

2014 Delta, CO Mine Rescue Contest Day 2

Our mine experienced an incident 4 days ago, where 7 miners failed to report outside. 3 miners were accounted for yesterday.

Overnight, teams have established this fresh air base at the mouth of 3 south, cleaned up the cave on the 3 south belt and set cribs to support the roof in this area.

The mine has a history of methane, water, unstable roof in areas, and has had spontaneous combustion issues at times.

The mine is ventilated by a blowing fan on the surface, which is running, guarded, being monitored and cannot be reversed or turned off.

Electrical power is available if needed at the Fresh Air Base.

The map we have for your team is up to date.

All authorities and backup mine rescue teams are present.

Live Conscious Miner
"Help, it's
airtight behind
me"

Face

Face

Delta Day 2

Face

B

Continuous Miner

Roof Bolter

5.8 % CH₄
200 PPM CO
18.0 % O₂

5.8 % CH₄
10 PPM CO
18.0 % O₂

3.5 % CH₄
10 PPM CO
18.0 % O₂

5.8 % CH₄
10 PPM CO
18.0 % O₂

3.5 % CH₄
10 PPM CO
18.0 % O₂

3.5 % CH₄
10 PPM CO
18.0 % O₂

Over Knee Deep

Open

Belt Tail Piece

Live Unconscious Miner

Battery Scoop Cannot Move

12 Timbers

1.2 % CH₄
200 PPM CO
18.0 % O₂

End of Smoke
Light Smoke

End of Smoke
Light Smoke

End of Smoke
Light Smoke

Open

Light smoke
End of Smoke

Light smoke
End of Smoke

0.9 % CH₄
200 PPM CO
17.0 % O₂

0.9 % CH₄
150 PPM CO
17.5 % O₂

Unsafe Rib

Unsafe roof

Unsafe Rib

Unsafe Rib

Unsafe roof

Unsafe Rib

Conveyor Belt

10 Crib Blocks Set (Passable)

Temporary Stopping

Temporary Stopping

Pump Cable

BC

BO

Pump Discharge
Permanent Stopping

35 HP Pump Switch Power Center
ON OFF

Delta CO Day 2

FAB – Teams start clock, go under O2, app checks, check all 3 entrances.

Team stop 1 – teams will advance in 3 entry to XC 1 (50 ft. app check). Stops 7 A and 7 B can be made as stop 1 or 2.

Team stop 2 – teams will advance in 3 entry to XC 2.

Team stop 3 – teams must tie through XC 2 to 2 entry. LUM is encountered – must be placed on stretcher, and taken to FAB with Respiratory protection. (low O2 in 3 entry).

Team stop 4 - team will return to 2 entry at XC 2 and must tie outby in 2 entry (due to gas in 2 entry).

Team finds 12 timbers, makes airtight cave, unsafe roof in 2 entry.

Team stop 5 – teams must tie across XC 1 to 1 entry. Makes unsafe roof in outby XC 1 in 1 entry, and end of smoke.

Team stop 6 – teams will travel inby in 1 entry to XC 2. TEAMS MUST NOT TRAVEL INBY XC 2 OR UNSYSTEMATIC Teams must explore the areas in 1 and 2 entries inby the FAB between the temporary stoppings and unsafe roof – in order for XC 1 to be tied. (see team stop 1)

Team stop 7 A and 7 B are optional regarding sequence but must BOTH be explored. THESE CAN BE EXPLORED FROM INBY (BY SETTING TIMBERS) OR OUTBY BY AIRLOCKING. IF AIRLOCKING FROM THE FAB, AIRLOCKS MUST BE USED -BLOWING FAN- TEAMS MAY CHOOSE TO SET TIMBERS AT THIS TIME OR NOT.

Once these area are explored, teams can continue exploring to team stop 8 A or 8 B which are optional regarding sequence.

The extent of gases found inby XC 2 in 1 and 2 entries depends on which entry, 1 or 2, is explored at this point. Refer to gas extents page. The gases either extend into the respective intersection or remain within the entry depending on direction of travel.

Team stop 8 A – barricade encountered. Response from Pt. is airtight. Teams now tied to this missing miner, but must continue to explore to ventilate.

Team stop 8 B – team captain can make face in 2 entry and water over knee deep in XC 3.

Teams must now ventilate barricade, using line curtain.

Vent 1 – teams will bring fresh air inby in 3 entry, through XC 2, inby in 2 entry to XC 3, to 1 entry, sweep barricade, out 1 entry to XC 2, to 2 entry, outby 2 entry to XC 1, and the air can go out 2 entry or 1 entry, through XC 1 to the FAB. The unsafe roof in either 1 or 2 entry inby the FAB must be timbered to move explosive gas through. 6 timbers required by rule at each unsafe roof area.

Teams do not need to airlock into barricade. Pt. in barricade can walk without respiratory protection unless retreat is through 1 or 2 entries and door in XC 1 between 1 and 2 remained open during ventilation.

Explosive mixture in 2 entry at XC 3 now clear, which allows pump cable to be energized.

Teams must pump water in XC 3 to continue exploration. No airlocks required.

Teams stop 9 – Teams should tie outby in 3 entry first. If teams explores inby XC 3 in 3 entry first, THEY ENCOUNTER EXPLOSIVE METHANE AND EVIDENCE OF FIRE - AND MUST RETREAT IMMEDIATELY - QUITTER. TEAM MEMBERS SHOULD NOT GO INBY GAS PLACARD in 3 entry inby XC 3. Nothing should be mapped inby this placard.

Judges – Please note EXACTLY where teams explore at team stop 9 so map examiners can accurately judge maps.

Problem:

1. Explore the entire section if it can be done safely.
2. Account for 4 missing miners and bring any survivors to the Fresh Air Base.
3. Your team has 65 minutes to complete this problem.

Live Conscious Miner
"Help, it's airtight behind me"

Face

Face

Delta Day 2

Delta Day 2
Team Map KEY

B

Continuous Miner

FPA

5.8 % CH₄
10 PPM CO
18.0 % O₂

5.8 % CH₄
10 PPM CO
18.0 % O₂

3.5 % CH₄
10 PPM CO
18.0 % O₂

5.8 % CH₄
200 PPM CO
18.0 % O₂

3.5 % CH₄
10 PPM CO
18.0 % O₂

3.5 % CH₄
10 PPM CO
18.0 % O₂

Over Knee Deep

Open

Belt Tail Piece

Battery Scoop Cannot Move
12 Timbers

1.2 % CH₄
200 PPM CO
18.0 % O₂

End of Smoke
Light Smoke

End of Smoke
Light Smoke

End of Smoke
Light Smoke

Light smoke
End of Smoke

Light smoke
End of Smoke

0.9 % CH₄
200 PPM CO
17.0 % O₂

0.9 % CH₄
150 PPM CO
17.5 % O₂

10 Crib Blocks Set (Passable)

Timbers set,
Ventilation
Built/Changed

Temporary Stopping

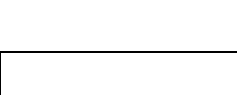
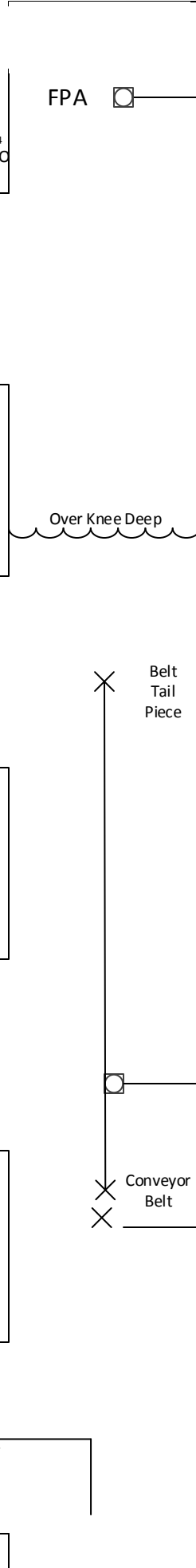
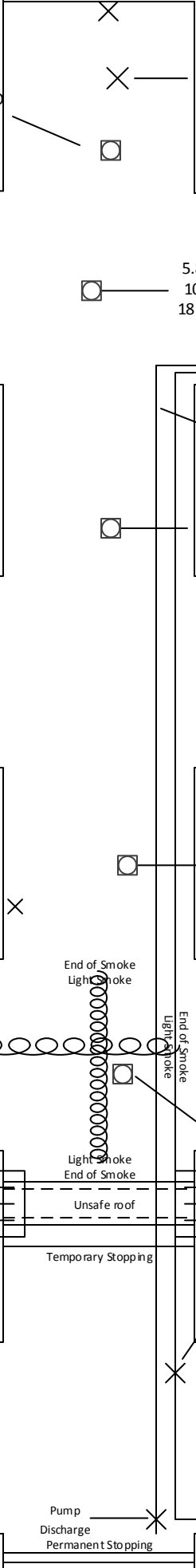
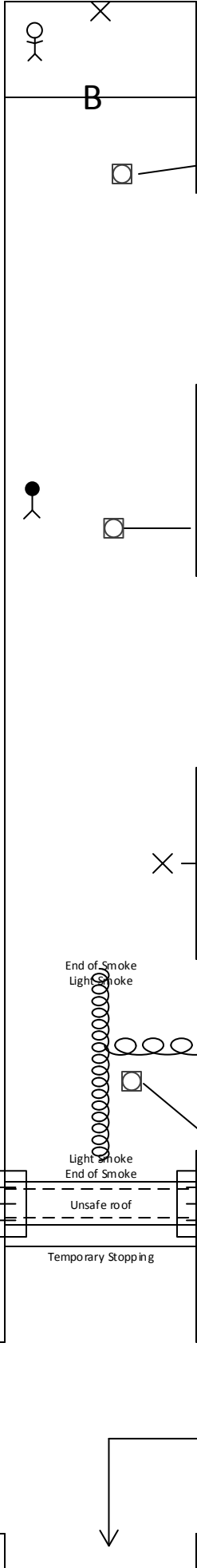
Temporary Stopping

Pump Cable

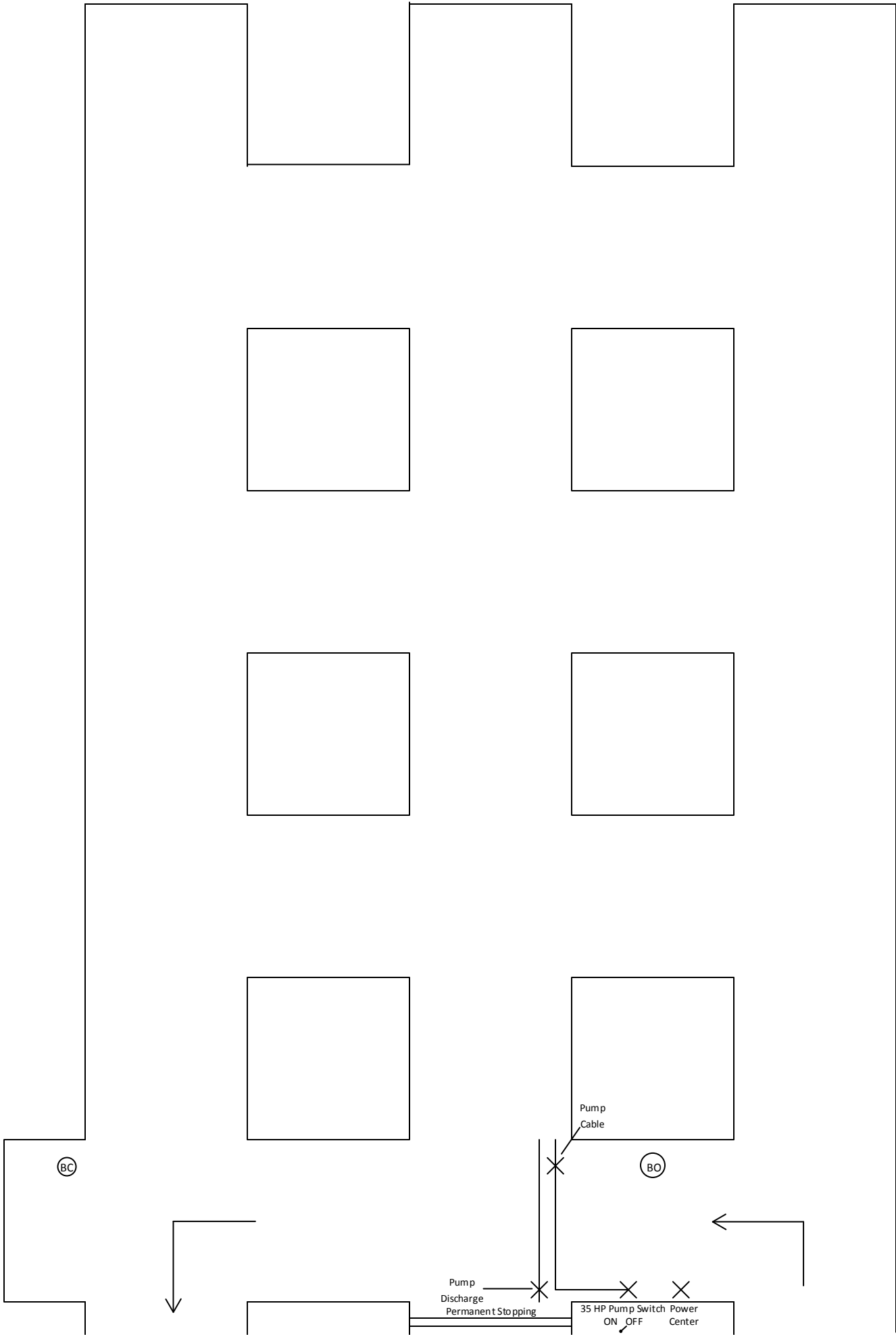
Conveyor Belt

Pump Discharge
Permanent Stopping

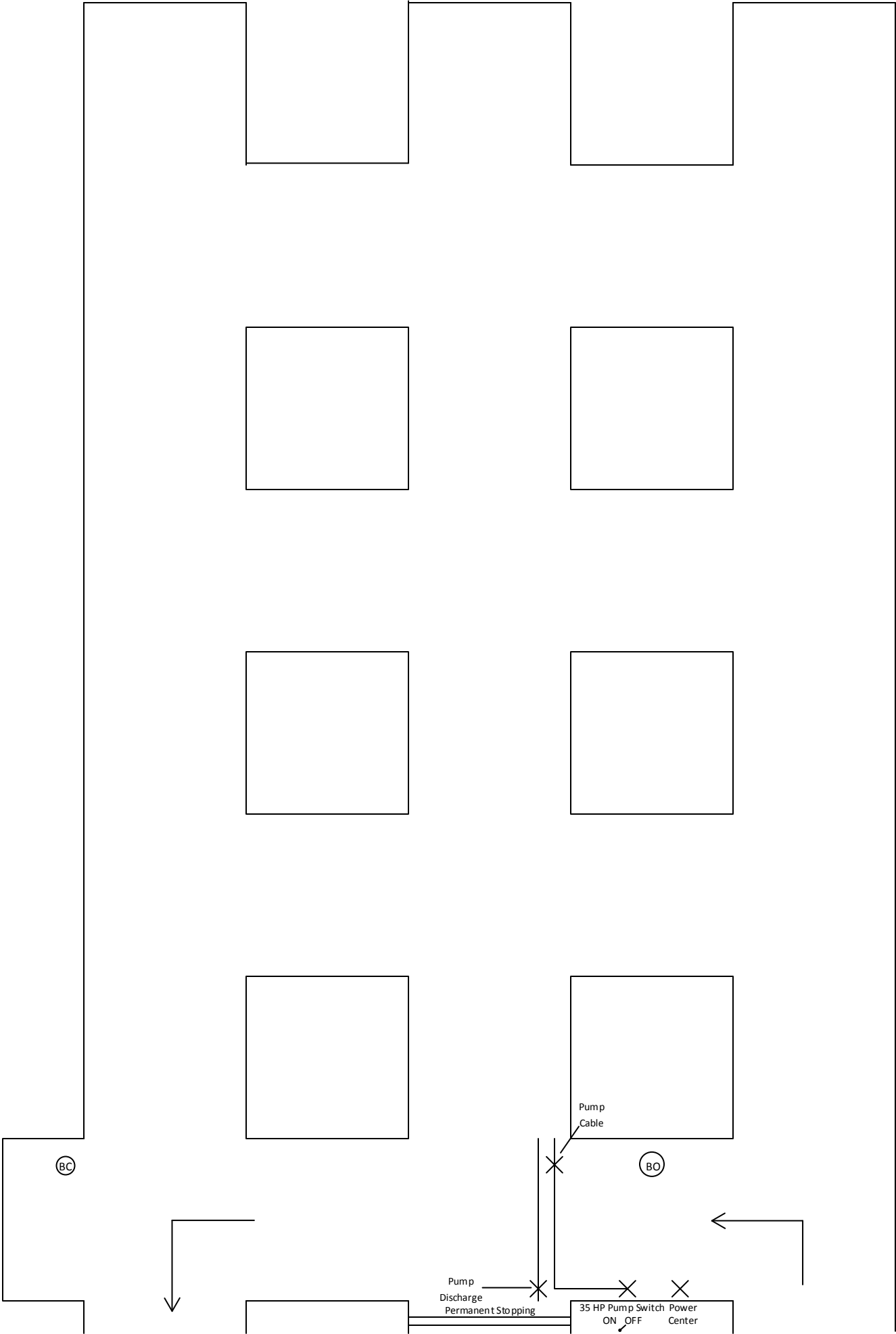
35 HP Pump Switch Power Center
ON OFF



Delta Day
2
TEAM
MAP



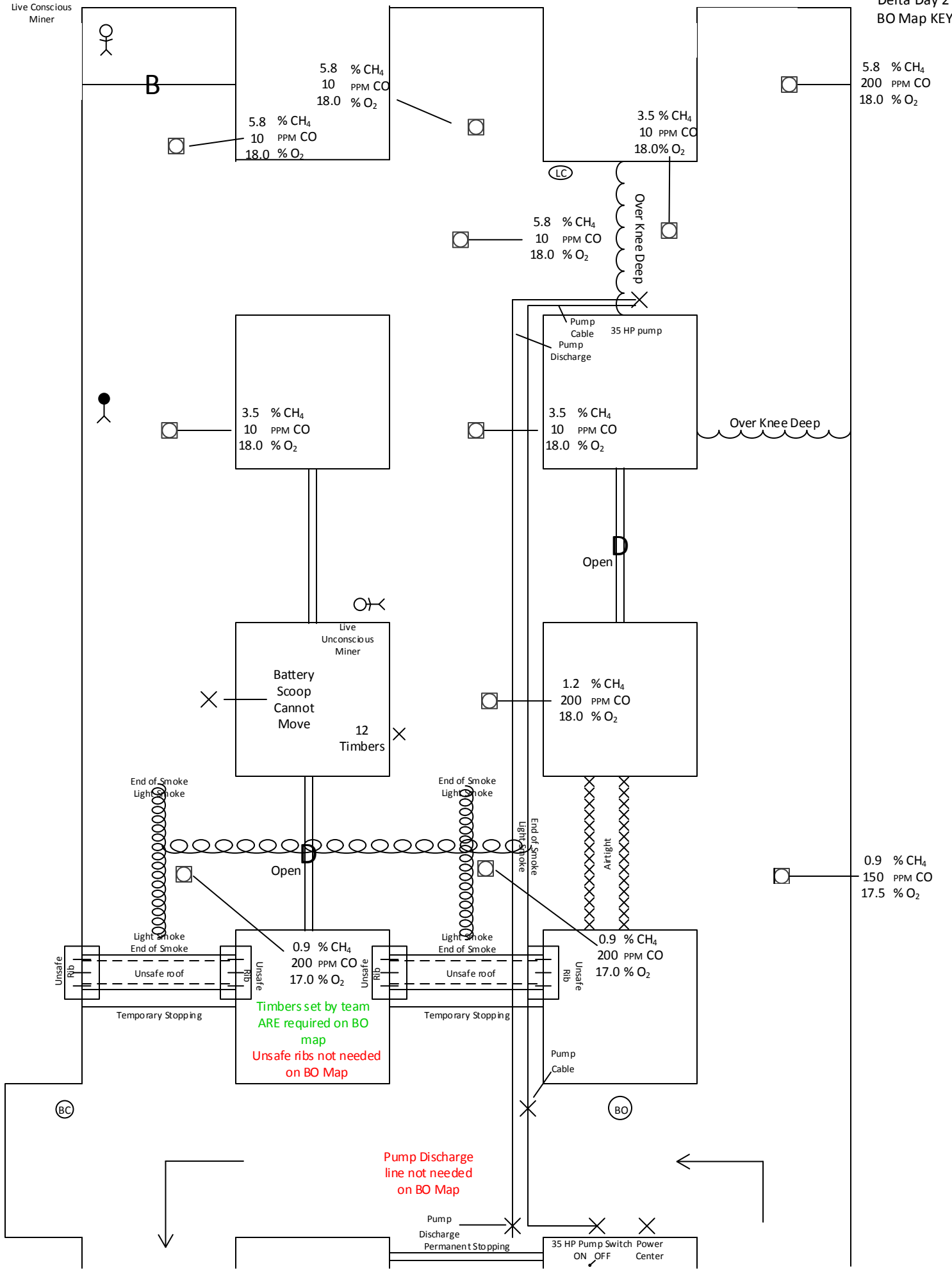
Delta
Day 2
Briefing
Officer
Map



Live Conscious Miner

Delta Day 2

Delta Day 2
BO Map KEY



Timbers set by team
ARE required on BO
map
Unsafe ribs not needed
on BO Map

Pump Discharge
line not needed
on BO Map

Live Conscious Miner
"Help, it's airtight behind me"

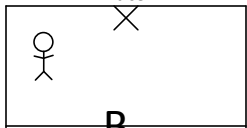
Face

Face

Delta Day 2

Face

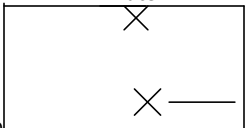
Delta Day 2
VENT 1



5.8 % CH₄
10 PPM CO
18.0 % O₂

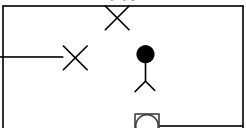
5.8 % CH₄
10 PPM CO
18.0 % O₂

Clear

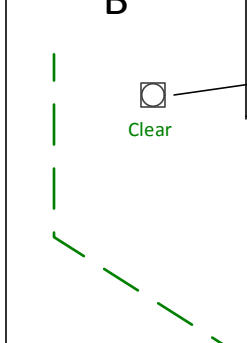


5.8 % CH₄
10 PPM CO
18.0 % O₂

Clear

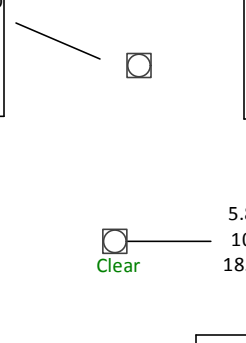


5.8 % CH₄
200 PPM CO
18.0 % O₂



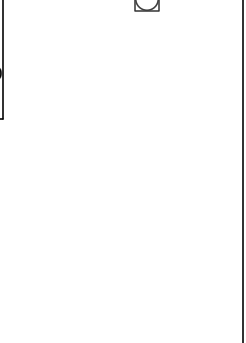
3.5 % CH₄
10 PPM CO
18.0 % O₂

Clear

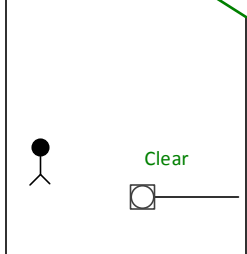


3.5 % CH₄
10 PPM CO
18.0 % O₂

Clear

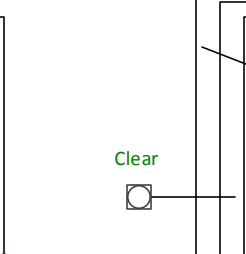


3.5 % CH₄
10 PPM CO
18.0 % O₂



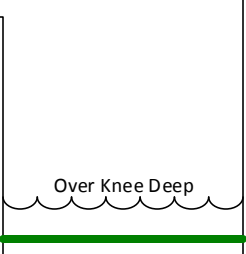
1.2 % CH₄
200 PPM CO
18.0 % O₂

Clear

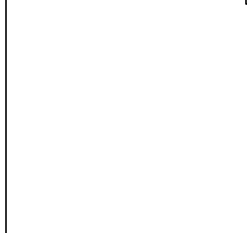


1.2 % CH₄
200 PPM CO
18.0 % O₂

Clear

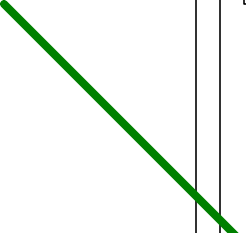


0.9 % CH₄
150 PPM CO
17.5 % O₂



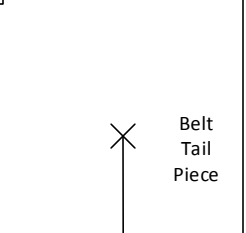
0.9 % CH₄
200 PPM CO
17.0 % O₂

Clear

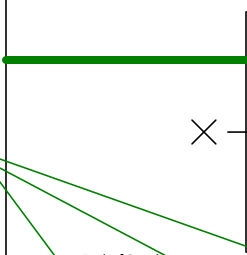


0.9 % CH₄
200 PPM CO
17.0 % O₂

Clear

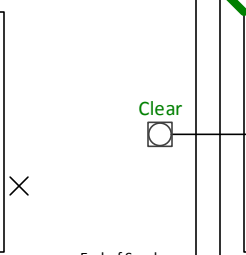


0.9 % CH₄
150 PPM CO
17.5 % O₂



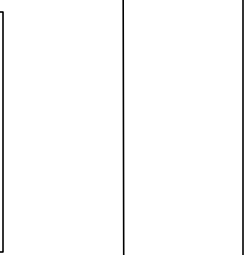
0.9 % CH₄
200 PPM CO
17.0 % O₂

Clear

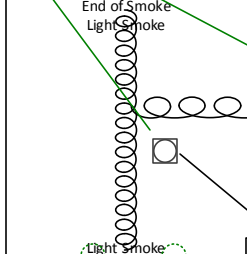


0.9 % CH₄
200 PPM CO
17.0 % O₂

Clear

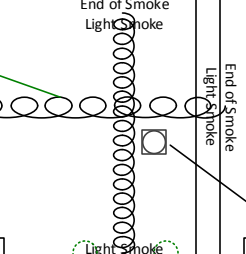


0.9 % CH₄
150 PPM CO
17.5 % O₂



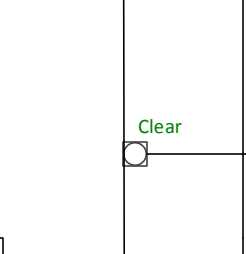
0.9 % CH₄
200 PPM CO
17.0 % O₂

Clear

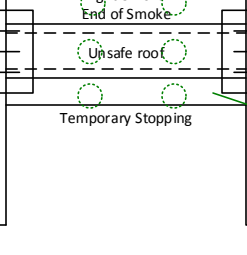


0.9 % CH₄
200 PPM CO
17.0 % O₂

Clear

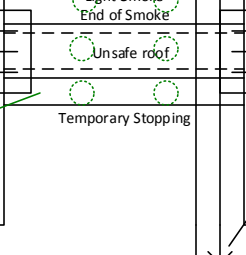


0.9 % CH₄
150 PPM CO
17.5 % O₂



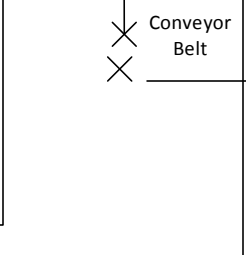
0.9 % CH₄
200 PPM CO
17.0 % O₂

Clear

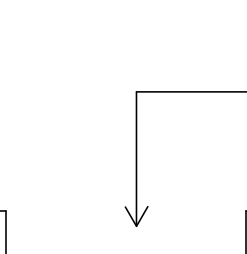


0.9 % CH₄
200 PPM CO
17.0 % O₂

Clear

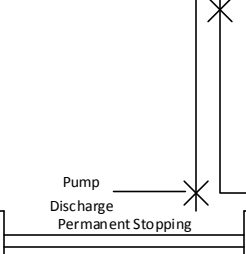


0.9 % CH₄
150 PPM CO
17.5 % O₂



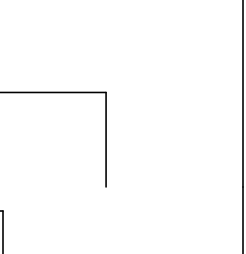
0.9 % CH₄
200 PPM CO
17.0 % O₂

Clear



0.9 % CH₄
200 PPM CO
17.0 % O₂

Clear



0.9 % CH₄
150 PPM CO
17.5 % O₂

If door in stopping remains open, these gases DO NOT clear

End of Smoke
Light Smoke

End of Smoke
Light Smoke

End of Smoke
Light Smoke

Light Smoke
End of Smoke

Light Smoke
End of Smoke

Light Smoke
End of Smoke

Temporary Stopping

Temporary Stopping

Pump Discharge
Permanent Stopping

35 HP Pump Switch Power Center
ON OFF

B

(LC)

Over Knee Deep

Pump Cable
35 HP pump
Pump Discharge

One of two Required

Over Knee Deep

Open

D

Belt Tail Piece

Clear

Conveyor Belt

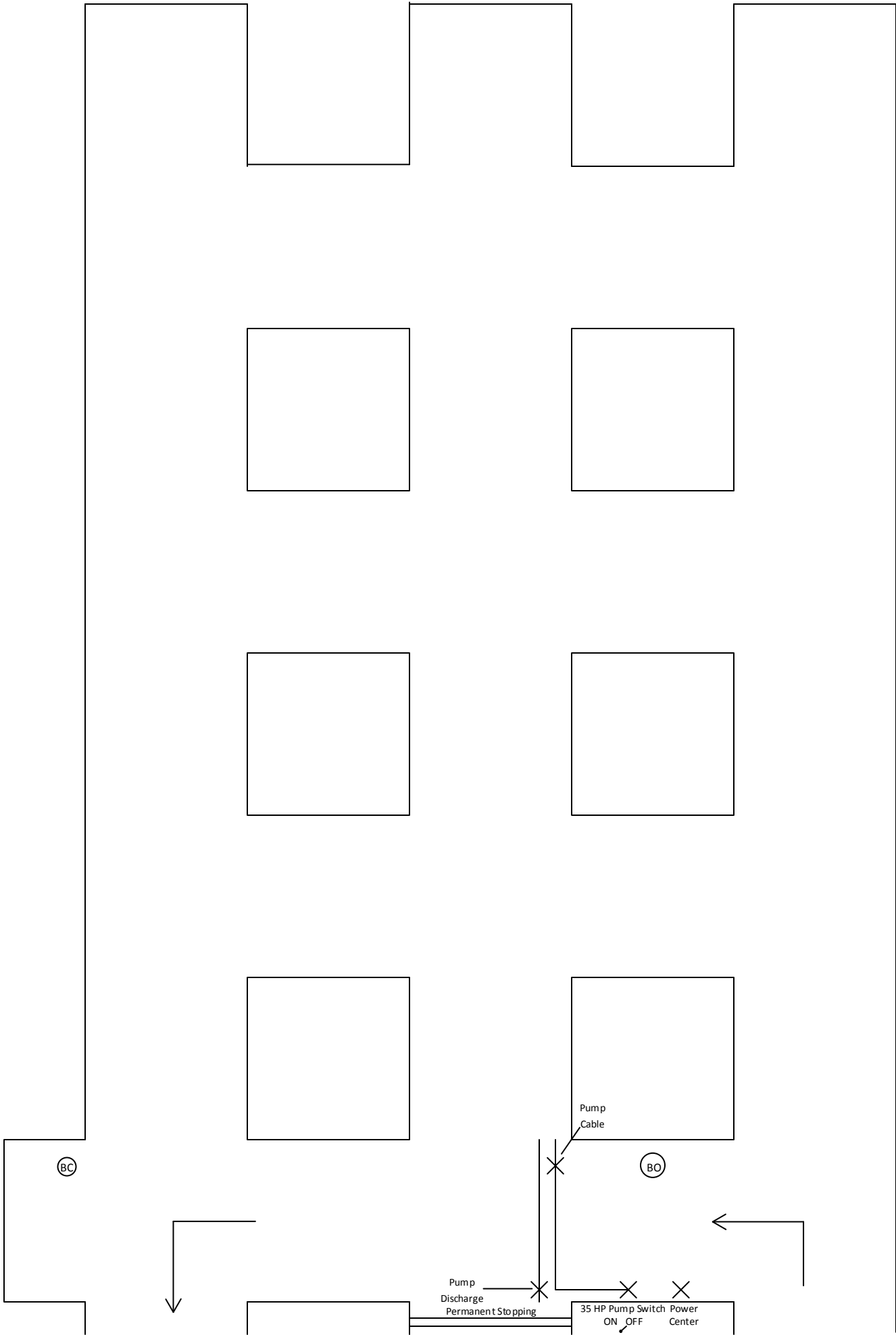
10 Crib Blocks Set (Passable)

(BC)

(BO)

Delta
Day 2

Final Vent



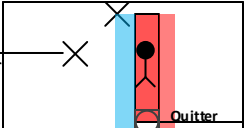
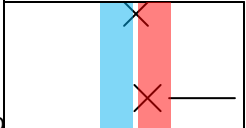
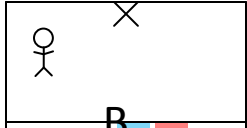
Live Conscious Miner
"Help, it's
airtight behind
me"

Face

Face

Delta Day 2

Face



B

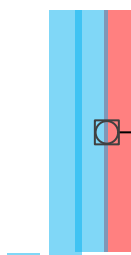
Continuous Miner

Quitter

5.8 % CH₄
10 PPM CO
18.0 % O₂

3.5 % CH₄
10 PPM CO
18.0 % O₂

5.8 % CH₄
200 PPM CO
18.0 % O₂



5.8 % CH₄
10 PPM CO
18.0 % O₂

3.5 % CH₄
10 PPM CO
18.0 % O₂

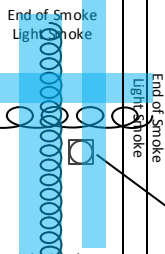
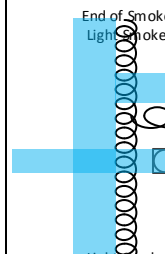
3.5 % CH₄
10 PPM CO
18.0 % O₂

Over Knee Deep



Live Unconscious Miner
Battery Scoop Cannot Move
12 Timbers

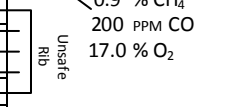
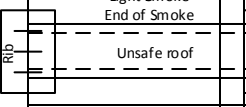
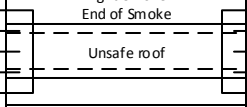
1.2 % CH₄
200 PPM CO
18.0 % O₂



0.9 % CH₄
200 PPM CO
17.0 % O₂

0.9 % CH₄
200 PPM CO
17.0 % O₂

0.9 % CH₄
150 PPM CO
17.5 % O₂



Conveyor Belt

10 Crib Blocks Set (Passable)

Temporary Stopping

Temporary Stopping

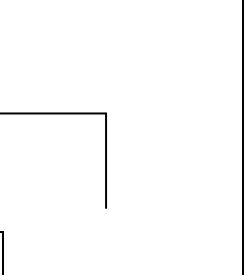
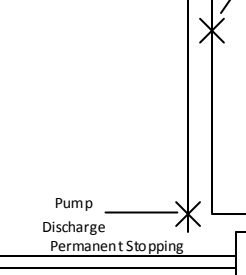
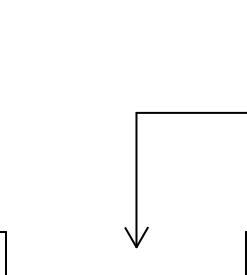
Pump Cable

Pump Discharge
Permanent Stopping

35 HP Pump Switch Power Center
ON OFF

(BC)

(BO)



Live Conscious Miner
"Help, it's airtight behind me"

Delta Day 2

