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EIGHTH ANNUAL REPORT
OF THE
STATE INSPECTOR OF
COAL MINES
COLORADO
1920

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EIGHTH ANNUAL REPORT
OF THE
STATE INSPECTOR
OF COAL MINES

1920



DENVER, COLORADO
EAMES BROTHERS, STATE PRINTERS
1920

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PERSONNEL OF COAL MINE INSPECTION DEPARTMENT

JAMES DALRYMPLE, Chief Inspector	Denver, Colo.
W. M. LAURIE, Deputy Inspector	Trinidad, Colo.
HUGO H. MACHIN, Deputy Inspector	Aguilar, Colo.
WILLIAM H. JAMES, Deputy Inspector	Walsenburg, Colo.
JAMES W. GRAHAM, Deputy Inspector	Lafayette, Colo.
HENRY P. KING, Deputy Inspector	Denver, Colo.
ADA R. TIBBITS, Chief Clerk	Denver, Colo.
MAX M. GREENWALD, Assistant Clerk	Denver, Colo.

FIELD FORCE AND DISTRICTS

W. M. LAURIE, 512 Ash St., Trinidad, Colo. District No. 1
Includes the following mines: Primero, Frederick, Sopris, Starkville, Morley, Engleville, Gray Creek, Boncarbo, Piedmont, La Belle, Jeffryes, Santa Fe, Bear Canon, Three Pines, Thor, M'Coye, Baldy Mountain, Hines, Keystone, Leone, Henderson, Deep Vein, Liberty, Fisher's Peak, Pickford, Beshoar, Brown, Phillips, Star, Prospect, Toller, Forbes.

HUGO H. MACHIN, Box 334, Aguilar, Colo. District No. 2
Includes the following mines: Lester, Ludlow, Rouse, Black Diamond, Rugby, Primrose, Star, Rapson, Southwestern, Jewel, Empire, Royal, Pryor, Cameron, Ravenwood, Ideal, Cap Rock, Hezron, Bunker Hill, Delagua, Cass, Tabasco, Greenville, Black Diamond, Berwind, Mutual, Brodhead.

WM. H. JAMES, 216 E. Indiana Ave., Walsenburg, Colo. District No. 3
Includes the following mines: Oakdale, Reliance, Caddell, Cuchara Canon, Toltec, Pieton, Jobal, Maitland, New Maitland, Vesta, Gordon, Turner, Sunnyside, Kebler Nos. 1 and 2, Walsen, Robinson 1 and 2, and all mines in Fremont county.

JAMES W. GRAHAM, Lafayette, Colo. District No. 4
Includes mines in the following counties: Boulder, Rio Blanco, Garfield, Gunnison, Mesa, Montrose, Ouray, and Pitkin.

HENRY P. KING, 1255 Lafayette St., Denver, Colo. District No. 5
Includes mines in the following counties: Routt, Weld, LaPlata, El Paso, Jefferson, Jackson and Montezuma.

LETTER OF TRANSMITTAL

Denver, Colorado, March 1, 1921.

To His Excellency,
OLIVER H. SHOUP,
Governor of Colorado.

Sir: Herewith I have the honor to submit to you, in accordance with Section 37 of an Act entitled "Coal Mining Laws," the Eighth Annual Report of this department.

The period covered began January 1 and ended December 31, 1920.

Respectfully,

JAMES DALRYMPLE,
State Inspector of Coal Mines.

STATEMENT SHOWING RECEIPTS AND DISBURSEMENTS FROM JANUARY 1 TO DECEMBER 31, 1920

RECEIPTS

Tax collected on coal mined	\$38,939.00	
From sales of copies of the Coal Mining Laws	467.05	
From sales of old anemometers	34.00	
From sales of old automobiles	1,050.00	
Balance brought forward from 1919	10,146.28	
Total		\$50,636.33

DISBURSEMENTS

Salary of chief inspector	\$ 4,400.00	
Salaries, six deputy inspectors	14,746.71	
Salary of chief clerk and assistant clerk	3,300.00	
Back pay, increase granted to chief and deputy inspectors in 1919	1,273.75	
Expenses, chief and deputy inspectors	5,927.21	
Mileage books for chief and deputy inspectors	1,620.00	
Automobiles; three new Dodge cars, one new Ford car, supplies, and repairs	5,687.63	
Board of examiners, per diem and expenses	1,697.52	
Printing	2,307.96	
Postage	455.50	
Stationery supplies	566.05	
Telephone service	107.00	
Telegraph service	43.86	
Instruments: Geophone	60.00	
Extra clerical help	122.50	
Electrical supplies	187.21	
Express	8.90	
Miscellaneous	117.22	
Total		\$42,629.02
Surplus		\$ 8,007.31

FIELD EQUIPMENT

Three Dodge Touring Cars.	Five Marseant Safety Lamps.
One Ford Touring Car.	Eleven Koehler Safety Lamps.
Seven Anemometers.	One Aneroid Barometer.
Five Speedometers.	One Burrell Gas Detector.
One Psychrometer.	One Gas Testing Box.
One Geophone.	

SUMMARY OF THE COAL PRODUCTION OF COLORADO, 1920

Number of mines operated.....	231
Number of new and old mines opened.....	16
Number of mines closed, 9; abandoned, 6; total.....	15
Tons of sub-bituminous coal produced.....	2,789,103
Tons of semi-bituminous coal produced.....	1,163,809
Tons of bituminous coal produced.....	8,457,502
Tons of anthracite coal produced.....	104,279
Total number of tons of coal produced.....	12,514,693
Increase 1920.....	2,108,150
Tons of run of mine coal produced.....	4,329,690
Tons of lump coal produced.....	3,842,790
Tons of nut coal produced.....	844,208
Tons of egg coal produced.....	36,703
Tons of pea coal produced.....	125,031
Tons of slack coal produced.....	3,336,271
Percentage of slack produced.....	40.8
Tons of coal mined by hand.....	7,044,901
Tons of coal mined by machine.....	5,469,792
Kind and number of machines used: Compressed air, 184; electric, 269; total.....	453
Tons of coal mined for shipment.....	10,333,662
Tons of coal shipped out of the state.....	3,249,564
Tons of coal sold to local trade and used by employees.....	408,282
Tons of coal used at the mines for steam and heat.....	281,943
Tons of coal made into coke.....	1,488,857
Tons of coke made.....	790,423
Number of coke ovens used.....	674
Number of days coke ovens were operated.....	350.2
Number of men employed at coke ovens.....	342
Number of miners employed: Pick. 4,536; machine, 2,992; total.....	7,528
Number of other underground employees.....	3,607
Number of surface employees.....	2,530
Total number of men employed in and about the mines (average).....	13,665
Number of employees foreign born.....	9,298
Number of employees speaking English.....	9,605
Average number of days worked.....	256.2
Daily production per miner.....	6.5
Annual production per miner.....	1,662.4
Number and type of safety lamps used: Flame, 591; electric, 4,897; total.....	5,488
Number of carbide lamps used.....	7,406
Number of pounds of carbide used (approximately).....	584,711
Number of pounds of permissible powder used.....	1,025,206
Number of pounds of black powder used.....	1,828,929
Number of pounds of dynamite powder used.....	70,003
Number of men killed: Underground, 67; surface, 3; total.....	70
Number of men injured.....	1,806
Number of men killed per thousand employed.....	5.4
Number of men injured per thousand employed.....	132
Number of tons of coal produced for each life lost.....	178,781
Number of tons of coal produced for each non-fatal accident.....	6,930
Number of men employed per fatal accident.....	195
Number of men employed per non-fatal accident.....	7.6
Number of widows left.....	40
Number of children left fatherless.....	107
Cost of development work in mines during 1920, 128 mines reporting.....	\$1,106,906.00
Number of days lost account of car shortage, 84 mines reporting..	2,904.
Number of tons of coal lost through shortage of labor, 66 mines reporting.....	720,770.

Eighth Annual Report

OF THE

State Inspector of Coal Mines

1 9 2 0

INTRODUCTION

The Eighth Annual Report compiled and tabulated by the Coal Mine Inspection Department is herewith submitted to those who are interested in the coal industry of Colorado.

The coal production of 1920 was 12,514,693 tons, an increase of 2,108,150 tons over 1919. The average number of men employed in and about the mines was 13,665, or 866 more men than in the preceding year. They worked an average of 256.2 days, a gain of 34.8 days more than last year. The number of mines operated was 231, a loss of ten mines, as compared with the preceding year, but as usual, these were small local mines, which open and close frequently and whose production has no appreciable effect on the State's output.

Earlier in the year activities were hampered by a shortage of both men and cars. Reports from 66 mines showed a loss of 720,770 tons due to scarcity of men, and 84 mines reported a loss of 2,904 days on account of car shortage. The bad railroad facilities in Routt county contributed mostly to this great number of days lost. The labor shortage can be charged to some extent to many employees not working full time, their wages being sufficient to permit them to lay off a part of their working time, but with the approach of summer there was plenty of labor. However, in the early fall a new obstacle arose in the slackening of orders for fuel, especially in the southern field, which caused a slowing down in many of the mines. This slump in the coal market did not apply to the mines in Boulder and Weld counties, where Routt county is a competitor, and the tonnage from that county being seriously affected by a car shortage, the product from the above counties was in greater demand than usual. Therefore, the strike which was called on October 28th and extended only to November 8th, further decreased the tonnage. Other than the above-mentioned strike there were no serious labor troubles. A few local disputes occurred but were amicably settled.

It has been the endeavor of this department to bring about a uniform method of collecting and tabulating the coal mine statistics of this state, to conform fully with the U. S. Geological Survey plan

of standardization of mine statistics. All the tables in this report designated by a numeral conform with this method. One of the most vital items of information is the average number of days worked and here is where the department differed in the method of computing the average number of days worked from the U. S. Geological Survey. Heretofore the average number of days worked has been obtained by adding all the days worked at each mine and then dividing the total days worked by the number of mines operated, giving mine days, instead of men days. This has been misleading and obviously unfair to the larger mines employing 95% of the total of men employed and producing 99% of the production. As has been stated before in other reports, there are numerous small wagon mines operating only during the early winter months, with a few men, to supply the local trade, also many small mines are opened up on a speculation and continually change hands, working a few days here and there. While these mines add little to the total production, yet they affect seriously the number of days worked when computed as above stated. Therefore, in this report the average number of days worked has been calculated by the method of the U. S. Geological Survey, the procedure of which is as follows: "The number of days worked at each mine is multiplied by the average number of men employed at that mine. This product is the number of men-days worked at that mine. The total men-days worked in all the mines of each coal producing county is then divided by the average number of men employed in that county, the quotient being the average number of days worked in that county. The results for the state are obtained by dividing the total of all men-days worked by all the mines by the total average number of men employed in all the coal mines of the state." This is a new departure of this department in computing the average number of days worked, and is a truer estimate of this important question, because it gives to the large producing mines their full measure of time worked, while by the old method they were brought to a lower level by a number of small mines employing a few men and working only a small part of the year.

In 1919 the daily production of the miner was 7.1 tons; under the new method of computing number of days worked the production of the miner has been reduced to 6.5 tons per day, but the annual production per miner has been increased from 1,580.8 tons in 1919 to 1,662.4 tons in 1920.

Several new mines were opened up during the year, none on a large scale at present. The mines developed are as follows: The first opened was the Bulkley No. 2, at Crested Butte, Gunnison county, and owned by the Crested Butte Coal Company. This mine was equipped with a tippie, chute, trestle, tramway, houses and mining machinery at quite an outlay of money. The coal at this mine is bituminous and a good grade.

The second mine developed is the Yampa, at McGregor, Routt county, and operated by the Amalgamated Development Corpora-

tion. Its present daily capacity is about 200 tons. Tipple set, railroad yards and grading are complete to bring the product to the market. Nearly \$100,000 have been spent to equip this mine.

The third mine developed is the Crown Point, at Milner, Routt county, and operated by the Roman Coal Company, and is now being equipped with up-to-date machinery and connected by a spur with the D. & S. L. Railroad.

The fourth mine in this list of new mines is the Florence-Canon, at Florence, Fremont county, and operated by the Florence-Canon Coal Company. Its present daily capacity is forty tons. A tipple has been built and electrical machinery installed for hoisting and cutting coal, which is of semi-bituminous character.

These four mines began to produce the latter of the summer of 1920.

The coal operators spent large sums of money for improvements in the mines and to bring the standard of living conditions at the various coal camps to a higher level. Considerable new machinery was installed and a sincere effort was made by all the operators and mine officials to conform to the coal mining laws in order that life may be better safeguarded and a higher percentage of efficiency obtained.

Many of the annual reports submitted to this department for 1920 covering the physical conditions and mechanical equipment of the various mines are very incomplete, and it is disheartening to tabulate data from reports so incomplete and inaccurately filled in. In the Directory, or Table No. 1, it will be noted that under the head of "Geological Name, or Number of Bed Worked," the answer is invariably the formation of the measure, instead of the geological name or number of the coal bed worked. The operators are requested in the future to give these questions for tabulation in the annual report more consideration, so that a more correct showing can be made of the extent and efficiency to which this important industry has attained in Colorado.

There were 70 lives lost in and around the mines—67 underground and 3 on the surface.

Underground—

- 36 from falls of roof and coal.
- 22 from mine cars and motors.
- 2 from explosives.
- 5 from electricity.
- 2 from other causes.

Surface—

- 1 from machinery.
- 2 from other causes.

Murt Muller, who died in the Haybro Mine of heart failure on December 28, 1920, is not charged against the industry.

In summing up the nonfatal accidents it is noted that there are 470 classed under "other causes"; 282, or 60% of them, are accidents to the eyes, caused principally from coal flying from the pick. As a protection against such accidents would recommend that all coal companies enforce the rule employed by the Colorado Fuel and Iron Company, "That all employees, while using pick, wear goggles."

The field work of the Inspector and Deputy State Inspectors for 1920 was as follows:

Total number of inspections made.....	823
Average inspections per mine.....	3.5
Fatal accidents investigated.....	68
Inquests attended	58
Scales examined	24
Complaints investigated	30
Prosecutions	7
Miles traveled by auto.....	28,146
Miles traveled by train.....	54,000

The rates per mile have increased from one and one-half to two times that what they used to be, so that a mileage book carries you little more than half the distance it formerly did.

An examination for Chief and Deputy State Coal Mine Inspectors was held on May 4th, 5th and 6th, 1920, at the Capitol Building, Denver, Colo. Twenty-one applicants appeared, eleven of them passing the examination; four of whom qualified for Chief Inspector, and seven for Deputy Inspector. They are as follows:

Chief Inspector—

James Dalrymple, Jr.
Thomas Allen
Hugo H. Machin
Samuel Andrews

Deputy Inspector—

Wm. H. James
James A. Wilson
Thomas Gibby
John Simpson
Henry Robertson
Reese Roberts
David T. Henderson

This department is now under the jurisdiction of the Civil Service Act, and, therefore, the examination for inspectors was held under its direction. The regular Coal Mine Board of Examiners was appointed as temporary Deputy Civil Service Board of Examiners for this occasion and the list of eligible candidates is filed with the Civil Service Commission.

On May 11th, 12th and 13th another examination was held for mine officials. This examination is not under the control of the Civil Service Commission, but under the regular Board of Examiners. One hundred and fifty applicants took the test and ninety-four qualified either as first class mine foreman, first class assistant

mine foreman, or fireboss, or second class mine foreman. See list of the successful candidates.

There were several changes made on the inspection staff, caused, first, by the resignation of Mr. A. E. Thompson, early in the winter of 1919, to accept a position with the Victor-American Fuel Company, and who was succeeded January 1, 1920, by Mr. William H. James. On the first of September, 1920, after having been with the department for ten months, Mr. James Dalrymple, Jr., resigned and also took a position with the Victor-American Fuel Company. Mr. Thomas Allen, from Mount Harris, standing highest on the eligible list, was tendered the position, but he refused the offer, and Mr. Hugo H. Machin, who was next in line, was then appointed to fill the vacancy.

The department sustained a sad loss in the death of Mr. Frank N. Oberding, who passed away the latter part of March, 1920. He was an able and loyal official, and was a valued member of the department for a period of eleven years. His death is very much regretted.

In conclusion, I wish to tender thanks to the Deputy Inspectors for their faithful services in the enforcement of the laws safeguarding life and property.

Respectfully submitted,

JAMES DALRYMPLE,

		Boilers				Engines				Pumps				Haulage				Air Compressors	
		Cylindrical		Tubular		Steam Engines (All Classes)		Internal Combustion Engines (Gas)		Electric Dynamos (All Classes)		Pumps Delivering Water to the Surface		Number of Locomotives					
Name of Operator		Number	Total Horse Power	Number	Total Horse Power	Number	Total Horse Power	Number	Total Horse Power	Number	Total Horse Power	Number	Total Gallons per Minute	Number	Steam	Compressed Air	Electric	Number	Total Capacity per Minute
Ajax Coal Co.		3	300			4	250			3	160	2	150	4				1	750
Amalgamated Dev. Corporation					100														
Amalgamated Dev. Corporation					250		75												
American Smelting and Refining Co.																			
American Smelting and Refining Co.																			
Anchor Coal Co.								3	80										
Ashtabula Dev. Co.		3	120	4	260					1	65	3	100	19				2	1000
Aspen Coal Mining Co.																			
Baldwin & Co.																			
Bear Canon Coal Co.				3	475	6	455			2	175	1	70	12					
Bear River Coal Co.		No	Equal	pm	ent														
Bodden, W. C.		No	Equal	pm	ent														
Bell, J. C. & Co.		No	Equal	pm	ent														
Berry, Chas. T.		No	Equal	pm	ent														
Big Four Coal and Coke Co.				4	100	2	100					1	20	2					
Big Six Coal Co.				3	300	1						1	100	1					
Black Canon Coal and Fuel Co.																			
Black Cat Coal Co.		No	Equal	pm	ent														
Black Hawk Coal Co.										1	100								
Boagles Coal Co.		No	Equal	pm	ent														
Book Cliff Coal Co.		No	Equal	pm	ent														
Boulder Black Diamond Coal Co.				3	180	3	75					3	1400	1	40	5		1	800
Boulder Valley Coal Co.						4												3	3000
Bracken & Co.		No	Equal	pm	ent														
Breen Coal Mining Co.												1	220						
Brennan Coal Co.		No	Equal	pm	ent														
Caddell Bros.		1	42	1	20					1	75								
Caddell Bros.		No	Equal	pm	ent														
Calumet Fuel Co.																			
Cambell & Co.		No	Equal	pm	ent														
Canon-Reliance Coal Co.				4	320							1	250	1	200	17			
Canon-Reliance Coal Co.		No	Equal	pm	ent							3	180	1	280	17			
Castle Coal Co.																			
Cedar Hill Coal and Coke Co.				2	90	1	10			2	185								
Cedar Hill Coal and Coke Co.				3	100	2	75												
Champion Fuel Co.				2	200	4	160					7	85	1	12	17			1713
Chargo & Stunk								1	3			1	40	1	40	1			
Chaw & Adam		No	Equal	pm	ent														
Clayton Coal Co.				2	200	3	350					1	300	1	4000	2			500
Cobb, E. R.		No	Equal	pm	ent														
Colorado Fuel and Iron Co.												3	100	3	100	27			
Colorado Fuel and Iron Co.				1	100							4	1	1	50	31			
Colorado Fuel and Iron Co.				4	330	5	340					5	440	3	720	26			
Colorado Fuel and Iron Co.												2	120	1	60	6			
Colorado Fuel and Iron Co.				2	150	1	80			3	800	1	75	4					
Colorado Fuel and Iron Co.				6	450	2	415			1	40	2	250						1200
Colorado Fuel and Iron Co.				4	350	3	257			3	257	2	300	2	100	7			900
Colorado Fuel and Iron Co.				4	400					3	1000	4	1600	23					
Colorado Fuel and Iron Co.				1	150	2	200			2	200	11	450	2	450	40			
Colorado Fuel and Iron Co.										1	120	3	850	1	650	22			
Colorado Fuel and Iron Co.		No	Equal	pm	ent							1	150	1	50	36			
Colorado Fuel and Iron Co.												1	150	3	1150	39			
Colorado Fuel and Iron Co.				5	500							12	415	1	18	1			180
Colorado Fuel and Iron Co.																			
Colorado Fuel and Iron Co.				2	1000	4	550			2	250	3	1350	3					
Colorado Fuel and Iron Co.				6	600														
Colorado Fuel and Iron Co.				9	900	2	1295			1	150	11	550	62					
Colorado Fuel and Iron Co.				2	100							9	500	2	100	86			
Colorado Fuel and Iron Co.				2	104					2	300	2	412	54					
Colorado Fuel and Iron Co.				3	250	1	75			1	300	1	500	1	65	44			120
Colorado Fuel and Iron Co.				3	300	4	280			2	440	10	582	6	172	44			
Colorado Fuel and Iron Co.				7	725	8	2635			5	280	16	300	46					
Colorado Fuel and Iron Co.				3	300	4	500					9	400	1	400	31			
Colorado Fuel and Iron Co.				4	400	3	500			2	150								
Colorado Springs Co.																			

VENTILATING EQUIPMENT OF COAL MINES IN STATE OF COLORADO FOR YEAR ENDED DECEMBER 31, 1920.

Name of Operator	Name of Mine	Shaft Depth	Kind of Opening			Gaseous or Non-Gaseous	Number of Shafts	Type of Safety Lamp Used	Method of Ventilation	Name of Fan	Diameter Feet	Revolutions per Minute	Water Gauge Developed (inches)	Kind of Power Used	Number of Shafts of Air Current	Number of Cubic Feet of Air per Minute Entering the Mine at Inlet	Total Number of Cu. Ft. of Air per Minute Circulating in All Shafts	Number of Cubic Feet of Air per Minute per Worker at Inlet	Number of Persons Employed (Inside)
			Length	Pitch	Depth														
Ajax Coal Co.	Capitol	219				Gasous	2		Natural	Buffalo	10	55	5	Steam		14,515		11,650	39
Amalgamated Dev. Corp.	Elk Creek			14%	1,500	Non-Gaseous	1		Natural	Sturtevant	10	250	5	Electric		15,000		17,000	23
Amalgamated Dev. Corp.	Yampa			10%	140	Non-Gaseous	1		Natural	Jeffrey	8	420	1 1/2	Electric	4	44,770	24,050	54,000	162
American Smelting and Refining Co.	Bonanza			1'	3,000	Non-Gaseous	1		Natural		40	164	4	Electric	5	17,750		19,100	31
American Smelting and Refining Co.	San Juan				3,567	Non-Gaseous	2		Natural										
Anchor Coal Co.	Anchor No. 2		300	12'	700	Non-Gaseous	1		Natural										
Aspen Basin Dev. Co.	Colton				950	Non-Gaseous	1		Natural										
Astoria Coal Mining Co.	Teller		2,500	10'		Non-Gaseous	1		Fan	Sturtevant	4 1/2 x 3	230	2	Electric and Steam	2	3,000	24,000	27,000	53
Lafayette Fuel Co.	Hallman-Star		1,000	2%	1,000	Non-Gaseous	1		Natural							4,450		4,450	4
Hamilton & Co.	Morning Star				600	Non-Gaseous	1		Natural										
Pearl Canon Coal Co.	Hear Canon				1,200	Non-Gaseous	1		Fan	Jeffrey	4	210		Electric		15,120		16,200	39
Hear River Coal Co.	Hear River		1,200	12'	1,400	Non-Gaseous	1		Fan	Atlas	12	250		Steam	2	9,000		16,200	39
Hedden, W. C.	White Ash					Non-Gaseous	1		Natural										
Bell, J. C. & Co.	Monomy				300	Non-Gaseous	1		Natural										
Herry, Chas. T.	Herry				630	Non-Gaseous	1		Natural										
Hig Four Coal and Coke Co.	Centennial	146				Gasous	1		Fan										
Pig Six Coal Co.	Sunny side	21				Non-Gaseous	1		Fan	Crawford & McCrimmon	12	120		Electric and Steam		17,800	4,750	10,300	110
Black Canon Coal and Fuel Co.	Co. Bell		2,700			Non-Gaseous	1		Fan		4 1/2 x 5	14		Electric		15,000		16,000	32
Black Cat Coal Co.	Black Cat	30				Non-Gaseous	1		Fan		10	410							
Black Hawk Coal Co.	Primrose No. 2		1,100	5'		Non-Gaseous	1		Fan	Stine	5	270		Electric		9,100		9,400	44
	Primrose No. 3		1,500			Non-Gaseous	1		Fan										
Honolulu Coal Co.	Pickford		300	3%	300	Non-Gaseous	1		Natural										
Hook Cliff Coal Co.	Hook Cliff		1,000			Non-Gaseous	1		Natural										
Boulder Black Diamond Coal Co.	Black Diamond		300	20'		Non-Gaseous	1		Fan	American	2	300		Steam		12,000		11,000	26
Boulder Valley Coal Co.	Boulder Valley	147				Gasous	1		Fan	Ajax	5	130		Electric and Steam	1	24,000		24,000	76
Hracken & Co.	Hracken Gap		800	6'	1,000	Non-Gaseous	1		Fan	Stine	5	400		Electric		22,000		23,000	3
Green Coal Mining Co.	Green					Non-Gaseous	1		Fan		13	50		Electric		13,000		13,500	61
Hrennan Coal Mining Co.	Hrennan				1,000	Non-Gaseous	1		Fan		14	60		Electric		13,450		14,250	3
Caddell Bros.	Huron		4,000	7'		Gasous	1		Fan		36	240		Electric	1	26,000	24,000	21,100	37
Caddell Bros.	Cuthbert Canon		700	6%		Non-Gaseous	1		Fan							4,500		4,500	14
Calumet Fuel Co.	Primo Peak		5,000			Non-Gaseous	1		Natural							24,000		24,000	137
Caminito & Co.	Primo-Star	1,047	2,500	90'	500	Non-Gaseous	1		Fan	Jeffrey	12 x 4	110	2 1/2	Electric	1	26,000		26,000	14
Canon-Reliance Coal Co.	Canon			25'		Non-Gaseous	1		Fan	Gulbal									
Canon-Reliance Coal Co.	Reliance		2,600			Gasous	1		Fan										
Castle Coal Co.	Caprock		490			Non-Gaseous	1		Natural										
Cedar Hill Coal and Coke Co.	Greenville		500	2'	1,500	Non-Gaseous	1		Natural										
Cedar Hill Coal and Coke Co.	Black Diamond		1,000	2'		Non-Gaseous	1		Fan		12	75		Steam	5	11,200		14,600	30
Champion Fuel Co.	Champion	239				Non-Gaseous	1		Fan		5	50		Electric		32,000	28,500	19,780	71
Cherry & Stunk	Cherry		300	14'		Non-Gaseous	1		Natural										
Chew & Adams	Missouri		250	8'		Non-Gaseous	1		Natural										
Clayton Coal Co.	Clayton	335		1 1/2'	600	Gasous	1		Fan	Jeffrey	14	70		Steam	2	12,000	12,000	74,340	19
Cobb, E. R.	Bennett					Non-Gaseous	1		Natural										
Colorado Fuel and Iron Co.	Coal Creek	394				Gasous	1		Fan	Steel Works	2 1/2 x 12	174	1 1/2	Electric	2	35,040	27,622	61,430	190
Colorado Fuel and Iron Co.	Rockvale	312				Gasous	1		Fan	C. F. & I. Co.	10	200	3	Electric	2	90,000	96,000	31,000	216
Colorado Fuel and Iron Co.	Fremont	402				Gasous	1		Fan	Gulbal	24	70	1 1/2	Steam	2	51,200	55,295	41,160	175
Colorado Fuel and Iron Co.	Emerald		2,000	6%		Gasous	1		Fan	Sturtevant	4	160	5	Electric	2	22,940	23,320	34,400	31
Colorado Fuel and Iron Co.	Nome		4,000			Non-Gaseous	1		Fan	C. F. & I. Co.	10	75	5	Steam	2	21,000		32,000	33
Colorado Fuel and Iron Co.	Crested Butte		5,000			Gasous	1		Fan	Capell	13	140	6	Steam	2	62,425	26,000	66,340	100
Colorado Fuel and Iron Co.	12th Mountain		1,700			Gasous	1		Fan	Buffalo	3 1/2 x 8	150	3	Steam	2	16,000	16,000	16,000	23
Colorado Fuel and Iron Co.	Walton-Robinson																		
	Robinson No. 1		4,600																
	Robinson No. 2		5,000																
Colorado Fuel and Iron Co.	Walton		4,500			Gasous	11	60	Can(2)	Capell	13 x 9	143	2 1/2	Steam and Electric	1	40,140		76,800	5141

Peacock Coal Co	City No. 2	45	325	0%	Non-Gaseous	1	Natural	Buffalo	10	170	1.4	Electric	5,000	4,000	12
Pelroy, Bain	Peaseman	1,000	1,000		Non-Gaseous	1	Natural						5,000	5,000	6
Pikes Peak Consolidated Fuel Co	White	175	900		Non-Gaseous	1	Natural						41,935	41,935	158
Pischel, H. E.	White		900		Non-Gaseous	1	Natural								1
Prairie Canon Coal Co	Prairie Canon		900		Non-Gaseous	1	Natural						11,000		34
Pritchard Fuel Co	Pritchard		800		Non-Gaseous	1	Natural						16,000	15,000	5
Prosperity Coal Co.	Prosperity	No report			Non-Gaseous	1	Natural								
P. V. Coal Co.	P. V.	No report			Non-Gaseous	1	Natural								
Quality Coal Co.	Verdun	250			Non-Gaseous	1	Natural								2
Rail Coal Co	Smith-Tanner	800	3 1/2%		Non-Gaseous	1	Natural						7,200	7,100	5
Rapson Coal Mining Co	Rapson No. 1	2,000	10%		Non-Gaseous	2	Natural	Cole		90		Steam	30,000		12
Reeser, Edward C	Farmer-Mineral				Non-Gaseous	1	Natural								7
Reynolds & Bahrock	Black Diamond	325			Non-Gaseous	1	Natural						5,000	5,000	
Rio Blanco Coal Co	Fairfield	No report			Non-Gaseous	1	Natural								
Rochio, James	Rochio	240	200		Non-Gaseous	1	Natural	Morris	12		1	Steam	90,000	124,890	62
Rocky Mountain Fuel Co	Stinson	545			Non-Gaseous	3	Natural	Vulcan	12	130	.2	Steam and Electric	30,000	25,000	85
Rocky Mountain Fuel Co	Standard	180			Non-Gaseous	4	Natural	Clifford	6' 6" x 11' 5"	113	1	Steam	65,980	67,890	61
Rocky Mountain Fuel Co	Vulcan	220			Non-Gaseous	3	Natural	Cole	12	100	.6	Steam	15,000	15,000	21
Rocky Mountain Fuel Co	Mitchell				Non-Gaseous	1	Natural								
Rocky Mountain Fuel Co	Acmr	114			Non-Gaseous	2	Natural	Cole	13	80	.3	Steam	21,680	21,960	72
Rocky Mountain Fuel Co	Hecla	152	180	12'	Non-Gaseous	2	Natural	Cole	11	70	.5	Steam	21,300	21,300	21
Rocky Mountain Fuel Co	Forham	2,000	16'		Non-Gaseous	2	Natural	Cole	1 1/4 x 13	110	.3	Electric	75,000	75,000	31
Rocky Mountain Fuel Co	Industrial	545			Non-Gaseous	3	Natural	Cole	11	110	1.3	Electric	47,916	25,824	104
Rocky Mountain Fuel Co	Alpine	160	3,300	7'	Non-Gaseous	1	Natural	Jeffrey	6 x 3' 5"	120	.2	Electric	28,545	25,250	13
Rocky Mountain Fuel Co	Forbes		3,700		Non-Gaseous	1	Natural	Quibai	18 x 16	102	1.2	Electric	14,000		30
Rocky Mountain Fuel Co	Medmou		500		Non-Gaseous	1	Natural	Rocky Mountain F. Co	12' 6"	95	1.1	Electric	16,000		37
Rocky Mountain Fuel Co	La Belle		1'	1,700	Non-Gaseous	2	Natural	Buckeye	5	300	3	Electric	28,000		18
Rocky Mountain Fuel Co	Southwestern		2,500	7'	Non-Gaseous	2	Natural		12	92	.5	Electric	21,000	21,000	32
Rocky Mountain Fuel Co	Grant	130			Non-Gaseous	2	Natural	Cole	6	260	.1	Electric	21,000	21,000	
Rocky Mountain Fuel Co	Frederick	500	27'		Non-Gaseous	2	Natural	Silber	11	42	.4	Electric	35,000	28,335	70
Rocky Mountain Fuel Co	Columbus	300			Non-Gaseous	7	Natural	Cole	10	200	.1	Steam	25,000	20,070	50
Roman Coal Co	Crown Point		600		Non-Gaseous	1	Natural	Jeffrey	10	200	.1	Electric			34
Ross Coal Co	Horare	125	275	2 1/2'	Non-Gaseous	1	Natural	McNabb & McCrimmon	8	120		Steam	24,400	25,800	61
Roult Pinnacle Coal Co	Roult-Pinnacle				Non-Gaseous	1	Natural								
Royal Fuel Co	Royal	713	5'	1%	Non-Gaseous	6	Natural	Jeffrey	5	204		Electric	19,250	18,140	26
Rugby Fuel Co	Rugby	1,350	6'		Non-Gaseous	2	Natural	Silber	7	212	2.9	Electric and Steam	41,600	51,960	117
Russell, W. E. Coal Co	Russell	570			Non-Gaseous	1	Natural	Sturtevant	12	180		Electric	11,250	12,000	40
Santa Fe Coal Co	Santa Fe		2,000		Non-Gaseous	2	Natural						51,925	11,120	65
Shamrock Coal Co	Shamrock	100			Non-Gaseous	1	Natural	Silber	5	1,300		Electric	25,000	12,800	32
South Canon Leasing Co	South Canon		1,100		Non-Gaseous	1	Natural	Buffalo	1 1/4			Steam			4
Star Coal Co	Star	70	117	6'	Non-Gaseous	2	Natural								5
Statera Coal Co	Statera		553		Non-Gaseous	1	Natural						5,000	5,400	2
Stilwagon Iron	Old Coalby		500		Non-Gaseous	1	Natural								
Stokes, W. D.	Stokes		150		Non-Gaseous	1	Natural								2
Sturtevant Coal Co	Sunshine		700		Non-Gaseous	1	Natural						7,000		7
Sunnyside Coal Mining Co	Sunnyside		2,700	2' Stope	Non-Gaseous	2	Natural	Ajax	6	150	1	Steam	32,600	32,600	99
Temple Fuel Co	Brighton No. 9	3,500	26%		Non-Gaseous	2	Natural	Jeffrey	12	160	5/8	Electric	30,000		119
Thomas Coal Co	Brookhead No. 10	2,500	18%		Non-Gaseous	1	Natural	Cole	12	17	1 1/4	Electric	25,000	22,000	61
Thomas, C. F.	Thomas	No report			Non-Gaseous	1	Natural								2
Three Pines Coal	Three Pines No. 1		1,300		Non-Gaseous	1	Natural								
	Three Pines No. 2		700		Non-Gaseous	1	Natural		5	130			5,500	6,500	25
Triangle Coal Co	Triangle		500		Non-Gaseous	1	Natural								2
Trinidad Coal Co	Baldy Mountain	400			Non-Gaseous	1	Natural								2
Trinidad Coal Mining Co	Valley	1,000			Non-Gaseous	1	Natural						60,000	50,000	13
Turner Coal Co	Turner	2,200	1%		Non-Gaseous	6	Natural	Jeffrey	8 x 1	81		Electric	65,000	65,000	120
Union Coal and Coke Co	Pryor-C	1,500			Non-Gaseous	1	Natural	Vulcan	10	100		Electric	21,000	22,000	76
	IK	1,500	4'		Non-Gaseous	1	Natural	Home-made	7	100		Steam	20,000	25,000	12
United Collieries Co	Monroe	100	300	20%	Non-Gaseous	1	Natural	Jeffrey	18 x 6	150	5	Steam	200,310	331,730	160
Utah Fuel Co	Somerset	6,810	2'		Non-Gaseous	40	Natural	Cole	1 1/4 x 1 1/4	90		Electric	1,575	1,575	10
Virginia, Tony	Williamsburg Slope	50	3,100	3.5%	Non-Gaseous	1	Natural						16,800	25,800	63
Vesta Mines, Incorporated	Vesta				Non-Gaseous	1	Natural								
Vossell & Marchetti	Brookville	1,600			Non-Gaseous	1	Natural						5,750	9,325	7
Victor-American Fuel Co	Phaniler	453	5,600	5.1%	Non-Gaseous	4	Natural	Capell	7 x 16	134	1.1	Electric	42,000	40,000	124
Victor-American Fuel Co	Phaniler		2,700	1%	Non-Gaseous	2	Natural	Miroto	4 1/2	151	1	Electric	21,420	26,400	59
Victor-American Fuel Co	Ravenwood	5,000	2 1/4'		Non-Gaseous	4	Natural	Silber	5	470	.9	Electric	21,075	21,075	17
Victor-American Fuel Co	Delagua No. 1	2,200	2 1/4%		Non-Gaseous	15	Natural	Capell	7 x 16	155	1.1	Electric	101,835	65,272	219
	Delagua No. 2		10,000		Non-Gaseous	15	Natural	Crawford & McCrimmon	15	87	.5	Electric			
Victor-American Fuel Co	Casa		2,950		Non-Gaseous	2	Natural	Silber	6	575	.5	Electric	27,710	27,740	71
Victor-American Fuel Co	Hastings No. 5		2,300		Non-Gaseous	2	Natural	Jeffrey	6	552	.5	Electric	20,154	20,952	49
Victor-American Fuel Co	Hray Creek	2,000	3,700	5%	Non-Gaseous	3	Natural	Silber	7	309	.6	Electric	32,600	32,600	24
Victor-American Fuel Co	Pinnacle No. 1		4,200		Non-Gaseous	5	Natural	Jeffrey	8	70		Steam	27,800	27,800	101
	Pinnacle No. 2		1,900		Non-Gaseous	5	Natural	Hummer	12	60	.6	Steam	26,000	24,000	
Victor-American Fuel Co	Wadga No. 1	1,000			Non-Gaseous	1	Natural	Silber	4	535	.5	Electric	13,360	16,360	73
Wadga No. 2	Wadga No. 2	1,400			Non-Gaseous	1	Natural		5	275	.5	Electric	27,640	27,640	73
Waller Mining Co	Waller		100		Non-Gaseous	1	Natural								2
Walker Land and Cattle Co	Walker	500			Non-Gaseous	1	Natural								2
Webber Coal Association	Webber	No report			Non-Gaseous	1	Natural								3
Western Collieries Co	Satanle	225	170	Vertical	Non-Gaseous	1	Natural						5,000	7,300	11
White River Lumber Co	White River		524		Non-Gaseous	1	Natural						5,000		2
Winton Coal Co	Winton		1,440		Non-Gaseous	1	Natural						2,136	3,976	1

* Mine idle entire year account being flooded

A. A gaseous mine is one generating explosive gas in quantities sufficient to be detected by an approved safety lamp.

TABLE 4
MINING MACHINES AND EXPLOSIVES USED AT COAL MINES IN THE STATE OF COLORADO FOR YEAR ENDED DECEMBER 31, 1920.

Name of Operator	Name of Mine	Mining Machines		Coal Mined by (Short Tons)			Explosives Used (Pounds)		
		No. Operated by Compressed Air	No. Operated by Electricity	Hand	Machine	Total	Black Powder	Dynamite	Permissible
Ajax Coal Co.	Capitol	2			21,119	21,119	6,350		
Amalgamated Dev. Corp.	Elk Creek		1	14,111	7,244	21,355	10,000		
Amalgamated Dev. Corp.	Yampa			5,192		5,192	3,750		
American Smelt. and Ref. Co.	Boncarbo	13		63,381	155,023	218,404			31,812
American Smelt. and Ref. Co.	San Juan			26,295		26,295			600
Anchor Coal Co.	Anchor No. 2	2		3,053		3,053	2,450		
Axial Basin Dev. Co.	Colleen			2,075		2,075	2,115		
Aztec Coal M. Co.	Tollce	4		350	37,227	37,577	1,900	2,085	3,985
Baldwin Fuel Co.	Baldwin-Star			6,122		6,122	3,000		
Baudhu & Co.	Morning-Star			3,945		3,945	750	200	
Bear Canon Coal Co.	Bear Canon	1		52,031	8,124	60,155		1,100	12,950
Bear River Coal Co.	Bear River			37,786		37,786	17,575		
Bedlien, W. C.	White Ash			1,961		1,961	5,000		
Bell, J. C., & Co.	Economy			500		500			
Berry, Chas. T.	Berry			515		515			
Big Four Coal and Coke Co.	Centennial	10	2		90,524	90,524	40,100	108	365
Big Six Coal Co.	Sunnyside	4			14,718	14,718			
Black Canon Coal and Fuel Co.	Caddell	2		7,900	13,769	21,669	12,700	50	
Black Cat Coal Co.	Black Cat			409		409	750	100	
Black Hawk Coal Co.	Primrose			33,917		33,917			1,067
Boaglio Coal Co.	Pickford			814		814			25
Book Cliff Coal Co.	Book Cliff			11,404		11,404			
Boulder Black Diamond Coal Co.	Black Diamond	3			32,840	32,840	12,200		

TABLE No. 4—(Continued)
MINING MACHINES AND EXPLOSIVES USED AT COAL MINES IN THE STATE OF COLORADO FOR YEAR ENDED
DECEMBER 31, 1920.

Name of Operator	Name of Mine	Mining Machines		Coal Mined by (Short Tons)			Explosives Used (Pounds)		
		No. Operated by Compressed Air	No. Operated by Electricity	Hand	Machine	Total	Black Powder	Dynamite	Permissible Explosives
Boulder Valley Coal Co.	Boulder Valley	8	—	2,045	48,051	48,051	20,525	100	2,200
Bracken & Cozza	Harvey Gap	—	—	9,817	—	2,045	—	—	600
Breen Coal Mining Co.	Breen	—	—	3,817	—	9,817	2,625	—	3,700
Brennan Coal Mining Co.	Brennan	—	3	—	49,784	49,784	17,575	—	1,800
Caddell Bros.	Hezron	—	1	3,414	7,968	11,382	—	—	—
Caddell Bros.	Cuchara Canon	—	—	1,730	—	1,730	2,300	—	20
Calumet Fuel Co.	Perins Peak	—	—	11,985	55,986	67,971	—	400	7,600
Caminotti & Co.	Premium-Star	—	3	7,676	—	7,676	—	—	3,000
Canon-Reliance Coal Co.	Canon	—	2	57,832	52,792	110,624	—	—	17,510
Canon-Reliance Coal Co.	Reliance	—	3	18,847	19,627	38,474	—	—	10,777
Castle Coal Co.	Caprock	—	—	4,133	—	4,133	—	15	650
Cedar Hill Coal and Coke Co.	Greenville	—	—	30,623	—	30,623	—	—	—
Cedar Hill Coal and Coke Co.	Black Diamond	—	—	6,373	—	6,373	—	—	—
Champion Fuel Co.	Champion	6	—	1,261	43,600	44,861	19,500	100	—
Chergo & Stunk	Chergo	—	—	730	—	730	2,250	—	—
Chew & Adam	Missouri	—	—	1,072	—	1,072	725	—	—
Clayton Coal Co.	Clayton	2	—	—	19,845	19,845	10,750	—	—
Cobb, E. R.	Bennett	—	—	551	—	551	1,200	50	—
Colorado Fuel and Iron Co.	Coal Creek	—	—	197,457	—	197,457	18,350	10,890	—
Colorado Fuel and Iron Co.	Rockvale	—	—	140,221	—	140,221	15,550	7,526	—
Colorado Fuel and Iron Co.	Fremont	—	—	121,896	5,084	126,980	10,775	3,217	—
Colorado Fuel and Iron Co.	Emerald	—	—	17,454	—	17,454	—	294	—
Colorado Fuel and Iron Co.	Nonac	—	1	4,548	27,314	31,862	8,800	50	—

TABLE No. 4—(Continued)

MINING MACHINES AND EXPLOSIVES USED AT COAL MINES IN THE STATE OF COLORADO FOR YEAR ENDED DECEMBER 31, 1920.

Name of Operator	Name of Mine	Mining Machines		Coal Mined by (Short Tons)			Explosives Used (Pounds)		
		No. Operated by Compressed Air	No. Operated by Electricity	Hand	Machine	Total	Black Powder	Dynamite	Permissible
Evans Fuel Co.	Evans	6			130,239	130,239	37,250		
Fiant, E. M.	McElmo			744		744	1,525		
Fickes, Frank M.	Coalby Red Canon			1,435		1,445			
Florence-Canon Coal Co.	Florence-Canon		1	373	3,747	4,120	150	50	450
Foreman, Thos. D.	McKee	No	rep	135		135			
Fox Coal Mining Co.	Fox	5		19,574	52,367	71,941	20,190		
French & Fielding	School Section Lease			2,119		2,119		100	
Fruth & Stone	Leader			75		75		500	
Gardner, D. L.	Farmer			211		211	500	30	
Garfield Coal M. and T. Co.	Garfield			4,309		4,309	3,750		
Gibson Lumber and Fuel Co.	Royal Gorge			44,889		44,889	20,750	900	3,600
Gilson Asphaltum Co.	Carbonera			19,593		19,593		4,400	
Gordon Coal Co.	Gordon	4			82,714	82,714	28,500	100	
Grand Junction M. and F. Co.	Cameo		4	36,300	68,371	104,671	625	450	10,100
Grand Junction M. and F. Co.	Sterling	1	2	1,474	26,152	27,626	9,125	1,500	
Green Valley Coal Co.	Green Valley								
Gregory, George	Marr			3,044		3,044	1,125		
Hall A. W. & Son	Red Mountain			866		866	750		
Harris, E. R. & Co.	Double Dick		1	4,487	6,530	4,487	1,250		
Hart Coal Co.	Hart	No	rep	35		35	775	600	
Hawkeye Coal Co.	McDowell			6,202		6,202	5,625		
Hayden Bros. Coal Corp.	Hayden		1	55,169	12,832	68,001	39,700	535	
Hayden Valley Mutual Coal Co.	Dry Creek	1			1,064	1,064	1,250		200

Company	No	rep	ort	24,992 3,470 1,965 1,057 127	(closed)	24,992 3,470 1,965 1,057 127	2,400 375	10 200	6,405
Hesperus Hines Hines-Broyles Coal Co. H. M. & L. W. Coal Co. Holland W. C. Holtkiss, W. S. Rollins									
Huerfano Coal Co. Hunter, J. B. Independent Lumber Co. International Fuel Co. Irons, W., & Son Baldy		2		125,509 410 1,178 26,285 1,066	11,203	136,712 410 1,178 26,285 1,066	375 300 16,100		12,417
Jeffries Fuel Co. Jewel Coal Co. Joergel Fuel Co. Jones & Trachta Juanita Coal and Coke Co.		3		34,054 10,450 1,800 632 103,622	23,977	34,054 10,450 1,800 632 103,622			6,250 30
Keystone Mining Co. Leone, L. Leyden Coal Co. Liberty Coal Co. Liberty Coal and Merc. Co.		3		19,603 2,509 66,950 4,338 1,784	58,811	78,414 2,509 165,476 4,338 2,584		315 400	315 50
Louisville Mining Co. Majestic Fuel Co. Marchetti, J. R. Marsh R. Marshall Coal Co.		4		322 35 913 810	31,850	32,172 35 913 810	7,500	25	100 25 90
Mattivi, Steve McLaughlin, Jas. E. McNally & Thompson McNeil Coal Co. Midwest Coal and Iron Co.		3 6		500 343	40,422 77,781	40,422 77,781	28,425	1,000	3,500
Miners Coal and Coke Co. Moffat Coal Co. Moffitt-Carlile Coal Co. Moffitt-Carlile Mutual Coal Co. National Fuel Co.		2 6		231,200 200 11,146 11,845	8,160 40,639	8,160 271,839 200 153,439 114,254	110,900 53,775 51,675	222 198	800 2,747 400
National Fuel Co. National Fuel Co.		12 1		96,380 20,021	247,703	96,380 267,724	110,875	450	8,000

TABLE No. 4—(Continued)
MINING MACHINES AND EXPLOSIVES USED AT COAL MINES IN THE STATE OF COLORADO FOR YEAR ENDED
DECEMBER 31, 1920.

Name of Operator	Name of Mine	Mining Machines		Coal Mined by (Short Tons)			Explosives Used (Pounds)		
		No. Operated by Compressed Air	No. Operated by Electricity	Hand	Machine	Total	Black Powder	Dynamite	Permissible
Naturita Stores Co.	Cloverdale	.....	.....	372	.....	372	150	.....	.....
New Santa Fe Coal and Coke Co.	New Viola	.....	.....	1,629	250	1,879	1,350	.....	250
North Park Coal Co.	Moore	.....	.....	50,039	.....	50,039	33,750	250	.....
Oakdale Coal Co.	Oakdale	.....	.....	128,000	40,341	168,341	10,871	100	26,938
Oberding, Wm. J.	Knauss	.....	.....	332	.....	332	240	.....	.....
Ohio Creek Coal M. Co.	Ohio Creek	.....	.....	1,198	20,000	21,198	8,750	.....	100
O. K. Coal Co.	O. K.	.....	.....	4,238	.....	4,238	150	.....	.....
Orecchio Coal Co.	Orecchio	.....	.....	2,340	.....	2,340	3,000	100	.....
Owens, W. H.	Brown	.....	.....	2,500	.....	2,500	.....	.....	2,400
Palisade Coal and Supply Co.	Palisade	.....	.....	32,719	.....	32,719	12,775	950	.....
Paonia Coal Co.	Farmer	.....	.....	4,826	.....	4,826	2,000	.....	200
Patterson, Alexander	City No. 2	.....	.....	14,609	.....	14,609	1,250	.....	.....
Peacock Coal Co.	Freeman	.....	.....	455	.....	455	525	.....	.....
Petry, Sam	Willie	.....	.....	3,244	.....	3,244	500	40	.....
Pike's Peak Consolidated Fuel Co.	Pikeview	.....	.....	50,222	150,077	200,299	.....	250	.....
Pischel, H. E.	Zerbe	.....	.....	1,294	.....	1,294	1,300	.....	.....
Prairie Canon Coal Co.	Prairie Canon	.....	.....	27,065	.....	27,065	.....	.....	3,800
Pritchard Fuel Co.	Pritchard	.....	.....	1,443	.....	1,443	.....	.....	36
Prospect Coal Co.	Prospect	.....	.....	1,471	.....	1,471	.....	.....	.....
P. V. Coal Co.	P. V.	.....	.....	755	.....	755	.....	.....	.....
Quality Coal Co.	Verdun	.....	.....	429	.....	429	.....	.....	.....
Rail Coal Co.	Smith-Tanner	.....	.....	1,370	.....	1,370	275	.....	.....
Rapson Coal Mining Co.	Rapson No. 1	.....	.....	24,992	9,189	34,091	.....	.....	7,450

TABLE No. 4—(Continued)

MINING MACHINES AND EXPLOSIVES USED AT COAL MINES IN THE STATE OF COLORADO FOR YEAR ENDED
DECEMBER 31, 1920.

Name of Operator	Name of Mine	Mining Machines		Coal Mined by (Short Tons)			Explosives Used (Pounds)		
		No. Operated by Compressed Air	No. Operated by Electricity	Hand	Machine	Total	Black Powder	Dynamite	Permissible
Thomas Coal Co.	Williamsville	.....	.....	341	.....	341	.....	.....	.....
Thomas, C. F.	Thomas	.....	rep	1,014	.....	1,014	1,200	22	.....
Three Pines Coal Co.	Three Pines	.....	.....	9,398	.....	9,398	.....	.....	1,145
Triangle Coal Co.	Triangle	.....	.....	532	.....	532	400	.....	.....
Trinidad Coal Co.	Baldy Mountain	.....	.....	1,456	.....	1,456	.....	.....	200
Trinidad Coal M. Co.	Valley	.....	.....	7,199	.....	7,199	.....	.....	.....
Turner Coal Co.	Turner	.....	7	7,728	144,468	152,196	50	494	33,456
Union Coal and Coke Co.	Pryor	.....	4	31,000	57,571	88,571	.....	10	5,350
United Collieries Co.	Monroe	4	.....	.....	68,115	68,115	20,500	550	24,850
Utah Fuel Co.	Somerset	.....	1	286,586	.....	286,586	.....	.....	.....
Verlengia, Tony	Williamsburg Slope	.....	.....	1,351	.....	1,351	875	60	.....
Vesta Mines Incorp.	Vesta	.....	2	8,389	47,541	55,930	22,500	600	.....
Vezzetti and Moschetti	Brookside	.....	1	.....	15,152	15,152	5,000	100	.....
Victor-American Fuel Co.	Chandler	.....	8	701	121,536	122,237	.....	.....	30,283
Victor-American Fuel Co.	Radiant	.....	5	5,003	43,273	48,276	17,850	.....	2,306
Victor-American Fuel Co.	Ravenwood	.....	4	30,524	26,508	57,032	.....	.....	11,557
Victor-American Fuel Co.	Delagua	.....	8	365,034	161,975	527,009	.....	.....	22,910
Victor-American Fuel Co.	Cass	.....	4	16,045	89,544	105,589	.....	.....	8,289
Victor-American Fuel Co.	Hastings No. 5	.....	3	66,356	7,103	73,459	.....	.....	18,869
Victor-American Fuel Co.	Gray Creek	2	23,008	10,986	33,994	2,635

Victor-American Fuel Co.
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• Tonnage of mines not reporting included in hand mined.

TABLE No. 6

PRODUCTION AND DISTRIBUTION OF COAL FROM ALL THE MINES
IN THE STATE OF COLORADO FOR THE YEAR ENDING
DECEMBER 31, 1920.

Total Production Distributed	Loaded at Mines for Shipment	Sold to Local Trade and Used by Employees	Used at Mines for Steam and Heat	Coal Made Into Coke	Coke Made
12,514,693	10,333,662	408,282	281,943	1,488,857	790,423

TABLE No. 5

Table No. 5 omitted. Applies to metal mining.

TABLE No. 7
NUMBER INJURED IN COAL MINES DURING THE CALENDAR YEAR ENDED DECEMBER 31, 1920.

CAUSES	Permanent Total Disability	Permanent Partial Disability	Temporary Disability		Total Injuries
			Time Lost More Than 14 Days	Time Lost Less Than 14 Days	
Underground—					
1. Falls of roof (coal, rock, etc.)	1	7	250	181	439
2. Falls of face or pillar coal			51	62	113
3. Mine cars and locomotives		13	241	177	431
4. Gas explosions and burning gas			7	1	8
5. Coal-dust explosions (including gas and dust combined)					
6. Explosives			8	1	9
7. Suffocation from mine gas					
8. Electricity					
9. Animals			1	4	5
10. Mining machines			40	56	96
11. Mine fires (burned, suffocated, etc.)		2	30	42	74
12. Other causes		9	192	268	470
In Shaft—	1				
13. Falling down shafts or slopes			2		2
14. Objects falling down shafts or slopes			1	1	2
15. Cages or skips			2		2
16. Other causes			1		1
Total number injured in mines	2	31	826	792	1,651
On Surface—					
17. Mine cars and mine locomotives		1	16	10	27
18. Electricity			1	1	2
19. Machinery			10	4	14
20. Boiler explosions or bursting steam pipes					
21. Railway cars and locomotives			12	9	21
22. Other causes	1		46	45	92
Total number injured on the surface	1	1	85	68	155
GRAND TOTAL	3	32	911	860	1,806

A. PERMANENT TOTAL DISABILITY. Loss of both legs or arms, one leg and one arm, total loss of eyesight, paralysis or other condition permanently incapacitating workman from doing any work of a gainful occupation.

B. PERMANENT PARTIAL DISABILITY. Loss of one foot, leg, hand, eye, one or more fingers, one or more toes, and dislocation where ligaments are severed, or any other injury known in surgery to be permanent partial disability.

C. In this column include only accidents which cause a loss of time more than the balance of the day or shift upon which the accident occurred.

TABLE No. 8
COAL MINE FATALITIES IN THE STATE OF COLORADO, CLASSIFIED BY CAUSE AND OCCUPATION, FOR YEAR ENDED
DECEMBER 31, 1920.

CAUSES	UNDERGROUND AND SHAFT															Total Underground	67
	Foreman	Assistant Foreman	Pit Bosses	Pick Miners	Machine Miners	Machine Runners and Scrapers	Shot Firers	Drivers and Runners	Motormen and Assistants	Doorboys and Helpers	Trackmen and Bratticemen	Timbermen and Rockmen	Pumpmen and Pipemen	Electricians and Helpers	All Others			Total Underground
Underground—																	36
1. Falls of roof (coal, rock, etc.)	2	16	15	1	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....
2. Falls of face or pillar coal
3. Mine cars and locomotives	3	4	.....	.....	12	1	.....	.....	.....	.....	.....	.....	.....	22
4. Gas explosions and burning gas
5. Coal-dust explosions (including gas and dust combined)
6. Explosives	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
7. Suffocation from mine gases
8. Electricity (shock or burns)
9. Animals	2	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10. Mining machines
11. Mine fires (burned, suffocated, etc.)
12. Other causes
Shaft—																	1
13. Falling down shafts or slopes
14. Objects falling down shafts or slopes
15. Cages or skips
16. Other causes
Total Underground	2	21	20	2	1	12	1	.....	.....	2	.....	.....	6	.....	67
Surface Fatalities																
Total Fatalities																

Surface—																
17. Mine cars and mine locomotives	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
18. Electricity (shock or burns)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
19. Machinery	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
20. Boiler explosions or bursting steam pipes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
21. Railway cars and locomotives	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
22. Other causes	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grand total	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Number employed in each occupation (a)	195	53	184	4,536	2,992	515	152	994	183	102	314	468	131	94	222	11,135

(a) To be supplied from Table 10.

TABLE No. 10

COAL MINE EMPLOYEES CLASSIFIED BY OCCUPATION IN THE STATE OF COLORADO DURING YEAR ENDED DECEMBER 31, 1920.

UNDERGROUND		Employed in and Around the Mines of Colorado
1. Foremen		195
2. Assistant foremen		53
3. Fire bosses		184
4. Pick miners		4,536
5. Machine miners		2,992
6. Machine runners and scrapers		515
7. Shot firers		152
8. Drivers and runners		994
9. Motormen and assistants		183
10. Doorboys and helpers		102
11. Trackmen and bratticemen		314
12. Timbermen and rockmen		468
13. Pumpmen and pipemen		131
14. Electricians and helpers		94
15. All others		222
Total underground		11,135
SURFACE		
1. Superintendents		156
2. Foremen		72
3. Blacksmiths and carpenters		281
4. Engineers and firemen		361
5. Machinists and helpers		102
6. Trackmen and helpers		73
7. All others at mine		1,338
8. Coke-oven employees		342
9. Office employees		147
Total surface		2,872
Total employees		14,007
Number of days men worked during year		256.2

Table No. 9 omitted, is covered by Table No. 8. Applies to Metal Mining

TABLE A

SHOWING BY COMPANIES: TOTAL NUMBER OF TONS PRODUCED AND NUMBER OF MEN EMPLOYED; NUMBER OF FATAL ACCIDENTS; NUMBER OF MEN EMPLOYED PER FATAL ACCIDENT AND NUMBER OF TONS PRODUCED PER FATAL ACCIDENT; NUMBER OF NON-FATAL ACCIDENTS; NUMBER OF MEN EMPLOYED PER NON-FATAL ACCIDENT AND NUMBER OF TONS PRODUCED PER NON-FATAL ACCIDENT; NUMBER KILLED PER 1,000 EMPLOYED AND NUMBER OF MEN INJURED PER 1,000 EMPLOYED.

COMPANIES	Total Production	Number of Men Employed	Number of Fatal Accidents	Number of Men Employed per Fatal Accident	Number of Tons Produced per Fatal Accident	Number of Non-Fatal Accidents	No. of Men Employed per Non-Fatal Accident	Number of Tons Produced per Non-Fatal Accident	Killed per 1,000 Employed	Injured per 1,000 Employed
Ajax Coal Company.....	21,119	39	2	20	10,560	6	6.5	3,520	51.3	154
Amalgamated Development Corporation.....	26,547	57	.....	.....	.....	6	9.5	4,425	105	105
American Smelting and Refining Company.....	244,699	237	5	47+	48,340	79	3	3,097	21+	80—
Anchor Coal Company.....	3,053	3	.....	.....	.....	.....	.....	.....	.....	.....
Axial Basin Development Company.....	2,075	4	.....	.....	.....	2	2	1,037	.....	500
Aztec Mining Company.....	37,577	71	.....	.....	.....	.....	.....	.....	.....	.....
Baldwin Fuel Company.....	6,122	6	.....	.....	.....	.....	.....	.....	.....	.....
Baudino & Co.....	3,945	4	.....	.....	.....	.....	.....	.....	.....	.....
Bear Canon Coal Company.....	60,155	60	1	60	60,155	1	60	60,155	16.7—	16.7—
Bear River Coal Company.....	37,786	57	.....	.....	.....	10	5.7	3,778	.....	175
Bedlien, W. C.....	1,961	3	.....	.....	.....	.....	.....	.....	.....	.....
Bell, John, & Co.....	500	2	.....	.....	.....	.....	.....	.....	.....	.....
Berry, Charles T.....	515	3	.....	.....	.....	.....	.....	.....	.....	.....
Big Four Coal and Coke Company.....	90,524	88	.....	.....	.....	11	8	8,230	.....	125
Big Six Coal Company.....	14,718	30	.....	.....	.....	5	6	2,944	.....	166
Black Canon Coal and Fuel Company.....	21,669	30	.....	.....	.....	2	15	10,849	.....	67—
Black Cat Coal Company.....	409	2	.....	.....	.....	.....	.....	.....	.....	.....
Black Hawk Coal Company.....	33,917	48	.....	.....	.....	3	16	11,305	.....	62+
Boagho Coal Company.....	814	2	.....	.....	.....	.....	.....	.....	.....	.....
Book Cliff Coal Company.....	11,404	15	.....	.....	.....	4	3.8	2,851	.....	267—
Boulder Black Diamond Coal Company.....	32,840	32	.....	.....	.....	.....	.....	.....	.....	.....
Boulder Valley Coal Company.....	48,051	42	.....	.....	.....	14	3	3,432	.....	333

[illegible]

TABLE A—(Continued)

COMPANIES	Total Production	Number of Men Employed	Number of Fatal Accidents	Number of Men Employed per Fatal Accident	Number of Tons Produced per Fatal Accident	Number of Non- Fatal Accidents	No. of Men Em- ployed per Non- Fatal Accident	Number of Tons Produced per Non-Fatal Accident	Killed per 1,000 Employed	Injured per 1,000 Employed
Fruth & Stone.....	75	5								
Gardner, D. L.....	211	2								
Garfield Coal Mining and T. Company.....	4,309	11					11	4,309		91
Gibson Lumber and Fuel Company.....	44,889	55					6	7,482		109
Gilson Asphaltum Company.....	19,593	12					2	9,796		166
Gordon Coal Company.....	82,714	84					14	13,786		71
Grand Junction Mining and Fuel Company.....	132,297	126					6	6,300		166
Green Valley Coal Company.....	3,044	2					21			
Gregory, George.....	866	2								
Hall, A. W., & Son.....	4,487	5								
Harris, E. R., & Co.....	6,530	9								
Hart Coal Company.....	35	1								
Hawkeye Coal Company.....	6,202	14					7	3,101		143
Hayden Bros. Coal Corporation.....	68,001	133					8	8,500		60
Hayden Valley Mutual Coal Company.....	1,064	5								
Hesperus Fuel Company.....	24,992	39					10	2,499		256
Hines-Broyles Coal Company.....	3,470	6					1	3,470		167
H. M. & L. W. Coal Company.....	1,965	5								
Holland, W. C.....	1,057	2								
Hotchkiss, W. S.....	127	1								
Huerfano Coal Company.....	136,712	123	1	123	136,712	7	17.6	19,530	7.3	51
Hunter, J. B.....	410	3								
Independent Lumber Company.....	1,178	4	1	4	1,178				250	
International Fuel Company.....	26,285	40				8	5	3,286		200
Irons, W., & Son.....	1,066	2								
Jeffries Fuel Company.....	34,054	36				3	12	11,351		83
Jewel Coal Company.....	34,427	53	1	53	34,427	5	10.6	6,885	18.9	95

Joergel Fuel Company	1,800	2	1	153	165,176	10	15.3	6.5	67
Jones & Trachta	632	1	1	153	165,176	10	15.3	6.5	47
Juanita Coal and Coke Company	103,622	45	5	15	20,724	5	15	20,724	22
Keystone Mining Company	78,414	63	3	21	26,137	3	21	26,137	135
Leone, L.	2,509	3	3	3					
Leyden Coal Company	165,176	153	1	153	165,176	10	15.3	6.5	65
Liberty Coal Company	4,898	7	4						
Liberty Coal and Mercantile Company	2,584	4	1	47	32,172	1	47	32,172	22
Louisville Mining Company	32,172	47	3	3					
Majestic Fuel Company	35	3	3						
Marchetti, J. R.	913	2	2						
Marsh, R.	810	2	2						
Marshall Coal Company	34,022	37	1	37	34,022	5	7.4	27	135
Mattivi, Steve	500	3	3						
McLaughlin, Jas. E.	343	1	1						
McNally & Thompson	40,422	50	3	17	13,477	5	10	60	100
McNell Coal Company	77,781	81	1	81	77,781	1	81	77,781	12
Midwest Coal and Iron Company	9,655	54	1	54	9,655	1	54	9,655	18
Miners Coal and Coke Company	8,160	16	4	70	67,960	24	14.3	14.3	86
Moffat Coal Company	271,839	279	4						
Moffit-Carlile Coal Company	200	1	1						
Mutual Coal Company	153,439	131	2	209	234,179	69	21.8	25,576	46
National Fuel Company	478,358	418	2				6+	6,933	165
National Stores Company	372	2	2				8	940	125
New Santa Fe Coal and Coke Company	1,879	16							
North Park Coal Company	50,039	47	1	156	168,341	13	12	12,949	83
Oakdale Coal Company	168,341	156	1						
Oberding, Wm. J.	332	1	1						
Ohio Creek Coal Mining Company	21,198	23	1	23	21,198	1	23	21,198	43
O. D. K. Coal Company	4,238	6	1	6	4,238	1	6	4,238	166
Orecchio Coal Company	2,340	5	5						
Owens, W. H.	2,500	4	4						
Palisade Coal and Supply Company	32,719	52	3	17.3	10,906	3	17.3	10,906	58
Panola Coal Company	4,826	4	3	4.3	4,870	3	4.3	4,870	231
Patterson, Alexander	14,609	13	3						
Peacock Coal Company	455	3	3						
Petry, Sam	3,244	5	13	11	15,408	13	11	15,408	91
Peaks Peak Consolidated Fuel Company	209,299	143							

Sunnyside Coal Mining Company	100,422	108	3	36	33,474	8	13.6	12,553	28.1	74
Temple Fuel Company	173,295	147	4	37	43,324	17	8.6	10,194	27.2	116
Thomas Coal Company	1,014	2								
Thomas, C. F.	9,395	35				3	11.7	3,133		86
Three Pines Coal Company	532	3								
Triangle Coal Company	1,456	3								
Trinidad Coal Company	7,199	14								
Trinidad Coal Mining Company	152,196	115	2	58	76,098	2	57.5	76,098	17.4	17
Turner Coal Company	88,571	80	2	40	44,285	8	10	11,711	25	100
Union Coal and Coke Company										
United Collieries Company	68,115	45				7	6.4	9,731		155
Utah Fuel Company	286,586	222				21	10.6	13,647		95
Verlengia, Tony	1,351	9								
Vesta Mines, Incorporated	55,930	56	1	56	55,930	4	14	13,982	17.9	72
Vezzetti & Moschetti	15,152	10								
Victor-American Fuel Company	1,151,699	1,174	3	391	385,666	240	4.9	4,821	2.6	208
Waite Mining Company	439	3								
Walker Land and Cattle Company	624	2								
Webber Coal Association	220	2								
Western Collieries Company	11,251	43				2	21.5	5,625		47
White River Lumber Company	1,693	3								
Winton Coal Company	919	2								
State of Colorado	12,514,643	13,665	70	195	178,781	1,806	7.6	6,930	5.1 +	132

TABLE B

SHOWING BY COUNTIES, MINES OPERATED, NAME OF OPERATOR AND ADDRESS OF MINE, CHARACTER OF COAL, NUMBER OF DAYS WORKED, AVERAGE NUMBER OF MEN EMPLOYED, TOTAL NUMBER OF TONS OF COAL PRODUCED IN 1920, AND CAPACITY OF MINE PER DAY IN TONS.

BOULDER COUNTY

Name of Mine	Name of Company	Mine Post Office	Character of Coal	Average No. of Men Worked	Average No. of Men Employed	Total Num- ber of Tons Produced	Capacity of Mine Per Day, Tons
Simpson.....	Rocky Mountain Fuel Co.....	Lafayette.....	Sub-bituminous..	312.5	80	164,034	600
Standard.....	Rocky Mountain Fuel Co.....	Lafayette.....	Sub-bituminous..	294.5	102	112,308	500
Vulcan.....	Rocky Mountain Fuel Co.....	Lafayette.....	Sub-bituminous..	294.8	72	96,914	350
Mitchell.....	Rocky Mountain Fuel Co.....	Lafayette.....	Sub-bituminous..	232.2	35	49,628	200
Acme.....	Rocky Mountain Fuel Co.....	Louisville.....	Sub-bituminous..	204.4	88	98,220	500
Hecla.....	Rocky Mountain Fuel Co.....	Louisville.....	Sub-bituminous..	64.7	52	11,680	Find
Gorham.....	Rocky Mountain Fuel Co.....	Gorham.....	Sub-bituminous..	230.6	39	44,963	200
Industrial.....	Rocky Mountain Fuel Co.....	Superior.....	Sub-bituminous..	256	122	125,174	800
Monarch No. 2.....	National Fuel Co.....	Broomfield.....	Sub-bituminous..	222	142	114,254	600
Centennial.....	Big Four Coal and Coke Co.....	Louisville.....	Sub-bituminous..	191.9	88	90,524	800
Fox.....	Fox Coal Mining Co.....	Gorham.....	Sub-bituminous..	268.1	68	71,941	500
Champion.....	Champion Fuel Co.....	Louisville.....	Sub-bituminous..	218.9	73	44,861	400
Cambro.....	Engineers Leasing Co.....	Lafayette.....	Sub-bituminous..	274	38	37,172	300
Red Ash.....	Marshall Coal Co.....	Gorham.....	Sub-bituminous..	245	37	34,022	250
Nonpareil.....	Louisville Mining Co.....	Louisville.....	Sub-bituminous..	246	47	32,112	200
Black Diamond.....	Boulder Black Diamond Coal Co.....	Boulder.....	Sub-bituminous..	208	32	32,840	300
Capitol.....	Ajax Coal Mining Co.....	Louisville.....	Sub-bituminous..	268	39	21,119	100
Cracker Jack.....	Cracker Jack Coal Co.....	Boulder.....	Sub-bituminous..	240	13	16,112	90
Sunnyside.....	Big Six Coal Co.....	Louisville.....	Sub-bituminous..	262	30	14,718	150
Crown.....	Crown Fuel Co.....	Crown.....	Sub-bituminous..	269.2	15	13,657	600
Lewis.....	Davies & Jones.....	Gorham.....	Sub-bituminous..	350.5	3	3,293	20
Star.....	Star Coal Co.....	Lafayette.....	Sub-bituminous..	75	6	7,741	50
Totals—Number	of Mines Operated, 22			240.2	1,221	1,230,347	.....

DELTA COUNTY

King	Juanita Coal and Coke Co.	Bowie	Bituminous	260	75	103,622	600
Farmer	Paonia Coal Co.	Paonia	Bituminous	180	4	4,926	75
Red Mountain	A. W. Hall & Son	Cedaredge	Bituminous	272	5	4,357	30
Green Valley	Green Valley Coal Co.	Cedaredge	Semi-bituminous	312	2	3,044	24
Coalby Red Canon	Frank M. Fickes	Cedaredge	Semi-bituminous	246	2	1,445	15
States	States Coal Co.	Cedaredge	Semi-bituminous	217	2	1,424	25
Kurtzville	Independent Lumber Co	Hotchkiss	Semi-bituminous	99	4	1,178	25
Converse	Frank Converse	Paonia	Bituminous	160	1	919	10
Winton	Winton Coal Co.	Cedaredge	Semi-bituminous	107	2	779	54
Old Coalby	Stillwagon Bros	Cedaredge	Semi-bituminous	58	2	561	.....
Bennett	E. B. Cobb	Hotchkiss	Semi-bituminous	119	1	551	6
Belly	Chas. T. Berry	Paonia	Bituminous	59	3	515	25
Rollins	W. S. Hotchkiss	Delta	Semi-bituminous	26	1	127	50
Totals—Number	of Mines operated, 13			234.3	104	123,478	.....

EL PASO COUNTY

Pikeview	Pikes Peak Consolidated Fuel Co.	Colorado Springs	Sub-bituminous	227.8	143	200,399	1,100
Keystone	Keystone Mining Co	Colorado Springs	Sub-bituminous	231	63	78,414	350
City No. 1	Colorado Springs Co	Colorado Springs	Sub-bituminous	248.5	54	65,557	500
City No. 2	Alexander Paterson	Colorado Springs	Sub-bituminous	135	13	14,609	125
Klondyke	W. D. Corley	Colorado Springs	Sub-bituminous	170	41	19,819	250
Black Maria	W. D. Corley	Colorado Springs	Sub-bituminous	168	1	830	100
Williamsville	Thomas Coal Co	Colorado Springs	Sub-bituminous	59	2	341	50
Totals—Number	of Mines Operated, 7			242.3	317	379,869	.....

TABLE B—(Continued)

FREMONT COUNTY

Name of Mine	Name of Company	Mine Post Office	Character of Coal	Average No. of Men Days Worked	Average No. of Men Employed	Total Num- ber of Tons Produced	Capacity of Mine Per Day, Tons
Coal Creek	Colorado Fuel and Iron Co.	Coal Creek	Semi-bituminous	298	231	197,457	700
Rockvale	Colorado Fuel and Iron Co.	Rockvale	Semi-bituminous	290	259	140,221	600
Fremont	Colorado Fuel and Iron Co.	Florence	Semi-bituminous	283	193	126,980	450
Emerald	Colorado Fuel and Iron Co.	Florence	Semi-bituminous	304	52	17,454	80
Nonac	Colorado Fuel and Iron Co.	Canon City	Semi-bituminous	254	33	31,862	125
Chandler	Victor-American Fuel Co.	Chandler	Semi-bituminous	284.9	159	122,237	1,000
Radiant	Victor-American Fuel Co.	Pyrolite	Semi-bituminous	261.7	74	48,276	500
Canon	Canon-Reliance Coal Co.	Canon City	Semi-bituminous	191	130	110,624	500
Royal Gorge	Gibson Lumber and Fuel Co.	Canon City	Semi-bituminous	290	55	44,839	175
Brookside	Vezzetti & Moschetti	Canon City	Semi-bituminous	298	10	15,152	50
Double Dick	E. R. Harris & Co.	Coal Creek	Semi-bituminous	280.5	9	6,530	24
Florence-Canon	Florence-Canon Coal Co.	Florence	Semi-bituminous	216	11	4,120	40
Willie	Samuel Petry	Florence	Semi-bituminous	273	5	3,244	15
Orecchio	Orecchio Coal Co.	Florence	Semi-bituminous	174	5	2,340	25
Smith-Tanner	Rail Coal Co.	Florence	Semi-bituminous	262	3	1,370	25
Williamsburg Slope	Tony Verlengia	Coal Creek	Semi-bituminous	166	5	1,351	10
Rocchio	James Rocchio	Coal Creek	Semi-bituminous	154	3	659	5
Totals—Number	of Mines Operated, 17.			275.2	1,237	874,766	-----

GARFIELD COUNTY

Carbonera.....	Gilson Asphaltum Co.....	Mack.....	Bituminous.....	19,543	60
South Canon.....	South Canon Mine Leasing Co.....	Glenwood Springs.....	Bituminous.....	5,515	10
Harvey Gap.....	Bracken & Cozza.....	Rifle.....	Bituminous.....	2,045	6
Zerbe.....	H. E. Pischel.....	Rifle.....	Bituminous.....	1,294	
Totals—Number.....	of Mines Operated. 4.....			28,507	

GUNNISON COUNTY

Somerset.....	Utah Fuel Co.....	Somerset.....	Bituminous.....	286,586	1,800
Crested Butte.....	Colorado Fuel and Iron Co.....	Crested Butte.....	Bituminous.....	134,209	800
Elk Mountain.....	Colorado Fuel and Iron Co.....	Crested Butte.....	Anthracite.....	17,123	300
Alpine.....	Rocky Mountain Fuel Co.....	Baldwin.....	Semi-bituminous.....	58,943	300
Horace.....	Ross Coal Co.....	Crested Butte.....	Anthracite.....	52,891	225
Smith Anthracite M. Co.....	Crested Butte Anthracite M. Co.....	Crested Butte.....	Anthracite.....	33,665	300
Bulkley No. 2.....	Crested Butte Coal Co.....	Crested Butte.....	Bituminous.....	9,205	.....
Ohio Creek.....	Ohio Creek Coal Mining Co.....	Gunnison.....	Semi-bituminous.....	21,198	100
Baldwin-Star.....	Baldwin Fuel Co.....	Baldwin.....	Bituminous.....	6,122	100
Totals—Number.....	of Mines Operated. 9.....			620,632	.....

TABLE B—(Continued)
HUERFANO COUNTY

Name of Mine	Name of Company	Mine Post Office	Character of Coal	Average No. of Men Days Worked	Average No. of Men Employed	Total Num- ber of Tons Produced	Capacity of Mine Per Day, Tons
Walsen-Robinson	Colorado Fuel and Iron Co	Walsen	Bituminous	294	583	494,587	1,975
Cameron	Colorado Fuel and Iron Co	Farr	Bituminous	289	243	235,246	1,200
Lester	Colorado Fuel and Iron Co	Lester	Bituminous	299	203	170,828	700
Ideal	Colorado Fuel and Iron Co	Ideal	Bituminous	301	198	160,067	700
Pictou	Colorado Fuel and Iron Co	Pictou	Bituminous	255	176	150,067	560
Kebler No. 1	Colorado Fuel and Iron Co	Tioga	Bituminous	275	66	33,295	150
Kebler No. 2	Colorado Fuel and Iron Co	Tioga	Bituminous	279	102	55,151	250
Jobal	Colorado Fuel and Iron Co	Pictou	Bituminous	256	63	40,113	160
Rouse	Colorado Fuel and Iron Co	Rouse	Bituminous	15	49	683	1,000
Oakdale	Oakdale Coal Co	Oakview	Bituminous	285.9	156	168,341	800
Mutual	Mutual Coal Co	Walsenburg	Bituminous	276.8	131	153,439	700
Turner	Turner Coal Co	Delcarbon	Bituminous	257	115	152,136	800
Sunnyside	Sunnyside Coal Mining Co	Strong	Bituminous	236.3	108	100,422	600
Pryor	Union Coal and Coke Co	Pryor	Bituminous	277	80	88,571	400
Gordon	Gordon Coal Co	Walsenburg	Bituminous	266.5	84	82,714	375
Ravenwood	Victor-American Fuel Co	Ravenwood	Bituminous	296	94	57,032	500
Vesta	Vesta Mines, Incorporated	Camp Shumway	Bituminous	260	56	55,930	350
Brennan	Brennan Coal Mining Co	Walsenburg	Bituminous	250.5	66	49,784	260
Maitland	McNally & Thompson	Maitland	Bituminous	257.5	50	40,422	200
Reliance	Canon-Reliance Coal Co	Ojo	Bituminous	228	74	38,474	250
Toltec	Aztec Coal Mining Co	Toltec	Bituminous	256.7	71	37,577	350
Rugby	Rugby Fuel Co	Rugby	Bituminous	259	45	34,458	250
Caddell	Black Canon Coal and Fuel Co	Walsenburg	Bituminous	258	30	21,669	100
Hezron	Caddell Bros	Lester	Bituminous	267	7	11,282	40
Cuchara Canon	Caddell Bros	Walsenburg	Bituminous	165	6	1,736	8
Breen	Breen Coal Mining Co	Walsenburg	Bituminous	265	11	9,817	150
Caprook	Castle Coal Co	Walsenburg	Bituminous	260	15	4,133	45
Bunker Hill	Steve Mattivi	Rugby	Bituminous	50	3	500	10
Leader	Fruth & Stone	Rouse	Bituminous	10	5	75	-----
Totals—Number	of Mines Operated, 29			272.3	2,890	2,448,733	-----

JACKSON COUNTY

Moore,	North Park Coal Co	Coalmont	Sub-bituminous..	235	47	50,039	350
Marr	George Gregory	Walden	Sub-bituminous..	125	2	866	15
Totals—Number	of Mines Operated, 2			230.5	49	50,905	.....

JEFFERSON COUNTY

Leyden No. 3	Leyden Coal Co	Golden	Sub-bituminous..	251	153	165,176	4,100
Satanic	Western Collieries Co	Mount Morrison	Sub-bituminous..	275	43	11,251	100
Totals—Number	of Mines Operated, 2			256.3	196	176,427	.....

LA PLATA COUNTY

Perlin Peak	Calumet Fuel	Perlin	Bituminous	254.5	69	67,971	350
San Juan	American Smelting and Refining Co.	Durango	Bituminous	245.5	34	26,295	150
Hesperus	Hesperus Fuel Co.	Durango	Semi-bituminous	218.3	39	24,992	200
O. K.	O. K. Coal Co.	Durango	Bituminous	225	6	4,238	50
Sunshine	Sunshine Coal Co	Durango	Bituminous	215	4	4,145	21
Morning Star	Baudino & Co.	Durango	Bituminous	254	4	3,945	30
Triangle	Triangle Coal Co.	Durango	Bituminous	91	3	522	30
Champion	Diamond Fuel and Mining Co	Durango	Bituminous	45	2	373	.....
Totals—Number	of Mines Operated, 8			228.5	161	132,497	.....

TABLE B—(Continued)
LAS ANIMAS COUNTY

Name of Mine	Name of Company	Mine Post Office	Character of Coal	Average No. of Men Days Worked	Average No. of Men Employed	Total Num- ber of Tons Produced	Capacity of Mine Per Day, Tons
Morley.....	Colorado Fuel and Iron Co.	Morley.....	Bituminous.....	298	323	365,429	1,300
Sopris.....	Colorado Fuel and Iron Co.	Sopris.....	Bituminous.....	304	382	358,339	1,400
Berwind.....	Colorado Fuel and Iron Co.	Berwind.....	Bituminous.....	297	273	254,424	825
Frederick.....	Colorado Fuel and Iron Co.	Valdez.....	Bituminous.....	308	266	248,037	1,200
Starkville.....	Colorado Fuel and Iron Co.	Starkville.....	Bituminous.....	298	284	245,792	850
Primero.....	Colorado Fuel and Iron Co.	Primero.....	Bituminous.....	308	273	243,599	1,200
Tabasco.....	Colorado Fuel and Iron Co.	Tabasco.....	Bituminous.....	306	213	203,711	800
Toller.....	Colorado Fuel and Iron Co.	Tollerburg.....	Bituminous.....	393	187	153,713	650
Engle.....	Colorado Fuel and Iron Co.	Engleburg.....	Bituminous.....	286	107	82,443	500
Delagua.....	Victor-American Fuel Co.	Delagua.....	Bituminous.....	293.5	402	527,009	2,400
Cass.....	Victor-American Fuel Co.	Hastings.....	Bituminous.....	299.2	86	105,589	600
Hastings No. 5.....	Victor-American Fuel Co.	Hastings.....	Bituminous.....	291.4	69	73,459	500
Gray Creek.....	Victor-American Fuel Co.	Gray Creek.....	Bituminous.....	283.1	50	33,994	500
Forbes.....	Rocky Mountain Fuel Co.	Forbes.....	Bituminous.....	302.8	96	99,398	300
Piedmont.....	Rocky Mountain Fuel Co.	Sopris.....	Bituminous.....	250.7	36	24,249	75
La Belle.....	Rocky Mountain Fuel Co.	Sopris.....	Bituminous.....	284.1	23	22,043	110
Southwestern.....	Rocky Mountain Fuel Co.	Aguilar.....	Bituminous.....	271.5	39	21,716	200
Boncarbo.....	American Smelting and Refining Co.	Cokedale.....	Bituminous.....	308	203	218,404	1,000
Royal.....	Royal Fuel Co.	Aguilar.....	Bituminous.....	304.9	188	209,295	750
Brodhead No. 9.....	Temple Fuel Co.	Brodhead.....	Bituminous.....	282	114	133,361	500
Brodhead No. 10.....	Temple Fuel Co.	Brodhead.....	Bituminous.....	277	33	39,934	200
Thor.....	Huerfano Coal Co.	Ludlow.....	Bituminous.....	283.1	123	136,712	600
Bear Canon.....	National Fuel Co.	Bowen.....	Bituminous.....	275.4	103	96,380	400
Empire.....	Bear Canon Coal Co.	Valloroso.....	Bituminous.....	291.7	60	60,155	300
	Empire Coal Co.	Aguilar.....	Bituminous.....	296	57	55,870	350

M'Coye	Eureka Coal Mining Co	Boncarbo	Bituminous	267	47	42,194	250
Greenville	Cedar Hill Coal and Coke Co	Ludlow	Bituminous	281	38	30,623	300
Black Diamond	Cedarside Hill Coal and Coke Co	Rugby	Bituminous	185	16	6,353	150
Jewel	Jewel Coal Co	Agular	Bituminous	266	53	34,427	200
Rapson No. 1	Rapson Coal Mining Co	Rapson	Bituminous	289.5	52	34,091	300
Jeffries	Jeffries Fuel Co	Trinidad	Bituminous	272	36	34,054	200
Primrose	Black Hawk Coal Co	Rugby	Bituminous	291.6	48	33,917	200
Santa Fe	Santa Fe Coal Co	Trinidad	Bituminous	169.7	68	31,882	350
Prairie Canon	Prairie Canon Coal Co	Vallorso	Bituminous	305.5	37	27,065	100
Three Pines	Three Pines Coal Co	Vallorso	Bituminous	163.3	35	9,398	150
Williams	Miners Coal and Coke Co	Trinidad	Bituminous	215	16	8,160	70
Premium-Star	Caminotti & Co	Rugby	Bituminous	209	8	7,676	50
Valley	Trinidad Coal Mining Co	Trinidad	Bituminous	208.5	14	7,199	150
Liberty	Liberty Coal Co	Trinidad	Bituminous	248	7	4,898	20
Hines	Hines-Broyles Coal Co	Trinidad	Bituminous	253	6	3,470	25
Leone	L. Leone	Trinidad	Bituminous	252	3	2,509	15
Brown	H. W. Owens	Sopris	Bituminous	155	4	2,500	15
New Viola	New Santa Fe Coal and Coke Co	Trinidad	Bituminous	115	16	1,879	50
Beshoar	Joeger Fuel Co	Trinidad	Bituminous	271	2	1,800	20
Prospect	Prospect Coal Co	Trinidad	Bituminous	50	12	1,471	25
Baldy Mountain	Trinidad Coal Co	Trinidad	Bituminous	260	3	1,456	25
Pritchard	Pritchard Coal Co	Trinidad	Bituminous	194	3	1,443	20
Baldy	Wm. Irons & Son	Trinidad	Bituminous	108	2	1,066	30
Pickford	Boaglio Coal Co	Trinidad	Bituminous	214	2	815	30
Fishers Peak	R. Marsh	Trinidad	Bituminous	214	2	814	30
Verdun	Quality Coal Co	Trinidad	Bituminous	38	6	429	20
Henderson	Jas. E. McLaughlin	Trinidad	Bituminous	124	1	343	20
Deep Vein	Deep Vein Coal Co	Trinidad	Bituminous	16	3	73	CL's'd
Majestic	Majestic Fuel Co	Majestic	Bituminous	16	3	35	CL's'd
Totals—Number	of Mines Operated, 54			294.3	4,533	4,345,110	

TABLE B—(Continued)
MESA COUNTY

Name of Mine	Name of Company	Mine Post Office	Character of Coal	Average No. of Men Worked	Average No. of Men Employed	Total Num- ber of Tons Produced	Capacity of Mine Per Day, Tons
Cameo.....	Grand Junction Mining and Fuel Co.	Cameo.....	Semi-bituminous	278	98	104,671	800
Palisade.....	Palisade Coal and Supply Co.	Palisade.....	Semi-bituminous	300.5	52	32,719	200
Book Cliff.....	Book Cliff Coal Co.	Grand Junction.....	Semi-bituminous	268	15	11,404	60
Midwest.....	Midwest Coal and Iron Co.	Palisade.....	Semi-bituminous	63	54	9,655	Cl's'd
Garfield.....	Garfield Coal M. and T. Co.	Palisade.....	Semi-bituminous	86	11	4,309	200
Anchor No. 2.....	Anchor Coal Co.	Fruta.....	Semi-bituminous	305	3	3,053	60
Stokes.....	W. D. Stokes	Palisade.....	Semi-bituminous	248	4	2,584	50
Nearing.....	Liberty Coal and Mercantile Co.	Fruta.....	Semi-bituminous	188	4	2,648	50
Holland.....	W. C. Holland	Grand Junction.....	Semi-bituminous	164	2	1,057	30
Thomas.....	C. F. Thomas	Grand Junction.....	Semi-bituminous	94.5	2	1,014	30
P. V.....	P. V. Coal Co.	Cameo.....	Semi-bituminous	17	15	755	Cl's'd
Hunter.....	J. B. Hunter	Fruta.....	Semi-bituminous	52	3	410	12
Farmer-Mutual.....	C. E. Reeser	Grand Junction.....	Semi-bituminous	87	2	311	2
Farmer.....	D. L. Gardner	Palisade.....	Semi-bituminous	30	2	211	10
Totals—Number	of Mines Operated, 14			206.2	267	174,801	-----

MOFFAT COUNTY

Collom.....	Axial Basin Development Co.	Mount Streeter.....	Bituminous.....	259	4	2,075	20
Walker.....	Walker Land and Cattle Co.	Craig.....	Bituminous.....	87	2	624	5
Waite.....	Waite Mining Co.	Craig.....	Bituminous.....	144	3	439	25
Hart.....	Hart Coal Co.	Craig.....	Bituminous.....	22	1	35	-----
Totals—Number	of Mines Operated, 4			166.4	10	3,173	-----

MONTEZUMA COUNTY

School Section Lease	French & Fielding	Mancos	Sub-bituminous		
McElmo	E. M. Fiant	Cortez	Sub-bituminous	222	2,119
Freeman	Peacock Coal Co.	Mancos	Sub-bituminous	167	744
Black Cat	Black Cat Coal Co.	Cortez	Sub-bituminous	155	455
Webber	Webber Coal Assn.	Mancos	Sub-bituminous	157.3	409
Moffitt-Carille	Moffitt-Carille Coal Co.	Cortez	Sub-bituminous	30	250
	of Mines Operated, 6		Sub-bituminous	48	260
Totals—Number				150.6	4,147

MONTROSE COUNTY

School Section Lease	Chew & Adams	Nuclea	Sub-bituminous		
Cloverdale	Naturita Stores Co.	Nuclea	Sub-bituminous	228	1,072
Knauss	W. J. Overding	Nuclea	Sub-bituminous	75	372
Liberty	John H. Drott	Naturita	Sub-bituminous	100	332
	of Mines Operated, 4		Sub-bituminous	180.5	329
Totals—Number				152.4	2,105

OURAY COUNTY

School Section Lease	J. C. Bell & Co.	Ridgway	Sub-bituminous		
Economy	of Mines Operated, 1			125	500
Totals—Number				125	500

PITKIN COUNTY

School Section Lease	J. R. Marchetti	Carbondale	Bituminous		
Marion	of Mines Operated, 1			127	913
Totals—Number				127	913

TABLE B—(Concluded)
RIO BLANCO COUNTY

Name of Mine	Name of Company	Mine Post Office	Character of Coal	Average No. of Men Days Worked	Average No. of Men Employed	Total Num- ber of Tons Produced	Capacity of Mine Per Day, Tons
Black Diamond.....	Reynolds & Babcock.....	Meeker.....	Bituminous.....	235.....	3.....	3,171.....	50.....
Lion Canon.....	White River Lumber Co.....	Meeker.....	Bituminous.....	312.....	3.....	1,693.....	20.....
Douglas Creek.....	Jones & Trachta.....	Rangleley.....	Bituminous.....	140.....	1.....	632.....	10.....
Fairfield.....	Fairfield Coal Co.....	Meeker.....	Bituminous.....	115.....	1.....	437.....	.....
McKee.....	Thos. D. Foreman.....	Meeker.....	Bituminous.....	62.....	1.....	135.....	.....
Totals—Number	of Mines Operated, 5.....	.....	.....	217.6.....	6.....	6,068.....	.....

ROUTT COUNTY

Oak Hills Nos. 1 and 2.....	Moffat Coal Co.....	Oak Creek.....	Bituminous.....	119.5.....	279.....	271,839.....	2,500.....
Harris.....	Colorado & Utah Coal Co.....	Mount Harris.....	Bituminous.....	130.6.....	232.....	246,868.....	2,400.....
Pinnacle.....	Victor-American Fuel Co.....	Oak Creek.....	Bituminous.....	96.....	146.....	111,024.....	1,000.....
Wadge.....	Victor-American Fuel Co.....	Mount Harris.....	Bituminous.....	115.....	94.....	73,079.....	1,000.....
McGregor.....	McNeil Coal Co.....	McGregor.....	Bituminous.....	117.7.....	81.....	77,731.....	800.....
Hayden.....	Hayden Bros. Coal Corporation.....	Haybro.....	Bituminous.....	102.1.....	133.....	68,001.....	1,500.....
Bear River.....	Bear River Coal Co.....	Bear River.....	Bituminous.....	103.....	57.....	37,786.....	500.....
Wolf Creek.....	International Fuel Co.....	Mount Harris.....	Bituminous.....	113.5.....	40.....	26,385.....	250.....
Elk Creek.....	Amalgamated Development Corp.....	McGregor.....	Bituminous.....	68.4.....	45.....	21,355.....	500.....
Yampa.....	Routt-Pinnacle Coal Co.....	Coalview.....	Bituminous.....	63.....	12.....	5,192.....	100.....
Routt-Pinnacle.....	Roman Coal Co.....	Coalview.....	Bituminous.....	56.9.....	37.....	13,343.....	275.....
Crown Point.....	Hayden Valley Coal Co.....	Coalview.....	Bituminous.....	67.7.....	10.....	6,363.....	120.....
McDowell.....	Hayden Valley Mutual Coal Co.....	Hayden.....	Bituminous.....	50.3.....	14.....	6,202.....	120.....
Dry Creek.....	Chergo & Stunk.....	Hayden.....	Bituminous.....	78.5.....	5.....	1,064.....	30.....
Chergo.....	.....	Oak Creek.....	Bituminous.....	73.....	1.....	730.....	10.....
Totals—Number	of Mines Operated, 15.....	.....	.....	110.8.....	1,186.....	966,312.....	.....

WELD COUNTY

Puritan	National Fuel Co	Dacono	Sub-bituminous	220.7	173	267,724	1,200
Evans	Evans Fuel Co	Frederick	Sub-bituminous	254.8	106	130,239	800
Baum	Consolidated Coal and Coke Co	Dacono	Sub-bituminous	242	89	105,987	1,000
Grant	Rocky Mountain Fuel Co	Frederick	Sub-bituminous	240.4	56	82,833	1,000
Frederick	Rocky Mountain Fuel Co	Frederick	Sub-bituminous	223	67	70,843	700
Columbine	Rocky Mountain Fuel Co	Errie	Sub-bituminous	155	36	7,255	100
Monroe	United Collieries Co	Errie	Sub-bituminous	258.5	45	68,115	500
Russell	W. E. Russell Coal Co	Firestone	Sub-bituminous	187.5	38	84,000	700
Shamrock	Shamrock Coal Co	Errie	Sub-bituminous	172.5	34	48,359	400
Boulder Valley	Boulder Valley Coal Co	Errie	Sub-bituminous	206.3	42	48,051	400
Sterling	Grand Junction Mining and Fuel Co.	Dacono	Sub-bituminous	201	28	27,626	1,000
Clayton	Clayton Coal Co	Errie	Sub-bituminous	268	28	19,845	300
Firestone	H. M. & L. W. Coal Co	Firestone	Sub-bituminous	121	5	1,965	Cl's'd
White Ash	W. C. Bedden	La Salle	Sub-bituminous	244	3	1,961	15
Totals—Number	of Mines Operated, 14			223.6	770	944,803	.....
Grand Totals	231			256.2	13,665	12,514,693	.....

TABLE C

PRODUCTION OF COUNTIES BY MONTHS—1920

Month	Boulder	Delta	El Paso	Fremont	Garfield
January	112,171	14,359	39,382	84,842	2,756
February	101,982	5,312	32,117	72,532	1,730
March	120,377	11,713	35,702	81,083	1,762
April	100,465	10,443	31,397	62,496	1,919
May	79,476	5,958	17,296	65,959	1,728
June	75,065	4,465	14,764	72,752	1,718
July	90,200	8,825	17,647	64,002	2,089
August	109,109	10,003	30,085	71,687	2,687
September	103,249	9,298	34,592	68,069	2,481
October	112,135	11,278	42,213	74,497	2,333
November	97,745	16,310	43,447	76,463	2,455
December	128,373	15,514	41,227	80,384	4,849
Totals.....	1,230,347	123,478	379,869	874,766	28,507

Month	Gunnison	Huerfano	Jackson	Jefferson	La Plata
January	56,419	223,977	3,833	16,487	13,638
February	47,076	194,433	3,886	16,044	11,102
March	49,641	219,667	2,936	15,613	10,905
April	40,858	198,101	168	11,039	10,264
May	37,095	206,022	2,466	8,815	8,626
June	42,669	214,280	4,193	6,812	8,915
July	49,830	212,275	5,056	9,276	9,061
August	52,575	182,394	5,378	15,663	11,073
September	50,753	170,398	5,003	17,175	11,634
October	58,676	173,457	5,371	18,859	10,831
November	65,085	215,078	6,054	22,971	11,903
December	69,955	238,651	6,561	17,673	14,545
Totals.....	620,632	2,448,733	50,905	176,427	132,497

Month	Las Animas	Mesa	Moffat	Monte-zuma	Mont-rose	Ouray
January	361,798	21,327	492	458	188	.....
February	314,436	12,207	371	136	95	.....
March	362,829	12,359	251	101	161	.....
April	352,248	12,760	153	125	97	.....
May	352,885	10,459	389	168	63	.....
June	361,175	13,575	211	174	62	.....
July	364,792	13,979	149	176	73	.....
August	361,341	14,851	266	308	78	.....
September	362,025	13,152	289	614	171	.....
October	355,910	12,333	409	419	118	.....
November	382,320	17,718	103	329	160	.....
December	413,851	19,081	90	1,139	839	500
Totals.....	4,345,110	174,801	3,173	4,147	2,105	500

Month	Pitkin	Rio Blanco	Routt	Weld	Grand Total
January .....	.....	722	119,943	91,850	1,164,642
February .....	.....	465	104,974	78,262	997,160
March .....	.....	466	67,144	79,458	1,072,168
April .....	.....	428	12,033	62,256	907,250
May .....	.....	259	52,547	37,570	887,281
June .....	.....	155	90,015	30,473	941,473
July	74	164	88,378	56,557	992,603
August	142	220	92,877	84,012	1,044,749
September	131	495	72,464	109,199	1,031,192
October	120	754	102,818	109,743	1,093,274
November	243	910	80,876	88,445	1,128,615
December	203	1,030	82,843	116,978	1,254,286
Totals.....	913	6,068	966,912	944,803	12,514,693

TABLE D

SHOWING INCREASE AND DECREASE OF PRODUCTION BY COUNTIES.
1919-1920

Counties	Tons Produced 1919	Tons Produced 1920	Increase	Decrease
Boulder	1,150,706	1,230,347	79,641	
Delta	88,682	123,478	34,796	
El Paso	310,855	379,869	69,014	
Fremont	833,394	874,766	41,372	
Garfield	21,592	28,507	6,915	
Gunnison	472,735	620,632	147,897	
Huerfano	1,938,570	2,448,733	510,163	
Jackson	50,605	50,905	300	
Jefferson	147,304	176,427	29,123	
La Plata	116,509	132,497	15,988	
Las Animas	3,316,871	4,345,110	1,028,239	
Mesa	105,487	174,801	69,314	
Moffat	3,925	3,173		752
Montezuma	2,262	4,147	1,885	
Montrose	1,856	2,105	249	
Ouray	277	500	223	
Pitkin	10,781	913		9,868
Rio Blanco	6,712	6,068		644
Routt	1,168,310	966,912		201,398
San Miguel	300			300
Weld	658,810	944,803	285,993	
Totals	10,406,543	12,514,693		

Increase, 1920 2,108,150

TABLE E

COKE PRODUCTION IN 1920 BY COMPANIES AND COUNTIES

Companies	Total No. of Ovens Used	Total Tonnage	Counties	Total No. of Ovens Used	Total Tonnage
American Smelting and Refining Co.	280	124,689	La Plata	22	8,173
Colorado Fuel and Iron Co.	394	665,734	Las Animas	532	265,577
			Pueblo	120	516,673
Totals	674	790,423		674	790,423

REMARKS:

Average number of days worked at the coke ovens 350.2
 Average number of men employed at the coke ovens 342
 Number of tons of coal made into coke 1,488,857

TABLE F
SHOWING BY COUNTIES THE COAL PRODUCTION OF 1920 IN PREPARED SIZES

Counties	Mine Run	Lump	Nut	Egg	Pea	Slack	Total
Boulder	527,092	340,931	22,444	.....	76	339,804	1,230,347
Delta	29,542	51,732	17,611	.....	6	24,587	123,478
El Paso	154,014	122,010	523	.....	.....	103,322	379,869
Fremont	57,490	455,350	138,111	.....	49,737	174,078	874,766
Garfield	24,912	2,109	846	.....	.....	640	28,507
Gunnison	*462,233	111,328	11,453	.....	.....	35,618	620,632
Huerfano	444,342	1,002,486	347,479	.....	46,237	608,189	2,448,732
Jackson	11,851	15,389	9,910	.....	.....	13,755	50,905
Jefferson	32,457	55,828	10,628	.....	.....	77,514	176,427
La Plata	100,811	15,904	4,146	.....	1,103	10,533	132,497
Las Animas	1,997,977	782,622	138,883	.....	25,580	1,400,048	4,345,110
Mesa	36,909	67,547	22,682	414	16	47,233	174,801
Moffat	1,228	1,382	132	.....	.....	381	3,173
Montezuma	3,067	725	46	.....	.....	309	4,147
Montrose	1,052	958	7	.....	.....	88	2,105
Ouray	500	.....	.....	.....	.....	.....	500
Pitkin	913	.....	.....	.....	.....	.....	913
Rio Blanco	933	4,426	709	.....	.....	.....	6,068
Routt	260,708	374,241	118,457	36,289	2,276	174,941	966,312
Weld	181,659	437,822	91	.....	.....	325,231	944,803
Totals	4,329,690	3,842,790	844,298	33,703	125,031	3,336,271	12,514,693

*Includes 104,279 tons of anthracite coal.

TABLE G

TABULATION SHOWING THE NUMBER OF MEN OF THE DIFFERENT NATIONALITIES EMPLOYED IN AND ABOUT THE COAL MINES OF COLORADO

(Poll Taken in January, 1921.)

Nationality	No. of Men	Nationality	No. of Men
Americans	4,328	Bulgarians	239
English	328	Greeks	538
Welsh	163	Russians	125
Scotch	221	Poles	196
Irish	73	Bohemians	44
Negroes	261	Swedes	75
Italians	2,488	Danes	6
French	118	Finlanders	44
Belgians	9	Japanese	9
Spanish	218	Turks	3
Mexicans	2,441	Rumanians	13
Slavonians	480	Syrians	3
Croatians	738	Lithuanians	6
Austrians	329	Armenians	1
Germans	146	Swiss	2
Hungarians	123	Norwegians	2
Servians	93	Tyroleans	8
Montenegrins	16		
		Total	13,887

LIST OF FATAL ACCIDENTS OCCURRING IN THE COAL MINES OF COLORADO DURING THE YEAR OF 1920

January 4—SAM SEFA, Turk, loader, experience 3 months, age 27 years, married, no children, employed by the Marshall Coal Company, at the Red Ash mine, Boulder county; was burnt by an explosion of powder on the second of January and died on the former date. The man who was employed to fill the powder jacks for the men had left the powder house for a few minutes; deceased, instead of waiting for his return, entered and began to fill his jack. He took his lighted lamp from his head and set it on the floor; it tilted over, igniting a scattering of powder on the floor and also ignited contents of a keg of powder causing an explosion, injuring deceased. The cause of the accident is attributable to the carelessness of deceased.

January 8—JOHN PATTERSON, Scotch, pick miner, experience 20 years, age 38 years, married, no children;

JOHN ANGLUS, Greek, pick miner, experience 12 years, age 28 years, single; and

FRANK CAVARAS, Greek, pick miner, experience 1 year, age 28 years, single, employed by the Moffat Coal Company, at the Oak Hills No. 1 mine, Routt county, were all three killed by a fall of rock 86 feet long. The cause of the accident cannot be determined, as the evidence given is conflicting. The mine foreman had tested the roof 40 minutes prior to the accident and considered it safe to work under. The men had been sent to this particular place to draw back the pillars. In taking off some of the coal in the pillar an old pillar break may have been struck, causing the roof to suddenly fall. It would seem that there were not enough timbers set under the part that fell, since there was no noise of breaking timber to warn the men that a fall was impending. No responsibility for accident is placed.

January 9—JACK SMITH, American, driver, experience 8 years, age 27 years, married, one child, employed by the Rocky Mountain Fuel Company, at the Acme mine, Boulder county, was crushed to death between a car and rib. Deceased was riding on the front end of a trip of eight loaded cars, with one foot resting on the bumper and the other on the tail chain. He was going pretty fast when in some manner he fell off and was caught between rib and car. The accident may have been caused by the mule stumbling or crowding against him. Owing to the custom of drivers riding on the front of trips, the accident was unavoidable.

- January 10—ANTONIO SALVATI, Italian, pick miner, experience 12 years, age 41 years, married, six children, employed by the Colorado Fuel and Iron Company at the Primero mine, Las Animas county, was killed by a fall of rock. Deceased and his partner were working in a pillar and while loading a car a rock fell on deceased, killing him instantly. The rock was released by a slip within three feet of the face, which was not visible. The accident was unforeseen and therefore unavoidable.
- January 12—AUGUST DENNIS, German, machine miner, experience 17 years, age 55 years, single, employed by McNally & Thompson at the Maitland mine, Huerfano county, was killed by a fall of rock. The deceased was in the act of loading a car when a rock, which was released by a slip running nearly parallel with the face, fell on him. The prop nearest the face was eight feet away. The accident is classed as unforeseen and unavoidable.
- January 12—JOHN URSICK, Austrian, pick miner, experience 12 years, age 38, married, three children, employed by the Ideal Fuel Company at the Jewel mine, Las Animas county, had his back broken by a fall of rock on October 15, 1919, which resulted in his death on the above date.
- January 13—WALTER STEVENS, American, machine miner, experience 1 month, age 38 years, single, employed by the Temple Fuel Company at the Brodhead No. 9 mine, Las Animas county, was killed by a fall of rock. Deceased and his partner were pushing a loaded car from the face of their working place when a rock came down, striking deceased. The timbers were set as close as practicable, but the character of the roof is such that sudden changes occur with little or no warning. Hence the accident was unavoidable.
- January 28—JOSEPH A. POWELL, American, driller, many years' experience in quartz mines as driller, age 40 years, single so far as known, employed by the Turner Coal Company at the Turner mine, Huerfano county, was killed by coming in contact with an electric wire. Deceased was running an air drill, air being compressed by electricity, 440 volts A. C. There were no witnesses to the accident. He was found dead, lying on his face on the floor of his working place with a bare wire in his hand. The motor was not running, indicating that he had made an attempt to fasten the wire to the motor without taking off the nips. The floor was damp (not wet), the insulation on the wire was greasy, but not wet, and the gloves on his hands were of cotton and slightly damp. Responsibility for the accident cannot be placed.
- January 12—E. ALLENBAUGH, American, machinist, age 44 years, married, no children, employed by the Moffat Coal Com-

pany at the Moffat mines, Routt county. Deceased was working on a lathe when his glove caught on same, pulling his hand into the machinery, causing such serious injuries that he died.

Remarks—The details of this accident are not complete, owing to the fact that it was not investigated by the Inspector of that district. The accident occurred immediately after the Inspector had been in that locality and his presence was urgently needed in another part of his district.

February 10—MATTIO BRUNO, Italian, miner, experience 16 years, age 44 years, married, eight children, employed by the Rocky Mountain Fuel Company at the Standard mine, Boulder county, was injured January 27th by being run over by loaded cars and died on above date. Accident occurred on the motor road where deceased was on his way to the bottom of the shaft after having finished his shift. Shelter holes are located on one side of the road varying in distance from 35 to 50 feet. He heard a motor trip coming and stepped into a shelter hole. The motor is uncoupled from the trip and the cars travel under their own momentum. Deceased stepped out of the hole and was caught by the cars, not realizing that they were continuing their run to the parting without the motor. He had worked at this mine only four months and probably was not familiar with the custom of motor being uncoupled from the trip. The accident was unforeseen and unavoidable.

February 13—GEORGE CLAIR, English, fireboss, experience not given, age 62 years, married, six children, employed by McNally & Thompson at the Maitland mine, Huerfano county, was killed by a fall of rock. Deceased was helping to take out a mining machine, the place having been cut. The Jack pipe slipped and while in the act of replacing it, the rock fell. The place had been examined before starting to sump machine and appeared to be safe. The accident was unforeseen and inherent to the danger of the work.

February 16—N. CLAUDIO, Italian, company man, experience 3 years, age 44 years, single, employed by the Globe Coal Mining Company at the Capitol mine, Boulder county, was injured by a fall of slate on January 24th and died on the above date. Deceased was working alone loading coal that had been shot down that morning. Without warning a piece of slate fell on him, causing such injuries that he died several weeks later. Deceased was a careful workman. There was a fair supply of props on hand. The accident was due to the inherent danger of the work and unavoidable.

February 22—JOHN GODFREY, Welsh, superintendent, experience 28 years, age 45 years, married, six children, employed by the Colorado Fuel and Iron Company at the Emerald mine, Fremont county, was killed by an explosion of giant powder. Deceased was taking seven sticks of giant powder and five

detonators into the mine to blast some rock. He carried both loosely in his pocket, and while going through an old air-way he may have fallen over some rock, putting detonators off with the jar, or it is possible that he exploded some with a pipe or matches, both of which were found on his body when found an hour after the explosion. Accident may be charged to deceased's carelessness in handling high explosives.

March 4—FELIPI CORTEZ, Mexican, pick miner, experience 3 months, age 35 years, married, 4 children, employed by the Victor-American Fuel Company at the Delagua mine, Las Animas county, was killed by a fall of rock. Deceased was taking down some coal at the face of his room which released, unknown to him, a large pot rock. It fell on him, killing him instantly. The place was well timbered and the accident is classed as "unavoidable."

March 9—FRANK T. GUTHRIE, American, weighboss, experience 26 years, age 41 years, single, employed by the Crested Butte Anthracite Mining Company at the Smith mine, Gunnison county, was killed by falling off the tippie. Deceased had dumped a car of coal into the chute. The car slipped off the track and in trying to set it back again he lost his balance and fell from the tippie to the ground, a distance of 30 feet. In falling his chin struck an outstanding brace, causing such injuries that he died. At the point where the accident occurred there is only a clearance of three feet from side of car to edge of tippie, having no guard rails for protection. Deceased came to his death through no fault of his, but rather through the negligence on part of the company in failing to properly protect the tippie.

March 10—TIDOR RANCAL, Mexican, pick miner, experience 7 years, age 63 years, married, two children, employed by the Colorado Fuel and Iron Company at the Tabasco mine, Las Animas county, was killed by a fall of rock. Deceased was working alone and there was no witness to the accident. The place was well timbered close to the face. The rock that fell was 7 feet long, 1 foot wide and 10 inches deep and was broken square with the face of coal. The accident is classed as "unavoidable."

March 18—GEORGE CLAY BRETT, American, pick miner, experience 5 years, age 34 years, married, 4 children, employed by the Calumet Fuel Company at the Perins Peak mine, La Plata county, was killed by a fall of rock on an entry. Deceased was working on a pillar and had climbed to the top of a rock which had fallen beside the pillar some time before the accident. Probably resting on top of this fall, another piece of rock overlying the coal, fell on him, causing instant death. His place was well timbered but evidently his judgment was at fault in sitting down where he was found.

March 20—MANUEL GARCIA, Mexican, pick miner, experience 5 years, age 38 years, married, 9 children, employed by the Colorado Fuel and Iron Company at the Tabasco mine, Las Animas County, was injured on the 20th, between a mine car and prop, and died on above date. Deceased was dropping two loaded cars from the face of room to the switch at the room entrance. He was riding on the bumpers between the cars and as he applied the brake, he leaned back and was struck by a prop, fracturing his pelvis, causing death. Accident is classed as "unavoidable."

April 10—WILLIAM L. JONES, American, driver, experience 22 years, age 38 years, single, employed by the Colorado Fuel and Iron Company at the Toller mine, Las Animas county, came to his death by being crushed between a car and rib. A rope rider was gathering loaded cars to carry to their destination, when deceased decided to take an empty car from an idle room and take it to one that was working. He coupled it to the loaded trip and told the rope rider to proceed. He rode between the loaded and empty cars. In turning a curve, the cars came together on the short side of the curve, catching deceased, who was riding on this side, and, in trying to extricate himself, he was caught between a car and rib and crushed so seriously that he died a few hours later. It was not the duty of deceased to ride trips, therefore the responsibility of his death rests on him.

April 13—JOHN PAVELLO, Austrian, machine miner, experience 5 years, age 30 years, single, employed by the Calumet Fuel Company at the Perins Peak mine, La Plata county, was killed by a fall of rock. Deceased was working in a room that ten minutes before the accident had been examined by his partner, who considered the roof safe and the place well timbered. However, a slip occurred which was unseen. A crossbar had been set up about 6½ feet from the coal face, inside of which were three props, and while deceased and his partner were working, without giving any warning, a rock fell, killing Pavello instantly. It was then seen that a slip ran one foot from the coal face across the working place. The accident is classed as unforeseen and unavoidable.

April 14—THOMAS VAUGHN, American, machine man, experience 22 years, age 41 years, married, six children, employed by the Colorado Fuel and Iron Company at the Toller mine, Las Animas county, was killed by a fall of top coal. Deceased and his partner having cut a room, were preparing to load machine on truck; to do this a jack pipe was set in the room over center of roadway; the weight of the machine on the jack pipe caused a displacement of the roof, which fell, striking deceased, killing him instantly. The place was considered safe by the mine foreman, and deceased and his partner had tested the roof prior

to cutting the place and again before setting jack pipe to load machine. The accident is classed as unforeseen and unavoidable.

April 16—PETER TOLAR, American, driver, experience not stated, age 26 years, single, employed by the Leyden Coal Company at the Leyden mine, Jefferson county, was injured by being crushed between a car and a mule on April 13th, and died three days later. Deceased was pulling coal from an entry to a parting. The mule he was driving stumbled, throwing him in front of the car, which ran partly over him and the mule stepping on him also. The accident was unavoidable.

April 30—BOZO RADJENOVIE, Serbian, pick miner, experience 5 years, age 29 years, single, employed by the Union Coal and Coke Company at the Pryor mine, Huerfano county, was killed by a fall of rock. Deceased was working alone and was found dead by the driver. Examination showed that the place was well timbered. He had taken about two feet of coal from the face when he struck an invisible slip which gave way when the coal was taken out, burying deceased. Accident is classed as unavoidable.

April 30—J. W. TABERNER, English, pick miner, experience 16 years, age 28 years, single, employed by French & Fielding at the School Section Lease mine, Montezuma county, was killed by a fall of coal. The thickness of the coal bed at this mine is $3\frac{1}{2}$ feet, and overlying this is a band of rock from 14 to 16 inches thick. The band of rock is taken down on the roadway to give height. This band of rock was hanging back from the coal face about 4 feet, and no props under it. According to his partner, who was working near by, deceased heard the band of rock breaking and continued to work under it. No responsibility for the accident can be placed on any one else but deceased. When he heard the band of rock creaking and breaking, he should either have taken it down or put props under it.

May 1—JOHN H. HAWKINS, English, cager, experience 2 years, age 19 years, single, employed by the National Fuel Company at the Monarch No. 2 mine, Boulder county, was killed by being crushed between cage and collar of shaft. Deceased was running a car of coal across the cage from the south side of the shaft to the north side; when partly across, the engineer lifted the cage away, crushing him between the bottom of the cage and collar of shaft, causing instant death. The engineer claims to have received a signal to hoist, but knew when he lifted the cage that it was light. The signal is a pull bell system. The lever runs across the shaft close to the bottom. On the south side the lever is pulled up to ring bell, on the north side it is pushed down to ring. If the engineer received signal to hoist, it is possible that a piece of coal fell from the car on

the lever, causing the bell to ring. Accident due to a misadventure.

May 5—H. MUYATA, Japanese, machine miner, experience 10 years, age 40 years, married, one child, employed by the Sunnyside Coal Mining Company at the Sunnyside mine, Huerfano county, was killed by a fall of rock. Deceased was loading machine coal in an entry; when nearly finished a slab of sand rock fell on him, from the effects of which he died six hours later. Deceased had been directed by the mine foreman to take the rock down. Accident is attributed to the disobedience of deceased and carelessness of mine foreman in not seeing that his instructions were being complied with before leaving working place.

May 10—JOHN HOLLIDAY, English, machine miner, experience 36 years, age 57 years, married, four children, employed by the Rocky Mountain Fuel Company at the Standard mine, Boulder county, was injured by being struck by a loaded trip of cars on April 24, and died from the effects of the injury and pneumonia, which had set in a few days before his death, on the above date. Deceased was traveling out from his working place on the main haulage road, and encountered a motor trip. He stepped into a shelter hole to let it pass, but did not know that it was in two sections. When the first part had passed he proceeded on his way. A witness to the accident called to deceased to look out, that the trip was split in two, but he did not hear or did not have time to get out of the way of the second section of the trip, and was caught by it and injured. He was taken to the hospital and ten days later pneumonia set in, which caused death. Deceased was not to blame, as he was traveling on the road allowed to miners for their coming and going. He undoubtedly believed the trip that passed was single. Accident due to a misadventure.

May 14—FLEX SIPPE, American, rope rider, experience 34 years, age 46 years, widower, three children, employed by the Royal Fuel Company at the Royal mine, Las Animas county, was killed by being run over by a mine car. Deceased was riding on the front end of the car, next to the rope, and had to pass through a canvas. Whether he became entangled in the canvas or slipped from the bumpers, no one knows. The tracks were found in good shape and sufficient space on each side of the entry as required by law. The accident is classed as unavoidable, being inherent to the danger of the work.

May 15—TONY HANNAH, Italian, driver, experience 10 years, age 24 years, married, one child, employed by the Canon-Reliance Coal Company, Canon mine, Fremont county, was killed by being run over by a mine car. Deceased was hauling a trip of five cars with a mule, using shafts. The pin connecting shafts and gun came out, leaving no support for deceased,

who was riding front end of first car, resting partly on shafts. He fell off and was run over. The road was level, with plenty of room on each side of track and provided with electric lights at this point. Accident was unforeseen and inherent to the danger of the work.

May 19—JOE BYOUK, Austrian, pick miner, experience 4 years, age 20 years, single, employed by the Colorado Fuel and Iron Company at the Elk Mountain mine, Gunnison county, was killed by a mine car striking him. Deceased was working at the face of an entry when a trip of three loaded cars became detached from the rope and ran into an empty car, which rebounded and struck him, causing such injuries that he died instantly. There was no drag on trip. Had the rider placed one, or had he thrown the derailing switches, which were between the knuckle and the face of the slope, the accident would have been avoided.

May 29—WALTER D. WATKINS, negro, parting tender, experience 15 years, age 33 years, married, no children, employed by the Sunnyside Coal Mining Company, Sunnyside mine, Huerfano county, was killed by a runaway trip. Deceased had signaled to stop trip of seven cars. The engineer, having run engine only a few days, applied brake suddenly, which caused the rope to snap, throwing outside sheave wheels on curve, letting seven empty cars run wild, which caught deceased, killing him instantly. The accident may be charged to the inexperience of the engineer and a defective rope.

June 19—ARTHUR SMITH, American, machine miner, experience 6 years, age 20 years, single, employed by the Victor American Fuel Company at the Chandler mine, Fremont county, was killed by a fall of rock. Deceased and his partner had loaded a car of coal and finished by taking down some loose rock and loading it also. There was a piece of draw slate hanging over one side of entry which they examined and considered safe; they started to load another car when this rock suddenly became loose and fell without warning. The accident may be termed as unforeseen and unavoidable.

June 21—ELMER HOWARD, colored, American, pick miner, experience 7 years, age 32 years, married, no children, employed by the Union Coal and Coke Company at the Pryor mine, Huerfano county, was killed by a fall of rock. Deceased was cleaning his room preparatory to machine cutting, when a large pot rock released by an invisible slip fell on him, killing him instantly. The accident was unforeseen and unavoidable.

June 21—VOLENTI HERNANDEZ, Mexican, machine miner, experience 5 years, age 30 years, married, no children, and

LOUIS HERNANDEZ (brother of Volenti), machine miner, experience 5 years, age 28 years, single, were employed

by the Temple Fuel Company at the Brodhead mine, Las Animas county, were instantly killed by a fall of rock in a room which had been cut and shot the evening before. The place was well timbered. The deceased were loading a car when a rock gave way from an invisible slip which was running close to the face. The accident is classed as unavoidable due to the inherent danger of the work.

June 21 — JOHN SPIROS, Greek, pick miner, experience not known, age 28 years, married, one child, employed by the Rugby Fuel Company at the Rugby mine, Huerfano county, was killed by a fall of rock at an inby pillar. No one was present when the accident occurred. Apparently deceased was mining and released a rock paralleled by a slip from rib to face. The accident is classed as unforeseen and unavoidable.

June 29 — NICK DEMITEO, Rumanian, machine miner, experience 9 years, age 50 years, married, no children, employed by the Rocky Mountain Fuel Company at the Grant mine, Weld county, was killed by a fall of rock. Deceased and his partner had fired two shots; one of these shots had knocked out a cross-bar and two props. On their return about 40 minutes after firing, there was still considerable smoke in the place and while they were groping and feeling around a rock fell and struck Demiteo, causing his death six hours later. The mine foreman had visited the place shortly before the accident and found the place safe. However, it was stated that it took several hours to clear the atmosphere. Possibly had the ventilation been sufficient to clear the smoke before the men returned, the accident might have been avoided.

June 30 — ROY CUSTARD, American, machine miner, experience 7 years, age 26 years, married, no children, employed by the Ajax Coal Mining Company at the Globe mine, Boulder county, was killed by a fall of rock in a room. Deceased and his partner were pushing a car into their room to load when a large rock gave way, falling on deceased and killing him instantly. The place was well timbered, although one of the bars supporting the rock was a split piece of timber, yet the timbers being set so close together and uniform, the accident was unforeseen and unavoidable.

July 5 — JOE DELNOSTIA, Italian, machine miner, experience 12 years, age 36 years, married, 7 children, employed by the Colorado Springs Company at the City No. 1 mine, El Paso county, was injured June 29th by a fall of rock and died on the above date. A band of draw slate intersects the seam varying from 6 inches to 2 feet, in the entry where this accident took place. It is customary to take down the slate as soon as the coal has been mined from under it. The nature of the draw slate between the seam makes it very difficult to timber. No one was near the deceased when the fall occurred and therefore no

responsibility can be placed. The accident is classed as unforeseen and unavoidable.

July 5—PETE FUNARO, Italian, driver, experience 10 years, age 31 years, married, 2 children, employed by the Colorado Fuel and Iron Company at the Crested Butte mine, Gunnison county, was injured between a loaded car and the shafts attached to the mule on July 1st, and died four days later. A bump had dislodged some coal which fell, striking car and forcing it down the room and causing deceased to be caught as above stated. Had the car been properly blocked the accident would have been avoided. The responsibility of the accident rests on two fellow-workmen, whose duty it was to see that the cars were properly blocked, and who apparently had neglected this obligation.

July 24—JOE CAMARENA, Mexican, pick miner, experience 4 years, age 36 years, married, one child, employed by the Colorado Fuel and Iron Company at the Starkville mine, Las Animas county, was killed by a fall of rock. An invisible slip along the face of a room pillar was released by the mining of coal. The place was well timbered and the accident is classed as unavoidable.

July 29—ALFREDO MIARANDA, Mexican, machine miner, experience 2 years, age 21 years, single, employed by the American Smelting and Refining Company at the Boncarbo mine, Las Animas county, was crushed to death between car and face. Graciano Miaramanda, uncle of the deceased, requested that latches lined up for the entry be turned into the room long enough for him to repair his room track to switch a car and that he would leave latches as he found them. This he failed to do. A motor man came along and, not seeing that the latches were turned for the room until he was within a few feet of it and too late to prevent his motor from entering, he struck the car that stood near the face of room, crushing deceased against the face. Carelessness on the part of Graciano Miaramanda in failing to turn latches is responsible for the accident.

July 29—JOE DIANA, Italian, driver, experience 8 years, age 31 years, married, 2 children, employed by the Colorado Fuel and Iron Company at the Tabasco mine, Las Animas county, was killed between car and rib. Deceased was riding with his back toward narrow side of entry, and in pulling on brake to set it his body was projected over side of car and caught by the rib of the entry and pulling him off, as above stated, with fatal results. The opposite side of the entry has a clearance of 3 to 3½ feet continued throughout on one side. Deceased was an experienced driver and was in the most natural position to set the brake. The accident is classed as inherent to the nature of the work performed.

August 11—WILLIAM WATKINS, Welsh, machine miner, experience 30 years, age 47 years, single, employed by H. L. McGowan at the Vesta mine, Huerfano county, was killed by a fall of rock. The mine foreman had instructed deceased to either prop or take down a rock which he considered unsafe. However, he did not wait to see that his directions were carried out, consequently the responsibility of the accident is charged to his carelessness in not enforcing his instructions and permitting a man to continue to work in a place known to be dangerous.

September 4—PETER ZUBAR, Russian, driver, experience 9 months, age 26 years, single, employed by the Turner Coal Company at the Turner mine, Las Animas county, was injured on September 1st by being crushed between a pillar and mine car, and died on the above date. Deceased was riding on front end of a two-car trip; he sat partly on car and partly on shafts. On making a curve he was on the inside, his body extending so far out that he struck the rib and was knocked off the car on the narrow side and was rolled between rib and car. On the other side there was ample room for safety. The accident was unforeseen and therefore unavoidable.

September 9—JUAN SERNA, Mexican, pick miner, experience 10 years, age 38 years, married, five children, employed by the Colorado Fuel and Iron Company at the Berwind mine, Las Animas county, was killed by a fall of rock. Deceased and partner were taking a skip off a left-hand rib enlarging the same for a new parting, when draw slate gave way from top of coal, burying deceased. The parting was well timbered. The accident was unforeseen and unavoidable.

September 10—ROY KALLAS, Greek, driver, experience 10 years, age 31 years, married, no children, employed by the Rocky Mountain Fuel Company at the Gorham mine, Boulder county, was killed by being run over by a loaded coal car. Deceased was riding on the front end of a trip of eight loaded cars which he was taking from the inside parting to the main parting at the slope. He fell in front of the trip, either losing his balance or traveling so fast that the mule crowded him off, or he slipped when he jumped off the trip. It could not be determined whether there were any obstructions on the side where he usually jumped off. At the time of the investigation men were busy cleaning the road. From the evidence obtained, the accident was unavoidable.

September 13—JAMES MAGA, Italian, pick miner, experience 20 years, age 36 years, married, 3 children, employed by the Rocky Mountain Fuel Company at the Forbes mine, Las Animas county, was killed by a fall of rock. Deceased was mining top coal when a large pot rock gave way from the roof, breaking square with the face of coal. Upon examination of the roof it

was found to be dangerous for a considerable distance back from the face on the roadway. The skip had been driven some distance at an average width of 8 feet to a point 10 feet from the face, then opened out to a width of 12 feet 3 inches, with no timbers set on right-hand side. A dangerous practice where pillar stumps are extracted and the coal is squeezed as was the case here. The mine officials should exercise more care and see that more timbers are used in this particular kind of work. Had this been done the accident might have been avoided.

September 17—JOSEPH L. POWELL, American, electrician helper, experience 4 years, age 24 years, married, no children, employed by the Colorado Fuel and Iron Company at the Rockvale mine, Fremont county, came to his death by electrocution. Deceased was attempting to pull off the insulation from a wire with a pair of pliers insulated with tape. However, he must have overlooked the fact that one end of pliers was bare and he was standing on ground slightly damp. He probably received a shock when the bare end of the pliers came in contact with the palm of one of his hands. There was no eyewitness to the accident, but the supposition is that he was killed instantly, the voltage being 500 A. C. The accident is classed as unforeseen and unavoidable.

September 20—CASIMIRO GONZALES, Mexican, nipper, experience 16 years, age 31 years, married, 3 children, employed by the American Smelting and Refining Company at the Boncarbo mine, Las Animas county, was killed by being caught between rib and car. It appears that deceased went to change the switch for a motor coming up an entry with 15 loaded cars and 18 empty ones, the latter being attached to the motor. The first loaded car had left the track about 30 feet from deceased at the switch. There was no obstruction on the track, and from the evidence obtained it seems a bent axle was the cause of the accident, which was unforeseen and unavoidable.

September 30—MARTIN KAUSER, Austrian, fireboss, experience 5 years, age 24 years, single, employed by the Oakdale Coal Company at the Oakdale mine, Huerfano county, was killed instantly by a fall of coal and rock, while putting up canvas in a room to carry away a small quantity of gas. No one was present, therefore nothing positive is known as to what deceased was attempting to do, but he was performing his duties. The accident being unforeseen, it is classed as unavoidable.

October 4—FRED SHULLIN, Austrian, machine miner, experience 4 years, age 27 years, single, employed by Caddell & Carlson at the Cuchara Canon mine, Huerfano county, was killed by a fall of rock. Deceased was loading coal when struck by a fall of rock released by two slips forming a triangle, one running close to coal face and the other back about 3 feet, inter-

secting each other above the coal. The accident was unforeseen and unavoidable.

October 13—A. D. POPOFF, Bulgarian, shotfirer, experience 10 years, age 45 years, married, three children, employed by the Roman Coal Company at the Crown Point mine, Routt county, was injured by flying coal on October 11th, and died two days later. On the evening of date of accident deceased was firing shots and was somewhat behind with his work. He asked Steve Stoianoff, also shotfirer, to fire two shots in a room off air course. This was done and Stoianoff then went out of the mine. After waiting for Popoff for some time, he went back and found him lying injured from an outburst of coal in the room where he had fired his shots. What prompted him to go to this room is not known. He must have forgotten that he had told Stoianoff to fire there. It seems that deceased's death was caused by his thoughtless act.

October 19—VERNON E. MARR, English, pick miner, experience 5 months, age 30 years, employed by Colorado Fuel and Iron Company at the Starkville mine, Las Animas county, came to his death by electrocution. Deceased came to the man trip to board a car and in doing so he dropped the top of his bucket. In reaching down to recover it he lost his balance and came in contact with a live wire, causing instant death. The accident is classed as unavoidable.

October 28—JAKE ORTEZ, Spaniard, trip rider, experience 5 years, age 30 years, married, one child, employed by the Sunnyside Coal Company at the Sunnyside mine, Huerfano county, was injured on September 7th, by being crushed between mine car and pillar and died on the above date. Deceased was riding between trip cars, his body extending over side of car struck a pillar which threw him off, rolling him between pillar and cars, on the narrow side of the track. Had he fallen on the opposite side he might have escaped, as there is sufficient room between pillar and cars. However, the accident was unforeseen and unavoidable.

November 6—MIKE MERKOVITCH, Austrian, pick miner, experience very little, age 35 years, single, employed by the National Fuel Company at the Monarch No. 2 mine, Boulder county, was killed by being knocked down by an empty car. Deceased was taking an empty car to his working place. He either slipped on a switch rail or the bumper of the car caught his heel, throwing him down and causing such injuries that he died a few minutes afterwards. The accident was a misadventure and no one can be held responsible for it.

November 17—BILL PALLALIS, Greek, machine helper, experience 6 years, age not known, single, employed by the Bear Canon Coal Company at the Bear Canon mine, Las Animas

county, was electrocuted by coming into contact with an electric cable. Deceased and his partner had finished cutting and moved the machine to an out-by cross cut, part of the cable was still trailing on the haulage road. Deceased took hold of it to remove it when he received an electric shock, killing him instantly. The cable showed no exposed wires, but the insulation was very thin. The mine management stated that a new cable had been ordered two months prior to the accident but had not yet arrived. It is possible that the accident might not have occurred had a new cable been in operation.

November 22—LEROY THOMAS, colored, miner, experience 2 years, age 20 years, single, employed by McNally & Thompson at the Maitland mine, Huerfano county, was crushed between car and prop, causing instant death. Deceased was acting as rope rider gathering coal. From the evidence obtained it seems that a loaded car was in the switch and that deceased had coupled on the rope and rang the bell for the engineer to start the car, then he endeavored to remove a sprag on the front wheel close to the rib side, and when the car started his head was caught between the car and prop. The accident might have been avoided had there been more clearance between the car and prop, which was only 10 inches from the track, and deceased had spragged the car on the inconvenient side. Responsibility for the accident is not placed.

November 23—LOUIS VILLAGOMES, Mexican, miner, experience 51 days, age 22 years, single, employed by the Victor-American Fuel Company at the Delagua mine, Las Animas county. Deceased and his brother attempted to lower a loaded car from the face in order to lay a track. The grade is about 2% in favor of the loaded car. Deceased was on the front end of the car where the brake is fastened and started to let the car down; he lost control of the brake and the car carried him across the room to the switch. His body protruding over the side of the car, came in contact with a prop, throwing the car off the track and causing injuries which resulted in his death. There was a clearance of about 20 inches between car and prop. The rules of the company forbid any one, other than the driver, from moving loaded cars. The brother testified that they did not know the rules. The accident would have been avoided had the company rules been understood and complied with.

November 23—H. E. KLUPHF, German, carpenter, age 41 years, family not reported, employed by the Rocky Mountain Fuel Company at the Columbine mine, Weld county, was injured by falling off the tippie on March 22, 1920, and died on the above date. Deceased was standing on a plank 16 feet up from the ground on tippie. A chute that was being hoisted caught on timbers, striking the plank and causing him to fall off the tippie, inflicting such injuries that he died eight months later.

November 24—TRANQUILINO LOVATO, Mexican, miner, experience 6 years, age 26 years, single, employed by the American Smelting and Refining Company at the Boncarbo mine, Las Animas county, was crushed to death by a haulage motor. Deceased had completed his night shift and was on the way out of the mine and boarded the main haulage motor to ride out. The motorman notified him that he could not ride on the motor, but he insisted. After riding some distance on the first motor he came in contact with the roof, knocking him off and was caught by the second motor, which was following the first motor, the latter having no trip of cars. Had the deceased taken the manway instead of riding the motor, which was against the rules, the accident would have been avoided.

December 4—PATRICK MCGINNIS, Irish, timberman, experience 50 years, age 61 years, single, employed by the Colorado Fuel and Iron Company at the Primero mine, Las Animas county, was killed by a fall of rock. Deceased and his partner were constructing a passage-way over some ponded water on the right side of an airway by taking coal from a rib. A slab of rock gave way from top of coal which is a draw slate between main roof and coal, striking deceased. The accident was unforeseen and is classed as unavoidable.

December 7—JOHN ANTONELLI, Italian, pick miner, experience 25 years, age 48 years, married, seven children, employed by the Colorado Fuel and Iron Company at the Lester mine, Huerfano county, was killed by a fall of rock. Deceased and his partner had left some top coal up for a distance of 7 feet back from the face. The place was well timbered to the lip of the top coal. The day previous to the accident the mine foreman had ordered the top coal taken down as the rock was liable to have slips that were not visible. On the morning of the accident the fireboss ordered them to either take down the top coal and timber up the rock, or else timber up the top coal. They had taken down nearly all the top coal when a slip was uncovered, allowing the rock to fall on deceased, causing instant death. The accident might have been avoided had some props been set before so much of the coal had been taken down.

December 10—DEWEY L. LINDON, American, driver, experience none, age 21 years, single, employed by the Independent Lumber Company at the Kurtzville mine, Delta county, was injured on the 8th of December by being struck by a loaded car, from the effects of which he died on the above date. Deceased was taking a loaded car to the tippie. At the point where the accident occurred there is an ample clearance and the grade is slightly in favor of the loaded car. The trip was composed of one car which the driver took direct to the tippie, covering only a short distance from the working places to the surface. This was deceased's first day in the mine and the work was new to

him. In some manner he got in front of the car and was struck, causing such injuries that he died two days later. The accident was caused by the inexperience of deceased, and, therefore, may be classed as unavoidable.

December 13—FELIX ROSKOSKI, Pole, driver, experience 2 years, age 18 years, single, employed by the Huertano Coal Company at the Ludlow mine, Las Animas county, came to his death by being crushed under a loaded car. Deceased was driving a trip and was delayed at a parting which was blocked. When the track was cleared, he loosened three sprags which held his trip of two cars and attempted to get on the front end of his trip, but his foot slipped off the bumper and he fell under the car; the mule became frightened and pulled the cars a distance, dragging deceased under the bumpers. The accident was a misadventure due to the inherent danger of the work.

December 20—ESTEVAN SELAVA, Mexican, pick miner, experience 15 years, age 42 years, married, seven children, employed by the American Smelting and Refining Company at the Boncarbo mine, Las Animas county, was killed by a fall of rock. Deceased was working alone at a pillar in an entry. He had left the face of the pillar and crossed into a gob on the right-hand side of the place, when a large rock gave way between the timbers. Upon examination it was found that the roof was very bad in all of the pillar, being full of slips. The accident was unforeseen and unavoidable.

December 28—W. M. MILLER, American, machine miner, experience 8 years, age 35 years, married, no children, employed by the American Smelting and Refining Company at the Boncarbo mine, Las Animas county, was injured by a fall of rock on the 13th day of December and died on the above date. Deceased and his partner had tried for fifteen minutes to take some rock down from a slip at the face of an entry, and not succeeding, began to load coal. After two cars had been loaded the rock gave way from the slip, resulting as above stated. The accident is classed as unavoidable.

December 28—BERT MULLEN, American, rope rider, experience 10 years, age 31 years, married, two children, employed by the Hayden Bros. Coal Corporation at the Hayden No. 2 mine, Routt county, came to his death by heart failure. Deceased was assisting in unloading a car when he staggered and fell over, dying in a few minutes. This death is not charged to the coal industry, as there was no accident to cause it.

December 29—ROBERT RANKIN, American (colored), miner, experience 5 months, age 55 years, single, employed by the Temple Fuel Company at the Broadhead No. 9 mine, Las Animas county, was killed by an electric shock. Deceased and three other men were riding from the inby parting to the main slope

parting in a car pulled by a burro on a trolley motor road. Deceased raised his head, coming into contact with the live wire which was about a foot and a half above the top of the car, receiving an electric shock, resulting in his death. Deceased knew that the power was on the line. The entry on which the accident occurred is of considerable length. The men on the night shift ride in and out in an empty car. The wires on this entry are shielded on the inside, also manholes are provided on the opposite rib from the wire to protect the men walking on this entry. The accident might have been avoided had the mine foreman, who checked the men in from the outside, known that they were going to ride; he could either have warned them that the power was on and turned it off, or forbidden them to use a car. Deceased also could have been more careful by riding on the other side of the car.

LIST OF SUCCESSFUL CANDIDATES RECEIVING CERTIFICATES AS FIRST CLASS MINE FOREMAN MAY, 1920

Cert. No.	Name	Address	Cert. No.	Name	Address
28	Anderson, Otto	Farr, Colo.	73	Manning, Fred	Superior, Colo.
146	Anderson, W. K.	Colo. Sp'gs, Colo.	18	McCrory, Jesse F.	Rouse, Colo.
13	Baker, Fred T.	Sopris, Colo.	99	McGinn, John A.	Aguilar, Colo.
68	Barclay, Thos.	Superior, Colo.	49	Neesham, Ralph	Somerset, Colo.
124	Barfoot, Thos.	Morley, Colo.	101	O'Branovich, Matt.	Lafayette, Colo.
135	Beech, Allen	Coal Creek, Colo.	61	O'Day, Harry	Pyrolite, Colo.
150	Bennett, F. C.	Berwind, Colo.	59	O'Day, Patrick	Lafayette, Colo.
133	Buffalo, Nick	Berwind, Colo.	25	Owen, Tom	Somerset, Colo.
38	Burns, Joseph	Ludlow, Colo.	19	Palmer, C. W.	Boulder, Colo.
48	Cowan, James	Somerset, Colo.	132	Patterson, Duncan	Berwind, Colo.
117	Cox, Edward E.	Paonia, Colo.	80	Payntor, Robt. E.	Denver, Colo.
39	Dally, Phillip	Ludlow, Colo.	147	Pickens, A.	Camp Shumway, Colo.
20	Davis, Ellsworth	Lafayette, Colo.	148	Race, Geo. W.	Morley, Colo.
125	De Ross, G. W.	Aguilar, Colo.	138	Richards, Emelyn	Berwind, Colo.
98	Evans, Thos.	Delagua, Colo.	137	Roberts, D. G.	Berwind, Colo.
14	Gallegos, Lito	Aguilar, Colo.	27	Roberts, Thos.	Canon City, Colo.
40	Griffiths, W. R.	Crested Butte, Colo.	134	Schiemenz, Fred	Berwind, Colo.
54	Hamil, David	Firestone, Colo.	21	Sherbondy, S. R.	Lafayette, Colo.
33	Harris, Thos.	Brodhead, Colo.	115	Sidle, Samuel	Broomfield, Colo.
149	Hodson, Frank	Louisville, Colo.	11	Simpson, Thos.	Frederick, Colo.
72	Hutton, Charles	Walsenburg, Colo.	1	Smith, Frank C.	Louisville, Colo.
113	Kaiser, Martin	Frederick, Colo.	3	Sponske, John	Frederick, Colo.
87	Lewis, John	Cameo, Colo.	42	Tauche, Carl	Primero, Colo.
45	Liddle, William	Craig, Colo.	84	Topping, Robert, Jr.	Tioga, Colo.
44	Linn, David	Mount Harris, Colo.	53	Walsh, Robt. G.	Frederick, Colo.
106	Lloyd, William	Tollerburg, Colo.	143-21	Watson, Joseph	Louisville, Colo.
100	Lowther, W. A.	Strong, Colo.			

LIST OF SUCCESSFUL CANDIDATES RECEIVING FIRE-BOSS CERTIFICATES, MAY, 1920

Cert. No.	Name	Address	Cert. No.	Name	Address
64	Ballantyne, Gilbert	Denver, Colo.	102	Kocppler, Joe	Lafayette, Colo.
46	Barnell, George	Pool, Colo.	94	Meden, Louis	Lafayette, Colo.
58	Beebe, John	Segundo, Colo.	75	Neish, John G.	Rugby, Colo.
109	Billington, A.	Lafayette, Colo.	119	Perrino, Lawrence	Chandler, Colo.
140	Caddell, Thos.	Lester, Colo.	114	Pickens, Chas.	Ojo, Colo.
127	Dawe, S. E.	Sopris, Colo.	50	Potter, Parley	Florence, Colo.
60	Draughn, Millard	Pyrolite, Colo.	12	Ranson, Foster	Coal Creek, Colo.
107	Ellington, Wm	Tollerburg, Colo.	63	Rees, John	Glenwood Sp'gs, Colo.
70	Follette, Eli	Primero, Colo.	123	Tibarti, Andro	Morley, Colo.
66	Howells, Ed.	Camp Shumway, Colo.	77	Trew, W. H.	Oakview, Colo.
65	Immordino, Joe	Primero, Colo.	37	Voytilla, John	Palisade, Colo.
43	Kiddie, Geo. H.	Mount Harris, Colo.	5	Young, Andy	Walsen, Colo.

LIST OF CANDIDATES RECEIVING SECOND CLASS MINE FOREMAN CERTIFICATES, MAY, 1920

Cert. No.	Name	Address	Cert. No.	Name	Address
110	Ahlich, Fred	Walsenburg, Colo.	52	Maxwell, David	Firestone, Colo.
118	Billstrom, G. A.	Pyrolite, Colo.	81	Pary, Lewis T.	Denver, Colo.
57	Holloway, Sidney L.	Primero, Colo.	23	Sammons, W. A.	Walsenburg, Colo.
41	Irwin, Edw'd S.	Crested Butte, Colo.	95	Schneider, Fred	Boulder, Colo.
120	Laiminger, Alfred	Sopris, Colo.	112	Tesone, Felix	Frederick, Colo.
143	Machin, Eugene	Louisville, Colo.	103	Trager, Joe	Erie, Colo.
2	Manley, Scott	Canon City, Colo.	96	Willis, Joshua	Delagua, Colo.

LIST OF CANDIDATES RECEIVING FIRST CLASS ASSIST-ANT MINE FOREMAN CERTIFICATES, MAY, 1920

Cert. No.	Name	Address	Cert. No.	Name	Address
131	Bell, R. O.	Strong, Colo.	4	Lindsey, James	Firestone, Colo.
32	Glover, Arthur	Erie, Colo.	128	Williams, John T.	Sopris, Colo.
36	Hoffman, E. C.	Forbes, Colo.			

CANCELLED

Date Due

EXTENSION

11 25

