



2016
HARLAN SAFETY DAYS
MINE RESCUE CONTEST
DAY 2

MH

Judges Instructions
BEFORE CLOCK STARTS

Show the pump to the team and explain that the pump is controlled by the command center. The rope attached is the power cable and discharge line and as they move the pump the rope will feed off to show the location and routing of the power cable and discharge line.

CHECKLIST AFTER CLOCK STOPPED

1. GET TEAM MAP AND BO MAP MAKE SURE BOTH ARE MARKED AND NUMBERED.
2. GET VISIO SD CARD IF TEAM IS USING IT, MAKE SURE THEY HAVE SAVED INFORMATION AND PUT IT IN TEAM NUMBERED ENVELOPE.
3. TELL TEAM TO LEAVE ALL CONTEST MATERIAL IN FAB.
4. FILL OUT FINAL MAP HAVE TEAM INITIAL.
5. GET TIME FROM TEAM TIME CLOCK AND HAVE CAPTAIN CONFIRM TIME.
6. BE SURE TO PICK UP TEAM PACKET.

**HARLAN SAFETY DAYS MINE RESCUE CONTEST
SUPERINTENDENT STATEMENT DAY 1 AND DAY 2
JULY 20 AND 21, 2016**

Thank you for coming to help us. You are located at the fresh air base of the Harco #1 mine. This is a very large mine with multiple working sections and interconnected fans and air courses.

This morning 73 miners entered the mine. Around 9:00 am this morning the incident occurred. There was a loud rush of air out the portals and the CO system alarmed. The Responsible Person tried to contact the miners underground but was not able to contact anyone. We reported this to MSHA and contacted mine rescue teams. At 10:30 am fifty miners were able to escape. The other 23 miners are unaccounted for. There are multiple mine rescue teams working different areas of the mine at the same time you will be working.

A mine rescue team was able to explore to the area inby the area you will be exploring. They were stopped by unsafe roof in the number 1 entry, water roofed in number 2 entry and caved in number 3 entry. The team was able to setup a safe return and intake inby that you can use to ventilate. The fan ventilating this area is exhausting and will pull air through the area you will be exploring if you do not maintain an airlock or you can stall both fans if they are pulling or pushing against each other. The area is currently air-locked inby the fresh air base.

The air is currently going across the fresh air base and the return has been established so you can send smoke, and any gases out and they will not travel over any ignition source or unexplored area. The fan is currently blowing.

The mine has a history of bad roof, water and methane. The mine maps are up to date. We have a competent life line person to give and take life line signals if necessary.

Please find the 5 missing miners that were in this area of the mine that you will be exploring. Thank you and good luck.

PROBLEM DAY 2

BOTH FANS CAN BE TURNED OFF, AND REVERSED BUT CAN NOT BE STALLED DUE TO CAUSING DAMAGE TO THE FAN.

TO PREVENT STALLING ONE FAN HAS TO BE BLOWING AND THE OTHER EXHAUSTING WHEN USING BOTH FANS.

THE RETURN AND INTAKE OUTBY THE FAB AND INBY AREAS HAVE BEEN EXPLORED AND IS SAFE TO VENTILATE THROUGH.

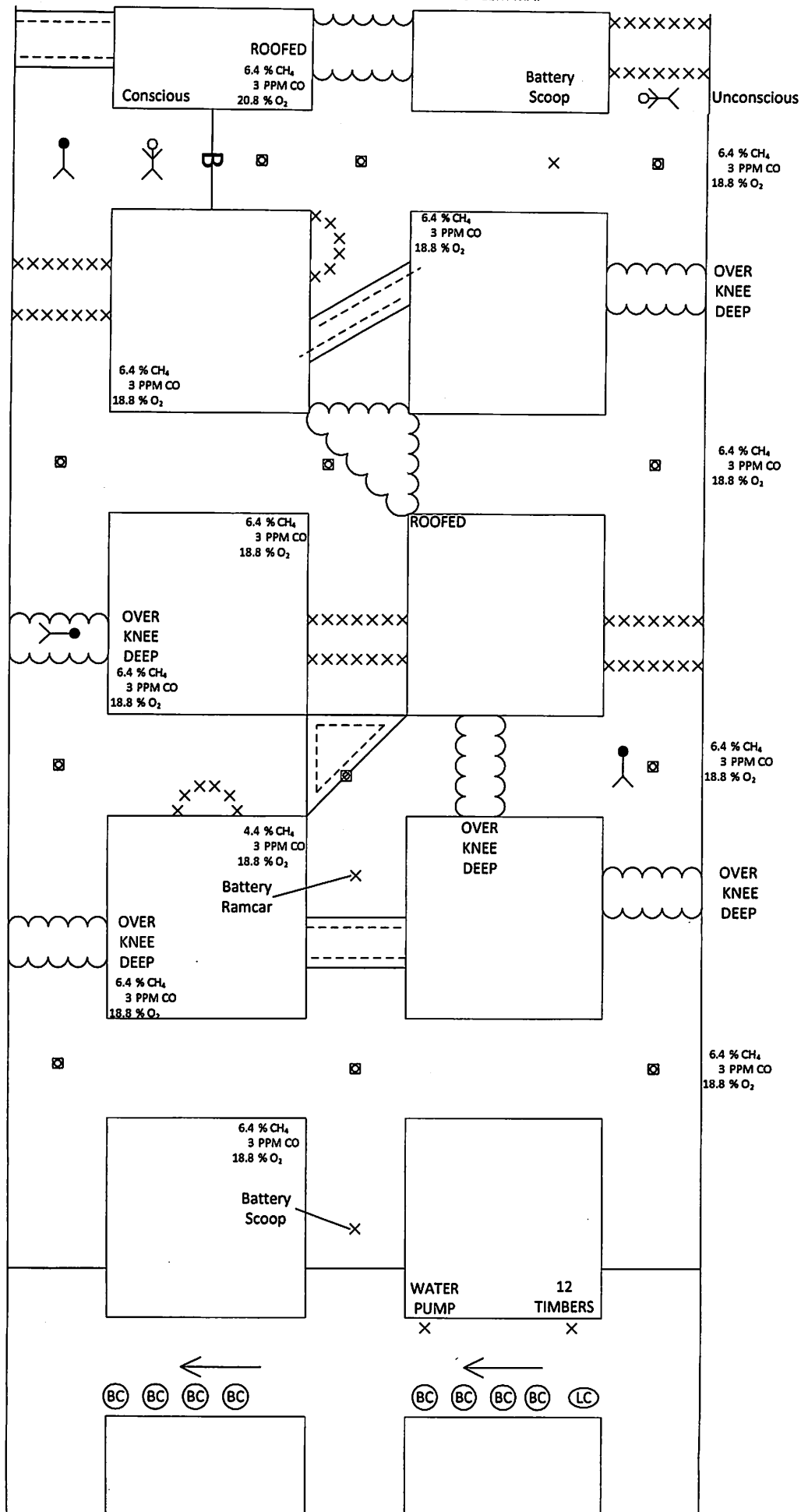
ACCOUNT FOR ALL 5 MISSING MINERS THAT ARE IN THE AREA YOU ARE EXPLORING AND BRING SURVIVORS TO THE FAB

EXPLORE ALL AREAS OF THE MINE THAT CAN BE DONE SAFELY

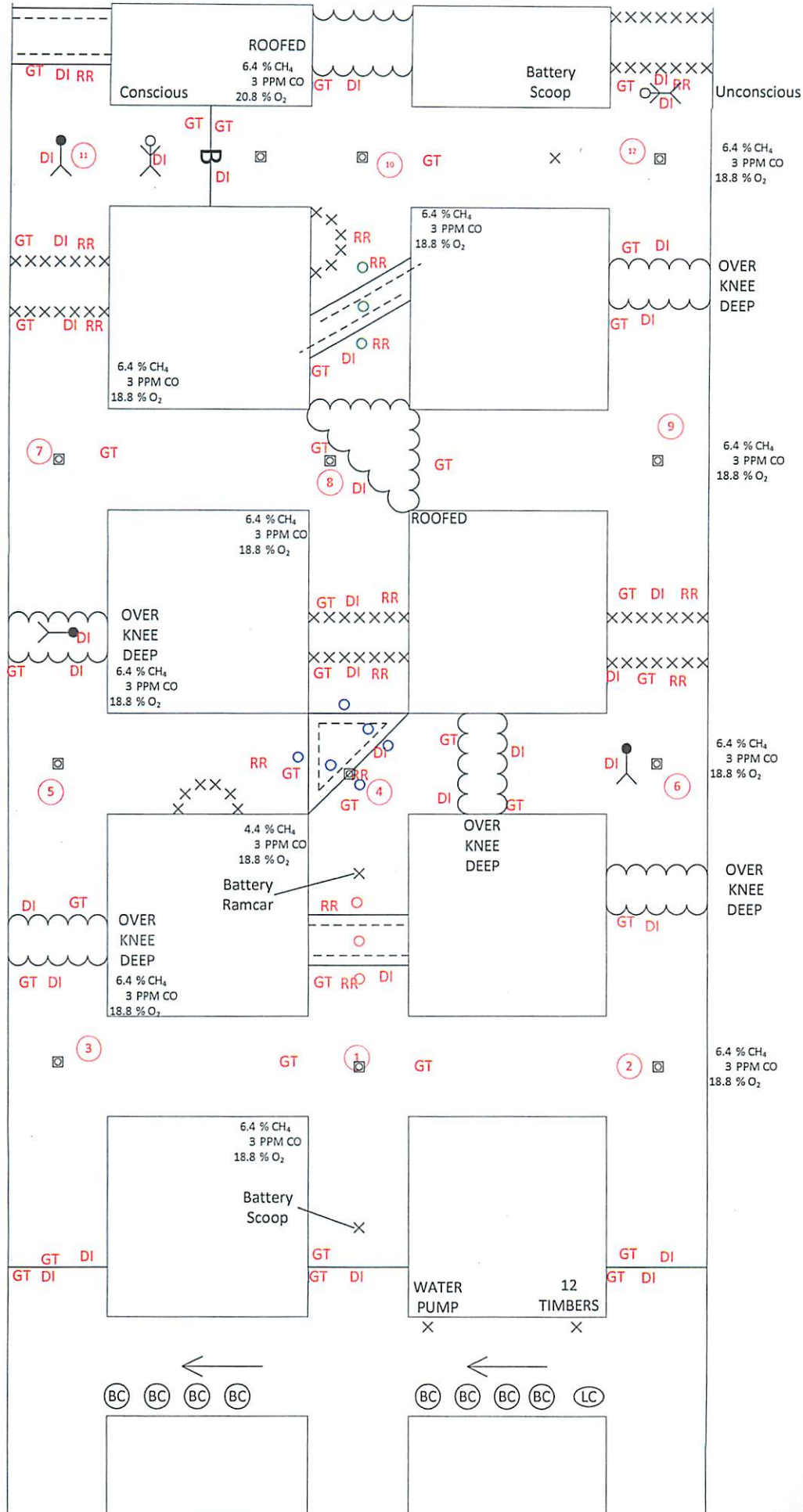
PATIENT STATEMENT 1

HELP!! GET ME OUT OF HERE.

HARLAN SAFETY DAYS 2016 DAY 2 PROBLEM MAP



HARLAN SAFETY DAYS 2016 DAY 2 TEAM STOP



HARLAN SAFETY DAYS RESCUE CONTEST DAY 2
JUDGES BRIEFING

Number 1 entry GT DI Airlock GT inby stopping

Number 2 entry GT DI Airlock GT inby stopping

Number 3 entry GT DI Airlock GT inby stopping

The teams can enter any entry they want to, we are setting it like they enter number 2 entry.

Team Stop before breaching stopping.

Team Check

Team Stop 1

Crosscut between 1 & 2 GT

Crosscut between 2 & 3 GT

Inby GT DI RR

Team Stop 2

Outby GT DI

Inby GT DI

Team Stop 3

Inby GT DI

Outby GT DI

Set 3 timbers advance up number 2 entry RR inby side.

Team Stop 4

Diagonal roof GT DI RR ZIG-ZAG

Crosscut between 2 & 3 GT DI

Set 3 timbers to go inby RR inby side GT DI RR at caved.
Set 3 timbers to go to number 1 entry RR inby side.

Team Stop 5
Inby GT DI
Outby GT DI

Ventilation 1
Pump Water 1

Team Stop 6
Body Touch DI
Inby GT DI RR
Crosscut between 2 & 3 GT DI

Pump Water 2
Ventilation 2
Pump Water 3
Ventilation 3
Pump Water 4

Body Touch DI

Team Stop 7
Inby GT DI RR
Crosscut between 2 & 3 GT

Team Stop 8
Intersection GT DI
Outby GT DI RR

Pump Water 5
Ventilation 4

Finish team stop 8
Inby GT DI RR
Crosscut between 2 & 3 GT

Team Stop 9
Inby GT DI
Outby GT DI RR

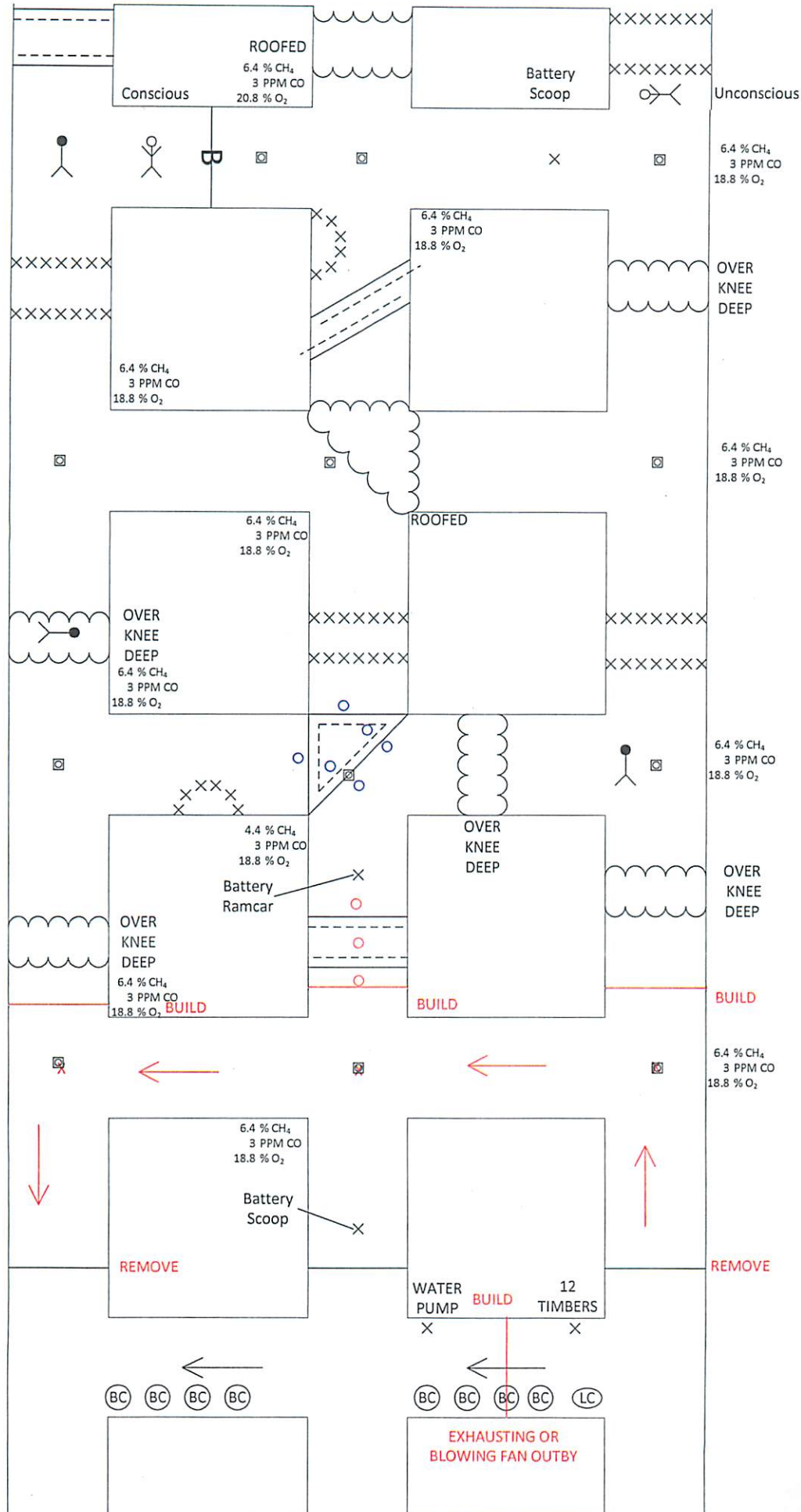
Set 3 timbers advance up number 2 entry RR inby side
RR ZIG-ZAG at unsafe roof

Team Stop 10
Inby DI GT
Crosscut between 2 & 3 GT
Crosscut between 1 & 2 GT DI
Patient reads statement
Enter barricade GT
Patient Touch, Assess, DI remove to FAB under oxygen

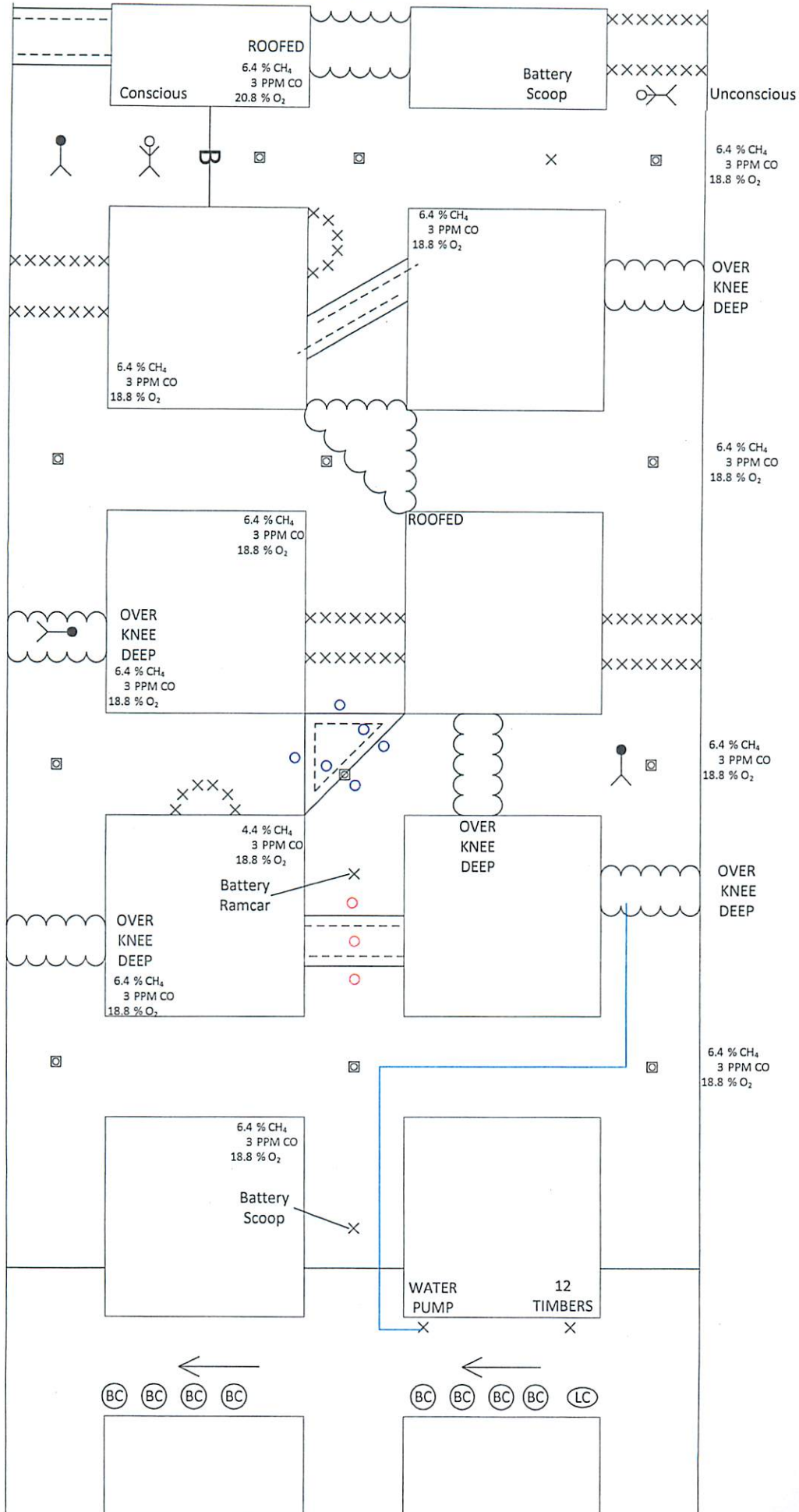
Team Stop 11
Body Touch DI
Outby GT DI RR
Inby GT DI RR

Team Stop 12
Patient Touch Assess DI remove to FAB under oxygen
Inby GT DI RR
Outby DI GT
STOP CLOCK

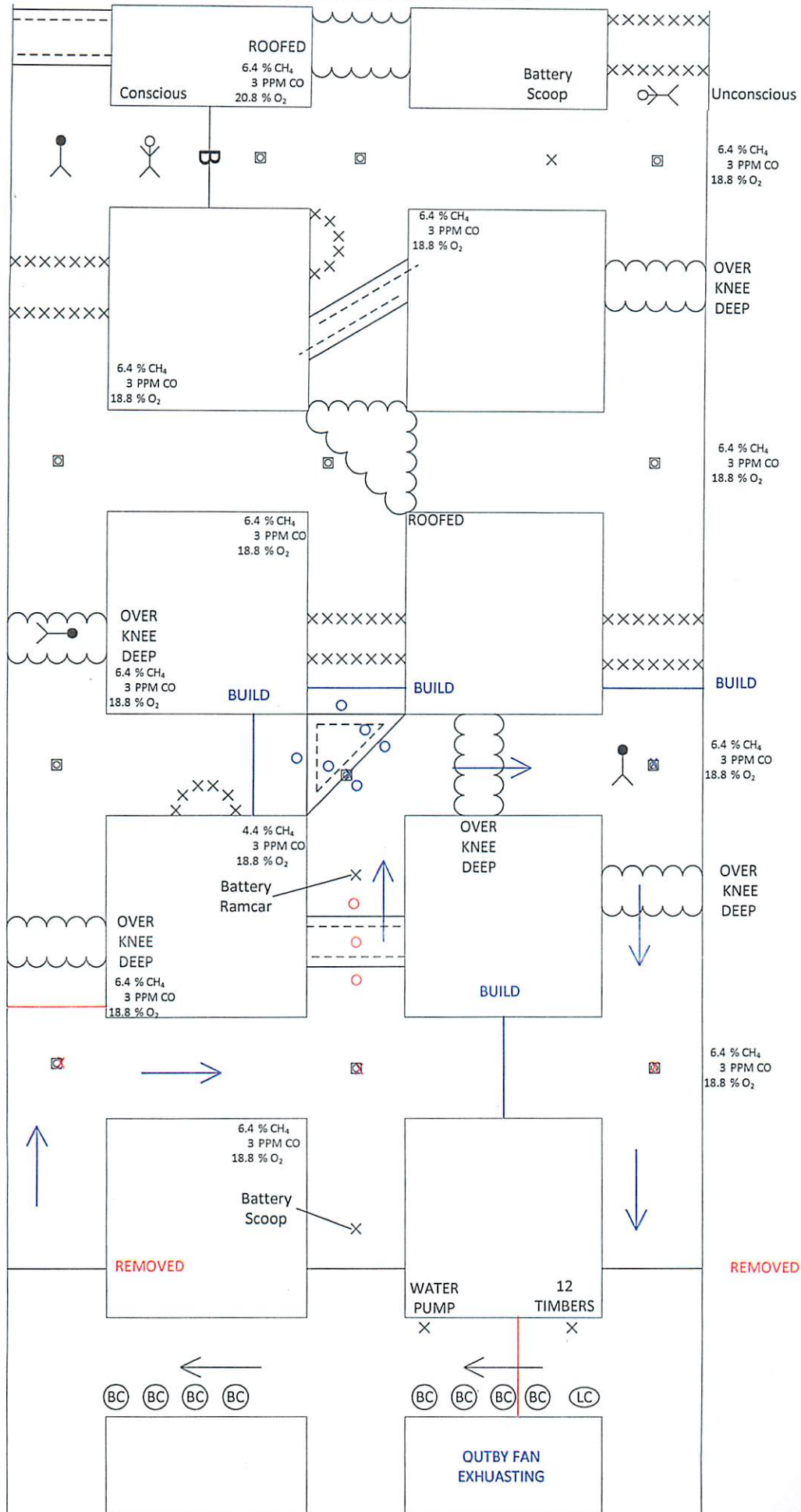
HARLAN SAFETY DAYS 2016 DAY 2 VENTILATION 1



HARLAN SAFETY DAYS 2016 DAY 2 PUMP 1



HARLAN SAFETY DAYS 2016 DAY 2 VENTILATION 2



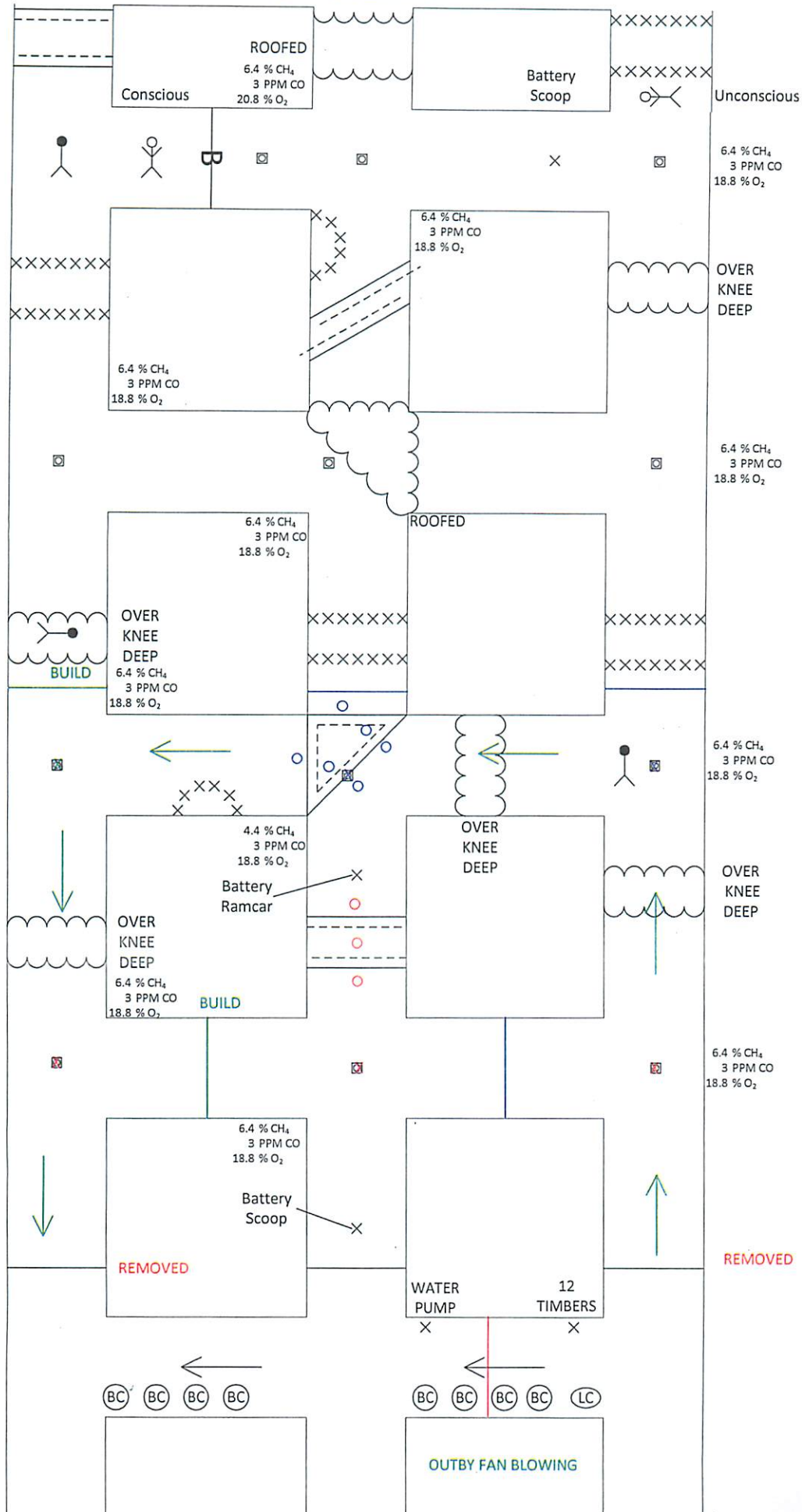
The diagram illustrates a mine layout with the following components and data:

- Top-Left Room:** Labeled "ROOFED" and "Conscious". Gas concentrations: 6.4 % CH₄, 3 PPM CO, 20.8 % O₂.
- Top-Right Room:** Labeled "Battery Scoop".
- Middle-Left Room:** Gas concentrations: 6.4 % CH₄, 3 PPM CO, 18.8 % O₂.
- Middle-Right Room:** Gas concentrations: 6.4 % CH₄, 3 PPM CO, 18.8 % O₂.
- Bottom-Left Room:** Labeled "OVER KNEE DEEP". Gas concentrations: 6.4 % CH₄, 3 PPM CO, 18.8 % O₂.
- Bottom-Middle Room:** Labeled "OVER KNEE DEEP". Gas concentrations: 4.4 % CH₄, 3 PPM CO, 18.8 % O₂. Contains a "Battery Ramcar".
- Bottom-Right Room:** Labeled "OVER KNEE DEEP".
- Bottom-Most Left Room:** Gas concentrations: 6.4 % CH₄, 3 PPM CO, 18.8 % O₂. Contains a "Battery Scoop".
- Bottom-Most Right Room:** Labeled "WATER PUMP" and "12 TIMBERS".

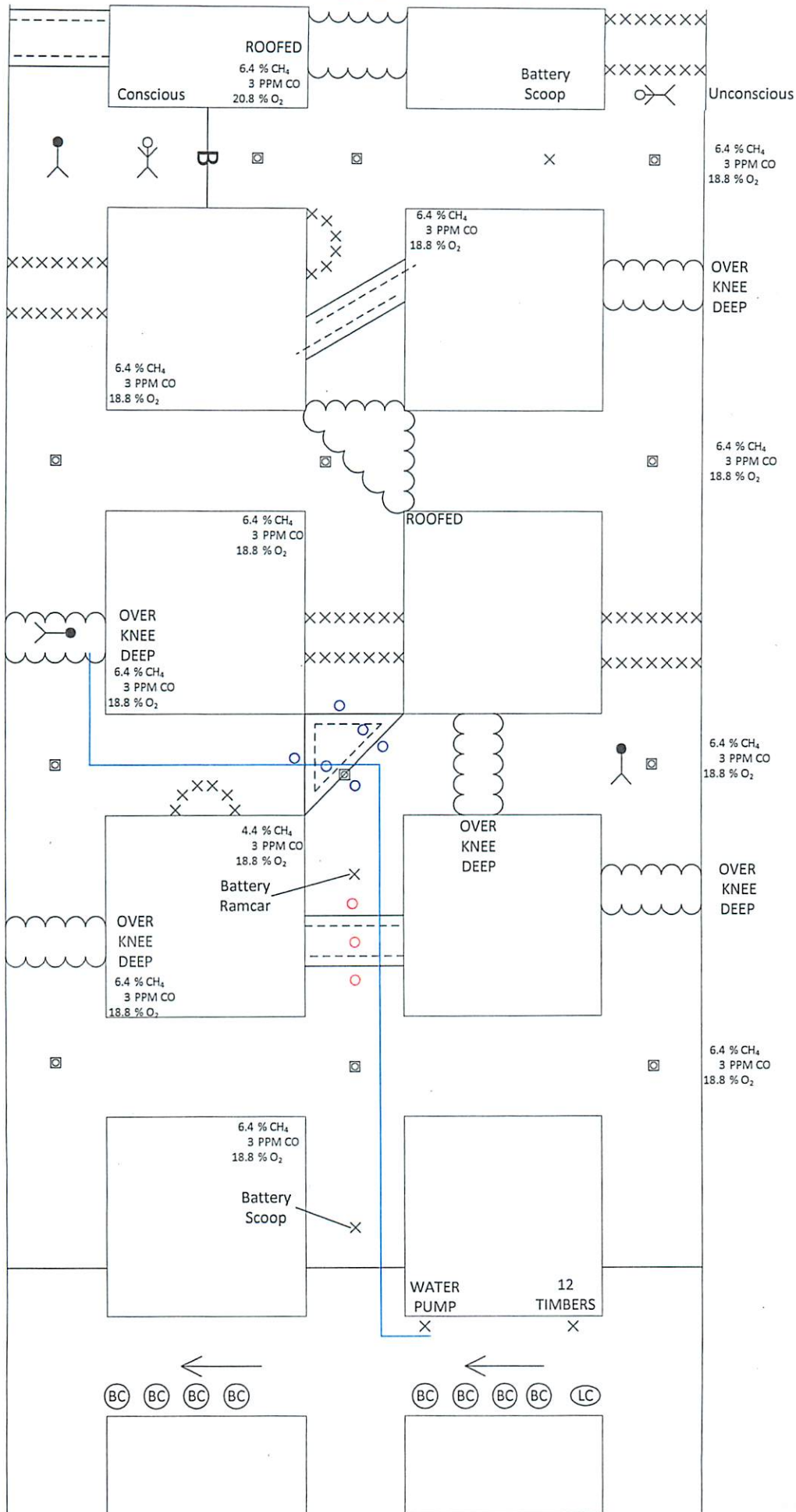
Air Flow and Other Features:

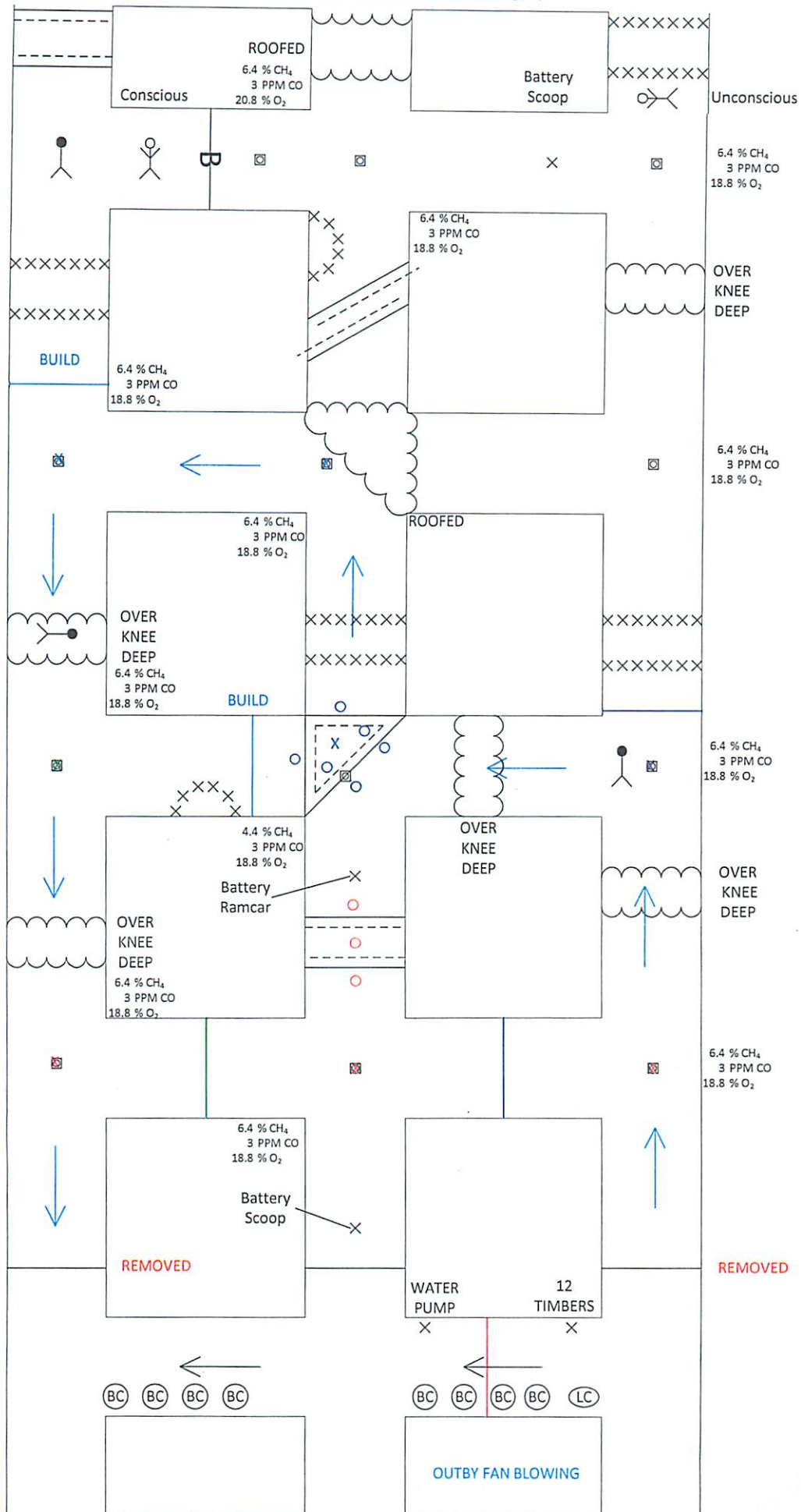
- Arrows indicate air flow paths, including a path from the top-left room through the "Battery Scoop" and "WATER PUMP" rooms.
- Various symbols represent doors, windows, and equipment.
- Gas concentrations are consistently noted in several rooms as 6.4 % CH₄, 3 PPM CO, and 18.8 % O₂.

HARLAN SAFETY DAYS 2016 DAY 2 VENTILATION 3

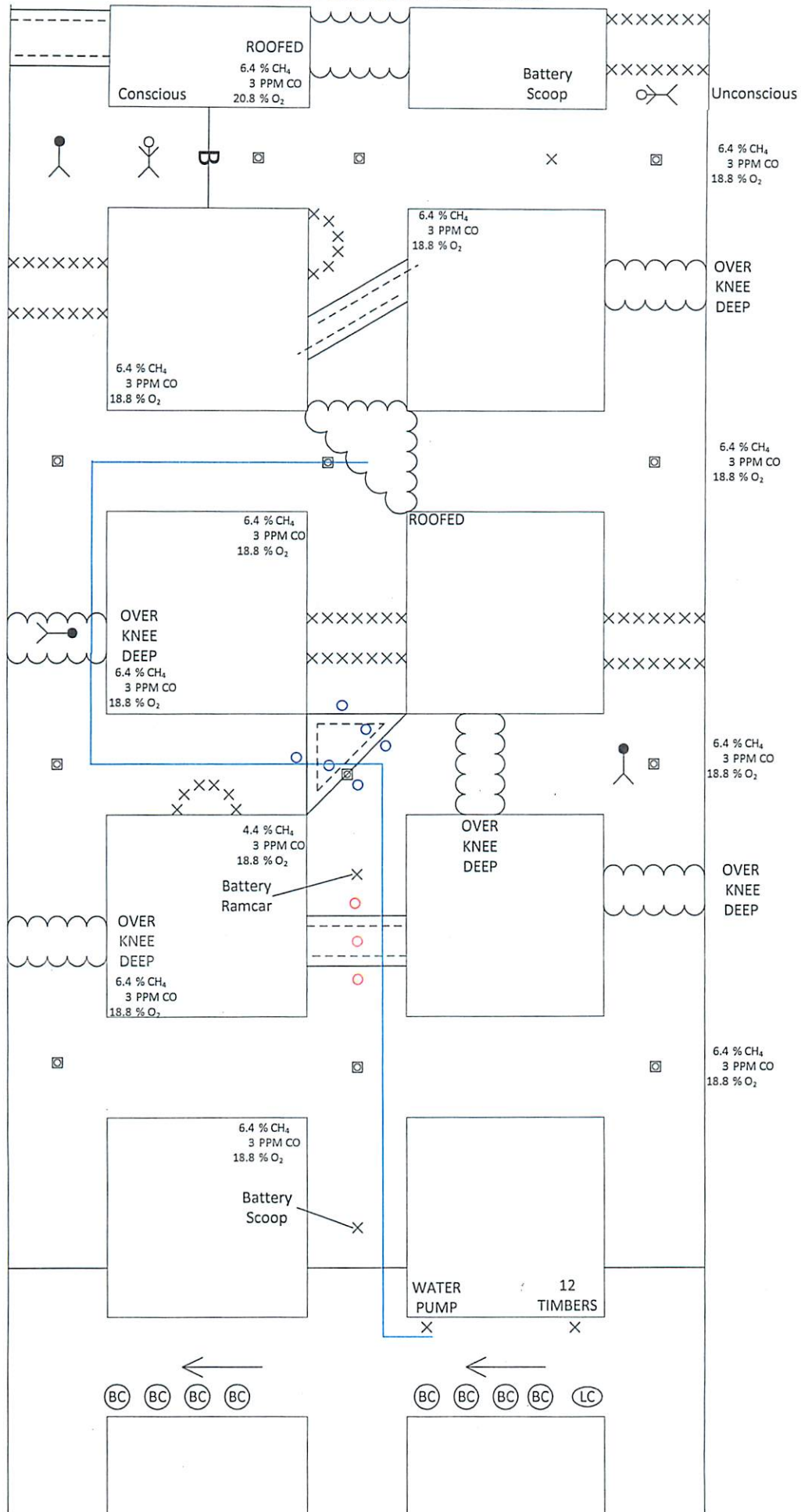


HARLAN SAFETY DAYS 2016 DAY 2 PUMP WATER 4





HARLAN SAFETY DAYS 2016 DAY 2 PUMP WATER 5



HARLAN SAFETY DAYS 2016 DAY 2 FINAL MAP

Retest Y__ N__ ROOFED 6.4 % CH₄ 3 PPM CO 20.8 % O₂		6.4 % CH₄ 3 PPM CO 18.8 % O₂
Retest Y__ N__ 6.4 % CH₄ 3 PPM CO 18.8 % O₂	6.4 % CH₄ 3 PPM CO 18.8 % O₂ Retest Y__ N__	Retest Y__ N__
6.4 % CH₄ 3 PPM CO 18.8 % O₂ Retest Y__ N__ Retest Y__ N__ 6.4 % CH₄ 3 PPM CO 18.8 % O₂		6.4 % CH₄ 3 PPM CO 18.8 % O₂
4.4 % CH₄ 3 PPM CO 18.8 % O₂ Retest Y__ N__ Retest Y__ N__ 6.4 % CH₄ 3 PPM CO 18.8 % O₂		6.4 % CH₄ 3 PPM CO 18.8 % O₂
6.4 % CH₄ 3 PPM CO 18.8 % O₂ Retest Y__ N__	WATER PUMP 12 TIMBERS	6.4 % CH₄ 3 PPM CO 18.8 % O₂
← (BC) (BC) (BC) (BC)	← (BC) (BC) (BC) (BC) (LC)	Retest Y__ N__

HARLAN SAFETY DAYS 2016 DAY 2 EXTENT OF GASES

