Reports

Sunnyside Mine

THE SUNNYSIDE MINE EXPLOSION

EVANSVILLE, INDIANA.

March 20th, 1909.

Respectfully submitted

R. J. Williams

Mining Engineer.

DEPARTMENT OF THE INTERIOR

UNITED STATES GEOLOGICAL SURVEY

WASHINGTON

Evansville is a city of 75,000 people located at the Southern end of Indiana, bordering the Ohio River in Vanderburgh County. The Sunnyside Coal and Coke Company operates a mine about two miles Southwest of the heart of Evansville and immediately West of Pigeon Creek. This mine has been in operation during the past twenty-five years, and up to the present time has never had a serious accident; in fact Vanderburgh County did not report a fatal accident during 1908.

The Sunnyside mine is a shaft proposition, the coal lying almost flat with an overburden 250 to 300 feet. The hoisting shaft is 265 feet in depth, with a cross section of 6 x 12 feet divided into two hoisting compartments and one pipe-way. This shaft is the upcast. About 100 feet to the west is located the Airshaft, which is the downcast. About 15 feet to one side of this airshaft is constructed a 10 ft. Brazil fan, operated by steam at a speed of 130 R. P. M., and blowing the air under a pressure of an inch and a quarter of water guage.

The "new" part of the mine is not in any way connected with the old workings except at a point 80 feet north of the shaft,

where an entry known as the New Main West with its parallel air-course goes in 800 feet to a double parting 150 feet long. 116 feet beyond this parting is located the frog of the switch leading to the First South Entry. This entry is 360 feet long, with break-throughs every 45 feet and with six rooms at right angles driven to the East on 45 feet centers. The Second South Entry contains six rooms driven to the West, and is about the same length as, and runs parallel with, the First South. The Main West has been driven something like 300 feet beyond the starting point of the Second South, making its total length from the shaft about 1400 feet. Two parallel entries, known as the First and Second Norths, are being driven to the North of the Main West in the same manner as the above described South Entries contains ten rooms. This double entry system has been used throughout the entire mine and the Ventilation is performed by one continuous current passing first through the new works and thence through the old.

As no mapping of the above workings has been executed by the company for at least a year, I submit the following sketch of the new works which is fairly accurate.

About two o'clock in the afternoon of Saturday, March 20th, 1909, an explosion took place in these new works, as a result of which six men lost their lives, although the property damage did not exceed $25.00. Sixty-nine men had entered the mine that morning; the "run" lasted until one o'clock; and before the explosion occurred 37 men had come out of the shaft, leaving 32 men underground when the calamity came. Of this latter number, 21 reached the cage by their own efforts, 5 men were overcome in their rooms by afterdamp but were revived when brought out of the mine, 5 were dead when found, and one died 13 hours later at the hospital.

The names of the dead, and the places in which they had been working on the 20th of March are as follows:-

Joe Schenks, 2nd South Entry, face.

John Pettit, 1st " " , face.

Sam Coomer, " " " , Room 4.

William Schnute, 1st South Entry, Room 5.

Nelson Willingham)" " " " 6.
Frank Willingham)

From testimony obtained, and from observations made during inspections on March 21st, and 23rd, the following facts may be stated.

1. The Sunnyside Mine operates the Number 5 Seam, the average height of the coal being 4 feet 2 inches.

II. To obtain the height necessary for roadways in both headings and rooms, 18 inches of bottom has to be taken up, this bottom being a fire clay which is either dug up with a pick or wedged up.

III. The mine is exceedingly dry.

IV. The mine is very dusty: but except in rooms, the floor dust contains a high percentage of fireclay.

V. All shooting, including rooms, entries and cross-cuts, is off the solid. The miners almost invariably use dry coal dust and the scraper for tamping, and do their firing by means of a fuse.

VI. No shot firers are employed, the miners blasting their own coal, According to rules, shooting is not permitted while the mine is "running", the miners being supposed to wait for an hour after the "run" is over before blasting. Furthermore, the miners are required to shoot in rotation, the miner being on the last of the air shooting first. These two regulations have been in a large measure disobeyed.

VII. The ventilation is conducted through the new works by means of five heavy canvas curtains, as shown in the preceeding blueprint. Three wooden doors are hung ready for use when the North entires shall have pierced the old workings; but the doors were not in use at the time of the explosion, being

in fact wired open.

VIII. During the twenty-five years that this mine has been in operation, no one has ever detected any firedamp.

The investigations to ascertain the point of origin of the explosion are in this particular instance much simplified by certain eliminations. All of the old workings may be excluded from consideration as they were in no way effected by the force of the explosion, no doubt due to the fact that they were on the last of the air. Confining our attention to the new workings, we find that there were no traces of a powder can having exploded. Furthermore, no shots were fired in the First and Second Norths. The men in the main West Entry and Aircourse were tamping their shots at the time of the calamity, and were able to rescue themselves. The men in the rooms off the Second South had all shot and were out of the mine when the explosion occurred. The miner of the Second South Entry had shot and was on his way out of the mine when he was overtaken by the explosion, he being some little distance ahead of the others who were killed. His body was found on the First North Entry fifteen feet from the Main West. His Entry and Crosscut did not show any signs that would locate in his place the starting point of the explosion.

On the First South, the miners of rooms one and two were at their places tamping their shots when they heard what they termed " a windy" on their own heading. They were overcome

by blackdamp some considerable time after the explosion, as they were unable to leave their places because of the blackdamp on the entry. They were revived when brought out of the mine. Their shots remained unfired. The miner of room three was not at work that day. Coomer in room four had a wild shot. Schnute in room five had as pretty a shot as could be desired. The Willinghams in room six and Pettit in the First South Entry had a combination of three shots, all of which were bad.

From the above observations, it would seem logical to expect to be able to locate the point of origin of the forces in one or a combination of the three places, namely, the First South Entry, its room number four or its room number six. An examination of these three places reveals the following:-

In room number four, probably only one shot had been fired. This shot was well located, but was so overcharged with powder that it swept the face clean and hurled a hugh lump of coal estimated to contain a weight of at least 3,000 pounds a distance of twenty feet from its original location. A flash-light photograph of this room and the lump of coal is submitted herewith. However, the charge performed an immense amount of work, and in the absence of further evidence could not be looked upon as producing the explosion.

The conditions at the head of the first South Entry, which is 50 feet in advance both of room six and of the last entry

crosscut, are shown in the accompanying photograph. Pettit, the miner who drove this heading, was known as a heavy shooter; he was repeatedly centured for missplacing his shots, and was once discharged for his recklessness in shooting. In this particular instance, Pettit had sheared a vertical groove in the face of the coal a little to the right of the center of the entry, had drilled a hole four feet seven inches along the right rib, this hole having a heel of eight inches and a point of only twenty inches. From the condition of his place, (the shot having blown the point of the hole pulverized the coal and thrown the coal 39 feet from the face,) we are free to assume that Pettit failed to consider the insignificant amount of work that a charge so located could perform on the coal, and was guilty of preparing and firing a recklessly overcharged shot.

Room six shows the result of a great deal of violence, as may be observed from the attached photograph. At least thirty props were blown out, sweeping clean an area of 420 square feet that had previously been well timbered ? posted. Lumps of coal were hurled forty feet from the face of the room and piled up against a loaded car standing in the room neck. A prop under the front wheels prevented the car from being blown out of the room. Two shots were fired in this place, one on the left rib and one on the right rib, both shots being parallel with the face and pointing into each other, as shown in the accompanying sketch. The shot on the left

was too highly charged, throwing its burden far from the face as mentioned above. The right side shot had to perform its work on a shattered breast of coal that had been left by two points, twelve and eighteen inches respectively, of previous blasts. Owing to this shattered condition, owing to the use of coal dust for tamping, and owing to the method of ramming in this coal dust with a light scraper, the blast blew its tamping and brought only twelve inches of coal from the heel of the shot. As measurements of the markings of these two holes seemed to indicate that this right hand hole was longer than the left hand hole, I am inclined to believe that the left shot went off first, hurling the coal down the room, throwing clouds of dust into the air, and charging the atmosphere with a large amount of powder smoke; and that into this mixture the right hand shot poured out its deadly content of coal dust tamping, gases distilled from this coal dust, powder-smoke and flame. As the sixth room was in only fifty feet from the entry and contained no crosscut, all these forces were confined as it were in a bottle.

This then appears to have been the origin of the explosion, the conditions in the First South Entry merely adding as it were fuel to this calamity.

In tracing this explosion throughout the mine, it was found that the posts and crossbars of the First and Second South Entries were blotched with coke splashes, which appeared like individual

globules about one thirty second of an inch in diameter. These splashes were far from being heavy cokings; and were more pronounced on the outside than on the inside exposures of the posts and crossbars. The flame evidently travelled throughout the extent of the South Entries, about 50 feet up the main West and 20 feet up the First and Second Norths.

Only two evidences of great force were observed. A post holding a crossbar across the entry at the entrance to room six was blown out, as shown in the following photograph. Also at the intersection of the First South and the Main West Entries considerable violence was shown because of the fact that the wind caused by the explosion wrenched loose the wire that held the door at this point open, closed the door and thus increased the pressure until it was sufficient to break the door and carry it 111 feet toward the East. The accompanying photograph, looking West on the Main West, shows the curtain through which this door was blown. The five powder cans represent the places where the five bodies were found. One of these bodies was badly mangled, head gashed and back cut, the man's oil flask and dinner bucket nearly flattened and one of his pick handles broken in two. He was probably struck by the above mentioned door. One of the other bodies was burned about the head; while the other three deaths were presumably due to blackdamp suffocation. This remarkable absence of property damage was probably due

first;- to the fact that, the ventilation being conducted by the use of curtains, the forces found an unresisted opportunity to expand in all directions; and,-second; to the extremely high percentage of fireclay in the dust of the entires, which prevented the explosion from picking up additional fuel as it travelled along.

-o-o-o-o-o-o-o-o-o-o-o-o-o-o-o-o-o-o-o-o-o-o-o-

News of this explosion was wired to Urbana, Illinois, by Indiana's Chief Mine Inspector, James Epperson. The message was received at 7:20 o'clock Saturday evening, March 20th, 1909; it contained no particulars, but asked us to come, bringing the Draeger Helmets. Considering the distance covered and the difficulty of packing the rescue apparatus in ordinary boxes, we feel that we made excellent time in reaching the scene of the accident.

Fortunately for those entombed, the property damage was so slight that we were too late to be of service in the work of rescue. However, a great deal of interest was shown in the Draeger Outfit, and in order to give a demonstration of its efficiency, about a quart of

black powder was well moistened, placed in a bucket and taken into a large wash shanty belonging to the company. A few live coals were thrown into the bucket, causing the powder to burn and fill the room with dense and poisonous powder smoke. Albert Sams, Assistant State Mine Inspector, and George Fares, J. D. Jarvis and Mathew Duncan, miners, entered this deadly atmosphere wearing Dreager Helmets and carrying Hubbel lamps; while 250 town people waited on the outside witnessing with amazement the ability of the four men to remain 20 minutes in the smoke.

Copy for Mr. Paul)

40th & Butler Sts., Pittsburgh, Pa.

March 22, 1909.

Mr. H. M. Wilson,

Washington, D.C.

My dear Mr. Wilson:

I noticed in the Pittsburgh papers yesterday morning that an explosion had occurred in the Sunnyside Mine near Evansville, Ind. The article stated that the rescuers had been able to get about the workings within an hour. Five men were lost.

I at once wired to Williams mentioning the newspaper report and advising him to proceed there and make a careful examination. I also advised not taking the rescue apparatus as it was evidently not needed, and I wished to save the expense which is very considerable as we have not yet gotten boxes for same. For example, they charged us $52.00 for getting the apparatus from Urbana to West Frankfort and return, a distance of less than 150 miles. I added to take the resuscitating box for exhibit.

Very truly yours,

Geo. S. K.

Mining Engineer.

GSR/ACS

40th & Butler Sts., Pittsburgh, Pa.

April 21, 1909.

Mr. R. Y. Williams, M. E.,

Urbana, Ill.

My dear Mr. Willims:

I received your report on the Sundyside explosion and wish to congratulate you on the excellent presentation of the subject. Bothethe report, the photographs and the maps are very satisfactory.

As you undoubtedly desire to have me comment on any special points, I will mention a few that I have noted. The first is rather in the form of a query. On page 4, you state "while the mine is running, the miners being supposed to wait for an hour after the run is over before blasting." Is this not a mistake? All the mines that I am familiar with in that part of the country usually begin firing 10 to 15 minutes before quitting time, but the hoisting of the coal does not cease until the agreed 8 hours are up. Then the men are hoisted out. Unless this is a typographic error, it would appear that the rule at Sunnyside must be quite different. A second point of query. You spoke of coke splotches. To me this word would convey the idea of molten coke in considerable quantities being thrown against the surface, whereas you go on to state that the coke appeared to be in individual

globules, I think we must get together and try to invent some new terms, but your term is evidently a proper description, the only question is, how much there was of this. Where individual globules are found, I think it seems to be true that they have coked while in transit in distinction to where flames have played on coal dust, coking the same.

Your statement that the majority of the coke globules were found on the outside rather than on the inner exposures of the posts and cross bars is consistent with what has generally been observed at explosions. The back lash of the explosion appears to cause this. Throughout, you make no comment on the effect of violence on the condition of the brattices between the first and second south entries. Were these of wood or brick or concrete or merely piled full with dirt? I judge that they could not have been disturbed or you would have made some comment about them.

Have you sent a copy of this report direct to Dr. Holmes or Mr. Wilson? In all cases, a duplicate report must be made for the Washington files.

Very truly yours,

Mining Engineer.

DEPARTMENT OF THE INTERIOR

UNITED STATES BUREAU OF MINES

Pittsburgh, Pa., Sept. 7, 1910.

My dear Mr. Rice:-

Mr. William's report on the Sunnyside Explosion, together with a list of suggested changes and corrections thought desirable before the publication of the report, is hereby submitted to you.

In making this list I have tried to follow your suggestions in the following particulars:

Tha the reports be submitted in the third person.

That all references to the "writer" or "author" be made, not as such, but as "Mr. Williams, etc".

That a statement of the occurrence and general effects of the explosion be made at the beginning of the report.

That the report should include the report of the State Inspector and whatever pertinent facts were brought out in the coroner's inquest.

That no direct criticism or such as might cause friction between the Bureau and the Company in question, be made, since the Bureau engineers are indebted to the courtesy of the Company for the privilege of making the investigation.

That local colloquialisms or words that might not be generally understood be avoided.

That care be taken that words are used in their proper meaning so as to make the statements of the report absolutely clear and devoid of any possible misconstruction.

Sincerely yours,

L. M. Jours,

Assistant Engineer.

SUNNYSIDE MINE EXPLOSION

Insert at beginning — About two o'clock in the afternoon of Saturday, Mar. 20, 1909, an explosion occurred in the new workings of the Sunnyside Mine, Evansville, Indiana, as a result of which six men lost their lives. The Explosion was local in character, the flame being confined almost wholly to one pair of entries which were 360 feet in length. The property damage was small.

Heading — LOCATION OF MINE

Page 1, L 4 — omit "a" before mine, and insert "the Sunnyside".

" 1, L 6 — omit "up to the present time" and insert "until the occurrence of the explosion of Mar. 20th".

" L 7 — "had never had" instead of "has never had".

L 8 — Does the concluding clause really add force to the preceding statement? Suggest omitting "in fact" or the last clause.

L 9 — The Sunnyside Mine is operated through shafts.

L 10 — insert "of" before 250.

L 12 — Instead of "with a cross etc" insert "and it's cross section with dimensions of 6 x 12 feet is divided".

L 13 — omit "about" before 100. Write one hundred instead of 100. The written number is considered less definite than the numeral. Order is poor. I think the natural order better, i.e., "The air shaft which is the downcast is situated one hundred feet west".

L 15 — A 10 foot Brazil fan (operated etc—_____gauge) is installed fifteen feet from one sideof the air shaft.

L 18 Heading — ARRANGEMENT OF THE MINE

last line — Insert "(see accompanying map)" after shaft.

page 2 L 2 — "extends" for "goes in"

L 3 — "situated" instead of "located"

page 2 L 5 Substitute "and with six rooms on 45 foot centers driven eastward at right angles to the entry".

L 6 "has" for "contains". Can an entry contain a room?

L 7 and is about the same length as the parallel entry, the first south.

L 9 "approximately" for "something like".

L 13 insert "Ten rooms have been turned off these entries".

L 17 omit last paragraph.

Page 3 Heading OCCURRENCE OF THE EXPLOSION

omit first sentence as it has already been used.

Substitute for 2nd sentence "On the day of the explosion 69 men had entered the mine but as the "run" ended at one o'clock 37 of these men had come out and only 32 were still underground when the explosion happened at two o'clock.

Page 3 Heading ADMITTED CONDITIONS

Observations and testimony are bunched under this heading. They should be given separately, I think. The report of the State Mine Inspector could probably be given in connection with the testimony from the inquest, since both of these items come under general classification of facts or observations from sources other than the Bureau.

Page 3 next to last line No. 1. Does the average height of coal refer to that of the mine or the seam?

Can a mine operate a seam?

Substitute "The Sunnyside Company works in this mine the No. 5 seam with an average height of coal of 4 feet 2 inches".

Page 4 L 2 "must" for "has to"

L 8 insert "that done in" after "including"

L 10 " "for tamping" after "dust"

" " "a" after "scraper for"

" " "rod" after "tamping"

L 14 Prefer this arrangement - "It being supposed that the miners wait".

L 17 Too many participles - Substitute "who is" for "being".

L 20 Are 5 curtains enough? See map.

Page 5 L 3 Heading INVESTIGATION

L 7 "affected" for "effected"

L 9 Add after 'air' "and so were more or less damp".

L 9 omit "our" and "we". Change this sentence to the following:
"With regard to the new workings, no traces of an exploded powder can were found".

I think that this sentence is out of place. As I understand it, this paragraph should include the eliminations which it might be possible to make as one proceeded to make his investigation in logical order. The eliminations then should be in the order in which they might occur to a person making the investigation.
If this be true, the elimination of a possible powder can explosion is out of place here, since the statement made in the text would not be known at this point in the investigation.

Page 6 L 1 This sentence not clear. Does it mean that the men were not overcome until some considerable time after the explosion? If so the sentence should be re-arranged to read something like this:
"The men were not overcome by black damp until a considerable time after the explosion, having been unable to leave their places etc"

Page 6 L 5 "Wild" Should not a more widely used word be substituted for this, or the statement be given in a different way?

L 6 I suggest substituting "well-judged" for "as pretty a --- as could be desired".

L 7 Why "combination"? Would not the sentence be better if "a combination of" were omitted?

L 10 "to expect to be able to locate" - too many infinitives together. Change the sentence thus: "From the above observations, the location of the point of ---- number six, would be a logical expectation".

L 15 "placed" for "located".

L 21 Substitute "charged with having produced" instead of "looked upon as producing".

Page 7 L 2 Substitute "man who used heavy charges" for "heavy shooter".

L 6 Insert "and" before "had drilled".

L 7 "Which had" for "this hole having".

L 10 Omit the first "the coal".

The sentence in parenthesis should be out as it is an important statement and shouldn't be parenthetical.

Insert after previous sentence (-- inches.) the following: "The shot blew the point of the hole, pulverized the coal and threw it 39 feet from the face".

L 11 "it was assumed" for "we are free to assume".

L 12 "placed" for "located".

L 18 "timbered" for "posted"

Page 8 L 1 "heavily" for "Highly".

L 1 "and consequently threw" instead of "throwing".

L 2 "shot on the right side" for "the right side shot".

Page 8 L 5&6 Omit the 2nd and 3rd preps. "owing to" and make the separate objects all objects of the first prep.

L 7 Substitute "the" for "its", since the blast cannot be said to have tamping.

L 8 omit "as" Insert "the" (a)

L 10 Insert after "hole" "so that" (b)

L 10 omit "I am inclined to believe that" (c)

L 11 insert "probably" after "shot" (d)

L 13 omit "and that" (e)

Corrections a to e allow the omission of "I etc."

L 16 "had been driven" for "was in".

L 20 I suppose the expression containing "fuel" is figurative; as it might be taken literally, I suggest the phrase be changed or omitted.

Page 9 L 11 Substitute "by" for "because of".

L 13 Insert "and" before "closed".

L 13 Omit "and" after "door". Substitute "increasing" for "increased".

L 18 Insert "the" before "head".

last line Substitute "the" for "this".

Page 10 L 1 Insert "as" before "the".

L 1 " "was" before "being".

L 3 Substitute "high content" for "extremely high percentage".

L 5 " "the propagation of the flame" for "the explosion etc".

Is mention of the Draeger apparatus exhibition of interest in a published report of an investigation of this character?

There is no statement concerning the experience of the Rescue party.

Possibly a reference to the helmets could be brought into an account of the operation of the rescue party if there was much delay in their advancing into the mine after the explosion.

** THE SUNNYSIDE EXPLOSION **

The Sunnyside Mine, near Evansville, Ind., is operated by a shaft 265 feet deep. The air shaft is about 100 feet from the mine shaft. The coal seam, No. 5, is almost horizontal, is 4 ft. 2 inches thick, and has an overburden varying from 250 to 300 feet in thickness. This part of the mine is new and is in no way connected with the old workings, except at 80 ft. north of the shaft, from where an 800 ft. entry and air-course branch off to the old workings. Ventilation was maintained by a 10 ft. Brazil fan. The accompanying sketch shows a plan of the workings and the system employed.

To obtain the necessary height for roadways in both headings and rooms, 18 inches of bottom had to be taken up, this bottom being a fire clay which is either dug up with a pick or wedged up.

The mine is exceedingly dry and dusty, and the floor dust, except in rooms, contains a high percentage of fire-clay.

All shooting, including rooms, entries and cross-cuts, is off the solid. The miners almost invariably use dry coal dust and the scraper for tamping, and do their firing by means of a fuse.

No shot firers are employed, the miners blasting

their own coal. According to rules, shooting is not permitted while the mine is "running", the miners being supposed to wait for one hour after the "run" is over before blasting. Furthermore, the miners are required to shoot in rotation, the miner being on the last of the air shooting first. These two regulations were not always obeyed.

About two o'clock Saturday afternoon, March 20, 1909, an explosion took place in the new works, as a result of which six men lost their lives, although the property damage did not exceed $25. Sixty-nine men had entered the mine that morning; the "run" lasted until one o'clock, and before the explosion occurred 37 men had come out of the shaft, leaving 32 men underground when the calamity came.

Of this latter number, 21 reached the cage by their own efforts, 5 men were overcome in their rooms by after-damp, but were revived when brought out of the mine, 5 were dead when found, and one died 13 hours later at the hospital.

The men in the Main West entry and air-course were tamping their shots at the time of the explosion, and were able to rescue themselves. The miner of the Second South entry had fired his shot and was coming out of the mine when he was overtaken by the explosion, he being a short distance ahead of the others who were killed. His body was found on the First North entry 15 feet from the Main West.

On the First South entry the miners in rooms Nos. 1 and 2 were at their places tamping their shots when they heard what they termed "a windy" on their own heading. They were unable to leave their places because of the black-damp on the entry, and were overcome by black-damp some time after the explosion. They were revived when brought out of the mine.

Room six showed the result of a great deal of violence, as may be observed from the accompanying photograph. At least 30 props were blown out, sweeping clean an area of 420 square feet that had previously been well timbered. Lumps of coal were hurled 40 feet from the face of the room and piled up against a loaded car standing in the room neck. A prop under the front wheels prevented the car from being blown out of the room. Two shots were fired in this place, one on the left rib and one on the right rib, both shots being parallel with the face and pointing into each other, as shown in the accompanying sketch. The shot on the left was highly charged, throwing its burden far from the face as mentioned above. The right side shot had to perform its work on a shattered breast of coal that had been left by two blasts, 12 and 18 inches respectively, from previous blasts. On account of this shattered condition, the use of coal dust for tamping, and the method of ramming the coal dust with a light scraper,

the blast blew its tamping and broke only 12 inches of coal from the heel of the shot. As measurements of the markings of these holes seemed to indicate that this right hand hole was longer than the left hand hole, it is believed that the left shot went off first, hurling the coal down the room, throwing clouds of dust into the air, and charging the atmosphere with a large amount of powder smoke; and that into this mixture the right hand shot poured out its deadly content of coal-dust tamping, gases distilled from this coal-dust, powder-smoke and flame. As the sixth room was in only 50 feet from the entry and contained no crosscut, all these forces were confined, as it were, in a bottle.

In tracing this explosion throughout the mine, it was found that the posts and crossbars of the First and Seconf South entries were blotched with coke splashes, which appeared like individual globules about one thirty-second of an inch in diameter. These splashes were far from being heavy cokings, and were more pronounced on the outside than on the inside exposures of the posts and crossbars. The flame evidently traveled throughout the extent of the South entries, about 50 feet up the Main West entry, and 20 feet up the First and Second North entries.

Only two evidences of great force were observed. A post holding a cross-bar at the entrance to room six was

blown out, as shown in the accompanying photograph. There was considerable violence at the intersection of the First South and the Main West entries, as shown by the fact that the force of the explosion wrenched loose the wire that held the door open at this point. The door closed and thus increased the pressure until it was sufficient to break the door and carry it 111 feet toward the east. The accompanying photograph, looking west on the Main West entry, shows the curtain through which this door was blown. The five powder cans represent the places where the five bodies were found. One of these bodies was badly mangled, head gashed and back cut, the man's oil flask and dinner bucket nearly flattened and one of his pick handles broken in two. He was probably struck by the above mentioned door. One of the other bodies was burned about the head, while the other three deaths were presumably due to black-damp suffocation. This remarkable absence of property damage was probably due first:- to the fact that, the ventilation being conducted by the use of curtains, the forces found an unrestricted opportunity to expand in all directions; and, - second; to the extremely high percentage of fire-clay in the dust of the entries, which prevented the explosion from picking up additional fuel as it travelled along.

LESSONS:

(1) Danger due to use of coal-dust tamping.

(2) Danger due to the use of scrapers for tamping rods.

(3) Property damage lessened by use of canvas ventilating curtains.

(4) Explosion lessened in violence by mixture of clay with floor dust.

(5) Danger due to over-charges, or excessively large shots.

Newspaper Accounts

Pittsburgh Dispatch
March 21, 1909

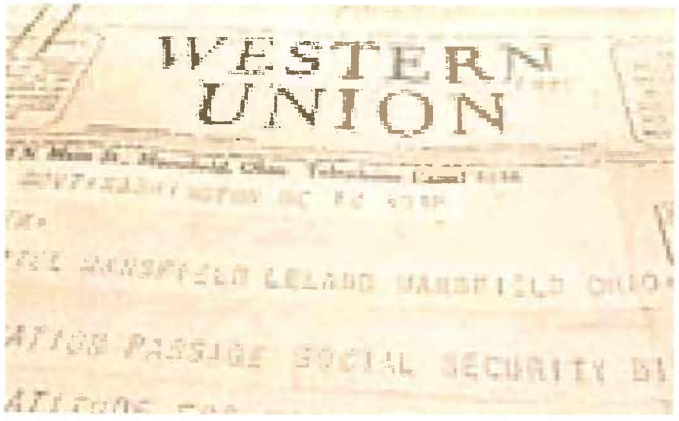
Sulphur Fumes Kill Five Men

Windy Shot in Mine Starts a Whirlwind of Noxious Gas. A Score Injured.

[*By Associated Press to The Dispatch.*]

EVANSVILLE, Ind., March 20.—Five men were killed and a score injured in an explosion at the Sunnyside coal mines, near this city, this afternoon. The explosion was caused by a windy shot due to an overcharge of powder said to have been placed by John Petit. Petit is burned over his entire body and will die. The dead were all killed by sulphuric fumes which followed the shot. The mine was swept as if by a whirlwind.

Twenty-nine men were in the west shaft when the explosion occurred. Within an hour after the explosion the mine was cleared, although the first rescuers were almost suffocated. The dead, injured and suffering miners were found thrown over all portions of the west shaft. Many recovered sufficiently to crawl to the shaft unaided. The men in the north shaft, who were not seriously affected by the explosion, were the most active in the work of rescue.



Telegraph

Form 168

THE WESTERN UNION TELEGRAPH COMPANY.

INCORPORATED

24,000 OFFICES IN AMERICA. CABLE SERVICE TO ALL THE WORLD.

This Company **TRANSMITS** and **DELIVERS** messages only o >o ıditions limiting its liability, which have been assented to by the sender of the following message. Errors can be guarded against only by repeating a message back t· the sending station for comparison, and the Company will not hold itself liable for errors or delays in transmission or delivery of **Unrepeated Messages,** beyond the amount of tolls paid thereon, nor in any case where the claim is not presented in writing within sixty days after the message is filed with the Company for transmission.

This is an **UNREPEATED MESSAGE,** and is delivered by request of the sender, under the conditions named above.

ROBERT C. CLOWRY, President and General Manager.

RECEIVED at 3152 PENN

#IG Ri Xn II Paid.8.Am.

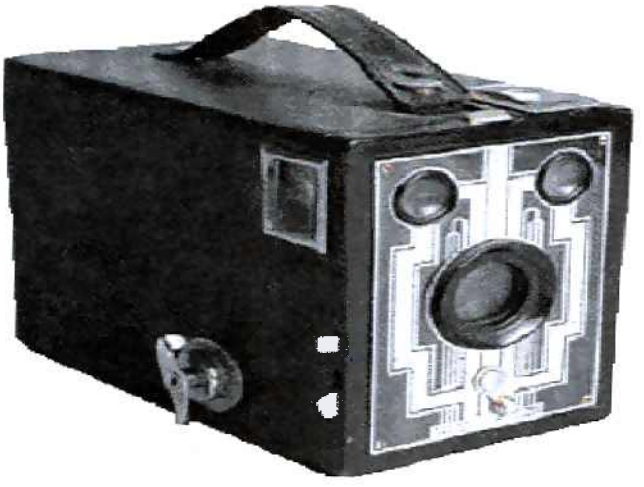
Champaign Ills.Mar.20th.09.

J.W.Paul,

U.S.Geol.Survey,Pittsburg Pa.

Am leaving for Sunnyside mine explosion Evansville Ind.reported five killed.

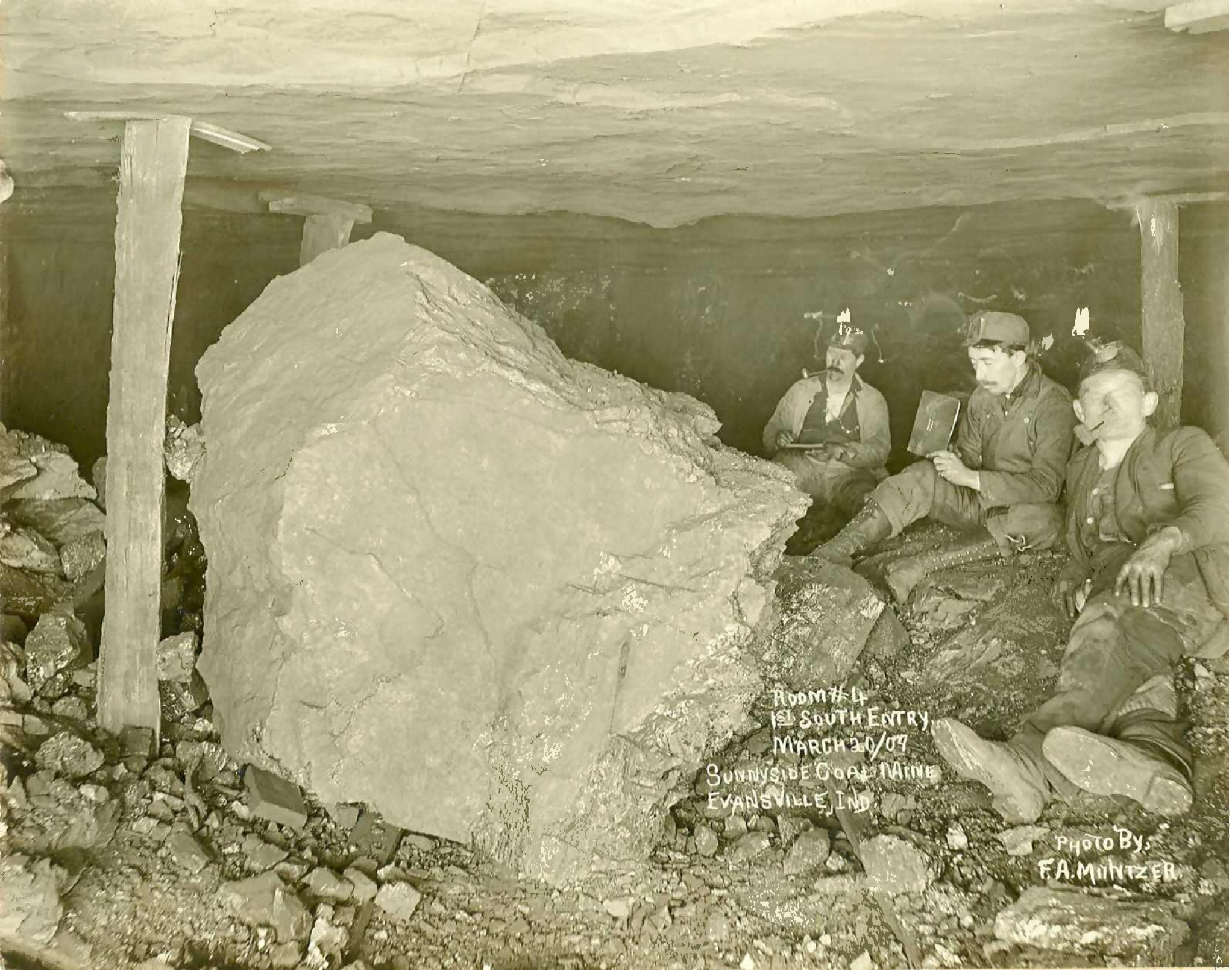
R.Y.Williams.



Photographs


INTERSECTION OF
1ST. SOUTH AND
1ST. WEST ENTRY.
SUNNYSIDE COAL MINE
EVANSVILLE, IND.
PHOTO BY,
F.A. MUNTZER.
MARCH 20/09.

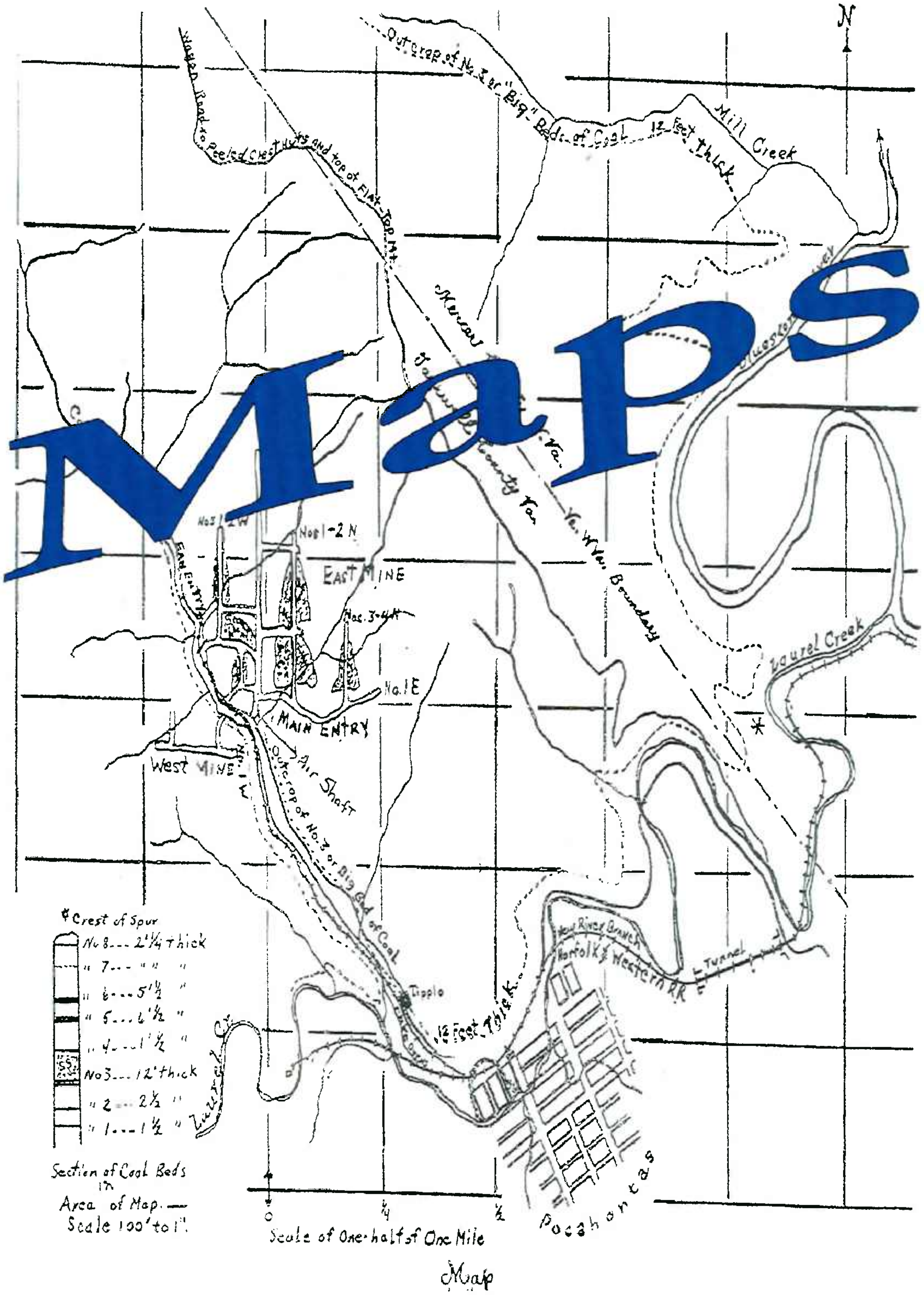

At Mouth Of
Room #6
March 20/09
Sunnyside Coal Mine
Evansville, Ind.
Photo By,
F.A. Miintzer.


ROOM #4
1st SOUTH ENTRY.
MARCH 30/09
SUNNYSIDE COAL MINE
EVANSVILLE, IND.
PHOTO BY.
F.A. MUNTZER.

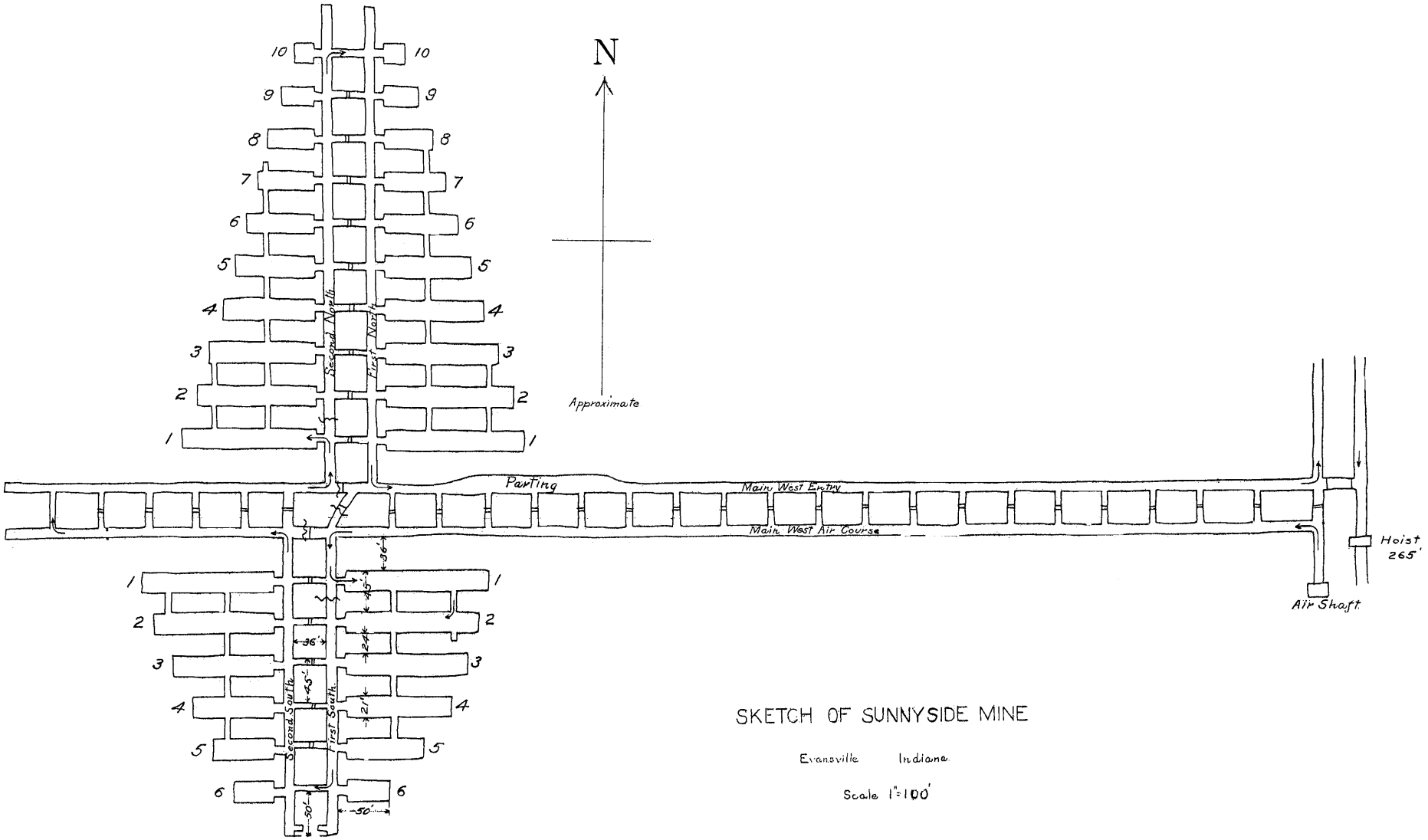

HEAD OF 1ST. SOUTH ENTRY.
SUNNYSIDE COAL MINE
EVANSVILLE, IND.
PHOTO BY,
F.A. MINTZER
MARCH 20/09.


Room #6
1ST. South Entry
March 30/09
Sunnyside Coal Mine
Evansville, Ind.
Photo By,
F.A. Miintzer.

Maps


N
Wagon Road to Peeled Chestnuts and top of Flat Top Mt.
Outcrop of No. 3 or "Big" Bed of Coal 12 Feet thick
Mill Creek
Mercer
Tazewell County Va.
Va. W. Va. Boundary
Laurel Creek
Fan Entry
No3 1-2 W
No1 1-2 N
East Mine
Nos. 3-4 N
No. 1 E
Main Entry
West Mine
Air Shaft
Outcrop of No. 3 or Big Bed of Coal
Tipple
12 Feet Thick
New River Branch
Norfolk & Western RR
Tunnel
Pocahontas
Crest of Spur
No 8 --- 2 1/4 thick
" 7 --- " "
" 6 --- 5 1/2 "
" 5 --- 6 1/2 "
" 4 --- 1 1/2 "
No3 --- 12' thick
" 2 --- 2 1/2 "
" 1 --- 1 1/2 "
Section of Coal Beds in Area of Map. Scale 100' to 1".
0
1/4
1/2
Scale of One-half of One Mile

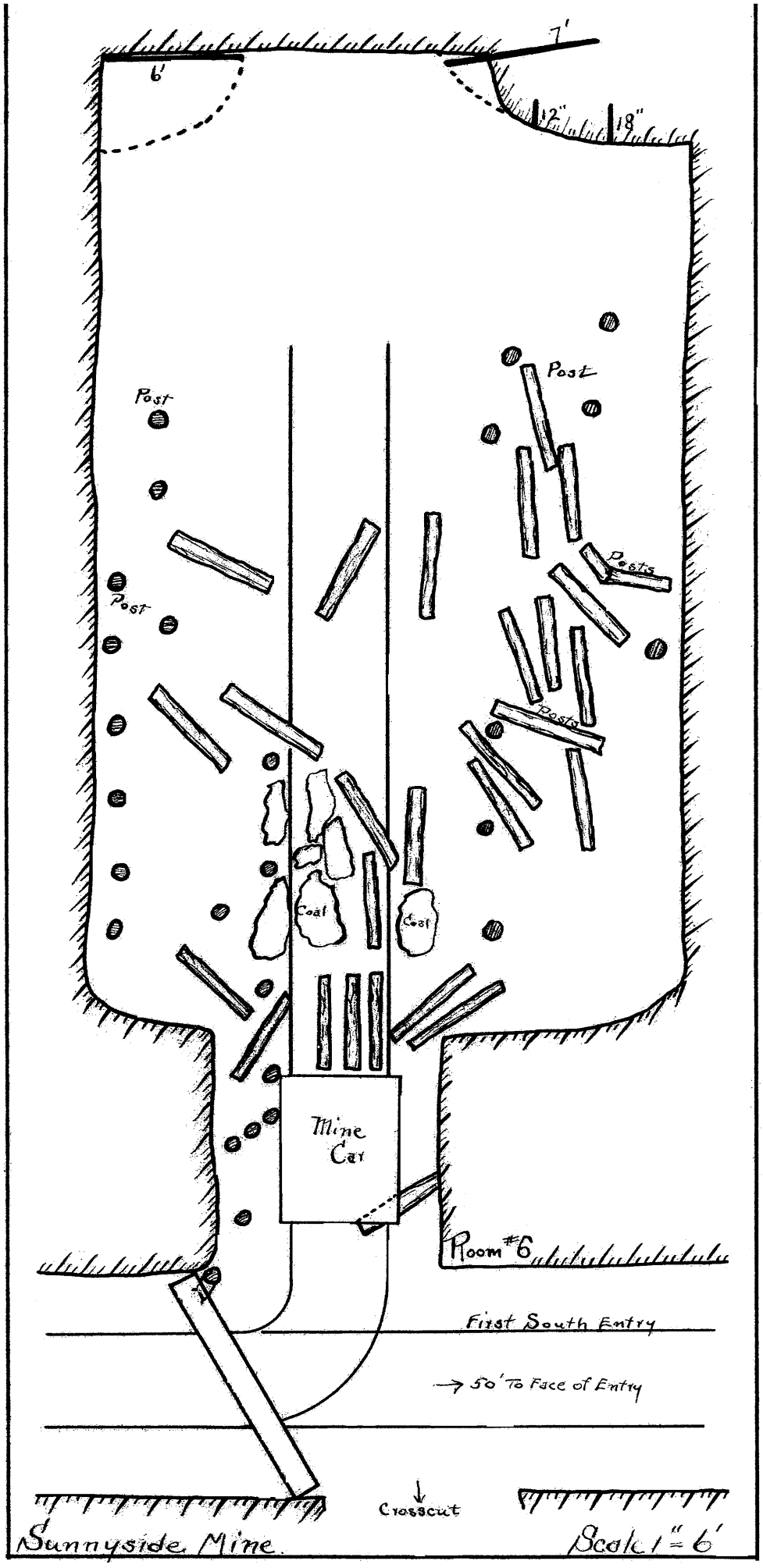
Map



SKETCH OF SUNNYSIDE MINE

Evansville Indiana

Scale 1"=100'


7'
6'
12"
18"
Post
Post
Post
Posts
Posts
Coal
Coal
Mine Car
Room #6
First South Entry
→ 50' To Face of Entry
Crosscut
Sunnyside Mine
Scale 1" = 6'