KCA Regional Skills Contest
July 31, 2012
Mine Rescue Problem

Problem Briefing
You are located on the surface of Big Blue Wildcat # 1 mine. This mine is being started again after being idle for several months. The past owner ran into money problems after cutting into old works on both sides of the unit. Seals were built and the mine is still being examined every day.

This morning a foreman and a fire boss entered the mine to do a pre-shift inspection. The foreman called out about an hour ago and said the seals were leaking. He also said he had detected low O2 and high methane levels and that he was going to look for his fire boss and come outside. We have not heard from them since. We found low O2 and high methane just inside the slope entry and we decided to call a trained mine rescue team to help us. The power knocked going to both fans just a few minutes ago and we are working to get the power restored. We have exhaust fans on top of two separate shafts. We also have an intake air shaft in the offset of no.1 entry. Please let the Superintendent know if you need to use either or both fans.

The building we keep our maps in was broken into last week and our maps were destroyed. The maps you will receive are pretty close to what you will find underground. We have a trained mine rescue team ready to back you up and have notified all authorities. Please be careful!
2012 KCA SKILLS CONTEST

5.5% CH4
5 PPM CO
19.1% O2

4.1% CH4
5 PPM CO
19.7% O2

5.5% CH4
5 PPM CO
19.1% O2

4.1% CH4
3 PPM CO
19.1% O2

5.5% CH4
5 PPM CO
19.1% O2

BO Outside & Isolated

Seal Leaking

Intake Shaft Face

Caved

Over Knee

Slope entry

Battery Ram Car

Return Shaft #1
Exhaust fan off on top of shaft

Return Shaft #2
Exhaust fan off on top of shaft

Battery Mine Phone

Timber Battery Ram Car

Face

Weathered

Over Knee
Problem
(Written Instructions)

• ACCOUNT FOR THE MISSING MINERS
• BRING LIVE PERSONS OUTSIDE
• REPORT ALL EXPLOSIVE MIXTURES TO THE SUPERINTENDENT BEFORE MOVING TO NEXT TEAM STOP
• THE EXHAUST FANS CANNOT BE REVERSED
• THE EXHAUST FANS DO NOT HAVE AIRTIGHT DOORS WHEN TURNED OFF
• THE EXHAUST FANS CAN BE STARTED AND STOPPED BY ASKING THE SUPERINTENDENT
• BO IS OUTSIDE AND ISOLATED
Team Stops

- 5.5% CH4, 5 PPM CO, 19.1% O2
- 4.1% CH4, 5 PPM CO, 19.7% O2
- 5.5% CH4, 5 PPM CO, 19.1% O2
- Intake Shaft
- Over Knee
- Caved
- Battery Scoop
- Timber
- Battery Ram Car
- Battery Mine Phone
- Return Shaft #1: Exhaust fan off on top of shaft
- Return Shaft #2: Exhaust fan off on top of shaft
- Over Knee
- Slope entry
- 5.4% CH4, 5 PPM CO, 19.1% O2

Numbers:
1, 2, 3, 4, 5, 6
PATIENT STATEMENT
IN RA

Help! Get me out!
First Vent

Relocate phone.

Clear

5.5% CH4
5 PPM CO
19.1% O2

4.1% CH4
5 PPM CO
19.7% O2

5.5% CH4
5 PPM CO
19.1% O2

Clear

Each angle takes 2 brattice cloth

Intake Shaft

Clear

Caved

Battery Ram Car

Return Shaft # 1 Exhaust fan off on top of shaft

Return Shaft # 2 Exhaust fan on top of shaft

Seal Leaking

Over Knee

Battery Scoop

5.4% CH4
5 PPM CO
19.1% O2

5.5% CH4
3 PPM CO
19.1% O2

Clear
Second Vent Option 2

- Relocate phone
- Battery Mine Phone
- Timber Car
- Over Scoop
- Seal Leaking
- Intake Shaft
- Caved

5.5% CH4, 5 PPM CO, 19.1% O2
4.1% CH4, 5 PPM CO, 19.7% O2
5.5% CH4, 5 PPM CO, 19.1% O2
4.1% CH4, 3 PPM CO, 19.1% O2
5.5% CH4, 5 PPM CO, 19.1% O2

Each angle takes 2 brattice cloth

- Over Knee
- Face
- Return Shaft #1, Exhaust fan on top of shaft
- Return Shaft #2, Exhaust fan off on top of shaft

ON

Clear
Keys to Problem

• Not sending any explosive mixture over battery scoops, battery mine phone, water over knee deep or caved areas
• Blocking off all unexplored areas
• Moving the battery mine phone to correct location in the intersection
• Not sending irrespirable atmosphere over person in unsafe roof
• Not enough timbers to safely timber to person in unsafe roof
• Getting correct scale on team map, because team map is off with dotted lines (pillar blocks were 20 X 20 on field and dotted map is off around 10 feet
• When team asks about the fans, tell them power has been restored