

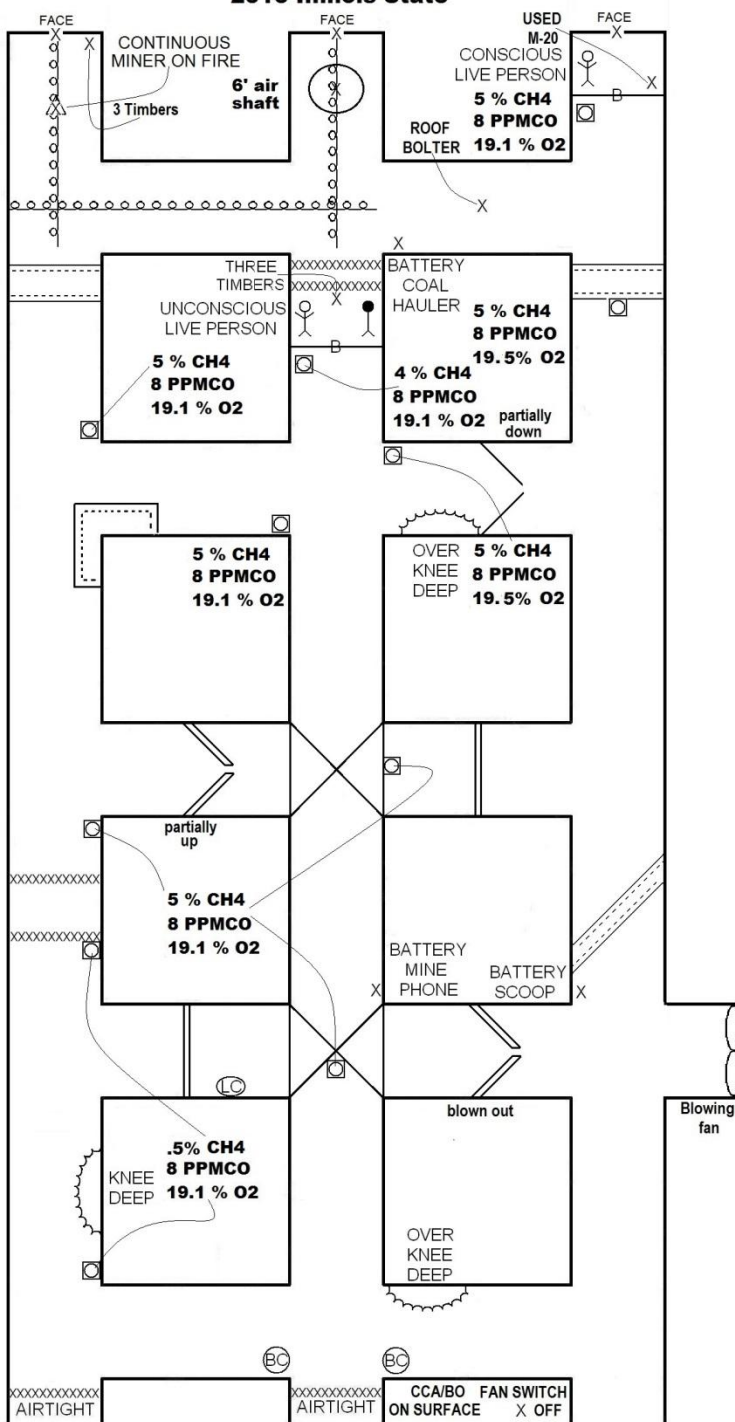
2016 Illinois State Mine Rescue Contest



Problem Briefing

August 24th 2016

2016 Illinois State



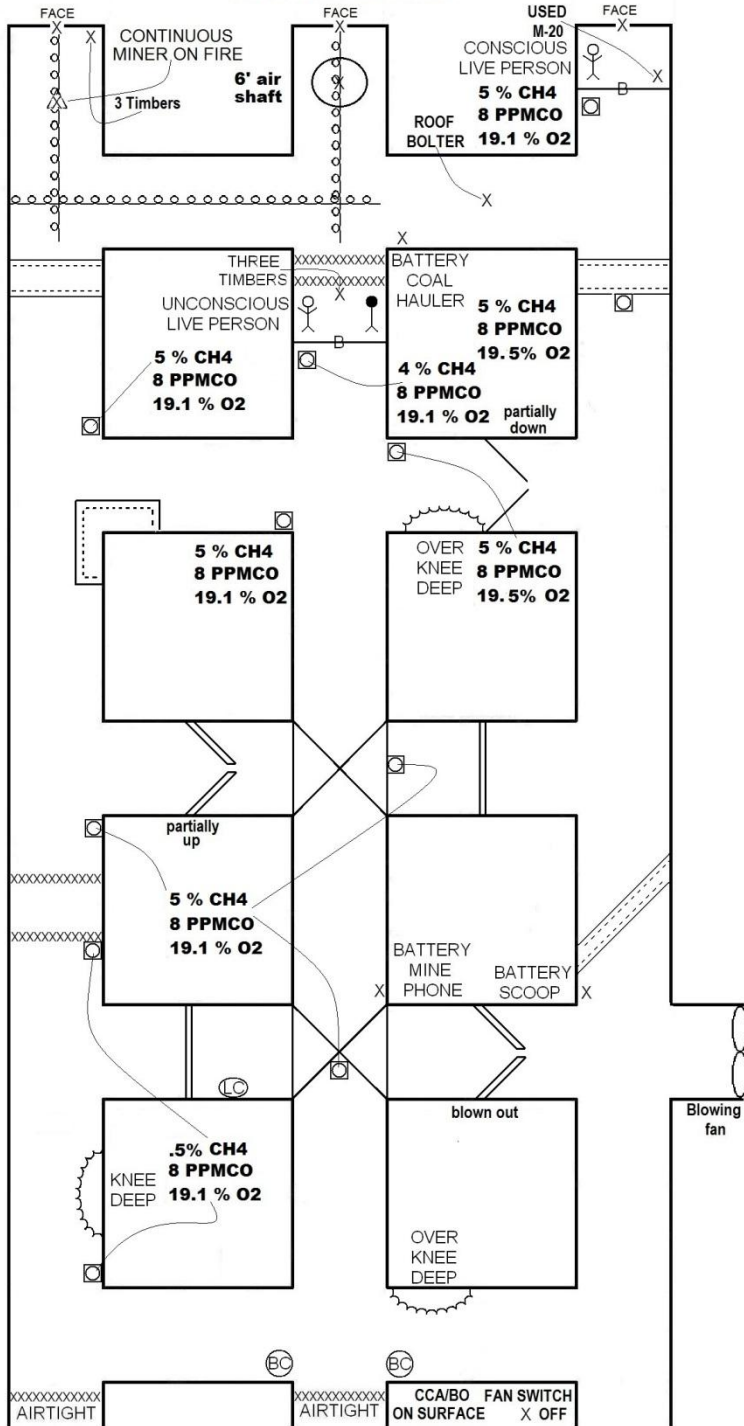
Problem Statement

A fresh air base has been established in the first crosscut of the Blue Blaze no. 2 mine. The mine is ventilated by a blowing fan, which is off at the present time, but can be started by a fan switch in the command center. An airshaft is located in the no. 2 entry and can be used for ventilation if needed by your rescue team during exploration.

Early this morning, a 2 man maintenance crew along with their foreman entered the mine to repair a continuous miner located in the # 1 entry. A call from the section stated that there was a large inundation of gas, that the crew was feeling dis-oriented, and they needed immediate assistance. Shortly after the call, an explosion was heard and the fan stopped. This was the last communication we had with the crew.

We have de-energized all electrical power inby the fresh air base. All the federal and state agencies have been notified and are on site to offer assistance. The maps are up to date. This mine is noted for poor roof, high liberations of methane, and low oxygen levels. Water accumulations are also frequently found. A fully equipped back up mine rescue team is stationed here while you work inby the fresh air base. You may start work when your team is ready. Good luck, and thank you for responding to our emergency.

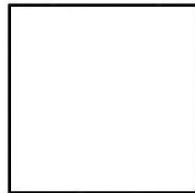
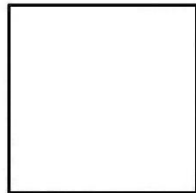
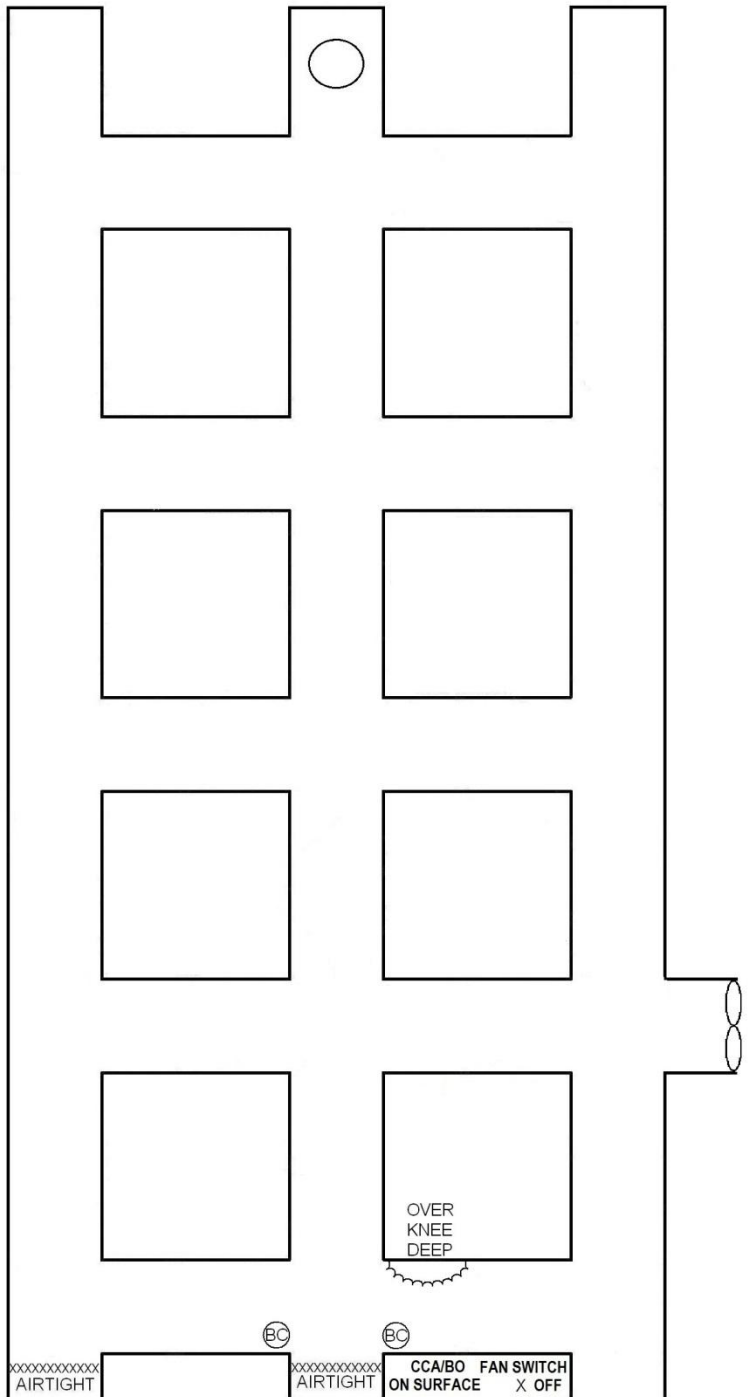
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Written Instructions

- **ACCOUNT FOR ALL MISSING MINERS**
- **THE BLOWING FAN CAN BE TURNED ON AND OFF BY A SWITCH IN THE COMMAND CENTER**
- **THE BLOWING FAN CAN NEVER BE REVERSED AND CANNOT BE STALLED WHILE IN OPERATION**
- **NO WORK CAN BE PREFORMED BY THE BACK UP TEAM**



OVER
KNEE
DEEP

EC

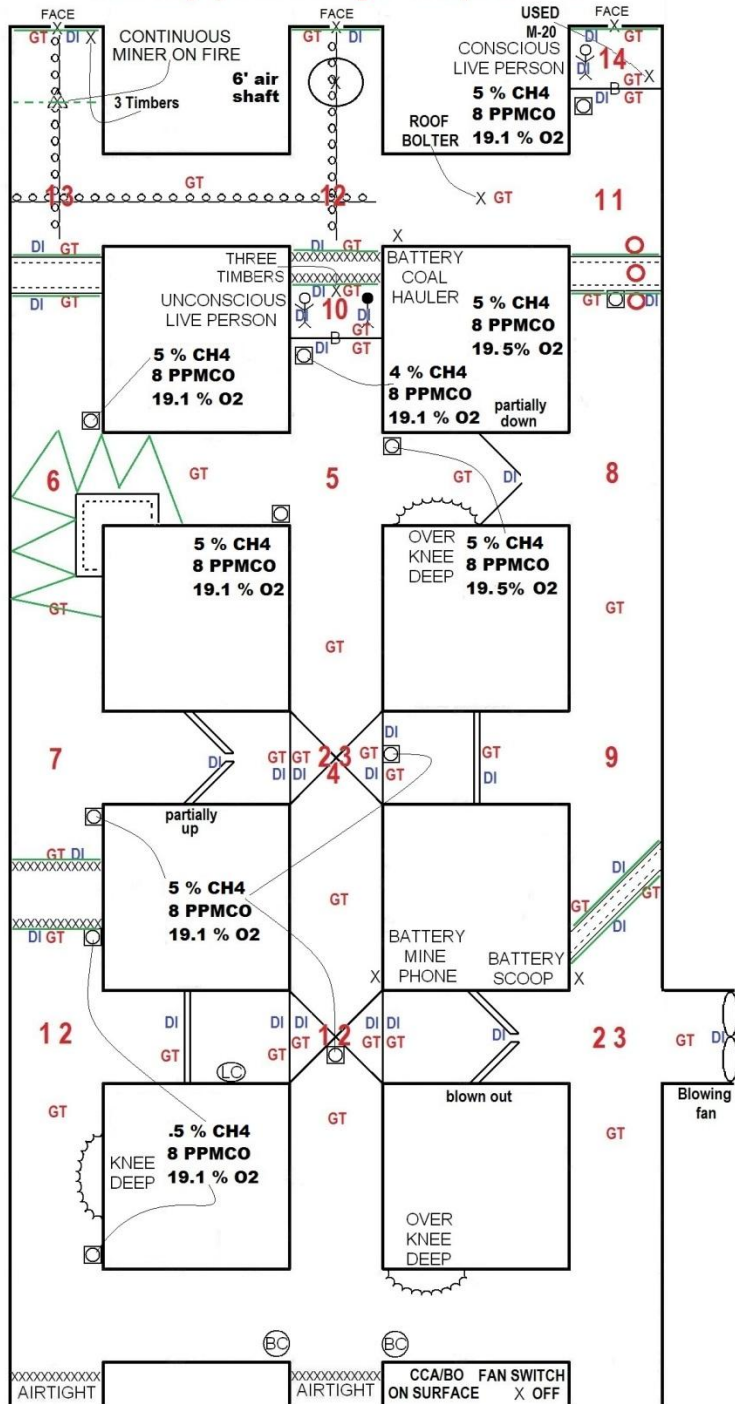
EC

XXXXXXXXXX
AIRTIGHT

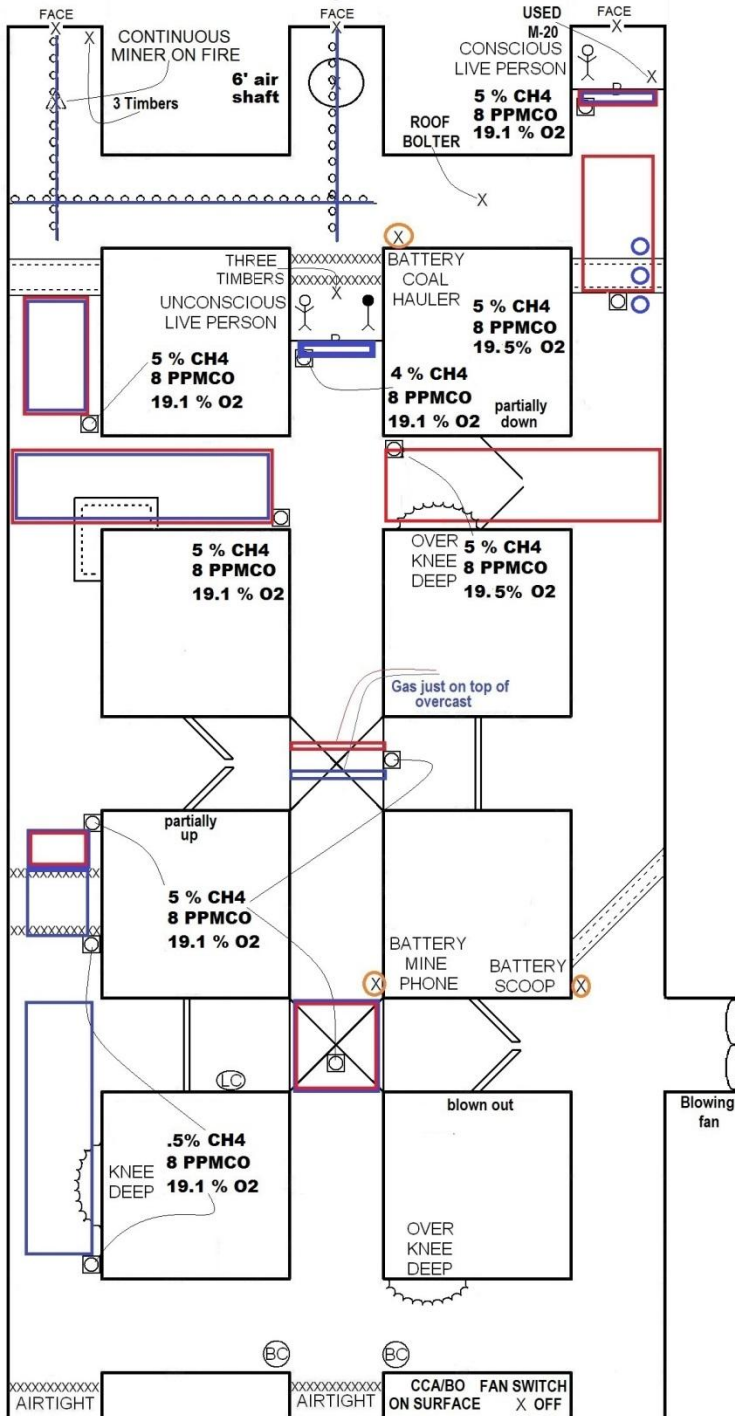
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AIRTIGHT

CCA/BO FAN SWITCH
ON SURFACE X OFF

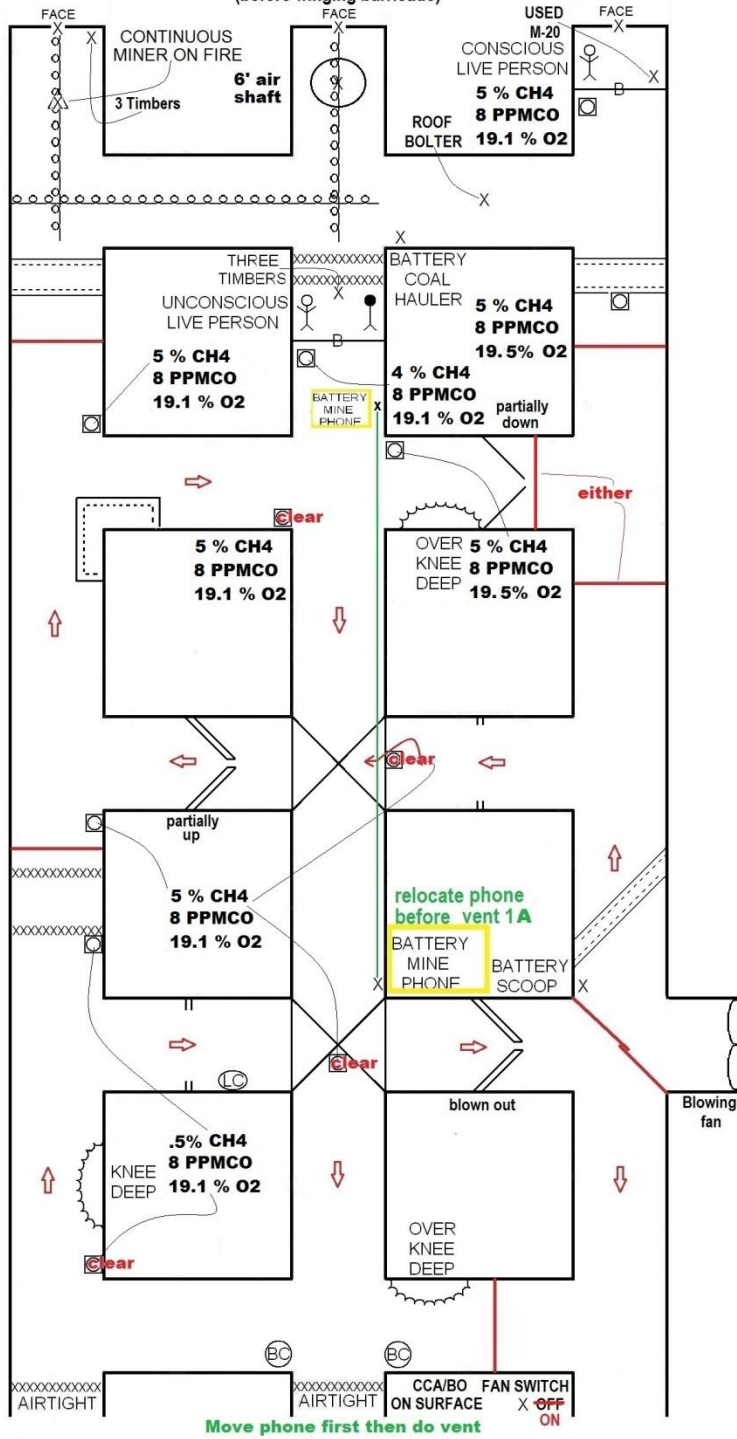
Team stops, date & int. gas tests, roof & rib



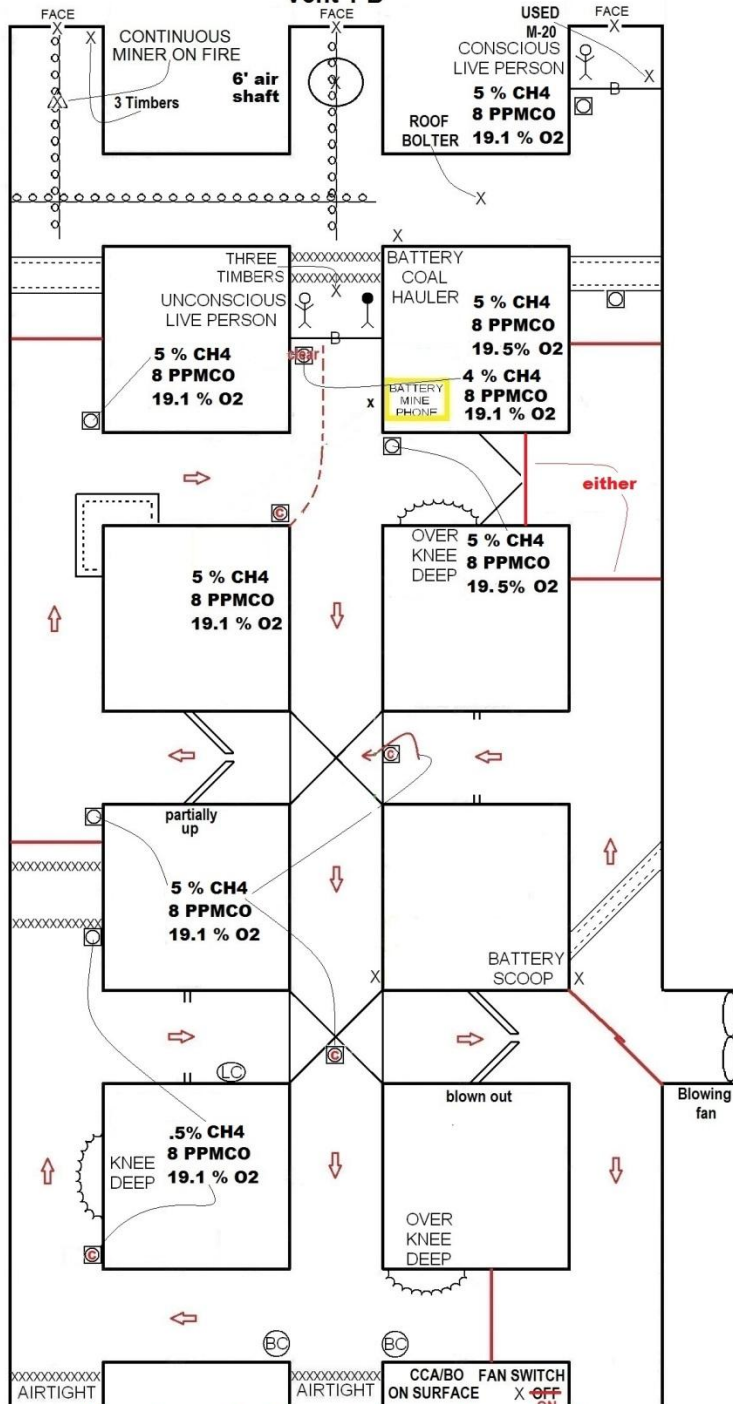
Gas extents and ignition sources



Vent 1 A (before winging barricade)



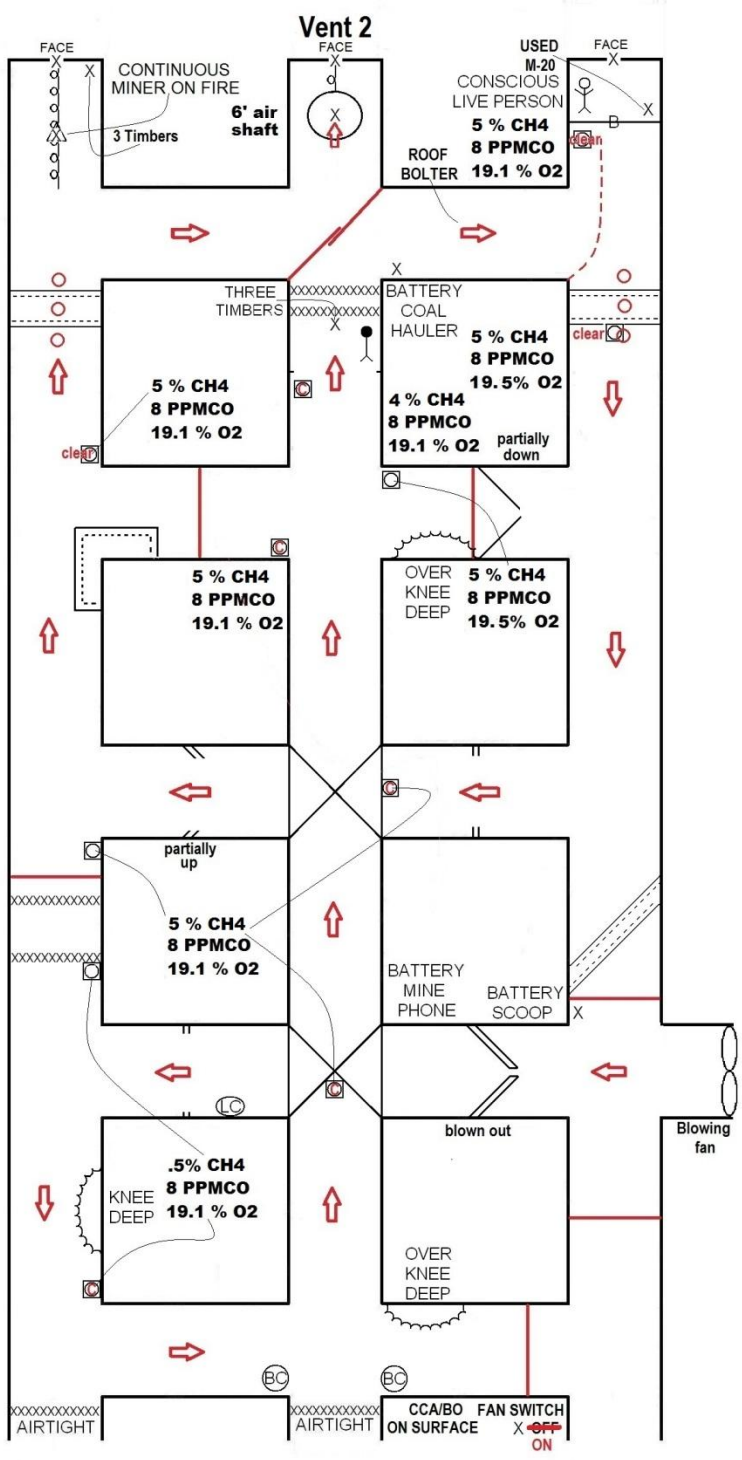
Vent 1 B



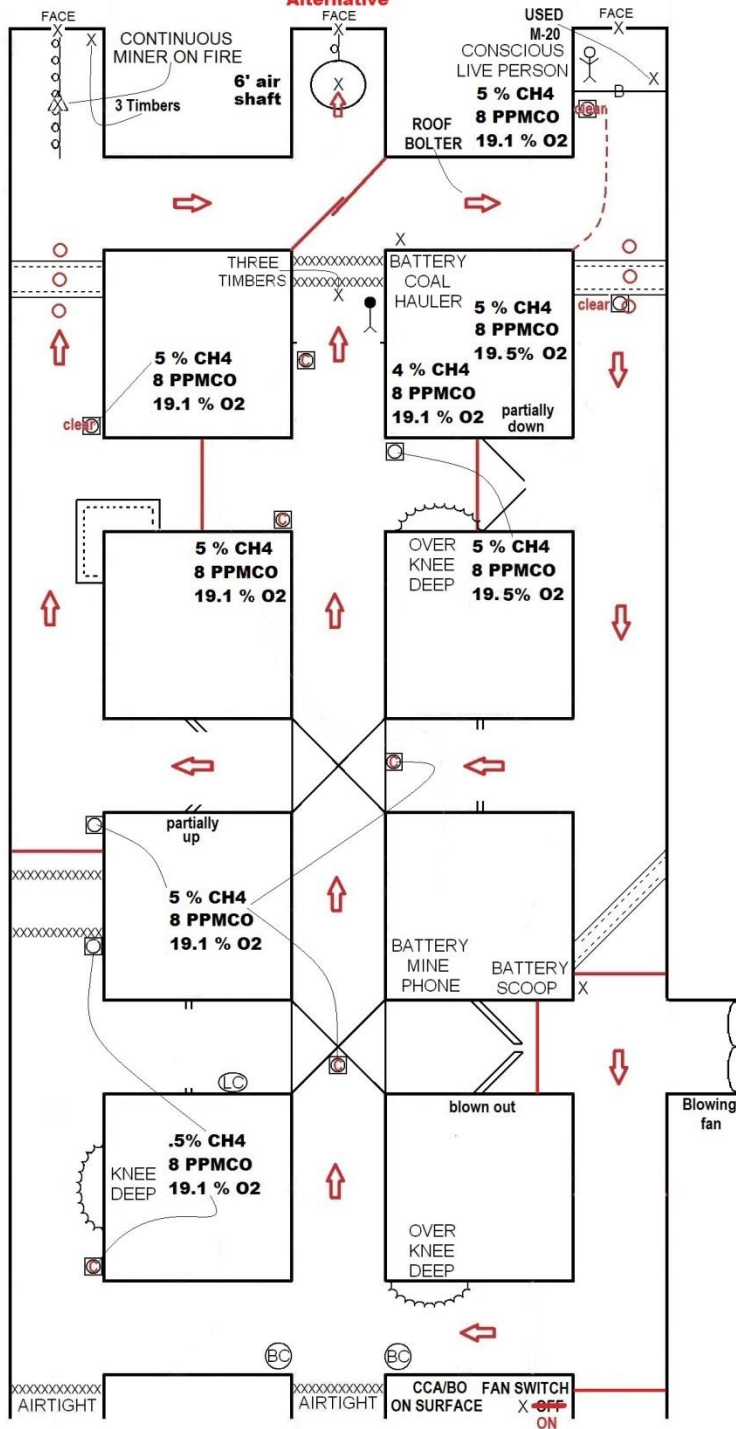
Hang wing curtain after explosive gases have cleared

PATIENT STATEMENT IN
BARRICADE IN NO. 3 ENTRY
INBY LAST OPEN

HELP! IT'S AIRTIGHT
BEHIND ME.....



Vent 2 Alternative



Keys to Problem

- **Blowing fan is inby fresh air base and will create air migration after turning on**
- **Team must follow contaminated entry while exploring (See team stop map)**
- **Team must explore behind intact permanent stoppings before advancing the no.5 man inby the corner of the second crosscut**
- **Team must move battery mine phone inby before first ventilation (See vent 1A map)**
- **Team must not send explosive mixture over battery mine phone or other battery equipment**
- **Team must not send explosive mixtures over unexplored areas and not send low O₂ over unexplored area until all persons are accounted for**
- **Team must timber unsafe roof in no.3 entry to follow contaminate into last open crosscut**
- **Team must timber unsafe roof in no.1 entry to complete 2nd vent (See vent 2 map)**