

### NINTH ANNUAL REPORT OF THE STATE INSPECTOR OF COAL MINES COLORADO 1921



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## NINTH ANNUAL REPORT

#### OF THE

# STATE INSPECTOR OF COAL MINES

## 1921





DENVER, COLORADO EAMES BROTHERS, STATE PRINTERS 1922

### CONR CG 1921 C.2

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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 Pine, Thor, Macoye, 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, Caprock, 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, Pictou, 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: Adams, Boulder, El Paso, Jackson, Garfield, Gunnison, Mesa, Montrose, Ouray, Pitkin, and Rio Blanco.
- HENRY P. KING, 1255 Lafayette St., Denver, Colo.......District No. 5 Includes mines in the following counties: Archuleta, Elbert, Jefferson, La Plata, Moffat, Montezuma, Routt, and Weld.

### LETTER OF TRANSMITTAL

Denver, Colorado, March 8, 1922.

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 Ninth Annual Report of this department.

The period covered began January 1 and ended December 31, 1921.

Respectfully,

JAMES DALRYMPLE. State Inspector of Coal Mines.

#### STATEMENT SHOWING RECEIPTS AND DISBURSEMENTS FROM JANUARY 1 TO DECEMBER 31, 1921

#### RECEIPTS

Tax collected on coal mines	\$32,330.27	
From sales of copies of the Coal Mining Laws	373.65	
From sales of old anemometer and safety lamp	. 16.00	
From refund on mileage book and telegram	. 22.75	
Balance brought forward from 1920	8,007.31	
Total		\$40,749.98

#### DISBURSEMENTS

Salary of chief inspector\$	4,400.00	
Salaries of five deputy inspectors	14,129.43	
Salaries of chief clerk and assistant clerk	3,300.00	
Expenses, Chief and Deputy Inspectors	4,675.68	
Fatal Accident Investigators, per diem and expenses	169.03	
Mileage books (R. R. Transportation)	1,140.00	
Automobiles, supplies, and repairs	767.20	
Board of Examiners, per diem and expenses	95.52	
Printing	1,688.40	
Postage	373.70	
Stationery supplies	216.79	
Telephone service	53.00	
Telegraph service	26.39	
Instruments	187.00	
Electrical supplies	140.92	
Express	6.20	
Miscellaneous	104.65	
Total		\$31,473.91

#### FIELD EQUIPMENT

2

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

## SUMMARY OF THE COAL PRODUCTION OF COLORADO, 1921

Number of mines operated	249
Number of new and old mines opened.	40
Number of mines closed, 11; abandoned, 5; total	16
Tons of sub-bituminous coal produced Tons of semi-bituminous coal produced	
Tons of bituminous coal produced	
Tons of anthracite coal produced	
Total number of tons of coal produced	9 141 947
Decrease, 1921	
Tons of run of mine coal produced	
Tons of lump coal produced.	
Tons of nut coal produced	650,472
Tons of egg coal produced	36,659
Tons of pea coal produced	58,876
Tons of slack coal produced	
Percentage of slack produced	
Tons of coal mined by hand	
Tons of coal mined by machine	4,295,501
Kind and number of machines used: Compressed air, 162; elec-	
tric, 270; total	432
Tons of coal mined for shipment.	
Tons of coal shipped out of the state Tons of coal sold to local trade and used by employees	520.240
Tons of coal used at the mines for steam and heat	,
Tons of coal made into coke	695,170
Tons of coke made	
Number of coke ovens used	340
Number of days coke ovens were operated	344.5
Number of men employed at coke ovens	134
Number of mines employed: Pick, 4,769; Machine, 3,356; total	8,125
Total number of men employed in and about mines (average)	14, 164
Number of employees foreign born	6,256
Number of employees speaking English	10,455
Average number of days worked (man-days)	164.4
Daily production per miner	6.8
Annual production per miner	1,125.2-
Number and type of safety lamps used: Flame, 542; electric, 5,471; total	6.013
Number of carbide lamps used	7,497
Number of pounds of carbide used (incomplete, only 99 mines	
reporting)	194,085
Number of pounds of permissible powder used	760,117
Number of pounds of black powder used	
Number of pounds of dynamite powder used	22,220
Number of men killed: Underground, 48; surface, 4; total	52
Number of men injured	1,520
Number of men killed per thousand employed	3.6 107.3
Number of tons of coal produced for each life lost	175,807
Number of tons of coal produced for each non-fatal accident	6.014
Number of men employed per fatal accident	272.4
Number of men employed per non-fatal accident	9,3
Number of widows left	° 31
Number of children left fatherless	68
Cost of development work in mines during 1921; 139 mines re-	
porting	1,015,478
Number of days lost account of car shortage, 44 mines reporting	2,187
Number of tons of coal lost through shortage of labor, 10 mines reporting	84,000

### Ninth Annual Report OF THE State Inspector of Coal Mines 1921

#### INTRODUCTION

The coal production of Colorado in 1921 was 9,141,947 tons, a decrease of 3,372,746 tons as compared with the output of 1920. This loss of tonnage is largely attributable to the general depression of all industries throughout the country and further intensified by wage disputes, causing numerous local strikes, also a car shortage, which prevailed chiefly in Routt county, caused much loss of business. The average number of men employed was 14,164, or 499 more men than in the preceding year. The number of (man) days worked was 164.4, a loss of 91.8 days compared with the year before. Two hundred and forty-nine mines were operated, which was eighteen more mines than in 1920. Of these mines 108 have no railroad connections and supply local trade only. A few new mines were opened up, but apparently on a small scale as no data was furnished to this office to give the probable extent of contemplated capacity or equipment. Despite the slump in business the operators did not lose their spirit of enterprise as shown by the annual reports filed with this office, many of them reported material additions in the housing and modern conveniences of employes at the coal camps.

#### **RESUSCITATING APPARATUS**

Being, that the pulmotor and lungmotor are no longer used and the inhaler having been approved by the U. S. Bureau of Mines, the following may be of benefit to those having pulmotors.

"The pulmotor may be converted into an inhalator, as follows: "Take the oxygen cylinder, reducing valve, recording gauge, oxygen feed tube, and face mask, which are parts of the pulmotor and fasten them in a tight box, such as the original pulmotor case, and you have an inhalator, to be used to furnish oxygen or air enriched with oxygen when giving artificial respiration my manual methods."

#### DANGER OF UNDERGROUND TELEPHONE IN GASEOUS MINES

#### (From a letter sent out by the U. S. Bureau of Mines)

"Washington, D. C.—That the ordinary, innocent-appearing telephones used in the underground depths of coal mines are capable of igniting gas and thus bringing about disastrous mine explosions is the novel finding of an investigation just conducted by the United States Bureau of Mines at its experiment station at Pittsburgh, Pa. The danger of gas ignition and explosion does not exist in the employment of such current as is necessary for talking over telephones, but results from the ringing of the magneto.

Actual tests on an ordinary mine telephone were made in a large testing gallery of approximately 400 cubic feet capacity, used by the Bureau of Mines for investigation of all types of electrical equipment in gaseous atmospheres. The gallery is so arranged that it can be filled with an explosive mixture of natural gas and air, the gas being taken from the city mains. The inner and outer doors of the telephones were left open so that the gas could easily enter the interior of the instrument. Another telephone was placed at a point some distance from the gallery and connected to the first telephone through a metallic circuit. The telephone inside the gallery was fitted with an attachment that permitted the ringer to operated from outside the gallery. By another attachment, the receiver circuit could be opened and closed in like manner. The outside telephone could be operated in the usual way.

Tests were made by ringing the telephone inside the gallery when filled with gas, but not connected to the external circuit, and by ringing the inside telephone when connected by the external circuit, and by ringing the outside telephone while the receiver circuit of the inside telephone was being opened and closed.

As the results of several series of trials made under varying conditions, numerous ignitions and explosions of the gas in the gallery were obtained.

The results of the investigation indicate that the ordinary type of mine telephone, while designed to have a certain measure of dust and moisture tightness, it is not explosion-proof device, and is, therefore, not safe in gaseous atmospheres. The Bureau of Mines stresses the need of establishment of safety standards for mine telephones that may be required to operate in gaseous atmospheres.''

#### EMPLOYMENT OF SHOT FIRERS AND THEIR DUTIES

A few words to some of the coal companies concerning the employment of shot firers, their duties, etc. Many of our coal companies employ shot firers because the law requires them to do so, and not because he is considered necessary or that he may be an asset to his employer. Under such conditions he is told that he has an average of so many shots to fire each shift without any regulations or understanding as to how he must proceed, further than that, as soon as the shots are fired, his day's work is done, and being a human being, he proceeds to fire the shots in the shortest possible time, holes are not inspected to see if they are properly placed, or properly cleaned, or to give any consideration to the charges left by the miner, or even have an understanding with his superiors that he must not commence firing shots until he has been advised by the mine foreman, or his representatives, that all other employes are out of the mine, that he must visit all places where shots have been fired as soon as practicable after firing to see the results of his work, and that fire has not originated from the blasting. Under such conditions very little, if any benefit can be expected, and in my opinion the employer is responsible for such careless procedure.

The object of employing shot firers is to minimize loss of life and destruction of property, to improve sanitary conditions during working hours, and in domestic mines to increase the percentage of lump coal, all of which can be accomplished, provided, the law governing the duties of shot firer is fully complied with. Where this is not done, the employer is working against his own interests and that of his employes. In mines producing domestic coal to the extent of 200 tons per day, the shot firer, by being compelled to do his work, properly as required by law, should be an asset to his employer, to the extent of many times his wages, by increasing the percentage of lump coal. I hope this will reach the attention of those for whom it is intended and that they will give it the consideration it is entitled to, and take it in the spirit it is given.

At a hearing held in Colorado Springs, January, 1922, before the Industrial Commission of Colorado, concerning a reduction in wages of the Pikes Peak Coal Company's employees, the miners' representatives complained of having to work in powder smoke caused by firing of shots during the day. There is no doubt as to the truth of the complaint and it applies to all lignite mines where shots are fired during the day. The State Mine Inspection Department has for a number of years tried to remedy the condition complained of, but because of lack of co-operation from both the companies and their employes, very little, if any results have been obtained, and just as long as the employer and employe are so indifferent to their own welfare, just so long will the miners have to work in smoke and the percentage of slack remain at fifty per cent or more.

A few days ago I was advised by Deputy Inspector J. W. Graham, that the Pikes Peak Fuel Co., had put on a shot firer at its Keystone mine and that all shots were being fired by him after all other employes are out of the mine. This was very gratifying news to this department and it is hoped that other mines will follow.

#### TO STATE DEPUTY COAL MINE INSPECTORS

No doubt you have read in the press the controversy over the recovery of the bodies of the six men, who lost their lives in the Satanic mine disaster, on December 13, 1921.

The Denver Fire Department was called upon for assistance and went to the mine, taking with them two Draeger helmets, both of them defective, several gas masks that give no protection against carbon monoxide gas, a life line, and flashlights.

Upon entering the mine they could not see with the flashlights, so Chief Healy telephoned Denver and had mazda lamps and necessary wiring brought to the mine. Attaching the mazda lamps to the wire, they lowered them down the forty-five degree slope, and when nearing the bottom, one of the lamps burst. Fortunately the atmosphere was not explosive, had it been, some members of the Fire Department and several others might have lost their lives as they were standing in and around the entrance to the slope. A compressed air hose was used to drive the fumes back in an effort to reach the bodies. Imagine the danger of such action with the intake and return airways sealed. It meant sending the fumes back over the men at the hose.

The following statement is taken from a letter of Mr. F. M. Downer in answer to a letter from me protesting against a repetition of a similar procedure in case of being called out again to a mine fire, to which he says: "That under similar conditions the same action as taken in this case will be taken again."

Now gentlemen, as state officials, sworn to do our duty and render all possible assistance in the protection of life and limb of those employed in and around coal mines in Colorado, I say that the State Coal Mine Inspection Department must take such action as may be necessary to prevent a recurrence of such action by any inexperienced man or men not under the direction of a competent leader, holding a certificate as such, issued by the Board of Examiners for Mine Inspectors and Mine Officials for the State of Colorado.

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

Total Inspections	803
Total Producing Mines	249
Total Mines Inspected	296
Number of Fatal Accidents Investigated	43
Inquests Attended	29
Scale Inspections	9
Complaints Investigated	25
Prosecutions	19

In conclusion, I wish to tender thanks to the Deputy Inspectors and office force for their faithful services.

Respectfully submitted,

JAMES DALRYMPLE, State Inspector of Coal Mines,

### TABLE No. 1

## DIRECTORY OF COAL MINES IN THE STATE OF COLORADO FOR THE YEAR ENDED DECEMBER 31, 1921

Name of Company	Name of Mine	County	Name of Manager or General Su- perintembent		Name of Superintendent	Mins Post Office Address	Railroad to Min	w Geological Name or Number of Coal Heil Worked	Averag Thickne Feet	83
Parkdale Coll Co. Nonannan & Fowler flocky Mountain Fuel Co flocky Mountain Fuel Co. flocky Mountain Fuel Co.	Parkdale Pagosa Shiipson Standard Vulcan	Adams Atchul Ia Boulder Houlder Boulder	Prank Biehells Noorainan & Powle Geo, T. Poart Geo, T. Peart Geo, T. Peart	Lalayelle Pagosa Springs Denver Denver Denver	Frank Elchell W. J. Nossaman David Allen Geo Swearlagen August Sire.	Lafayette Lafayette Lafayette Lafayette Lafayette	None None C.&S. and C B.Q T. B. & Q C. B. & Q	Larante Formation	3 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	0
Rocky Mountain Fuel Co. Rocky Mountain Fuel Co. Bocky Mountain Fuel Co. National Fuel Co.	Acme Industrial Gorham Monarch No. 2	Houlder Houlder Houlder Houlder	Geo. T. Peart	Denver Denver	J. C. Williams Thos Globy Thumas Hillon John T. Sidle Win Andrew	Louisville. Superior Gorham Broomfield Louisville	C. & S C. & S C. & S C. & S. C. & S.	Louisville, Lower	, fi to S , 5 to 10 , 5 to 9 , 5	
Big Four Coxi & Coke Co. Fox Coal M. Co. Frown Fuel Co. "Louisville Mining Co.	Centennial Fox	- Houlder - Boulder - Boulder - Houlder Houlder	<ul> <li>Eph Nexhii</li> <li>S. A. Snyder</li> <li>R. A. Pierce</li> <li>Geo, Zarlengo</li> </ul>	Henver ···· Henver ···· Denver ···· Denver ···	Henry Dusher A. J. Brooks D. M. Shnpson Juo E. Daley	Gorhain None Loulaville	C. & S. C. & S. C. & S. C. & S.	Laramic Formation Laramic Formation	6 to 8 5 5	5 10 10
<ul> <li>International Fuel Corp., Engineers Leasing Co</li> <li>MacFormac Co.d. Co</li></ul>	Cambro . Hed Ash	Boulder	Wm, B. Millikin F. J. L. MacCormac. Helen A fielden Phas. Elley	Denver	John D. Miller. P. J. & MacCormae. George Williams Chas Lilley	Gorbam Boulder Louisville	. C. B. & Q. . P. & S. None P. B. & Q.	Laramic Formation Laramic Formation Laramic Formation Laramic Formation		6 6
Cracker Jack Coal Co Big Six Foal Co Davies Coal Fo Hoss & Lorenzo	Cráčker Jach Sunnyside Læwis Horham No 2	Houlder Houlder Boulder Boulder Boulder	.(Mine close down) T. L. Davies Frank Ross James Brierly	Houlder	W. W. Moigan (No report sub f' L. Davles Frank flors James Brierly	Horhans ,	C. & S	Laramic Formation	5	 10
Independent Coal Communi- Blue Gause Coal Communi- Star Coal Communi- Juanita Coal & Coke Commu- Fnonta Coal Communi-	Independent . Bue Goose Star King	Boulder Boulder Della Dolla	J. D. Sloan 1Mine close down John S. Howle Ed. E. Cox.	- Lowle -	J. D. Slogn (No report sub Alex II Bowle Ed E. Cox	Boulder milled) ,	D. & R. G. W	. Laramle Formation	7 	1 6   9
A. W. Hall & Son Breen Valley Coal Co States Cool 1'o Frank W. Flekes	, Red Mountain Green Valley States	Della Della Della Della	A W Hall C W. Bluehart J. C. Fartar Frank M.Flekes.	Cedaredge	A W Hall Alex Hughoffer C.B States Prank M. Flekes Ira L. Howerman	Cedaredge Pedaredge Cedaredge Pedaredge		Rollins No. 1	11	G
Winfort Foal Co	Whiton . Kurtzville . Converse Did Coalby	Della Della Della	<ul> <li>J. P. Bowerman</li> <li>C. E. Goddard</li> <li>Frank Converse</li> <li>John W. Stillwagon</li> <li>Chas, T. Berry</li> </ul>	Cedaredge Hotelbergs Phothum Cedaredge Paonlan Paonlan	C. E. Boldard L. L. Converse. John W. Stillwagon Chas, T. Berry.	Paopia - Cedaredge	None None None None	Rollins No. 1		6
Chus T Herry Tygell & Aspol Mealdon Coal Co J. R De Graffenried. Holchkins Fuel & S. Co.	Berry	Della, Della, Della Della	George McMillin	<ul> <li>Della</li> <li>etta</li> <li>Hotelikiss</li> <li>ttolchkiss</li> </ul>	Thomas Tygell George McMillin J. D. DeGraffenried B. R. Cobb	Delta Delta Hotehkiss. Hotehkiss.	None None None None None			G S
Barker Weight Puel Co Pike s Peak ('ons. Fuel Co Keystone Mining Do. Colorndo Springs Co. Alexander Patterson	Wright a second Pilicoview second Registione a City No. 1 second Elly No. 2 second	Elbert El Paso El Paso El Paso El Paso	Henry Thomas Henry Thomas J. It. Young	<ul> <li>Matheson</li> <li>Colorado Spi(*,, Colorado Spi(*,, Colorado Spi(*,, Colorado Spi(*,, (Mine Closed)</li> </ul>	Harker Wright Henry Thomas John Norgard John Streenan	<ul> <li>Matheson</li></ul>	None D & R 11 W R. J. A. T. & S. F. A. T. & S. F.		7 10 11 8 10 12 6 11 16	
W. D. Corley W. D. Corley Golden Dawn Coal Co Rush Coal & Day, Co Danyille Coal ( 9	Old Patterson Black Marlab Golden Dawn Hush Daaville	El Paso El Paso El Paso El Paso El Paso El Paso	A. O. Hoffman W. D. Corley T. F. Ellioli	Colorado Spgs (Mine Closed) Rush Colorado Spgs		Colorado Springs Colorado Springs Rush Rush Liolorado Springs	None	Laramle Formation A	7 to 12 5 tu 6 5 tu 6 7 6	6
Cottonwood Coal Co *Afritude Coal Co Colorado Fore & Iron Co Colorado Fuel & Iron Co	Coltonwood Alliude	El Paso El Paso Fremont Fremont	Berl Lloyd D. A. Stoutt D. A. Stoutt	Colorado Spgs Colorado Spgs Pueblo	Pred Sevelk Bert Lioyd J. D. Celhbs Hen Beach	Colorado Springs Colorado Springs Rockvale Coal Creck	None None A. T. & S. F. A. T. & S. F. D. & R. G. W.	Laramle Formation A Canon City Canon City Canon City	3 to 1	6 6 8
Colorado Fuel & Iron Co. Colorado Fuel & Iron Co. Colorado Fuel & Iron Lio. Victor-American Fuel Co Victor-American Fuel Co	Fremont Nonac Emerald Chandler	Fremoni Fremoni Fremoni Fremoni	D. A. Stoutt D. A. Stoutt D. A. Stoutt B. W. Snodgrass B. W. Snodgrass	Pueblo Pueblo Pueblo Denver	W J Davis Chas. O'Nell W, J. Davis A. E. Thompson W, D. Bryson	Canon City Florence Chandler Pyrolite	Λ T. & S. F. Λ. T. & S. F. D. & R. G. W. Λ. T. & S. F.	Canon Cliy Canon Cliy Laramie Formation Laramie Formation	6 	10
Canon-Remarker Coal Co Vezzeril Moschetti C. Co Bibson Lumber & Fuel Co	Canon	Premont Premont Premont	J. S. Cheyney	Canon City	Mozari Gewis Rocco Moscheili Stanley Pavelsky Tony Santarelli		λ. T, & S. F.           None.           λ. T, & S. F.           None.	· · · · · · · · · · · · · · · · · · ·	4'4" 10 5 3 and 4	968
Mountain View Coal Co Florence-Panon Coal Co Williamsburg Stope C. Co Sam Feiry *Smin-farmer coal Co	Walden Florence-Canon Williamsburg Sl. Willie Smith-Tanner	Fremont Fremont Fremont Fremont Fremont	Roland Bluni	Coal Creek	James Berardi Roland Blunt Dominic Madone Sam Pelry A. M. Smith		None None None None	Rockvale		
Canon-cijskaj Cour Co. J Brewster independent C. Co. P. M. Frunbrugh, Jr. (2000) James Rocchao	Bassick	Fremont Fremont	Job Moschetti	Canon City Florence	Joe Moschetti John Rees F. M. Dunbaugh, Jr (Mine closed) Homer D. Ford	Canon Cliy and Flotence	None None	Canon City		68
Glason Aspadtum Co South Caron of L. Co Estes Bros Hracken & Pozza	Carbosers South Canon Estes	Garffeld Garffeld Garffeld Darffeld Darffeld	James H. Hood R. Prendergast	Walson, Utah Glenwood Spgs Rifle Newenstle	R. Frendergast Frank Estes	Mack Glenwood Springs Rille Newcastle Rille	Vibiah	1		Ğ 
Rauman Coal Co. Roletto Poal Co. Crara Bergromo Utah Fuer Co. Colorado Fuel & Iron Co	Roletto Bergiund Somersel Crested Butte	Garfield Garfield Dunnison Gunnison	Clara Berglund W. C. Ferguson D. A. Stout	Riflo Newcastle	John Roletto Robt, Williams, Jr W. J. Tyson	Newcastle	None None D. & R. G. W D. & R. G. W	Mesa Vorde		6
Colorado Fuel & Iron Co Ross Coal Co Crested Butte Anthr. M. Co Crested Butte Joar Co	Elly Mountain. Horace Smith-Antimactic. Buildey	Gampison Gumpison Gumpison Gumpison	D. A. Stout C. L. Ross J. M. Page	Puchlo. Crested Bullo Denver	W. J. Tyson John Arnoll J. L. Harrison J. J. Melniyre		D. & R. G. W D. & R. G. W D. & R. G W D. & R. G W	Liranile Cretaceous Laranile Cretaceous	Blt 4 Arth 3 4	- 6 - 6 - 6
ttocky Mountain Fuel Co Onto creek coul Co Banuwan muci Co	Alpine	Guanison Buasison Guasison	Geo. T. Peart Geo. D. Manville Baidwin Fuel Co	Denver Gunnbun Denver	John Featherstone Geo, D. Manville Clarence Skellenger Lessee	Baldwin Gunnison Baldwin	D. & R. G. W D. & R. G. W D. & P. G. W	······································		*****
Colorado Fuel & Iron Co	Robinson-Walsen. Ideal Cameron	lluerlano lluerlano . fluerlano fluerlano	D. A. Stoutt D. A. Stoutt D. A. Stoutt	Pueblo Pueblo Pueblo	W. S. Getchell Arthur Samples C. A. Kalser J. L. MeBrayer	ldeal	D.&R.C.WC &S C. & S		\$ 10 7 \$ 10 10 3	6
Colorado Fuel & Iron Co Colorado Fuel & Iron Co Colorado Fuel & Iron Co Colorado Fuel & Iron Co. Colorado Fuel & Iron Co.	Lester	fluerlano Iluerlano Iluerlano Huerlano	D. A. Stoutt D. A. Stoutt D. A. Stoutt D. A. Stoutt D. A. Stoutt	Puchlo Puchlo Puchlo Puchlo Puchlo	W. S. Getchell S. S. Temple S. S. Temple W. S. Getchell	Lester Pletou Tloga Pletou	D & R. G. W D & R. G. W D & R. G. W D & R. G. W D & R. G. W	Laramie-Walson Laramie-Wals'n-Itob'n, Laramie-Wals'n-Itob'n, Laramie-Wals'n-Rob'n, Cameron-Wals'n-Rob'n		6
Turner Coal Communication Mutual Loat Communication Oakdale Coal Communication Gordon Coal Communication	Turner	Huerfano Huerfano Huerfano Huerfano	James B. Dick	Walsenburg Denver Oakview Walsenburg	Robert Turner James Cameron E. H. McCleary R. F. Poll	Delcarbon Walsenburg Oakview Camp Shumway	D. & R. B. W. D. & R. G. W. D. & R. G. W. D. & R. G. W.	Walsen Walsen Munmoth Cameron	. 5 to 7 . 5 to 7 . 5 to 7 . 5 to 12 . 8 to 12	····
Sunnyside Coal M. Co	Ravenwood Suonyside	lfuerlano Huerfano Huerfano Huerfano . Iluerfano	B. W. Snodgrass. W. F. Oakes Chas. Bouchal, Sr. J. S. Cheyney George Fruth	Denver Denver, Canon (11)	G, D, Jones R, T Bell Chas, Benchat, Sr H, T Dick S, B, Smith	Strong Pryor. Olo	C, & S. D, & R, G, W, D, & R, G, W, D & R, G, W, D & R, G, W, D & R, G, W,	Ration Formation Walsen		6 5 
Brennan Loal M. Co Vesta Mines Incorporated *Caddell & Son	Mallland	Huerlano Huerlano Huerlano Huerlano Huerlano	S. M. Thompson James Corner Dan. J. O'Harn R. W. Caddell Jno. Q. Royce	Maliland. Walsenburg Denver Lester Denver	James ( unier	Molifand	D. & R. G. W D. & R. G. W D.& R. G. WC.&S D. & R. G. W. D.& R. G. W.	Cennox-Maltland Robinson, Walsen Robinson Robinson-Cameron,	- s. z. s	
Castle Coat Co.,	Caproch	Huerfano Huerfano Huerfano Huerfano fluerfano	A. J. Merrill. Geo. D. Klinball. Geo. Fruth.	Walsenburg Denver Denver Toltee	Archie Topping Thos. McLaughlin T. J. Stone. Elmer E. Caddell Steve Mattive	Walsenburg Rugby, Rouse,	None. D & R B WC &S D, & R, G, W. None	Cameron Laramle, Middle Gr'p Laramle, Upper Gr'p. Cameron, No. 3	3	
Black Hills Coal Co North Park coal Co Loyden Coal Co, "Colorado Colliertes Co	Black IIII18 Moore No. 1 Leyden No. 3 Salante	Huerlano Jackson, Jefferson Jefferson	J G. Tompkins W D. McCausland . J W. A. Ream	Rughy Tlogn Tlogn Ft, 1'ollins The Providence The P	J. G. Tompkins W. T. Gianville Archie Glichrist Thomas Lee	Golden	None D. & it. G. W C. W. & E Donver&interur, C. & S	Walsen Laramle Løyden B		6  
Calumet Fuel Co.,	Perins Peak	La Plata La Plata La Plata La Plata La Plata	W. C. Ferguson	Denver, Denver, Hesperusi,	Leo McCormick	Perins Durnigo	R. G. S	Mesa Verde	· · · · · · · · · · · · · · · · · · ·	G G
O. K. Conl Co	O K	La Plata	John Baudino	Durango Durango Durango Durango Durango	Anton Gaudino	Durango	None			6 6 6
Gates Coat Co. Colorado Fuel & Iron Co Colorado Fuel & Iron Co Colorado Fuel & Iron Co	Brain Ridge . Sopris	La Plata - P Las Animas - Las Animas - Las Animas - Las Animas -	D. A. Stoutt	Durango Pueblo Pueblo Pueblo	D. T. Gates John Sopris Chas. Chumbers James O'Nell	Durango Sopris	None C&S-C&W-D,RG	Laramic Pormalion	3 to 1	G
Colorado Fuel & Iron Co. Colorado Fuel & Iron Fo. Folorado Fuel & Iron Co Folorado Fuel & Iron Co	Foller Primero Merwind	Las Animas Las Animas Las Animas Las Animas	D. A. Stoutt D. A. Stoutt	Pueblo Pueblo Pueblo	D. L. Hansen F. T. Baker F. C. Benneit James Wilson	Tollechurg Primero	C. & S C. & S C. & S A. T. & S. F.	Berwind	G 10 S 	6 6 6
Victor-American Fuel Co	Digle Delogua Casa	Las Animas Las Animas Las Animas Las Animas	D A Stoutt B. W. Snodgrass B. W. Snodgrass B. W. Snodgrass B. W. Snodgrass	Pueblo Pueblo Pueblo Pueblo	T P. Davis James Strattors. Geo. Shields, Asst A. J. Brooks James O'Nell	Balagua Dalagua filostings	D & R G, W, C, & S, E C, & S, M C, & S, E.	Raton Formation	5 ····· ··· ··· ··· ··· ··· ··· ··· ···	8 6
Rocky Mountain Foul Co Rocky Mauntain Foul Co Rocky Mountain Foul Co	Hray Freek Furlies La Helle	Las Animas Las Animas Las Animas Las Animas	Geo. T. Pearl Geo. T. Pearl Geo. T. Pearl	Pashio	W. L. Morgan Wm. Morgan Geo. T. Fortune Wm. Morgan	Forbest	C. & S. C. & S. C. & W. C. & S. C. & W.	Up, and Lower Rob'n 1	3 1/2 10 5 3 1/2 10 5 3 1/2 10 7	-1.0
Hoyal Fuel Po. American Smell & Bel. Co., Primple Fuel Co. Temple Fuel Co.	Itoyal Honcarho Brodhead No, 9 Brodhead No, 10	Las Animas Las Animas Las Animas Las Animas Las Animas	F. R. Wood	Pueblo Cakedates Trinidad Trinidad	C. R. Garrell and a second of C. Cook	Cokedale	Γ & S. D & R. D. W C & S. C & S. U & C	Laramie-Walson	G 6	6 6
Huerfano Coal Lo. Bear Canoa Coal Co National Fuei Co.		Las Antimos	S. S. Murphy	Trinidad Denver Trinidad	P McDermolt, P, D Miller	Laidlow. Vallorso Howen	12. & S 12. &	Poerless	6 5 6 6 1 0 6 4 5	·····  6
Hlack Hawk Coal Co Jewel Coal Co Prairie Canon Coal Co.		Las Anlmas Las Anlmas Las Anlmas Las Anlmas Las Anlmas	John Allan	Denver Denver Ludlow	Itoberi C. Cuvila. David Lewis	Rugley	C.AS and D.AR.G W C.AS and D.AR.B W C.& S C.& S C.& S C.& S	Robinson Primrose No 2	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	10 6 6
• Santa Fe Coal Co. • Kinley - Wilton Coal Co.	Hiack Diamond Jeffryck Santa Pe Fritchard Baldy Mountain	Las Animas Las Animas Las Animas Las Animas Las Animas	Albert G. Jeffryes P. A. Williams Prank E. Kintey Ben, W. Halgh	Denver Trinidad Denver Trinidad	Robi, Donaldson Albert G. avitti yes Geo, Gulley J. H. Willou M. C. Hroyles	Trinsiad	C & S. Trinidad Eite, A T & S. F. None None	Starkville Laramio No. 1	3 4 10 7 5 10 7 	-
Trialdad Coal Ca Miners Doal & Coke Co. Joerger Fuel Co	Ferrell Beshoar Leone	Las Animas Las Animas Las Animas Las Animas	Beo. W. Haigh	Trinidad Trinidad Trinidad Trinidad	L.C. 10no i D. O. Bucressa J. P. Shew La Leone	Tribidad	None	Trinidad	· · · · · · · · · · · · · · · · · · ·	36 86
Liberty Coxi Co Three Pines Foal Co Pickford Coal Co Cummate, & Co.	Liberty 3 http://ipes Poliford Rugby Fisher's Peak	Las Animas Las Animas Las Animas Las Animas Las Animas	Earl Cabb B. Boagho	Porte a	W. D. Diggs E. L. Pendleton <i>I</i> : an optio Wine's connector K. connector	Vallorio	1° & S.,	Berwind, Lower and	······································	10 6
C. O. Stanley	Stanley	Las Anlinas Las Anlinas Las Anlinas Las Anlinas		Tribbad Tribbad Walsonburg (No report sub-	Pele Cameroa W. IL Owen R. IV Graham	Trinid of	Nune D. & H. G. W Trioidad Etec.	Primero		6 10
John Corra Jan E. McLaughtin Grand Jum tion M. & F. Co Palinade Coal & Sup. Co.	Corra Hemilerson Cameo Pullsade	Las Animas Los Animas Mesa Mesa	Geo McNoll II 11, Koch C W Bowerman	Sopila Trandad Denver Aspon	John Corfa	Palimate	None	El Moro	1 6	6 G
Book Clut Ford Co.		Micsa Micsa Micsa	C W flowerman Lon Luther	Graph Junction	Lon Littler	Frand Juncilon	D & R O W. Rook Clifft, R None	Pallesde	7 6 4	Ğ

Columbi Fuel & Iron Co. 80 Columbi Fuel & Iron Co. 13 Victor-American Fuel Co. 14 N	erwind tarkville ingle belagua ass	Los Asimos Los Asimos Los Asimos Los Asimos	D A. Stoutt D A. Stoutt D A. Stoutt It W. Snodgrass It W. Snodgrass	Гиеная Pueblo Pueblo Pueblo Pueblo Pueblo	James Wilson T. P. Davis James Struthers . Geo. Shields, Asst.	Starkville Engleburg Delagus Ilastiags	Δ Ť.& S.F D & R G W. C.& S E. C & S.E.	Larannie Formation Engle Raton Formation Raton Formation	· · · · · · · · · · · · · · · · · · ·	- 8
Yictor-American Fuel Co. Victor-American Fuel Co. Rocky Mountain Foul Co.	nslings may Creek	Los Animas Los Animas Los Animas Los Animas Los Animas	R W Shodgruss B.W. Shodgruss Heo, T Feart Geo, T. Feart Gro, T. Peart	Pucho Pucho Pucho Pucho Pucho Pucho	A. J. Brooks James O Nell W. L. Morgan Wm Morgan Geo. T. Fortune		C & S. E. C. & S. C. & S. C. & S. C. & S.	Haten Potination Verinejo Formation Forbes La Belle Up, and Lower Hob'n		12
Rocky Mountain Feul Co. PI Royal Fuel Co. B American Smelt, & Hel. Co. B Temple Fuel Co. B	ledmont	Las Animas Las Animas Las Animas Las Animas Las Animas	Geo, T. Pearl Samuet Tescher II II, Bubb F R Wood F, R, Wood	Pueblo Pueblo Pueblo Uokedale Trinidad	Wm Morgan Richard Dackerton C. It Garrett O. C. Cook	Sopris Aguilar Cokedalo Brodhead Brodhead	C & W C & S D & H G W C & S C & S	Pledmont Laramie-Walson Princi Laramie, Mid. Scries Laramie, Mid. Scries		6 6
Empire Coal Co. Er Huerfano Coal Co. In Bear Canon Coal Co. III National Fuel Co. III	mpire udlow ear Chron hor.	Las Animan Las Animan Las Animan Las Animan Las Animan	J. W. Slple S. S. Murphy P. D. Miller Samuel Tescher Jas. P. Hoye	Denver Denver Trialdad Denver Trialdad	W. W. Hoss. F. McDermott P. D. Miller Eph Wagstaff (Ros. P. Hoye	Agullar	C & S. C & S. C & S. C & S. C & S. C & S. D & R. G. W.	Poerlens Hastings & Berwind Laramie, I pper Laramie Cretaceons		•
Itajison Coal M. Co	acoya apron rlmrose ewel rafrie Canon	Los Animas Los Animas Los Animas Los Animas Los Animas	W. W. Curtix J. J. Wolfersheiger Ach Bean John Allan	Colorado Spgs Denver Denver Ladloy Denver	Robert C. Curtis David Lewis W. E. Powell John Allan Robt. Doubldson	Rapson Rugby Agullar Yallarso Ludlow.	P.A.S. and D.&R.G.B. P.A.S. and D.&R.G.W. C. & S. C. & S. C. & S.	Itobinson. Primrose No. 2. Bear Uanon	3 to 4    3 to 5	t0 6 6
Cedar Hill Coal & Coke Co. Jeffry es Poet Co. Santa Fe Coal Co. *Kintey-Wilton Coal Co.	rcenville lack Djamond effryes. anta Fo rilchard	Las Animas Las Animas Las Animas Las Animas Las Animas	Athert G. Jeffryes. F. A. Williams Frank E. Kløley Geo. W. Halgh	Depver Trinidad	Robit Donaldson	Itaymon	C, & S. Trinidad Elsee A T & S. F None	Starkville Laramle No. J	. 1 ID 7   	
Trinidad Coal Co Miners Coal & Coke Co	errelt fillinms eshtoar cong	Las Animas Las Animas Las Animas Las Animas Las Animas	Geo. W. Haigh	Trinidad Trinidad Trinidad Trinidad Forbes	J. C. Riner C. O. Burress J. P. Shew L. Leone	Tribidad	None None None C.& S	Trinidad		3 5 5 5
Three Place Coal Co Th Pleklord Coal Co Ph Caminotto & co	therty	Las Animas Las Animas Las Animas Las Animas Las Animas	Earl Cobb	Amarilio, Tex. Tranklad Ructy Tranklad Trinklad	E. L. Pendleton E. Ludghu Win vanipotti R. anarsh Pete Changion	Vallorso Trinidad Rugby Trinidad Boncarbo	ł	Laramle, Upper Laramie, Lower	3	10 6 10
Fairview Coal Co Th Dick Coal co, Di Hines Coal Co,	hompson	Las Animas Las Animas Las Animas Las Animas Las Animas	(Mine closed)	Trinidad Walesnburg ANO report sub- Sopris	W. H. Owen R. K. Graham mitted) John Corra Jan, E. Melaughtin	Trinidad Boncarbo Sopris Trinidad	Trinidad Elec D. & R. G. W	Vloin		6
Grand Juration M. & P. Co. Pallando Coal & Sup. Co Garlield Coal M. & T. Co Book Clift Coal Co	ameo allaade " arfield cok Cliff	Mesa Mesa Mesa Mesa Mesa	Geo. 31 cNell H. G. Koch	Denver Aspen Aspen Patisade Grand Junction ( Palbade	J. J. Neish	Caineo Pallsade Pallsade Grand Junction Pallsade	D. & R. G. W. D. & H. G. W. D. & R. G. W. Book Ulffitt, R. None	Book Cliff Palls sde	······································	6 6 6
Lifterly Coal & Merc, Co Ne Anchar Coal Co Ar Anchor Coal Co Ar C, W, Holfand Hi	earing schor No. 1 + nchor No. 2 Iverside	Mesa		Fruffa Fruffa Pruffa Paffsade	Carl IIIcks	Prulta. Frulta. Frulta. Pallsade tNo Report sub	None	Book Cliff		
Thomas Co.d Co., The Pfellx Palmetto Black Dismond Coal Co Bl J. B. Hunter	komas	Mesa Mesa	C. F. Thomas	Grand Junction. Grand Junction. Grand Junction Fruits Grand Junction	C. F. Thomas, Jr. Felix Palmetto W. M. Siotis J. B. Hunter Win, McGuiley	Grand Junction Grand Junction Grand Junction Prufix Lom8				5 6 
Axial Basin Developm't Co. Walte Mining Co	dlom,	Mcffat	. (Aline closed)	Denver Cralg Cralg Cralg Cralg 	C. G. Phelan	Axlat	None None None None	Mesa Verde Mesa Verde Mesa Verde Dakota		  - G
Prench & Fleiding	chool See Lange - elly-Sheildy. reeman	Montezuma Montezuma Montezuma Montezuma	J C Fleiding. H A Kelly. H J, Crandall , Mine closed)	Mancos. Cortez Mancos Mancos (No report sub-	W. H. French P. J. Sheddy Prank Platzek H. J. Crandall milled)	Mancos Cottez. Mancos Mancos	None	Menefer Formation		2
Naturilla Slores Co	overdale	Montrose Montrose Montrose Montrose	John C. Blake	Naturita	Charles Rice J. S. Chew John H. Drott Swan Blixt W. J. Oberding	Nucla Nucla Naturita Olajhe	None			 6 6
John Rell & Co	onomy arlon., ack Diamond on Canon.	Ourny		Montrose Carbondale	P. E. Swyhart J. R. Marchelti	Ridgway Carboadale Meeker Meeker	None		······································	
Templeton & Long	ollard cKee. ouglas Creek ik Hill* No 1-2	Rio Blanco Rio Blanco Rio Blanco Routt Itoutt	R M. Perry B A Harris	Merker Meeker Rangeley Denver	John C. Templeton J. H. Clark L. E. Jones F. J. Garreti H. A. Mallot	Meeker Moeker Rabgeley Oak Creek MI, Harriz.	None	Mesa Verde Group Pinnacie	•	
Victor-American Fuel Co Pir Victor-American Fuel Co We Hayden Bros. Coal Corp Ha McNell Coal Co Me	adge	Routt	B. W. Snodgrass B. W. Snodgrass Lewis A. Bayden Geo. W. McNeil Geo. Zarlongo	Denver	D. E. Davis J. A. Halbert Joseph Mathews Lee File S. D. Domenico	Oak Creek	D. & S. 1 D. & S. 1	Pinnacle Wadgo	9 to 11 8 8 8	
*Ittue Seal Coal Co Elli Roult-Pinnacle Coal Co	k Creek utt-Finnaele own Point	Roult	John Connell B, B Mageo Geo, N. Sparling	Denver Denver Denver Milber Denver	R. R. Smith. A. E. Oliver J. A. Hanna (Mine clored). Joseph Simpson	Bear River Millner Rear River 	D. & S. L. D. & S. L. D. & S. L. milled) D. & S. L.	Pinnacle. Wolf Creek. Pinnacle.	10 10 11	2 k
Hayden Valley Mut'l C. Co., Dry M. O. Dickerson., Lor Thomas Chergo	y Creek rella	Roufi Routi Houtt Houtt Weld	Samuel Teseiver	Bear River	John McDowell Lon Workman M. O. Dickerson Thomas Chergo Geo. Mathews	Bear River Hayden Hayden Oak Creek Dacono	D. & S. L	Laramie Cretsceoue	G 10 10 10 8	0 N WOUD WOUD
Rocky Mountain Fuel Co Gra Bocky Mountain Fuel Co Fro Consolidated C. & C. Co Bat	anl	Weld	Geo. T. Peart Geo. T. Peart Geo. T. Peart Geo. H. Morrison	Denver	F. L. Peart. J. J. Thomas Evan Jones Stanley Blose Wm. Burt	Erle Prederick Prederick Dacono Erle	C, B, & Q, U, P. U, P. U, P. U, P.	Lower Columbine Lower Frederlek Lower Frederlek		6 6 10 6
<ul> <li>*International Fuel Corp Eva United Colliertes Co Mo W, E. Russell Coal Co Rus</li> </ul>	ans	Weld	Geo McNell Geo Zarlango Andrew Walker W. F. Russell P. M. Peltler	Denver Denver Denver Denver Denver	John Alexander. S. B. Domenteo Edward Walker Fred E. Smith J. Weller	Dacono	U. P. U. P. U. P. U. P. U. P.	Laramic Formation Laramic Formation	8 6 8 8	**** **** ****
Dillon Coal Co Eur W. C. Bedlten	reka. 🔤 Y hlle Ash	Weld		Denver Frøderick La Salle Pt. Lupton	Thos. Morgan G. F. Dillon W. C. Bedilen John Peterson	Erle	H P U.P None Nane	Laramle Formation	10 7 2 6	б 8

Remarks The Nonparell Mine operated by the Louisville M. Co., was taken over by the Boulder County Mining Co., Denver., Co., Jan. 1, 1922.

\*NOTE: Red Ash Mine was formerly operated by the Ebdustrie S. Co., w \*NOTE: Red Ash Mine was formerly operated by the Champion Fuel Double Dick Mine was formerly operated by E. R. Harris & Co. Altitude Mine was formerly operated by the Thomas Conl Co. Smith-Tanner Mine was formerly operated by the Rail Coal Co. Williamsburg Slope was formerly operated by the Verlengo Coal Co. Herron Mine was formerly operated by Caddell Bros. Cuchara Canon Mine was formerly operated by Caddell Bros.

Satanic Milne was formerly operated by the Western Collicries Ca. Pritchard Mine was formerly operated by the Pritchard Fuel Co. Farmer Mutual was formerly operated by Ed. Reeser. Nelly-Sheddy Mine was formerly operated by E. M. Flant. Freeman Mine was formerly operated by the Peacock Coal Co Wolf Creek was formerly operated by the International Fuel Co. Elk Creek was formerly operated by the Amalgamated Development Corp. Yampa was formerly operated by the Amalgamated Development Corp. Evans was formerly operated by the Evans Fuel Co.

#### TABLE No. 2

### POWER EQUIPMENT OF COAL MINES IN THE STATE OF COLOARDO FOR YEAR ENDED DECEMBER 31, 1921

				lers		Powe	r Plant	Eng		Electric			'umps			Haulage Com			Air mpres- pors
Name of Operator	Name of Mine		yilndri- cal	TU	ıbular	E	IAII IAII Iasaca)	Com1	bust'n dnes as)	Оурва (Ан (Сідзя	801 (82)	pacity	De log 0	umps ellver- Water o the urtace	of nd Mules	Loc	mber of omotives		city
		Number	Total Herse Power	Number	Total Horme Power	Number	Total Horse Power	Number	Total Horse Power	Number	Kilowatta		Sumher	Total Gallons Per Minute	1 1 10	Gasollae	Steam Compress Air	Electric Number	Tota) Capa Cubic Peet Fer Minut
Ajax Coal Co Altitude Coal Co. American Smelting and Refining Co American Smelting and Refining Co American Coal Co.	Callfol Alfitude San Joan Boncatho Anchor No 1	t s   :	300	<b>J</b>	25	6 1 	350 15 			с з	90 G	25 5 430	4444	150 1500 100	1	-++   +, ,	1	28 .	1 750
Anchor Coal Co Axial Basin Development Co. Astec Coal Minding Co Baldwin Poel Co. Baldwin Poel Co.	Anchor No. 2 Collom	2	120	4	31i1) 30			3	<b>8</b> 0		65 10	16			1 1 1 5 1		** *    **** ***	- 1	l 325 l 213 f 100a
Harker, Wright Bear Canob Coal Co	Wright and Bear Canon and Andreas Willer Amb	No	Equi	5 pm	550 ent	· · · · · · · · · · · · · · · · · · ·	278		50		25 10		+	65 	10 12 3	47 8417	· · · · · · · ·		
Bell, John & Co Berglund, Clara Berry, Chas T. Big Five Coal Co. Big Four Coal and Coke Co	Economy Berglund Berry Yamba Contendat	No	Equi	pm pm pm	ent ent 300 300	1 2 2 2 2 2 2 2	150 100			444 Ages 4 2544 9 2544 9 2544 9	·····	100	1	80 20	 1 2 9	1	· · · · · · · · · · · · · · · · · · ·	····· ···	* ####################################
Big Six Coul Co Black Catton Coal and Fuel Co Black Cat Coal Co Ulack Diamond Coal Co Iffack Diamond Coal Co	Sunnyalide Caddell Black Cal Black Damond Prinrose	Ab No	Raul Equi	on Jim	ed		• 147 braker p 444 maga 444 maga 444 maga 444 maga		* - + + + + + + + + + + + + + + + + + +	1 1		• • •		** ****** ********* *********	5 32	*	** *	V   2 V   2	
Black Hills Coal Co Blatrick, John Blixe, Swan Blue Gooxe Yoal Co.	Black Hills City Blixi Hue Goose	1 	1 · · · · · · · · · · · · · · · · · · ·		25 300					· · ·	75 1	25 160 100		315 60	2 1 4 5 9	····· · · · · · · · · · · · · · · · ·	10 0.000 10 0.000 10 0.000 10 0.000	· · ·	
Book CHR Cual Co. Boulder Black Diamond Coal Co Boulder Valley Coal Co Bracken & Cozza Bernnan Coal Mining Co	Black Diamond Boulder Valley Bioman	•		ça tû	180	8 4 	65 4011 	4000 4000 4000 400	- +++ +++ ++++	1		40		40 140		12-3 2775-2 2775-4 202 202 202 202 202 202 202 202 202 20	* ** ( . **	···· 1 2 1	800 1360 -
Brewster Independent Coal Co Caddell & Son Cadell & Taxgart Calumet Fuel Co	Brewster Bezron Canon Chebara Canon Perins Peak		· · · · · · · ·		50		30	····		···· ····	·	100	Anna Rèva Veras	100	2 00 17-51	·····	10 0 00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		- 
Canon-Crystal Coal Co	Lassiek	1'0		1 Pu 4 	40 7chns 320	1 ed 1	2 ]		*****	····· / ····· ····· / ·····		250 350 50		26					
Clurko, Thomas Clurko, Thomas Clurk, J. L. Clark, J. H. Claylon Coal Co	Black Diamond		Equi	2 pm pm 3	121 ent ent 400	1	76   		>> 11	1 1 1	      Sui	75	1 1 1 1	5000		****	** 1 **** * ** **	···· / ···	
Colorado Colliertes Co Colorado Fuel and Iron Co Colorado Fuel and Iron Co Colorado Fuel and Iron Co	Satanje				200	····· ····· 1	100		*** **	·····		1 100 275 59 300 120	2 1 2 1 1	50 50 100 100 60	2   21646	·	-   , 	<u>-</u>	* 800 * *****
Colorado Fuel and Iron Co	Crested Butle Elk Mountain		*******	2   6   4   4	190 510 460 400	7	560 8110 200	0-04 0-40 1.440		3 2	25 2 25 7 25 7	1410 325 350	2	720 50 1100	45	-114 pv	**		1200 900
Colorado Fuel and Iron Co	Ideal Cameron Lester Pictou		· · · · · · · · · · · · · · · · · · ·	4 + + P + + + + + + + +			·	1.100	1.1.0.0.0.1  		$\begin{array}{c c} & & & & & & & & & & & & & & & & & & &$	500 100 2275 2350	1 2	400 50 600 650 1150	19 63 41 22			1	
Colorado Fuel and Iron Co. Colorado Fuel and Iron Co. Colorado Fuel and Iron Co. Colorado Fuel and Iron Co.	Kebler No. 2 Johnt Sopris	1		1 Fire 4	Tube 600	1 1  8	250					\$0 85		35 65 400 {	18	••••• •••		4 i 8	
Colorado Fuel and Iron Co Colorado Fuel and Iron Co Colorado Fuel and Iron Co Colorado Fuel and Iron Co	Moriey Frederick Tabasco Toller	* 18 * 18 *		201212-03	1000 250 725 390	13	1350 2625 495	4	· · ·	2 3 2 3 5 0	00 10 00 7 80   8 , 6	1600 400 800 400	5	550 180 300 400 172	56 68 48 36			5	
Colorado Fuel and Iron Co. Colorado Fuel and Iron Co. Colorado Fuel and Iron Co. Colorado Fuel and Iron Co. Colorado Fuel and Iron Co.	Borwlud Starkville Engle City No. 1.		*******	2 3 4 Po	280 200 250 400 ower	1 1 3 Pu	40 75 350 rebas			1 3	00 5 1 1	700 500 50 600	31	300 65 460	63 46 7		та кулар та ак р манак та акта та акта ката р	**************************************	
Colorado & Utah Coal Co., Consolidated Coal and Colte Co Convorse, Frank Corley, W. D. Corley, W. D.	Harris Baum Converve Old Patterson Black Marlah		······································	6 4 1	100 820	2 0 1	800	+ + 1			50 6	76	2	300 50 150 :	11 13 1	• • • • • • • • • • • • • • • • • • •		1	
Corra, John Cottonwood Coal Co Cracker Jack Coal Co Crested Hulle Anthrache Mining Co Crested Butle Coal Co	Corta Collonwood Cracker Jack Smith-Anthracite Bulkley	2 2 101 ·	150	1	20	5	160	****	** *** ***	7.5	1	100	9.9.Au	75	20-	анран 	. 1	1	***** *** ********* ********* *******
Crown Fuel Co. Danville Coal Co. Davies Coal Co. De Graffenried, J. R. Dick Coal Co.	Crown Danville Lewis De Graffenried Dix	2 	260	1	25	3	50	2	5 34			31	1	10 57	1	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		····	1200
Dicherson, M. O Dillan Cost Co Dauble Dick Coal Co. Drott, John Dunbaugh, T. M.	Lorella Eureka Double Dick Liberty Bolt Jack O'Lantern	No 	Equi	pm 1	ent 150	3	110			· · ···· · · · · · · · · · · · · · · ·		150		150	1	4 -		1 ·	100
Englicers' Lenging Co. Englicers' Lenging Co. Estes Bros. Eureka Coal Mining Co. Fairview Coal Co.	Emptre Cambro Estes Macoye Thompson	2 No	180 Equi	1 } im 	40 ent	**** *** **** ****		**** *** ***	0	······	A 89	1825 200 phon	2 1 	500 100	10 4 	· · · · · · · · · · · · · · · · · · ·	н иран 10 и д 10 казар д 10 казар 10 казар	1 . 2	462
Fleites, Frank M. Florence-Canon Foal Co. Fort Lupton Coal Co. Fox Coal Mining Co. French & Fleiding	Coulby Red Canon Florence-Canon	 192 	180 180	***** ***** ***** ****	· · · · · ·	1 2	511 30	 	, , ,, ,, ,	1 3	16 3 5	phon 90 1200	13	20 100p	1 } 16 4		<ul> <li>vinn ↓ a</li> <li>na</li> <li>na</li></ul>		100 1000
Fruth & Stone Garfield Cosl Mining and T. Co Gates Coal Co. Glison Lumber and Fuel Co Glison Asphaltum Co	Leador						······································	• • • • • • • • • • • • • • • • • • •		1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	5		····· ····· 1		3	1	т плани плани п плани п права т алини п	····	
Golden Dawn Coal Co. Gordon Coal Co Grand Junction M, and F. Co. Grand Junction M, and F. Co. Green Valley Coal Co.	Golden Dawa Gordon Cameo Sterling Green Valley	1	60	* 4 2	5110 300	2	55 274 130		4 · · · · · · · · · · · · · · · · · · ·		iŭ i ja	1361 360 800 8	2012 100 100 100	800 230	7	1949	* 0.000 , * 0.000 , * 0.000 , * 0.000 ,	1 1	
Hall, A. W. & Son Hart Coal, Co. Hawkeye Con) Co. Hayden Bros Coal Cornoration Hayden Valley Mutual Coal Co	Red Mountain Hart McDowell Hnyden Dry Creek	No	Equi	2 pm 1 6 1	150 ent 80 900 40		18 30 500 40					80 150 350	1 , 1 1 	30 26 176		·····			430
Hesperus Fuel Co Hitnes Coal Co Holland, W. C. Holland, W. C. Hotchidgs Fuel and Supply Co	Hesperus Illnes Riverside Holland Bennett		Equi Equi	pm pm pm	250 eni eni	0494 - 747 1747 1747 1747	········ ········ ········· ··········		······································	2 18		87	1	145			14 1000 10 14 10 10 14 10 10 15 10 10 15 10 10 15 10 10 15 1	1	
Huerfano Conj Co. Hunter, J. B Independent Coal Co. Independent Lumber Co. International Fuel Corporation	Ladiow Hunter Independent Kurtzville	1	110	3	380 	2	200   25	· · ·	· · · · · · · · · · · · · · · · · · ·	•• •	1 7	40 "340	 	411 300	16 1 155 {		··· · · · · · · · · · · · · · · · · ·		1718
International Fuel Corporation International Fuel Corporation Jeffryes Fuel Co Jewel Coal Co Joerger Fuel Co	Wolf Creek Evana Joffryes Jowel Beshoar	6-75 94477 94477		23	300 350	5 6	157 243			J 1	50 14 115 	12 NOD odPamp		12 620	12 6 1 1	**************************************	••• •••• ••• •••• ••• ••• ••• •••		2100
Jones & Trachta Juanlia Cost and Coke Co Kelly & Sheddy Keystone Mining Co Kinley & Wittor	Douglass Creek	No No	A1 1 4	ףזה 5 ויייו 2	ent 300 ent 200	-	4 44 4 4 44 4 44444 5 44444 6444		**************************************		5D 3 50 3	105		165	15 22 D	**** { } * *** ***	•• • • • • • • •	1	5
Leone, L. Leyden Coal Co Liberty Coal Co Liberty Coal and More on the Co Louisville Mining Co	Leone Leyden No. 3	00.46 0.6 1 0.5		5 1 3	1360 75 300	9 1 4	1452 45		3 50	1 i				254	$\begin{array}{c c} 1 \\ 26 \\ 1 \\ 7 \end{array}$	· · · · · · · · · · · · · · · · · · ·		·····	3200 250 760
MacCormae Coal Co Mancos Micra Coal Co Marchellt, J. R	Red Ash Snewer Marlon	1	100	44448 44448 44448 44448 44448	- - +> ++ + + +++	1	25	***** * ***** * ***** *	•••••				-++ 	### ## ##		1 2000 (1) 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	4 00000 1 64 1 4610 16 4	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
McGlaloy, Wm McLaughlin, Jas E McMillin Coal Co McNally & Thompson McNally & Thompson McNell Coal Co	McGinley	No 1	Equi 12	pm 	eni 750		426 ,	**** *********************************	······ ···		50 2 75 0	5 d 6 1 1		15D 30 30	1 	· · · · · · · · · · · · · · · · · · ·	• • • • • • • •		
Minera' Coal and Coke Co Moffat Coal Co Moublain View Coal Co Mutual Coal Co National Fuel Co	Williams Oak IIIlia No 1 and 2 Walden Mulual	6	1100	1 1 3 3	304 60 450 300	1 2 1 3 1	560 26 190 150	52.5 92.5 94.5 25.5	а санар А санар Ва с с Ч с с Ч с	3 8	511 9 		1012	100 30 200 70	1 8 12 20	····· ··· ··· ··· ··· ··· ···· ···· ····	2	4 3	2000
National Fuel Co National Fuel Co Naturita Stores Co North Park Coal Co North Park Coal Co	Thor Paritan Physicale Moore Pagosa	No		- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	200 600 ent 180	21	150 168 6		· · ·	] 	75 ÎJ 3 1		2	150 100 8	17 26 3		1	9	2 1800
Oskilale Cost Co Oberding, W. J. Oldo Crock Cost Maning Co O. K. Cost, Co	Oakdale Knauses Ohlo Creek	5 No 1	750 Equi 100			4	450	**	- 34 		75 11 75	650	5	65	25	: -	25 J	3	1 1040
Patiende Coat and Supply Co Palmetto, Fellx	Pallsade			2 	60	·····	25	-		J	:I 2	5	1	······ 3 ** ·····	1410	-	00		
Pachao Bros, and and	Minule	-					a design of		-	0.0		-	-1.00	9 ayı.					-

Hunter, J. B Rulependent Coal Co Independent Lumber Co Indernational Fuel Corporation	Hunter	1	110		280	1	25	···	*** *** **	 1	+ I . †	4n 1 300 1	10 10 300 1		· · · · · · · · · · · · · · · · · · ·	i	2 1718	
Infernational Fuel Corporation Infernational Fuel Corporation Jeffryes Fuel Co Jewel Cont Co.	Wolf Creek Evans Jeffryes Jewel Beshoar	***** *****	0	23	200 350	6 	187			1 60		12 1 800 3 adPump	12 620 1		*** ***		2 2100	
Jones & Trachin Juanita Coal and Color Co Kelly & Sheddy Keystone Mining Co. Kintey & Wilton	Douglass Creek King Kelly & Sheddy Keyslone Fritchard	No	Equi	pm 5 pm 2	en1 300 en1 200	E		- + + + + - + + + - + + + - + + + - + + - + +	····· ···	1 60		165 1	165	6	···· · · · · · · · · · · · · · · · · ·		446 4116 1 40 449-049- 69 6114 40	
Leone, L	Leone	uniniaa verma ver tit tit	· · · · · · · · · · · · · · · · · · ·	6 1 3	1350 75		1452 15	1 1 1			5	150 2 		1 26 1 7	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	2 3200 1 250 1 750	;
MacDormae Coal Co Mances Mesa Coal Co Marchetti, J. R Marshi, R. Matshi, R.	Roll Ash Sjoncer Mation Fisher's Peak Bunker Hill	1	100	0.445 19344 1044 1044 1044	6 541 517 55 599 6 777 78 50 50 6 77	1	25	·····   ·····   1	Æ	***	n nin v nin v nin v nin v nin v	Variable         Variable           Variable         Variable           Variable         Variable           Variable         Variable	· · · · · · · · · · · · · · · · · · ·		41 41 47 45 45 45 45 45 45 45 45 45 45 45 45 45		1443 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
McGinley, Wm. McLaughilin, Jas. 15 McMillin Coal Co McNally & Thompson McNell Coal Co. 1990	McGinley		Equi 12	pm  3	en1 750		425	· · · · · · · · · · · · · · · · · · ·		1 150 3 271	0 2	50 611 2	161 30 30			1 5	1	,
Miners' Coal and Coke Co Monital Coal Co Monitalin View Coal Co Multal Coal Co National Fuel Co.	Williams Oak Hills No. 1 and 2 Walden Mulual Monarch No. 2	6	1100	1 1 3 3	300 60 460 300	1 1 3 1	550 25 190 150	++++ +2+++ +2+++	**************************************	3   95)		465 2 1650 4 200 2		10	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		3 2000 1 1 1000	-
National Puel Co. National Fuel Co. Naturita Stores Co Notth Park Conl Co Notsh Park Conl Co	Thor Purlian Cloverdale Moory Pagesa	No 1	Equi 10	2 2 2 1 1 2	200 600 en1 180	2 1 	150 168 6		**************************************	1 7	3	600 2 176 1 8 1	150 100 S	3	1100 1000 1000 1000 1000 1000 1000 100	++++	2 1800	
Oakdale Coal Co Oberding, W. J Ohio Creek Coal Mining Co O K Coal Co Palisade Coal and Supply Co	- Oakdale Rhauss Ohio Creek O K Pallsade	5 No 1	750 Equi 100	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	ent	 	450 ********	 		2 37	6   11 5   5   	650 1		4	• • • • • • • • • • • • • • • • • • •			-
Palmetto, Felly Paonla Coal Co Parkdale Coal Co Pattorzon, Alex, Portho Iltos		No	Rep	ort	5.0 	1	26	1	G	1	3 2	6 <b>1</b>	3					*# *3 &* &*
Petry, Sam Pickfuid Coal Co. Piles Peak Consolidated Fuel Co. Pinos Allos Coal Co. Prairie Canon Poal Co.	Petry Pickford Pikevlew Freeman Prairie Canon	1 No	250 Equi	a pm	300 ent		2 4 4 4 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		· · · · · · · · · · · · · · · · · · ·	3	· · · · · · · · · · · · · · · · · · ·	300 2		1 1 16 4	Elere mare 1410 durre 1410 maar 1410 maar 1410 maar		· · · · · · · · · · · · · · · · · · ·	14 1 - 2 14
Rapson Coal Mining Co Rauman Coal Eo Reynolds & Babcock Rio Blanco Coal Co Roccalo, James	Bapson No. 1. Bauinau Black Dlamond Pairileid Rocchio	3	260	- + -+ 	4474 - 448 44999444 - 1 - 614 - 1 - 614	4	200	1	J G	1 623	· · · ·				1.000 0000 0.000 0000 0.000 0000 0.000 0000		·····	1.4 1.4 1.97
Rocky Mountain Fuel Co Rocky Mountain Fuel Co., Rocky Mountain Fuel Co., Rocky Mountain Fuel Co., Rocky Mountain Fuel Co.,	Simpson Sinndard Yulean Acme Induatrial	1 **2 -	600 250 	5 2 3	650 450 350	15386	600 580 285 260 383			2 17	5 13 10	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	75 275 700	15 10 10 12	1	<u> </u>	1 160 2 87 1 92 2 180	0 6 0
Rocky Mountain Fuel Co. Rocky Mountain Fuel Co. Rocky Mountain Fuel Co. Rocky Mountain Fuel Co Rocky Mountain Fuel Co	Gorliam J. Alpine Porbes J. La Belle Southwestern	-		3	350 100		310		1	1 1	10 5 10 5 15 2			4 10 22 16		. 3	1 150	
Rocky Mountain Fuel Co Locky Mountain Fuel Co Rocky Mountain Fuel Co Rocky Mountain Fuel Co Roletto Cool Co	Pledmont Columbine Grant Preferick Roletto	1 1 1	40	 	200 310		35		*******	1 31 2 21	. 4	$\begin{vmatrix} 200 \\ 325 \end{vmatrix} \frac{2}{1}$	40 200 200 200 80	14 1 1 1 1	• • • • • • • • • • • • • • • • • • •	. 2 . 1 	++ + + ++ ++ ++ ++ ++ ++ ++ ++ ++ ++ ++	) = ) +
Roman Coal Co Ross Coal Co Ross & Lorenzo Rouit-Pinnacle Coal Co Royal Fuel Co	Crown Point Horace Gorham No. 2 Rouil-Pinnacle Royal		Rep	0r1 1 2 3	Sub 315 300 260		11ed 300 300	 	\$\$\$\$** - \$\$\$\$*** \$\$\$\$*** \$\$****			32 1		13 1 1 28		. 4	1 30	- +
Rugby Fuel Co	Rugby Rush Russell Sania Fe Shamrock		wer	Pu 1 3	rchan 12 375 180	1	8 175 170						15   20 	5 11 6	4	· • • • • • • • • • • • • • • • • • • •	2 136	-*-
Smith-Tanner Coal Co. South Canon Mine Leasing Co. Stanley, C. O. Star Coal Co. States Coal Co.	Smith-Tanner South Canon Stanley Star Star Star Sinles	No			60 Sub	2 2 mi	1 65 30 11ed			1 1   			** *** ***	2 1 1 1		··· ··· ··· ··· ··· ··· ··· ··· ··· ··	Anne Anne Anne Anne Anne Anne Anne Anne	
Stillwagon Bros. Stokes, W. D., Sunshine Coal Co. Sunsystde Coal Mining Co. Temple Fuel Co.	Stokes		********	···· ···· 1	60	*****				····· · ····· ························	75 1 15	300 1	30 (	1 2 1 6 10	······································	- 2		*** ***
Temple Fuel Co	Thomas Three Place	No	Equi	pm 	011	••••• ••••• ••••• •••••		•   •	*******	****		· · · · · · · · · · · · · · · · · · ·	**************************************	3 1 11 1 2	••••• ••• ••• •••• •••• •••• ••••			
Tribiled Coal Co Tribiled Coal Co Turner Coal Co Typeri & Aspell Union Coal and Coke Co	Turner Fairview			-740	180			• 2 3 • 2 4 •		····· ····· ····· ·····		· ····· · ····	150	3 2 17 17 1 22 		** ***		
Unlied Collierles Co. Utoh Fuel Co. Vesia Mines, incorporated. Vezretii & Moschetti Coal Co. Victor-American Fuel Co.			*******	37	300 825 500	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1423	2		2 3	75		3000	6 19 7 3 36	4.1499 (A. 14469 (A. 14469 (A. 14469 (A.)	···· ··· ···· ···· ···· ···· ···· ···· ····	1 1	00
Victor-American Fuel Co	Ravenwood		4++++++++++++++++++++++++++++++++++++++	4100 4110 4110 4110 4110						1 1 2 6 3 3	60 4 00 7 00 11 00 1 50	1 635 1 1 39 1	11 300 50 1	16            15            62            18            17			····· ····	
Victor-American Fuel Co	Gray Creek Planacle Wadge Baker Walle	2	200		300		al bable Land articine de la	- a a a a a a a a a a a a a a a a a a a	· · · · · · · · · · · · · · · · · · ·	3 3 1 1 	00 60 50	4 244	an ortextan	10 6 10 2 1	2 1 	···· 4 ··· 2 ··· ····		
Walker Lond and C. Co	Walker Llon Canon Williamsburg Slope Winton			1	10	1		5	*****			······································	· · · · · · · · · · · · · · · · · · ·	1	443 4 4434 4 9434 1 6444 1	r + ======= r : +===== r : = ==== r : = ==== = ====		* * + * * + * * + *

### TABLE No. 3 VENTILATING EQUIPMENT OF COAL MINES IN THE STATE OF COLORADO FOR YEAR ENDED DECEMBER 31, 1921

			Kind of Opening				Num	Number and Type of Safety Lamp								21.44	<b>1</b> − L + 2)		
Name of Operator	Name of Mine	t Depth	4	lope	Length	Gaseous or Non-Gaseous <u>A</u>	U	y Lamp and 2	Method of Ven- Hiation	Name of Fan	Diameter Feel	olutions Minute	r Gauge oped en)	Kind of Power Used	Number Splits of Air Current	er of Cubi of Air po e Enterin ne at Inle	Number of Alt pe of Alt pe of Circulat All Split	r of Cuti of Alr pe l'assim at Outle	yed ()
		Shaft	Leng	Pitch	Drift		Flam	Elect				Revol	Water Develo		Numbe of AIr	Number Peet of Minute I Uhe Mine	Total J Cu Ft. Minute Ing In	Numbe Feet o Minute O u t a	Suppo Supposed
Ajag Coal Co. Altitude Coal Co. American Smelting and Heffning Co. American Smelling and Heffning Co. American Smelling and Heffning Co. Ancisor Coal Co.	Capitol Miltude San Juan Boncarho Anchor No. 1	219	1,000 † . 200	5.6% 1* 10*	2,976 3,500	Gascous Non-Gascous Non-Gascous Non-Gascous Non-Gascous	1 4 2 1	2N 300	Fan Natural Fan Fan Natural	Jeffrey	10 10 5	55 140 313	1.6	Steam Electric Electric	s	11,975 <sup>*</sup> 5,000 15,480 45,151		14,850 15,300 85,000 1	2 · 5 28 170
Anchor Coal Co.,	Anchor No 2 Collom Tollee Baldwin-Stat Morning Star	· · · · · · · · · · · · · · · · · · ·	700 2,600 1,500	10%	1,100 1,200 900	Non-Gaseous Non-Gaseous Non-Gaseous Non-Gaseous	1 1 2 1 1	1 9000 119 10 10 10 10 10	Natural Natural Fan Natural Natural	Sirucco	15x 3	220	2	Electric and Steam		26.540	26,510		3 217-0
Baydino & Co. Barker, Wrighi Buar Cation Coal Co. Bear River Coal Co. Bedlien, W C.	Wright Bear Canon Bear River While Ash	Strip		25 %	1,800		1		Fan Fan Nalural	Jeffrey	4 6	125	····· ·	Electric " Steam	100	17,940 18,000	+ 17.940 18,000	7,200 18,360 24,000	6 83 37
Bell, John & Co. Berglund, Clara	Berglund Berry Yampa				700	Non-Gaseoua Non-Gaseoua Non-Gaseoua Non-Gaseoua	*******	- 21A - 21A	Natural Natural Natural Fan	Ollumwa	12	- 50 .	···· · · · · · · · · · · · · · · · · ·	Steam			•	• •	6101 C-130
Big Four Conl and Coke Co. Big Six Conl Co. Black Canon Conl & Fuel Co.	Centennial Sunnyside	Abund	oned, 9110 & 2,700		aubmi	Gaseous Hed Non-Gaseous	3	*	Fan	Crawford & McCrimmon	12	120	· · · · ·	Steam and Electric	2	1,000 41,520 28,000	17,240	1,500 12,500 1 	30 100 
Black Cal Coal Co Black Olimond Coal Co Black Hawk Coal Co Black Hills Coal Co	Binek Cat Biack Diamond Primrose Black IIIIs	20.10	port sub 1,100 1,700 180 2,000	5*	···· ·· ·	Non-Gaseous Non-Gaseous Non-Gaseous	****** ***		Natural Fan Natural	Sline	5	ີ ເບັດ ເຊິ່ງ ເປັນ 		Electric	L L	10,200		10,400	323
Blatnick, John Blixt, Swan Blue Goose Coal Co Blue Seal Coal Co Blue Seal Coal Co Book Cliff Coal Co	Blixt Blue Goose Elk Creek Book Cliff	264	110	11 26"	······································		411 411 411 411		Natural Van Natural	Slurlevant	1x12	250	2.5		1.2	15,000 3,1100	44 4	17,000 3,600	401140120 1011
Boulder Black Diamond Coal Co. Boulder Valley Coal Co. Bracken & Cozza Brealian Coal Mining Co. Brewster Independent Coal Co.	Black Dlamond Boulder Valley Harvey Gap Brennan Brewsler	317	3110 1,500 435	20* 56* 5% 7*	 I,100	Non-Gaseous Non-Gaseous Non-Gaseous Non-Gaseous Non-Gaseous			Fan Fan Nalural Fan Nalural	American Ajax Home-made	2 5 11	300 260 55	·	Sleam Electric and Steam Electric	10. 54	12 000 18,000 29,500	36,170 29,500	11,000 50,000 10,800	24 80 3 71 12
Caddell & Son	Hezron . Cuchara Pason		4,100 500	414	5,000	Gaseous Non-Gaseous Non-Gaseous Non-Gaseous Non-Unseous		<b>3</b>	Fan Natural Fan Natural	Home-made	16 	60 128	.75	Electric Electric	3	4,620 27,000 4,000		4,620 28,000 1,100	8 12 60 10
Canon-Crystal Coal Co	Canon Rellance Caprock Greenville	1,081	3,500	36°	500	Non-Gascous Gascous Non-Gaseous Non-Gaseous	21	116	Fan Fan Fan Natural	Jeffrey	12x 4 1	400 115 500	2.5 1.8	Electric	1	21,350 34,560 20,000	** - - 1	29.050 39,920 22,000	12 90 54 15
Cedar Hill Coal and Coke Co.	Black Dlamond	Report	Incompl 200 175 180	ete	181	Non-Gascous Non-Gascous Non-Gascous Non-Gascous	1	**************************************					47.000.44.04.000 47.000.0000000000000000	Steam		531 1 Ap.	84 814 8555555 984 855555 1 188 855555 1 188	····· · · · · · ·	41910 000
Clayton Coal Co	Clayton Satanle	300		85*	· · · ·	Non-Gaseous Non-Gaseous Gaseous	1 1	250	Fan Fan allt Installed Fan	Loffrey Buffalo C. F. & I. Co.	14 3 12	60 300 200	2	Electric	2	60,000 12,000 96,760	60,000 93,100	50,000 12,200 95,120	78 12 228
Colorado Fuel and Iron Co	Coal Creek Premont Nonae Emerald	398 402	1,000 2,001	6 70 G*	· · · · · · · · · · · · · · · · · · ·	Gaseous Non-Gaseous Gaseous	4 1 2	179	Fan Fan Fan Fan	C. F. & I. Co Guital C. F. & I. Co Sturiovant	6x12 24 10 8	124 90 160	1,2 .5 9	Electric	3 	57,200 52,100 24,000 33,500	33,926	61,600	179 176 28 50
Colorado Fuel and Iron Co	Crested Builte Elk Mountain Robinson-Walsen- Robinson No. 1	Anih. Bit.	1,450 1,450	4.8*	6.300  3.200 5.000	Gascous	6	137	Fan Fan	Capelle Jeffrey Capelle		120 120 163	.05 .6 25]	Steem and Electric	3	51,480 31,270	29,280	32,400	143
Colorado Fuel and Iron Co Colorado Fuel and Iron Co	Walsen Ideal	168	1,450 7,500 1,800	Ğ* G*	5,000	Gaseous Non-Gaseous Gaseous Haseous	15 6 12	190	Fan(3) Fan Fan Fan	C. F. & I. Co.		163 163 97 290 400	2.5 2.7 3 1.8	Electric Electric		126,200 65,890 38,655 48,600	65,690	63,300	189 173
Colorado Fuel and Iron Co	Rebler No. 1 Kebler No. 2 Jobal		6,000 2,000 2,800 2,400	40* 48* 22* 10*	2,500	Gaseous Non-Gaseous Non-Gaseous Non-Gaseous	0002131	239	Fan Fan Fan Fan Fan	Stroceo	5 40 43 5″1″	357 65 80 122 198	3.5 3 3,1	Electric Electric Electric	1	71.588 20,000 22,500 22,400	71,688 20,000 22,500	30,720	194 111 15 70 44
Colorado Fuel and fron Co	Sopris	·	5,280	• • • • • • • • • • • • • • • • • • •	2,200 13,000	Gaseous Gaseous Gaseous	20	485 253 295	Fan(2) Fan(3) Fan	C. F. & I. Co	$ \left\{\begin{array}{c} 14 \\ 4x & 6 \\ 6x & 20 \\ 8' & 3'' \\ 11 \end{array}\right. $	198 445 300 68 200	2.3 5.3 4 2.4	Steam and Electric Steam and Electric Steam and Electric	9 9	250,020 197,710 65,936		266,855	255
Colorado Fuel and Iron Co.	Tabaseo . Toller Primero—N. B.	352	5,304	6.6%	7 100 7,550	Gaseous Gaseous	75	283	Fan Fan Fan(2)	C. F. & 1. Co	6x12 5 6x 8 5x25	205 583 127 138	3.2 2.2 2.1 1.2	Steam	43	79,000 65,000 87,000	42,560 73,500 59,200	72,000	180 232
Colorado Fuel and Iron Co. Colorado Fuel and Iron Co. Colorado Fuel and Iron Co. Colorado Springs Co.	Berwind ,	****** bbs	1,900	**************************************	11,700 9,000 10,300	Gascous Non-Gascous Non-Gascous Non-Gascous	12	311	Fan(2) Fan Fan Fan	C F, & 1, Co	{ 12x 6 6 19 5 9	182 200 185 410 70	$\left\{\begin{array}{c} 2.9\\ 1.5\\ 2.1\\ -\frac{7}{4}\end{array}\right\}$	Electric Sleam Sleam Electric	5 F 1 C	82,480 70.000 40.320 24,840	74,390 70,000 40,320 13,050	52,000 72,000 49,000 13,360	230 Idte
Colorado & Utah Coal Co. Consolidated Coal and Coke Co Converse. Frank Corley, W. D	Harris	200	3,000 100 450	9° 30% 35%	6,280 900	Non-Gaseous Non-Gaseous Non-Gaseous Non-Gaseous Non-Gaseous	2 4 		Fan Fan Natural Fan	Crawford & McCrimmon	14 18	130 76	3.5	Steam and Electric	5	68,000 34,900 2,800	102,000 18,170 900	72,000 39,200 2,800	26 74 30
Corley, W. D	Corra Cottonwood Cracker Jack Smith-Anthracite	1.5 A bank	300 150 1,000 3,410	2% 16* 7*		Non-Gascous Non-Gascous Non-Gascous Non-Gascous	1	-	Natural Natural Fan Fan	Gorham Woddle	16	48	.6	Electric	2	1,000 1,600 6,000 18,720		1,600 6,000 11,400	tdle 15 38
Crester Butte Coal Co	Bulkley       Crown       Danville       Lewis       De Graffenried	265 92	565	5 % 10 %	1.000	Non-Gascous Non-Gascous Non-Gascous	1		Fan Fan Natural Natural	Cole		50	**************************************	Steam		10,000	а ф 2 Виро фланост — — — — — — — — — — — — — — — — — — —	10,000 5,000	27 63 9
De Graffentled, J. R Dick Coal Co. Dickerson, M. O. Dillion Coal Co. Double Dick Coal Co.	Dix Lorella Eureka Double Dick	60 (03	600	10*	600 380	Non-Gaseous Non-Gaseous Non-Gaseous Non-Gaseous Non-Gaseous	1	······································	Natural Fati Natural Fati Fati	Stine	5	287	· · · · · · · · · · · · · · · · · · ·	Electric	3	14,400 2,000 8,400 3,000	4,800	15,500 1 600 9 100 3.200	\$190
Drott, John . Dunbaugh, Jr., F. M. Empire Coal Co. Engineers' Leasing Co.	Liberty Bell Jack O'Lanlern		390  3,000 950		325	Non-Gaseous Non-Gaseous Gaseous Non-Gaseous			Naturat Naturat Fan Fan	Jeffrey Crawford & McCrimmon	5 10	305 70		Electric and Gas Eng. Steam	410 -44 410 - 44 1	38,000 17,325	27,200	40,000	1 6 70 45
Estes Bros. Eureka Coal Mining Co	Estes Macoye Thompson	· · · · · · · · · · · · · · ·	······	10110-000 000 00 10110-000 000 00	390 Delft 175 & 250	Non-Gaseous Non-Gaseous	1		Natural Fan Furnace	Sline	3 ' 4"	700	1	Etectric		1,000	9,500	10,800	50 4
Fickes, Frank M. Florence-Canon Coal Co. Ft. Lupton Coal Co. Fox Coal Mining Co. French & Fleiding	Coalby Red Canon Florence-Canon Witherbee Fox School Section Lease	220	196	4% 10°	600 800	Non-Gaseous Non-Gaseous Non-Gaseous Non-Gaseous Non-Gaseous			Natural Fan Natural Fan Natural	Buffalo		4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	4 + 0 + 1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -	Eleciric		4,200 11,160		11 620 	13 9 66 6
Fruth & Sione Uarfield Coal Mining and T. Co. Gates Coal Co Gibson Lumber and Fuel Co.	Leader		800 850 1,200	49*	250	Non-Gaseous Non-Gaseous Non-Gaseous Non-Gaseous	1 1 1 2		Natural Natural Fan	Capelle	12	76	3	Electric		4,975	1,275	10,000	10 8 3 33
Gilson Asphaltum Co Golden Dawn Coal Co Gordon Coal Co. Grawd Juncilon Mining & Fuel Co	Carbonera Golden Dawn Gordon		218 2,833	314 78	1	Non-Gaseous Non-Gaseous Gaseous Non-Gaseous			Natural Natural Fan Fan	Vane	12	120		Electric Sleam and Electric	t2	22,400 4,000 43,325 38,640	Course second	25,000 2.688 21,112 49,300	8 4 80 59
Grand Aunction Mining & Fuel Co. Green Valley Poal Co. Hall, A. W. & Son Hari Coal Co	Sterling Green Valley Red Mountain	347 No re		17° milica	550	Non-Gascous Non-Gascous	1		Fan Natural Natural	Garden Cily	5	160	.02	Sleam	2	21,000 25,000 3.200	· · ·	21,600 20,000 3,800	84 10 9
Hawkeye Coal Co Hayden Bros Coal Corp Hayden Valley Sutual Coal Co Hesperus Fuel Co.	Mellowell	No re	3,540 212	t2* 18* mitted	1,100 160 3,000	Non-Gaseous Non-Gaseous Non-Gaseous			Natural Fan Natural Fan	Joffrey	10x 4 15	80 70	рл 1 1944 г.л 1 1994 г.л	Sleam and Electric	04===== 100==== 7	38,640 1,200 28,000	*** ***** 4**	38,710 1,200 28,000	104 3 25
Holland, W C Holland, W C Holchkiss Fuel and Supply Co	Riverside Hotland Bennelt		port sub		700 600 3,500	Non-Gaseous Non-Gaseous	· · ·		Natural Natural Fan	Crawford & McCrimmon	18	85		Steam and Electric.		20,00#	30,000	60,000	
Hunler, J. B Independent Cosl Co. Independent Lumber Co International Fuel Corporation	Hunter Independent Kurizville Champion	85	Each	45°&10°	700	Non-Gaseous Non-Gaseous Non-Gaseous Non-Gaseous	··· · ··· · ··· ·		Natura Natura Fan	Balley	6	270		Steam and Electric		27,000	27,000	30,000	2 4 70
International Fuel Corporation International Fuel Corporation Jeffryes Fuel Co Jewel Cost Co Jorger Fuel Co	Wolf Creek Evans Jeffryes Jewel Beshoar	1521/2	3,000 700	15*	300 1,500	Non-Gascous Non-Gascous Non-Gascous Non-Gascous Non-Gascous			Fan Fan Fan Fan Natural	American Silne Silne Buckeye Disk	1.8.	450 200 180 280		Steam	1 3 	13,000 48,900 10,260 2,500		16,595 64,330 19,000 2,600	
Jones & Trachta Juanlia Coal and Coke Co. Kelly-Sheddy Keyslone Mining Co.	Douglass Creek	Not	300 3,800 reported 3,700	5%		Non-Gascous Non-Gascous Non-Gascous			Natural Fan Fan	Vulcan Sirocco	4x16 β	120	1.5	Steam	4	6\$,000 27,000		\$0,000 28,800	1 69 56
Kinley-Wilton Leone, L Leyden Cont Co, Liberty Cont Co	Prijchard Leyden No. 3 Liberty Nearlog		500	10.	850	Non-Gascous Non-Gascous Non-Gascous Non-Gascous Non-Gascous	14	- - - -	Natural Natural Fan Fan	Crawford & McCrimmon	1	70 100	2.5	Steam Gas Engine	6113 6113	1,500 42,500 2,300	42,500		1 3 130 3
Lilierty Coal and Mercantile Co	Nonparell	285 Not	reported		003	Non-Gascous Non-Gascous	1	····	Natural Fan Natural	Capelle	B	125		Sleam .	201- 1	22 000	22,000	24,000	46
Marchelli, J. H. Marsh, H. Mattive, Steve & Sons	McGinley Henderson		260	16 %	243	Non-Gascous Non-Gascous Non-Gascous Non-Gascous	· · · · · · · ·		Natural Natural Natural		·	· · · · · · · · · · · · · · · · · · ·	********			1 700		1,766	co 19130
McMillin Coal Co McNally & Thompson McNall Coal Co Minera Coal and Coke Co	Nollins		600 2,800 150	2* #*	1,900	Non-Gaseous Non-Gaseous Non-Gaseous Non-Gaseous	1		Natural Natural Fan Fan	Clifford Crawford & McCrlintion	1215	138 55	1.3	Electric		41.000		39,900 34,100	10 10
Moffai Coal Co Mounialo View Coal Co	Onk IIIIs Nos. 1 and 2 Walden Motual Monatch No. 2 a sec.	472 283	663	15*	6,004	Non-Gaseous Non-Gaseous Gaseous Non-Gaseous	23	125	Natural Fan(2) Fan Fan Fan	Jeffrey & Sirocco Crawford & McCrimmon Crawford & McCrimmon	6 10 16 16	120 148 85 90	.6 }	Electric Steam and Electric		98,000 5,500 50,000 52,000	\$0,000	53 000	213 5 162
Nalional Fuel Co	Thor	110	2,000		-	Non-Gascous Non-Gascous Non-Gascous	1	 	Fan Fan Fan(?)	Crawford & McCrimmon Jeffrey & Cole	16 { 10   18	72 176 90		Electric Steam and Electric	2 6	50,000 110,000	33,000	33,1100 1 111,000	262 2
North Park Coal Co	Moore Pagooa	80	4,200 240 { 500 3,000	20 15 15 Stopes 12	3,500	Non-Gascous	1	164	Fan Natural Fan(3)	Ajax		160	· · · · · · · · · · · · · · · · · · ·	Steam		45,000 		80,000	2
Oberding, W J	Knauss	·	wd 231- wd 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2		200	Non-Opmonum	1	and a state of the		Albert Same Street	A			1				-	

Hesperus Fuel Co		No re	port sub	mitted	700	Non-Gaseous	1 1	-	Fan Naturaj			** * **	5 54 61 49	Steam and Electric	1	23,000	11.754	28,000	28
Holland, W. C., Holland, W. C., Holland, W. C., Rolchkiss Fuel and Supply Co.	Riverside Holland Bennelt	No re	vort aub	mitted .	600	Non-Gascous			Natural	Crawford & McCrimmon	18	55		Steam and Electric		20,000	30,000	69,000	" 1 0.4
Huerfano Coal Co Hunter J B Independent Coal Co	Hunter	×5	260 500		100	Non-Gascous Non-Gascous Non-Gascous			Van Natural Natura		· ······ ··· ···	450- 1045 2000 070 4886741 89				· · · · ·	·····		24
International Fuel Corporation	Wolf Creek	15245			300	Non-Gascous Non-Gascous Non-Gascous		- 1 ad 1	Fan Fan Fan	Mailey American	6 4 <u>1/</u> 4 '8=	270 450 200	· • • •	Steam and Electric		27,000 13,000 48,900	27,000 13,000 20,800	30,000 16,595 54,330	70 33 02
International Fuel Corporation.	Jeffryes Jewel Bestionr		3,00p 700		1,500	Non-Gascous Non-Gascous Non-Gascous		43- 211 2 - 22	Fan Fan Natural	Stine Buckeye Disk	5 6	180 280	- <b>3</b> 	Electric	1 *** * 3 **		0 000 00000 071 0.4101	19 000	22 47 3
Jones & Trachta Juanita Coal and Coke Co.	Douglass Creek	Not	300 3,800 reported		- 479947-	Non-Gaseous Non-Gaseous	- +++ 		Natural Fan	Vulcan	4x10	120	" t.5"	Sleam	4		39,300	\$0,000	1 69
Kelly-Sheddy Keystone Mining Co	Krystone Pritchard		3,700		600	Non-Gascous	445 14 44 44 4	2	Fan Natural	Sirocco		310		Stram	2	27,000	1,500	28,800 1,500	56
Leone, L. Leyden Coal Co. Liberty Coal Co.	Leone . Leyden No. 3 Liberty . N. aring	591 	800 300	15"	850 300	Non-Gaseous Non-Gaseous Non-Gaseous Non-Gaseous			Natural Fan Fan Natural	Crawford & McCrimmon	14	70	2.5	Steam Gas Engine	2	12.500 2,300	12,500 3,450	44,000 2,200	3 130 3 2
Lilierty Coal and Mercanille Communication Louisville Muling Co	Rol Abh ann ar an	1	reported	a 1 1 1 1	 600	Non-Gaseous Non-Gaseous	i	137-944 137-944	Fan Natural	Capelle	8	125	***** ares	Steam	2	22 000 	22,000	24,000	46 14
Mancos Mesa Coal Co	Spencer Marlon Pishers Peak Bunker Hill	Not		16 %	200	Non-Gажеоца Non-Gажеоца	···· );		Natural	•		· · · · · · · · · · · ·	4		1	1 700 /		7,200 1,750 7,100	13 16 In 12
McGluley, Wm. McLaughlin, Jos. E.	McGinley		3nB 600	1000 1	243	Non-Gaseous Non-Gaseous Non-Gaseous		0 - 444 - 10 - 444 - 40 - 44	Natural Natural	**************************************						0798	- 1000 40 0000 00- 070407		3
McNally & Thompson	Maltland McGregor		2,800		1,900	Non-Gascous Non-Gascous	1 2	i na Line	Natural Fan Fan	Clifford Crawford & McCrlmmon	12 16	138	1,3	Electric	29	19,000 29,700	29,720 28,000	39,900 31,100	48 56
Miners Coal and Coke Co	Williams Oak IIIIs Nos, 1 and 2		553	10"	6,000	Non-Gascous Non-Gascous			Natural Fan(2)	Jeffrey & Siroteo	6 10	120 148		Electric	4	98,000 5,500	98,000	104,000	10 213
Mountain View Coal Co	Walden	472 293				GASCOUS Non-Gascous	23	125	Natural Fan Fan	Crawford & McCrimmon Crawford & McCrimmon	16 16	85 90	2	Steam and Electric Steam	25	50,000 52,000	50,000 52,000	53,000 65,000	159
National Fuel Co.	Thor . Puritan	110	2,000	1		Non-Gaseous Non-Gaseous Non-Gaseous	l		Fan(2)	Crawford & McCrimmon Jeffrey & Cole	16 10 18	72 176 90	2	Sleam and Electric.	6	60.000 110,000	33,000 108,000	33,000 111,000	
Naturita Stores Co	Moore	80	1,200 240	20* 45*		Non-Gascous Non-Gascous	1	444 44 44 44 44 44 44 44 44 44 44 44 44	Fan Notural	Ajax	10		0	Steam		15,000	N VVA 18 4	17,000	31 2
Oakdale Coal Co Oberding, W. J Obio Creek Coal Mining Co.	Oakdale	······································	{ 3,000	Slopen 12°	3,500 200 1,400	Gaseous Non-Gaseous Non-Gaseous	6	166	Fan(?)	Jeffreyn & Strocco	1 3 5	160 110 300	1 (part) 0 10 10 10 10 10 10 10 10 10	Electric		78,000	80,000	80,000	1
O. K. Conl Co	O. K Pallsade	101210-11114		1% 900 37%	3.500	Non-Gaseous Non-Gaseous	i	unid A maxweb	Natura) Fan	Stroeco	6	220	******	Electric		5 000 25,000		17.000	6
Palmetto, Felix Pponia Coal Co Parkdale Cosi Co Patterson, Alex	Farmer-Mutual Paosla Parkdale City No. 2		200 400 180 port aub	1 35 25 *	250	Non-Gaseous Non-Gaseous Non-Gaseous	1	-+ ++	Natural Natural Natural				******	• • • • • • • • • • • • • • • • • • •	10.000	1,080		, 1,000	503
Perino Bros	Willie	Shaft	unfinish 175	ed		Non-Gascous Non-Gascous	1	** ****	Natural Natural	*******	*****		wly wron-			J,00U		· · · ·	5
Pickford Coal Co. Pikes Peak Consolidated Fuel Co. Pinos Allos Coal Co. Prairie Canon Coal Co.	Pickford Pikevlow Freeman Prairie Canon	175	400	- 1	2,100	Non-Gascous Non-Gascous Non-Gascous Non-Gascous	1		Fan	Buffalo	10	165	1.9	Electric and Steam	3	48,000	11,000	\$0,\$80	137
Rapson Coal Mining Co	Rapson		2,500	10%	500 & 800	Gaseous	1	75	Fan	Cole	nardu evu čano vares sum všek		********	Steam		30,000	11 par +1	30,000	4 %
Rauman Coal Co. Reynolds & Babcock	Rauman Black Diamond Fairfield	······································	325 150 200	Closed	575	Non-Gaseous Non-Gaseous Non-Gaseous	1 ī		Natural Natural Natural			an spanpar 1 s and 3 an 1 spipe	· · · · · · · · · · · · · · · · · · ·		0=1.000		2011-01-011441 2011-01-01-01-01- 201222013-01-01-	** ******** **************************	4.4
Rocky Mountain Fuel Co Rocky Mountain Fuel Co	Simpson	240		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		Non-Gaseous Gascous	13		Fan Fan	Morris Vulcan Clifford	12	120 120	1,2	Sleam Steam and Electric	4	90,000 32,000	\$6,000 10,750	82,000 32,600	57
Rocky Mountain Fuel Co. Rocky Mountain Fuel Co. Rocky Mountain Fuel Co.	Vutcan Acme	180 186 265	++++++++++++++++++++++++++++++++++++++		04-200 KWE(24)	Gaseous Non-Gaseous Gaseous	1013 64	**************************************	Fan Fan Fan	Cole	UU'S"x 5'5" 12 18	120 100 110	.3 1.4	Steam	4	61,000 15,000 16,000	33,160 71,000 46,000	66,610 48,000 52,000	62
Rocky Mountain Fuel Co	Garkam	150	4,000		2,400	Non-Gaseous Non-Gaseous Non-Gaseous	1	***** *	Fan Fan Fan	Cole Jeffrey Crawford & McCrimmon	4'6°x13 5x 3'2" 16x 4%	110 135 102	500	Electric	32	24,000 29,700 46,000	16,840 29,700	38,400 29,000 35,000	35
Rocky Mountain Fuel Co	La Belle		3,000 2,700	6° 3*		Gaseous Gaseous Gaseous	1		Fan Fan Fan(2)	Buckeye Disk	12 13'6"	101 104 130 290		Electric	* #***** #* ***	26,000 36,000 18,000	32,000	28,000 28,500 31,000	4.5
Rocky Mountain Fuel Co.	Columbine	100 150	0.28	2*		Non-Gascous Non-Gascous	6	***********	Fan	leffrey	11	260	14	Electric	2	75,000 31,000	75,000 34,000	75,000 35,000	61 73
Roletto Coal Co.	Frederick		port sub	mlited	160	Non-Gascous Non-Gascous	ī		Fan Natural	Cole	18	65		Electric	3	11,000	48,800	59,200	19
Ross Conl Co. Ross & torenzo Routt-Planacia Coal Co	Horace Gotham No. 2 Routt-Planacle	128	300 1.850	2 ½ * 17* 8°	209 1,700	Non-Gaseous Non-Gaseous	********* ********		Fan Natural Fan	McNabb & McCramon	8 5 8	120		Electric	200 m da	15,000	******* ****	15,000	23
Rughy Fuel Co	Rugby Rugby	71	1,850	6*		Gaseous Non-Gaseous Non-Gaseous	2	260	Fan Fan Natural	Stine	7	280	1	Sleam and Electric	3	95,000 11,250	86,900	105,000	212
Russell, W. E. Conl Co., Santa Fe t'onl Co., Shamtock Conl Co.,	Russell	220		1 .	3,000	Non-Gaseous Non-Gaseous Non-Gaseous	1 2	*	Fun Fan Fan	Sturtevant	12 3 5	80 675 1 200	0-00-0-00 1-000-0-0-0-0 1-000-0-0-0-0-0-	Sleam Electric Electric	2 61 51	26,425 30,000 24,090	26,426	30,425 38,000 24,000	
Smith-Tanner Coal Co	Smlth-Tantier South Canon		\$00	5*	1,600 350	Non-Gaseous Gaseous Non-Gaseous	1 1	1 *******	Natural Fan Natural	Cole	12	80	545(944) 	Steam		10,000		\$,000 1,550	
Star Coal Co	States	NO FE	port sub	mitted	650	Non-Gaseous	·····]		Natural		*****					*****			4
Stokes, W. D. Sunshine Coal Co.	Stokes Sunshine		1,000 2. Total		700	Non-Gascous Non-Gascous	1		Natural Natural						The and the second	6,000	******	билицики и ирол. остобларни ил остобларни ()	t B
Sunnyside Coal Mining Co Temple Fuel Co	Sunnyside Brodhead No. 9	** ***********************************	2.700 1.200 2.500	12* 25* 15*		Non-Gascous Non-Gascous	22	111784	Fan Fan Fan	Ajax-Sirocco Jeffrey	12 12	150 160 72	.1 왕( 1년	Electric	3	38,600 36,000 25,000	25,000	<b>38,600</b> <b>10,000</b> 2 <b>6,000</b>	
Templeton & Long Thomas Coal Co.	Pollard Thomas Three Pines	g g	1,300	14*	300 200 700 700	Non-Gaseous Non-Gaseous Non-Gaseous			Natural Natural Fan	Jeffrey	5	120	• • • • • • • • • •	Etectric		7.400		7,800	18
Trinidad Coal Co	Triangle Baldy M1.				700 850	Non-Gaseous Non-Gaseous Non-Gaseous	******	1 0 - 0 1 0 - 10	Natural Natural Natural			********	***********						4
Turner Coal Co	Turner		4,500 2,0110	114*	940	Non-Gaseous Non-Gaseous	1		Fan Natural	Jeffrey	8x 1	105	.5	Electric	1) 	41,650	· · · · · · · · · · · · · · · · · · ·	59,400	2
United Collieries Co	Montor Somerset	100	1,500	1	** *** 4** *	Non-Gascous Non-Gascous Gascous	2	225	Fan(2) Fan Fan	Vulcan Jeffrey	15 5x18	100 50 140	4.6	Steam	2 	42,000 20,000 205,850	147,896	44,000 22,509 232,320	6.6
Vesta Mines Incorporated Vezzelli & Moschetil Coat Co Victor-American Fuel Co	Vesta Brookside Chandler	50 483	3,000	3.6% 8% 5.4&7%	7,560	Gaseous Non-Gaseous Gaseous	1 1 6	200	Fan Natural Fan	Cole Capelle	33/2x113/2 7x15	90 134	22	Electric Electric Electric		24,700 7,250 46,620	52,900	25,800	60
Victor-American Fuel Co.	Radiant		3,250 & 1,060 5,000	7%		Non-Gaseous Non-Gaseous	2		Fan Fen	Sirocco Siline	6'6"	152	8	Electric	1	24,410 32,050	23,800		
Victor-American Fuel Co	Delagua		3,300	3% %	7.800 10,000 8,000 8,000	Non-Gascous	15		Fan(?)	f Capelle	15	122	1.8 ]	Electric	3				
Victor-American Fuel Co.	Cass Hastlogs			3 4 5	8,200 [ 10,400 ] 4,100 2,460	Non-Gaseous Non-Gaseous	1	*******	Fan Fan	l Crawford&McCrimmon Stine Jeffrey	18 6	67 575 552	.5	Electric	0.14	27,810		28,800	143
Victor-American Fuel Co	Gray Creek		2,000	5&6 14 %	3,700	Gascous Non-Gascous	3		Fan	Silne ( Jeffrey	7	309 70	.б )	Electric	1	32,000	30,000		52
Victor-American Fuel Co	Pinnacle No. 2 Wadgo No. 1 Wadgo No. 2 Baker	5 5 5 55 88 51 - 155 5 1 - 25	1,040 1,800 400	18% 15%	4,000	Non-Gascous Non-Gascous			Fan(2) Fan(2) Natural	t Oltumwa Stine	12 4 5	60 275 275	V. 1 3.2	Electric	9 ••••••	67,600 13,600	43,966	24,500	1.
Walte Mining Co	Walte		100	2 7	500	Non-Gascous	1	dia	Natural Natural			07/00000000		**					
White River Lumber Co. Williamsburg Slope Coal Co Winton Coal Co	Lion Canon Williamsburg Slope Winion		2110 785 980	45° 1%*	760	Non-Gaseous Non-Gaseous Non-Gaseous	1 1 1	4	Natural Natural Natural				******		1	6,000 1 515 3,120		6,000 1,545 3-120	5 8
A A gaseous mine is one generati	pe osuloslys est la ouest	111	elent to be	dotaal id 1											1				

 $\underline{A}$  = A gaseous mine is one generating explosive gas in quantities sufficient to be detected by an approved safety lamp.



TABLE No. 4

MINING MACHINES AND EXPLOSIVES USED AT COAL MINES IN THE STATE OF COLORADO FOR YEAR ENDED DECEMBER 31, 1921.

d	9ldissimt99 s9visolqxA	26,871	3,890	30,000	460	140
Explosives Used (Pounds)	Dynamite	25	1,615	250 775 120	147	10
Explc (I	Black Powder	$\begin{array}{c} 7,250\\ 1.2550\\ 1.265\\ 175\end{array}$	2000 2000 2000 2000 2000 2000 2000 200	3.000 14,925 500	500 100 27,725	6,350
by ()	[stoT	$16,196\\292\\16,570\\129,491\\156$	$\begin{array}{c} 1.914 \\ 1.161 \\ 2.9.189 \\ 6.058 \\ 4.001 \end{array}$	$\begin{array}{c} 2.313\\ 46.872\\ 29.081\\ 1.801\\ 578 \end{array}$	$\begin{array}{c} 600\\ 590\\ 56,770\\ 5,148\end{array}$	13.535 47 519
Coal Mined by (Short Tons)	Апілэв№	16,196	27,799	18,540 3,952	52,929	7,794
0	basH	$\begin{array}{c} 292\\16,570\\32,361\\156\end{array}$	$\begin{array}{c} 1,914\\ 1,161\\ 1,390\\ 6,058\\ 4,001 \end{array}$	$\begin{array}{c} 2,313\\ 2,313\\ 25,332\\ 1,801\\ 578\end{array}$	600 590 4,829 3,841 ort 5,148	ort 5,741 519
Mining Machines	No. Operated Vo. Operated	12	4	1 1	rep	2 rep
Mir Macl	Vo. Operated by Compressed Air	3	4		10 No	No
	Name of Mine	Capitol Capitol Altitude San Juan Boncarbo Anchor No. 1	Anchor No. 2 Collom Tollec Baldwin-Star Morning-Star	Wright Bear Canon Bear Alver White Alve Wonde Alver	Berglund Berry Yampa Centennial Sunnyside	Caddell Black Cat Black Diamond
	Name of Operator	Ajax Coal Co. Altitude Coal Co. Altitude Coal Co. American Smelt, and Ref. Co. American Smelt, and Ref. Co. American Social Co.	Anchor Coal Co Axial Basin Development Co Aztec Coal Mining Co Baldwin Fuel Co Baudino & Co	Barker, Wright Bear Canon Coal Co Bear River Coal Co Bedilen W. Bedilen & Co	Berglund. Clara Berry, Chas. T. Big Five Coal Co. Big Four Coal Co. Big Six Coal Co.	Black Canon Coal and Fuel Co Black Cat Coal Co Black Diamond Coal Co

#### STATE INSPECTOR OF COAL MINES

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

		Mining Machine	Mining Machines	0	Coal-Mined by (Short Tons)	A)	Explo (F	Explosives Used (Pounds)	đ
Name of Operator	Name of Mine	No. Operated by Vompressed Air	No. Operated by Electricity	basH	9nifosM	IstoT	Powder Black	9jimsnyU	Permissidle Explosives
Black Hawk Coal Co. Black Hills Coal Co. Blathick, John Blath, Swan Blue Goose Coal Co.	Primrose Black Hills Black Blixt Blixt Blue Goose			$21,479 \\ 510 \\ 516 \\ 200 \\ 671 \\ 671$		$\begin{array}{c} 21,479\\ 21,309\\ 516\\ 200\\ 671 \end{array}$	250	2,000	200
Blue Seal Coal Co Book Cliff Coal Co Boulder Black Diamond Coal Co Boulder Valley Coal Co Bracken & Cozza	Elk Creek Book Cliff Black Dlamond Boulder Valley Harvey Gap	~~~~~~	1	15,297 8,144 1,123	$\begin{array}{c} 200\\ 20,5555\\ 52,880\end{array}$	$15,497\\8,144\\20,555\\52,880\\1,123$	No record 25 8,725 18,250		10
Brennan Coal Mining Co Brewster Independent Coal Co Caddell & Son Caddell & Taggart Caldumet Fuel Co	Brennan Brewster Hezron Cuchara Canon Perins Peak		4	$\begin{array}{c} 144\\ 8.281\\ 469\\ 21,466\end{array}$	27,092 8,282 33,000	27,092 16,563 54,466	4,000 25 600	50	5,000 $5,926$
Caminotti & Co. Canon-Crystal Coal Co Canon-Reliance Coal Co. Canon-Reliance Coal Co. Canon-Reliance Coal Co.	Star		100	$1,022 \\ 41,485 \\ 26,091 \\ 10,672$	$\begin{array}{c} 1,205\\9,357\\4,926\end{array}$	$\begin{array}{c} 1,022\\ 1,499\\ 50,842\\ 31,017\\ 10,672\end{array}$	750	200	$\begin{array}{c} 100\\ 400\\ 7,468\\ 7,022\\ 1,300 \end{array}$
Cedar Hill Coal and Coke Co Cedar Hill Coal and Coke Co Chergo, Thomas	Greenville Black Diamond Chergo			$14,042 \\ 1,251 \\ 500$		$14,042 \\ 1,251 \\ 500$	750		

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Chew, J. S. Clark, J. H. Clarkno Coal Co. Colorado Collieries Co	Missouri McKee Clayton Satanic Rockvale	5		78,101 4,185 17,356	$\begin{array}{c} 579\\ 134\\ 78,101\\ 12,734\\ 119,984\end{array}$	700 275 12,230		12,000 6,783
Colorado Fuel and Iron Co Colorado Fuel and Iron Co Colorado Fuel and Iron Co Colorado Fuel and Iron Co Colorado Fuel and Iron Co	Coal Creek	not re- ported	105,809 59,005 21,315 19,690 95,255	22,246	$\begin{array}{c} 105,809\\ 81,251\\ 21,034\\ 19,690\\ 95,255\end{array}$	9,175 6,150 5,600 42		$\begin{array}{c} 5,402\\ 7,747\\ 3,747\\ 3,67\\ 3,144\end{array}$
Colorado Fuel and Iron Co Colorado Fuel and Iron Co Colorado Fuel and Iron Co Colorado Fuel and Iron Co Colorado Fuel and Iron Co	Elk Mountain Robinson-Walsen Ideal Cameron Lester	1	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{c} 3,641\\ 211,849\\ \hline 110,723\\ 4,630\end{array}$	$\begin{array}{c} 24,330\\ 331,913\\ 156,041\\ 154,845\\ 153,282\\ 153,282 \end{array}$	40,556		$\begin{array}{c} 2,271\\ 45,384\\ 68,081\\ 17,826\\ 36,205 \end{array}$
Colorado Fuel and Iron Co Colorado Fuel and Iron Co Colorado Fuel and Iron Co Colorado Fuel and Iron Co Colorado Fuel and Iron Co	Pictou Kebler No. 1 Kebler No. 2 Jobal Sopris		4         45,771           3         45,771           4         10,313           4         10,313           4         112,674	$\begin{array}{c} 37,062\\ 8,425\\ 19,677\\ 10,433\\ 138,386\end{array}$	$82,833\\29,5512\\29,9900\\11,519\\251,060$	$11,000\\3,735$		$\begin{array}{c} 9,389\\ 1,260\\ 1,233\\ 57,434\end{array}$
Colorado Fuel and Iron Co. Colorado Fuel and Iron Co. Colorado Fuel and Iron Co. Colorado Fuel and Iron Co. Colorado Fuel and Iron Co.	Morley Morley Frederick Tabasco Toller Primero	not re- ported	245,142 31525,201 (ed 107,574 39,979 114,924	39,355 67,672 51,258 51,258	$\begin{array}{c} 245,142\\ 191,556\\ 175,246\\ 151,237\\ 114,924 \end{array}$			$\begin{array}{c} 3,199\\ 28,066\\ 23,056\\ 15,041\\ 14,971 \end{array}$
Colorado Fuel and Iron Co Colorado Fuel and Iron Co Colorado Fuel and Iron Co Colorado Springs Co Colorado & Utah Coal Co	Berwind Starkville Bingle City No. 1 Harris		$\begin{array}{c} 2 \\ 25,432 \\ 26,686 \\ 8,840 \\ 13,949 \\ 12,17,174 \end{array}$	88,407	$\begin{array}{c} 113,839\\ 26,686\\ 8,840\\ 55,185\\ 217,174\end{array}$	16,950 No record	80	$\begin{array}{c} 7,165\\ 497\\ 97\\ 110\\ \end{array}$
Consolidated Coal and Coke Co Converse. Frank Corley, W. D Corley, W. D Corra, John	Baum Sourverse Converse Old Patterson Black Mariah Corra		7 2 11,389  150 	83,554	$\begin{array}{c} 83,554\\ 975\\ 14,389\\ 286\\ 150\\ 150 \end{array}$	No record	200	
Cottonwood Coal Co	Cottonwood Cracker-Jack	5	494	6,704	494 6,704	2,500	20	

#### STATE INSPECTOR OF COAL MINES

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MINING MACHINES AND EMPLOSIVES USED AT COAL MINES IN THE STATE OF COLORADO FOR YEAR ENDED

		Mining Machines	ing		Coal Mined by (Short Tons)	0y 3)	Explo	Explosives Used (Pounds)	pd
Name of Operator	Name of Mine	Xo. Operated by Compressed Air	Vo. Operated Vo. Operated	busH	9nin9s <b>W</b>	IstoT	Black Black	Dynamite	Permissible Explosives
Crested Butte Anthracite M. Co Crested Butte Coal Co Darville Coal Co Darville Coal Co Darvise Coal Co	Smith-Anthracite Bulkley Crown Darville Lewis			$16,480 \\ 18,166 \\ 18,166 \\ 1,208 \\ 3,465 \\ 3,465$	45.029	$16,480 \\ 18,166 \\ 45,512 \\ 1.208 \\ 3,465$	$\begin{array}{c} 3,875\\ 11,000\\ 22,500\\ 750\\ 900 \end{array}$	490 120	
De Graffenried. J. R. Dick Coal Co. Dilckerson. M. O. Dillon Coal Co. Double Dick Coal Co.	De Graffenried Dix Dix Dix Eureka Double Dick			$ \begin{array}{c} 263\\ 267\\ 5,097\\ 6 \end{array} $	8,633	263 1,155 5,097 8,633	$\begin{array}{c}125\\175\\225\\2,500\end{array}$	75	350
Drott, John Dunbaugh, Jr., F. M. Empire Coal Co. Engineers' Leasing Co Estes Bros.	Liberty Bell Jack O'Lantern Cambre Estes	°0		$\begin{array}{c} & 405\\ & 137\\ 61,767\\ & 1,499\end{array}$	19,664	$\begin{array}{c} 405\\ 137\\ 61,767\\ 19,664\\ 1,499\end{array}$	250 75 1,000 750		7,943 324
Eureka Coal Mining Co- Fairview Coal Co- Flokes, Frank M. Florenc-Canon Coal Co. Ft. Lupton Coal Co.	Macoye Thompson Coaby Red Canon Florence-Canon Witherbee	11.17		$29,364 \\ 1,376 \\ 1,376$	4,057 1,346	$\begin{array}{c} 29,364 \\ 1,376 \\ 4,057 \\ 1,346 \end{array}$	None 425 500	$600 \\ 1,500$	4,767
Fox Coal M. Co. French & Fielding Fruth & Stone.	Fox School Section Lease	.o.		27,256 1 980 4,137	19,138	$\begin{array}{c} 46,394\\ 1,980\\ 4,137\end{array}$	15,300	+	

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2,000		2,468			3,000	265	
250 30	200 350 400	65	150	100 776		10	200
3,000	$19,825 \\ 2,000 \\ 15,000 \\ 1,75 \\ 1,600 \\ 1,6$	48,625 $350$	600	$250 \\ 2,000 \\ 1,055$	22,750 100	$16,200 \\ 1,000$	40,000
$13,462 \\ 152 \\ 11,913 \\ 8,515 \\ 1,889$	$\begin{array}{c} 68,226\\ 59,033\\ 75,144\\ 3,947\\ 5,150\end{array}$	$\begin{array}{c} 331\\ 4,519\\ 65,088\\ 1,171\\ 13,186\end{array}$	$1,557 \\ 1,557 \\ 150 \\ 180 \\ 57,531$	$\begin{array}{c} 231\\ 1,703\\ 1,105\\ 24,840\\ 31,183\end{array}$	$\begin{array}{c} 69, 647\\ 9, 624\\ 18, 938\\ 2, 331\\ 120\end{array}$	$\begin{array}{c} 70.358\\ 1.044\\ 48.974\\ 2.795\\ 2.211 \end{array}$	$121,848 \\ 1,745$
13,462	$\begin{array}{c} 64, 644\\ 17, 190\\ 75, 144\end{array}$		9,237	24,840	69,647 6,045	32,943	75,518
11,913 8,515 1,889	$\begin{array}{c} 3.582\\ 41,843\\ 3.947\\ 5.150\end{array}$	ort 331 4,519 65,088 1,171 13,186	$\begin{array}{c} \text{ort} & 175 \\ 1,557 \\ \text{ort} & 150 \\ 48,294 \end{array}$	$\begin{array}{c} 231\\ 1,703\\ 1,105\\ 31,183\end{array}$	$\begin{array}{c} 9,624\\ 12,893\\ 2,331\\ 120\end{array}$	$\begin{array}{c} 70,358\\ 1.044\\ 16.031\\ 2.795\\ 2.211\end{array}$	46,330 1,745
	10401		rep rep		3	use 1	÷ŧ
		No	No No	9	2	Not in	1
Garfield Ridge Basin Royal Gorge Carbonera Golden Dawn	(tordon Cameo Sterling Green Valley Red Mountain	Hart McDowell Hayden Dry Creek Hesperus	Hines Riverside Bennett Ludlow	Hunter Independent Kurtzville Champion Wolf Creek	Pyans Jeffryes Jewel Beshoar Douglas Creek	King Kelly-Sheddy Keystone Pritchard Leone	Leyden No. 3 Liberty
Garfield Coal M. and T. Co Gates Coal Co. Gibson Lumber and Fuel Co Gilson Asphaltum Co Golden Dawn Coal Co	Gordon Coal Co. Grand Junction M. & F. Co. Grand Junction M. & F. Co. Green Valley Coal Co. Hall, A. W. & Son	Hart Coal Co Hawkeye Coal Co Hayden Bros. Coal Corporation Hayden Valley Mutual Coal Co. Hesperus Fuel Co.	Hines Coal Co- Holland, W. C. Holland, W. C. Hotchkiss Fuel and Supply Co- Huerfano Coal Co.	Hunter, J. B. Independent Coal Co. Independent Lumber Co. Independent Fuel Corporation Independent Fuel Corporation	Independent Fuel Corporation Jeffryser Fuel Co Jewel Coni Co Joerger Fuel Co Joerger Fuel Co Jones & Trachta	Juanita Coal and Coke Co. Kelly-Sheddy Keystone Mining Co. Kinley, Wilton Leone, L.	Leyden Coal Co

STATE INSPECTOR OF COAL MINES

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MINING MACHINES AND EXPLOSIVES USED AT COAL MINES IN THE STATE OF COLORADO FOR YEAR ENDED

NINTH ANNUAL REPORT

		5.500 3.500		714 455 640 70	$\frac{11,218}{12,322}$	34.737	
52	150 50 60	10	20				3,950
$\begin{smallmatrix}&&175\\6,250\\13,125\\&&2,500\end{smallmatrix}$	1,325	100 not reported 275	$1,500 \\ 1,625 \\ 41,448$	$\begin{array}{c} 14,611\\ 21,733\\ 15,307\\ 25,425\\ 5,100 \end{array}$	6,400	37,312	$31,925\\800$
$\begin{array}{c} 197\\ 18,116\\ 4,082\\ 20,864\\ 1,251\end{array}$	$\begin{array}{c} 5,756\\ 3,774\\ 2,210\\ \end{array}$	$165,003 \\ 165,003 \\ 889 \\ 16,810 \\ 22,563 \\ \end{array}$	$\begin{array}{c} 924\\ 2.127\\ 215\\ 128,587\end{array}$	$\begin{array}{c} 75,375\\ 75,375\\ 75,548\\ 157,548\\ 113,843\\ 33,197\end{array}$	26,031 72,808 35,721 25,061 1,501	$130.218 \\ 112.575 \\ 8.984 \\ 5.104 \\ 5.104$	43.047 2,358
15.760 211		80,768	127 not reported	$\begin{array}{c} 65,588\\ 63,761\\ 54,082\\ 83,632\\ 11,578\end{array}$	$\begin{array}{c} 11,588\\ 24,435\\ 10,067\\ 513\end{array}$	$130,218 \\ 98,987 \\ 8,505 \\ 8,505$	
$\begin{array}{c} 197\\ 2,356\\ 4,082\\ 20,653\\ 1,251\end{array}$	$\begin{array}{c} 5.756 \\ 5.776 \\ 110 \\ 3.774 \\ 2.210 \end{array}$	$\begin{array}{c} 1,028\\ 84,235\\ 889\\ 16,810\\ 20,886\end{array}$	$\begin{array}{c} 924\\ 2,000\\ 215\\ 105\\ 128,587\end{array}$	$\begin{array}{c} 9.787\\11.882\\3.466\\30.211\\21,619\end{array}$	$\begin{array}{c} 14,443\\ 48,373\\ 25,654\\ 24,548\\ 1,501 \end{array}$	$\begin{array}{c} 13.588 \\ 13.588 \\ 679 \\ 613 \\ 0rt \\ 5,104 \end{array}$	use 43.047 2.358
	də.	10 01	1	00	11.0	4 7 	Not in
	No		11	7-7-8 - 4-		7 No	2
Knauss Ohio Creek O.K. Palisade Farmer-Mutual	Paonia Parkdale City No. 2 No Wilmle No	Pickford	Rauman Black Diamond 11	Standard <u>7</u> Vulcan <u>8</u> Actue <u>8</u> Industrial <u>8</u> Gorham <u>4</u>	Alpine Alpine	Columbine Columbine Caratter Columbine Columbine Caratter Caratter Caratter Columbine	Horace 2 Gorham No. 2

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¢ MINING MACHINES AND EXPLOSIVES USED AT COAL MINES IN THE STATE OF COLORADO FOR YEV

		Mining Machine	Mining Machines	0	Coal Mined by (Short Tons)	oy s)	Explo	Explosives Used (Pounds)	pa
Name of Operator	Name of Mine	No. Operated by Compressed bir	No. Operated by Electricity	busH	əninərM	[BioT	Black Powder	91îmanyO	eldizzimteq sevizolqxA
Routt-Pinnacle Coal Co. Royal Fuel Co. Rugby Fuel Co. Rugby Fuel Co. Rush V coal and Dev. Co. Russell, W. E. Coal Co.	Routt-Pinnacle Royal Rugby Rush Russell	2	\$1	$\begin{array}{c} 5,776\\ 198,945\\ 9,529\\ 1,211\\ \end{array}$	9,254 68,196	$15,030 \\ 198,945 \\ 9,529 \\ 1,211 \\ 68,196$	$7,500\\1,875\\17,075$	281	4,814
Santa Fe Coal Co	Santa Fe Shamrock Smith-Tanner South Canon Stanley	¢1		$5,756 \\ 1,499 \\ 4,843 \\ 698 \\ 698 \\$	37,698	$ \begin{array}{c} 5,756\\ 37,698\\ 1,499\\ 4,843\\ 698 \end{array} $	$11,900 \\ 450 \\ 5,000$	15	2,050 100
Star Coal Co States Coal Co Stillwase Coal Co Stillwasen Bros. Stokes, W. D. Sunshine Coal Co	Star States Old Coalby Stokes Sunshine	N N	deu	$\begin{array}{c} \mathrm{ort} & 200 \\ 1,630 \\ 689 \\ 3,151 \\ 4,600 \end{array}$		$\begin{array}{c} 200\\ 1,630\\ 689\\ 3,151\\ 4,600\end{array}$	$\begin{array}{c} 300\\ 425\\ 1,875\\ 1,800\end{array}$	2002	200
Sunnyside Coal Co. Temple Fuel Co. Temple Fuel Co. Templeton & Long Thomas Coal Co.	Sunnyside Brodhead No. 9 Brodhead No. 10 Pollard Thomas		101~00	$15,807 \\ 1,265 \\ 1,265$	49,877 82,221 9,131	$53,082 \\ 9,131 \\ 1,265 \\ 1,265$	22,950 1,925	2,000 500 500 500 500	18,000 18,000 1,000
Three Pines Coal Co Triangle Coal Co Trinidad Coal Co	Three Pines Triangle Baldy Mountain			1,060 4,739 2,512		$1,060 \\ 4,739 \\ 2,512$			$\begin{array}{c} 1 \\ 2 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0$

			•		
29,847 4.500	1,800 $24,445$ $3,059$	$10.006 \\ 15,625 \\ 10.257 \\ 4.321 \\ 3.825 \\ 3.825$	15		760,117
60	600		100		22,220
13,175 125 26,425	$\begin{array}{c} 18.750\\ 11.250\\ 14,800\end{array}$		$\begin{array}{c} 42,075\\ 30,750\\ 3,125\\ 600\\ 600\end{array}$	2,500 1,625 1,625	1,260.955
$159,500 \\ 576 \\ 52,676 \\ 68,978 \\ 68,978 \\$	$\begin{array}{c} 237,131\\ 18,220\\ 17,885\\ 106,815\\ 31,659\end{array}$	$\begin{array}{c} 59,537\\ 371,856\\ 96,452\\ 20,747\\ 19,226\\ 19,226\end{array}$	98,256 58,362 871 84 400	1,487 3,122 1,124	9,141,947
$\begin{array}{c} 154,447\\ 35,134\\ 68,978\end{array}$	$15,487\\17,885\\106,477\\29,343$	$\begin{array}{c} 28,604\\ 105,751\\ 85,7751\\ 6,375\\ 6,375\\ 10,340\end{array}$	32,591		4,295,501
1,500 5,500 17,548	237,131 2,733 2,733 2,338 2,316	$\begin{array}{c} 30,933\\ 266,105\\ 10,686\\ 14,372\\ 8,886\end{array}$	98,256 25,771 871 400	1,487 3,122 1,124	4,846,446
9	use 1	60000000	4		270
4	Not in 3 3 1				162
Ferrell Turner Turner Priview Monroe	Somerset	Ravenwood Celagua Celagua Celagua Celagua Celagua Celas Cela	Pinnacle	Lion Canon	
Trinidad Coal Co Turner Coal Co Tygett & Aspell Union Coal and Coke Co Union Coal and Coke Co	Utah Fuel Co Vesta Mines, Incorporated Vezzett & Moschetti Ocal Co Victor-American Fuel Co Victor-American Fuel Co	Victor-American Fuel Co Victor-American Fuel Co Victor-American Fuel Co Victor-American Fuel Co Victor-American Fuel Co	Victor-American Fuel Co	White River Lumber Co	Totals

Remarks-Tonnage of mines not reported included in hand mined.

#### NINTH ANNUAL REPORT

#### TABLE No. 6

#### PRODUCTION AND DISTRIBUTION OF COAL FROM ALL THE MINES IN THE STATE OF COLORADO FOR THE YEAR ENDING DECEMBER 31, 1921.

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
9,141,947	8,350,388	1,995,571	520,240	695,170	369,267

#### TABLE No. 5

#### Table No. 5 omitted. Applies to metal mining.

NUMBER INJURED IN COAL MINES DURING THE CALENDAR YEAR ENDING DECEMBER 31, 1921. TABLE No. 7

		Downoor on t	Description	Temporar	rempotary Disability	
	CAUSES	rermanent Total Disability	Partial Partial Disability	Time Lost More Than 14 Days	Time Lost Less Than 14 Days	Total Injuries
Underg	Underground-			010	, yo,	
	Falls of face of pillar coal		0  `	2007 2007 2007	24	416
	Mine cars and locomotives. Gas explosions and burning gas.	77	6	191	141	346 6
e.	Coal-dust explosions (including gas and dust combined) Explosives			5		5
7. Su	Suffocation from mine gas. Electricity			Y	0	0
	Animals		1	41	40	82
11. Mi	Mining machines Mines fires (hurned suffoorted of )		4	27	30	61
0	other causes	1	12	156	250	419
13. Fallin	<b>nait</b> Falling down shafts or slones			6		c
	Objects falling down shafts or slopes.			1 m	1	101
-	cages of skips. Other causes		I	77	1	4
	Total number injured in mine	***	33	706	661	1 403
On Sur	Surface		2		4 G	00
	Electricity			ן מ	10	1 60
19. Ma 20 Bo	Machinery Roiler explosions or hursting steem nings		1	6	11	21
	Railway cars and locomotives			- 63		- 03
-	Other causes		33	35	30	68
	Total number injured on the surface		4	57	56	117
GF	GRAND TOTAL	co	37	763	717	1,520

condition permanently incapacitating workman from doing any work of a gainful occupation. B.

In this column include only accidents which cause a loss of time more than the balance of the day or shift upon which the acci-dent occurred. 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. v

TABLE No. 8

COAL MINE FATALITIES IN THE STATE OF COLORADO, CLASSIFIED BY CAUSE AND OCCUPATION, FOR YEAR ENDED DECEMBED 31 1031

-	Total Fatalities					!	:			1				:	
	səiiilsis Fatalities		;			-	1		:	1				ĺ	
	Total Underground	16	00		5		0		9						48
	All Others	-			1				1	·····					60
	Electricians and Helpers														
	Pump and Pipemen			:											
	Тітреттеп алд Косктеп														
ΡT	Ттасктеп апд Вгастісетеп	1	1												0
SHAFT	and Helpers Doorboys		-			:		: :	1	:				:	-
AND	Motormen and Motormen and						1								1
UND	Drivers and Runners		62				1								°.
GRO	Shot Firers				61										5
UNDERGROUND	Machine Run- ners and Scrapers														
Ω	Machine Miners	[~ 4	1		61										14
	Pick Miners	1~10	e79			0 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			4						19
	Fire Bosses	-													1
	Assistant Poreman						1								1
	Poreman								1	:					1
	CAUSES	Underground- 1. Falls of roof (coal. rock, 2. Falls of face or pillar coal	Mine cars and lo Gas explosions	5. Coal-dust explosions (in- cluding gas and dust		Suffocation from mi		10. Mining machines		12. Other causes	Falling down shafts or slopes	14. Objects falling down shafts	15. Cages or skips	Other causes	Total Underground

#### NINTH ANNUAL REPORT

urface								_				-						
. Mine cars and mine loco-																		
18. Electricity (shock or	-	-	:	-		-									1		¢.1	ł
burns)												-			01		01	
										-		1	-					-
I. Railway cars and locomo-										-	-	-						1
tives										1				-				-
·· Other causes										-							:	
				'													1	1
Total				-1								1	1	-	~		4	
Grand total	-	-	-	06	14		6	6	1-	-	6				0		0	1
Number employed in each	1	4	4	1	-		a	2	+	-	4				0		9.0	:
occupation (a)	204	52	168	168 4,769 3,356	3,356	582	152	1,058 200	200	86	335	457	124	124 103	380	12,046		1
												1					1	1

(a) To be supplied from Table 10.

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### TABLE No. 10

### COAL MINE EMPLOYEES CLASSIFIED BY OCCUPATION IN THE STATE OF COLORADO DURING YEAR ENDED DECEMBER 31, 1921.

	UNDERGROUND	Employed in and Around the Mines of Colorado
1.	Foremen	204
2.	Assistant foremen	5.2
3.	Fire bosses	168
4.	Pick miners	4.769
5.	Machine miners	3,356
6.	Machine runners and scrapers	582
7.	Shot firers	152
8.	Drivers and runners	1,058
9.	Motormen and assistants	200
10.	Doorboys and helpers	86
11.	Trackmen and bratticemen	335
12.	Timbermen and rockmen	457
13.	Pumpmen and pipemen	124
14.	Electricians and helpers	103
15.	All others	380
	Total underground	12,046
1.	Superintendents	154
2.	Foremen	62
3.	Blacksmiths and carpenters	266
4.	Engineers and firemen	335
5.	Machinists and helpers	87
6.	Trackmen and helpers	50
7.	All others at mine	1,266
8.	Coke-oven employees	134
9.	Office employees	151
	Total surface	2,505
Tot	al employees	14,531
Nur	nber of days men worked during year	164.4

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.

lnjured per b970lqmH 000,1	93.7 75.8	83.3 106.4	113.2	58.8 23.8	68.2
Killed per 1,000 Employed				23.5	22.7
Zumber of Tons Produced per Xon-Fatal Accident	5.399	5,837 4,687	4,847	$\frac{11,354}{13,535}$	7,160
No, of Men Em- ployed per Non- Fatal Accident	10.7	12	8.9	17	14.7
Vumber of Non- Fatal Accidents	3	5 10	9	1 5	3
Zumber of Tons Produced per Fatal Accident				28,385	21,479
Number of Men Ranployed per Fatal Accident				42.5	44
Number of Fatal Accidents				5	-
Employed Number of Men	32 1984 257 257	60 9 3 5 7 0	10 co 4 ci ci ci ci	1 858 12 12 12 12 12 12 12 12 12 12 12 12 12	44
Total Production	$16.196 \\ 292 \\ 146,061 \\ 2.070 \\ 1.161$	$\begin{array}{c} 29,189\\ 6,058\\ 4,001\\ 2,313\\ 46,872 \end{array}$	$\begin{array}{c} 29,081\\ 1,801\\ 578\\ 600\\ 590 \end{array}$	$ \begin{array}{c} 56,770\\ 56,770\\ 5,148\\ 13,535\\ 47 \end{array} $	21,479
COMPANIES	Ajax Coal Company Altitude Coal Company American Smelting & Refining Company Amehor Coal Company Axial Basin Development Company	Aztec Coal Mining Company Baldwin Fuel Company Baudino & Company Barker, Wright Bear Canon Coal Company	Bear River Coal Company Bedlien, W. C. Bell, John & Company Berglund, Clara. Berry, Chas. T.	Big Five Coal Company Big Four Coal & Coke Company Big Six Coal Company Biack Canon Coal & Fuel Company Black Cat Coal Company	Black Diamond Coal Company Black Hawk Coal Company

### NINTH ANNUAL REPORT

Black Hills Coal Company Blathick, John Blixt, Swan Blue Goose Coal Company Blue Seal Coal Company	$\begin{array}{c} 309\\516\\200\\671\\15,497\end{array}$	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1	52	15,497	5	26	7,749	19.2	38.5
Book Cliff Coal Company Boulder Black Diamond Coal Company Boulder Valley Coal Company Bracken & Cozza Branan Coal Mining Company	$\begin{array}{c} 8.144\\ 20,5555\\ 52,880\\ 1,123\\ 1,123\\ 27,092 \end{array}$	$\begin{array}{c} 12\\29\\61\\7\\2\\7\end{array}$		29 61	20,555 52,880	4	29 8.7	20,5555 7,554	34.5 16.4	333.3 34.5 114.8
Brewster Independent Coal Company Caddell & Son Caddell & Taggart Caddell & Taggart Calumet Fuel Company Caminotti & Company	$16,563 \\ 16,563 \\ 469 \\ 54,466 \\ 1,022$	$\begin{array}{c} 11\\1\\6\\79\\9\\9\\9\end{array}$				-1 5	5.5	8,282		181.8 88.6
Canon Crystal Coal Company Canon-Reliance Coal Company Castle Coal Company Cedar Hill Coal & Coke Company Cedar Phomas.	1,499 81,859 10,672 15,293 500	$\begin{array}{c} 212\\217\\55\\55\\1\end{array}$	1	217	81,859	33	6.6	2,481 3,823	4.6	152.1 72.7
Chew, J. S. Clark, J. H. Clarkon Coal Company Colorado Collieries Company Colorado Fuel & Iron Company.	$\begin{array}{c} 579\\ 579\\ 134\\ 78,101\\ 12,734\\ 2,674,818\end{array}$	4,855	12	$\begin{array}{c} 5.7 \\ 4.04.6 \end{array}$	222,902	478 478	$\begin{array}{c} 16.4\\ 17\\ 10.2 \end{array}$	15,620 6,367 5,596	176.5 2.5	61 58.8 98.5
Colorado Springs Company Colorado & Utah Coal Company Consolidated Coal & Coke Company Converse, Frank Corley, W. D.	$\begin{array}{c} 55,185\\ 217,174\\ 83,554\\ 14,675\\ 14,675\end{array}$	$2560 \\ 81 \\ 81 \\ 120 \\ 20 \\ 20 \\ 1$	5	129	108,587	10 43 12 3	6 6.7 6.7	5,519 5,051 6,963 4,892	7.8	166.7 166.7 148.1 150
Corra, John Cottonwood Coal Company Crucker Jack Coal Company Crested Butte Anthracite Mining Company Crested Butte Coal Company	$\substack{\substack{150\\494\\6,704\\16,480\\18,166}$	40 2010 2010 2010 2010	1	40	16,480	1 - 63	7 40 12.5	$ \begin{array}{c} 6.704\\ 16.480\\ 9.083 \end{array} $	19	142.9 25 80
Crown Fuel Company Danville Coal Company Davies Coal Company	$\begin{array}{c} 45,512\\ 1,208\\ 3,465\end{array}$	61 4	6			10	6.1	4,551		163.9

### STATE INSPECTOR OF COAL MINES

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Florence-Canon Coal Company- Fort Lupton Coal Company- French & Fielding Company- French & Fielding Company- Garfield Coal Mining & Transportation Co- Gates Coal Company- Gibson Lumber & Fuel Company- Gibson Lumber & Fuel Company- Golden Dawn Coal Company- Golden Dawn Coal Company- Gordon Coal Company- Gordon Coal Company- Gordon Coal Company- Grand Junction Mining & Fuel Company- Grand Junction Mining & Fuel Company-	$\begin{array}{c} 4,057\\ 4,057\\ 1,346\\ 4,394\\ 1,37\\ 1,3,462\\ 1,3,462\\ 1,3,462\\ 1,3,4515\\ 8,51526\\ 68,5226\\ 68,5226\\ 1,34,177\\ 134,177\\ 3,947\end{array}$	10 13 13 13 13 13 13 14 13 1 13 1 13 1 1				1 6 6 1 2 2 1 1 3 1 3 1 3 1 3 1 3 1 3 1 3 1 3	10 11.3 10 14 8.5 15.8 10.5	4,057 7,732 6,731 6,731 6,731 2,978 11,371 10,321		100 88.2 88.2 100 117.6 63.2 94.9

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Hall, A. W. & Son Hart Coal Company Hawkeye Coal Company Hayden Bros. Coal Corporation. Hayden Valley Mutual Coal Company	$\begin{array}{c} 5,150\\ 5,331\\ 4,519\\ 65,088\\ 1,171\end{array}$	6 112 116 116		6	12	10,844	83.3 51.7
Hesperus Fuel Company Hines Coal Company. Holland, W. C. Hotchkiss Fuel & Supply Company. Huertano Coal Company.	$13,186 \\ 1,707 \\ 1,707 \\ 57,531$	$\begin{smallmatrix}&&3\\&&4\\&&4\\&&2\\&&2\\&&12\\0\end{smallmatrix}$		4	9.5	3,297	105.2
Hunter, J. B. Independent Coal Company Independent Lumber Company International Fuel Corporation Jeffryes Fuel Company	$\begin{smallmatrix}&&231\\1,703\\1,105\\1,105\\9,624\end{smallmatrix}$	$\begin{smallmatrix}&&2\\&&4\\190\\18\\18\end{smallmatrix}$		13	14.6	9,667	68.4
Jewel Coal Company. Joerger Fuel Company Jones & Trachta. Juanita Coal & Coke Company. Kelly & Sheddy.	$\begin{array}{c} 18,938\\ 2,331\\ 2,331\\ 70,358\\ 1,044 \end{array}$	64 68123 68173		∞	5.4	2,367	186
Keystone Minlug Company- Kinley & Wilton- Leone, D- Leone, Coal Company- Liberty Coal Company-	$\begin{array}{c} 48.974\\ 2,795\\ 2,211\\ 121,848\\ 1,745\end{array}$	55 145 65		1	21.1	48,974	18.2 82.8
Liberty Coal & Mercantile Company Louisville Mining Company MacCornac Coal Company Mancos Mesa Coal Company Marchetti, J. R.	2,230 29,232 14,367 1,648 1,648	40 01-4000		60 61	15.7	9.744	63.8 5 8.8
Marsh, R. Mattive & Sons. McGinley Coal Company McLaughin, Jas. E. McMillin Coal Company.	847 372 150 432 432	c1 c1 <del>4</del> c1 c1					
McNally & Thompson	$\begin{array}{c} 27,722\\ 58,095\\ 1,492\end{array}$	60 82 6		01	60 41	27,722	24.4

TABLE A-Continued

50 156.1	92.5 24.4 55.5	200	30.3	44.7	68.7 93++ 312.5	$ \begin{array}{c} 81.7\\55.6\\66.7\\204.7\end{array} $	107.3
31.3			10.1	11.2		4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	3.6+
10,762 3,006	$\begin{array}{c} 9,046\\ 9,529\\ \overline{5},683\\ 1,439\end{array}$	4,843	17,694	13,395	$\frac{17,772}{6,585}$	$\begin{array}{c} 13.949\\ 9.110\\ 17,885\\ 3,147\end{array}$	6,014
20	10.9 41 	ra 🛛	33	22.4	14.6 10.8 3.2	12.2 18 15 4.9	9.3
4 10	22 1 21 12 4	-		×	9 15.8	100 100 100 100 100	
15,030			53,082	53,579		237.131	175,807
32			9.9	89.5 8		208 264.8	272.4
-			1	1 2		1 1	52
333015 333015	2339 41 822 222	3 10.7 5 5 8	9 9 0 1 9 0 1 9 0 9	179 222 8	$\begin{array}{c}13\\13\\8\\6\\4\\8\end{array}$	$\begin{array}{c} 208\\ 36\\ 15\\ 1,324\\ 5\\ 5\end{array}$	22 3 14,164
$\begin{array}{c} 613\\ 5,104\\ 43,047\\ 2,358\\ 15,030\end{array}$	$198,945 \\ 9,529 \\ 1,211 \\ 68,196 \\ 5,756$	37,698 1,499 4,843 4,843 698 200	$1,630 \\ 689 \\ 689 \\ 3,151 \\ 4,600 \\ 53,082$	$107,159 \\ 141 \\ 1,265 \\ 1,060 \\ 4,739$	$\begin{array}{c} 4,012\\159,947\\52,682\\68,978\\68,978\end{array}$	$\begin{array}{c} 237,131\\ 18,220\\ 17,885\\ 862,910\\ 862,910\end{array}$	$\begin{array}{c} 400\\ 1,487\\ 3,122\\ 1,124\\ 9,141,947\end{array}$

STATE INSPECTOR OF COAL MINES

Total Xum- ber of Tons Produced Mine Per Mine Per	3 110 10	3 110	
Worked Average Ko. of Men			
Average No. of Men 1)ays Worked	30	30	
Character of Coal	Sub-bituminous		
Mine Post Office	Lafayette		ARCHULETA COUNTY
Name of Company	Parkdale Coal Co.	of Mines Operated, 1	ARCHI
Name of Mine	Parkdale.	Totals-Number	

TABLE B

SHOWING BY COUNTIES, MINES OFERATED, NAME OF OPERATOR AND ADDRESS OF MINE, CHARACTER OF COAL, NUM-BER OF DAYS WORKED, AVERAGE NUMBER OF MEN EMPLOYED, TOTAL NUMBER OF TONS OF COAL PRODUCED IN 1921, AND CAPACITY OF MINE PER DAY IN TONS.

ADAMS COUNTY

### NINTH ANNUAL REPORT

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250 250

Sub-bituminous.

Pagosa Springs.

Nossaman & Fowler. of Mines Operated,

Totals-Number

Pagosa.

32

BOULDER COUNTY

Simpson Standard Vulcan Acme Industrial	Rocky Mountain Fuel Co- Rocky Mountain Fuel Co- Rocky Mountain Fuel Co- Rocky Mountain Fuel Co- Rocky Mountain Fuel Co-	Lafayette- Lafayette- Lafayette- Louisville- Superior-	Sub-bituminous Sub-bituminous Sub-bituminous Sub-bituminous Sub-bituminous	228 202.5 198.8 174.1 134	$\begin{array}{c} 69\\ 90\\ 79\\ 136\\ 136\end{array}$	$\begin{array}{c} 128.587\\ 75,375\\ 75,375\\ 75,643\\ 157,548\\ 113,843\end{array}$	$\begin{array}{c} 600\\ 500\\ 800\\ 800 \end{array}$
Gorham Monarch No. 2 Centennial Fox Crown	Rocky Mountain Fuel Co National Fuel Co Pig Four Coal and Coke Co Fox Coal Mining Co Crown Fuel Co	Gorham Broomfield Louisville Gorham Crown	Sub-bituminous Sub-bituminous Sub-bituminous Sub-bituminous Sub-bituminous	$154.9 \\ 106.2 \\ 98.4 \\ 220 \\ 220.5 $	$179 \\ 85 \\ 68 \\ 61 \\ 61$	33,197 72,978 56,770 46,394 45,512	250 900 600 600 600
Nonpareil Champion Cambro Red Ash Black Diamond	Louisville Mining Co	Louisville Louisville Lafayette Gorham Boulder	Sub-bituminous Sub-bituminous Sub-bituminous Sub-bituminous Sub-bituminous	231,2 119,4 114 137 137	4704600 1-700140	29,232 24,840 19,664 14,367 20,555	$175 \\ 500 \\ 200 \\ 400 $
Capitol Cracker-Jack Sunnyside Lewis Gorham No. 2	Ajax Coal Co Cracker-Jack Coal Co Big Six Coal Co Davies Coal Co Ross & Lorenzo	Louisville Boulder Louisville Gorham	Sub-bituminous Sub-bituminous Sub-bituminous Sub-bituminous Sub-bituminous	$     \begin{array}{c}       194 \\       141 \\       81 \\       243 \\       240 \\       \end{array} $	00 00 00 00 00 00 00 00 00 00 00 00 00 0	$16.196 \\ 6.704 \\ 5.148 \\ 3.148 \\ 2.358 \\ 2.358 \\$	$\begin{array}{c} 150\\ 100\\ 25\end{array}$
Independent Blue Goose Star	Independent Coal Co	Boulder Boulder Lafayette	Sub-bituminous Sub-bituminous Sub-bituminous	$204 \\ 126 \\ 24$	10134	$\begin{array}{c} 1.703\\ 671\\ 200\end{array}$	10 15
Totals—Number	of Mines Operated, 23			156.1	1,181	850,950	

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### DELTA COUNTY

Capacity of Mine Per Day, Tons	600 80 50 50	2002200 50020 50000 50000 50000 50000 50000 50000 50000 50000 50000 50000 50000 5000000	20 30 12	
Total Num- ber of Tons Produced	70,3585,7565,7563,9471,630	$1,376 \\ 1,124 \\ 1,105 \\ 975 \\ 689$	5590 576 576 576 532 180 180	94,151
Average No. of Men Employed	9 8 4 9 4 6	010001111	ରାହାରାହାରା	104
Атегаде <sup>No.</sup> of Men Days Worked	$126 \\ 305 \\ 301 \\ 222 \\ 222 \\ 301 $	240 175 121 240 240 240	125     175     106     106     60	149.9
Character of Coal	Bituminous Bituminous Semi-bituminous Semi-bituminous Semi-bituminous	Semi-bituminous Semi-bituminous Semi-bituminous Bituminous	Bituminous Semi-bituminous Semi-bituminous Semi-bituminous Semi-bituminous	
Mine Pcst Office	Bowie Paonia Cedaredge Cedaredge Cedaredge	Cedaredge Cedaredge Hotchkiss Paonia Cedaredge	Paonia Delta Delta Hotchkiss Hotchkiss	
Name of Company	Juanita Coal and Coke Co- Paonia Coal Co. A. W. Hall & Son- Green Valley Coal Co. States Coal Co.	Frank M. Fickes. Winton Coal Co Independent Lumber Co Frank Converse Stillwagon Bros.	Chas. T. Berry Tygett & Aspel McMillin Coal Co. McMillin Coal Co. Hotchkiss Fuel and Supply Co	of Mines Operated, 15
Name of Mine	Xing Parmer (Paonia) Red Mountain Green Valley States	Coalby Red Canon Winton Kurtzville Converse Old Coalby	Berry Fairview Rolling De Graffenried Bennett	Totals—Number

## ELBERT COUNTY

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### NINTH ANNUAL REPORT

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1,200 275 600 Closed 150	25 40 6	50	
165.00348.97455.1853.77414.389	1,889 1,211 1,208 494 292	286	292,705
173 160 114 116	0.41-014	4	342
$\begin{array}{c} 123.6\\ 174\\ 215\\ 233\\ 233\end{array}$	$\begin{array}{c} 209\\ 124\\ 237\\ 94\end{array}$	0.2	149.4
Sub-bituminous Sub-bituminous Sub-bituminous Sub-bituminous Sub-bituminous	Sub-bituminous. Sub-bituminous. Sub-bituminous. Sub-bituminous. Sub-bituminous.	Sub-bituminous	
Colorado Springs Colorado Springs Colorado Springs Colorado Springs Colorado Springs	Rush Rush Colorado Springs Colorado Springs Colorado Springs	Colorado Springs	
Pikes Peak Consolidated Fuel Co Keystone Mining Co Colorado Springs Co Alexander Patterson W. D. Corley	Golden Dawn Coal Co Rush Coal and Development Co Danville Coal Co Altitude Coal Co	W. D. Corley	of Mines Operated, 11
Pikeview Keystone City No. 1 City No. 2 Old Patterson	Golden Dawn Rush Danville. Cottonwood Altitude	Black Mariah	Totals—Number

## FREMONT COUNTY

Rockvale Coal Creek Fremont Nonac Emerald	Colorado Fuel and Iron Co- Colorado Fuel and Iron Co- Colorado Fuel and Iron Co- Colorado Fuel and Iron Co- Colorado Fuel and Iron Co-	Rockvale Coal Creek Florence Canon City Florence	Semi-bituminous Semi-bituminous Semi-bituminous Semi-bituminous Semi-bituminous	172 164 177 272 172	262 2122 30 67	$\begin{array}{c} 119.984\\ 105.809\\ 81.251\\ 21.034\\ 19.690\end{array}$	1,000 800 500 150 100
Chandler Radiant Canon Brookside Royal Gorge	Victor-American Fuel Co Victor-American Fuel Co. Canon-Reliance Coal Co Vezzetti & Moschetti Coal Co Gibson Lumber and Fuel Co	Chandler Pyrolite Canon City Canon City Canon City	Semi-bituminous Semi-bituminous Semi-bituminous Semi-bituminous Semi-bituminous	$\begin{array}{c} 184.8 \\ 188.8 \\ 131.5 \\ 220.5 \\ 76 \end{array}$	173 64 148 15 34	$106.815 \\ 31.659 \\ 50.842 \\ 17.885 \\ 11.913 \\ $	1,000 700 75 75 75 200
Double Dick. Walden. Florence-Canon. Williamsburg Slope Willie	Double Dick Coal Co. Mountain View Coal Co. Florence Canon Coal Co. Williamsburg Slope Coal Co. Sam Petry	Canor City Coal Creek Florence Coal Creek	Semi-bituminous Semi-bituminous Semi-bituminous Semi-bituminous Semi-bituminous	212 193 186 286 208	13 11 7 4	8,633 5,175 4.057 3.122 3.122 2.210	35 NotRep'd 50 NotRep'd 15
Smith-Tanner Bassick Brewster Jack O'Lantern Rocchio	Smith-Tanner Coal Co Canon-Crystal Coal Co Brewster Independent Coal Co F. M. Dunhaugh, Jr. James Rocchio	Florence Canon City Florence Florence Coal Creek	Semi-bituminous Semi-bituminous Semi-bituminous Semi-bituminous Semi-bituminous	198 169 26 23 23	1 12 66 7 12 8 6	$1,499 \\ 1,499 \\ 144 \\ 137 \\ 105$	15 15 10 10 Closed
Totals-Number	of Mines Operated, 20			169.2	1.263	593,463	

### STATE INSPECTOR OF COAL MINES

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## GARFIELD COUNTY

Capacity of Mine Per SnoT ,ysU	6 0 1 0 6 dattep'd 6	3	-
Total Num- per of Tons beoubord	$\begin{array}{c} 8,515\\ 4,843\\ 1,499\\ 1,123\\ 924\end{array}$	$\begin{array}{c} 613\\ 600\end{array}$	18,117
Average Xo. of Men Employed	ວາວຍາຍຄ	01 01	25
Average No. of Men Days Worked	206.3 226 163 127 209	$194 \\ 90$	190.5
Character of Coal	Bituminous Bituminous Bituminous Bituminous Bituminous	Bituminous	
Mine Post Office	Mack	Newcastle Rifle	
Name of Company	Gilson Asphaltum Co	Roletto Coal Co	of Mines Operated. 7
Name of Mine	Carbonera South Canon Estes Harvey Gap. Rauman	Roletto. Berglund	Totals—Number

## GUNNISON COUNTY

31 1.800 55 1.800	30         400           47         225           80         300	116         250           31         350           16         150           58         50	.14
8 237,131 0 95,255	$\begin{array}{c} 9 \\ 0 \\ 16,480 \\ 16,480 \\ 16,480 \end{array}$	5 18,116 2 26,031 7 6,058 6,058	4 484,614
208 170	4.84	9 m 10	.5 664
173	) 177 	106 103 203 203	160.5
Bituminous Bituminous	Anthractue and Bit, (2 seams) Anthracite	Bituminous Semi-bituminous Semi-bituminous Bituminous	
Somerset Crested Butte	Crested Butte Crested Butte	Crested Butte Baldwin	
Utah Fuel Co	Colorado Fuel and Iron Co Ross Coal Co Crested Butte Anthracite M. Co	Crested Butte Coal Co Rocky Mountain Fuel Co Ohio Creek Coal Co	of Mines Operated, 9
Somerset Crested Butte	Elk Mountain Horace Smith-Anthracite	Bulkley Alpine Ohio Creek Baldwin-Star	Totals-Number

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Robinson-Walsen Ideal Cameron Lester Pictou	Colorado Fuel and Iron Co- Colorado Fuel and Iron Co- Colorado Fuel and Iron Co- Colorado Fuel and Iron Co- Colorado Fuel and Iron Co-	Walsen Ideal Farr Lester Pictou	Bituminous Bituminous Bituminous Bituminous Bituminous	250 201 243 169	572 251 236 178 178	331,913 156,041 154,845 153,282 82,833	$1,900 \\ 900 \\ 700 \\ 700 \\ 560$
Kebler No.1 Kebler No.2 Jobal Turner Mutual	Colorado Fuel and Iron Co. Colorado Fuel and Iron Co. Colorado Fuel and Iron Co. Colorado Arel and Iron Co. Turner Coal Co.	Tioga Tioga Pictou Walsenburg	Bituminous Bituminous Bituminous Bituminous Bituminous	$154 \\ 173 \\ 64 \\ 194.6$	$     \begin{array}{c}       37 \\       37 \\       54 \\       131 \\       162 \\       162 \\       \end{array} $	$\begin{array}{c} 8.512\\ 29.990\\ 11.519\\ 159.947\\ 142.102\end{array}$	$\begin{array}{c} 200\\ 350\\ 900\\ 800\\ \end{array}$
Oakdale Gordon Ravenwood Sunnyside Pryor	Oakdale Coal Co Gordon Coal Co Victor-American Fuel Co Sunnyside Coal Mining Co Union Coal and Coke Co	Oakview Walsenburg Ravenwood Strong Pryor	Bituminous Bituminous Bituminous Bituminous Bituminous	219 188.5 197.2 116.8 123	$     \begin{array}{c}       156 \\       95 \\       99 \\       86 \\       86     \end{array} $	$129,183 \\ 68,226 \\ 59,537 \\ 53,082 \\ 52,682 \\$	$\begin{array}{c} 800\\ 500\\ 600\\ 600\\ 400\end{array}$
Reliance Toltec Maitland Brennan Vesta	Canon-Reliance Coal Co Aztec Coal Mining Co McNally & Thompson Brennan Coal Mining Co Vesta Mines, Incorporated	Ojo Toltec Maitland Walsenburg Camp Shumway	Bituminous Bituminous Bituminous Bituminous Bituminous	$164 \\ 128.4 \\ 138.5 \\ 96.4 \\ 92.2 \\ 02.2 \\ 02.2 \\ 02.2 \\ 02.2 \\ 02.2 \\ 02.2 \\ 02.2 \\ 02.2 \\ 00.2 \\$	69 60 36 36 36	$\begin{array}{c} 31,017\\ 29,189\\ 27,722\\ 27,092\\ 18,220\end{array}$	$\begin{array}{c} 300\\ 320\\ 3200\\ 3$
Hezron Caddell Caprock Rugby Leader	Caddell & Son Black Canon Coal and Fuel Co Rugby Fuel Co Fruth & Stone	Lester. Walsenburg. Walsenburg. Rugby. Rouse.	Bituminous Bituminous Bituminous Bituminous Bituminous	$225 \\ 126.1 \\ 255 \\ 49 \\ 180 $	$ \begin{array}{c} 11\\ 22\\ 11\\ 12\\ 12\\ 12\\ 12\\ 12\\ 12\\ 12\\$	$16.563 \\ 13.535 \\ 10.672 \\ 9.529 \\ 4.137$	$\begin{array}{c} 50\\125\\250\\50\end{array}$
Cuchara Canon Bunker Hill Black Hills	Caddell & Taggart Steve Mattive & Son Black Hills Coal Co	Toltec Rugby Tioga	Bituminous Bituminous Bituminous	86 61 40	9019	469 372 309	$15 \\ 30 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10$
Totals-Number	of Mines Operated, 28		) ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	195	2,924	1,782,520	
				-		-	

HUERFANO COUNTY

400 42,784 42,784 47 159 159 Sub-bituminous.. JACKSON COUNTY Coalmont. ÷ North Park Coal Co ... of Mines Operated, Totals-Number Moore.....

STATE INSPECTOR OF COAL MINES

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## JEFFERSON COUNTY

Capacity of Mine Per Day, Tons	1.100	
Total Num- anoT 10 19d Produced	121,848 12,734	134,582
Average Xo. of Men Employed	145 34	179
Ачегаде Хо. оf Меп Days Worked	182 197	184.8
Character of Coal	Sub-bituminous Sub-bituminous	
Mine Post Office	Golden	
Name of Company	Levden Coal Co	of Mines Operated, 2
Name of Mine	Leyden No.3	Totals—Number

## LA PLATA COUNTY

$ \begin{array}{c} 350\\ 150\\ 200\\ 70\\ 26\\ \end{array} $	30 22 30 3 3 20	-
54,466 $16,570$ $13,186$ $4,739$ $4,600$	4,082 4,001 315 152	102.627
0 - 30 % B	E-10 00 01 01	180
178.6 171 106.4 210 195	178 191 81 90 21	159.8
Bituminous Bituminous Semi-bituminous Bituminous	Bituminous Bituminous Bituminous Bituminous Bituminous	
Perins Durango Hesperus Durango Durango	Durango Durango Durango Durango Durango	
Calumet Fuel Co American Smelting & Refining Co. Hesperus Fuel Co Triangle Coal Co Sunshine Coal Co	O. K. Coal Co. Baudino & Co. John Blatnick Perino Bros. Gates Coal Co.	of Mines Operated, 10
Perins Peak. San Juan. Hesperus. Triangle. Sunshine	O. K. Morning Star	Totals-Number

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Sopris. Morley. Frederick. Tabasco. Toller.	Colorado Fuel and Iron Co. Colorado Fuel and Iron Co. Colorado Fuel and Iron Co. Colorado Fuel and Iron Co. Colorado Fuel and Iron Co.	Sopris. Morley Valdez Tabasco Tollerburg	Bituminous Bituminous Bituminous Bituminous Bituminous	207 211 190 192 201	446 303 320 250 250	251,060 245,142 191,556 175,246 151,237	1,200 1,200 1,200 850 800
Primero Berwind Starkville •Engle Delagua	Colorado Fuel and Iron Co Colorado Fuel and Iron Co Colorado Fuel and Iron Co Colorado Fuel and Iron Co Victor-American Fuel Co	Primero Berwindt Starkville Engleburg Delagua	Bituminous Bituminous Bituminous Bituminous Bituminous	$111 \\ 116 \\ 30 \\ 64 \\ 177.4$	$240 \\ 275 \\ 103 \\ 446 \\ 446$	$114,924 \\ 113,839 \\ 26,686 \\ 8,840 \\ 371,856$	$1,200 \\ 900 \\ 900 \\ 2,400 \\ 2,400$
Cass Hastings Gray Creek Forbes La Belle	Victor-American Fuel Co	Hastings. Hastings. Gray Creek. Forbes.	Bituminous Bituminous Bituminous Bituminous Bituminous	152.760.7146.1203158.7	135 80 67 118 66	96.452 20.747 19.226 72.808 35,721	$\begin{array}{c} 600\\ 500\\ 250\\ 400\\ 300\end{array}$
Southwestern Piedmont Royal Boncarbo Brodhead No. 9	Rocky Mountain Fuel Co	Aguilar Sopris Aguilar Cokedale Brodhead	Bituminous Bituminous Bituminous Bituminous	$163.9 \\ 19 \\ 225.2 \\ 179 \\ 181 $	$     \begin{array}{c}       56 \\       12 \\       167 \\       132 \\       132     \end{array} $	$\begin{array}{c} 25,061\\ 1,501\\ 198,945\\ 129,491\\ 98,028\end{array}$	$^{300}_{1,000}$
Brodhead No. 10 Empire Ludiow Bear Canon	Temple Fuel Co Empire Coal Co Huertano Coal Co National Fuel Co	Brodhead Aguilar Ludlow Vallorso Bowen	Bituminous Bituminous Bituminous Bituminous	43 207.5 119.6 168 80.3		$\begin{array}{c} 9,131\\ 61,767\\ 57,531\\ 46,872\\ 32,718\end{array}$	$200 \\ 600 \\ 500 \\ 500 $
MaCoye Rapson No. 1 Primrose Jewel Prairie Canon	Eureka Coal Mining Co	Boncarbo Rapson Rapson Aguilar	Bituminous Bituminous Bituminous Bituminous Bituminous	$121 \\ 161.8 \\ 154.8 \\ 147.8 \\ 100$	0 10 4 4 10 0 10 4 10 01	29,364 22,563 21,479 18,938 16,810	$200 \\ 200 $
Greenville Black Diamond Jefftyes Santa Fe Pritchard	Cedar Hill Coal and Coke Co- Cedar Hill Coal and Coke Co- Leftryes Fuel Co- Santa Fe Coal Co- Santa Fe Coal Co- Kinley-Wilton Coal Co-	Ludlow Rugby Trinidad Trinidad	Bituminous Bituminous Bituminous Bituminous Bituminous	$106 \\ 162 \\ 191 \\ 191 \\ 191 \\ 191 \\ 191 \\ 191 \\ 191 \\ 191 \\ 100 $	0000011-	$\begin{array}{c} 14.042\\ 1.251\\ 9.624\\ 5.756\\ 2.795\end{array}$	$\begin{array}{c} 300\\ 2500\\ 2500\\ 2500\end{array}$

\*The Bngle Mine was closed February 25, 1921, and reopened under lease to T. P. Davis, who mined 1,678 tons which is included in the production of the Bngle Mine.

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Contin
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## LAS ANIMAS COUNTY-Continued

Total Num- ber of Tons Produced Mine Per Bay, Tons	$\begin{array}{c} 2,512\\ 1,500\\ 1,492\\ 2,331\\ 2,211\\ 2,211\\ 10\\ \end{array}$	$\begin{array}{c} 1,745\\ 1,060\\ 1,060\\ 1,028\\ 1,022\\ 847\\ 847\\ 55\end{array}$	698 28 280 28 267 3 175 15 150 20	80	2,716,405
Average No. of Men Employed	m 10 Q m m	000000 010001	L-47040	2	4,716 2,7
Ачегаде Хо. of Меп Days Worked	$     \begin{array}{c}       283 \\       140 \\       273 \\       226 \\       226 \\       \end{array} $	$     \begin{array}{c}       125 \\       225 \\       35 \\       206 \\     \end{array}   $	510250 033702	32	160.1
Character of Coal	Bituminous Bituminous Bituminous Bituminous Bituminous	Bituminous Bituminous Bituminous Bituminous Bituminous	Bituminous Bituminous Bituminous Bituminous Bituminous	Bituminous	
Mine · Fost Office	Trinidad Trinidad Trinidad Trinidad Trinidad	Forbes. Vallorso Trinidad Rugby Trinidad	Boncarbo Trinidad Boncarbo Trinidad Sopris	Trinidad	
Name of Company	Trinidad Coal Co. Trinidad Coal Co. Miners Coal and Coke Co. Joerger Fuel Co. L. Leone	Liberty Coal Co Three Pines Coal Co Filter Coal Co Caminotti & Co R. Marsh	C. O. Stanley Fairview Coal Co. Hick Coal Co. Hines Coal Co. John Corra	Jas. E. McLaughlin	of Mines Operated, 51
Name of Mine	Baldy Mountain Ferrell Williams Beshoar Leone	Liberty Three Pines Pickford Premium-Star Fishers Peak	Stanley. Thompson Dix Hines Corra	Henderson	Totals-Number

### NINTH ANNUAL REPORT

	200 100 50	$40 \\ 60 \\ 30$	$200 \\ 200 $			2200 5200			15 15 23
	$\begin{array}{c} 59,033\\ 20,864\\ 13,462\\ 8,144\\ 3.151 \end{array}$	2.230 1.56 1.914 1.557 1557	$\begin{array}{c} 1.265\\ 1.251\\ 519\\ 231\\ 150\end{array}$	114,077		$1.161\\871\\844\\84\\400\\331$	2,847		$\begin{array}{c} 1.980\\ 1.044\\ 889\\ 109\\ 109\\ 47\end{array}$
	1284-7 1288-7 66	n 01 00 00 H	03 47 67 67 4	195		01000101-	10		10 01 4 00 11
	$\begin{array}{c} 1.35.5\\ 217\\ 217\\ 189\\ 178.5\\ 175\end{array}$	$272 \\ 112 \\ 258 \\ 192 \\ 30 \\ 30 \\ 30 \\ 30 \\ 30 \\ 30 \\ 30 \\ 3$	$2335 \\ 60 \\ 80 \\ 24 \\ 00 \\ 24 \\ 00 \\ 00 \\ 00 \\ 00 \\ 0$	269		$167 \\ 136 \\ 64 \\ 60 \\ 136 \\ 136 $	112.6		217 242 50 85 85
	Semi-bituminous Semi-bituminous Semi-bituminous Semi-bituminous Semi-bituminous	Semi-bituminous Semi-bituminous Semi-bituminous Semi-bituminous Semi-bituminous	Semi-bituminous Semi-bituminous Semi-bituminous Semi-bituminous Semi-bituminous			Bituminous Bituminous Bituminous Bituminous		ĩ	Sub-bituminous Sub-bituminous Sub-bituminous Sub-bituminous Sub-bituminous
MEAA UUUNII	Cameo. Palisade Palisade Grand Junction Palisade	Fruita Fruita Palisade Grand Junction	Grand Junction Grand Junction Grand Junction Fruita Loma		MOFFAT COUNTY	Axial Craig Craig Craig Craig		MONTEZUMA COUNTY	Mancos. Cortez. Mancos. Mancos. Cortez.
TI TAT	Grand Junction Mining & Fuel Co. Palisade Coal and Supply Co. Garfield Coal Mining & T. Co. Book Cliff Coal Co. W. D. Stokes.	Liberty Coal and Mercantile Co Anchor Coal Co Anchor Coal Co W. C. Holland W. C. Holland	Thomas Coal Co Felix Palmetto Black Diamond Coal Co J. B. Hunter. Wm. McGinley	of Mines Operated, 15	MOF	Axial Basin Development Co Waite Mining Co Walker Land and C. Co	of Mines Operated, 5	MONT	French & Fielding Kelly-Sheddy Coal Co. Pinos Altos Coal Co. Pinos Altos Coal Co. Black Cat Coal Co.
	Cameo Palisade Garfield Book Cliff Stokes	Nearing Anchor No. 1 Anchor No. 2 Riverside Holland	Thomas. Farmer-Mutual Black Diamond Hutter McGinley.	Totals-Number		Collom Baker Waite Waiter Hart	Totals-Number		School Section Lease Kelly-Sheddy (McElmo) Freeman Spencer Black Cat

MESA COUNTY

41

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of Mines Operated,

Totals-Number

### STATE INSPECTOR OF COAL MINES

	Capacity of Mine Per Day, Tons	10000		4					1	150
	Total Num- nul 10 19d Produced	$\begin{array}{c} 976 \\ 579 \\ 579 \\ 200 \\ 197 \\ 2,357 \end{array}$		578	578		1, 648	1,648		$\begin{array}{c} 2,127\\ 1,487\\ 215\\ 215\\ 141\\ 134\\ 120\\ 4,224\\ 4,224\end{array}$
	Average Xo. of Men Employed	0,01-01- 0		5	21		2	2		0.01   00
	Average No. Worked Worked	$\begin{array}{c} 189.5\\ 109\\ 201\\ 90\\ 50\\ 128.5\\ \end{array}$		100	100		212	212		$\begin{array}{c} 202.6\\ 281\\ 40\\ 156\\ 61.5\\ 100\\ 165.6\end{array}$
	Character of Coal	Sub-bituminous Sub-bituminous Sub-bituminous Sub-bituminous Sub-bituminous		Sub-bituminous			Bituminous			Bituminous Bituminous Bituminous Bituminous Bituminous Bituminous
MONTROSE COUNTY	Post Office Mine	Naturita Nucla Naturita Olathe Nucla	JURAY COUNTY	Ridgway.		PITKIN COUNTY	Carbondale		RIO BLANCO COUNTY	Meeker Meeker Meeker Meeker Meeker Rangeley
TNOM	Name of Company	Naturita Stores Co. J. S. Chew. John Diott Swan Blixt W. J. Oberding. of Mines Operated, 5	IUO		of Mines Operated, 1	PIT	J. R. Marchetti	of Mines Operated. 1	RIO BI	Reynolds & Babcock White River Lumber Co- Tenple & Long J. H. Clark Jones & Trachta of Mines Operated. 6
	Name of Mine	Cloverdale Missouri Liberty Bell Blixts Knauss Totals–Number		Economy	Totals-Number		Marion	Totals-Number		Black Diamond Lion Canon Fairfield Pollard McKee Douglas Creek Totals—Number

TABLE B-Continued

NTROSE COUNT

### NINTH ANNUAL REPORT

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2,500 2,400 1,000 1,500	3500 3500 3500 3500 3500 3500 3500 3500	120 100 130 5	ſŌ	
271,594 217,174 98,256 58,362 65,088	58,095 31,183 29,081 15,497 15,030	5,104 4,829 4,519 1,171 1,171 1,155	500	876,638
310 258 133 108 116	101000-110 0001000000000000000000000000	128 128 128 128 128 128	1	1.238
115.6 99.9 55.8 113.9	<b>56.2</b> <b>43.9</b> <b>56.5</b> <b>56.5</b> <b>48.7</b>	46.5 43.5 66.5 139 99	108	87.2
Bituminous Bituminous Bituminous Bituminous Bituminous	Bituminous. Bituminous. Bituminous. Bituminous. Bituminous.	Bituminous. Bituminous. Bituminous. Bituminous. Bituminous.	Bituminous	
Oak Creek. Mt. Harris. Oak Creek. Mt. Harris. Haybro.	McGregor. Mt. Harris. Bear River. Milner. Bear River.	Milner Milner Bear River Hayden Hayden	Oak Creek	
Moffat Coal Co. Colorado & Utah Coal Co. Victor-American Fuel Co. Hayden Bros. Coal Cor.	McNeil Coal Co International Fuel Corp Bear River Coal Co. Blue Seal Coal Co Routt-Pinnacle Coal Co	Roman Coal Co Big Five Coal Co Hawkeye Coal Co Hayden Valley Mutual Coal Co M. O. Dickerson	Thomas Chergo	of Mines Operated, 16
Oak Hills Nos. 1. and 2. Harris. Wadge Hayden	McGregor Wolf Creek Bear River Elk Creek Routt Pinnacle	Crown Point Yampa McDowell Dry Creek Lorella	Chergo.	Totals-Number

	2,500 1,000 1,000	1.00 80 80 50 50 50	1100	
	$\begin{array}{c} 225.235\\ 130.218\\ 1112.575\\ 8.984\\ 83.554\end{array}$	$\begin{array}{c} 78.101\\ 75.144\\ 69.647\\ 68.978\\ 68.196\end{array}$	52.880 37.698 5.097 1.801 1.346	$\frac{1,019.454}{9.141.947}$
	254 114 83 83 83 83	61 61 80 80 61 61 61 80 80 61	61 38 6 4 4 4 4	$\frac{1.050}{14,164}$
	$\begin{array}{c} 152\\ 298\\ 187\\ 187\\ 195\end{array}$	$219 \\ 228.5 \\ 122.1 \\ 2222.7 \\ 187$	120.5 120.5 135 276 47	$\frac{180.4}{164.4}$
	Sub-bituminous Sub-bituminous Sub-bituminous Sub-bituminous Sub-bituminous	Sub-bituminous Sub-bituminous Sub-bituminous Sub-bituminous Sub-bituminous	Sub-bituminous Sub-bituminous Sub-bituminous Sub-bituminous Sub-bituminous	
WELD COUNTY	Dacono Frederick Frederick Frederick Dacono	Erie Dacono Froderick Friestone	Erie Brie Frederick La Salle Ft. Lupton	
WE	National Fuel Co- Rocky Mountain Fuel Co- Rocky Mountain Fuel Co- Consolidated Coal and Coke Co-	Clayton Coal Co	Boulder Valley Coal Co. Shamrock Coal Co. Dillon Coal Co. W. C. Bedlien Ft. Lupton Coal Co.	of Mines Operated. $\frac{15}{249}$
	Puritan Columbine Grant. Slope Baum	Clayton Sterling Fyans Monroe Russell	Boulder Valley Shamrock Bureka	Totals—Number Grand Totals

# Two men are included in the total number of men employed not included in the above table. See Estella Mae Coal Company

PR	ODUCTI	ON OF (	COUNTIE	S BY M	ONTHS-	-1921	
Months	Adams	Archuleta	Boulder	Delta	Elbert	El Paso	Fremont
January			111,939	9,863		33,923	74,604
February			83,454	6,595		32,412	49,397
March.			73,576	5,875		26,090	23,291
April			68,149	6,939		26,108	52,615
May			48.321	5.665		15.747	56.155
June			46.742	3,781		13.393	18,707
July			58,920	5.815		13.334	54,990
August			68.446	6.461		15,106	53,406
September			70,419	10.062		19.479	63.784
October	********		83,220	7.914		30.702	80.026
37			61,160	11.619		30.040	56.775
	0.1.1	714			2.313		9.713
December	110	714	76,604	13,562	2,313	36.371	9,110
Totals	110	714	850,950	94,151	2,313	292,705	593,463

### TABLE C

Months	Garfield	Gunnison	Huerfano	Jackson	Jefferson	La Plata
January	2,060	51,491	195,868	3.622	14.525	11.419
February	1,529	33,845	111,059	1,855	13.683	8,009
March	863	31,187	73,378	3,556	8.079	7.716
April	939	30,658	128,727	4,012	8.524	6.476
May	1,171	35,468	151.281	2,112	7.719	5,725
June	968	26,766	110,145	1,589	6.652	5.676
July	935	39,698	146,795	3,898	7,801	5.428
August	1,280	46.916	185,457	3,406	10.549	7.802
September	1,538	58,571	176,253	4,932	11.785	10,228
October	1,819	64,296	230,200	6.513	16.000	12.286
November	2,477	42.029	169,859	3,877	16,002	13,008
December	2,538	23,689	103,498	3,412	13,263	8.854
Totals	18,117	484,614	1,782,520	42,784	134,582	102,627

Months	Las Animas	Mesa	Moffat	Montezuma	Montrose	Ouray
January	362,637	12,711	353	604	156	
February	247,284	7,355	167	370	165	
March	224,405	4,381	74	88	122	
April	205,676	5,854	207	126	107	
May	225,019	4.338	141	302	213	
June	188,640	4,326	163	304	170	
July	196, 157	5,488	202	180	106	
August	197,314	9,379	340	257	45	
September	205 505	14,590	277	406	165	
October	236,730	13,758	154	351	191	
November	238,676	12.264	210	534	237	
December	188,362	19,633	559	547	650	57
Totals.	2.716.405	114.077	2.847	4.069	2.357	57

Months	Pitkin	Rio Blanco	Routt	Weld	Grand Total
Januar '	156	645	60.155	112.779	1.059.510
Febru: •	85	534	49.811	100.533	748.142
March .	12	428	64,019	73.652	620.822
April	Idle	378	25,140	74.233	644.868
May	81	178	80,422	36.550	676.638
June .	153	58	88,016	32.203	548,452
July	140	144	77,953	45,503	663.487
August	163	162	105,496	67,661	779,646
September	219	226	112,495	106,527	867.461
October	74	346	111.434	143.637	1.039.651
November	322	461	80,040	98.438	838.025
December	213	6.6.4	21,657	127,738	655,242
Totals	1,648	4.224	876.638	1,019,451	9.141.947

### Tons Tons Counties Produced Produced Increase Decrease 1920 1921 Adams 110 110 Archuleta ..... $714 \\ 850,950$ 714 1,230,347 Boulder Delta 379,397 123,478 94,151 29.327 2,313292,705 593,463 Elbert ..... 2,313 87,164 281,303 10,390 136,018 666,213 9,121 $379,869 \\ 874,766 \\ 28,507$ El Paso..... Fremont ..... 593,46318,117 484,614 1,782,520 42,784 134,582 102,627 2,716,405 114,077 2,847 Garfield ..... $\begin{array}{r} 28,507\\ 620,632\\ 2,448,733\\ 50,905\\ 176,427\\ 132,497\\ 4,345,110\\ 174,801\\ 2,172\end{array}$ Gunnison ..... Huerfano ..... 8,121 41,845 Jackson ...... Jefferson ..... 29,8701,628,705 60,724 La Plata..... Las Animas ..... Mesa ..... 3,1734,1472,1052,847 4,069 2,357 578Moffat ..... 326 252 Montezuma ..... 78 Montrose ..... 500 Ouray Pitkin 78 735 913 1,648 1,844 6,068 4,224 Rio Blanco..... 966,912 876,638 90,274 944,803 1,019,454 74.651 Totals..... 12,514,693 9,141,947

### TABLE D SHOWING INCREASE AND DECREASE OF PRODUCTION BY COUNTIES 1920-1921

### TABLE E

### COKE PRODUCTION IN 1921 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 Colorado Fuel and Iron Co	172 168	56,358 312,909	La Plata Las Animas Pueblo	22 198 120	7,473 75,039 286,755
Totals	340	369,267		340	369,267

REMARKS:

Average number of days worked at the coke ovens	
Average number of men employed at the coke ovens	
Number of tons of coal made into coke	695,170

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SHOWING BY COUNTIES THE COAL PRODUCTION OF 1921 IN PREPARED SIZES

Total	$\begin{array}{c} 110\\714\\850,950\\94,151\\2,313\end{array}$	$\begin{array}{c} 292.705\\ 593.463\\ 18,117\\ 484,614\\ 1,782,520\end{array}$	$\begin{array}{c} 42.784\\ 134.582\\ 102.627\\ 2.716.405\\ 114.077\end{array}$	2,847 4,069 2,357 578 1,648	${}^{4,224}_{876,638}_{1,019,454}$	9,141,947
Slack	214,087 18,087	$104,526 \\ 159,281 \\ 22,811 \\ 417,089 \\ \end{array}$	$\begin{array}{c} 10.574 \\ 54,246 \\ 6,8236 \\ 788,003 \\ 25,128 \end{array}$	206 162 60	169,727 324,297	2,315,630
Pea		3,757 30,683	1,053 19,268	63	4,052	58,876
Egg					35,210 1,449	36,659
Nut	16,421 12,922	$\begin{array}{c} 4,141\\ 93,356\\ 1,119\\ 1,119\\ 227,106\end{array}$	$\begin{array}{c} 8.088\\12,319\\3.709\\131.544\\11,410\end{array}$	0101 00 44	116,030 8,638	000,472
dumJ	209,376 38,872	$\begin{array}{c} 70,674\\ 314,382\\ 2,442\\ 77,741\\ 619,815\end{array}$	$\begin{array}{c} 14,464\\ 322,375\\ 520,5547\\ 35,978\\ 35,978\\ \end{array}$	910 993 602	2,363 376,591 347,051	2,0(4,1/2
Mine Run	$\begin{array}{c} 110\\ 411,714\\ 24,270\\ 2,313\end{array}$	113,364 22,687 14,039 *382,100 487,827	$\begin{array}{c} 9.658\\ 35.642\\ 81.445\\ 1.257.046\\ 1.261\end{array}$	$1,429\\2,660\\1,695\\1,648\\1,648$	175,028 338,019	0,400,000
Counties	Adams Archuleta Boulder Delta Elbert	El Paso. Fremont Garfield Gunnison Huerfano	Jackson Jefferson La Plata Las Animas Mesa	Moffat	Rio Blanco Routt Weld Totels	

\*63,986 tons anthracite coal included. In the slack, some mines include pea, others nut and pea coal.

### STATE INSPECTOR OF COAL MINES

### 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, 1922.)

Nationality	No. of Men	Nationality	No. of Men	
Americans	4,522	Montenegrins	. 22	
English	206	Bulgarians	. 269	
Welsh	162	Greeks	. 506	
Scotch	215	Russians	. 131	
Irish	107	Poles	. 155	
Negroes	304	Bohemians	. 35	
Italians	2,493	Swedes	. 79	
French	142	Danes	. 7	
Belgians	16	Finlanders	. 25	
Spanish	159	Japanese	- 22	
Mexicans	2,075	Rumanians	. 6	
Slavonians	463	Syrians	. 3	
Croatians	455	Lithuanians	. 5	
Austrians	523	Armenians	. 1	
Germans	136	Swiss	. 2	
Hungarians	110	Norwegians	. 1	
Servians	94	Hollander	. 1	

Total	.1	3,4	5	2
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### REPORT ON OAK HILLS EXPLOSION

On February 12, 1921, at 5:30 P. M., an explosion occurred in Oak Hills No. 2 mine, resulting in the death of five men.

The Oak Hills mine No. 1 and 2, are situated one-half mile west of the town of Oak Creek, Routt county, Colo., on the Denver & Salt Lake Railroad, and operated by the Moffat Coal Co., Denver. Colo., of which S. M. Perry is President; R. M. Perry, Gen. Supt., and John Alexander, mine superintendent.

The mines originally were opened on different seams and later connected by a rock tunnel. They are classified as non-gaseous mines. The mines are ventilated by two exhaust fans. One fan taking care of No. 1 mine and part of No. 2 mine. Open lights are used for general purposes. Black powder being used exclusively for blasting the coal and adobe for tamping.

The seam operated, is known as the Pinnacle seam, a very hard, domestic bituminous coal, from seven to ten feet in thickness. Eighty-five per cent of the coal mined is by solid shooting, balance by machine. Shot firers are employed to tamp and fire all shots. Shot firing is supposed to be done after all other employes are out of the mine. An identification check board is in use as a means of ascertaining when all the employes are out of the mine. The cleavage in the seam runs in all directions, intersecting at different angles. Powder was taken into the mines in powder jacks. The machines used by the miners for drilling holes have no side gearing, consequently, all drilling is done with end gear, making it necessary to have room between rib and thread bar to turn crank or handle of machine in drilling rib holes.

I arrived at Oak Hills on the 14th, about midnight, and was informed that the bodies of Edward Hamidy, Weaver Sharp, and Samuel Patrick had been found on the main south entry about 1,000 feet from portal of mine and that there was no hope of the other two men being alive. On the following morning, accompanied by Mr. Smith, engineer in charge of Car No. 2, U. S. Bureau of Mines, Thomas Allen, superintendent of the Elk Creek and Yampa mines, John Harrison, mine foreman of the Haybro mine, Jeff Rhodes, foreman of the Wadge mine, and several other, including helmet crews of the Moffat Coal Co., and Mount Harris, 1 entered the mine in search for the bodies of Celestin Testas and Hy Wagner. Testas' body was found Tuesday night on a raise entry about 600 feet from face of main south entries. Wednesday, Wagner's body was found in room 6 off L slope. The balance of the week was spent exploring both mines to determine, if possible, the initial point and cause of explosion. In no part of either mine could we detect any indications of fire damp, notwithstanding that we were considerable in advance of the ventilation.

A number of parts of holes that had been fired, were found measuring from one to five feet in depth, drilled into the solid beyond the line of face and drilled at such angles that it was impossible for the charge to do more than blow out the tamping, or a small part of the coal from the muzzle of the holes. The firing of dependent shots was very much in evidence. Holes were found tamped beyond the point where the bodies of the shot firers were found. The number of shots fired each day ran from 80 to 100. Shot firers were supposed to enter the mine at 2:00 P. M. or two hours before quitting time for the purpose of examining the shots to be fired later in the day. They probably tamped all the shots that were ready on this trip. They were supposed to start firing at 5:00 P. M., one hour after quitting time, provided all men were out of the mine.

I am reliably informed that the shot firers were home by 7:00 P. M. nearly every evening. The time taken to fire the number of shots above mentioned is entirely insufficient to do the work properly, as required by law. I was also informed that some of the miners were in the habit of staying at work after quitting time. Because of this practice and the failure of the mine officials to see that all employes, except the shot firers, were out of the mine before shots were fired, Hamidy, Sharp and Patrick lost their lives.

The explosion, in my opinion, was a dust explosion, caused by one or more blown out or overcharged shots, assisted by explosions of black powder in different parts of the mine. The initial point may have been either K & L slopes, M & N slopes, or main or back south entries. The explosion covered practically all of mine No. 2 and part of No. 1 mine. The slopes of mine No. 2 into and including K & L are connected with the third level of No. 1 mine. The forces apparently traveled towards No. 1 mine, spending itself before reaching the rock tunnel connecting the two mines.

The responsibility for the explosion is placed upon the shot firers and the mine foreman. The former for firing of impractical and unlawfully placed shots and the later through his failure to prohibit the firing of such shots.

(Signed) JAMES DALRYMPLE.

### REPORT ON THE SATANIC MINE DISASTER

The Satanic mine is operated by The Colorado Collieries Company, at Mount Morrison, Jefferson county, Colorado. It is a vertical shaft opening, about 200 feet in depth. The seam being operated, lies at an angle of eighty-five degrees with the horizontal, dipping to the east. The shaft is located on the west side of seam, rock tunnels being driven through the measures at different levels to the coal seam. The exits or escapeways are driven in the coal seam to the surface at an angle of forty-five degrees. There are two levels, one at One hundred feet and one at Two hundred feet, and are connected at different points. On the south side of the shaft, where the fires occurred, there are several openings to the surface.

On the morning of December 3rd, 1921, smoke was seen coming up through some of these openings, apparently coming from a fire in the upper level. Men were put to work at once to fill in the openings from which the smoke was coming for the purpose of smothering the fire. On the morning of the 10th inst., smoke was discovered coming from the southern-most opening, which is the main air course for the south workings. Upon investigation by Mr. Ream and Superintendent Dunn, fire was discovered at room 14, on south entry, lower level. Preparations were made at once to build a concrete stopping at mouth of south entry, and was completed on the night of the 11th, or early on the morning of the 12th inst. On the afternoon of the 12th, Supt. Dunn, sent Wm. Joves and Louis Golob, two of the deceased, over to the south air-shaft to cover it and to leave only a small hole, which was carried out. Shortly after the disaster, and before all of the bodies were out of the mine, Mr. Baxter and Mr. Alden, two employes, went to the air-shaft and found an opening six to twelve inches in diameter. They enlarged this opening to the full size of the shaft. This was done to give the fumes in the mine a chance to recede, so that the bodies could be reached.

On the forenoon of the 13th inst., Supt. Dunn entered the mine by an opening known as the forty-five degree slope to the upper level and advanced to a point where a concrete stopping was to be built for the purpose of isolating the entire south side workings from the north side workings. Upon his return from this inspection, just before noon, he reported to the men that were to assist him in building the stopping that everything was all right. Immediately after dinner, accompanied by Wm. Jones, E Bovie, Jr., Louis Golob, and Louis Daregetti, he went into the mine to build the concrete stopping. About two hours afterwards the men on the outside heard some one call from the inside, and thinking help was needed, two of them entered, one of them lost his life trying to save his son, who was in the mine.

I was in Trinidad, Colo., when notified of the disaster. I immediately notified Deputy Inspector Wm. H. James, of Walsenburg, who met me on the first train, arriving in Denver the next morning. We arrived at the mine before noon, made some investigation, and after due consideration determined not to enter the mine until early the next morning. The reason for this postponement was that the mine depends entirely upon nature for ventilation, that is the atmosphereic pressure has to be greater at one opening than it is at the other to create a volume of air. This pressure is subject to reversal by a change in outside temperature, and very liable to happen especially during the midde of the day in warm weather. A reversal may also occur through a change in the direction of the wind on the outside. It was about noon when we arrived, and it was warm, hence the delay.

Early next morning, accompanied by Manager Ream, and two State Deputy Inspectors, 1 entered the mine and advanced fifty feet beyond the point where the concrete stopping was to be built, and where deceased lost their lives. The atmosphere was clear and no signs of temperature. While it is evident from the above statement that the mine foreman had laid out the work in an effort to seal off the fire, I believe his judgment was in error to attempt this work during the day, under the weather conditions existing at the time, in a mine depending on the elements for air and governing the direction of its travel. He also neglected to notify the State Inspection Department at the time the fire was discovered, as required by Section 51 of the Coal Mining Laws. Had this been done, it is my opinion that the loss of life would not have occurred. Owing to the frequency of fires in the Lignite Mines of the State and mine managers having constantly to face this condition, do not look upon this as seriously as could be wished, and often do not report them until they have made every effort to control them, and it is obvious that Mine Foreman Dunn had taken this course. The deceased lost their lives from inhaling fumes from fire carried to them either by sealing off of air-shaft or by a reversal of the air current. All of the employes directly engaged in sealing off the fires having lost their lives, my opinion is based upon the statements made under oath and otherwise by Mr. Ream, General Manager of The Colorado Collieries Company, some of the employes working in the mine at the time of the disaster, and upon my knowledge from experience in coal mines dependent upon natural ventilation.

The Satanic Mine was inspected four times by State Deputy Inspector Henry P. King, in 1921, prior to the accident. Dates of inspection are: January 17th, April 5th, August 17th, and November 5th, and in none of these reports is a fire mentioned. The first information the State Coal Mine Inspection Department had of the fire was through the press on the evening of and after the disaster. Section 120 of the Coal Mining Laws, requires that all mines shall be equipped vi h fans. Deputy Inspector King, on April 5th and August 17th, recommended that a fan be installed. The company being in financial straits to the extent that the employes took over the operation on a basis of eighty cents on the dollar, in an effort to get their back pay and have work, the fan was not installed. Had a fan been in operation and the work of sealing off the fire been done as it was done, the result would have been the same, because of building of the stopping in the main south intake, thereby making it impossible to ventilate the south side of mine through this entry.

There are several openings from the south upper level to the surface, and the lower south level is connected with the upper south at different points. The southernmost connection being at room 17, upper level, and continued to the surface, which was the main air course for south side of mine and with this opening and the main sealed, there was only one direction left for the fumes to travel,

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which was towards the openings between the main shaft and the main south air course. The forty-five degree slope which the men entered to build the stopping is one of these openings. It appears to me that if the fumes had approached the men gradually, the safety lamp would have indicated their presence in time, so that at least some of them could have reached a point of safety. A considerable area was standing open on both sides of room 14, lower south level, and it is possible a cave took place sending the fumes back over the deceased at a high velocity.

On the day after the accident I made two tests with the Carbon Monoxide Gas Detector. The first at the main south return and the other at one of the openings between main shaft and main return. The first test showed over one per cent and the other three-tenths of one per cent C O, (Carbon Monoxide).

### REPORT OF DEPUTY INSPECTOR JAS. W. GRAHAM, ON FIRE OF TIPPLE AT THE MONARCH NO. 2 MINE, AT BROOMFIELD, COLO., ON NOVEMBER 15, 1921.

A fire occurred at the Monarch No. 2 mine, at Broomfield, Colo., on November 15, 1921, about 9:00 P. M., which destroyed tipple, head frame, platform of railroad scales, and also did more or less damage to the outside equipment. By stremuous efforts the fire was kept away from the engine and boiler house.

Tipple house and head frame were enclosed with corrugated iron. The tipple house was steam heated. Mr. Sidle said that he was at the fire shortly after it was discovered, which started at or near the tipple scale, this was very near to the head frame. A wind was blowing from the South and East, which prevented the fire fighters from getting on the tipple, as the stairway which leads to it was situated on the north side. When the fire could not be reached from the inside, and very little could be done from the outside, the fire fighters devoted their time to keep the fire from spreading to other buildings.

At the time of the fire there were six men in the mine. Fire Boss Richards went down the ladder at the air-shaft and informed the men what was taking place. They at once returned to the surface by climbing the ladder, which is about 300 feet straight up.

The main shaft was damaged but very little, owing to it being on the return. This kept the flames from being drawn into the mine.

The local management, fire fighters, and Fire Boss Richards, are to be commended for their efficient work performed in keeping the fire from spreading to other buildings. Fire Boss Richards is to be further commended for his voluntary service in going into the mine to warn his fellowmen, when they were in danger.

It will probably take the company to repair the damage the balance of this year, and before they will be ready to resume operations.

### LIST OF FATAL ACCIDENTS WHICH OCCURRED IN THE COAL MINES OF THE STATE OF COLORADO DURING THE YEAR 1921

- January 7—MIKE PAVLETICH, Austrian, trackman, experience 7 years, age 28 years, widower, two children, employed by the Colorado Fuel and Iron Company at the Kebler No. 2 mine, Huerfano county, was crushed to death between a loaded car and roof of mine. Deceased had loaded his tools on top of a loaded car and was riding with the rope rider on the front end of this car. The driver, thinking the car would jump the track because the rope was catching on the fish plate bolt on side of track, jumped off to give bell signal to stop. In the meantime, deceased attempted to get off also, but at a point where the roof was low, which threw his body between the moving car and roof crushing him. It is against the rules at this mine for anyone to ride the trips except the rope rider. Had deceased observed this rule the accident would have been avoided.
- January 8—JOHN DA ANDREA, Italian, machine miner, experience 40 years, age 63 years, married, no children, employed by the National Fuel Company at the Monarch No. 2 mine, Boulder county, was killed by a fall of rock. Deceased was in the act of propping his working place when the rock fell from the roof. The place was well timbered and the accident is not charged to anyone, but was due to the inherent danger of the work.
- January 12—MIKE H. KACHANER, Russian, miner, experience 6 years, age 28 years, single, employed by the Colorado Fuel and Iron Company at the Cameron mine, Huerfano county. Deceased and his partner on entering their room tested the roof before starting to work and decided it was safe. After loading two cars deceased again tested the roof, telling his partner it was loose. They took down some of the rock and found it was too hard to get it all down, and decided they would consult the mine foreman. The partner went to the opposite side of the room to set a prop and deceased started to remove the rock taken down when a slab of rock gave way from a slip, falling on deceased and killing him instantly. Accident was due to faulty judgment, had the rock been taken down, the accident would have been avoided.
- January 17—MATT LARSON, Austrian, rope rider, experience 8 years, age 37 years, single, employed by the Sunnyside Coal Mining Company at the Sunnyside mine, Huerfano county, was crushed to death between pillar and car. Deceased was riding on front end of a six car trip. The car attached to the

rope left the track on the short side of curve, on the same side was the passing room and bell wire. Deceased's light going out, he jumped off at the narrow side or opposite the side on which the derailed car was going. The latter passed him, but the other part of the trip remained on the track and he was rolled between it and the pillar for a distance of twenty feet. Deceased losing his light was the principal cause of the accident, as he was an experienced rope rider. The accident is classed as "Unavoidable."

- February 5—JOHN RUSSELL, American (Colored), machine miner, experience 20 years, age 45 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 was working single in an entry at a point which was being widened out for a cross cut. He had loaded a car and then went out and told a co-worker that he had a bad rock in his place. He was told to take it down or timber it. Sometime after, the rock was heard falling, and upon investigation, deceased was found with a broken neck under the rock. The entry was well timbered to a distance of 9½ feet from the face. The latter was, however, 11 feet wide allowing too much open space between timbers and face. The accident could have been avoided had deceased taken the rock down.
- February 10—JOE SACCOCI, Italian, machine miner, experience 12 years, age 32 years, married, one child, employed by the Colorado Fuel and Iron Company at the Kebler No. 1 mine, Huerfano county, was killed by a fall of rock. Deceased was going to remove a fall of rock which had occurred near the face of the back slope. He was advised to begin timbering at the outer edge of the fall to make the place safe as he advanced. Instead, he climbed at once to the top of the fall and was caught by a second fall which resulted in his death. Had deceased been careful, the accident would have been avoided.
- February 12—EDWARD HAMIDY, Italian, hoistman, experience 2 years, age 21 years, single;

WEAVER SHARP, American, miner, experience 24 years, age 36 years, married, one child;

SAM PATRICK, American, miner, experience 22 years, age 35 years, married, three children;

CELESTIN TESTAS, French, shot firer, experience 19 years, age 31 years, married, two children; and

HY. WAGNER, American, shot firer, experience 28 years, age 60 years, single. He and the above men were employed by the Moffat Coal Company at the Oak Hills No. 2 mine, Routt county, were killed by a dust explosion caused by blown-out or overcharged shots. See full report.

- February 25—ROBERT FALAGRADY, Italian, driver, experience 4 years, age 20 years, single, employed by the Colorado Fuel and Iron Company at the Sopris mine, Las Animas county, came to his death by electrocution. Deceased in some way unknown, accidentally came into contact with a live trolley wire, at the man-trip station located on an entry off the main haulage road. According to evidence, the cut-off switch had been drawn and the power cut off from the man-trip station and he must have come in contact with the live wire at the outer edge of the cut-off switch. The latter had been tested for leakages and found in good condition. The man-trip station also was guarded for a distance of 500 feet. The accident is classed as unforeseen and unavoidable.
- March 1—SCOTT MANLEY, American, assistant mine foreman, experience 15 years, age 38 years, married, one child, employed by the Canon-Reliance Coal Company, at the Canon mine, Fremont county, came to his death by electrocution. Deceased was making an examination of the return airway at a certain point, he encountered water standing several inches above the track. To keep out of it he walked on the rail but lost his footing. In an effort to save himself from falling, he accidentally caught hold of a live wire carrying a voltage of 440 A. C. The wire was insulated and showed no broken places. The accident was a misadventure and no one can be charged with its responsibility.
- March 1—MANUEL CRUZ, Mexican, rope rider, experience 14 years, age 40 years, married, no children, employed by the Colorado Fuel and Iron Company at the Kebler No. 1 mine, Huerfano county, was killed by being squeezed between a car and rib. Deceased was riding up a panel having a ten per cent grade, when his cars were derailed on the narrow side and he was thrown between cars and rib, receiving such injuries that he died several hours later. A careful examination disclosed no cause for the derailment of the cars and it seems to have been a case of misadventure while deceased was performing his duties.
- March 8—JAMES RICHARDSON, Scotch, motorman, experience 12 years, age 24 years, married, two children. employed by the Colorado Fuel and Iron Company at the Frederick mine, Las Animas county, came to his death by electrocution. Deceased was cleaning track and was in the act of changing a trolley pole when he came into contact with a live wire. The accident was unforeseen and unavoidable.
- March S—RAFAEL BERNANDEZ, Mexican, machine miner, experience one year, age 24 years, single, employed by the Victor-American Fuel Company at the Delagua mine, Las Animas county, was injured by a fall of rock on February 14th, and died from the effects of the injuries sustained, on the above

date. Deceased had removed coal with a pick from the face of his room and had exposed a slip running parallel with the face intersecting another slip running parallel with a pillar. The place was well timbered and deceased considered it safe and began loading a car when the rock gave way without any warning, forcing out prop and cross bar, and fell on him injuring him to such an extent that he died 22 days later. The accident was due to the inherent danger of the work and no one can be held responsible for it.

- April 4—PETE KLIMO, Pole, pick miner, experience 7 years, age 33 years, single, employed by the Oakdale Coal Company at the Oakdale mine, Huerfano county, was killed by a fall of rock. Deceased was drawing a pillar. He had set a prop and started to mine when suddenly a number of props gave way and rock and coal from an area 100 sq. ft. and 5 ft. thick fell. Deceased made an effort to escape but was caught by the edge of the fall and killed instantly. The accident was unforeseen and no one can be held responsible.
- April 22—WILLIAM SOTIROPOULOS, Greek, pick miner, experience 8 years, age 56 years, married, four children, employed by the Victor-American Fuel Company at the Delagua mine, Las Animas county, was injured on the 3rd of April by a pit car running over him and died later on the above date. Deceased was riding the front end of a loaded car, which had been in his way and which he had intended to move only a short distance, when he reached the curve he tried to set the brake and in attempting this he fell forward on to the track and was run over by the car. Had deceased heeded the rules of the company which forbade employes, other than the drivers, riding cars, the accident in all probability would have been avoided.
- April 27—PAUL MANDERICH, Austrian, pick miner, experience 21 years, age 38 years, married, two ehildren, employed by the Victor-American Fuel Company at the Delagua mine, Las Animas county, was killed by a fall of rock. The accident happened at the face of a room which was well timbered. Deceased was working at the gob side of the room, and his partner in the cross cut. Without giving any warning, a large pot rock fell from the roof between the face and the last row of timbers, a distance of about 5½ feet. The rock was released by a slip which had not been visible to the men working under it. This accident was due to the inherent danger of the work and no one can be charged with its responsibility.
- May 5—J. A. CHAVEZ, Mexican, pick miner, experience 27 years, married, ten children, employed by the Colorado Fuel and Iron Company at the Ideal mine, Huerfano county, was injured Jan. 5th, by a fall of rock and died on the above date. On the day of the accident deceased had gone into his room

to work, his lamp went out and while filling it with carbide, a prism shaped rock fell out of the room neck, striking him and breaking his back, which, with other integnal injuries, resulted in his death four months later.

- May 23—BALDOMANIO LOPEZ, Mexican, pick miner, experience 3 years, single, employed by the Colorado Fuel and Iron Company at the Pictou mine, Huerfano county, was killed by a fall of rock. Deceased and his partner had been working on a stump of coal 8 ft. wide by 8 ft. long between the outby cross cut and the open space where the pillar had been extracted. After they had loaded the coal which they had mined, they began removing their tools from the face preparing to leave the mine. While thus engaged, the remaining stump gave way, causing the coal and drawslate to fall on deceased, killing him instantly. The accident might have been avoided had the mine foreman visited the place earlier in the day and warned the men, or had the men realized the danger of a small stump of coal left under the above mentioned conditions.
- June 3—LUCIANO D'ORAZIE, Italian, pick miner, experience 7 months, age 24 years, married, no children, employed by the Colorado Fuel and Iron Company at the Berwind mine, Las Animas county, was killed by a fall of bony and coal. Deceased and his partner were working in a room off a blind entry, the former had set a prop and was in the act of setting another when bony and coal gave way from an invisible slip, falling on deceased and killing him almost instantly. The place was well timbered and the accident was due to the inherent danger of the work.
- June 6—MIKE OSPENKO, Russian, pick miner, experience 8 years, age 21 years, single, employed by the Moffat Coal Company at the Oak Hills No. 2 mine, Routt county, was killed by a fall of rock. The accident was due to a loose rock left in the roof after a fall had occurred and which either should have been taken down or properly timbered. As there was plenty of timber at hand and the condition of the roof was visible, the accident is charged to deceased's own negligence in not properly protecting himself.
- June 15—JOHN DENNY, Macedonian, pick miner, experience not given, age 37 years, single, employed by the Amalgamated Development Corporation, at the Elk Creek mine. Routt county, came to his death by being pulled by a derailed push car, about a mile and one-half from the mine. Deceased and a gang of men were employed in re-enforcing with rock a bridge that was endangered by high waters. He was riding the car which was loaded with rock and pulled by a locomo tive. The car was going down grade at a low rate of speed when the car jumped the track, pulling him under it for forty feet when the engine stopped. He was found in a serious con-

dition and died four hours later. There was no obstruction on the track and the accident cannot be accounted for. It was unforeseen and unavoidable.

- June 20-JOE CHEPIRIO, Italian, machine miner, experience 6 years, age 32 years, married, no children, employed by the Mutual Coal Company at the Mutual mine, Huerfano county, was killed by a fall of rock. Deceased was working in an entry preparing to load coal. Upon examining his roof, he asked the rope rider to bring him a cross bar, stating that he would not load coal until he had put up the timber. It is not usual at this mine to set cross bars in the entries, but they are kept in a convenient place so that the rope rider can get them in a short time when needed. In this instance the storage place was about 500 feet from the working face. The place was full of loose coal being all shot down, and in order to set the prop, it was necessary to move the coal. When the rope rider returned he found deceased lying dead under a large rock. The accident was unavoidable as deceased must have thought that the rock was too large to take down and therefore, was moving the coal in order to set the prop.
- June 25-ALBERT SALAS, Mexican, trapper, experience 18 months, age 18 years, single, employed by the Colorado Fuel and Iron Company at the Cameron mine, Huerfano county, came to his death by being crushed between a car and a rib. Deceased was trapping on the main slope and stated to his brothers before he died that he did not hear the trip of 21 empty cars coming in time to have the door open. In his haste and excitement he tried to open the door, but hearing the trip close behind him, he left the door and made a dash for the safety hole about 14 feet from the door when it is open. Before he could reach the shelter hole, the trip went through the door carrying it along and derailing 13 cars, scattering them in all directions, one of them caught him and fastened him to the rib of the shelter hole, crushing him so seriously that he died a few minutes after reaching the hospital in Pueblo, four hours after the accident occurred. Deceased was performing his duties and the accident was due to the inherent danger of the work.
- July 7—G. A. HAMPTON, American, pick miner, experience 5 years, employed by the Triangle Coal Company at the Black Hawk mine, La Plata county, came to his death by a fall of rock. Deceased had left his assigned working place and entered the adjoining old workings, where he was caught by a fall of rock which resulted in his death. These old workings had been reported as "dangerous," but the company failed to post up the danger sign as required by law. Also there was no certified mine foreman employed to see that the mine was operated in accordance with the law. Therefore, the responsibility of the accident is charged to the company for failure

to fence off the dangerous place and for failure to engage the services of a certified mine foreman, and also for the impracticable method by which the mine was worked.

- August 3—JOSEPH SWINEBERGER, German, machine miner, experience 30 years, age 49 years, married, three children, employed by the Rocky Mountain Fuel Company at the Vulcan mine, Boulder county, was injured by a fall of rock on July 29th, 1921, and died on the above date. Deceased was injured by a rock which fell between face and inside cross bar 5½ feet from face when he was preparing to set a prop. Testimony showed that deceased was a very competent miner and always willing to obey orders given pertaining to safety. The accident is classed as unavoidable.
- August 9—PETE SONEFF, Bulgarian, pick miner, experience 8 years, age 36 years, married, no children, employed by the Victor-American Fuel Company at the Pinnacle mine, Routt county, was killed by a fall of rock. A large rock was hanging almost across the track in a room and supported by one prop set near the edge, while the roof surrounding it had fallen away, leaving the rock practically unsupported. Deceased was riding the rear end of a loaded car that he was letting down from the face and the vibration of the moving cars dislodged the rock. The responsibility is charged to the officials of the mine who had overlooked the rock, showing that their examinations were not thorough. The rest of the room was well propped and there were plenty of extra props on hand.
- August 9—BUYRIL WINDSOR, American, engineer, experience none, age 19 years, single, employed by the Black Hawk Coal Company at the Primrose mine, Las Animas county, came to his death by electrocution. Deceased was an outside electrical hoisting engineer. According to the testimony given, he entered the mine entrance at his lunch hour, and placed himself close to the electric wires, taking hold of one and received the shock that killed him. Upon examination, it was found that the insulation was bared the distance of one and one-half inch on the side next the timber and was invisible and hard to detect. The accident is classed as unavoidable.
- August 10—TONY KOMAR, Austrian, machine miner, experience 4 years, age 36 years, married, two children, employed by the Victor-American Fuel Company at the Radiant mine, Fremont county, was killed by a fall of rock. Deceased was loading coal on an entry. A slip running diagonally across the entry released a rock which had been examined previous to the accident and was considered safe. The top being full of slips and very wet made the roof conditions very uncertain, therefore, the accident was unforeseen and unavoidable.
- September 1—HERBERT V. FACKLER, American, machine miner, experience two weeks, age 32 years, married, one child,

employed by the Boulder Black Diamond Coal Company at the Black Diamond mine, Boulder county, was killed by a fall of rock. Deceased was working with F. W. Fedder, father-in-law of deceased, who is a practical miner. They were loading coal when a large pot fell from the roof on deceased causing his death a short time afterward. The rock was surrounded on three sides by a smooth slip and broke off three feet from the face. The place was fairly well timbered and F. W. Fedder stated that he had tested the roof just prior to the accident and had considered it safe to work under. The accident was unavoidable and can be charged to no one.

- September 14—K. TODOROFF, Bulgarian, pick miner, experience 10 years, age 36 years, married, two children, employed by the Colorado & Utah Coal Company at the Harris mine, Routt county, was killed by a fall of coal. According to evidence, deceased was responsible for the accident, having been warned that the coal he was mining was loose. The night previous he had fired two shots in the coal which did not bring it down, merely loosening it. Had he taken the precaution to either sprag it or take it down before he started to undercut it, the accident would have been avoided.
- September 24—LAWRENCE McHUGH, Irish, machine miner, experience 35 years, age 63 years, married, nine children, employed by the Big Four Coal and Coke Company at the Centennial mine, Boulder county, was injured while working in his room by a piece of coal sluffing from a rib which fell on him and resulted in his death on the above date. On account of roof conditions at this mine coal sluffs from the sides. When the accident occurred, deceased was making a cap piece standing on the road thirty feet from the face. Although props are set along the sides of the road, no timbers had been put at the place where this piece of coal sluffed. Had this been done the accident would have been avoided.
- October 7—ANGELO FABRIZIO, Italian, weigh boss, experience three years, married, three children, employed by the Colorado Fuel and Iron Company, at the Coal Creek mine, Fremont county, came to his death by electrocution. Deceased was in his office taking a burnt-out globe from a socket, to replace it by a new one. In order to reach it easily he climbed on to an iron pipe which was used as a speaking tube between his office and the engine room; in doing so he touched the brass bracket, and caused a current to form which struck him. The accident was unforeseen and therefore unavoidable.
- October 14—JAMES H. HICKS, Colored, pick miner, experience 26 years, age 37 years, married, three children, employed by the Temple Fuel Company at the Brodhead No. 9 mine. Las Animas county, was killed by a fall of rock while extracting chain pillars. An invisible slip had been released and while the place was well timbered, the rock was so heavy that it gave

way, breaking the timbers and falling on deceased and killing him instantly. The fire boss had examined the place on his second visit on the day shift and did not discover any noticeable sign of danger. However, the place was worked only on night shifts, and extracting chain pillars in most cases is very hazardous, therefore, it is possible that had a mine foreman been employed for the night shift, the accident might have been avoided.

- October 19—CLARENCE FRONK, American, machine runner, experience 23 years, age 43 years, married, two children, employed by the Boulder Valley Coal Company at the Boulder Valley mine, Weld county, was injured on October 11th, by a fall of rock and died on the above date. Deceased was undermining coal with a puncher machine when a large piece of rock fell on him. He stated fifteen minutes after the accident that he was aware that the rock was loose and that he had tried to take it down, but failing, continued to work under it. Had he put a prop under it to make it safe it is possible the accident might have been avoided.
- October 25—ALBERT POHNL, German, machine miner, experience 16 years, age 45 years, single, employed by the Moffat Coal Company at the Oak Hills mine, Routt county, was killed by a fall of rock. A shot in deceased's room the night before had knocked out two props, leaving a space of 25 feet from the face unprotected. It appears deceased had discovered that the rock was loose and was in the act of taking it down, when it fell on him, killing him instantly. The fire boss' book showed that he had reported the dangerous condition of this place. Therefore, the accident cannot be charged to anyone. The deceased was endeavoring to pull the rock down, and in case of failure, there were plenty of props close at hand.
- October 29—ALBERT OAKS, American, laborer, no experience in coal mining, age 49 years, married, one child, employed by the Colorado & Utah Coal Company at the Harris mine, Routt county, was killed by a fall of rock. Deceased was working for a contractor who had charge of concreting the slope. The roof of the slope is fairly good and well timbered, but at the point where the accident occurred, it showed several offsets or edges, and it was from one of these that the rock fell. The accident was unforeseen and unavoidable.
- November 1—JOSEPH DRATTER, Austrian, trackman, experience 25 years, age 41 years, single, employed by the Oakdale Coal Company at the Oakdale mine, Huerfano county, came to his death by a fall of top coal. Deceased was assisting the pillar boss in taking down loose coal at an intersection of two entries. Empty cars were set under this coal for the purpose of catching it as it fell. The pillar boss inquired of deceased if he were in the clear of the falling coal and upon his assur-

ance that he was, he placed a bar over the top of the coal and pulled it down. There was more of a fall than they expected and it caught deceased who was standing about two and onehalf feet away from the car. The responsibility of this accident is charged to both pillar boss and deceased. They did not take the proper safeguards.

- November 14—NICANOR SAID, Mexican, pick miner, experience 6 years, age 25 years, single, employed by Robt. Caddell at the Estella Mae mine, Huerfano county, was killed by a fall of rock. Deceased and his partner were engaged in taking off the outby corner of a cross cut in order to lay a long switch. After the coal had been taken down two temporary props were set under the exposed drawslate so that the coal could be loaded out to make room for permanent cross bars which could then be set with safety. Considering the temporary props safe until the coal was out of the way, they began to load coal, when the drawslate suddenly gave way, throwing out the props and letting the rock fall on deceased, killing him instantly. The accident was unforeseen and therefore unavoidable.
- November 21—JIM COLLETTI, Italian, machine miner, experience 8 years, age 34 years, single, employed by the Routt Pinnacle Coal Company at the Routt Pinnacle mine, Routt county, was injured by a fall of rock on the 14th of November and died from the effects of the injury sustained on the above date. The accident occurred at the face of a room where the coal had been cut the night before. The foreman in visiting the place in the morning noticed that a rock in the roof was loose and instructed deceased to prop it, apparently it was not loose enough to pull down. The roof is of soapstone and very treacherous, but the deceased being a practical miner, should have tested it before trying to set a prop. He neglected to examine the roof and while setting a prop it fell on him. The cause of the accident may be charged to the carelessness of deceased.
- November 29—WM. K. COOLIDGE, American, employed to feed coal crusher, experience 15 months, age 46 years, married and two children, employed by the Crested Butte Authracite M. Company at the Smith-Anthracite mine, Gunnison county, came to his death by being crushed between ear and car door. The accident occurred at the lower terminus of the gravity plane where the car dumped the coal while the door of same was held open by hooks attached to a bar. It is the custom when the car enters the gravity plane to hoist a flag indicating that it was not ready to be pulled up by the drum runner. Evidently there was no flag hoisted and consequently the car was pulled up and deceased was canght between it and the door and crushed to death. The accident was due to some mischance and no one is charged with its responsibility.

- November 29—ORESTE STENECK, Austrian, pick miner, experience 17 years, age 34 years, married, two children, employed by the Colorado Fuel and Iron Company at the Frederick mine, Las Animas county, was killed by heing run over by a motor. Deceased and two other men had taken a motor from the mine entrance to ride to their work. After traveling a short distance, the motor arced and flashed a flame enveloping it and caused deceased, who was driving it, to fall in front of the motor and was run over. Mine officials claim that deceased had no permission to take the motor, but his partner stated that deceased told him he had. At any rate the motor should not have been driven except by a regular motorman.
- December 12—ANTON KROPROSHEK, Austrian, miner, experience 8 years, age 36 years, married, no children, employed by the Utah Fuel Company at the Somerset mine, Gunnison county, was injured by a fall of coal on November 12th, and died on the above date. Deceased was working in a pillar room. He had finished loading a car and went to the face, bumping it with his pick, in doing so he released a slip and coal fell, which struck him and resulted in injuries so serious that he died from the effects of them a month later. The accident was a misadventure, and no one can be blamed for same.
- December 13—G. E. DUNN, Supt., American, mine superintendent, experience 2 years, age 38 years, married, one child;

EUGENE F. BOVIE, Sr., American, laborer, age 55 years, married, two children;

EUGENE F. BOVIE, Jr., American, pick miner, age 25 years, single;

WILLIAM JONES, Welsh, pick miner, age 40 years, married, two children;

LOUIS GOLOB, Austrian, pick miner, age 32 years, single, and

LOUIS DORIGATTI, Austrian, pick miner, age 42 years, married, four children, all employed by the Collieries Company at the Satanic mine, Jefferson county, came to their deaths by being overcome by fumes generated by a mine fire. (See special report.)

December 18—ALFREDI PERNA, Italian, machine miner, experience 14 months, age 21 years, single, employed by the Big Four Coal and Coke Company at the Centennial mine, Boulder county, was injured by a fall of rock on December 14th, and died on the above date. Deceased was shoveling coal cuttings away from the machine puncher when a piece of coal and rock. weighing about 500 pounds, fell from the face, striking him. The accident was due to absence of proper spragging and the mine management is to blame for not enforcing this precaution.

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