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# BUREAU OF MINES

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1525 Sherman Street

Denver 3, Colorado

A Division of the Department of Natural Resources

# ANNUAL REPORT

for the Year

1961

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G. A. FRANZ, JR.

Deputy Commissioner of Mines

Publication Approved by E. G. Spurlin, State Controller



24

Publishers Press, 1830 Curtis St., Denver, Colorado



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## Letter of Transmittal

May 1, 1962

Honorable Steve McNichols  
Governor of Colorado  
State Capitol  
Denver

Dear Governor McNichols:

In compliance with the requirements of Chapter 92, Article 32, Section 11, of the Colorado Revised Statutes 1953, I have the honor to transmit herewith the Report of the State Bureau of Mines for the year 1961.

Respectfully submitted,  
G. A. Franz, Jr.  
Deputy Commissioner of Mines

## Personnel

G. A. FRANZ, JR., Deputy Commissioner.....	Lakewood
DAVID R. COLE, Senior Inspector.....	Grand Junction
NORMAN R. BLAKE, Inspector, District No. 1.....	Black Hawk
JOSEPH L. KEATING, Inspector, District No. 2.....	Colorado Springs
JOHN W. DOYLE, Inspector, District No. 3.....	Leadville
ELZIE D. RAY, Inspector, District No. 4.....	Montrose
JOHN H. PAKKA, Deputy Inspector.....	Telluride
THOMAS D. HIGH, Junior Inspector.....	Naturita
WILLIAM E. HORN, Junior Inspector.....	Naturita
KEITH P. JOHNSON, Junior Inspector.....	Ouray
CALVIN T. WARNICA, Junior Inspector.....	Nucla
MARGARET G. LAWRENCE, Principal Clerk.....	Denver
THELMA L. MACMANUS, Account Clerk.....	Denver
NAOMI S. JONES, Clerk Stenographer.....	Denver
OLIVIA C. REMINES, Clerk Typist.....	Denver
MARIE E. BARNES, Clerk Typist.....	Uravan

## Commissioners of Mines

HARRY A. LEE.....	May 11, 1895-May 10, 1903
E. L. WHITE.....	May 10, 1903-May 10, 1907
T. J. DALZELL.....	May 10, 1907-May 10, 1911
T. R. HENAHEN.....	May 10, 1911-May 10, 1915
FRED CARROLL.....	May 10, 1915-May 10, 1919
HORACE F. LUNT.....	June 1, 1919-June 1, 1923
JOHN T. JOYCE.....	June 1, 1923-June 12, 1939
EDWARD P. ARTHUR.....	June 12, 1939-August 26, 1943
FRED JONES.....	September 27, 1943-April 25, 1950
WALTER E. SCOTT, JR.....	May 3, 1950-May 31, 1959

## Director of Natural Resources

DR. EDWARD L. CLARK.....	October 15, 1959
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## Deputy Commissioner of Mines

G. A. FRANZ, JR.....	June 1, 1959
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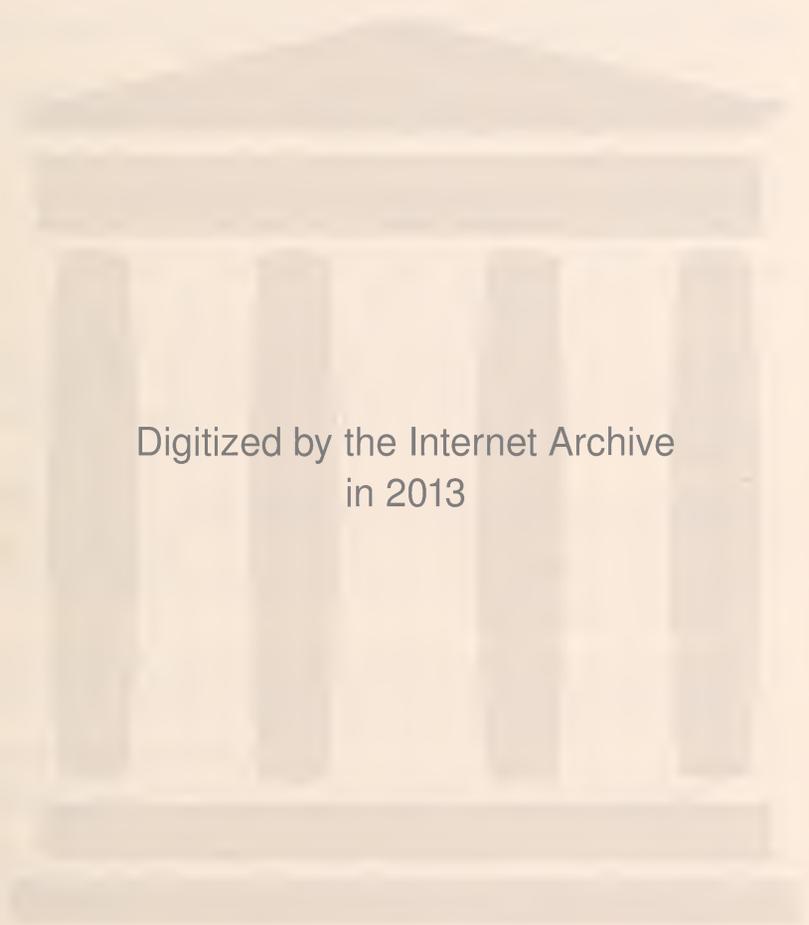
## Districts of Inspection

**DISTRICT NO. 1**, all of the following counties: Adams, Arapahoe, Boulder, Cheyenne, Clear Creek, Denver, Douglas, Elbert, Gilpin, Grand, Jackson, Jefferson, Kit Carson, Larimer, Logan, Morgan, Phillips, Sedgwick, Washington, Weld, Yuma, and that part of Park County lying north of Fairplay.

**DISTRICT NO. 2**, all of the following counties: Alamosa, Baca, Bent, Conejos, Costilla, Crowley, Custer, El Paso, Fremont, Huerfano, Kiowa, Las Animas, Lincoln, Otero, Prowers, Pueblo, Teller, and that part of Park County lying south of Fairplay.

**DISTRICT NO. 3**, all of the following counties: Chaffee, Eagle, Garfield, Lake, Mineral, Moffat, Pitkin, Rio Blanco, Rio Grande, Routt, Summit, and that part of Gunnison County in the extreme northwest corner and lying north of the 39th degree of latitude, and that part of Saguache County lying south and east of the Continental Divide.

**DISTRICT NO. 4**, all of the following counties: Archuleta, Delta, Dolores, Hinsdale, La Plata, Mesa, Montezuma, Montrose, Ouray, San Juan, San Miguel, and Gunnison County, except the extreme northwest corner lying north of the 39th degree of latitude, and that part of Saguache County lying north and west of the Continental Divide.



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# Publications of the Bureau of Mines

## BULLETINS

- Bulletin No. 1, Recommendations for Safety Appliance in Mining, Harry A. Lee, Commissioner of Mines, 1896.
- Bulletin No. 2, Precious Metal Production for the Year 1898, Harry A. Lee, Commissioner of Mines, 1899.
- Bulletin No. 3, Mining Laws, Relative to Bureau of Mines Precious Metal Production, Harry A. Lee, Commissioner of Mines, 1899.
- Bulletin No. 4, Precious Metal Production, Harry A. Lee, Commissioner of Mines, 1901.
- Bulletin No. 5, Precious Metal Production, Harry A. Lee, Commissioner of Mines, 1902.
- Bulletin No. 6, Regulations Relative to the Construction, Equipment and Operation of Metalliferous Mines, Mills and Metallurgical Plants, Recommendations and Mineral Production for 1905, E. L. White, Commissioner of Mines, 1906.
- Bulletin No. 7, Federal and State Laws Relating to Mining, Fred Carroll, Commissioner of Mines, 1916.
- Supplement to Bulletin No. 7, Mining Laws Enacted by the Twenty-First General Assembly, Fred Carroll, Commissioner of Mines, 1917.
- Supplement No. 2 to Bulletin No. 7, Amendments to the Mining Laws Enacted by the Twenty-Second General Assembly, Horace F. Lunt, Commissioner of Mines, 1919.
- Supplement No. 3 to Bulletin No. 7, Amendments to Laws Relating to Mining Enacted by the Twenty-Third General Assembly, Horace F. Lunt, Commissioner of Mines, 1921.
- Supplement No. 4 to Bulletin No. 7, Amendments to Laws Relating to Mining Enacted by the Twenty-Fourth General Assembly, Horace F. Lunt, Commissioner of Mines, 1923.
- Bulletin No. 8, The Oil Shales of Northwestern Colorado, Horace F. Lunt, Commissioner of Mines, 1919.
- Bulletin No. 9, Mine Safety Standards, Horace F. Lunt, Commissioner of Mines, 1920.
- Bulletin No. 11, Federal and State Laws Relating to Mining, John T. Joyce, Commissioner of Mines, 1931.
- Bulletin No. 12, Mining Laws of Colorado, Edward P. Arthur, Commissioner of Mines, 1942.

- Bulletin No. 13, Mining Laws of Colorado, Fred Jones, Commissioner of Mines, 1946.
- Bulletin No. 14, Mining Laws of Colorado, Fred Jones, Commissioner of Mines, 1949.
- Bulletin No. 15, Oil Well Safety Laws, Walter E. Scott, Jr., Commissioner of Mines, 1953.
- Circular No. 1, Location of Lode and Placer Mining Claims, Walter E. Scott, Jr., Commissioner of Mines, 1953.
- Bulletin No. 16, Colorado Mining Laws with Rules and Regulations, Walter E. Scott, Jr., Commissioner of Mines, 1954.
- Circular No. 1, Revised, Location of Lode and Placer Mining Claims, Walter E. Scott, Jr., Commissioner of Mines, 1957.
- Bulletin No. 17, Safety Rules and Regulations (Condensed), G. A. Franz, Jr., Deputy Commissioner of Mines, 1959.
- Circular No. 2, Minerals of Colorado and Area Locations, G. A. Franz, Jr., Deputy Commissioner of Mines, 1960.
- Bulletin No. 18, Oil Well Safety Laws, G. A. Franz, Jr., 1961.
- Circular No. 3, Location Regulations for Lode and Placer Mining Claims, Tunnel Sites and Mill Sites, G. A. Franz, Jr., Deputy Commissioner of Mines, 1961.
- Bulletin No. 19, Colorado Mining Laws with Safety Rules and Regulations, G. A. Franz, Jr., Deputy Commissioner of Mines, 1962.

## REPORTS

- Report of Bureau of Mines, Colorado, from Its Establishment in May, 1895, to November 30, 1896, Harry A. Lee, Commissioner of Mines.
- Annual Reports for 1897-1898, Harry A. Lee, Commissioner of Mines.
- Biennial Reports for 1899-1902, Harry A. Lee, Commissioner of Mines.
- Biennial Reports for 1903-1906, E. L. White, Commissioner of Mines.
- Biennial Reports for 1907-1910, T. J. Dalzell, Commissioner of Mines.
- Biennial Reports for 1911-1914, T. R. Henahen, Commissioner of Mines.
- Biennial Reports for 1915-1918, Fred Carroll, Commissioner of Mines.

Annual Reports for 1919-1922, Horace F. Lunt, Commissioner of Mines.

Annual Reports for 1923-1924, John T. Joyce, Commissioner of Mines.

Annual Report for 1925 was fully prepared but, because of lack of funds, was not printed. The manuscript is on file in the office of the State Bureau of Mines.

Annual Reports for 1926-1935, John T. Joyce, Commissioner of Mines.

Owing to lack of funds the Annual Report for 1936 was not published.

Annual Report for 1937, John T. Joyce, Commissioner of Mines.

Owing to lack of funds the Annual Report for 1938 was not published.

Annual Report for 1939, Edward P. Arthur, Commissioner of Mines.

Owing to lack of funds the Annual Report for 1940 was not published.

Annual Report for 1941, Edward P. Arthur, Commissioner of Mines.

Annual Reports for 1942 and 1943, Fred Jones, Commissioner of Mines.

Lists of Mines for 1944 and 1945, Fred Jones, Commissioner of Mines.

Annual Reports for 1946-1947, Fred Jones, Commissioner of Mines.

Annual Report for 1948 was not published.

Annual Reports for 1949-1958, Walter E. Scott, Jr., Commissioner of Mines.

Annual Reports for 1959-1961, G. A. Franz, Jr., Deputy Commissioner of Mines.

At the time this report goes to press, copies of the following reports are available: 1897, 1919, 1921, 1922, 1928, 1929, 1932, 1939, 1941, 1946, 1947, 1950-51, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960. All other reports are out of print, but they may be consulted in our Denver office and at most public libraries.

## Foreword

Colorado's mineral industry comprises exploration, development, and production of a wide variety of minerals and mineral fuels, many of which have been developed in the last few years and which have far surpassed our original gold, silver, lead, and zinc mineral production. Colorado has always been recognized as a mining state and our mineral production has been of great economic value to the State's development. We are fortunate in having a diversification of precious, base, and industrial minerals, as well as an abundance of mineral fuel. This wide variety of products has kept our miners employed even though one or several of our minerals have at times been subject to an unfavorable market.

At the turn of the century gold, silver, and lead were our most important mineral products, and many of Colorado's towns and cities were founded on this type of production. Railroads were constructed and highways were built to handle the marketing of these minerals. As these minerals became less in demand through overproduction and adverse monetary action, Colorado's other minerals were developed and produced, keeping the industry as a whole on an even keel. Mechanization and improved mining methods and equipment are in part responsible for the employment drop in the industry since 1900. Our molybdenum industry has been developed and oil and gas production has thrived as did the sand, gravel, and stone industries to support our growing State. The uranium and vanadium deposits were opened when these minerals were needed in industry and defense. At this writing there is considerable activity and inquiry into our beryl, gypsum, and scoria deposits, as well as many other minerals such as oil shale, quartz, limestone and rare earths.

Colorado's mining men are considered among the best, and their versatile knowledge of the industry, both in development and production, coupled with our State's adequate supply of many minerals, will, no doubt, maintain our mineral industry for many years to come.

The Bureau of Mines' part in this industry is to first make certain that mining and drilling operations are conducted in a safe manner. We are further charged to assist in the development of our mineral resources by supplying reliable information on our potential and known ore reserves. To this end we realize full well that more could be desired and it is the wish of this department to continually expand our information on Colorado mineral deposits for disposition to interested parties and the industry.

For their interest and support of mine safety, we wish to

thank the Governor of this State, and the Colorado Legislature for making possible our new radon daughter control program, which is explained later in this report. For their assistance to our programs during the year, acknowledgment is gratefully given to the Occupational Health Section of the Colorado Health Department, the United States Bureau of Mines, and the United States Public Health Service.

Information in this report and the compilation of the same comes from the generous contribution of every member of our staff, in both the inspection and clerical divisions. The tireless and unqualified support of these employees is gratefully acknowledged.

G. A. Franz, Jr.

# Radon Daughter Control Program

*By David R. Cole, Senior Inspector*

The need for the radon daughter control program now in effect in Colorado was brought to the attention of the Bureau of Mines through previous experiences in other areas, as well as through surveys conducted by the United States Public Health Service. Studies dating from 1879 to 1939 of the miners from Schneeberg and Joachimsthal in Europe showed that 40-50 per cent of the deaths were due to lung cancer with doubt as to what extent radiation exposure played in these deaths. However, it is known that these mines have a high radiation level. More recently, evidence of lung cancer has been uncovered in Nova Scotia similar in scope to that just mentioned. The fluorspar mines in Nova Scotia have a high radiation level and it has been established that the miners are suffering from the effects of radiation. We are not trying to equate the results of these past histories, but use them to put us on notice that there is a definite indication that a radiation hazard does exist. It is known that radiation over-exposure does cause injury to humans. The United States Public Health Service has been conducting surveys since 1950 in an effort aimed at detecting positive radiation effects on uranium miners. These surveys have not been conclusive, but have pointed out a probable increase in the incidence of lung cancer among uranium miners, which warranted further and more complete tests which are underway at the present time.

In order to reduce the concentration of radon daughter products in the atmosphere of Colorado's uranium mines, the Bureau of Mines received a supplemental appropriation for the last three months of the fiscal year 1960-1961, and an additional appropriation to the regular fiscal year 1961-1962 operating expense, for setting up and operating a Radon Daughter Control Program for the uranium mines of the State. The program required the addition of six employees to the regular staff and began operations on June 1, 1961. The new employees included a Senior Mine Inspector to supervise the program, as well as dust and ventilation control at other mines in the State, four Junior Mine Inspectors to make the radon daughter concentration surveys, and a Clerk Typist to tabulate and post the field data and take care of other work required by the new Field Office. The program required training the new personnel in the use of radiation detection equipment, familiarizing them with the location of some 400 uranium mines in the State and generally instructing them in the Bureau of Mines inspection procedure. To process, file and handle the information collected from this program and set up records and enforcement procedure, a field office was established in

Naturita, Colorado, near the center of the uranium activity.

The procedure followed consists of taking samples of the mine atmosphere in the working areas of all Colorado uranium mines to determine the radon daughter concentration at the time of sampling. United States Public Health Service Publication No. 494 describes the sampling method in detail which consists of filtering the daughters from a known volume of air and measuring the alpha activity on the filter. The mine operator, or his representative, is notified and given a copy of the sample results upon the completion of a survey. Notice is also given that all radon daughter concentrations in excess of one working level (1.0 WL) must be reduced to acceptable limits by controlled ventilation. One working level,  $1.3 \times 10^5$  million electron volts of potential alpha energy per liter of air or 300 micromicrocuries per liter of air, is considered to be the maximum concentration to which a man can be safely exposed throughout his working lifetime. Subsequent sampling is done and direct orders are given to the operator to comply by a specified time if the results remain high. In areas found to be consistently high, orders are given to clear the area of workmen until such time as the radon daughter concentrations can be reduced. To date, emphasis has been placed on the mines with excessively high concentrations. As the mines in this group have decreased, more time is being spent on improving the conditions in the mines in the next lower group. Since the start of the Radon Daughter Control Program on June 1, 1961, the results have been most gratifying. More detailed information on the status of the mines and work accomplished is contained elsewhere in this Annual Report.

In the Naturita Field Office the results of each mine survey are posted in a visible binder on a Radon Control form, one for each mine, and the mine's status (average working level) indicated by use of a color code. An individual man exposure card is made up for each man listed in the various working places on the sample tickets. On this card is posted the man's name, address, age, radon daughter exposure and the mine at which they are taken. This system allows for a quick reference to the status of the mines in the State through use of the visible binder and/or a more detailed study of any particular mine through the use of the mine file. In addition, the samples which are received from the several operating companies and other regulatory agencies are posted in the Bureau of Mines records in the same way. The sample filters are numbered and forwarded to the United States Public Health Service for possible further analysis for radiolead or other research work.

Through the cooperation and material support of the United States Public Health Service and the Colorado State Department of Public Health, facilities are available at the Naturita Field Office to calibrate the radiation detection equip-

ment used in this program. This calibration service has been made available to, and used by, mine operators and governmental regulatory agencies within Colorado, as well as those in the neighboring states.

The success of the Program can be attributed to the excellent report-keeping system set up by Mr. G. A. Franz, Deputy Commissioner of Mines, which has required little or no change as the Program progressed; the cooperation of the operating companies, mine operators, and other governmental regulatory agencies in taking corrective action and exchanging information; and the enthusiastic and efficient pursuit of the work at hand by the Junior Mine Inspectors in making the surveys.

In conjunction with the Radon Daughter Control Program, the Bureau of Mines is giving all possible assistance to the United States Public Health Service and the Colorado State Department of Public Health sputum test program now in progress.

The cooperation that has been received by the Bureau of Mines in the execution of its Program from everyone concerned has been excellent, and has resulted in a more thorough coverage of the operating mines than could have been accomplished with the present staff alone. It has lessened a duplication of effort by the various organizations concerned, and made the Naturita Field Office of the Colorado Bureau of Mines a "clearing house" for radon daughter control information in the State of Colorado.

## Minerals in 1961

The mineral industry of Colorado contributed \$396,702,149 to the State's economy during 1961, which is an increase of \$20,368,056 over the 1960 production, and the highest year on record with the exception of 1956. In that year an estimated value of the uranium industry to the State was included.

Mineral fuels, with crude petroleum leading the list, were responsible for over 48 per cent of this production, with molybdenum, uranium, and cement following in order. Increased production is noted in all minerals, with the exception of lead and manganese. Both metallic and nonmetallic industrial minerals have shown a steady increase in value produced since records have been kept by the Bureau of Mines. These minerals have steadily replaced and surpassed the original Colorado production which consisted of gold, silver, lead, and zinc. With the value of Colorado mineral production at an all-time high in 1961 a comparison of the peak production years of the following metals will illustrate how fixed low mineral prices and low cost competition have affected our once principal mineral production.

Gold .....	1961	\$2,394,394	1900	\$28,762,036
Silver .....	1961	1,734,484	1892	23,082,600
Copper ....	1961	2,459,532	1956	3,963,300
Lead .....	1961	4,062,038	1951	10,496,256
Zinc .....	1961	9,915,917	1951	20,279,896

The above figures can also illustrate the effect that low cost foreign competition could have on our now peak production minerals. They can also indicate the possible additional value to our economy, if these minerals were in full production.

Metallic mineral production in 1961 was directly affected by increased output of molybdenum from the Climax property of the Climax Molybdenum Division of American Metals Climax Company, and increased uranium and vanadium production from the Colorado Plateau and Front Range areas. Gold production increased as a direct result of increased production from zinc, copper, lead, and silver properties operated by the Idarado Mining Company, the New Jersey Zinc Company, Camp Bird Colorado, Inc., and the Emperius Mining Company. A slight increase in gold production was noted from the Cripple Creek District despite the fact that these properties were closed on December 31. Public Law 87-347, enacted by the 1961 Congress, became effective too late in the year to ascertain if the proposed assistance payments on lead and zinc production to qualified applicants would have some small effect on increased activity. The Presidential Order taking the United

States Treasury out of the silver business and placing silver on an open market resulted in a price raise from 91 cents to as high as \$1.04 by the end of the year. This was a direct assist to those companies that were actively producing silver. The depressed price of lead was directly responsible for the decrease in production of this mineral during the year.

Increased production in 1961 of practically all nonmetallic minerals was responsible for an increase of \$4,291,267 in the value of these minerals over 1960. Cement, sand, and gravel, and stone production was responsible for this increase. However, volcanic scoria, clay, gemstones, and peat moss operations contributed to the final figure. With additional highway, reclamation, and general construction activities, both planned and allowed, the 1962 value of nonmetallic industrial minerals should increase.

Mineral fuel production, although less than the peak production in 1957, has leveled out to assume a steady yearly average. With additional coal activity in northern Colorado and an average of new oil and gas discoveries over the State, the mineral fuel industry should remain one of our State's principal industries for many years. Rio Blanco County was first in petroleum production, and second in mineral value produced. Washington County was second in petroleum production with a dollar value of \$27,447,062. Morgan County moved to third place. During the year there were 678 well completions compared to 701 completions in 1960, with 17 discoveries from 101 wildcat wells. One additional county, Pitkin, was added to the growing list of petroleum producing counties in the State, and prospecting continued in other nonproducing counties. Rio Blanco County completed 76 development wells which, along with the continued water-flooding of unitized Weber field, maintained an average and steady production during the year. Considerable drilling activity was noted in southeastern Colorado, which should eventually bring this area into greater production.

Average prices used in calculating Colorado's mineral production in 1961 are as follows:

Gold .....	\$35.00	per ounce
Silver .....	.924¢	per ounce
Copper .....	.299¢	per pound
Lead .....	.108¢	per pound
Zinc .....	.155¢	per pound
Molybdenum .....	1.40	per pound
Uranium .....	9.00	per pound
Vanadium .....	1.80	per pound

Information in this report is gathered by Bureau of Mines inspectors and office personnel and, although the production figures cannot be accepted as final, they are as nearly accurate as possible to secure at this early date. They are intended as a preliminary indication and cannot be used for tax or other valuation purposes. Petroleum production is supplied by the Colorado Oil & Gas Conservation Commission and the dollar value is calculated by this office. All production figures are calculated by multiplying the unit of production by the average yearly prices. Metallic and nonmetallic mineral production figures are received directly from the operator and in some cases, where these reports are incomplete, an estimate from inspection reports is used.

# Production of Metals, Nonmetallics, Petroleum and Coal

## State Totals

	<b>Metallics</b>
Molybdenum .....	\$ 65,256,677
Uranium .....	60,957,060
Vanadium .....	17,038,800
Zinc .....	9,915,917
Tungsten .....	4,969,756
Lead .....	4,062,038
Copper .....	2,459,532
Gold .....	2,394,394
Silver .....	1,734,484
Pyrite .....	928,746
Iron .....	170,000
Beryl .....	156,009
Tin .....	94,877
Miscellaneous Metallics .....	37,397

---

Total Metallic Mineral Production.....\$170,175,627

	<b>Nonmetallics</b>
Cement .....	\$ 17,958,419
Sand and Gravel .....	17,269,579
Stone .....	2,682,011
Limestone .....	1,965,653
Clay .....	1,597,338
Fluorspar .....	1,427,616
Feldspar, Mica, Gypsum .....	427,003
Volcanic Scoria, Pumicite .....	69,225
Peat Moss .....	50,072
Gemstones .....	45,000
Miscellaneous Nonmetallics .....	6,000

---

Total Nonmetallic Mineral Production.....\$ 43,497,916

	<b>Mineral Fuels</b>
Crude Oil .....	\$135,601,030
Gas (All classes, well head value) .....	23,891,115
Coal .....	23,536,401

---

Total Mineral Fuel Production.....\$183,028,546

**TOTAL STATE MINERAL PRODUCTION.....\$396,702,149**

## County Activity and Production

### ADAMS (1)

\*Brighton

Area 1,250 square miles

Gravel, placers, oil and gas wells—164 men

Normal petroleum production from the many Adams County wells, sand and gravel production from the Boise-Cascade, and the Brannan Pits held this county's mineral production to normal in 1961. Loffland Brothers Drilling Company completed a deep injection well on Rocky Mountain Arsenal property at Rocky Flats, which will be used to dispose of waste liquid from the Arsenal. Gold recovery was made from sand and gravel plants as a by-product.

Gold .....	\$	41,110
Silver .....		9,400
Total .....	\$	50,510
Sand and Gravel .....	\$	1,701,055
Petroleum .....		2,636,645
Gas .....		222,876
Total .....	\$	2,859,521
TOTAL PRODUCTION FOR COUNTY.....	\$	4,611,086

### ARCHULETA (4)

\*Pagosa Springs

Area 1,364 square miles

Placers, projects, oil—115 men

Petroleum production from the Gramps oil field, operated by the Oriental Refining Company, was steady during the year, with additional production coming from the many independent producers in the southern part of the county. Sand and gravel added to Archuleta County's total mineral production, and some uranium and rare metal prospecting was evident. Highway construction was in progress in the Arboles and Navajo Reservoir area by Shore Construction Company, Colorado Constructors, Inc., and Herron & Strong.

Sand and Gravel .....	\$	75,705
Petroleum .....	\$	257,706
TOTAL PRODUCTION FOR COUNTY.....	\$	333,411

\*County seats

**BACA (2)**

\*Springfield

Area 2,565 square miles  
 Mine, placer, oil—42 men

The Service Drilling Company, Schlumberger Well Surveying, and others were active in Baca County during the year. Some development work was continued on the copper deposits south of Springfield, but no production was recorded. With increased prospective drilling Baca County, no doubt, will eventually show increased gas and petroleum production.

Cement .....	\$	102,245
Petroleum .....		97,275
Gas .....		50,112
		<hr/>
Total .....	\$	147,387
TOTAL PRODUCTION FOR COUNTY .....	\$	249,632

**BOULDER (1)**

\*Boulder

Area 758 square miles  
 Mines, plants, quarries, oil—289 men

Boulder County's versatile mineral industry is responsible for continued mineral development despite high cost mining in the face of depressed mineral prices. Fifteen separate properties were being prospected and developed for silver and gold ores in anticipation of a better market. These were in addition to the fourteen quarries which produced red, pink, and white sandstone for the building trade. Two fluorspar properties were active: namely, the Burlington Mine, owned and operated by the General Chemical Division of Allied Chemical Corporation, and the Emmett Mine, owned by Harry R. Williamson. This ore was milled at General Chemical's Valmont Plant. The La Salle Mining Company operated their Fair Day uranium mine with considerable production, and the Cash gold and silver mine was operated and developed by the Utex Exploration Company. Although Boulder County's tungsten industry is virtually at a standstill, uranium, fluorspar, stone, sand and gravel have kept its mineral economy from sinking into oblivion.

Uranium .....		.....
Miscellaneous .....	\$	5,578
Sand and Gravel .....		285,840
Fluorspar .....		1,427,616
Stone .....		97,770
Clay .....		6,000
Peat .....		13,172
		<hr/>
Total .....	\$	1,830,398
Petroleum .....	\$	7,465
TOTAL PRODUCTION FOR COUNTY .....	\$	1,843,441

\*County seats

**CHAFFEE (3)**

\*Salida

Area 1,040 square miles

Mines, plants, quarries—79 men

Mining activity in Chaffee County was considerably less in 1961 than in the previous year. Mineral production was confined primarily to sand and gravel, limestone, feldspar, and various building and monumental stone. The Monarch Quarry, operated by the Colorado Fuel & Iron Corporation, the Homestake Quarry, operated by M&S, Inc., Colorado Granite Grit Company, and Western Feldspar Milling Company were the principal operators. The Alaskan International Mining Company started work on beryl claims located in the Ute Trail area which are owned by Turret Mines, Inc. Beryl activity in the county was abnormally high during the year.

Miscellaneous .....	\$	500
Sand and Gravel .....		21,825
Limestone .....		833,211
Stone .....		26,088
Feldspar, Mica, etc. ....		145,768
<hr/>		
Total .....	\$	1,026,892
TOTAL PRODUCTION FOR COUNTY.....	\$	1,027,392

**CLEAR CREEK (1)**

\*Georgetown

Area 395 square miles

Mines, plants, projects—134 men

Operations at the Urad Mine on the eastern slope of Berthoud Pass were conducted all year by C. Ryan & Son under contract with Climax Molybdenum Company. Work consisted of opening, rehabilitating and sampling the huge molybdenum deposit. Colorado Constructors, Inc., completed work on the Twin Tunnels on Highways 6 and 40, east of Idaho Springs. Mining activity and production in the county was adversely affected by high mining costs and low metal prices. Pending completion of negotiations, work on the Pioneer Bore and approach road for the Strait Creek highway tunnel will probably start in 1962. This work will aid in employment of local miners. Prospecting and development work on the many mines in the county continued throughout the year, and some of these properties will, no doubt, have opportunity to secure bonus assistance from the recently passed Public Law 87-347,

\*County seats

as well as additional payment from the recent rise in silver price.

Gold .....	\$	77
Silver .....		9,537
Copper .....		154
Lead .....		1,485
Zinc .....		1,134
<hr/>		
Total .....	\$	12,387
Sand and Gravel .....	\$	82,697
TOTAL PRODUCTION FOR COUNTY.....	\$	95,084

**COSTILLA (2)**

\*San Luis

Area 1,220 square miles

Plant, project—10 men

Mineral production in Costilla County this year was confined to volcanic scoria, produced by Colorado Aggregate, Inc.'s operation at Mesita. Sand and gravel production, mainly for highway construction and maintenance, added to this county production.

Sand and Gravel .....	\$	19,300
Volcanic Scoria .....		21,852
<hr/>		
TOTAL PRODUCTION FOR COUNTY.....	\$	41,152

**CUSTER (2)**

\*Westcliffe

Area 738 square miles

Mines, placer—23 men

One development operations by Eisenauer & Decker on the Buckeye-Holt property, by Charles and Lyman Akin on the Lodge Pole No. 1 and Tomboy properties, and the S. N. N. Mining, Inc., on the Williams property, comprise the development work in this county in 1961. Floyd R. Johnson produced some clay from the Lawson property, located one and a half miles west of Wetmore. Sand and gravel and clay were the only minerals produced in this once productive county.

Pyrite .....	\$	12,000
Sand and Gravel .....		17,068
Clay .....		3,770
<hr/>		
Total .....	\$	20,838
TOTAL PRODUCTION FOR COUNTY.....	\$	32,838

\*County seats

**DELTA (4)**

\*Delta

Area 1,161 square miles

Mine, placer, projects, oil—100 men

The Chipeta Mining Company, operating the Canyon Tract Group, produced agricultural grade gypsum from their property located near the junction of Smith Fork Creek and the Gunnison River. This ore was crushed and processed in the company mill east of Delta. Work continued on the Smith Fork Dam by the Bud King Construction Company. This dam is located one mile south of Crawford, Colorado. Wildcat oil drilling continued throughout the year and production of carbon dioxide gas remained steady from wells east of Delta. Sand and gravel were excavated and screened for road and construction purposes.

Sand and Gravel .....	\$	148,797
Gypsum .....		6,960
		<hr/>
TOTAL PRODUCTION FOR COUNTY.....	\$	155,757

**DENVER (1)**

\*Denver

Area 73 square miles

Plants—172 men

Operations at the Globe Plant, owned by the American Smelting & Refining Company, remained steady during 1961 with the addition of some local ore which was received for shipment to other company smelters. This plant was granted a Safety Achievement Award from the Colorado Bureau of Mines in February of this year for attaining one million man-hours of operation without a disabling injury. Production of sulphuric acid and other chemicals continued steady at the General Chemical Division of Allied Chemical Corporation's Denver plant. Many Colorado mining and oil companies' general offices are located in downtown Denver.

Sand and Gravel .....	\$	111,407
TOTAL PRODUCTION FOR COUNTY.....	\$	111,407

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\*County seats

**DOLORES (4)**

\*Dove Creek

Area 1,029 square miles  
 Mines, plants, projects, oil—258 men

Mining operations in Dolores County in 1961 were confined to the Rico area, with a development operation on the Rosebud property, eight miles south of Duncan. The Rico Argentine Mining Company operated both their mill and acid plant at Rico all year on ores from the Mountain Spring Mine and the St. Louis Tunnel. Sulphuric acid was sold to vanadium-uranium mills in the Plateau area. Lead and zinc concentrates were shipped to smelters in other states. The St. Louis and Iron Clad properties, operated by Myron Jones, produced some gold, silver, lead and zinc. Some road construction was done during the year.

Silver .....	\$	44,700
Lead .....		171,280
Zinc .....		82,700
Pyrite .....		717,106
<hr/>		
Total .....	\$	1,015,786
Sand and Gravel .....	\$	390,546
TOTAL PRODUCTION FOR COUNTY.....	\$	1,406,332

**DOUGLAS (1)**

\*Castle Rock

Area 844 square miles  
 Mine, placers—139 men

Stroud Whisenhunt operated the Stroh and Stevens Ranch clay properties northeast of Castle Rock and near Parker. The Robinson Brick & Tile Company operated the Hogback Nos. 2 and 3 clay properties, and the Ringenberg Quarry was operated by the Denver Brick & Tile Company. Sand and gravel production in the county was normal.

Sand and Gravel .....	\$	100,000
Clay .....		220,487
<hr/>		
TOTAL PRODUCTION FOR COUNTY.....	\$	320,487

\*County seats

**EAGLE (3)**

\*Eagle

Area 1,686 square miles

Mines, plants, projects—611 men

A full year of lead, zinc, silver and copper production was recorded at the New Jersey Zinc Company's Eagle property on Battle Mountain. Development work on the lower levels of the mine was continued and production remained steady. Careful planning and good management can be credited to this operation for their ability to operate on depressed lead and zinc prices. Gypsum was produced at the Dotsero Quarry by Lava Products Company, and volcanic scoria was produced at the Roaring Fork Quarry, twenty-two miles southeast of Glenwood Springs, by Eddis Finder of Carbondale.

Silver .....	\$ 400,000
Copper .....	250,000
Lead .....	1,145,400
Zinc .....	5,395,000
<hr/>	
Total .....	\$ 7,190,400
Sand and Gravel .....	1,233
Scoria .....	7,373
<hr/>	
Total .....	\$ 8,606
TOTAL PRODUCTION FOR COUNTY.....	\$ 7,199,006

**EL PASO (2)**

\*Colorado Springs

Area 2,159 square miles

Quarries, project, oil—492 men

Concrete aggregate, sand and gravel, and limestone were the principal mineral products of El Paso County in 1961. Aggregate was produced from the Castle Quarry and the Lennox Breed Quarry northwest of Colorado Springs. Limestone was produced from the Rampart Range Quarry, ten miles northwest of Colorado Springs. Mining activity, so far as employment was concerned, increased sharply during the year due to construction and excavation at the NORAD project in Cheyenne Mountain by the Utah Mining & Construction Company. This work is being done for the Corps of Army Engineers. This project, when completed, will house North American Air Defense Headquarters.

Sand and Gravel .....	\$ 528,180
Limestone .....	15,000
<hr/>	
TOTAL PRODUCTION FOR COUNTY.....	\$ 543,180

\*County seats

**FREMONT (2)**

\*Canon City

Area 1,562 square miles

Mines, plants, quarries, oil—227 men

The Cotter Corporation, operating a 200-ton per day uranium mill at Canon City, had their contract with the Atomic Energy Commission extended through February of 1965. This is one of the several plants in Colorado which have received contracts for U<sub>3</sub>O<sub>8</sub> through 1965. The Cotter Corporation Mill receives ore from their own mining property in the Front Range Area, as well as from independent mines in Saguache and Jefferson Counties. Mineral production in Fremont County consisted of petroleum, sand and gravel, stone, clay, gypsum, uranium, limestone, and cement. The Ideal Cement Plant at Portland was again the outstanding mineral producer in the county. Cement and plaster are manufactured at their Portland plant from limestone and shale taken from quarries near the plant. Considerable uranium activity was noted in the Tallahassee District from deposits that now require some underground mining. Many varieties of stone for terrazzo chips and building blocks are produced at Fremont County quarries. Petroleum is produced in the Florence area, which is the location of Colorado's first petroleum production.

Uranium .....	.....
Cement .....	\$ 8,455,835
Sand and Gravel .....	101,809
Limestone .....	463,066
Dolomite, etc. ....	168,286
Stone .....	190,833
Clay .....	11,043
Gypsum .....	53,000
	<hr/>
Total .....	\$ 9,443,872
Petroleum .....	\$ 82,566
<b>TOTAL PRODUCTION FOR COUNTY.....</b>	<b>\$ 9,526,438</b>

\*County seats

**GARFIELD (3)**

\*Glenwood Springs

Area 3,000 square miles

Mine, plant, quarries, projects, oil—313 men

It was announced late in the year that work would probably resume at the Government Oil Shale mine near Rifle. During the year the Atomic Energy Commission contract with the Union Carbide Nuclear Company's Rifle uranium-vanadium plant was extended through 1966. This recently constructed 1,000-ton per day plant receives ore from the Colorado Plateau, as well as from mines in other areas of Utah and Colorado and from Wyoming. The plant has been in steady operation all year. Work at the Rifle vanadium mine, located 14 miles northeast of Rifle, was discontinued during the year pending improvement in the vanadium market. Limestone was produced from the Glenwood Springs lime quarry, petroleum and gas from wells in the western part of the county, and sand and gravel from pits located in various parts of Garfield County.

Sand and Gravel .....	\$	8,775
Limestone .....		63,469
		<hr/>
Total .....	\$	72,244
Gas .....	\$	165,389
TOTAL PRODUCTION FOR COUNTY.....	\$	237,633

**GILPIN (1)**

\*Central City

Area 149 square miles

Mines, plants, placers—77 men

Glory Hole, Inc., continued development and exploration work on their property at Central City during the year. Work consisted of constructing a truck road down into the Glory Hole from the surface and extending the crosscut in the La-Cross workings toward an adit near the company mill. Improvements were made in the 1,000-ton per day company mill and some ore was milled, which added to the value of Gilpin County's mineral production. Nye-Mathews, Inc., worked throughout the year at their molybdenum prospect in the Apex area and constructed new metal buildings, installed a diesel generator plant and a new air compressor so that work can go ahead at a smoother and faster pace. Peat moss, which has a market in the Denver metropolitan area, was mined from three peat bogs. General prospecting and development work was recorded from 13 mines and 8 placers in the county. Tourist mines in the Central City area were open all year and were visited by people from all over the country.

\*County seats

Gold .....	\$	15,823
Silver .....		1,176
Copper .....		661
Lead .....		2,129
Zinc .....		1,698
Total .....		\$ 21,487
Sand and Gravel .....		1,608
Peat .....		12,900
Total .....		\$ 14,508
TOTAL PRODUCTION FOR COUNTY.....		\$ 35,995

**GRAND (1)**

\*Hot Sulphur Springs

Area 1,869 square miles  
 Project—40 men

The Hubner Construction Company continued rebuilding U. S. Highway 40 on top of Berthoud Pass during the summer months. Work on this project, which includes widening and re-routing the old road, was suspended during the winter months and will be resumed in the spring of 1962. There was no other mineral activity reported in this county.

Sand and Gravel .....	\$	118,957
TOTAL PRODUCTION FOR COUNTY.....		\$ 118,957

**GUNNISON (3 & 4)**

\*Gunnison

Area 3,243 square miles  
 Mines, plants, placers, projects—171 men

The Gunnison Mining Company's uranium mill and mining properties in Saguache County were purchased by Ker-Mac Nuclear Fuels Corporation during the year and are now known as the Lakeview Division of the Gunnison Mining Company. Atomic Energy Commission contracts for ore purchase were extended through 1962. This plant was in steady operation all year on ores from their Los Oches property and ores from the Tallahassee District in Fremont County. General mineral development with some production was evident at fifteen mines in the county located in the Italian Mountain, Crested Butte, and Ohio City areas. Boyles Brothers Drilling Company did additional work on the E. I. du Pont claims, and some work was completed on the New Jersey Zinc claims in the Powderhorn area. Considerable work was done on rerouting U. S. Highway 50 south of the Gunnison River near Sapinero. Two bridges,

\*County seats

one across the Lake Fork, were started and this work will near completion in 1962. This change was made necessary to skirt the area which will be inundated by the Curecanti Unit-Blue Mesa Dam and Reservoir.

Uranium .....	
Miscellaneous .....	\$ 3,033
Sand and Gravel .....	103,100
Miscellaneous .....	6,000
	<hr/>
Total .....	\$ 109,100
TOTAL PRODUCTION FOR COUNTY.....	\$ 112,133

**HINSDALE (4)**

\*Lake City

Area 1,062 square miles

Mines, plant, projects—53 men

A slight increase in mining activity was noted in Hinsdale County during 1961. Six mines were under development and one mill placed in operating condition during the summer months. Although production was slight, the increase in mineral activity is encouraging to this once large-producing county. Dale Dunkle, Heracoda Mining Company, Joe R. Brown, Mid-Continental Corporation, Nome Mines, Inc., and McKee & Cummings were the operators listed.

Miscellaneous Metallics .....	\$ 6,500
TOTAL PRODUCTION FOR COUNTY.....	\$ 6,500

**JACKSON (1)**

\*Walden

Area 1,628 square miles

Oil—30 men

With the exception of some prospecting and development work in the north and east parts of the county, petroleum production was the only other mineral activity in Jackson County. Oil and gas production at the Canadian River, McCallum, and Battleship fields was normal, with the average number of wells being abandoned and drilled.

Sand and Gravel .....	\$ 78,084
Petroleum .....	1,714,358
Gas .....	8,737,768
	<hr/>
Total .....	\$ 10,452,126
TOTAL PRODUCTION FOR COUNTY.....	\$ 10,530,210

\*County seats

**JEFFERSON (1)**

\*Golden

Area 791 square miles

Mines, plants, quarries, oil—295 men

Clay production from the numerous pits and mines located on the hogback west of Denver and running through Golden was the major mineral product of Jefferson County during the year. The Denver Fire Clay Company, George W. Parfet Estate, Denver Brick & Pipe Company, and the Robinson Brick & Tile Company were the principal producers. Beryl ore was purchased and processed by the Beryl Ores Company in Arvada. Uranium ore was mined by the Denver-Golden Oil & Uranium Company at their property in Ralston Creek, where more ore was opened this year by sinking a shaft on the vein to a depth of 975 feet below the original Schwartzwalder discovery. Cotter Corporation worked their Idle Dale uranium mine and shipped some ore to their plant located at Canon City. The Public Service Company completed sealing operations at the old Leyden Coal Mine north of Golden which is used as an underground storage for natural gas. The new light weight aggregate plant operated by Idealite, a subsidiary of the Ideal Cement Company, located on Rocky Flats, was completed in 1961 and started production. The shale used in this process is mined from a company quarry located near the plant.

Gold .....	\$	17,028
Silver .....		71
Uranium .....		.....
Beryllium .....		10,000
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Total .....	\$	27,099
Sand and Gravel .....		2,025,634
Stone .....		198,834
Clay .....		622,626
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Total .....	\$	2,847,094
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TOTAL PRODUCTION FOR COUNTY.....	\$	2,874,193

**LAKE (3)**

\*Leadville

Area 384 square miles

Mines, plants, projects—2,319 men

Metallic mineral production in Lake County, from the operations of American Metal Climax, Inc., Climax Molybdenum Company, located on Fremont Pass, continues to be first in Colorado. Mining in excess of thirty-three thousand tons per day from Bartlett Mountain by means of the block caving system places this operation first in tonnage and dollar

\*County seats

value production in the State. Considerable new development work has been done during the year by completing No. 4 Shaft in the Storke Tunnel which provides access for development on the 600 Level and 900 Level. During the year, work was started on No. 5 Shaft outside of the Storke Level portal, and Boyles Brothers have nearly completed their contract on driving the Ceresco Ridge Adit for the company. Present new development will open lower levels of the mine for additional tonnage. Exploration and development work in other parts of the county was done this year by the Benson Mining & Leasing Company on the Continental Chief property in Iowa Gulch, by Lowell Kaess on the Eureka, and by the Campbell Lease on the Mary Jane in the Twin Lakes area. The Rattling Jack property on Johnny Hill was worked by Stanley McClure of Leadville.

Molybdenum .....	\$ 65,256,677
Tungsten .....	4,969,756
Pyrite .....	199,640
Tin .....	94,877
Miscellaneous .....	2,000
	<hr/>
Total .....	\$ 70,522,950
Sand and Gravel .....	\$ 95,950
TOTAL PRODUCTION FOR COUNTY.....	\$ 70,618,900

#### LA PLATA (4)

\*Durango

Area 1,691 square miles

Mines, plants, projects, oil—583 men

With construction work on several projects in the county, rehabilitation and improvements on Vanadium Corporation of America's Durango plant, and above normal development and prospecting work at several mines, La Plata County mineral activity was up in 1961. Oil and gas production and new drillings added to the economy. Work on the Lemon Dam by A. S. Horner Construction Company and Colorado Construction Company continued throughout the year, as did work in the Bayfield area by Siegrist Construction Company. The V.C.A. Durango plant operated with record tonnage on ores from Colorado, New Mexico and Utah. Crushing facilities were moved to the new Naturita upgrading plant, which allowed an improved flowsheet at the Durango plant. The uranium purchase contract with the Atomic Energy Commission has been extended to 1966. Mining activity in the La Plata Canyon area during the summer months provided additional employment for men in the area. Barker Dome, Ignacio, and Red Mesa gas fields were in steady production.

\*County seats

Silver .....	\$	1,000
Copper .....		450
Uranium .....		.....
Vanadium .....		.....
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Total .....	\$	1,450
Sand and Gravel .....	\$	116,622
Petroleum .....		122,374
Gas .....		3,585,794
<hr/>		
Total .....	\$	3,708,168
<hr/>		
TOTAL PRODUCTION FOR COUNTY.....	\$	3,826,240

**LARIMER (1)**

\*Fort Collins

Area 2,640 square miles  
 Mine, plants, quarries, oil—285 men

Stone production consisting of red, pink and white sandstone for the building trade and limestone for sugar refining and cement manufacturing was normal during the year. The Boettcher Quarry, operated by the Ideal Cement Company, at La Porte, operated on a maximum tonnage basis all year to supply raw materials for the cement plant at La Porte. Gypsum rock was mined from the Goodwin Quarry by Ernest W. Munroe, and from the Loveland Quarry by the U. S. Gypsum Company. Beryl and mica were mined from the Giant Crystal Quarry by Tartan & Company. Cut stone and quarry-run flagstone produced from the many quarries in the county have become very popular in Colorado architecture, and the production of this stone adds materially to the county economy. The Mineral Concentrates & Chemical Company's beryl plant at Loveland maintained steady operation all year. Petroleum production was steady from the many small fields in the area.

Beryllium .....	\$	3,170
Cement .....		9,502,584
Sand and Gravel .....		282,332
Limestone .....		523,621
Stone .....		158,421
Feldspar, mica, etc. ....		25,110
Gypsum .....		196,167
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Total .....	\$	10,688,235
Petroleum .....		542,346
Gas .....		4,600
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Total .....	\$	546,946
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TOTAL PRODUCTION FOR COUNTY.....	\$	11,238,351

\*County seats

**LAS ANIMAS (2)**

\*Trinidad

Area 4,798 square miles

Mines, quarry, oil—78 men

Clay production from Pit Nos. 1 and 3, operated by the Empire Clay Products Company, and from the Santa Fe Mine of the Scott Mining Company in the Trinidad area was steady during the year. Carbon dioxide from the Nina View field in the eastern part of the county, as well as sand and gravel production, added to the county's total mineral production.

Sand and Gravel .....	\$	89,216
Clay .....		28,116
		<hr/>
Total .....	\$	117,332
Gas .....	\$	5,175
TOTAL PRODUCTION FOR COUNTY.....	\$	122,507

**LOGAN (1)**

\*Sterling

Area 1,849 square miles

Plants, oil—520 men

Logan County's production of 4,453,276 barrels of oil came from 439 active producing wells during 1961. Although total mineral fuel production declined during the year in the county, the average of new producers was maintained. Logan County was fourth in petroleum production in the State.

Sand and Gravel .....	\$	19,459
Petroleum .....		12,419,500
Gas .....		1,175,827
		<hr/>
Total .....	\$	13,595,327
TOTAL PRODUCTION FOR COUNTY.....	\$	13,614,786

**MESA (4)**

\*Grand Junction

Area 3,334 square miles

Mines, plants, projects, oil—1,598 men

Carnotite ores from Mesa County during 1961 continued to hold third place in the State's uranium production. Beaver Mesa, Outlaw Mesa, Calamity Mesa, and Tenderfoot Mesa were the chief producing areas in which 44 active uranium mines were listed. Climax Uranium Company operations of the Climax Mill at Grand Junction were successful in having their ore purchase contract with the Atomic Energy Commission extended through December of 1966. This plant operates

\*County seats

on ores from company-owned mines, as well as on ores from private operations. Plant improvements were completed during the year, which assure a continued capacity operation of 330 tons per day. Operations were steady at the Atomic Energy Commission Ore Procurement and Experimental Station located in Grand Junction. State and federal projects contributed heavily toward sustaining employment in the county. Sand and gravel produced by the Whitewater Sand & Gravel Company, and clay produced by the Junction Brick & Tile Company added to the mineral economy of the county. Oil and gas activity and production were noted by the Ambassador Oil Corporation and the Apache Corporation in the Deer Park area west of DeBeque and the Collbran and Grand Mesa areas.

Uranium .....		
Vanadium .....		
Cement .....	\$	529,550
Clay .....		7,600
		<hr/>
Total .....	\$	537,150
Gas .....	\$	91,239
TOTAL PRODUCTION FOR COUNTY.....	\$	628,389

**MINERAL (3)**

\*Creede

Area 923 square miles

Mines, plants, projects—68 men

Mining activity in Mineral County was confined to operations of the Emperius Mining Company, the H. & B. Construction Company, the Monon Leasing Company, and the Outlet Mining Company. The Emperius Mining Company, largest county producer, operated their Amethyst and Commodore properties and milled this ore in their own selective flotation mill located below Creede. Positive mechanical ventilation equipment was installed in the Amethyst and Commodore Tunnels which should eliminate poor ventilation during low barometric pressure periods. Some mill improvements were also completed. Economical planning, coupled with good management, permits this company to operate during depressed mineral prices and high mining costs.

Gold .....	\$	22,960
Silver .....		287,725
Copper .....		91,552
Lead .....		421,995
Zinc .....		437,385
		<hr/>
Total .....	\$	1,261,617
Sand and Gravel .....	\$	15,346
TOTAL PRODUCTION FOR COUNTY	\$	1,276,963

\*County seats

**MOFFAT (3)**

\*Craig

Area 4,761 square miles

Mines, plant, project—405 men

Petroleum, uranium, and sand and gravel were the major mineral products of Moffat County in 1961. Continued petroleum development at the Danforth Hills, Maudlin, Elk Springs, Moffat, Isles Dome, Powder Wash, and Hiawatha fields enables this county to maintain steady petroleum production. Two Safety Achievement Awards were granted by the Colorado Bureau of Mines to Texaco, Inc., operations this year for operating in excess of five years without a lost-time injury. Uranium production in the Maybell area by Trace Elements Company from their pit mines kept Moffat County in fourth place in uranium production during 1961. Ore was milled at their Maybell plant, which is a subsidiary of Union Carbide Nuclear Company. The Atomic Energy contract for the company was extended through 1966.

Uranium .....		
Petroleum .....	\$	4,111,594
Gas .....		1,135,905
<b>TOTAL PRODUCTION FOR COUNTY.....</b>		<b>\$ 5,247,499</b>

**MONTEZUMA (4)**

\*Cortez

Area 2,097 square miles

Mines, plants, projects, oil—257 men

Development mining operations were conducted on the Hazel-Lu, northeast of Mancos, and on the Red Arrow by the First National Oil & Mineral Company in 1961. Oil drilling operations were conducted by Sexton Brothers Drilling Company, the Century Drilling Company, and J. P. Gibbons, Inc. Gas and petroleum production was steady from the Towaoc, Desert Canyon, and Flodine Park fields in the Paradox Basin. New drilling activity was noted along the south and west borders of the State. Road construction by the Northwestern Engineering Company and the Van Winkle Construction Company on the road from Cortez to the Four Corners area continued all year, with completion scheduled for early 1962. Five miles of new paving were done by Nielson, Inc., in the Pleasant View area.

Sand and Gravel .....	\$	89,495
Petroleum .....		309,888
Gas .....		33,584
<b>Total .....</b>		<b>\$ 343,472</b>
<b>TOTAL PRODUCTION FOR COUNTY.....</b>		<b>\$ 432,967</b>

\*County seats

**MONTROSE (4)**

\*Montrose

Area 2,240 square miles  
 195 mines, plants, projects, oil—1,423 men

Montrose County continued to hold first place in uranium production in 1961. During the year a new upgrading plant was constructed and placed in operation at Naturita by the Vanadium Corporation of America. Ore received at this plant is sampled, crushed and upgraded, and trucked to the company mill at Durango for final processing. The Union Carbide Nuclear Company Uravan Plant operated at capacity all year on ore produced from company mines in the area and on custom ore produced from independent operations. Major uranium and vanadium producing areas in the county were Monogram Mesa, Bull Canyon, Atkinson Mesa, Dolores Rim, Long Park, and Carpenter Flats. Major producers were Union Carbide Nuclear Company, Vanadium Corporation of America, Golden Cycle Corporation, Worcester Mines, and Climax Uranium Company. Over 190 mines in the county were inspected by the Bureau of Mines during the year. Contracts with the Atomic Energy Commission for both Union Carbide Nuclear Company and Vanadium Corporation of America were extended through 1966. The Colorado Bureau of Mines set up offices at Naturita during the early part of the year for the control of uranium mine radiation on the Plateau. Excellent cooperation has been received from the operators in this area.

Uranium .....	.....
Vanadium .....	.....
Sand and Gravel .....	\$ 188,181
Gas .....	\$ 738
<b>TOTAL PRODUCTION FOR COUNTY.....</b>	<b>\$ 188,919</b>

**MORGAN (1)**

\*Fort Morgan

Area 1,300 square miles  
 Plants, oil—356 men

Morgan County's Adena field was a steady producer during the year, and several new wells were drilled in proven fields. Average production was maintained and water flooding continued, which will result in maximum total production from the field. Morgan County moved to third place in State production of mineral fuels.

Sand and Gravel .....	\$ 120,923
Petroleum .....	25,952,898
Gas .....	1,313,275
<b>Total .....</b>	<b>\$ 27,267,173</b>
<b>TOTAL PRODUCTION FOR COUNTY.....</b>	<b>\$ 27,388,096</b>

\*County seats

**OURAY (4)**

\*Ouray

Area 540 square miles

Mines, plants, projects, oil—312 men

Mineral production in Ouray County consisted of gold, silver, copper, lead and zinc ores. Principal county production came from the Idarado Mining Company's Treasury Tunnel operations at Red Mountain and from Camp Bird Colorado, Inc., operations in the Sneffels district. Other operators listed by the Bureau of Mines are the American Nettie, Edna Group, Hawkeye Tunnel, Mineral Farm, Rouville, South Dakota, and the Wewissi property. All ore mined at Idarado's operation was transported through the mine and milled at the company's 1,000-ton per day Pandora Mill in Telluride. Camp Bird ore was milled at the company's new 500-ton per day mill at Camp Bird.

Gold .....	\$	461,520
Silver .....		386,906
Copper .....		789,505
Lead .....		901,174
Zinc .....		1,538,718
		<hr/>
Total .....	\$	4,077,823
Sand and Gravel .....	\$	1,200
TOTAL PRODUCTION FOR COUNTY.....	\$	4,079,023

**PARK (1 & 2)**

\*Fairplay

Area 2,178 square miles

Mines, plants, projects—180 men

Erection of a 100-ton per day beryl ore concentrator on Badger Flats by Mineral Concentrates & Chemical Company will greatly increase beryllium oxide production in Park County. The new mill located to handle U. S. Beryllium Company's ores from the Boomer and Red Skin Mines will eliminate the long haul to Larimer County formerly required to concentrate this ore. Gold placer operations in the Fairplay area were conducted during the summer months at the Penn Mountain Placer, and mining operations were conducted at the Betty, the Evening Star, Hazel Marie, and Lucky Boy Mines. Robert G. McGhee operated the Snell Mill, which is located two and one-half miles west of Alma, during the summer months.

Gold .....	\$	35
Copper .....		420
Zinc .....		418
Beryllium .....		42,839
		<hr/>
TOTAL PRODUCTION FOR COUNTY.....	\$	43,712

\*County seats

**PITKIN (3)**

\*Aspen

Area 975 square miles

Mine, plant, placer, oil—46 men

Mining activity in Pitkin County was confined to the operations at the Pitkin Iron Mine located six miles southwest of Ashcroft. The Morrison Knudson Construction Company was the operator, and ore mined from the iron pit was hauled to their Woody Creek crushing plant west of Aspen. E. J. Rippey & Sons completed work on their project covering improvement of Highway 82 between Glenwood Springs and Aspen. None of the former heavy-producing silver mines in the county was active.

Iron .....	\$	27,000
Sand and Gravel .....	\$	7,947
Gas .....	\$	710
<b>TOTAL PRODUCTION FOR COUNTY.....</b>		<b>\$ 35,657</b>

**PUEBLO (2)**

\*Pueblo

Area 2,414 square miles

Mines, placers, projects—160 men

The Standard Fire Brick Company's clay mining operations at Rock Creek, 22 miles southwest of Pueblo, and their Chamblin Mine, 35 miles southeast of Pueblo, were active during the year. Operations owned by General Refractories in the Stone City area also were active on clay producers. Clay from these properties is shipped to Pueblo, Canon City, and Denver for processing. Uranium production was recorded from the Kathryn Mine, operated by the Cotter Corporation, and located 20 miles south of Colorado Springs. Sand and gravel also added to the county's mineral production.

Uranium .....		
Sand and Gravel .....	\$	288,201
Clay .....		60,696
<b>TOTAL PRODUCTION FOR COUNTY.....</b>		<b>\$ 348,897</b>

**RIO BLANCO (3)**

\*Meeker

Area 3,264 square miles

Mines, plants, oil—639 men

Petroleum production, along with sand, gravel, and uranium, kept Rio Blanco County first in mineral production in

\*County seats

1961. Rangely field, located in the northwest part of the county, operated by the California Company under a unitized agreement, was first in oil production in the State. Wilson field and Piceance Creek added to this production, and the California Company gasoline plant at Rangely handled most crude oil produced in the area. Water-flooding operations at Rangely-Weber field were continued during the year for the purpose of obtaining better and more complete recovery from the field. The Butterfly Uranium Mine, located in the Uranium Peak area, 22 miles northeast of Meeker, was in production during the year, as were the Coal Creek No. 1, Columbine, Midnight, Shylo, and Naomi Ann uranium mines in the same area.

Uranium .....	.....
Sand and Gravel .....	\$ 22,966
Petroleum .....	55,127,747
Gas .....	6,568,664
Total .....	\$ 61,696,411
TOTAL PRODUCTION FOR COUNTY.....	\$ 61,719,377

### RIO GRANDE (3)

\*Del Norte

Area 916 square miles

Mine, projects—45 men

Development work continued at the Reynolds Mine, located 27 miles southwest of Del Norte in the Summitville area. This work is being done by John B. Rigg on this once large producer of gold, silver, and copper ores. Development work which consists of connecting lower levels with older upper levels, has presented the difficulty of tapping water in these old workings. Ore deposits contacted thus far have been encouraging to the operator.

Miscellaneous Metallics .....	\$ 6,664
TOTAL PRODUCTION FOR COUNTY.....	\$ 6,664

### ROUTT (3)

\*Steamboat Springs

Area 2,331 square miles

Projects, oil—77 men

Petroleum production from the Curtis and Tow Creek, Sage and Grass Creek fields was average during the year with wildcat wells being drilled for further oil development. The Cabeen Exploration Company, as well as Texaco, Inc., conducted drilling operations at the Tow Creek field. Sand, gravel, and scoria added to the county mineral production. Peter Kiewit & Sons Company, highway contractors, worked on

\*County seats

U. S. Highway 40, between Steamboat Springs and Milner.

Sand and Gravel .....	\$	286,389
Petroleum .....		420,242
Gas .....		2,532
		<hr/>
Total .....	\$	422,774
TOTAL PRODUCTION FOR COUNTY.....	\$	709,163

**SAGUACHE (3 & 4)**

\*Saguache

Area 3,146 square miles  
 Mines, placers, projects—313 men

Base metal production in Saguache County was low in 1961 due to suspended operations in the Bonanza area. Most of these properties were maintained on a standby basis to await pending procedures following recent lead-zinc assistance legislation. Turquoise was produced at the Villa Grove Turquoise Mine, operated by Winfield & Minneman. Two highway projects were active in the summer months in the East Creek Pass area, and one on U. S. Highway 50 west of Sargents. Gunnison Mining Company's operations at their Los Ochos property on Cochetopa Creek were steady all year, producing and shipping uranium ore to their reduction plant at Gunnison. Pinnacle Exploration Company's operations on Indian Creek, nine miles southeast of Sargents, were large producers of uranium ore, which was shipped by truck to the Cotter Corporation mill at Canon City. The recently advanced silver price and payment of lead-zinc subsidies should stimulate base and precious metal production in this county.

Uranium .....		
Gemstones .....	\$	10,000
TOTAL PRODUCTION FOR COUNTY.....	\$	10,000

**SAN JUAN (4)**

\*Silverton

Area 392 square miles  
 Mines, plants, projects—126 men

Of prime importance to San Juan County is the operation of the Standard Metals Company on the old Gold King and Sunnyside properties, through the American Tunnel. Work in 1961 consisted of connecting the American Tunnel with the lower levels of the old Sunnyside workings by means of two raises, one to be used for an ore pass and the other to be used for transportation. Development work consisted of drifting on the Washington vein and on the Bell Creole veins, which are

\*County seats

reported to contain excellent mill grade ore. The old Gold King lower level has been widened for more economic transportation and many new improvements have been made on the property. Work continued on the rehabilitation of the Shenandoah or Central Mill where company and custom ore will be milled. Development work with some production was evident at the Columbus, Black Hawk, Clear Lake Tunnel, Delano, Detroit Hollister, Esmeraldo, Illinois, Independence, Kansas City, Katy, King, Longfellow, Mazzeppa, Monarch, Nome, Rainbow, Brooklyn, and Silent Friend Mines.

Gold .....	\$	7,277
Silver .....		7,014
Copper .....		10,650
Lead .....		15,792
Zinc .....		8,994
Vanadium .....		.....
Miscellaneous .....		15,122
		<hr/>
Total .....	\$	64,849
Sand and Gravel .....	\$	1,464
TOTAL PRODUCTION FOR COUNTY.....	\$	66,313

#### SAN MIGUEL (4)

\*Telluride

Area 1,284 square miles

Mines, plants, projects, oil—752 men

San Miguel County maintained first place in the production of silver, lead and copper, and second place in the production of uranium and vanadium. Operations at the Idarado Mining Company's property in San Miguel and Ouray Counties were steady during the year, with a production in excess of 30,000 tons per month. Ore mined in both counties is transported through the mine to their modern and efficient concentrator at Pandora. Development work continued and ore reserves were maintained. Uranium production was steady all during the year from the Slick Rock, Gypsum Valley, Bull Canyon and Egnar areas from mines operated by the Union Carbide Nuclear Company, Dulaney Mining Company, and many other operators. The Slick Rock upgrading plant, operated by Union Carbide Nuclear Company, was in operation all year but was closed on January 1 of 1962. This plant is located on the site of the old Standard Chemical Mill. Oil prospecting and drilling were evident in the county this year. However, no production has been recorded. Additional paving was added to the Naturita-Dove Creek highway in the vicinity of Slick Rock by Nielson, Inc.

\*County seats

Gold .....	\$ 642,115
Silver .....	483,367
Copper .....	1,314,700
Lead .....	1,378,783
Zinc .....	2,429,870
Uranium .....	.....
Vanadium .....	.....
Iron .....	100,000
<b>Total</b> .....	<b>\$ 6,348,835</b>
Sand and Gravel .....	89,989
Miscellaneous .....	124
<b>Total</b> .....	<b>\$ 90,113</b>
<b>TOTAL PRODUCTION FOR COUNTY</b> .....	<b>\$ 6,438,948</b>

**SUMMIT (3)**

\*Breckenridge

Area 616 square miles

Mines, placers, projects—364 men

Blue River Constructors, Inc., contractors for the Denver Water Board on the Harold D. Roberts diversion tunnel, completed concreting operations in the tunnel this year, despite a damaging fire early in the year which destroyed the surface aggregate plant at Dillon. Completion of the Roberts Tunnel is expected early in 1962. Work continued during the summer months on the Dillon Dam and on the bypass tunnel which will carry Blue River water around the dam until the same is completed. Practically all of the town of Dillon was moved from its old location behind the dam and much of the lake area was cleared of timber and debris. Many buildings were moved to the new Dillon, which is located north and east of the dam. All of these projects kept employment high in the area. Six mines, including the Wellington property, were active during the year as were several placer operations on the Blue River near Breckenridge. C. Ryan & Son operated their aggregate screening plant which is located four miles north of Climax, and they produced sand and gravel for use at Climax.

Gold .....	\$ 2,910
Silver .....	3,398
Copper .....	1,440
Lead .....	24,000
Zinc .....	20,000
<b>Total</b> .....	<b>\$ 51,748</b>
Sand and Gravel .....	\$ 175,690
<b>TOTAL PRODUCTION FOR COUNTY</b> .....	<b>\$ 227,438</b>

\*County seats

**TELLER (2)**

\*Cripple Creek

Area 555 square miles

Mines, plants, quarries, projects—90 men

Announcement was made late in 1961 that operations of the Golden Cycle Corporation would be suspended on January 1, 1962. The closing of these Cripple Creek district properties represents the first complete shutdown since the camp started in 1891. The fixed gold price of \$35 per ounce and continually rising costs of production are responsible for the shutdown. The Cripple Creek district had a top gold production of \$18,147,681 in the year 1900, and for a good many years these fabulous properties supported a population of over 50,000 people in the area. Several privately owned companies will continue operations pending arrangements for the construction of a small mill to handle their production. Properties that operated in the Cripple Creek District during 1961 were the Black Cloud, the Carlton Mill, the Deadwood Mine, the El Paso Mine, the High Park Mine, the Little May Mine, Proper, and Theresa Mines. Pikes Peak Granite Company quarried stone from their quarry, located in the southwest corner of the county, and the Alpen Meadows Peat Bog pit near Gillette was active.

Gold .....	\$ 1,183,549
Silver .....	100
Total .....	\$ 1,183,649
Sand and Gravel .....	3,134
Stone .....	10,065
Peat .....	24,000
Total .....	\$ 37,199
TOTAL PRODUCTION FOR COUNTY.....	\$ 1,220,848

**WASHINGTON (1)**

\*Akron

Area 2,530 square miles

Oil and gas—100 men

Several new fields were located and proved during the past year. Most of the oil activity has been in the southern part of the county. The area around Lindon, both north and south of Highway 36, as well as the area north to and beyond

\*County seats

Highway 34, have been developed and several producing wells have been located. This county is fast becoming a major oil producer.

Sand and Gravel .....	\$ 238,877
Petroleum .....	26,935,606
Gas .....	511,456
	<hr/>
Total .....	\$ 27,447,062
TOTAL PRODUCTION FOR COUNTY.....	\$ 27,685,939

**WELD (1)**

\*Greeley

Area 4,033 square miles  
Plants, oil and gas—86 men

Weld County petroleum production of 1,491,962 barrels came from 107 producing wells during 1961. The county was sixth in State production and showed a decrease of 91,842 barrels under 1960. Sand and gravel and gas production added to the county total.

Sand and Gravel .....	\$ 455,881
Petroleum .....	4,326,690
Gas .....	237,758
	<hr/>
Total .....	\$ 4,564,448
TOTAL PRODUCTION FOR COUNTY.....	\$ 5,020,329

NOTE: County mineral production mentioned or listed without a value has been placed in the State's total mineral production on page 19.

## Safety Awards

Safety Achievement Awards were issued to the American Smelting & Refining Company's Globe Plant and to Texaco Inc., for their accident-free operations in the Hamilton and Wilson Creek Areas. These awards are presented to those operators who achieve a minimum of 1,000,000 man-hours or five years worked without a lost-time injury.

Safety Awards have been issued to the following operators who have completed the year 1961 without a lost-time injury and who have exceeded 30,000 man-hours of employment during the year:

American Smelting & Refining Company—Globe Plant  
 Oral Clark—Fawn Springs Mine  
 Douglas Cleghorn—Sandy Mine  
 Dulaney Mining Company—Radium 4, 5, 9 Mines  
 W. B. Eckman—Deer Shaft  
 General Chemical Division, Allied Chemical Corporation  
 —Burlington Mine  
 General Chemical Division, Allied Chemical Corporation  
 —Denver Works  
 General Chemical Division, Allied Chemical Corporation  
 —Valmont Mill  
 Gunnison Mining Company—Gunnison Mill  
 A. S. Horner Construction Company—Lemon Dam  
 Idarado Mining Company—Mill Department  
 Idarado Mining Company—Shop Department  
 Ideal Cement Company—Boettcher Quarry & Crushing  
 Plant  
 Ideal Cement Company—Portland Quarry & Crushing  
 Plant  
 Nielson, Inc.—Highway Construction  
 Trace Elements Corporation—Maybell Mill  
 Trace Elements Corporation—Mining Division  
 Union Carbide Nuclear Company—Eula Belle Mine  
 United Gold Mines Company—Theresa Shaft

Awards of Merit have been issued to the following operators, some of which had no lost-time injuries during the year but had insufficient man-hours to qualify for a Safety Award. This award is given to large and small operators alike in appreciation of outstanding effort and cooperation in the field of Safety during the year.

Don Andrews—Picket Corral Mine  
 Bachelor Mines, Inc.—Bachelor Mine

Harry Bennett & Bill Cornett—Hidden Basin Mine  
G. C. Bennetts & Son—Jefferson County Operations  
Dave Blake & Frank Power—Dolores & Fraction Mines  
C. W. Bunker—Ophir-Aztec Operations  
D. C. Bunker—Virgin Mine  
The California Company—Oil & Gasoline Plant  
Climax Uranium Company—Mineral Joe Properties  
Colonna & Company—English Quarry  
Colorado Fuel & Iron Company—Monarch Lime Quarry  
Colorado Granite Grit, Inc.—Mining Operations  
Colorado Lime Company—Lennox Breed Quarry  
Colorado Limestone Company—Calcite Quarry  
Wesley D. Conda—Church Quarry  
Cooley Gravel Company—Adams and Arapahoe County  
Operations  
Cotter Corporation—Canon City Mill  
Cowan Brothers—Cowan Brothers Quarry  
Dade & Shumway—Groundhog No. 6  
Deadwood Leasing Company—Deadwood Mine  
Hoyt Deaver & Son—Trace Elements Pits  
Denver Brick & Pipe Company—Clay Mining Operations  
Denver Fire Clay Company—Jefferson County Clay Mines  
Dulaney Mining Company—Mining Operations  
Emperius Mining Company—Creede Mill  
Fibreboard Paper Products Company—Coaldale Quarry  
Ralph Flesh & Son—Trace Elements Pits  
Ralph Foster & Sons—Mesa No. 8 Mine  
Pete Franks—September Morn Mine  
Ralph D. Hickman—Lumsden No. 2 Mine  
Hopkins Mining Company—Trace Elements Pits  
Idarado Mining Company  
Javernick, Javernick & Borgeson—Mill No. 2 & 4 Mines  
E. J. Johannsen—Norther No. 6 Mine  
Wendell Jones—Rim Rock No. 5 Mine  
Bud King Construction Company—Crawford Area  
Alex Lockhart & Sons—Mica Lode  
M&S, Inc.—Homestake Mine  
Magdalena Mining & Milling Company—Kathryn Mine  
Mountain Fuel Supply Company—Hiawatha Oil Field  
Mountain Fuel Supply Company—Powder Wash Oil Field  
Ernest W. Munroe—Munroe Plant & Quarry  
New Jersey Zinc Company—Eagle Operations  
Noble Drilling Company—Drilling Operations

Oriental Refining Company—Gramps Oil Field  
George W. Parfet Estate, Inc.—Clay Mining Operations  
Ralph Pierce—Salt Canyon Mine  
La Verne Ray—Guadalcanal Mine  
Fred Richards & Son—Mineral Joe No. 2 Mine  
Rio Grande Gravel Company—Jefferson County Operations  
Clyde Sanchez Mining Company—Bob Incline  
Calvin C. Sanders—Plat au Operations  
Dale Souther—Sunbeam Mine  
Standard Fire Brick Company—Rock Creek Mine  
Star Mining Company—New Verde Mine  
Texaco Inc.—Moffat Oil Field  
Texaco Inc.—Wilson Creek Oil Field  
U. S. Gypsum Company—Loveland Works  
U. S. Soil Conditioning Corporation—Thunder Mountain  
Quarry  
Union Carbide Nuclear Company—Burro Mines  
Union Carbide Nuclear Company—Deremo Mine  
Union Carbide Nuclear Company—Paradox No. 5 & 6  
Mines  
Utex Exploration Company—Cash & Rex Mines  
Joseph A. Weaver—Rigel Mine  
Western Feldspar Milling Company—Western Feldspar  
Mill  
Grover Williams—Trace Elements Pits  
T. S. Wolverton—Dorothy Jean & Mary Ann Mines  
Worcester Mines—Worcester Mine

## Injuries

Although 796 more men worked 806,400 more man-hours in the mineral industry in 1961 as compared with 1960, there were 134 less time-lost injuries. The over-all frequency rate dropped 4.4 to 25.5, and the severity rate dropped 273. to 2,774. per million man-hours. Eleven fatal accidents occurred during the year, six of which were in underground mines, two on mine surface, and one each at a quarry, project and oil well. The over-all average of fatal accidents over the last ten years is 15, which makes 1961 four less than average. Continued and improved effort on the part of the operator, the Bureau of Mines, and the employee toward safety is responsible for this reduction.

Fall of rock continues to be the prime cause of injury, with transportation vehicles and tools and machinery following in that order. One fatal occurred for every 851 men working underground, or one for every 1,938,400 man-hours worked. One fatal occurred for every 2,720 men working at surface mining, or one for every 5,376,000 man-hours worked. One quarry fatal occurred for every 718 men working, or for every 1,072,800 man-hours. One fatal occurred for every 2,160 men working on State and Federal projects, and one fatal for every 3,308 men working in the oil industry.

Each of the above mentioned fatal accidents was thoroughly investigated by the Bureau of Mines inspectors, and complete reports of the same were filed in our Denver office and with the operator. Recommendations and orders were issued for the correction of the cause of these accidents, and these recommendations were distributed to all inspectors in all districts so that similar hazardous conditions could be corrected.

The following accident and injury tables have been revised into a more compact form in order that the information contained can be more readily studied.

**SUMMARY OF INJURIES**

	Total Man-Hours	Fatal Injuries	Lost-Time Injuries	Number of Days Lost	Frequency Rate Per One Million Man-Hours	Severity Rate Per One Million Man-Hours
Mines, Underground	11,630,400	6	483	44,290	41.5	3,808.
Mines, Surface	2,222,400	2	100	15,014	44.9	6,755.
Quarries—Pits	1,072,800	1	19	12,107	17.7	11,285.
Mills—Plants—Smelters	8,529,600	1	76	8,528	9.0	999.
State & Federal Projects	5,184,000	1	115	7,804	22.1	1,505.
Oil & Gas Industry	7,939,200	1	143	12,647	18.0	159.
<b>Totals</b>	<b>36,578,400</b>	<b>11</b>	<b>936</b>	<b>100,390</b>	<b>25.5</b>	<b>2,744.</b>

This table includes the loss of 660,000 days due to 11 fatalities and 21,555 days due to 14 permanent partial disabilities.

Frequency Rate	Number of Injuries × 1,000,000	Severity Rate	Total Time Charges in Days × 1,000,000
	Number of Man-Hours of Exposure		Number of Man-Hours of Exposure

**INJURIES BY DISTRICTS**

District	Fatals	Mines, Underground	Mines, Surface	Quarries—Pits	Mills—Plants—Smelters	Projects	Oil	Totals
District 1	0	20	9	9	11	34	37	120
District 2	1	24	6	10	13	32	7	92
District 3	5	114	35	0	10	41	64	264
District 4	5	325	50	0	42	8	35	460
<b>Totals</b>	<b>11</b>	<b>483</b>	<b>100</b>	<b>19</b>	<b>76</b>	<b>115</b>	<b>143</b>	<b>936</b>

**FATAL INJURIES**

**Mines, Underground**

Date	Name	Age	Employed by	County	Cause of Injury
1-25-61	Raymond W. Hicks	19	Pinnacle Exploration Company	Saguache	Hicks was up 15 feet in the man-way compartment releasing a chute by barring in between spreader lining. When chute released, the concussion broke out the lining 50 feet above, and 15 tons of ore knocked Hicks to the level, causing instant death. Improper timbering.

Man walked into a 170-foot open ore pass while in the act of repairing a slusher cable. Visibility was poor due to smoke and dust caused from a recent 3-case hangup shot. Returned to blast area too soon after firing.

Both men were crushed by loose ground falling from overhead while they were in the act of loading a stope pillar. Insufficient ground support.

Csegezi was operating an underground shuttle car which slipped out of gear, causing him to lose control. The shuttle car rolled backwards, catching the operator's head between a rib and the steering wheel. Improper equipment inspection and inexperience.

Morlang was crushed by a falling roof slab. The supporting post had been blown out by a previous blast and the operators had failed to replace the post. Safety rule infraction.

Williams was hit by rocks and debris when an improperly anchored eye pin, supporting a single cable tram, gave away. Multiple fractures of head and body. Carelessness and improper equipment installation.

Conklin was working on the surface, landing steel covers which were being lifted with a rubber-tired winch truck. Winch boom hit a high tension wire, directing current through Conklin to the ground. Electrocution. Carelessness on the part of all concerned.

2-26-61	William James Sage	20	Climax Molybdenum Company	Lake	Man walked into a 170-foot open ore pass while in the act of repairing a slusher cable. Visibility was poor due to smoke and dust caused from a recent 3-case hangup shot. Returned to blast area too soon after firing.
5- 9-61	Willis Gene Mason	21	Climax Molybdenum Company	Lake	Both men were crushed by loose ground falling from overhead while they were in the act of loading a stope pillar. Insufficient ground support.
5- 9-61	Clarence R. Cox	23	Climax Molybdenum Company	Lake	Csegezi was operating an underground shuttle car which slipped out of gear, causing him to lose control. The shuttle car rolled backwards, catching the operator's head between a rib and the steering wheel. Improper equipment inspection and inexperience.
6-24-61	Laszlo Csegezi	24	George V. Liverman	Mesa	Morlang was crushed by a falling roof slab. The supporting post had been blown out by a previous blast and the operators had failed to replace the post. Safety rule infraction.
8-22-61	Romeo C. Morlang	22	Union Carbide Nuclear Company	Montrose	Williams was hit by rocks and debris when an improperly anchored eye pin, supporting a single cable tram, gave away. Multiple fractures of head and body. Carelessness and improper equipment installation.
5-13-61	Earnest E. Williams	30	Self employed	Montrose	Conklin was working on the surface, landing steel covers which were being lifted with a rubber-tired winch truck. Winch boom hit a high tension wire, directing current through Conklin to the ground. Electrocution. Carelessness on the part of all concerned.
5-15-61	Richard Conklin	29	J. A. Parks Construction Company	Lake	

### Mines, Surface

**Quarries**

Date	Name	Age	Employed by	County	Cause of Injury
5- 2-61	Donald K. Korbcl	41	Ralph J. Pierce	Fremont	Korbcl, a heavy equipment operator, was cleaning the floor of the quarry after a blast transporting waste with the front-end loader. Traveling with the load elevated while on sloping ground caused the loader to overturn, crushing Korbcl. Improper equipment operation.

**Projects**

Date	Name	Age	Employed by	County	Cause of Injury
7-13-61	David V. Norvell	27	Blue River Constructors	Summit	Employee detached a Victaulic cap from the end of the pressure line without bleeding pressure from the line. The cap hit Norvell in the lower rib section, causing internal injuries and death. Carelessness. Safety precautions ignored.

**Oil Wells**

Date	Name	Age	Employed by	County	Cause of Injury
10- 2-61	George Henry Bishop, Jr.	30	Sage Drilling Company	La Plata	Release valve controlling breakout cathead failed, causing the tongs to be pulled back too far. The tongs hit Bishop on the back, swing, causing internal injuries and death. Probable ice forming in release valve.



LOST TIME INJURY STATISTICS—MINERAL INDUSTRY (Continued)

TYPE OF INJURY (I=Injuries; F=Fatalities)	I	F	I	F	I	F	I	F	I	F	I	F	I	F	Totals
Burns-Shock	9		4	1	9		3	3	5		33	1	34		
Caught in or between	63	1	11		7		3	25	23		132	1	133		
Fall on Same Level	10		6		3		2	2	2		23		23		
Fall on Different Level	27	1	1		5		1	4	7		46	1	47		
Handling	127		36		22		5	23	30		243		243		
Inhalation-Suffocation	1		2		6		1	1	1		10		10		
Slip-Stepping on	46		14		13		2	9	16		100		100		
Striking against-Struck by	192	4	25	1	11		7	46	58	1	339	8	347		
Unclassified-Insufficient Data	3				1			1	1		6		6		
Totals	478	6	99	2	77		21	114	142	1	931	11	942		
NATURE OF INJURY															
Amputations	10		2		2			1	8		23		23		
Burns-Scalds-Shock	6		5	1	15		1	3	3		30	1	31		
Cuts-Bruises-Lacerations-Punctures	228		26		24		9	62	68	1	427	2	429		
Foreign Bodies	18		3		2		2	6	3		31		31		
Fractures	74	4	14	1	6		2	16	31		143	5	148		
Hernia	5		4		5				14		14		14		
Occupational Diseases	1		1		4			2	5		13		13		
Respiratory					1				1		1		1		
Strains-Sprains-Dislocations	141		41		18		4	24	36		264		264		
Nature Unknown	2		1		1			1	1		5		5		
Totals	495	6	97	2	78		18	115	148	1	951	11	962		
SITE OF INJURY															
Eyes	29		7		4		3	9	7		59		59		
Head-Face-Neck	25	2	5		6		1	6	8		53	2	55		
Trunk	211	1	44		28		8	45	63	1	399	3	402		
Upper Extremities	56		16		15		3	20	29		139		139		
Lower Extremities	159		27		23		4	39	44		296		296		
General	3	3		2	3		1	2	1	1	10	6	16		
Unclassified-Insufficient Data	2				1			1	1		5		5		
Totals	485	6	99	2	80		20	122	153	1	959	11	970		

## Men Employed

Mineral industry employment has shown a slight increase each year since 1958. An increase of 796 men employed over the 14,905 men listed in 1960 credits the Colorado mineral industry with employment of 15,701 men during 1961. This figure does not include employment in the coal industry and does not include employment in the many activities directly connected with the mineral industry. Employment has increased on State and Federal projects, and in the mining and oil industry, with a reduction in employment at plant and quarry operations. Consolidation of several small mining properties resulted in fewer operations listed with an increase of men actually employed. Declining activity in Colorado's old standby minerals and increased activity in our many other minerals is responsible for a more or less steady industry employment.

	Mines		Mills, Plants, Smelters		Quarries & Pits		Placers		Projects		Oil Wells		Totals	
	No.	Men	No.	Men	No.	Men	Men	Men	Men	Men	Men	Men	Men	Men
District 1	76	355	26	436	24	224	292	190	1,433	1,433	1,433	2,940	2,940	
District 2	45	190	6	89	20	166	245	684	315	684	315	1,684	1,684	
District 3	36	1,926	10	1,377	11	53	197	601	960	601	960	5,114	5,114	
District 4	402	2,801	18	1,652			225	685	600	685	600	5,963	5,963	
Totals	559	5,272	60	3,554	95	447	960	2,160	3,308	3,308	3,308	15,701	15,701	

TOTAL MEN EMPLOYED	
Underground	3,554
Surface	1,192
	818
	551
	1,988
	2,252
	5,106
	7,287

MEN EMPLOYED IN	
Gold, Silver, Copper, Lead, Zinc	1,050
Molybdenum	2,300
Uranium	5,200
Oil Wells	3,308
Other	3,843
Totals	15,701

## DIVISION OF OPERATIONS

Base and Precious Metal Mines	41
Uranium Mines	422
Other Mines	96

## FIRST AID TRAINING

Six hundred thirty-five men in Colorado's mineral industry were trained in first aid during 1961, using the standard United States Bureau of Mines training course.

## MINERAL SPECIMEN COLLECTIONS

One thousand separate small collections were mailed to interested parties during the year.

# Inspections

A decrease of 63 inspections during the year is reflected primarily in District Nos. 1 and 4. The influence of our concentrated radiation control program wherein the inspectors were occupied for a considerable length of time during May, June and July in acquainting and supervising new personnel for the program was responsible for fewer inspections during this time. A total of 890 separate mines, mills, quarries, projects and oil wells was inspected at least once during the year, and many were inspected several times according to time available and safety condition requirements. Consolidation of several small uranium properties under one operator and operation resulted in two fewer properties inspected this year.

## INSPECTIONS

	Made By				Total
	District 1	District 2	District 3	District 4	
1961	Blake	Theobald & Keating	Doyle & Keating	Ray, Pakka & Keating	
January .....	11	10	35	37	93
February .....	29	24	30	51	134
March .....	20	....	15	70	105
April .....	26	....	32	52	110
May .....	24	12	44	58	138
June .....	35	7	50	44	136
July .....	8	....	26	52	86
August .....	27	13	32	30	102
September .....	32	....	43	74	149
October .....	27	1	53	55	136
November .....	35	4	18	40	97
December .....	42	27	15	49	133
Totals .....	316	98	393	612	1,419

	Mines	Mills Plants Smel- ters	Pits & Quarries	Placers & Bogs	Oil & Gas Wells, Plants	Projects			Total
						Road	Tunnel	Dam	
District 1....	94	54	78	5	59	7	19	....	316
District 2....	44	15	30	1	2	1	4	1	98
District 3....	128	60	27	3	118	20	23	14	393
District 4....	494	35	2	3	40	31	2	5	612
Totals .....	760	164	137	12	219	59	48	20	1,419

One thousand separate small mineral specimen collections were mailed to interested parties during the year.

## Information Reports

Information contained in these 571 reports submitted during the year includes compiled data gathered from one or several inspections during the year. These reports are filed by mine name and complete a running narrative on the property operation. Information is given on operator organization, men employed, type of operation, work accomplished during the year, type of ground, size of ore deposits and general working procedures. These reports date from the time the property started to the present date and contain valuable information for those interested in evaluating most properties in the State.

### INFORMATION REPORTS

1961	Made By				Total
	District 1 Blake	District 2 Theobald & Keating	District 3 Doyle & Keating	District 4 Ray, Pakka & Keating	
January .....	.....	.....	3	25	28
February .....	2	.....	2	36	40
March .....	1	.....	.....	43	44
April .....	6	.....	1	31	38
May .....	.....	.....	3	55	58
June .....	9	.....	20	27	56
July .....	2	.....	.....	33	35
August .....	6	.....	3	28	37
September .....	19	.....	3	43	65
October .....	1	34	.....	26	61
November .....	5	26	.....	38	69
December .....	4	4	2	30	40
Totals .....	55	64	37	415	571

District	Mines	Mills Plants Smel- ters	Pits & Quarries	Placers & Bogs	Oil & Gas Wells, Plants	Projects			Total
						Road	Tunnel	Dam	
District 1....	29	4	7	14	1	..	..	..	55
District 2....	35	5	22	1	..	..	1	..	64
District 3....	17	2	4	2	12	..	..	..	37
District 4....	386	16	2	1	3	4	1	2	415
Totals .....	467	27	35	18	16	4	2	2	571

## Radon Daughter Control

The following illustrative tables are supplemental to the report on Radon Daughter Control found in the fore part of this report, and supply information on the scope and success of the program. Concentrations of Radon Daughter products in Colorado uranium mines are expressed in terms of Working Levels (WL). The figures represent the condition of the number of mines that were operating on December 31.

Number of Mines Sampled for Radon Daughter Products	223
Number of Individual Samples Taken.....	1,296
Number of Inspections for Radon Daughter Products.....	480
Number of Men Catalogued for Exposure.....	1,454

### STATUS OF MINES DECEMBER 31, 1961

(1 WL represents 300 micromicrocuries per liter of air)

Range	Number of Mines	Per Cent	Cumulative Per Cent
1.0 WL or less .....	90	45%	45%
1.0 WL to 3.0 WL .....	55	27%	73%
3.0 WL to 10.0 WL .....	46	23%	96%
10. WL and over .....	9	4.5%	100%
<b>Total</b> .....	<b>200</b>	<b>100%</b>	

The reduction of Radon Daughters concentration in Colorado's uranium mines by the month is illustrated in the table below:

Working Level Ranges	Per Cent of Mines			
	June 30	Aug. 31	Oct. 31	Dec. 31
1.0 WL and less .....	18%	36%	41%	45 %
1.0 WL through 3.0 WL.....	14%	17%	25%	27½ %
3.0 WL through 10. WL.....	29%	22%	23%	23 %
10. WL and over .....	39%	25%	11%	4½ %
<b>Total</b> .....	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Samples Taken by	Number of Samples	Number of Inspections
Thomas High .....	323	106
William Horn .....	328	153
Keith Johnson .....	177	76
Calvin Warnica .....	468	145
<b>Total</b> .....	<b>1,296</b>	<b>480</b>

# Mineral Operations by County in Colorado

Name of Property	Location	Operator's Name and Address	Product	Kind of Property
<b>ADAMS COUNTY</b>				
Inland	Derby	Boise Cascade Sand & Gravel Co., 7620 Madison St., Derby	Sand, Gravel, Gold	Plant
North Plant	Denver	Kerkling & Stensker, 2481 Garrison St., Lakewood	Sand, Gravel, Gold	Plant
Plant Nos. 8, 10 & R.	Denver	Cooley Gravel Co., 6101 Lowell Blvd., Denver 11	Sand, Gravel, Gold	Plant
Portland No. 209 at Pit No. 4	Denver	Brannan Sand & Gravel Co., 4800 Brighton Blvd., Denver 16	Sand, Gravel	Plant
<b>ARAPAHOE COUNTY</b>				
Englewood Plant	Englewood	Cooley Gravel Co., 6101 Lowell Blvd., Denver 11	Sand, Gravel	Plant
Littleton Plant	Littleton	Cooley Gravel Co., 6101 Lowell Blvd., Denver 11	Sand, Gravel	Plant
<b>BOULDER COUNTY</b>				
Beaver Lake	Beaver Dam Lake	Beaver Lake Peat Co., 2902 6th St., Boulder	Peat	Peat Bog
Blue Bird	Grand Island	Ruehlman Mining & Land Co., 1941 Tyler Road, Boulder	Gold, Silver, Copper, Lead	Mine
Blue Stone Lode	Grand Island	R. E. Clarida & W. L. Stephenson, 3120 W. Arizona, Denver 19	Silver, Copper, Lead	Mine
Boulder Gravel Products	Valmont	Boulder Gravel Products, Inc., Box 229, Boulder	Sand, Gravel, Gold	Plant
Brodies St. Vrain	Lyons	Sterling Contracting Co., Box 759, Ft. Collins	Stone	Quarry
Burlington	Jamestown	Allied Chemical Corp., General Chemical Division, Box 228, Boulder	Fluorspar	Mine
C & M Sand & Gravel	Boulder	C & M Sand & Gravel Co., 2211 Pearl	Sand, Gravel	Plant
Caribou	Caribou	Mountain States Peat Co., 3100 Walnut St., Boulder	Peat	Peat Bog
Carrol Gore	Beach Hill	Loukenen Bros. Stone Co., Box 865, Lyons	Stone	Quarry
Cash	Gold Hill	Utex Exploration Co., Salina Star Route, Gold Hill	Gold	Mine
David Lode	Sugar Loaf	Floyd V. McCulloch, Sugar Loaf Route, Boulder	Gold	Mine
Diamond K	Beach Hill	Joe Puckett, Lyons	Stone	Quarry
Eldorado Pit No. 2	Eldorado Springs	Eldorado Clay Co., Route 1, Box 759, Golden	Clay	Mine
Emmett	Jamestown	Williamson Mining Co., Box 431, Boulder	Fluorspar	Mine
Fair Day	Jamestown	La Salle Mining Co., Box 217, Grand Junction	Uranium	Mine
Gladstone	Jamestown	Elliott Goldstein, 310 So. 40th St., Boulder	Fluorspar	Mine
Harms Peat Bog	Ward	W. F. Harms, Route 2, Box 75A, Boulder	Peat	Peat Bog

**BOULDER COUNTY—Continued**

Name of Property Inviolable	Location	Operator's Name and Address	Product	Kind of Property
Jacobson & Lyons	Beach Hill	Allied Chemical Corp., General Chemical Division, Box 228, Boulder	Fluorspar	Mine
Jenkins	S.E. of Boulder	Jacobson & Lyons Stone Co., Inc., Box C, Lyons	Stone	Quarry
Kitts	Beach Hill	Stroud Whisenbunt, Castle Rock	Clay	Mine
Kline	Beach Hill	Lawrence Kitzmiller, Lyons	Stone	Quarry
Marion	Sugar Loaf Road	Joe & Oman La Vole, Star Route, Lyons	Stone	Quarry
Noland	Beach Hill Road	Earl G. Sweeney, 1061 Grant St., Boulder	Rare Earths, Tin, Tungsten	Mill
Ramey	Lyons	Sterling Contracting Co., Box 759, Ft. Collins	Stone	Quarry
Rex	Summerville	Leukenen Bros. Stone Co., Box 865, Lyons	Stone	Quarry
Rip Van Dam Group	Springdale	Utex Exploration Co., Salina Star Route, Gold Hill	Gold, Silver	Mine
Stockton & Perkins	Beach Hill	N. J. Parker, Box 450, Boulder	Gold, Silver	Mine
Tungsten (18225A)	Nederland	Leukenen Bros. Stone Co., Box 865, Lyons	Stone	Quarry
Valmont Plant	Valmont	Tungsten Mining Co., 420 Pine St., Boulder	Tungsten	Mine
Wano	Jamestown	Allied Chemical Corp., General Chemical Division, Box 228, Boulder	Fluorspar	Plant
		Williamson Mining Co., Jamestown	Gold	Mine

**CHAFFEE COUNTY**

Bonus Extension	Salida	R. V. McGuire, 75 Hazel Court, Denver 19	Feldspar, Mica, Beryl	Mine
Buckley Hill	Turret	American Mining & Milling Corp., 2222 E. Platte Ave., Colo. Springs	Quartz	Quarry
Colorado Granite Grit Mill	Salida	Colorado Granite Grit Corp., Box 426, Salida	Granite	Mill
Crystal Granite Quarry	Salida	Colorado Granite Grit Corp., Box 426, Salida	Granite	Quarry
Homestake	Ute Trail	The M & S, Inc., Box 671, Salida	Feldspar	Quarry
Monarch Lime Quarry & Plant	Monarch Pass	Colorado Fuel & Iron Corp., Box 316, Pueblo	Limestone	Quarry & Plant
Shannon Last Chance	Chalk Creek	Colorado Granite Grit Corp., Box 426, Salida	Granite	Quarry
Western Feldspar Mill	Salida	Western Feldspar Milling Co., Box 671, Salida	Feldspar	Mill

**CLEAR CREEK COUNTY**

Alma Lincoln	Spanish Bar	Alma Lincoln Mines, Box 781, Idaho Springs	Tourist	Mine
Bald Eagle	Virginla Canyon	Jack Pot Oil Co., 300 Travel Center Bldg., Denver	Gold, Copper, Lead, Zinc	Mine
Booth & Smith	Georgetown	Booth Sand & Gravel Co., 5305 Sheridan Blvd., Arvada	Sand, Gravel	Plant

Burleigh	Silver Plume	Silver Plume Mining Co., Georgetown	Silver, Lead, Zinc	Mine
Centennial	Virginia Canyon	Anthony V. Madonna & Richard A. Madonna, 1899 Allison, Lakewood	Gold	Mine
Central or Big Five	Idaho Springs	Clear Creek Mining Co., 1727 Boulder St., Denver	Gold, Silver, Copper, Lead	Mine
Dixie	Ute Creek	Pete Leavitt, Box 215, Idaho Springs	Gold, Silver	Mill
Drummond	Lawson	Drummond Mines, c/o J. B. Traynor, 512 Skyline Drive, Ft. Collins	Gold, Silver, Copper, Lead, Zinc	Mine
Empress	Trail Creek	Golden Side Mining Co., Box 787, Idaho Springs	Gold	Mine
Franklin	Gilson Gulch	Franklin Silver Age Mining Co., c/o A. E. Burns, Wilson, Kansas	Gold, Silver, Copper, Lead	Mine
Grover	Beaver Brook Canyon	Joe Grover, Evergreen	Beryl	Mine
Hall Tunnel	Georgetown	Oscar Anderson, Box 1108, Idaho Springs	Gold, Silver, Copper, Lead, Zinc	Mine
Kaverne	Dumont	Revenue Metals Mines, 2656 4th St., Boulder	Gold, Silver	Mine
King Cyrus Nos. 1 & 2	Spanish Bar	Lyle B. McNulty, 7505 Clay St., Westminster	Tourist	Mine
Little Albert	Trail Creek	Buffalo Oil & Gas Co., Colorado Bldg., Denver	Gold, Silver, Lead	Mine
Lombard	Cumberland Gulch	Lombard Mines, Inc., 824 Equitable Bldg., Denver	Gold, Silver, Lead	Mine
Lone Star No. 6	Clear Creek	R. W. Carroll, Box 6, Idaho Springs	Gold, Silver	Mine
Miami & Edgar Tunnel	Dry Gulch	Colorado School of Mines, Engineering Department, Golden	Instruction	Mine
Mick Mack	Empire	Empire Mining Corp., Box D, Empire	Gold, Silver	Mine
Monarch	Lawson	Mid-Valley Development Corp., Hotel North Park, Chicago 14, Illinois	Gold, Silver	Mine
Quickle Iron Mine	Beaver Brook Canyon	Haef Leavitt, Box 822, Idaho Springs	Iron	Mine
Rusty Shovel & Black Squirrel	Trail Creek	Amrahamson & Anderson, Lawson, Springs	Gold	Mine
Santa Fe	Gilson Gulch	David & Kenneth Kingery, Idaho Springs	Gold, Silver, Lead, Zinc	Mine
Silver Spoon	Floyd Hill Station	Fred Garula, 1763 Williams St., Denver 18	Gold, Silver	Mine
Urad	Woods Creek	C. Ryan & Son, 6001 McIntyre, Golden	Molybdenum	Mine
Mesita Hill	Mesita	Colorado Aggregate, Inc., Mesita	Volcanic Scoria	Plant
Buckeye-Holt	Ophir Creek	Eisenhour & Decker, Wetmore	Gold	Mine
Lawson	Wetmore	Floyd R. Johnson, 1215 Park Ave., Canon City	Clay	Mine
Lodge Pole No. 1	Ophir Creek	Charles & Lyman Akin, Wetmore	Gold	Mine
Lomboy	Ophir Creek	Charles & Lyman Akin, Wetmore	Gold	Mine
Williams	Rosita	SN Mining Co., Box 732, Cheyenne, Wyoming	Iron Pyrites	Mine

## COSTILLA COUNTY

Mesita Hill.....Colorado Aggregate, Inc., Mesita.....Volcanic Scoria.....Plant

## CUSTER COUNTY

Buckeye-Holt	Ophir Creek	Eisenhour & Decker, Wetmore	Gold	Mine
Lawson	Wetmore	Floyd R. Johnson, 1215 Park Ave., Canon City	Clay	Mine
Lodge Pole No. 1	Ophir Creek	Charles & Lyman Akin, Wetmore	Gold	Mine
Lomboy	Ophir Creek	Charles & Lyman Akin, Wetmore	Gold	Mine
Williams	Rosita	SN Mining Co., Box 732, Cheyenne, Wyoming	Iron Pyrites	Mine

Name of Property	Location	Operator's Name and Address	Product	Kind of Property
Canyon & Tract Group	Smith Fork Creek	Chipeta Mining Co., Box 571, Delta	Gypsum	Quarry
Chipeta Mill	Delta	Chipeta Mining Co., Box 571, Delta	Gypsum	Mill
Smith Fork Dam	Crawford	Bud King Construction Co., Missoula, Montana		Dam
<b>DELTA COUNTY</b>				
Denver Works	Denver	Allied Chemical Corp., General Chemical Division, Box 4040, South Denver Station, Denver	Sulphuric Acid, Aluminum Sulfate	Plant
Globe Plant	Globeville	American Smelting & Refining Co., 495 East 51st Ave., Denver 16	Cadmium	Smelter
<b>DENVER COUNTY</b>				
Fritz-Erickson Mining Co.	Four Corners Area	Fritz-Erickson Mining Co., Inc., Box 365, Dove Creek	Drilling, Exploration	
Mountain Springs	Rico	Rico Argentine Mining Co., Rico	Gold, Silver, Copper, Lead, Zinc	Mine
Rameo Acid Plant	Rico	Rico Argentine Mining Co., Rico	Sulphuric Acid	Plant
Rico Mill	Rico	Rico Argentine Mining Co., Rico	Lead, Zinc	Mill
Rock of Ages	Rico	Rico Argentine Mining Co., Rico	Gold	Mine
Rosebud	Navajo Basin	Sunrise Exploration Co., Redvale	Silver	Mine
Silver Swan	Bull Gulch	Joe Roscio & Margaret Ruhl, Dunton	Silver, Lead, Zinc	Mine
St. Louis Tunnel	Rico	Hugh Lee, Lupton, Arizona	Gold, Silver, Copper, Lead, Zinc	Mine
St. Louis & Iron Clad	Rico	Rico Argentine Mining Co., Rico	Gold, Silver, Copper, Lead, Zinc	Mine
<b>DOUGLAS COUNTY</b>				
Hogback Nos. 2 & 3	Waterton	Robinson Brick & Tile Co., 500 So. Santa Fe, Denver 23	Clay	Mine
Ringenberg	Waterton	Denver Brick & Pipe Co., 4501 Fox, Denver	Clay	Mine
Stevens Ranch	Castle Rock	Stroud Whisenhunt, Castle Rock	Clay	Mine
Stroh	Parker	Stroud Whisenhunt, Castle Rock	Clay	Mine
<b>EAGLE COUNTY</b>				
Dotsero	Dotsero	Lava Products, Inc., Box 390, Glenwood Springs	Volcanic Ash	Quarry
Eagle Mill	Gilman	New Jersey Zinc Co., Gilman	Lead, Zinc	Mill
Eagle Mine	Gilman	New Jersey Zinc Co., Gilman	Silver, Copper, Lead, Zinc	Mine
Roaring Fork	Glenwood Springs	Eddys Funder, Carbondale	Pumice	Quarry
<b>ELBERT COUNTY</b>				
Buffalo	Kiowa	Robinson Brick & Tile Co., 500 So. Santa Fe, Denver 23	Clay	Mine
<b>EL PASO COUNTY</b>				
Castle	Colorado Springs	Castle Concrete Co., Box 2462, Colorado Springs	Aggregate	Quarry
Johnnie	Dead Man's Canyon	George Stroup, Elizabeth & Field St., Canon City	Quartz	Quarry
Lennox Breed	Colorado Springs	Colorado Lime Co., Route 3, Pike View	Aggregate, Limestone	Quarry
NORAD	Cheyenne Mountain	Cheyenne Mountain		
Rampart Range	Colorado Springs	Utah Construction & Mining Co., Box 1580, Colorado Springs	Limestone	Project Quarry

## FREMONT COUNTY

Burnito	Canon City	Ray B. Sturbaum, 225 Main St., Canon City	Ganister	Quarry
Calcite	Howard	Colorado Limestone Co., Box 8,	Limestone	Quarry
Canon Dolomite	Canon City	Colorado Fuel & Iron Corp., Pueblo.	Dolomite	Quarry
Coaldale	Coaldale	Fibreboard Paper Products Corp., Box 63, Coaldale	Gypsum	Quarry
Corral Tunnel	Tallahassee Creek	Melvin J. Wallace, 1619 Park Ave., Canon City	Uranium	Mine
Cotter Mill	Canon City	Cotter Corporation N.S.L., Box 761, Canon City	Uranium	Mill
Cowan Travertine	Canon City	Cowan Brothers, 227 Main St., Canon City	Travertine, Marble	Quarry
Empire	Canon City	Western Agricultural Chemical Co., 601 S. Wasatch St., Colorado Springs	Soil Conditioner	Plant
Empire Zinc	Canon City	New Jersey Zinc Co., Canon City	Zinc	Plant
English	English Siding	Colonna & Co. of Colorado, Inc., Canon City	Marble	Quarry
Green Rock Lode	Westcliffe	O. L. Braly, Wetmore	Stone	Quarry
Horney Ganister	Canon City	Ralph Pierce, 108 Penn, Canon City	Ganister	Quarry
Hurd Lease	Tallahassee Creek	Tallahassee Uranium Co., Box 768, Canon City	Uranium	Mine
I. & E.	Salt Canyon	Wm. R. Irvin, 345 So. Cottonwood, Canon City	Clay	Mine
Jim Dandy	Phantom Canyon	American Mining Co., Box 193, Florence	Quartz	Quarry
Joan	Tallahassee	Seacol, Inc., 826 Main St., Canon City	Uranium	Mine
Juniper	Tallahassee	Melvin J. Wallace, 105 E. Stanley, Canon City	Uranium	Mine
Knob Hill	Tallahassee	Elmore Glem, 1232 S. 1st St., Canon City	Uranium	Mine
Last Chance	Tallahassee	Gunnison Mining Co., Box 539, Gunnison	Uranium	Mine
Lawson	Wetmore	Ralph Pierce, 108 Penn, Canon City	Clay	Mine
Little Abney No. 1	Tallahassee	Logan E. Shelhamer Mining Cont., 800 North 19th St., Canon City	Uranium	Mine
Mary-L	Tallahassee	Elmer Smaller, Canon City	Uranium	Mine
Mica Lode	Royal Gorge Park	Lockhart & Sons, 431 Majestic St., Canon City	Quartz	Quarry
Phantom Canyon	Beaver Creek Road	George Stroup, Elizabeth & Field St., Canon City	Clay	Mine
Portland Plant & Quarry	Portland	Ideal Cement Co., Box 231, Florence	Limestone	Quarry & Plant
Rainbow	Tallahassee	Melvin J. Wallace, 105 E. Stanley, Canon City	Uranium	Mine
Salt Canyon	Tallahassee	Ralph Pierce, 108 Penn Ave., Canon City	Clay	Mine
Taylor Gulch	Taylor Gulch	Frank H. Norberg Co., 703 Guarantee Bank Bldg., Denver 2	Limestone	Quarry
Thorn	Tallahassee	C. O. Wallace, Canon City	Uranium	Mine
Williams	Tallahassee Creek	Gunnison Mining Co., Box 539, Gunnison	Uranium	Mine

**GARFIELD COUNTY**

Name of Property	Location	Operator's Name and Address	Product	Kind of Property
Glenwood Springs Quarry	Glenwood Springs	Frank H. Norberg Co., 703 Guaranty Bank Bldg., Denver	Limestone	Quarry
Marble Head	Glenwood Springs	Moab Drilling Co., Box 270, Glenwood Springs	Limestone	Quarry
Rifle Plant	Rifle	Union Carbide Nuclear Co., Rifle	Uranium, Vanadium	Mill
Rifle Mine	Rifle Creek	Union Carbide Nuclear Co., Rifle	Uranium, Vanadium	Mine

**GILPIN COUNTY**

Bertha-Ra	Black Hawk	Carvel Gentry, 3902 Nelson St., Wheat Ridge	Gold, Silver	Mine
Bob Tail	Black Hawk	Gus Bakos & Robert Hollenbeck, Black Hawk	Tourist	Mine
Braecheer Ranch	Black Hawk	Colorado Peat, Inc., Route 2, Box 79, Golden	Peat	Peat Bog
Clark Wilson	Black Hawk	Bert Myer, 80 W. Kenyon, Englewood	Gold	Placer
Couch Placers Nos. 1 & 2	Black Hawk	Stancil Couch, Box 146, Black Hawk	Gold	Placer
Durand	Lump Gulch	Durand Brothers, 935 So. Patton Court, Denver	Gold	Placer
Fools Luck	Missouri Gulch	Alvin C. Amrhein, 3441 W. Colfax, Denver	Gold	Placer
Gangloff Placer No. 13670	Hawkeye Mining District	Columbine Peat Co., 17215 West 12th, Golden	Peat	Peat Bog
Gold Hole	Central City	Glory Hole, Inc., Central City	Gold, Silver, Copper, Lead, Zinc	Mill
Gold Rock, Rotchfield & Pocaohontas	Silver Lake	Paul J. James, 1010 Grand Ave., San Francisco, Calif.	Gold, Silver	Mine
Golden Gilpin	Black Hawk	Roberts & Morse, Box 24, Idaho Springs	Base Metals	Mill
Green	Black Hawk	Thayer & Meyers, 1636 Garfield, Loveland	Gold	Placer
Hopf Garten	Lake Gulch Road	Sylvester S. Thayer, 1636 Garfield, Loveland	Gold	Mine
Huddleson (Toll Gate)	Black Hawk	Mike McNulty, Black Hawk	Tourist	Mine
La Crosse	Nevadaville	Ruth Mining & Drilling Co., Inc., 8607 E. Colfax, Denver	Gold, Silver, Lead, Zinc	Mine
Little Colonel	Black Hawk	Black Hawk Trading Post, Black Hawk	Tourist	Mine
National Bank Lode (Lost Gold)	Central City	Faye Tyson, Box 201, Central City	Tourist	Mine
Reider & Lawson	Black Hawk	Chalmers L. Reider & Tom Lawson, 630 Logan St., Denver	Gold	Placer
Rollins Placer	Rollinsville	Clifford A. Hast, 3863 Estes St., Wheat Ridge	Gold	Placer
Rudolph Ranch	Black Hawk	Gus Rudolph, Black Hawk	Peat	Peat Bog
Snooks Tunnel	Perigo	Bee Vee Mines, Box 135, Rollinsville	Gold, Silver, Copper	Mine
Vanderbilt Lode (Diamond Lil)	Central City	Central Gold Mine & Mining Museum, Box 161, Central City	Gold, Silver, Copper, Lead, Zinc, Tourist	Mine
We-Got-Em	Silver Lake	Garrick & Allison, Central City	Gold, Silver, Copper, Lead, Zinc	Mine
Wilma Zacker	Apex Black Hawk	Nye Mathews, Inc., Black Hawk Ralph Zacker, Black Hawk	Molybdenum	Placer

## GUNNISON COUNTY

Carter Mill & Mine	Gold Creek	O. Sutton, 407 Insurance Bldg., Wichita, Kansas	Gold, Silver, Lead	Mine
Cebolla Creek Nos. 1 & 2	Cebolla Creek	Hughes Mining Co., Green River, Utah	Titanium, Iron	Mine
Copper King	Gold Creek	Lowell Staats, Nucla	Silver	Mine
Core Minerals Corp.	Illinois Creek	Core Minerals Corp., Box 1247, Albuquerque, New Mexico	Gold	Placer
E. I. duPont Claims	Powderhorn	Boyles Bros. Drilling Co., 2960 W. 7th St., Denver	Exploration	Drilling
Forest Queen Group	Irvin	Forest Queen Mines, Inc., Box 396, Crested Butte	Silver	Mine
Gold Links	Gold Creek	Kraft & Associates, 635 So. Hawthorne Ave., Boulder	Gold, Silver	Mine
Gunnison Mill	Gunnison	Gunnison Mining Co., Box 539, Gunnison	Uranium	Mill
High Boy Mine & Pieplant Mill	Pieplant Gulch	Keith Andrews, Box 87, Nucla	Gold	Mine & Mill
Hot Rock	Tincup	Hugh Corrigan, Tincup	Silver, Lead	Mine
Keystone	Crested Butte	American Smelting & Refining Co., Crested Butte	Copper, Lead, Zinc	Mine
Mountain Fern	Eyre Creek	Clair Chase, Ben Flick, Bill Wright, Ohio City	Silver, Lead	Mine
Paonia Dam	Muddy Creek	Bud King Construction Co., Missoula, Montana		Dam
Paradise Mining Corp.	Paradise Pass	Paradise Mining Corp., c/o Frank Dekan, Crested Butte	Silver, Lead, Zinc	Mine
Spring Creek Dam	Spring Creek	Qurico & Kane, Box 211, Alamosa	Gold	Dam
Stahl, R. D.	Illinois Creek	R. D. Stahl, Almont	Gold	Placer
Titan	Powderhorn	H. O. Aaberg, Powderhorn	Vermiculite	Mine
X-10-U-8	Tincup	John Lamberton, Box 567, Gunnison	Silver	Mine

## HINSDALE COUNTY

Bess	Nellie Creek	Dale Dunkle, 1260 Glenwood, Grand Junction	Uranium	Mine
Bluebird	Henson Creek	Heracoda Mining Co., c/o Garland Walker, Ft. Worth, Texas	Silver, Lead	Mine
Frank Hough	Henson Creek	Joe R. Brown, Box 173, Montrose	Silver, Copper	Mine
Golden Wonder	Gold Hill	Nome Mines, c/o Ruff Dumm, Ouray	Gold, Silver	Mine
Gold Quartz	Lake City	Mid-Continent Uranium Corp., Uranium Center Bldg., Grand Junction	Silver, Copper	Mine
Mable	Lake San Cristobal	Hugh McKee & George Cummings, c/o Cummings Gas Co., Montrose	Gold, Silver	Mine
Pelican Mill	Henson Creek	Nome Mines, Inc., c/o Ruff Dumm, Box 432, Lake City	Gold, Silver	Mill

## JEFFERSON COUNTY

Aggregates, Inc.	Golden	Aggregates, Inc., 2120 So. Ash St., Denver 22	Aggregate	Plant
Ascension	Golden	Yellow Queen Uranium Co., 2027 E. Virginia, Denver 9	Uranium	Mine
Beryl Ores Co.	Arvada	M. D. Lyons, W. 100 Ave. & Alkire St., Arvada	Beryl, Beryllium Salts	Mill
Black Silica	Golden	Denver Fire Clay Co., 3303 Blake St., Denver	Clay	Mine
Caldwell	Plainview	Denver Brick & Pipe Co., 4501 Fox St., Denver	Clay	Mine

JEFFERSON COUNTY—Continued

Name of Property Centennial Cone	Location Centennial Cone Peak	Operator's Name and Address	Product	Kind of Property
Church	Rocky Flats	R. V. McGuire, 75 Hazel Court, Denver 19	Beryllium	Mine
Cooper	Foxton	Wesley D. Conda, Box 110, Route 1, Boulder	Clay	Mine
Foot Hills	Idledale	Earl M. Cooper, 1232 So. Eaton Court, Denver 26	Quartz	Quarry
Green Mountain	Golden	Magdalena Mining & Milling Co., Idledale	Uranium	Mine
Harvey	Rocky Flats	George W. Farfet Estate, Inc., Box 226, Golden	Clay	Mine
Kilgroe & Atchison	Golden	John L. Harvey, 1609 Pine St., Denver 12	Clay	Mine
Lakewood Buff Clay Pit	Golden	Kilgroe-Atchison Construction & Paving Co., Box 15385, Lakewood	Gravel	Plant
Lakewood Red Clay Pit	Golden	Lakewood Brick & Tile Co., 1325 Jay St., Lakewood	Clay	Mine
Larlat	Waterton	Lakewood Brick & Tile Co., 1325 Jay St., Lakewood	Clay	Mine
Last Hoilar	Guy Gulch	Robinson, Brick & Tile Co., 500 So. Santa Fe Drive, Denver 23	Clay	Mine
Lee	Golden	Carlquist, Box 136, Lako George	Quartz	Quarry
Leyden Nos. 1, 2, 3, 4	Golden	Lee Sand & Gravel Co., Box 128, Wheat Ridge	Gold, Sand, Gravel	Plant
Leyden White Silica	Golden	Quad Construction, Inc., 5770 McIntyre St., Route 1, Box 568A, Golden	Gas Storage	Mine
Lindsey Buff Clay	Golden	G. C. Bennetts & Son, Route 1, Box 759, Golden	Clay, Silica	Mine
Lindsey Red Clay	Golden	Lakewood Brick & Tile Co., 1325 Jay St., Lakewood	Clay	Mine
McIntyre Plant	Golden	Lakewood Brick & Tile Co., 1325 Jay St., Lakewood	Clay	Mine
Morrison	Morrison	Asphalt Paving Co., 9655 West Colfax, Lakewood	Gravel	Plant
Morrison West Side No. 1	Morrison	Earl M. Cooper, 1232 So. Eaton Court, Denver 26	Quartz	Plant
Mt. Carbon	Morrison	Denver Gravel & Concrete Co., Box 192, Morrison	Stone	Quarry
Nare Prospect	Golden Gate Canyon	Duane Bruno, 929 Ellsworth Ave., Denver	Clay	Mine
North Chieftain	Denver	L. D. Ohman, 800 Bonnie Brae, Denver 9	Uranium	Mine
North Golden	Golden	Robinson Brick & Tile Co., 300 South Santa Fe, Denver	Clay	Mine
North Golden Road Pit	Golden	Denver Fire Clay Co., 2301 Blake St., Denver	Clay	Mine
Oregon No. 3	Buffalo Creek	Duane Bruno, 929 E. Ellsworth, Denver	Clay	Mine
Pattidge	Golden	Forrest G. Hamilton, 1415 No. 6th St., Golden	Quartz	Quarry
Plant at Pit No. 11	Ward Road	Chalite Aggregate Co., 4250 McIntyre, Golden	Shale	Quarry
		Brannan Sand & Gravel Co., 4800 Brighton Blvd., Denver 16	Sand, Gravel	Plant

Red Clay	Plainview	Colorado Brick Co., Longmont	Clay	Mine
Rio Grande Gravel Co.	Golden	Rio Grande Gravel Co., 123 Santa Fe, Denver	Sand, Gravel	Plant
Rockwell	Golden	George W. Parfet Estate, Inc., Box 226, Golden	Clay	Mine
Rocky Flats Quarry	Boulder	The Idealite Co., 806 Boston Bldg., Denver	Shale	Quarry & Plant
Rubey	Golden	H. M. Rubey Clay Co., Box 226, Golden	Clay	Mine
Schwartzwalder	Ralsion Creek	Denver-Golden Corp., Box 109, Golden	Uranium	Mine
South Chieftain	Golden	Robinson Brick & Tile Co., 500 So. Santa Fe, Denver	Clay	Mine
South Golden Open Pit	Golden	Denver Fire Clay Co., 3303 Blake St., Denver	Clay	Mine
State	Rocky Flats	Colorado Brick Co., Longmont	Clay	Mine
Strainland No. 1	Golden	Denver Brick & Pipe Co., 4501 Fox St., Denver	Clay	Mine
Table Mountain Inc.	N. Table Mountain	Table Mountain, Inc., 2680 Youngfield, Denver 15	Gold, Sand, Gravel	Plant
Two Brothers	Golden	Denver Fire Clay Co., 3303 Blake St., Denver	Clay	Mine
White Cloud No. 1	Raleigh Peak	Carl Quist, Box 136, Lake George	Quartz	Quarry
West	Golden	G. C. Bennetts & Son, Box 759, Route 1, Golden	Stone	Quarry

## LAKE COUNTY

Ceresco Tunnel	Climax	Boyles Brothers Drilling Co., Box 805, Climax	Molybdenum	Drilling
Climax Mill	Climax	American Metals Climax. Inc., Climax	Molybdenum	Mill
Climax Mine	Climax	American Metals Climax. Inc., Climax	Molybdenum	Mine
Continental Chief	Iowa Gulch	Robert R. Benson, 130 East 14, Leadville	Gold, Lead, Zinc	Mine
Eureka Saturday Night	Independence Pass	Lowell A. Kaess, Twin Lakes	Gold, Silver, Lead	Mine
Giant Lode Mine	California Mining Dist.	Rollo W. Shaffer, Jr., Box 622, Climax	Lead, Zinc, Magnesium	Mine
Mary Jane	Twin Lakes	Jesse J. Campbell, Twin Lakes	Gold, Silver, Lead	Mine
Park's Operation	Climax	J. A. Park Construction Co., Box 426, Climax	Construction	Mill
Rattling Jack	Johnnie Hill	Rattling Jack Partnership, 512½ E. 7th St., Leadville	Gold, Lead	Mine
C. Ryan & Son	Climax	C. Ryan & Son, Box 378, Climax	Gravel	Plant
Bessie G.	La Plata Canyon	L. M. Mining Contractors, Hesperus	Gold, Silver	Mine
Comstock	La Plata Canyon	Montonati Bros., 639 Second Ave, Durango	Gold, Silver	Mine
Copper Age	Bedrock Gulch	Copper Age Uranium Co., Box 103, Marvel	Gold, Copper	Mine
Farmer Boy	Ohyler Ridge	O. H. Hawkins, 1857 North 30th St., Kansas City, Kansas	Gold, Silver	Mine

## LA PLATA COUNTY

**LA PLATA COUNTY—Continued**

Name of Property	Location	Operator's Name and Address	Product	Kind of Property
Lemon Dam	Florida Creek	A. S. Horner Construction Co., Inc., Box 1587, Durango		Dam
Lime Pit	English Ranch	Vanadium Corporation of America, Durango	Limestone	Quarry
Recapture, Crown Diamond, Mystery	Junction Creek	Archie Bodo, 715 Third Ave., Du- rango	Gold, Silver	Mine
Sarah G	Hermosa	Russell Dessieux, Durango	Silver	Mine
V.C.A. Mill	Durango	Vanadium Corporation of America, Durango	Uranium, Vanadium	Mill
Western Bell, Jenny Lind	Wall Gulch	Steward Brothers, Box 1303, Du- rango	Gold, Silver, Lead	Mine
Wildcat	La Plata Canyon	Ralph E. Jason, 5252 Edinger, Hunt- ington Beach, California	Gold, Silver, Copper, Lead, Zinc	Mine

**LARIMER COUNTY**

Alden	Carter Lake	Harvey M. Alden, 845 Third St., Berthoud	Stone	Quarry
Big Boulder	Crystal Mountain	W. R. Allphin, Jamestown	Beryl	Mine
Boettcher Plant & Quarry	La Porte	Ideal Cement Co., Box 579, Ft. Col- lins	Limestone	Plant & Quarry
Buckhorn	Masonville	Buckhorn Quarries, Estes Park Route, Loveland	Stone	Quarry
Chance	Masonville	Weaver Stone Quarries, 759 So. York St., Denver	Stone	Quarry
Colorado Stone Co. Berthoud Quarries	Carter Lake	Colorado Stone Co., 1635 N. Main St., Longmont	Stone	Quarry
Colorado Stone Co. Loveland Quarries	Carter Lake	Colorado Stone Co., 1635 N. Main St., Longmont	Stone	Quarry
Colorado Stone Co. Rose Stone Quarries	Beach Hill	Colorado Stone Co., 1635 N. Main St., Longmont	Stone	Quarry
Corral Pole Nos. 1, 2	Crystal Mountain	Longmont	Stone	Quarry
Fudge	Beach Hill	Arthur Johnson, 625 Mathews, Ft. Collins	Beryl, Mica	Mine
Giant Crystal	Drake	Clyde Fudge, Box 305, Lyons	Stone	Quarry
Goodwin	Payne Ranch	Tartan Co., 428 Rex St., Louisville	Beryl, Mica	Mine
Holly	Owl Canyon	Ernest W. Munroe, Route 2, Box 273, Ft. Collins	Gypsum	Quarry
Jolex	Columbine	Frank H. Norberg Co., 703 Guaranty Bank Bldg., Denver	Limestone	Quarry
Kistler	Carter Lake	Jolex Mica Co., Box 575, Ft. Collins	Mica	Plant
Langston	Columbine	Jacobson Lyons Stone Co., Inc., Box 6, Lyons	Stone	Quarry
Laender	Masonville	Jolex Mica Co., Inc., Box 575, Ft. Collins	Mica	Mine
Lodge Pole	Crystal Mountain	Buckhorn Quarries, Estes Park Route, Loveland	Stone	Quarry
Loveland	Loveland	Young & Johnson, 395 Grape St., Denver 20	Beryl, Mica	Mine
		U. S. Gypsum Co., Estes Park Route, Loveland	Gypsum	Quarry

Masonville	Masonville	Gus Feher, Estes Park Route, Loveland	Stone	Quarry
Mincan Loveland Plant	Loveland	Mineral Concentrates & Chemical Bldg., Denver	Beryllium Oxide	Plant
Mona Nos. 5, 9	Buckhorn Canyon	Carl Brungardt, 1012 E. Fourth St., Loveland	Beryl	Mine
Munroe	Payne Ranch	Ernest W. Munroe, Route 2, Box 273, Ft. Collins	Gypsum	Plant
Ohline	Beach Hill	Brook Fry, Estes Park Route, Loveland	Stone	Quarry
Rex	Owl Canyon	Frank H. Norberg Co., 703 Guaranty Trust Bldg., Denver	Limestone	Quarry
Rita Beryl-Feldspar Beryl & Clipper Group	Crystal Mountain	Wayne Anderson, 206 Garfield St., Ft. Collins	Beryl	Mine
Roberts Lime	Ft. Collins	Roberts Lime, Inc., Box 238, La Porte	Limestone	Plant & Quarry
Scott	Beach Hill	L. L. Scott, 6001 East Iowa, Denver 22	Stone	Quarry
Sillica Beryl	Crystal Mountain	Young & Johnson, 395 Grape St., Denver 20	Beryl, Mica	Mine
Somac Nos. 1, 2	Carter Lake	Somac Stone Quarries, 1729 12th Ave., Greeley	Stone	Quarry
Spears	Beach Hill	B. H. Spear & Son, Box 283, Lyons	Stone	Quarry
Sprague A, B, C	Carter Lake	Berthoud Pink Stone Co., Route 2, Box 99A, Berthoud	Stone	Quarry
Sterling Sand & Gravel	Taft Hill Road	Sterling Sand & Gravel Co., Box 759, Ft. Collins	Sand, Gravel	Plant
Stewart	Beach Hill	Stewart Ledgse Stone Co., Hygiene	Stone	Quarry
Thompson	Masonville	Chuck Tribble & Son, No. Broadway, Star Route, Boulder	Stone	Quarry
Weaver	Masonville	Weaver Stone Quarries, 759 So. York, Denver	Stone	Quarry
Wild South	Masonville	Wild's Stone Quarries, Estes Park Route, Loveland	Stone	Quarry
Willson	Lyons	Bill Wilson Stone Co., 932 Arapahoe St., Boulder	Stone	Quarry
Yo-Jo No. 15	Crystal Mountain	Young & Johnson, 395 Grape St., Denver 20	Beryl, Mica	Mine
<b>LAS ANIMAS COUNTY</b>				
Pit Nos. 1, 3	Trinidad	Empire Clay Products, Inc., Box 156, Trinidad	Clay	Mine
Santa Fe	Starkville	Scott Mining Co., Starkville	Clay	Mine
<b>MESA COUNTY</b>				
Arrowhead No. 5	Gateway	Ira Adamson, 226-29 Road, Grand Junction	Uranium, Vanadium	Mine
Arrowhead No. 12	Calamity Mesa	Ralph Sterry, 415 30 $\frac{1}{2}$ Road, Grand Junction	Uranium, Vanadium	Mine
Arrowhead No. 23	Calamity Mesa	Howard Sterry, 2483 F. Road, Grand Junction	Uranium, Vanadium	Mine
Atomic Energy Commission	Grand Junction	Atomic Energy Commission, Grand Junction	Uranium, Vanadium	Mill
Belmont Nos. 1, 2, 3	Calamity Mesa	Norman Wellman, 2927 Craig, Grand Junction	Uranium, Vanadium	Mine
Black Mama	Tenderfoot Mesa	Harold Price, Nucia	Uranium, Vanadium	Mine

MESA COUNTY—Continued

Name of Property	Location	Operator's Name and Address	Product	Kind of Property
Black Streak	Blue Mesa	Charles Davis, Box 494, Urayan	Uranium, Vanadium	Mine
Blue Ribbon No. 4	Calamity Mesa	Ralph Storry, 415 30 $\frac{1}{4}$ Road, Grand Junction	Uranium, Vanadium	Mine
Bonanza No. 2	Beaver Mesa	Climax Uranium Co., Box 989, Grand Junction	Uranium, Vanadium	Mine
Bonanza No. 3	Beaver Mesa	Lyle F. Campbell, Grand Junction	Uranium, Vanadium	Mine
Century Tunnel	Beaver Mesa	Argo Mining Co., Box 1698, Grand Junction	Uranium, Vanadium	Mine
Cherokee	Beaver Mesa	Beaver Mesa Uranium Co., Box 567, Grand Junction	Uranium, Vanadium	Mine
Climax Mill	Grand Junction	Climax Uranium Co., South 12th St., Grand Junction	Uranium, Vanadium	Mill
Crescent	Outlaw Mesa	W. Gripe & Bailey, Box 186, Naturita	Uranium, Vanadium	Mine
Depression No. 3	Flat Top Mesa	Eugene Bonner, Box 855, Grand Junction	Uranium, Vanadium	Mine
Depression No. 5	Flat Top Mesa	Jim Gibson & W. Irwin, Box 372, Fallsade	Uranium, Vanadium	Mine
Depression No. 6	Flat Top Mesa	Jack Ritter, 122 So. 5th St., Grand Junction	Uranium, Vanadium	Mine
Economy	Outlaw Mesa	Carl Pearson, Naturita	Uranium, Vanadium	Mine
Elizabeth Nos. 10, 17	Blue Mesa	London & London, Box 217, Grand Junction	Uranium, Vanadium	Mine
Hope Group	Blue Mesa	Cole & Bond, Box 397, Nucla	Uranium, Vanadium	Mine
Hubbard Drift & Packrat	Beaver Mesa	Joe Potts, 330 West Mesa Ave., Grand Junction	Uranium, Vanadium	Mine
Jody Group Nos. 10, 11	Blue Mesa	Cole & Bond, Box 397, Nucla	Uranium, Vanadium	Mine
Joe	Tenderfoot Mesa	Clifton Carter, Box 741, Paonia	Uranium, Vanadium	Mine
July	Outlaw Mesa	Howard Arbogast, 234 31.3 Road, Grand Junction	Uranium, Vanadium	Mine
		Eugene Bonner, Box 855, Grand Junction	Uranium, Vanadium	Mine
Junction Brick & Supply	Grand Junction	Junction Brick & Supply Co., 2400 N. 17th St., Grand Junction	Clay	Mine
Karns Incline	Beaver Mesa	Ed Knizeley, 2763 $\frac{1}{2}$ B Road, Grand Junction	Uranium, Vanadium	Mine
La Sal	Beaver Mesa	Gen Pac Mining Co., Box 861, Grand Junction	Uranium, Vanadium	Mine
Liberty Bell	Tenderfoot Mesa	Cliff Carter, Paonia	Uranium, Vanadium	Mine
Little Johnny	Tenderfoot Mesa	Dale Dunkle, 2728 F Road, Grand Junction	Uranium, Vanadium	Mine
Lost Dutchman No. 1	Beaver Mesa	Lyle Campbell, Grand Junction	Uranium, Vanadium	Mine
Lumsden	Beaver Mesa	Ralph D. Hickman, 3136 E Road, Route 1, Grand Junction	Uranium, Vanadium	Mine
Mineral Channel No. 3	Outlaw Mesa	Ralph Foster & Sons, 1217 Colo. Ave., Grand Junction, & Howard Arbogast, 234 31.3 Road, Grand Junction	Uranium, Vanadium	Mine
Mineral Channel No. 10	Outlaw Mesa	Lee Hetzel, Box 455, Clifton, & George Liverman, Box 451, Grand Junction	Uranium, Vanadium	Mine
Mesa No. 5	Outlaw Mesa	Goerge Liverman, Box 451, Grand Junction	Uranium, Vanadium	Mine
New Verde	Calamity Mesa	Ralph Foster & Sons, 1217 Colo. Ave., Grand Junction	Uranium, Vanadium	Mine
October Adit	Gateway	Star Mining Co., Box 291, Grand Junction	Uranium, Vanadium	Mine
Okan	Tenderfoot Mesa	O. E. Jonson, Box 394, Dove Creek	Uranium, Vanadium	Mine
		Dale Dunkle, 1260 Glenwood, Grand Junction	Uranium, Vanadium	Mine

Protector	Tenderfoot Mesa	Phil Bunker, Box 227, Nucla	Uranium, Vanadium	Mine
Rainbow	Gateway	Howard Arbogast, 294 31.3 Road, Grand Junction	Uranium, Vanadium	Mine
Rajah No. 30	Beaver Mesa	Model Mining Co., Box 1105, Grand Junction	Uranium, Vanadium	Mine
Ronnie No. 1	Outlaw Mesa	George Liverman, Box 431, Grand Junction	Uranium, Vanadium	Mine
Sprague & Henwood	Four Corners	Sprague & Henwood, Inc., Box 2556, Salt Lake City, Utah	Uranium, Vanadium	Drilling
Sun	Outlaw Mesa	Ralph Foster & Sons, 2950 A½ Road, Grand Junction	Uranium, Vanadium	Mine
Thornton Tunnel	Beaver Mesa	Charles V. Woodward & Co., 2909 Highway No. 50, Grand Junction	Uranium, Vanadium	Mine
Whitewater Sand & Gravel	Whitewater	Whitewater Sand & Gravel Co., 940 So. 10th St., Grand Junction	Sand, Gravel	Plant
<b>MINERAL COUNTY</b>				
Amethyst & Commodore	West Willow Creek	Emperius Mining Co., Creede	Silver, Lead, Zinc	Mine
Bull Dog Mountain	Creede	MacPherson Drilling Co., Box 242, Creede		Drilling
Corsair	Sunnyside	H. & B. Construction Co., No. 11 Dinner St., Monte Vista	Silver, Lead, Zinc	Mine
Creede Mill	Creede	Emperius Mining Co., Creede	Gold, Silver, Copper, Lead, Zinc	Mill
Monon	Creede	Monon Leasing Co., Creede	Gold, Silver, Lead, Zinc	Mine
Phoenix & Solomon	Creede	Outlet Mining Co., Inc., Creede	Silver, Lead, Zinc	Mine
<b>MOFFAT COUNTY</b>				
Adits Nos. 12, 13, 14	Maybell	Grover Williams, Maybell	Uranium	Mine
Dismant Adit	Maybell	Carl I. Dismant, 3037 Birch St., Denver	Uranium	Mine
Maybell Mill	Maybell	Trace Elements Corp., Box 1135, Grand Junction	Uranium	Mill
Mitchell Drilling	Maybell	Mitchell Drilling, 516 Lilac Lane, Grand Junction	Uranium	Drilling
Trace Elements Plant & Pits	Maybell	Trace Elements Corp., Box 1135, Grand Junction	Uranium	Plant & Mine
<b>MONTEZUMA COUNTY</b>				
Hazel-Lu	Ross Mountain	Albert & John Lyen, 2400 Main Ave., Durango	Gold, Silver	Mine
Red Arrow	Mancos	First National Oil & Minerals Co., Box 205, Mancos	Gold, Silver	Mine
Sexton Bros	Highway 160	Sexton Bros. Drilling Co., Box 506, Cortez		Drilling
<b>MONTROSE COUNTY</b>				
Adak	Dolores Rim	Bill Lathrop, Box 635, Nucla	Uranium, Vanadium	Mine
American Eagle	Lower Gyp Valley	Clair Albano, Box 522, Nucla	Uranium, Vanadium	Mine
Anna Can	Monogram Mesa	Cole & Bond, Nucla	Uranium, Vanadium	Mine
Bztec & Black Tom	Monogram Mesa	Cecil Bunker, Nucla	Uranium, Vanadium	Mine
Baby Fawn	Bull Canyon	Woodrow Gripe, Box 225, Naturita	Uranium, Vanadium	Mine
Baby Ruth	Bull Canyon	Joe Nelson & Barney Blackmore, Nucla	Uranium, Vanadium	Mine
Bagger Group	Long Park	Ed Wolyerton & Fred Morlang, Route 2, Box 115, Olathe	Uranium, Vanadium	Mine

**MONTROSE COUNTY—Continued**

Kind of Property

Product

Operator's Name and Address

Location

Name of Property

Name of Property	Location	Operator's Name and Address	Product	Kind of Property
Better Be	Club Mesa	Dan E. Kelly, Route 4, Grand Junction	Uranium, Vanadium	Mine
Betty Jean No. 2	Martin Mesa	American Leasing Co., Norwood	Uranium, Vanadium	Mine
Big Chief	Rock Creek	Woodrow Gripe, Box 225, Naturita	Uranium, Vanadium	Mine
Big Dick	Dolores Rim	Blake & Power, Box 91, Uravan	Uranium, Vanadium	Mine
Big Mitt	Dolores Rim	Cal Sanders, Box 386, Nucla	Uranium, Vanadium	Mine
Bill Batey	Monogram Mesa	Levi Barnes, Box 156, Nucla	Uranium, Vanadium	Mine
Bitter Creek	Long Park	Loren Jack Jewell, Jerry Mayfield, Morrison & Morrison, Baldwin Mining Co., Naturita	Uranium, Vanadium	Mine
Blackburn	Monogram Mesa	Lowell Staats, Box 350, Nucla	Uranium, Vanadium	Mine
Black Diana	Long Park	Howard Rowe, Box 94, Uravan	Uranium, Vanadium	Mine
Black Rock	Dolores Rim	Githon Reid, Box 273, Naturita	Uranium, Vanadium	Mine
Blackfoot	Eagle Basin	Joe Baldwin & Leo Fagun, Nucla	Uranium, Vanadium	Mine
Bliss	Long Park	Lark Washburn, Box 750, Uravan	Uranium, Vanadium	Mine
Blue Bell	Long Park	Blake & Power, Box 91, Uravan	Uranium, Vanadium	Mine
Bob Nos. 6, 7	Long Canyon	Oral Clark, Box 728, Nucla	Uranium, Vanadium	Mine
Bob Cat	Long Park	Neilson & Klingensmith, Box 337, Uravan	Uranium, Vanadium	Mine
Bob Tail	Monogram Bench	Cole & Bond, Nucla	Uranium, Vanadium	Mine
Bogus	Mesa Creek	Union Carbide Nuclear Co., Uravan	Uranium, Vanadium	Mine
Bowen No. 1	Atkinson Mesa	Golden Cycle Corp., Box 86, Colorado Springs	Uranium, Vanadium	Mine
Broomstick	Bull Canyon	Barney D. Blackmore, Naturita	Uranium, Vanadium	Mine
Buckeye	Long Park	O. E. Smart, Box 296, Naturita	Uranium, Vanadium	Mine
Buckhorn	Carpenter Ridge	O. E. Smart, Box 296, Naturita	Uranium, Vanadium	Mine
Buckshot	Club Mesa	Marlon Trone, Box 274, Uravan	Uranium, Vanadium	Mine
Butterfly	La Sal Creek	Ernest Berry & O. E. Gures, Box 446, Nucla	Uranium, Vanadium	Mine
C. F. C. & Moonbeam	Middle Long Park	Lark Washburn, Box 750, Uravan	Uranium, Vanadium	Mine
Calvert No. 3	Bull Canyon	Cecil W. Bunker, Box 67, Nucla	Uranium, Vanadium	Mine
Canopus Group Nos. 2, 3	Monogram Bench	Lark Washburn, Box 750, Uravan	Uranium, Vanadium	Mine
Capella	Monogram Bench	Union Carbide Nuclear Co., Uravan	Uranium, Vanadium	Mine
Cashin	La Sal Creek	W. I. Gray, 743 East Costilla, Colorado Springs	Uranium, Vanadium	Mine
Chiffdweller	Dolores Rim	Woodrow Gripe, Box 225, Naturita	Uranium, Vanadium	Mine
Club Group	Club Mesa	Lark Washburn, Box 750, Uravan	Uranium, Vanadium	Mine
Club Sandwich	Dolores Rim	Woodrow Gripe, Box 225, Naturita	Uranium, Vanadium	Mine
Colorado	Long Park	Calvin Sanders, Nucla	Uranium, Vanadium	Mine
Commodore	Club Mesa	Lark Washburn, Box 750, Uravan	Uranium, Vanadium	Mine
Corporation No. 1		H. Bennett, W. A. Cornett & C. N. Athey, Naturita	Uranium, Vanadium	Mine
Crab Orchard	Bull Canyon	Githon Reid, Box 273, Naturita	Uranium, Vanadium	Mine
Cripple Creek	Long Park	O'Bryant & Powell, Box 124, Uravan	Uranium, Vanadium	Mine
Cripple Creek No. 2	Long Park	Nickerson Mining Co., 515 So. Junction Ave., Grand Junction	Uranium, Vanadium	Mine
Dad	Carpenter Flats	Woodrow Gripe & Jerry Mayfield, Box 222, Naturita	Uranium, Vanadium	Mine
Dan Patch No. 1	Long Park	Russell Mayfield, Box 565, Nucla	Uranium, Vanadium	Mine
Deer Shaft	Monogram Mesa	W. B. Eckman, Box 127, Nucla	Uranium, Vanadium	Mine
Diana	Bachelor Draw	Joe R. Nelson, Box 512, Nucla	Uranium, Vanadium	Mine
Doagey No. 2	Monogram Mesa	C. N. Athey, Box 156, Naturita	Uranium, Vanadium	Mine
Dolores	Dolores Bench	Blake & Power, Box 91, Uravan	Uranium, Vanadium	Mine
Donald L.	Long Park	Homeer Woods, Uravan	Uranium, Vanadium	Mine
Donna K	Long Park	Bond & Rainwater, Nucla	Uranium, Vanadium	Mine
Dorothy	Long Park	Art Thompson, Nucla	Uranium, Vanadium	Mine
		Lark Washburn, Box 750, Uravan	Uranium, Vanadium	Mine

Dorothy Jean No. 2 & Mary Ann No. 4	Monogram Bench	T. S. Wolverton, Uravan	Uranium, Vanadium	Mine
Duggan Adit	Monogram Mesa	Climax Uranium Co., Box 1901, Grand Junction	Uranium, Vanadium	Mine
Dusty	Long Park	Art Thompson, Box 716, Nucla	Uranium, Vanadium	Mine
Dusty No. 2	Middle Long Park	Harvey Holt, E. J. Alongo, & Jerry Mayfield, Norwood	Uranium, Vanadium	Mine
Dynamite	Bitter Creek	Githon Reid, Smith & Thompson, Naturita	Uranium, Vanadium	Mine
Easy	Bull Canyon	Jack Darland	Uranium, Vanadium	Mine
Echo No. 3	Dolores Rim	Clifford Goforth, Uravan	Uranium, Vanadium	Mine
Equinox & Oregon	Eula Belle	Lathrop & McCullah, Box 175, Nucla	Uranium, Vanadium	Mine
Eureka	Carpenter Ridge	Union Carbide Nuclear Co., Uravan	Uranium, Vanadium	Mine
Eva	Yellow Bird Bench	Ben Brito, Southside Store, Delta	Uranium, Vanadium	Mine
Fairy King	Eagle Basin	O. E. Guress, Box 446, Nucla	Uranium, Vanadium	Mine
Fawn Springs No. 5	Bull Canyon	Baldwin & Spalding	Uranium, Vanadium	Mine
Fawn Springs Nos. 9, 11, 12, 36	Bull Canyon	Novak & McBride, Grand Junction	Uranium, Vanadium	Mine
Firecracker	Long Park	Joe C. Cole, Naturita	Uranium, Vanadium	Mine
First National Bank	Long Park	Orval Clark, Box 728, Nucla	Uranium, Vanadium	Mine
Fox	Dolores Rim	Harvey Holt, Box 323, Norwood	Uranium, Vanadium	Mine
Fraction	Dolores Rim	Address Bros., Box 333, Norwood	Uranium, Vanadium	Mine
Friday	Long Park	Blake & Power, Box 91, Uravan	Uranium, Vanadium	Mine
Gilbert	Bull Canyon	Barnes Bros. Mining Co., Box 156, Nucla	Uranium, Vanadium	Mine
Golden Eagle	Eagle Basin	Delbert Burbridge, Box 187, Nucla	Uranium, Vanadium	Mine
Great Western	Long Park	Blake & Power, Box 91, Uravan	Uranium, Vanadium	Mine
Groundhog	Middle Long Park	O'Bryant & Powell, Box 124, Uravan	Uranium, Vanadium	Mine
Guadalucaan	Long Park	Ben Zimmerman, 2940 1/2 F Road, Grand Junction	Uranium, Vanadium	Mine
Gyp	Long Park	Jack Arnold, Box 298, Naturita	Uranium, Vanadium	Mine
Happy	Long Park	Herring & Brewer, Box 194, Nucla	Uranium, Vanadium	Mine
Henry Clay	Middle Long Park	De Var Shumway, 215 Landsdown Road, Grand Junction	Uranium, Vanadium	Mine
Hidden Basin	Long Park	La Verne Ray, Box 256, Uravan	Uranium, Vanadium	Mine
Himes Drilling	Four Corners	Sears & Sears, Redvale	Uranium, Vanadium	Mine
Hobo	Monogram Mesa	O'Bryant & Powell, Uravan	Uranium, Vanadium	Mine
Independence	Lion Creek	Roy Franklin, Uravan	Uranium, Vanadium	Mine
Joe	Dolores Rim	Harry Bennett & W. A. Cornett, Placerville	Uranium, Vanadium	Mine
Joe Dandy	Monogram Mesa	C. N. Athey, Box 156, Naturita	Uranium, Vanadium	Mine
Joe Jr.	Club Mesa	Bud Himes Drilling Co., Box 727, Nucla	Uranium, Vanadium	Mine
Johnson & Youvan	Colorado Plateau	Smith & Reed	Uranium, Vanadium	Drilling
Just Right	Club Mesa	Lowell Staats, Nucla	Uranium, Vanadium	Mine
Lane & Franklin	Colorado Plateau	De Var Shumway & John Dade, 215 Landsdown Ave., Grand Junction	Uranium, Vanadium	Mine
Lark No. 8	Bull Canyon	O. C. La Rue, Uravan	Uranium, Vanadium	Mine
		Douglas Cleghorn, Box 502, Uravan	Uranium, Vanadium	Mine
		Enis Cole & Jack Bond, Nucla	Uranium, Vanadium	Mine
		Lark Washburn, Box 750, Uravan	Uranium, Vanadium	Mine
		Johnson & Youvan, Inc., Box O, Naturita	Uranium, Vanadium	Mine
		Dan B. Kelly, Route 4, Grand Junction	Uranium, Vanadium	Drilling
		Langston & Franklin, Drilling Co., Box 3098, Houston, Texas	Uranium, Vanadium	Mine
		James F. Galyean, Nucla	Uranium, Vanadium	Drilling

**MONTROSE COUNTY—Continued**

Name of Property	Location	Operator's Name and Address	Product	Kind of Property
Little Alice	Wild Steer Canyon	Jerry Mayfield, Box 222, Naturita	Uranium	Mine
Little Buckhorn	Carpenter Flats	Lathrop & McCullah, Box 625, Nucla	Uranium, Vanadium	Mine
Little Dink & Fox Group	Dolores Bench	Delbert Burbridge, Box 187, Nucla	Uranium, Vanadium	Mine
Little Gyp Chaims	Little Gyp Valley	Gilthon Reid, Box 273, Naturita	Uranium	Mine
Long Park No. 1	Long Park	Walter Burnett, Box 386, Nucla	Uranium, Vanadium	Mine
Long Park No. 2	Long Park	Marlon Trone, Box 376, Uravan	Uranium, Vanadium	Mine
Long Park Nos. 6, 10, 12	Long Park	Calvin Sanders, Box 396, Nucla	Uranium, Vanadium	Mine
Long Park No. 13	Long Park	Lark Washburn, Box 750, Uravan	Uranium, Vanadium	Mine
Lower Oversight	Monogram Mesa	Lowell Staats, Box 337, Nucla	Uranium, Vanadium	Mine
Lucky Dog	Atkinson Mesa	Calvin Sanders, Box 396, Nucla	Uranium, Vanadium	Mine
MacPherson Drilling	Four Corners Area	MacPherson Drilling Co., Box 447, Montrose	Uranium, Vanadium	Mine
Maggie C	Middle Long Park	Homer Woods, Uravan	Uranium, Vanadium	Drilling
Marjorie Ann	Lion Creek	Morrison & Morrison, Nucla	Uranium, Vanadium	Mine
Maudie	La Sal Creek	Dade & Shumway, 215 Landsdown, Grand Junction	Uranium, Vanadium	Mine
Media	Long Park	O. E. Gueses, Box 446, Nucla	Uranium, Vanadium	Mine
Meek's Water Tunnel	Crawford	Jerry Mayfield, Box 596, Nucla	Uranium, Vanadium	Mine
Merry Widow	Eagle Basin	Carlton & Gordon Meek, Mather	Uranium, Vanadium	Water Tunnel
Mesa & Old Granddad	Bull Canyon	Paul Smith & Oran Thompson, Box 291, Nucla	Uranium, Vanadium	Mine
Mill No. 1	Club Mesa	Oval Care, Box 1, Placerville	Uranium, Vanadium	Mine
Mill Nos. 2, 4	Club Mesa	Lark Washburn, Box 750, Uravan	Uranium, Vanadium	Mine
Mineral Joe Nos. 1, 11	Monogram Mesa	Javelinck & Borgesen, Montrose	Uranium, Vanadium	Mine
Mineral Joe No. 2	Monogram Mesa	Climax Uranium Co., Box 1901, Grand Junction	Uranium, Vanadium	Mine
Mineral Joe No. 4	Monogram Mesa	Fred Richards & Son, Box 384, Nucla	Uranium, Vanadium	Mine
Mineral Joe No. 10	Monogram Mesa	Climax Uranium Co., Box 1901, Grand Junction	Uranium, Vanadium	Mine
Mineral Lease No. 23	Long Park	E. Jewels, Inc., Box 1481, Grand Junction	Uranium, Vanadium	Mine
Mineral Park	Middle Long Park	Floyd Smith, Box 343, Naturita	Uranium, Vanadium	Mine
Modene	Sylvia's Pocket	Morrison & Draves, Box 195, Nucla	Uranium, Vanadium	Mine
Monogram	Monogram Bench	Floyd Smith, Box 236, Grand Junction	Uranium, Vanadium	Mine
Monogram	Sauce Bash	Tim McCluer, Dove Creek	Uranium, Vanadium	Mine
Moonteam	Long Park	Cole & Bond, Nucla	Uranium, Vanadium	Mine
Mucker	Long Park	Lee Moore, Box 892, Uravan	Uranium, Vanadium	Mine
Mustard	Dolores Bench	Ben Urralburu, 205 N. Willerup, Montrose	Uranium, Vanadium	Mine
New Firecracker	Long Park	Albert Nickerson, Box 171, Montrose	Uranium, Vanadium	Mine
New Happy	Long Park	Union Carbide Nuclear Co., Uravan	Uranium, Vanadium	Mine
New Long Park No. 13	Long Park	Andrew Brothers, Box 333, Norwood	Uranium, Vanadium	Mine
North Hammer	Monogram Mesa	Robert C. Williams, Box 947, Nucla	Uranium, Vanadium	Mine
North Star	Molores Rim	Lark Washburn, Box 750, Uravan	Uranium, Vanadium	Mine
Nucla	Atkinson Mesa	Union Carbide Nuclear Co., Uravan	Uranium, Vanadium	Mine
Ocean Spray	Club Mesa	Lowell Staats, Box 350, Nucla	Uranium, Vanadium	Mine
Old Salt Lick	Monogram Hill	Jerry Mayfield, Naturita	Uranium, Vanadium	Mine
Opera Box	Dolores Rim	Roy Gripe, Naturita	Uranium, Vanadium	Mine
Opifer	Monogram Mesa	Lark Washburn, Box 750, Uravan	Uranium, Vanadium	Mine
Oversite	Monogram Mesa	C. N. Athey, Box 156, Naturita	Uranium, Vanadium	Mine
		Cecil Bunker, Nucla	Uranium, Vanadium	Mine
		Lark Washburn, Box 750, Uravan	Uranium, Vanadium	Mine

Paradox Nos. 5, 6	Monogram Mesa	Union Carbide Nuclear Co., Uravan	Uranium, Vanadium	Mine
Paradox D	Monogram Mesa	Union Carbide Nuclear Co., Uravan	Uranium, Vanadium	Mine
Patty Nos. 4, 5	Lower Bull Canyon	Walter Rush & Thomas J. Vogelsans, Naturita	Uranium, Vanadium	Mine
Peanut No. 1	Bull Canyon	Gerald Randolph, Box 333, Naturita	Uranium, Vanadium	Mine
Peanut No. 2	Bull Canyon	Adolphus Moore, Naturita	Uranium, Vanadium	Mine
Peanut Nos. 3, 4	Bull Canyon	A. C. Rinderle, 404 Sherman Drive, Grand Junction	Uranium, Vanadium	Mine
Peggy	Saucer Basin	O. D. Arnold & Lee Reed, Naturita	Uranium, Vanadium	Mine
Pegleg No. 2	Long Park	Ray King, Box 353, Naturita	Uranium, Vanadium	Mine
Picket Corral	Bull Canyon	Don Andrews, Box 87, Nucla	Uranium, Vanadium	Mine
Pluto	Monogram Mesa	Cole & Bond, Box 397, Nucla	Uranium, Vanadium	Mine
Production	Long Park	O. Bryant & Powell, Box 124, Uravan	Uranium, Vanadium	Mine
R.A.M.	Club Mesa	Lark Washburn, Box 750, Uravan	Uranium, Vanadium	Mine
Radium Hill Nos. 10, 12	Bull Canyon	James Galyean, Nucla	Uranium, Vanadium	Mine
Radium Hill No. 31	Bull Canyon	P. C. Franks, Box 594, Nucla	Uranium, Vanadium	Mine
Rajah	Rock Creek	Woodrow & Roy Gripe, Naturita	Uranium, Vanadium	Mine
Rattlesnake & San Miguel No. 10	Long Park	Russell Mayfield, Nucla	Uranium, Vanadium	Mine
Raven	Lower Gyp Valley	Clair Albano, Box 522, Nucla	Uranium, Vanadium	Mine
Red Bird	Carpenter Ridge	Herring & Kennedy, Box 194, Nucla	Uranium, Vanadium	Mine
Red Bird No. 20	Carpenter Ridge	O. E. Smart, Box 296, Naturita	Uranium, Vanadium	Mine
Red Rock No. 5	Martin Mesa	Norman & Marvin Morrison, Box 195, Nucla	Uranium, Vanadium	Mine
Red Sox	Dolores Rim	Ben Zimmerman, 2940 1/2 F Road, Grand Junction	Uranium, Vanadium	Mine
Republican	Long Park	Nickerson Mining Co., Box 513, Uravan	Uranium, Vanadium	Mine
Rigel	Monogram Mesa	Frank Elder, Nucla	Uranium, Vanadium	Mine
Rim Claims	Monogram Mesa	C. E. Davis & Jack Foutch, Uravan	Uranium, Vanadium	Mine
Rimrock	Wedding Bell	Union Carbide Nuclear Co., Uravan	Uranium, Vanadium	Mine
Rim Rock No. 5	Wedding Bell	Woodrow Gripe, Naturita	Uranium, Vanadium	Mine
Rim Rock Blues No. 2	Bull Canyon	J. C. Southerland, Naturita	Uranium, Vanadium	Mine
Rim Rock Blues No. 5	Bull Canyon	Clyde & Wendell Jones, Naturita	Uranium, Vanadium	Mine
Rim Rock Blues Nos. 6, 17	Bull Canyon	Ben Zimmerman, 2940 1/2 F Road, Grand Junction	Uranium, Vanadium	Mine
Rubadale	Long Park	Adolphus Moore, Box H, Naturita	Uranium, Vanadium	Mine
Sandy	Dolores Rim	Union Carbide Nuclear Co., Uravan	Uranium, Vanadium	Mine
Sarah M	Slack Rock	Charles E. Davis, Bedrock	Uranium, Vanadium	Mine
School Marm	Bull Canyon	Douglas Cleghorn, Box 502, Uravan	Uranium, Vanadium	Mine
September Morn	Bull Canyon	K. C. Mipping Co., Box 294, Naturita	Uranium, Vanadium	Mine
Sesmo	Long Park	Harvey Holl, Norwood	Uranium, Vanadium	Mine
Shamrock	Club Mesa	P. C. Franks, Box 594, Nucla	Uranium, Vanadium	Mine
Shipman Drilling	Colorado Plateau	Githon Reid, Naturita	Uranium, Vanadium	Mine
Soldier Boy	Lion Creek	Lark Washburn, Box 750, Uravan	Uranium, Vanadium	Mine
South Groundhog	Long Park	Shipman Drilling Co., 1129 Colorado, Grand Junction	Uranium, Vanadium	Mine
South Happy Thought	Long Park	Shumway & Dade, 215 Landsdown Ave, Grand Junction	Uranium, Vanadium	Mine
Sphinx	Long Park	Lark Washburn, Box 750, Uravan	Uranium, Vanadium	Mine
Star No. 6	Bull Canyon	Cole & Bond, Box 36, Uravan	Uranium, Vanadium	Mine
Starlight No. 7	Bull Canyon	Clarence Neilson & Phillip Klingensmith, Box 875, Uravan	Uranium, Vanadium	Mine
Sunbeam	Eagle Basin	Lark Washburn, Box 750, Uravan	Uranium, Vanadium	Mine
Sunrise No. 3	Bull Canyon	Rex Holland, Naturita	Uranium, Vanadium	Mine
Sunrise No. 5	Bull Canyon	Dale Souther, Box 66, Redvale	Uranium, Vanadium	Mine
Surprise	Bull Canyon	Paul C. Veil, Nucla	Uranium, Vanadium	Mine
Surprise & Roy Lee	Gyp Valley	Albert L. Bell, Nucla	Uranium, Vanadium	Mine
		Red Rock Mining Co., Inc., Box 233, Naturita	Uranium, Vanadium	Mine
				Drilling

**MONTROSE COUNTY—Continued**

Name of Property	Location	Operator's Name and Address	Product	Kind of Property
T.N.T. No. 1	Long Park	Golden Cycle Corp., Box 86, Colorado Springs	Uranium, Vanadium	Mine
T.N.T. No. 3	Long Park	Norman Morrison & Guy Mulanax, Box 465, Nucla	Uranium, Vanadium	Mine
Three Jacks	La-Sal Creek	Frank Elder, Nucla	Uranium, Vanadium	Mine
Thunderbolt	East Paradox	Ernest A. Berry, Box 237, Naturita	Uranium, Vanadium	Mine
Townhouse	Dolores Rim	Lark Washburn, Box 750, Uravan	Uranium, Vanadium	Mine
Crannus	Monogram Bench	C. C. Sanders, Box 386, Nucla	Uranium, Vanadium	Mine
Uravan Plant	Uravan	Cole & Bond, Box 36, Uravan	Uranium, Vanadium	Mill
V.C.A. Mill	Naturita	Union Carbide Nuclear Co., Uravan	Uranium, Vanadium	Mill
Vaden View	Wild Steer Canyon	Uranium Corporation of America, Durango	Uranium, Vanadium	Mill
Valentine	Long Park	Jerry Mayfield, Naturita	Uranium, Vanadium	Mine
Valley View Group	Carpenter Ridge	Clark Washburn, Box 750, Uravan	Uranium, Vanadium	Mine
Van	Long Park	Carl A. Nichols, Paradox	Uranium, Vanadium	Mine
Vanadate	Long Park	Ed Wolverton & Fred Morlang, Route 2, Delta	Uranium, Vanadium	Mine
Vanadium King	Long Park	Delbert Barker, Box 263, Nucla & E. L. & M. B. Chastain, Box 357, Uravan	Uranium, Vanadium	Mine
Virgin	Long Park	L. B. Boss & Marvin Morrison, Nucla	Uranium, Vanadium	Mine
Wanda No. 3	Long Park	D. C. Rinker, Box 153, Nucla	Uranium, Vanadium	Mine
Wedgwick	Long Creek	Jim Patterson, Box 427, Uravan	Uranium, Vanadium	Mine
Whitney Shaft	Long Park	Jerry Mayfield, Naturita	Uranium, Vanadium	Mine
Worcester	Atkinson Mesa	DeVar Shumway, 215 Landsdown, Grand Junction	Uranium, Vanadium	Mine
		Worcester Mines Co., 2512 Mira Vista Road, Grand Junction	Uranium, Vanadium	Mine

**OURAY COUNTY**

American Nettle	Gold Hill	Ed Wolverton, Route 2, Delta	Gold, Silver, Copper, Lead	Mine
Camp Bird Mine & Mill	Canon Creek	Camp Bird Colorado, Inc., Ouray	Gold, Silver, Copper, Lead, Zinc	Mine & Mill
Edna Nos. 1-6	Fronton Park	St. Germain Foundation, Box 549, Ouray	Gold, Silver, Copper, Lead, Zinc	Mine
Hawkeye Tunnel	Yankee Boy Basin	Bi-Metallist Mining Co., Inc., Box 86, Ouray	Gold, Silver	Mine
Mineral Farm	Ouray	M. W. Waldrum, c/o M. W. Driscoll, Box 531, Ouray	Silver, Tourist	Mine
Rouville	Red Mountain	Rouville Mining Corp., Silverton	Silver, Copper, Lead, Zinc	Mine
South Dakota	Gray Copper Gulch	Raymond R. King, Box 353, Uravan	Gold, Silver, Copper, Lead, Zinc	Mine
Treasury Tunnel	Red Mountain	Idarado Mining Co., Ouray	Gold, Silver, Copper, Lead, Zinc	Mine
Wewissi	Diamond Creek	Warren Kuykendall, Ouray	Silver, Copper, Lead, Zinc	Mine
Betty	Guffey	D. M. F. Mining Co., 833 Platte Ave., Colorado Springs	Copper, Zinc	Mine
Boomer	Badger Flats	U. S. Beryllium Corp., Bondurant Bldg., Pueblo	Beryllium	Mine

**PARK COUNTY**

Evening Star	Mosquito Gulch	Robert G. McGhee, Drawer 1, Alma	Gold, Silver, Copper, Lead, Zinc	Mine
Hazel Marie	Tarryall	Tri-State Metals Corp., Box 71, Chester, West Virginia	Beryllium	Mine
Lucky Boy	Lake George	Transmount Mining Venture, Inc., 217 Independence Bldg., Colorado Springs	Tungsten	Mine
Penn-Hill, Ltd.	Pennsylvania Creek	Hesser, Drake & Cole, Fairplay	Gold	Mine
Roberts Tunnel	Grant	Blue River Constructors, Box 295, Arvada	Water Tunnel	
Smokee	Pennsylvania Gulch	Smokee Peat Co., Box 213, Fairplay	Peat	Peat Bog
Snell	Bucks skin Gulch	Robert G. McGhee, Drawer 1, Alma	Gold, Silver, Copper, Lead, Zinc	Mill
Tarryall Mill	Badger Flats	Mineral Concentrates & Chemical Co., 1430 First National Bank Bldg., Denver	Beryllium	Mill
<b>PITKIN COUNTY</b>				
Cooper Basin Mine	Cooper Basin	Pitkin Iron Corp., Carbondale	Iron	Mine
Woody Creek Crusher	Cooper Basin	Pitkin Iron Corp., Carbondale	Iron	Crusher
<b>PUEBLO COUNTY</b>				
Chamblin	Mustang	Denver Brick & Pipe Co., 4501 Fox, Denver	Clay	Mine
Kathryn	Turkey Creek	Magdalena Mining & Milling Co., Box 751, Canon City	Uranium	Mine
Number 2, 7	Stone City	General Refractories Co., 721 W. Third St., Pueblo	Clay	Mine
Open Pit	Stone City	General Refractories Co., 721 W. Third St., Pueblo	Clay	Mine
Rock Creek	Rock Creek	Standard Fire Brick Co., 24th & Albany, Pueblo	Clay	Mine
<b>RIO BLANCO COUNTY</b>				
Butterfly	Uranium Peak	Lyle Francis, Box 577, Meeker	Uranium, Vanadium	Mine
Coal Creek No. 1	Uranium Peak	Devereaux Bros., Meeker	Uranium	Mine
Columbine	Uranium Peak	Devereaux Bros., Meeker	Uranium	Mine
Midnight	Uranium Peak	J. & H. Mining, Box 643, Meeker	Uranium	Mine
Naomi Ann	Uranium Peak	McFarland & Sons, Box 284, Cisco, Utah	Uranium	Mine
Shylo	Uranium Peak	Devereaux Bros., Meeker	Uranium	Mine
Reynolds	Summitville	John B. Rigg, 1500 E. 7th Ave., Denver 18	Gold, Silver, Copper	Mine
<b>RIO GRANDE COUNTY</b>				
<b>SAGUACHE COUNTY</b>				
East	Cochetopa Creek	Gunnison Mining Co., Box 539, Gunnison	Uranium, Vanadium	Mine
Lookout	Sargent	Logan E. Shelhamer, 1215 Park Ave., Canon City	Uranium	Mine
Los Ochos (T-1)	Cochetopa	Gunnison Mining Co., Box 539, Gunnison	Uranium	Mine

**SAGUACHE COUNTY—Continued**

Name of Property	Location	Operator's Name and Address	Product	Kind of Property
Pitch Tunnel	Indian Creek	Pinnacle Exploration, Inc., Box 598, Gunnison	Uranium	Mine
Rawleigh No. 12	Bonanza	Superior Mines Division, Box 127, Salida	Uranium	Mine
T-2	Cochetopa	Gunnison Mining Co., Box 539, Gunnison	Lead, Zinc	Mine
Turquoise Lode	Villa Grove	M. C. Windfield, Salida	Uranium	Mine
Warwick	Bonanza	Boulder Bonanza Corp., Villa Grove	Turquoise Lead, Zinc	Quarry Mine
<b>SAN JUAN COUNTY</b>				
American Tunnel	Gladstone	Standard Metals Corp., Box 247, Silverton		
Black Hawk	Eureka	R. Leo Searle, 2643 7200 So., Midvale, Utah	Gold, Silver, Copper, Lead, Zinc	Mine
Clear Lake	Clear Lake	Denver Golden Oil & Uranium Co., Silverton	Gold, Silver, Lead, Zinc	Mine
Columbus	Silverton	Jack G. Dick, Box 151, Delta	Gold, Silver, Copper, Lead, Zinc	Mine
Delano-Jer-Bar	Cement Creek	Jerry J. Matten, Box 534, Gallup, New Mexico	Lead, Zinc, Stone	Mine
Detroit Hollister	Cinnamon Pass	Nome Mines, Inc., Lake City	Gold, Silver	Mine
Esmeralda	Minnie Gulch	E. E. Lewis, Inc., 803 Winters Ave., Grand Junction	Gold, Silver, Copper, Lead, Zinc	Mine
Greysill	Hermosa Creek	Vanadium Corporation of America, Durango	Uranium, Vanadium	Mine
Illinois	Anlmas	Jerry Dalla, 425 6th Ave., Durango	Silver, Lead	Mine
Independence	Howardsville	W. R. Nichols, 508 Main, Montrose	Lead, Tourist	Mine
Kansas City	McMillan Peak	Graham Mines, Box 13, Silverton	Gold, Silver, Copper, Lead, Zinc	Mine
Katy	King Solomon	R. E. O. Mining Co., Silverton	Gold, Silver, Copper, Lead	Mine
King Group	Silverton	Western Nucleosols, 259 Nancy St., Grand Junction	Gold, Silver, Copper, Lead	Mine
Little Rabbit	Lime Creek	Claude D. Park, 528 4th Ave., Durango	Copper	Mine
Longfellow	Red Mountain	Frank George, No. 140, Ouray	Gold	Placer
Mazzeppa	Mineral Creek	J. E. Kuykendall, 1605 Orchard Ave., Grand Junction	Gold, Silver, Copper, Lead	Mine
Mighty Monarch	Kendall Mountain	Ike Kuslsto, Wickenburg, Arizona	Gold, Silver	Mine
Nome	American Basin	Nome Mines, Inc., Lake City	Gold, Silver, Copper, Lead, Zinc	Mine
Pride Mill	Howardsville	La Plata Gold Corp., c/o John Hopkins, Hesperus	Gold, Silver	Mine
Rainbow	Anvil Mountain	Art Thompson, Box 501, Uravan	Gold, Silver, Copper, Lead, Zinc	Mine
Richardson No. 1	Anvil Mountain	Frank O. Richardson, Ouray	Zinc	Mine
Shenandoah Mill	Silverton	Standard Metals Corp., Silverton	Gold, Silver, Copper, Lead	Mine
Shenandoah (Silver Lake)	Silver Lake Basin	Standard Metals Corp., Silverton	Gold, Silver, Copper, Lead, Zinc	Mill
Silent Friend	Anlmas Forks	R. E. O. Mining Co., Box 391, Silverton	Gold, Silver, Copper, Lead, Zinc	Mine

Silver Cloud	Mill Creek	Duane & T. B. Gilliland, Box 521, Silverton	Gold, Silver, Copper, Lead, Zinc	Mine
American Frenchman	Ophir	Ophir Mining Co., c/o Nicolaus Newby, Telluride	Gold, Silver	Mine
Andrus	Ingram Creek	East Ridge Co., 633 Shatto Pl., Los Angeles, California	Gold, Silver, Copper, Lead, Zinc	Mine
Atlas & Clara	Trout Lake	John Montonati, 693 Fourth Ave., Durango	Gold, Silver	Mine
Bachelor	Wedding Bell	Bachelor Mines, Inc., Box 337, Dove Creek	Uranium, Vanadium	Mine
Bald Eagle	Gyp Valley	T. J. McCluer, Dove Creek	Uranium, Vanadium	Mine
Bean Nos. 3, 10, and Bean Patch	Slick Rock	Dulaney Mining Co., Box 1951, Grand Junction	Uranium, Vanadium	Mine
Bob	Egnar	Clyde Sanchez, Box 314, Dove Creek	Uranium, Vanadium	Mine
Bog Iron Pit	Ophir	Pete Douglas & Nick Newby, Box 375, Telluride	Bog Iron	Mine
Bottom Canyon	Slick Rock	Cedar Mining Co., Cortez	Uranium, Vanadium	Mine
Burro Nos. 3, 5, 7	Slick Rock	Union Carbide Nuclear Co., Dove Creek	Uranium, Vanadium	Mine
Carnation	Gypsum Valley	Lowell Staats, Box 185, Nucla	Uranium, Vanadium	Mine
Chilli No. 2	Hamm Bench	Lark Washburn, Box 750, Uravan	Uranium, Vanadium	Mine
Chilli No. 5	Hamm Bench	Ed Horn, Box 543, Uravan	Uranium, Vanadium	Mine
Colorado	La Junta Basin	Conkling Contracting Co., Box 1286, Wichita Falls, Texas	Gold, Silver, Copper, Lead, Zinc	Mine
Craig's Peat Beds	Ophir	Jerome Craig, Whitewater	Peat	Peat Bog
Cycle	Gyp Valley	Ralph Sears, Redvale	Uranium, Vanadium	Mine
De Luxe	Horse Range	Joe Gomez, Slick Rock	Uranium, Vanadium	Mine
Deremo	Egnar Plains	Union Carbide Nuclear Co., Dove Creek	Uranium, Vanadium	Mine
Dynamo	Liberty Bell Basin	Koskinen Brothers, Box 474, Telluride	Uranium, Vanadium	Mine
Early Morn Group	Upper Gyp Valley	Tim J. McCluer, Dove Creek	Gold, Silver	Mine
Falcon	Slick Rock	Anderson & Gurwell Co., Dove Creek	Uranium, Vanadium	Mine
Fall Creek	Fall Creek	Lawrence & Glen Ross, Box 74, Placerville	Uranium, Vanadium	Mine
France	Hogback	Don Tripp, Egnar	Vanadium	Mine
Grassy Hill Group	Gyp Valley	Corder Oil & Mining Group, Box 1683, Grand Junction	Uranium, Vanadium	Mine
Groundhog & No. 6	Hamm Canyon	DeVar, Shumway, 215 Landsdown Road, Grand Junction	Uranium, Vanadium	Mine
Groundhog Dump	Wedding Bell	Rex Holland, Box 243, Naturita	Uranium, Vanadium	Mine
Hangover Nos. 1, 2, 3, 4	Slick Rock Hill	London & London, Naturita	Uranium, Vanadium	Mine
Hawk No. 2	Slick Rock Hill	Clyde Sanchez Mining Co., Box 314, Dove Creek	Uranium, Vanadium	Mine
Horseshoe No. 5	Horseshoe Bend	Jack Milling, Egnar	Uranium, Vanadium	Mine
Jack Knife No. 1	Wedding Bell	Shumway & Dade, 215 Landsdown Road, Grand Junction	Uranium, Vanadium	Mine
Jim No. 2	Spud Patch	Benny Martinez, Dove Creek	Uranium, Vanadium	Mine
Joe Dandy Group	Sawpift	Clarence L. Neilson, Box 875, Uravan	Gold, Silver, Copper, Lead, Zinc	Mine
King No. 4	Slick Rock	Cedar Mining Co., c/o Charles Pickens, Mancos	Uranium, Vanadium	Mine

SAN MIGUEL COUNTY—Continued

Name of Property	Location	Operator's Name and Address	Product	Kind of Property
La Junta	La Junta Basin	Harvey Baron & Billy Mahoney, Box 31, Telluride	Gold	Mine
Laticla	Slick Rock	Jaeket	Uranium, Vanadium	Mine
Magpie	Gypsum Valley	Hardin & Ptzler, Redvale	Uranium, Vanadium	Mine
Mainstreet	Wedding Bell	Rex Holland, Box 234, Naturita	Uranium, Vanadium	Mine
Marne	Spud Patch	Benny Martinen, Box 224, Dove Creek		
		T. E. Thompson, Box 197, Dove Creek		
May Nos. 1, 2, 3	Slick Rock	Rueker & Strang	Uranium, Vanadium	Mine
		E. E. Lewis, Inc., Box 1481, Grand Junction	Uranium, Vanadium	Mine
Mickey	Egnar	Jim Butts, Dove Creek	Uranium, Vanadium	Mine
North Slope	Hayden Peak	North Slope Mining Co., Route 2, Box 190, Montrose	Gold, Silver, Copper, Lead, Zinc	Mine
Norther No. 6	Horse Range	E. J. Johannsen, Nucla	Uranium, Vanadium	Mine
Idarado	Pandora	Idarado Mining Co., Ouray	Gold, Silver, Copper, Lead, Zinc	Mine
Pandora Mill	Pandora	Idarado Mining Co., Ouray	Gold, Silver, Copper, Lead, Zinc	Mill
Parrot Nos. 1, 2, 3	Mineral Mountain	Baldwin Mining Co., Box 98, Nucla		
		Kenny McBride, Naturita		
		Loren F. Hammar, Naturita		
Penju	Gyp Valley	Jim C. Butts, Ucola Route, Dove Creek	Uranium, Vanadium	Mine
Pitch Fork	Gyp Valley	Kenneth McBride & Joe Baldwin, Box 294, Nucla	Uranium, Vanadium	Mine
Radium Nos. 4, 5, 9	Slick Rock	Dulancy Mining Co., 1152 Elm St., Grand Junction	Uranium, Vanadium	Mine
Rainy Day	Hamm Bench	Harold Price, Box 74, Nucla	Uranium, Vanadium	Mine
Red Horse	Hamm Bench	Harold Price, Box 74, Nucla	Uranium, Vanadium	Mine
Red Rock No. 5	Mule Shoe	Marion Trone, Norwood		
Roy Lee	Mineral Mountain	Fred Rasmussen, Box 133, Norwood	Uranium, Vanadium	Mine
		Max & Raymond Wainwright, Box 233, Naturita		
S. B. Group	North Pine Hill	Edward Duran & Gerald Perkins, Box 429, Dove Creek	Uranium, Vanadium	Mine
Sage No. 11	Bishop Canyon	C. H. Carey, Box 652, Durango	Uranium, Vanadium	Mine
San Bernardo	Matterhorn	Terry Hankin, Egnar	Uranium, Vanadium	Mine
		Silver Hat Mining Co., Box 664, Ophir	Gold, Silver, Copper, Lead, Zinc	Mine
San Juan Mine & Mill	Matterhorn	Hunter Mining and Milling Co., Box 125, Telluride	Gold, Silver, Copper	Mine & Mill
Savage	La Junta Basin	Bhxt Bros., Box 192, Telluride	Gold	Mine
S. K. Adit	Slick Rock	E. E. Lewis, Inc., Box 1481, Grand Junction	Uranium, Vanadium	Mine
Sunday No. 2	Gypsum Valley	Lowell Thompson, Box 34, Naturita	Uranium, Vanadium	Mine
Slick Rock Concentrator	Slick Rock	Union Carbide Nuclear Co., Slick Rock	Uranium, Vanadium	Plant
Strawberry Roan	Bishop Canyon	C. H. Carey, Jr., Box 652, Durango	Uranium, Vanadium	Mine
Summit No. 21	Egnar	Woodrow Gripe, Box 295, Naturita	Uranium, Vanadium	Mine
		Burwell Mining Co., Egnar	Uranium, Vanadium	Mine

Summit Fraction	Slick Rock	W. D. Tripp Mining Co., Box 118, Dove Creek	Uranium, Vanadium	Mine
Tailholt	Slick Rock	Cliff Ream, Carl Holder & Bruce Willard, 45 No. Harrison, Cortez	Uranium, Vanadium	Mine
Veta Mad & Veta Glad	Slick Rock	Earl Hotz, Silek Rock, & Charles Pickens, Mancos	Uranium, Vanadium	Mine
Victor No. 3	Egnar	Russell & Olin Willey, Slick Rock	Uranium, Vanadium	Mine
Wally Claims	Mul Shoe	Clyde Sanchez, Box 314, Dove Creek	Uranium, Vanadium	Mine
Windswept	Cyp Valley	Clyde Allison, Redvale	Uranium, Vanadium	Mine
Yellow Bird	Slick Rock	Dulaney Mining Co., 1152 Elm St., Grand Junction	Uranium, Vanadium	Mine
<b>SUMMIT COUNTY</b>				
Climax Tailings Pond	Climax	Boyles Bros. Drilling Co., Box 58, Salt Lake City, Utah		Drilling
Dillon Dam Diversion Tunnel	Dillon	F. H. Linneman, Inc., Box 103, Dillon		Water Tunnel
Dunkin	Breckenridge	John T. O'Dowd, 335 Josephine St., Denver		Mine
Fannie Placer	Breckenridge	Aura Lee Engineering Co., Box 1676, Denver 1	Gold, Silver, Lead	Placer
Gagen Tunnel	Kokomo	Deringer & Parker, 1808 19th St., Golden	Gold	Mine
Jumbo	Gold Run Gulch	Fiskno Co., Inc., Box 134, Grand Junction	Gold	Mine
Lorena No. 1	Breckenridge	C. J. Carlson, 1200 Scranton, Aurora	Gold	Placer
McCullough Tunnel	McCullough Gulch	J. W. Brown Const. Co., 5700 N. Broadway, Denver 16		Water Tunnel
Montezuma Shaft	Loveland Pass	Blue River Construction Co., Box 236, Dillon		Water Tunnel
Roberts Tunnel	Dillon	Blue River Construction Co., Box 236, Dillon		Water Tunnel
Ryan Screening Plant	Climax	C. Ryan & Son, Box 378, Climax	Sand, Gravel	Plant
Wellington	Breckenridge	Consolidated Farnett Corp., Box 392, Breckenridge	Gold, Silver, Copper, Lead, Zinc	Mine
<b>TELER COUNTY</b>				
Ajax	Battle Mountain	Golden Cycle Corp., Box 127, Cripple Creek	Gold	Mine
Alpen Meadows Peat Bog	Gillette	Alpen Meadows, Inc., Box 1074, Colo- rado Springs	Peat	Peat Bog
Black Cloud	Divide	Herb Crisler, Lake George	Quartz	Quarry
Carlton Mill	Victor	Golden Cycle Corp., Box 127, Cripple Creek	Gold, Silver	Mill
Deadwood	Cripple Creek	Deadwood Leasing Co., Box 156, Cripple Creek	Gold	Mine
El Paso	Beacon Hill	El Paso Gold Tours, Inc., Box 155, Cripple Creek	Tourist	Mine
High Park	High Park	Cotter Corporation, Box 751, Canon City	Uranium	Mine
Little May Tunnel	Beacon Hill	Earl W. Robush & Co., Cripple Creek	Gold	Mine
Mollie Kathleen	Cripple Creek	Black Diamond Mining Co., Box 998, Cripple Creek	Granite	Mine
Plikes Peak	Guffey	A. H. Harre, Woodland Park	Quarry	Quarry
Proper	Globe Hill	Mickey Kolb & Bert Bergstrom & Associates, Cripple Creek	Gold	Mine
Theresa	Victor	United Gold Mines Co., Box 86, Colo- rado Springs	Gold	Mine

**WELD COUNTY**

Name of Property	Location	Operator's Name and Address	Product	Kind of Property
Commander	Greeley	Sterling Contracting Co., Route 3, Box 560, Ft. Collins	Gravel	Plant
Garner	Greeley	Fay Garner & Co., Box 913, Greeley	Sand, Gravel	Plant

**HIGHWAY PROJECTS**

County	Location	Operator's Name and Address	Project
Mesa	Four Corners Area	Beard, Wallace, Construction Co., 2041 No. 8th St., Grand Junction	Highway
Delta	Grand Mesa	Brasiers Bros. Const. Co., Norwood	Highway
Mesa	Montezuma		
Archuleta	Four Corners Area		
Archuleta	North & East of Arboles	Colorado Constructors, Inc., 725 W. 39th, Denver	Highway
Clear Creek	Idaho Springs		Twin Tunnels
Montrose	Black Canyon Road		Highway
Mesa	Grand Junction	Corn Construction Co., Box 1501, Grand Junction	Highway
Summit	Northeast of Dillon		
Mesa	Four Corners Area	K. L. Etter Construction Co., Box 697, 27½ Road, Grand Junction	Highway
Grand	South from Winter Park	Gardner Construction Co., Box 521, Littleton	Highway
Mesa	Northeast of Palisade on Colorado River		Bridge
La Plata	From Four Corners N.E. to Highway 666	Harrison Construction Co., 1314 W. Oxford Ave., Englewood	Highway & Bridge
Archuleta		Herren & Strong, Inc., Platteville	Highway
Summit	Between Climax & Kokomo		
Grand	Top of Berthoud Pass	C. L. Hubner Co., 4473 E. Evans, Denver	Highway
Route	Between Steamboat Springs & Milner	Peter Kiewit & Sons Co., Steamboat Springs	Highway
Saguache	6 miles west from Sargents	J. S. Kloberdanz Contractor, Inc., Henderson	Highway
Boulder	Northeast of Nederland	H. E. Lowdermilk, 1950 W. Dartmouth, Denver	Highway
Gunnison	From Sapinero, east & west		
Moffat	East of Artesia		
Route	Rabbit Ears Pass		
Montrose	Naturita Creek	C. E. Mills Construction Co., Route 2, Box 231, Montrose	Highway & Bridge

Dolores	-----Egnar South	Nielsons, Inc., Box 468, Dolores	-----Highway
Montezuma	-----From Pleasantview South		
Ouray	-----Dexter Creek		
San Miguel	-----Egnar North		
Moffat	-----Craig	Northwestern Engineering Co., 6001 Dexter, Denver	-----Highway
Montezuma	-----Four Corners to U.S. 666		
Chaffee	-----Between Salida & Buena Vista	Pioneer Construction Co., Box 898, Pueblo	-----Highway
Lake	-----Between Leadville & Climax		
Garfield		E. J. Rippey & Sons, Box 638, New Castle	-----Highway
Gunnison	-----South of Iola-Lake City Road		
Lake			
Pitkin	-----Red Stone		
Mesa	-----Grand Mesa	Rocky Mountain Construction Co., Box 1833, Missoula, Montana	-----Highway
Delta	-----East from Crawford	Schmidt Construction, Inc., 8150 W. 49th Ave., Arvada	-----Highway
Garfield	-----Silt		
Mesa	-----South from Gateway From Grand Junction to Whitewater From Whitewater to Kahnah Creek		
Rio Blanco	-----North of Meeker—Nine Mile Gap		
Gunnison	-----6 miles above Taylor Reservoir	Sharpe Construction Co., Box 145, Trinidad	-----Highway
Archuleta	-----Pagosa Springs	Shore Construction Co., 5560 E. 56th Ave., Denver 16	-----Highway & Bridge -----Highway
Saguache	-----East Creek		
Fremont	-----Canon City		
La Plata	-----Bayfield	Siegrist Construction Co., 700 York St., Denver 29	-----Highway
Chaffee	-----Between Buena Vista & Salida	Leon K. Suhm, Inc., 2420 So. Downing St., Denver 10	-----Highway & Bridge -----Highway
Mesa	-----Grand Mesa	Taylor Construction Co., Denver	-----Highway
El Paso	-----Near Monument	V & V Construction Co., Florence	-----Highway
Montezuma	-----Four Corners Road	Van Winkle Construction Co., Golden	-----Bridge
Saguache	-----East Pass Creek	Whitewater Sand & Gravel Co., Box 1451, Grand Junction	-----Highway

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