

### LICK BRANCH MINE SECOND EXPLOSION.

The second explosion occurred at the Lick Branch Mine at 8:40 A. M. January 12th, 1909, killing sixty-five miners and injuring one.

This mine is located on the main line of the Norfolk and Western Railroad, about eighteen miles west of Bluefield, W. Va. The elevation of the drift mouth on the Lick Branch side is 2160, and the elevation on the drift on the Tug River side is 2115. The elevation of the fan, about 2500 feet to the North west of the Lick Branch opening, is 2084. The elevation of the Norfolk and Western Railroad at Switchback, is 2054. Those levels refer to the mean tide elevation. From these elevations we find that the coal is about one hundred feet above the level of the creek at the Lick Branch opening.

The Lick Branch was first opened up by the Norfolk Coal & Coke Company, in 1890, and was under the management of Mr. S. M. Buck, President, E. W. Clark and other Bankers of Philadelphia, Pa., were the principal owners.

Mr. Jenkins Jones acquired the Clark interests in 1898 or 1899. Mr. Isaac T. Mann was President, Mr. Jenkins Jones was Vice President and Mr. James Ellwood Jones was General Manager.

On July 1st, 1907, the properties of the Pocahontas Consolidated Company and the Pocahontas Collieries Company were merged, and the Company is now styled the Pocahontas Consolidated Collieries Company, Incorporated. Mr. Isaac T. Mann is President, Mr. C. S. Thorne is First Vice President, Mr. Jenkins Jones is Second Vice President, and Mr. James Ellwood Jones is General Manager.

The minimum output of the mine was 5,705 tons of coal in 1890, and its maximum output was 161,166 tons of coal in 1906.

The plant has 158 coke ovens, which have been in blast since the opening of the operation, except for a few months during the year of 1908.

In my report of the first explosion, I noted that the mine is developed by two main entries, running parallel to each other and about 2000 feet apart. One of the entries is designated as the New Main drift of Lick Branch opening, and the other drift as the Old Main drift or Tug River opening.

The first explosion occurred between the old Main or Tug River opening and the New Main; but did not extend east of the New Main entry. (See map for location of bodies in first explosion, filed with said report).

The coal mined is the No. 3 Pocahontas seam and has an average thickness of eight feet six inches clean coal. It has a sandstone roof and practically no timber is used in posting.

The mine has always been perfectly free from explosive gases. In fact no explosive gas has been found in the mine either before or after each of the explosions.

The mine is ventilated by an exhaust fan 20 feet in diameter, 110 revolutions per minute, driven by 100 Horse Power, 2200 volt, 3 phase A. C. Motor. The fan was originally built by Kenny & Company, Scottsdale, Pa.; but has been recently rebuilt by the company.

The fan was not affected by the explosion so they were able to start it again at once.

The ventilation of the mine at this time was conducted by one intake. The air entering in at the New Main drift and then was conducted to the face of third X entry, and then back to the fifth X entry, through 5-1 entry to the face of eighth X entry. Then through 8-1 entry to its face. Then to eleventh X entry, through 11-2 to 12 X entry, and then back to the Old Main entry, to Dip B or Italy, to face of B-1, and then again back to Old Main entry and to tenth X entry, and from there through Old Main entry to the fan. (See map attached to this report.)

The second explosion seemed to have originated on the east of the New Main entry and to have extended all over the mine.

The Department of Mines was notified of the explosion at 9:02 A. M. on January 12th—just 25 minutes after it occurred.

I left by the first train to the scene, arriving there that evening. I found the mine in charge of District Inspectors D. R. Phillips and William Nicholson, who had a force of men working on the recovery of bodies. I remained until the following day when I returned to Charleston. District Inspectors Henry and Grady afterwards arrived at the mine and assisted in the recovery of the bodies, so that by Friday evening January 15th the mine was cleared of all the dead bodies.

For a location of the position of the bodies as found by the rescuing party see map attached to this report. The numbers refer to the location of the body, also to the name as given in the testimony of the physicians at the Coroner's Inquest.

I arrived again at Lick Branch mine on the evening of January 15th and on the next day, January 16th, together with District Inspectors D. R. Phillips, Earl A. Henry, William Nicholson, P. A. Grady, several mine officials and mining experts, made a careful examination of the workings of the mine on the east side of the New Main entry, for the purpose of ascertaining, if possible, the cause of the second explosion.

We found that black powder was used by the miners in blasting down their coal. As the thickness of the seam is 8 feet 6 inches and is undercut by a seven foot Electric Mining Machine, it would naturally take considerable force to blow down the coal.

The miner begins his hole at about 5 feet from the bottom and bores it upwards so as the back part of the hole will be about one foot from the roof. The depth of the hole will be seven feet, the same as the undercut.

We found an overcharged hole in room No. 21, 5-1 entry, which in our judgment, was, in all probability the initial point of the explosion. This hole was bored on the left rib of the room, and was evidently tamped with slack coal. The coal was blown back from the face and across the room showing that considerable force was produced by the powder loaded in the hole.

The dust adhering to the coal on the ribs, was charred and coked. Also the slack on the floor of the room was coked to a depth varying from one-half to one inch thick near the face of the room.

There is a breakthrough started on the right of this room, about 50 feet from the face of the room. In this breakthrough were found the bodies of two men. (Nos. 29 and 30 see Map attached.) These bodies were badly burned, their clothing having been burnt off and their flesh seemed also to be burned. It would seem, as if these men had gone into this breakthrough to seek refuge while firing the shot.

The effect of the overcharge hole was, that probably a considerable amount of powder was not consumed by blasting the coal, but was spent by burning in shape of a flame. This in turn taking up the finely powdered dust in suspension was doubtless the initial point of the explosion. The single line of force shown in this room and the direction taken from here, determined in our mind that this was the initial point of the explosion.

The condition of 5-1 entry by its charred ribs and coked coal gave additional proof of the blown out shot.

The explosion passed down the room, began to distribute itself throughout various directions in the entry. One part of the force going down fifth X entry to third X entry. Another force going through 5-1 entry to eighth X entry and from there to 8-1 entry, and these forces going through the New Main entry to 11th X entry, and from there to the Old Main entry. Then along this entry to the Tug River opening and also to the fan entrance. Three bodies (Nos. 63, 64 and 65 see Map) were found in Old Main entry. One body (No. 58 See map) was found within 350 feet from Tug River opening.

In studying the layout of the Lick Branch mine, we find that the method of working same, was along practical lines, and evidently no expense was spared to bring the property to its greatest efficiency, both as to ventilation and the safety of its employes.

It is an evident fact, that in mining this seam of coal, other means than pick mining must be employed, and that the blasting of the coal can be accomplished with a minimum amount of danger. In order to accomplish this I think it is necessary to employ shot firers, who shall have charge and be responsible not only for the firing of the shots, but for the quality and quantity of explosives used. Also that all holes should be tamped with clay. That in gaseous mines some safety explosives other than black powder be used. That the blasting as far as

it is possible should be done between shifts, when the men other than the shot firers are out of the mine. Also that the dust from the machine cuttings should be first loaded out before firing the holes. There is no doubt that at present one of the most dangerous conditions in the mine is occasioned by the accumulation of coal dust.

There are several methods that can be employed to keep the mine watered and the air moistened so as to saturize the dust.

I herewith attach the report of the District Inspectors, E. A. Henry, D. R. Phillips and P. A. Grady, also a Map of the mine showing the position in the mine of the bodies as found by the recovering party.

Respectfully submitted,

January 26th, 1909.  
Charleston, W. Va.

JOHN LAING,  
*Chief of Department of Mines.*

State of West Virginia:

County of McDowell: ss.

An inquisition taken at Switchback, in the said County of McDowell on the 13th day of January, in the year 1909, and following days, before C. W. White, a Justice of the Peace of said County, upon the view of the bodies of Henry Lee and divers other persons there lying dead.

The jurors sworn to diligently inquire and true presentment make when, how and by what means the persons whose bodies lay dead before them came to their respective deaths upon their oath do say that the said persons, to-wit:

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|----------------------|------------------------|
| 1. Everett Phillips, | 33. Dowdy Miller,      |
| 2. Luther Boldin,    | 34. Peter Heppenstall, |
| 3. Walter Giles,     | 35. Unidentified,      |
| 4. John Hunter,      | 36. C. J. Hariston,    |
| 5. George Enssey,    | 37. J. Henry Bolen,    |
| 6. J. H. Cobbs,      | 38. Mike Robensky,     |
| 7. Chas. Phillips,   | 39. Mel Hunter,        |
| 8. A. R. Jones,      | 40. Jno. Mitchell,     |
| 9. Frank Hairston,   | 41. H. A. Leonard,     |
| 10. Ed. Rose,        | 42. S. C. Clark,       |
| 11. Brown Lee,       | 43. Unidentified,      |
| 12. Unidentified,    | 44. Unidentified,      |
| 13. Unidentified,    | 45. Jno. Mahoney,      |
| 14. Henry Lee,       | 46. Albert Abell,      |
| 15. George Peters,   | 47. Henry Waller,      |
| 16. Ernest Terry,    | 48. Unidentified,      |
| 17. Unidentified,    | 49. Tobe Hutcheson,    |
| 18. Unidentified,    | 50. Walter Martin,     |
| 19. Elk Clark,       | 51. Jim Martin,        |
| 20. Unidentified,    | 52. Bruce Mann,        |
| 21. A. R. Miller,    | 53. Chas. Howard,      |
| 22. Joe Jones,       | 54. Floyd Buffalo,     |
| 23. Taylor Staples,  | 55. Chas. Wellford,    |
| 24. David Surratt,   | 56. Jno. Smith,        |
| 25. Ed. Collins,     | 57. Walter Eversole,   |

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| 26. Riley Surratt,   | 58. Con Holladay,      |
| 27. Anthony Johnson, | 59. Clarence Mitchell. |
| 28. Lemuel Dean,     | 60. Dan Watson,        |
| 29. James Ayers,     | 61. A. P. McDade,      |
| 30. Robt. Wyatt,     | 62. Will Durphey,      |
| 31. Henry Bowles,    | 63. Jno. Hague,        |
| 32. Dan Arrington,   | 64. Thos. Myers,       |
|                      | 65. Robt. Buffalo.     |

came to their death by an explosion in the Lick Branch Mine, caused by an overcharge shot of gun-powder in room 21 off 5-1 entry in what is known as new main of said mines.

As we, the jury according to the evidence in the above cases further say that we exonerate the Pocahontas Consolidated Collieries Company, Incorporated or the Lick Branch Colliery from all blame and responsibility for said explosion.

In testimony whereof the said Justice and Jurors hereto set their hands, this 16th day of January, 1909.

C. W. WHITE, Justice of the Peace.  
 W. R. SHEETS, Juror.  
 O. R. ANDERSON, Juror.  
 W. C. HORTON, Juror.  
 E. V. BAILEY, Juror.  
 E. W. ST. CLAIR, Juror.  
 CHAS. HARRIS, Juror.

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*REPORT ON LICK BRANCH MINE SECOND EXPLOSION.*

Clifton, W. Va., January 19th, 1909.

HON. JOHN LAING,

Chief of Department of Mines.

Charleston, W. Va.

Dear Sir:—I herewith submit the following report of the second disastrous explosion which occurred at 8:30 A. M., January 13th, 1909, whereby sixty-five persons lost their lives in the Lick Branch Mine, located in McDowell County, West Virginia, operated by the Pocahontas Consolidated Collieries Company.

At the time of this explosion I was in Charleston, W. Va., at which place I received a message from Mr. Laing, Chief of the Department of Mines, advising me of the explosion, also instructed me to hasten to the scene and render all possible assistance in protecting the persons who were engaged in recovering the dead bodies from the mine.

I arrived at the mine the evening of the 13th, at which time I entered the mine and assisted in restoring ventilation and recovering the bodies.

On Saturday, the 16th, I again entered the mine in company with Chief Laing, District Inspectors D. R. Phillips, Nicholson and Grady, with Company officials and Mine experts, for the purpose of investigating the cause of the explosion, and if possible locate the point of origin. The condition inside of the mine gave evidence that the second explosion had occurred in a part of the mine known as the New Main; which part was not in any way affected by the first explosion. We made a thorough investigation of rooms and headings, at which time we found different places that might have been the starting point of this explosion, but the best evidence as to the point of origin was found at face of room No. 21, entry 5-1, where an overcharged shot had been fired on the left side of the room throwing coal to the opposite side of the room. There were also evidence of heat as charred dust on the ribs and pavement, and the bodies of two men found in the breakthrough were badly burned. Judging from the position in which they were found, it was evident that they had retired to this breakthrough to be out of range after lighting the shot at the face of the room No. 21, entry 5-1. The evidence on this entry is conclusive that the force came from the face of room No. 21, which is demonstrated by the rounded corners of the coal on the inby exposures, increasing in volume by a series of new explosions, or re-enforcements fed by accumulations of coal dust, and in all probabilities more or less blasting powder, and spreading destruction in every part of the New Main and the Old Main workings, unless where its force was diminished by the presence of water, or the absence of coal dust.

At no time during the work of removing the dead bodies from the mine, or in making the final investigation were we able to find the slightest trace of fire damp. This being the case in my judgment dust was the principal factor in this fearful explosion, causing great loss of life and destruction to property.

In some instances we found that rooms and headings were driven

beyond what is known as the eighty foot limit, between breakthroughs, we also found several places that gave positive evidence of excessive use of powder; which is certainly a dangerous practice in a dry mine. Where the coal is cut by machinery which creates considerable dust, that would be easily placed in suspension and fired by an overcharge or blown out shot, or by the explosion of a keg of powder.

I am in the opinion that in keeping all parts of the mine where there is an accumulation of dust well watered, especially near the working faces, where the blasting is done would minimize the chances of an explosion. And by the adoption of safety explosives and using clay for tamping with experienced men employed as shot firers, who would have charge of placing the hole and the amount of explosives to be used in each hole would certainly eliminate the probabilities of a general explosion throughout the mine.

Yours respectfully,

EARL A. HENRY,  
*Inspector Fifth District.*

Charleston, W. Va., January 23rd, 1909.

MR. JOHN LAING,

Chief of Department of Mines,  
Charleston, W. Va.

DEAR SIR:—At the Lick Branch Mine of the Pocahontas Consolidated Collieries Company, in McDowell county, there occurred an explosion January 12th, 1909, which took the lives of sixty-five men and injured one other person.

On January 5th, 1909, I left this mine after making an investigation of the explosion which occurred there on December 29th, 1908. A report of this investigation I submitted to you on January 9th, 1909.

Hearing of the explosion of January 12th, 1909, I immediately left my home and reached the mine at 1 p. m. on the day following. Up until Saturday I assisted in the rescue work of recovering the bodies, and on January 16th with a number of Inspectors, mining men and yourself I made an investigation to determine if possible what caused this second explosion; happening as it did so closely after the first one.

The condition which existed at this mine prior to the first explosion, I described to you in my report of January 9th, 1909. The mining of coal in one section of the mine was resumed a few days previous to the second explosion. This section is in a different part of the mine and a considerable distance from the seat of the first explosion.

Room No. 21 on 5-1 entry shows evidences where a shot had been fired in the left rib of the face. From the conditions of the remaining part of the hole and of the coal in the face, it could be seen that the charge of powder in this hole when fired caused a windy shot, which I believe distilled the gases from the coal dust held in suspension in the atmosphere of the mine and propagated itself by the dust furnished as it traversed the area covered.

In my first report to you, I made recommendations, which I thought covered the ground thoroughly to prevent explosions in such mines. As

these recommendations might be abused by the class of labor we have working in the mines of our state, I would suggest a further preventative, that shot firers be employed to shoot the coal when all other employes are out of the mine.

Very respectfully,

P. A. GRADY,  
*Mine Inspector 12th District.*

*REPORT OF LICK BRANCH SECOND EXPLOSION.*

HON. JOHN LAING,  
Chief of Department of Mines,  
Charleston, W. Va.

DEAR SIR:—I herewith submit the following report on the second explosion which occurred about 8:40 a. m., January 12th, 1909, resulting in the death of sixty-five persons. At the time the explosion occurred I was on train No. 15, on my way to visit some mines on the Norfolk & Western Branch of the N & W. R. R.\* Upon the arrival of the train at Northfork, I was informed of the disaster and learned at the same time that a freight train was ready to depart. I caught the freight and arrived at the mine about 1½ hours after the explosion occurred.

Upon my arrival the work of rescue was placed in my hands, and I began at once to organize for that purpose. I selected the most practical and trustworthy men available, as foremen for the several departments required in the prosecution of this work.

I was given valuable assistance in organizing the crews by Mr. Nicholson, Inspector for the Eleventh District, who arrived upon the scene in about two hours after my arrival. The organization was made more complete, by the arrival that evening of yourself, and the following day Inspectors Henry and Grady.

The work of rescue was carried on successfully without any interruption, the last bodies recovered in the afternoon of the 15th inst.

On the 16th I entered the mine with the Chief of this Department Mr. Laing, Inspectors Henry, Grady and Nicholson, Mr. Krebs and several other expert mining men, and mine officials, for the purpose of making an investigation as to the cause of the explosion, and the point where it originated. We began the investigation in the entries nearest the opening called the New Main opening; we made a thorough examination of rooms and entries from this point to the face of the workings of the New Main district, which area had apparently not been affected by the former explosion.

As we continued from the first mentioned entries inward to the center of the district, the evidence as indicated by the rounded inby projections and the direction in which the debris had been thrown, was plain that the force had come from some point in advance of us. This condition changed after we arrived at 5-1 entry, at this point the force seemed to have separated going in several directions. The point from which the force seemed to radiate was in the vicinity of No. 21 room, off the 5-1 entry. A careful examination of this room disclosed evidence of great heat having



been there, the ribs were charred and coked, as also was the face of the room and the coal on the floor. A shot had been fired on the left side of the room, a portion of the coal having been thrown to the right side; this together with the shattered condition of the coal strewn in front of the shot, was very good evidence of it having been heavily overcharged. Two men were found in a break-through off of this room in such position as to justify the assumption that they had retired there for protection when firing the shot. These men were badly burned.

We continued from this point forward, to the face of the workings and found evidence of the force in some parts, having become so reduced as to make it next to impossible to determine its direction, but upon moving onward we found that it had been re-enforced again, by dust, powder, or probably the necessary oxygen to produce a more complete combustion of the dust. It was an easy matter when this condition was encountered to trace its course by the direction of the wreckage, and work projections on the ribs.

We found conflicting evidence in many places, but No. 21 room on 5-1 entry seems the most probable point of origin. I re-entered the mine again on the 19th inst. for the purpose of accompanying some expert mining men in an investigation of the mine. I saw considerable evidence that had been overlooked upon our investigation of the 16th, but nothing that altered my opinion as to the point of origin.

Our investigation developed that in several instances, rooms and entries had been driven beyond the distance required by law between break-throughs; also that in many places an excessive quantity of powder was used in blasting, and that holes were improperly placed.

In my report on the first explosion which occurred December 29th, 1908, I made the statement that a repetition of this deplorable calamity might occur in this or any other mine, unless there were some changes in the method of blasting the coal. I also recommended certain methods by which the danger from this source would be minimized, and I would urge such legislation as would result in taking out of the hands of the ignorant inexperienced miners the charging and firing of shots, and place it in the hands of intelligent experienced men.

Yours very truly,

D. R. PHILLIPS,  
*Inspector Tenth District.*

January 26th, 1909.

