

FARMINGTON SHAFT MINE EXPLOSION.

Report of T. E. Thomas, Mine Inspector.

(The Chatham Shaft No. 1 is 253 feet deep.)

CLARKSBURG, W. VA., May 21st, 1901.

HON. JAMES W. PAUL,
Chief Mine Inspector,
Charleston, W. Va.

Dear Sir:—

In pursuance with the regulations, I hereby respectfully submit to you my report of an explosion occurring on May 15th, 1901, at 9:30 a. m. at Chatham Shaft No. 1, of the George's Creek Coal & Iron Company, located at Farmington, and in the First Mining District of West Virginia, resulting in the death of F. M. Beatty, Joseph Nichols, Fravannca Venditto, Farfello Tisippio, Antonio Apolick and J. H. Everson, also Carl R. Hunter, who since died, and injuring Joseph Blaney, Chas. D. Carpenter, Jefferson Fast, Herchel Everson, Thos. Mainbrdge and Antonio Phillipi.

In order to enable myself to explain and you to more readily understand the existing conditions at the time and place, I forward you under separate cover a "blue print" of the workings, and on which I have endeavored to mark course of air current, location of the bodies when found, the direction traveled by force of explosion, the place where fire damp has accumulated, the position taken by "shot firer" when firing shot, together with location of the shot, which, in one sense, was the primary cause of the explosion. Having learned no special designation of the place in question, I will designate the point of accumulation as (1) and so on in regular order, as I have cause to mention them and begin my report by stating that, while on the train going to Worthington to inspect the mines at that place, I was informed of the disaster and made every effort to reach the scene. The shaft was reached at about 1:30 p. m. Found the air course rendered useless by the force of the explosion having found its way up the air shaft and completely demolishing that portion of the fan-building immediately over the shaft. The injured were found to have been taken to their homes. The bodies of the dead had been recovered and taken to an undertaking establishment, with the exception of that of Antonio Phillippi, who up to this time, had not been found, but who after a search of some two hours was discovered among the debris of the shattered air shaft bottom. On approaching the immediate scene of the explosion but little if any "after damp" was encountered, for the reason that some hours had elapsed since the explosion had occurred. Also that the large air compressor was at work on the outside and every working place is followed by a 2-inch pipe, which carries the air power to the coal-cutting machines, and were with very few excep-

tions emitting air into the working faces both at the time of and after the explosion had taken place. Advancing along the intake from airshaft (for the fan worked on plenum system) when (1) was reached much heat was encountered, and it was soon apparent that the rib corner marked (2) and the surrounding bottom, wood road and road bed were in the same condition. It was also noticed that the gas had reaccumulated in (1), bringing it in dangerous proximity to the fire. Fearing that application of water might create a flash, canvases thoroughly soaked with water were spread over the burning coal and bottom and water applied until the fire abated to such an extent as to enable the use of picks and shovels, in digging off and shovelling away the same. When extinguished temporary brattices were built. All being in readiness for the circulation of the current, the workmen were taken out of the mine, when it was found that the reconstruction of the fan-building as instructed was under way and nearing completion. When ready fan was set in motion at a very low rate of speed, and all persons kept away from up-cast shaft; when considered safe the speed was increased and the fan allowed to run an hour, when the party re-entered the mine, when a general exploration was made for the purpose of discovering the cause.

The main intake aircourse was again traversed and (1) reached again, and it was found to be a place driven heading width, 50 feet in length, at right angles, with the course of main intake, at this point it was found to be turned to a course of about 50 degrees off course of main and intended to connect with place marked (3) on blue print; here it was 20 ft. wide and had fallen and had been abandoned.

Fire damp was known to be generated here, and for the purpose of keeping it clear a two-inch pipe 70 ft. in length into and on the fall was laid. From evidence adduced and other information gained it was learned that it was a general understanding that gas existed in this place, as a danger signal 3 ft. from mouth of place gave warning. It was also learned that the valve in the pipe was supposed to be partly open at all times to dilute the mixture in this room until (3) would be driven to connect, when there would be a circulation. Other evidence given pointed to the fact, that when compressed air pressure became low the machine operators closed this and other valves for the purpose of obtaining sufficient power for their machines. There is no doubt but that this reckless practice was applied to the air at (1) on the morning of the disaster. The generation being steady and above the average, the very moment the air was taken off, accumulation began, filling the place at the fall at first, then backing, by the compression of the generation force, little at a time until finally it filled (1) to its utmost capacity, back over the danger mark to the very mouth. Then came a compression of this body from both ends, on one the intake volume of air passing prevented its coming out and on the inside the continuous generation kept crowding it against the air. At this time and under those circumstances, two men, Italian coal loaders, were loading coal at (4). When Chas. Johnson and F. M. Beatty, machine runner and helper, entered this heading one of them carried a naked light and the other a safety. The naked light was left on the bottom close to the rib at the point (*), and they proceeded to

the face of (3), where they were joined afterward by Jeff. Fast. The valve at (3) was opened at this time, and while it is not known that gas was found here at this time, it is reasonable to believe that it was, for the valve had been closed and it was opened presumably for the purpose of clearing the place while the machine was being prepared and placed in position to work. How reasonable then to suppose that when this air was turned on if any accumulation there was to be forced gradually back to (*), particularly so when the full valve was turned on to the machine its exhausting became almost a compressor within itself. Now, when it arrived at (*) it could go no farther, for the reason that it met the main volume of ventilation as compressed from the fan. The result then was a compression in this heading from the point (*) to (3), at (*) from the main current and at (3) from the force of machine. It is very plain to be seen that if for any reason the fan would be suddenly stopped, the pressure at one end of both (1) and (*) would be relieved, and, as a result, the pressure, or I may say the counter pressure, would suddenly force out the air and gas that had been confined. This being the condition at this section, your attention is respectfully called to points marked (5) and (6) respectively, (5) representing the position of "shot frir," who, by the way, used a battery, as all blasts are made with dynamite in this mine, a grade of 20 per cent. being used, (6) is where the blast was made.

Joseph Blaney, an experienced and intelligent miner, is the "shot frir," and gave as his evidence, when sworn, the following testimony, "I work with or by the use of safety lights at any and all times; entered 5, 6, 7 and 8; examined them carefully, found no gas in either and there was positively no naked lights in either; proceeded to (6), charged a blast there, fell back to (5), where battery stood, connected wire, fired shot and explosion followed almost instantaneously." Now, going back again to (1), and noting the course of current from this point to (A) and taking into consideration the course naturally traveled by the concussion produced by this shot, which was heavy as two rib holes were fired at once, it can be readily seen that it was exactly or directly against the current. Now, then, this resulted in a clashing of the two forces, the concussion for the time it lasted was stronger and more sudden, but its force was exhausted by the resistance offered by the current. It's effect on the current, however, caused a sudden check, creating a swaying or vibration, in which interim the pressure was relieved at (1) and (*), but the strength of concussion was spent; the current recovered itself and carried the escaping gas to the naked light. The bodies recovered in 3 showed not the slightest evidence of having been burned, while Blaney was severely burned at (5), 300 ft. away. The question might occur, why, if (1) was the place where explosion happened, Blaney, 300 feet away, was burned where there was no gas; why others who were in much closer proximity were not? In reply to which I will endeavor to explain the conditions that, in my opinion, made possible those results. Looking at the map again, we find that the point A is in a direct course with the mouth of (1). The accumulation in (1) was the explosive power. Let us imagine the force derived from the explosion as the projectile driven

from the mouth of (1). Is it not a reasonable supposition that it would be driven in a straight direction to A? Here it meets the resistance of a solid block of coal 125 feet thick, the very high momentum at which this power traveled and the enormous and overpowering resistance the coal offered could have but one result, that of deflection, which occurred here, the force splitting one portion to the right to (5), carrying with it a sheet of flame and burning Blaney. The direction to the left being toward the two shafts, affording a means of escape and offering comparatively little resistance, the major portion of the force turned in that direction, in fact, it is doubtful whether anything more than the flame that was thrown off by the shock of resistance went to (5), for the reason in the first place, no means of escape was offered it in that direction, and again, there was no evidence of force at that point after the explosion. The battery used, also the reel on which the wire was wound, were found standing in an upright and undisturbed position. Following the deflection to the left, we find it went by (B) to (S) at shaft and went up; at (B) we find it split again, however, and the portion traveling to right or to upcast shaft overtook and seriously burned and otherwise injured Chas. L. Carpenter at (C), (Carpenter was Blaney's helper and was returning to supply house); and thence to door (D), blowing it out; then to lamp house (E) and to upcast shaft. Again returning to (1) we find the point that suffered greatest is point of pillar (2), showing the first split of the main force due to two causes, first, by the enormous expansion that took place when ignition occurred, rendering heading from (1) to (A) impossible to contain it, again from (1) to S was the shortest cut and most direct route to airshaft, where we find another split caused by expansion, all that could, passing up the air shaft the other portion going through and tearing down regulator at (G), turning to the right, where it fatally injured Driver Carl Hunter at (H), and connecting with other main split of force and up main or upcast shaft. The force of the explosion spent, we find the resulting residue (after damp) stronger in (1) and vicinity than in any other part, for, as the force has traveled it carried its smoke and gasses with it, but (1) was like the smoking muzzle of a gun. The destruction of the air course had rendered the fan useless, consequently there was no current. The "after damp" remained stagnant at that point between the men in (3) and the avenue of escapes and assistance. Those men had beyond doubt suffered greatly both from fright and concussion and had struggled for life until overcome to a helpless condition by this poisonous residue and died before help arrived. Having endeavored by observing the condition with what little knowledge my past experience has taught me, the evidence produced at Coroner's inquest, together with what other information obtained that could be considered reliable, I respectfully beg leave to state that to the best of my knowledge that it was an explosion of Fire Damp, caused by an accumulation in (1) by shutting off the compressed air in that place and the use of naked light.

And now having reached a conclusion as regards the disaster, and for the purpose of the prevention of a repetition of such an occurrence, I feel compelled to call your attention to the system of opening here, which

I consider extremely faulty, for the reason that the method employed renders the pillars so unwieldy as to make proper and easy ventilation impossible. While appreciating the fact that the matter in view with the management has been to leave sufficient thickness of pillar to support with abundant safety their shaft bottom and the approach to it, and while admitting it to be a very wise and commendable precaution, I am of the firm opinion that the system as already worked and shown on map of prospective workings can not fail of being dangerous and consequently very unsatisfactory from a standpoint of safe ventilation. This, in my opinion, is sufficient ground for the general condemnation of such a system in a mine generating explosive gas, and again there is no apparent reason why sufficient strength cannot be maintained and at the same time have a compact and complete ventilative system. This working, as I see it, is but a slight improvement upon the single entry system. Instead of having a scattered system with large pillars between each place, requiring the driving of 200 feet ahead of air, why not have compact sections with reasonable pillars between working places, facilitating the ventilation and large pillars kept uniformly between sections, whereby the ventilation can circulate around them in the main air courses and return them to the fan independently. Having as a result safer ventilation, purer and with much less expense. With this system of opening one split of air could be brought through one, two or more sections, for when the current had passed through a place next to large pillar it would come out on the main air course and travel it until it came to the place that served as intake for the next section and so on. In gaseous mines, however, a split should be used for one section and returned. I have made these recommendations, and am going to insist upon their adoption or some such other plans as I consider safe.

After the inquest I, in company with Fire Boss and several workmen, re-entered the mine for the purpose of re-establishing the air course, and after directing them as to commencing the work I left them with the Fire Boss and repaired to the point of ignition for the purpose of finding something that would throw some light or assist me in arriving as to who fired the gas. I was rewarded in my search by finding the naked light lamp right at the point designated *, which sketch will show. I spent four days there in all, and went back again in the following week and except to see the place to-morrow again. I had been there on the 11th inst., and left instructions with Mine Boss as to the care required and to changes that should be made.

Trusting that I have not tired you, and hoping that you will be able to understand what I have tried to explain, I am,

Very respectfully,

T. E. THOMAS.

Mine Inspector First District.

Following is the verdict of the Coroner's inquest, followed with names of persons killed and injured in the above explosion:

State of West Virginia, County of Marion, to-wit:

An inquisition taken at Farmington, in the said County of Marion, on 15th and 16th days of May, 1901, before T. A. Fleming, Coroner of said County, upon the view of the bodies of F. M. Beatty and seven others, whose names are written on the margin hereof, (namely, Joe Nichols, J. H. Everson, Franvanna Venditto, Farfello Tisipio, Antonio Apolick, Carl R. Hunter, seventh name not given) there lying dead. The Jurors, sworn to inquire when, how, and by what means the said F. M. Beatty and the seven others came to their deaths, upon their oaths, do say: We, the jury, find that the said F. M. Beatty and the seven others named, came to their deaths by an explosion, on May 15th, 1901, in the George Creek Coal Mines near Farmington, caused by the firing of a shot by Joseph Blaney or by an open lamp used by one of the men employed in said mines, which ignited the dust or gas.

(Signed by)

T. A. FLEMING.

Coroner.

I. J. DENT,
MILTON TENNANT.

C. L. LOUGH,

O. L. WILSON,

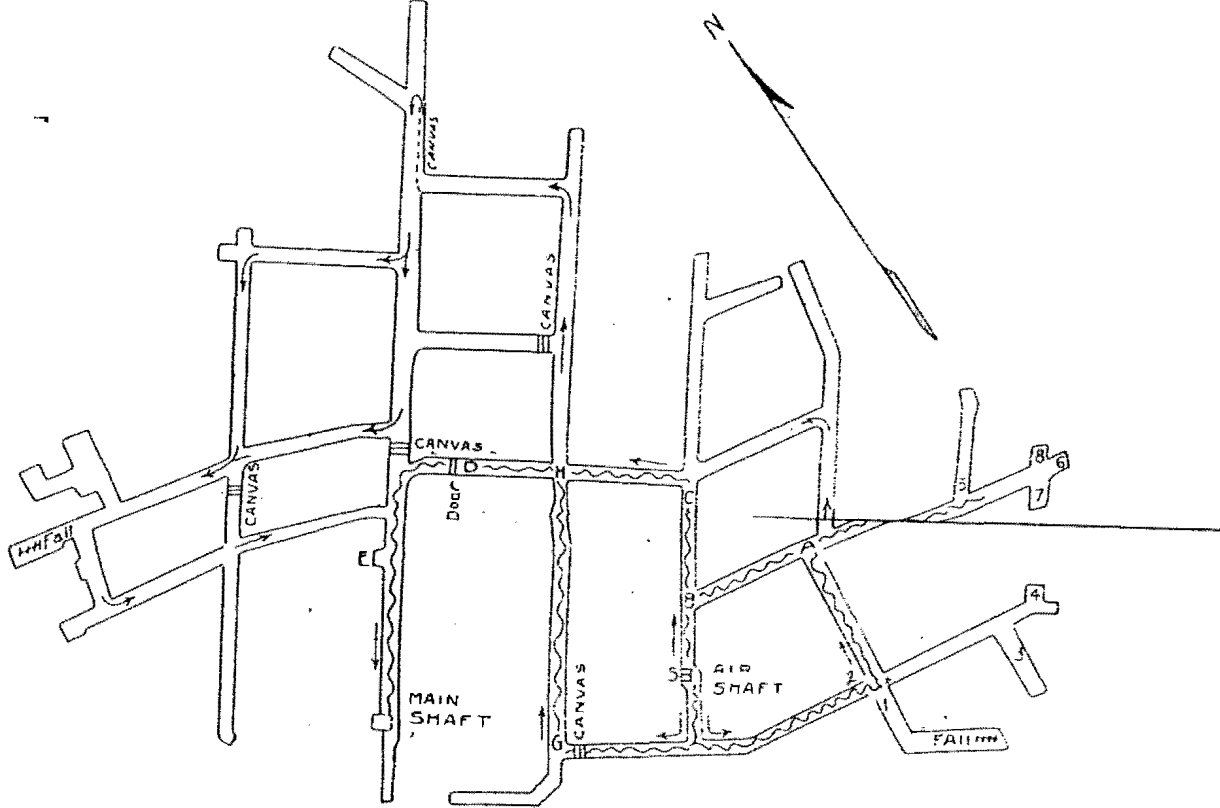
J. M. HAMILTON.

E. TOOTHMAN.


Jurors.

The following is a list of persons killed and injured in the above explosion as given by the Coal Company.

No.	NAME.	Nationality	Age	Occupation	M. or S.	Date of Death.
<i>Fatalities.</i>						
1	Geovanni Venditto.....	Italian.....	.....	Miner.....	S.	May 15th.
2	Brasso Antonio.....	Italian.....	.....	Miner.....	.....	May 15th.
3	John H. Everson.....	American.....	40	Miner.....	M.	May 15th.
4	Carl R. Hunter.....	American.....	28	Driver.....	M.	May 15th.
5	Joseph L. Nichols.....	American.....	40	Miner.....	M.	May 15th.
6	Maynard Beatty.....	American.....	30	Miner.....	M.	May 15th.
7	Dono Alfieri.....	Italian.....	30	Laborer.....	S.	May 15th.
8	Goekoro Pugliese.....	Italian.....	.....	Miner.....	.....	May 15th.
9	Antonio Pugliese.....	Italian.....	.....	Miner.....	.....	May 15th.
10	Jefferson D. Fast.....	American.....	.....	Miner.....	M.	May 28th.
<i>Non-Fatalities.</i>						
1	Joseph Blaney.....	Scotch.....	.....	Miner.....	.....	.....
2	Hirschel Everson.....	American.....	.....	Laborer.....	.....	.....
3	Chas. D. Carpenter.....	American.....	.....	Laborer.....	.....	.....
4	Chas. Johnson.....	Sweede.....	.....	Miner.....	.....	.....
5	Ralph Desipio.....	Italian.....	.....	Miner.....	.....	.....



FARMINGTON SHAFT
MARION COUNTY,
WEST VA.

EXTENT OF EXPLOSION 
 III CANVAS; II DOOR
 → AIR CURRENT.

50 100 200 300 400 Ft.

Coal Fatality

Farmington Marion WV
George's Creek Coal and Iron
Chatham Shaft # 1 46-00000

5/15/1901

Victim Name

Maynard F. Beatty

There was an explosion of gas that killed ten persons and injured five others. The accumulation of fire damp in the mine was ignited by the firing shot by Joseph Blaney or by a opened lamp used by one of the men employed in said mine ignited the dust or gas. Report from State on file.

Coal Fatality

Farmington

Marion

WV

George's Creek Coal and Iron

Chatham Shaft # 1

46-00000

5 /15/1901

Victim Name

Antonio

Pugliese

There was an explosion of gas that killed ten persons and injured five others. The accumulation of fire damp in the mine was ignited by the firing shot by Joseph Blaney or by a opened lamp used by one of the men employed in said mine ignited the dust or gas. Report from State on file.

Coal Fatality

Farmington Marion WV
George's Creek Coal and Iron
Chatham Shaft # 1 46-00000

5 /15/1901

Victim Name

Goekoro Pugliese

There was an explosion of gas that killed ten persons and injured five others. The accumulation of fire damp in the mine was ignited by the firing shot by Joseph Blaney or by a opened lamp used by one of the men employed in said mine ignited the dust or gas. Report from State on file.

Coal Fatality

Farmington Marion WV
George's Creek Coal and Iron
Chatham Shaft # 1 46-00000

5 /15/1901

Victim Name

Dono

Alfieri

There was an explosion of gas that killed ten persons and injured five others. The accumulation of fire damp in the mine was ignited by the firing shot by Joseph Blaney or by a opened lamp used by one of the men employed in said mine ignited the dust or gas. Report from State on file.

Coal Fatality

Farmington Marion WV
George's Creek Coal and Iron
Chatham Shaft # 1 46-00000

5 /15/1901

Victim Name

Carl R. Hunter

There was an explosion of gas that killed ten persons and injured five others. The accumulation of fire damp in the mine was ignited by the firing shot by Joseph Blaney or by a opened lamp used by one of the men employed in said mine ignited the dust or gas. Report from State on file.

Coal Fatality

Farmington Marion WV
George's Creek Coal and Iron
Chatham Shaft # 1 46-00000

5 /15/1901

Victim Name

John H. Everson

There was an explosion of gas that killed ten persons and injured five others. The accumulation of fire damp in the mine was ignited by the firing shot by Joseph Blaney or by a opened lamp used by one of the men employed in said mine ignited the dust or gas. Report from State on file.

Coal Fatality

Farmington Marion WV
George's Creek Coal and Iron
Chatham Shaft # 1 46-00000

5 /15/1901

Victim Name

Brasso Antonio

There was an explosion of gas that killed ten persons and injured five others. The accumulation of fire damp in the mine was ignited by the firing shot by Joseph Blaney or by a opened lamp used by one of the men employed in said mine ignited the dust or gas. Report from State on file.

Coal Fatality

Farmington Marion WV
George's Creek Coal and Iron
Chatham Shaft # 1 46-00000

5 /15/1901

Victim Name

Geovaennie Venditti

There was an explosion of gas that killed ten persons and injured five others. The accumulation of fire damp in the mine was ignited by the firing shot by Joseph Blaney or by a opened lamp used by one of the men employed in said mine ignited the dust or gas. Report from State on file.

Coal Fatality

Farmington Marion WV
George's Creek Coal and Iron
Chatham Shaft # 1 46-00000

5 /15/1901

Victim Name

Jeff D. Fast

There was an explosion of gas that killed ten persons and injured five others. The accumulation of fire damp in the mine was ignited by the firing shot by Joseph Blaney or by a opened lamp used by one of the men employed in said mine ignited the dust or gas. Report from State on file.

Coal Fatality

Farmington Marion WV
George's Creek Coal and Iron
Chatham Shaft # 1 46-00000

5 /15/1901

Victim Name

Joseph L. Nichols

There was an explosion of gas that killed ten persons and injured five others. The accumulation of fire damp in the mine was ignited by the firing shot by Joseph Blaney or by a opened lamp used by one of the men employed in said mine ignited the dust or gas. Report from State on file.