
Coarse and fine aggregate 5/	W	W	W	W
Agricultural 6/	W	W	--	--
Chemical and metallurgical 7/	W	W	W	W
Other miscellaneous uses 8/	W	W	W	W
Unspecified: 9/				
Reported	1,210	6,360	--	--
Estimated	--	--	1,900	5,700
Total	3,020	15,600	4,620	21,700

W Withheld to avoid disclosing company proprietary data; included in "Total." -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Includes filter stone, and riprap and jetty stone.

3/ Includes concrete aggregate (coarse) and other graded coarse aggregate.

4/ Includes stone sand (concrete).

5/ Includes crusher run (select material or fill), graded road base or subbase, unpaved road surfacing, and other coarse and fine aggregates.

6/ Includes agricultural limestone and other agricultural uses.

7/ Includes cement manufacture, lime manufacture, and sulfur oxide removal.

8/ Includes specified uses not listed.

9/ Reported and estimated production without a breakdown by end use.

TABLE 5
NEVADA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2000,
BY MAJOR USE CATEGORY 1/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregates (including concrete sand) 2/	6,320	\$36,200	\$5.73
Concrete products (blocks, bricks, pipe, decorative, etc.)	445	4,210	9.45
Asphaltic concrete aggregates and other bituminous mixtures	1,740	15,000	8.67
Road base and coverings 3/	5,570	23,600	4.24
Fill	1,870	7,180	3.85
Snow and ice control	54	274	5.07
Other miscellaneous uses 4/	962	3,330	3.47
Unspecified: 5/			
Reported	11,200	39,600	3.55
Estimated	8,700	42,000	4.88
Total or average	36,800	172,000	4.67

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Includes plaster and gunit sands.

3/ Includes road and other stabilization (cement).

4/ Includes railroad ballast.

5/ Reported and estimated production without a breakdown by end use.

TABLE 6
NEVADA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2000,
BY USE AND DISTRICT 1/

(Thousand metric tons and thousand dollars)

Use	District 1		District 2		Unspecified districts	
	Quantity	Value	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products 2/	1,830	9,630	4,920	30,700	10	62
Asphaltic concrete aggregates and other bituminous mixtures	1,240	9,730	493	5,310	--	--
Road base and coverings 3/	888	4,680	4,680	18,900	1	4
Fill	743	2,710	1,110	4,380	15	93
Other miscellaneous uses 4/	58	367	955	3,210	5	30
Unspecified: 5/						
Reported	225	963	6,530	31,300	4,400	7,280
Estimated	2,200	8,500	6,500	34,000	--	--
Total	7,170	36,600	25,200	128,000	4,430	7,470

-- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Includes plaster and gunite sands.

3/ Includes road and other stabilization (cement).

4/ Includes railroad ballast and snow and ice control.

5/ Reported and estimated production without a breakdown by end use.