UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

District 4

REPORT OF INVESTIGATION
(UNDERGROUND COAL MINE)
NON-INJURY EXPLOSION

Gary #50 Mine, ID No. 46-01816
U. S. Steel Mining Co., LLC
Pineville, Wyoming County, West Virginia

May 18, 2001

By
Ted R. Tilley
Coal Mine Safety and Health Inspector

Originating Office - Mine Safety and Health Administration
100 Bluestone Road, Mount Hope, West Virginia 25880
Edwin P. Brady, District Manager

Release Date: 09/14/2001
United States
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On Friday, May 18, 2001, at approximately 8:40 a.m., a contractor employee traveling along the Indian Creek Hollow access road observed a displacement of the sealing caps at the Indian Creek and 7-J air shafts. This occurrence was reported to the mine operator and an immediate investigation was started. The miners were removed from the active areas of the mine after determining that a methane ignition event occurred in the sealed area of the mine. The area in which the subject air shafts are located was permanently sealed on May 6, 2001, and the capping of the air shafts was completed on May 9, 2001. There are four air shafts situated within the sealed area, but evidence of disturbance was only observed at the Indian Creek and 7-J shafts. The 7 Haulage area of the mine was permanently sealed utilizing the Micon 550 permanent ventilation seals. The absence of water in the No. 3 seal water trap was the only indication of a pressure event in the sealed area. Two MSHA inspectors, who were conducting inspections underground at the time of notification of this event, were dispatched to collect data from the affected areas. Initial air samples collected near the Indian Creek air shaft showed elevated carbon monoxide levels when the shaft was out gassing. The 7-J air shaft was in gassing when examined. The initial readings at the 7 Haulage No. 3 seal indicated a slight amount of carbon monoxide present. There were no smoke or signs of burning at either of the examined locations. The sealing caps were repositioned over the air shafts within the addition of a second cap. MSHA's Technical Support Group was requested and dispatched to the mine site on May 18, 2001, and arrived at the mine office at 3:30 a.m., Monday, May 19, 2001. Mine gas analytical equipment was installed at the mine office conference room to analyze samples collected from the 7 Haulage seals, Indian Creek fan shaft, 7-J air shaft and 7-J borehole. The Technical Support Group provided information and held briefings with officials from MSHA, WVCMSH, company, and UMWA, on the gas and atmospheric trends. On May 23, 2001 technical support personnel relinquished the analytical duties to a commercial laboratory, and departed the mine site. The trends indicated that there was not a fire in the sealed area.
24. Conclusion:

On May 17, 2001 at 5:09 p.m., a lightning storm moved through the area, which interrupted the mine power system. The main mine fans and the surface power sources were de-energized for a short time. The company obtained lightning strike information from Global Atmospherics, Inc., which confirmed that lightning was detected at this specified time frame and vicinity. Due to these findings, it is reasonable to conclude that this methane ignition resulted when an explosive mixture was ignited by lightning. The force of the ignition was confined by the underground seals and evidenced by the displacement of the sealing caps. The mine gas trends indicate that an ignition has occurred, with no evidence of a mine fire.

C. MSHA Information

26. Last Quarter NFDL Injury Incidence Rate (PEIR) for:
   Industry: 6.63
   This Mine: 6.28
   Contractor: 6.63

29. MSHA District Office:
   Mt. Hope

30. MSHA Field Office:
   Pineville, WV

32. Lead Accident Investigator: Name: Ted R. Tilley
   AR No.: 23541
   Date: 07/17/2001

27. Did Technical Support participate in this investigation?
   Yes [X]  No

28. Part 50 Document Control Number:(Form 7000-1):

30. Date Last Regular Inspection Completed:
   03/30/2001

33. Date On-site Investigation Started:
   05/18/2001

34. Formal Report:
   Yes [X]  No

35. Report Release Date:
   09/14/2001

MSHA Form 7000-50a, Dec 1994
Printed 09/19/2001 8:36:05 AM
Accident Investigation Data - Methane Ignition/Explosion Information

Event Number: 4092567

A. Section Information

1. Ignition or Explosion:
   a. Ignition | b. Explosion X

2. Location of Ignition/Explosion:
   a. Description: Haulage Sealed Area
   b. MMU Number:

3. Type of Mining:
   Development | Retreat | Ventilation Plan | Roof Control Plan | No Approval

4. Extended Cut Approved in: (Coal only)

5. Extended cut used at time of accident? Yes | No

6. Depth extended cut approved (in feet):

7. Depth of extended cut at time of accident (in feet):

B. Dust Suppression Information

6. Water Spray Parameters:
   a. Number of water sprays required in ventilation plan:
   b. Number of water sprays operable at time of ignition:
   c. Water pressure required in ventilation plan (in PSI):
   d. Water pressure measured during investigation (in PSI):
   e. Water flow rate required in ventilation plan (in GPM):
   f. Water flow rate measured during investigation (in GPM):
   g. Type of water spray system (include type of scrubber and fan system):

   Description

C. Face Ventilation Information

9. Ventilation Configuration: Exhaust | Blowing | Combination

10. Ventilation control devices at time of accident:
    a. Auxiliary Fan/Tubing
    b. Curtain
    c. Diffuser

Other ventilation controls (describe):

11. Distance from inby end of ventilation control to face:
    a. Required in Ventilation Plan (ft.)
    b. At time of accident (ft.)

12. Air Quantities (in CFM):
    a. Air quantity required at LOC or pillar line:
    b. Air quantity measured at LOC or pillar line:
    c. Air quantity required at face or reaching longwall:
    d. Air quantity measured at face or longwall:
    e. Measured diffuser fan capacity:
    f. Measured scrubber quantity:

D. Methane Information

13. Methane Liberation:
    a. On Section (cubic feet each 24 hr):
    b. Category (Metal and Nonmetal only): I | II | III | IV | V | VI

14. Source of Methane Accumulation:
    a. Normal Liberation X
    b. Feeder
    c. Other (Describe):

d. Description of feeder location (if applicable):

15. Was methane monitor functioning properly? Yes | No | N/A X

16. Equipment involved maintained in permissible condition? Yes | No | N/A X

17. Location of methane monitor sensing head:
    a. Right side
    b. Left Side
    c. Center
    d. Distance From Face (in inches)

18. Barometric Pressure:
    b. Rising
    Falling X
    Steady

E. Bit Information

19. Bit Type:

20. Bit Configuration:

21. Condition of Bits:

F. Other Information

22. Energy Source:
    a. Frictional
    b. Electrical
    c. Cutting/Welding
    d. Smoking
    e. Undetermined
    f. Other (describe): Lightning

23. Coke samples taken: Yes | No X

24. Other Technical Data: Sealed area. MSHA's Technical Support group analyzed samples from 05/18/01 through 05/23/01. No evidence of fire.

MSHA Form 7000-50d. Sept. 1995

Printed 08/24/2001 3:02:25 PM
Approved by:

Edwin P. Brady
District Manager