

DELTA, CO MINE RESCUE CONTEST

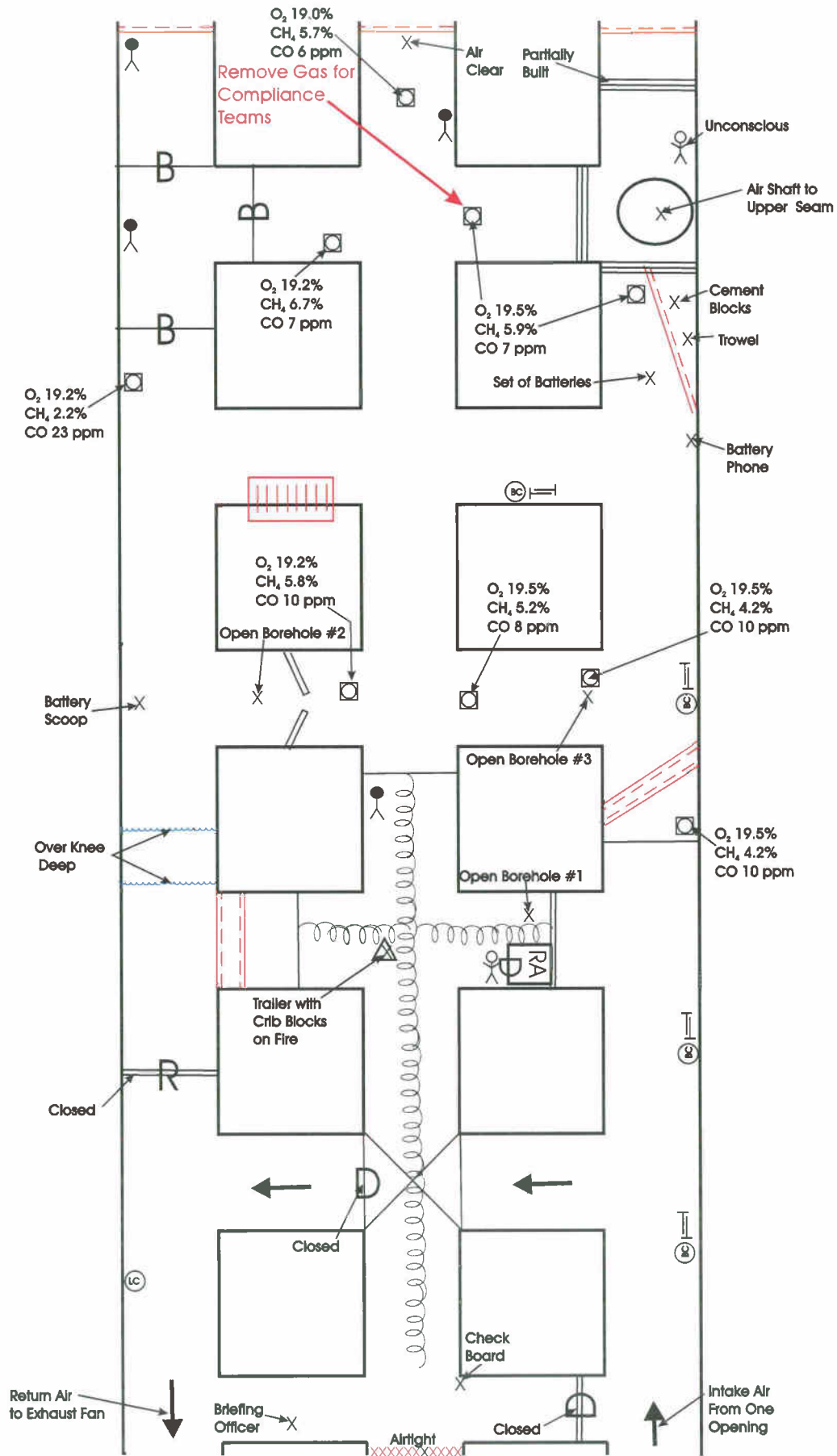
PROBLEM A

JULY 20, 2010



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ENTRIES CONTINUE INTO SECTION



DELTA, CO MINE RESCUE CONTEST
PROBLEM A
JULY 20, 2010

STATEMENT

I am _____, Superintendent of the No. 1 Mine. You are located at the fresh air base on the West Mains section. Three days ago an explosion occurred at the mine. 75 miners were underground when the explosion occurred. Initially, 55 miners exited the mine. Mine rescue teams have found an additional 8 miners and have brought them to the surface. The remaining miners are still missing. The tracking system indicates that these missing miners are on the West Mains section. Work assignments indicate that a crew was building seals around an air shaft located on the West Mains section. This shaft connects the West Mains section to workings in an upper coal seam that are ventilated by a blowing fan. The air shaft is shown on the map that will be provided.

Following the explosion, three boreholes were drilled into the West Mains section in an attempt to locate the missing miners. Borehole #1 entered the mine near the section refuge alternative. A communication device has been lowered into the mine and verbal contact has been made with the miner located in the refuge alternative. The exact location of the three boreholes has not been surveyed. During exploration, you are asked to locate these boreholes and report their location to me.

Previous mine rescue teams constructed a temporary stopping with a man door across the fresh air base between Nos. 2 and 3 entries to direct air into the section. Since both sides of the stopping have been explored, an airlock is not needed to travel through this mandoor. The mandoor must remain closed, except for passing through the door, and the stopping must remain intact during the working of the problem. Temporary stoppings have also been constructed inby on the section to control air movement in the section.

An exhausting main fan on the surface is used to ventilate the mine. This fan must remain on and cannot be reversed or stalled. The fan is being guarded and sampled.

The mine map is a solid-line, up-to-date map. Mining equipment cannot be moved.

The mine is walking height and supported by resin-grouted roof bolts. All electrical circuits to the West Mains section have been disconnected, locked-out and guarded. The mine has experienced adverse roof conditions and problems with water.

A backup team is on site and another team is on standby. All state, federal, and local officials have been notified and are on site. You will have 90 minutes to work the problem. Mine maps and instructions will be provided.

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PROBLEM A

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PROBLEM

Account for all missing persons and bring all live persons to the Fresh Air Base.

Explore all areas that can be done safely.

You have 90 minutes to work the problem.

Statement of Person In Refuge Alternative

To be read by Person when team enters intersection
in front of refuge alternative

Help! Help!

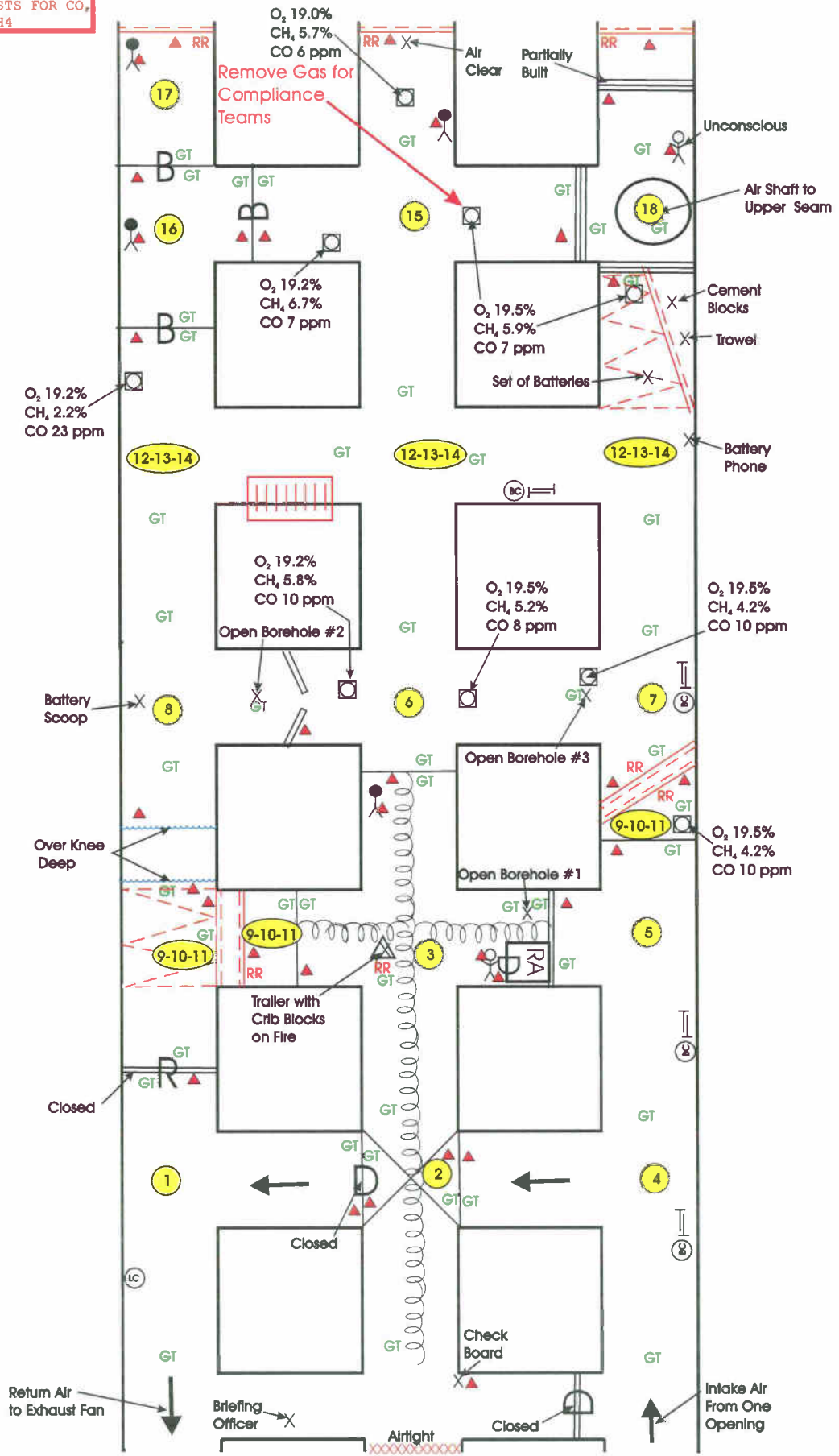
When the team rescues the live person an initial
assessment is required(RULE 12).

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TEAM STOPS

ENTRIES CONTINUE INTO SECTION

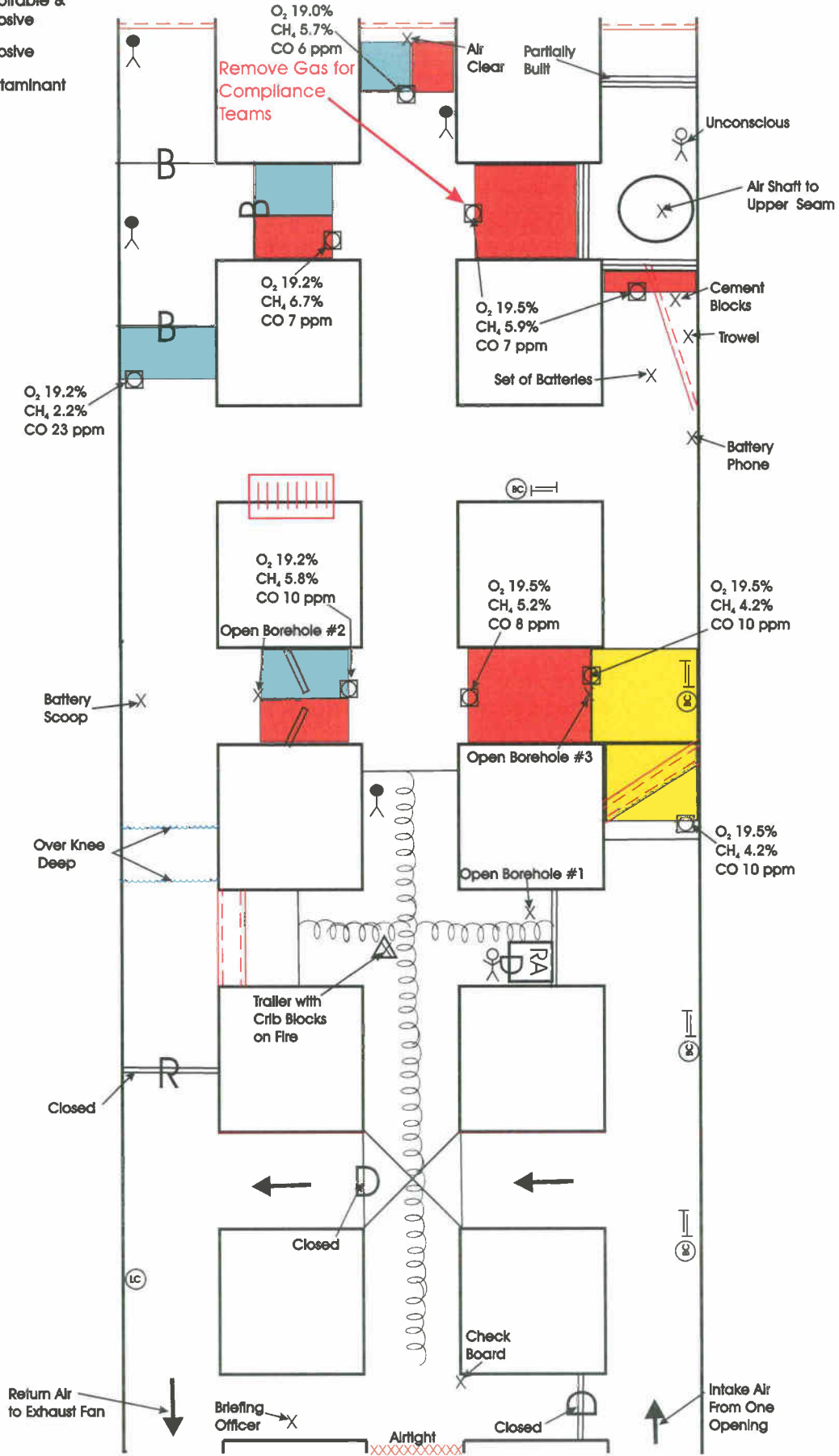
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EXTENT OF GASES ENTRIES CONTINUE INTO SECTION

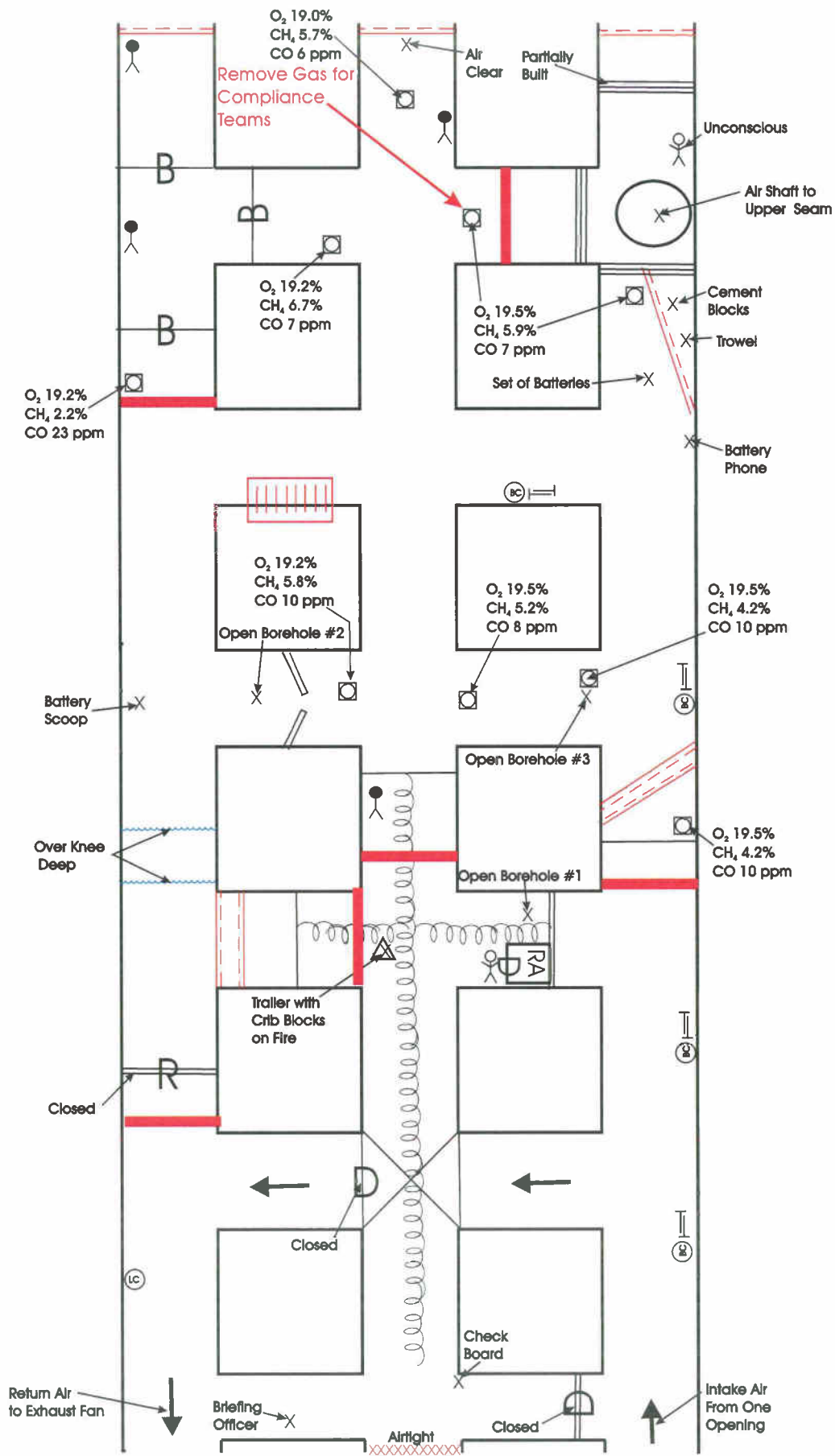
- Irrspirable
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- Explosive
- Contaminant



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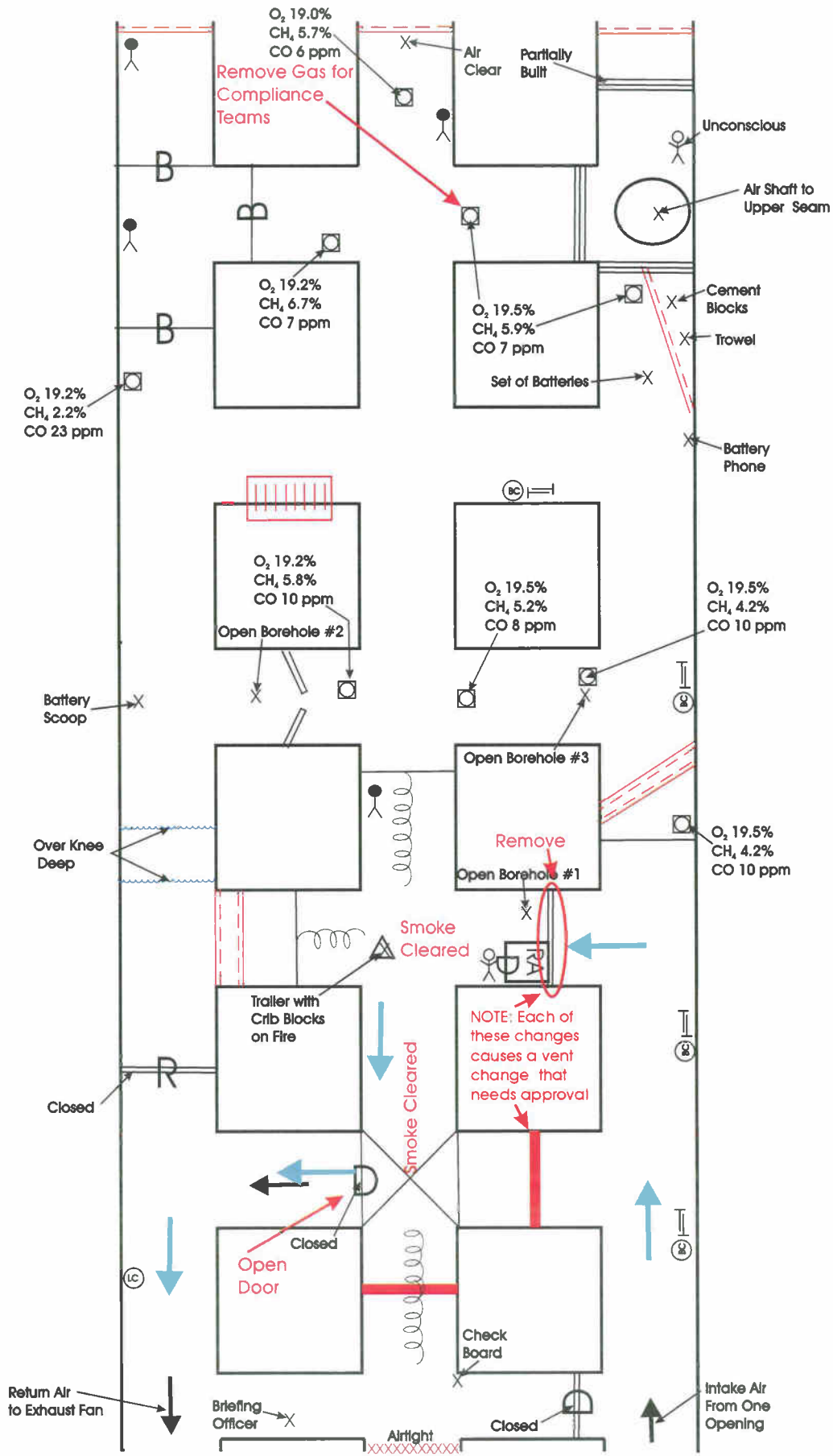
Airlocks Required - Rule 43

ENTRIES CONTINUE INTO SECTION



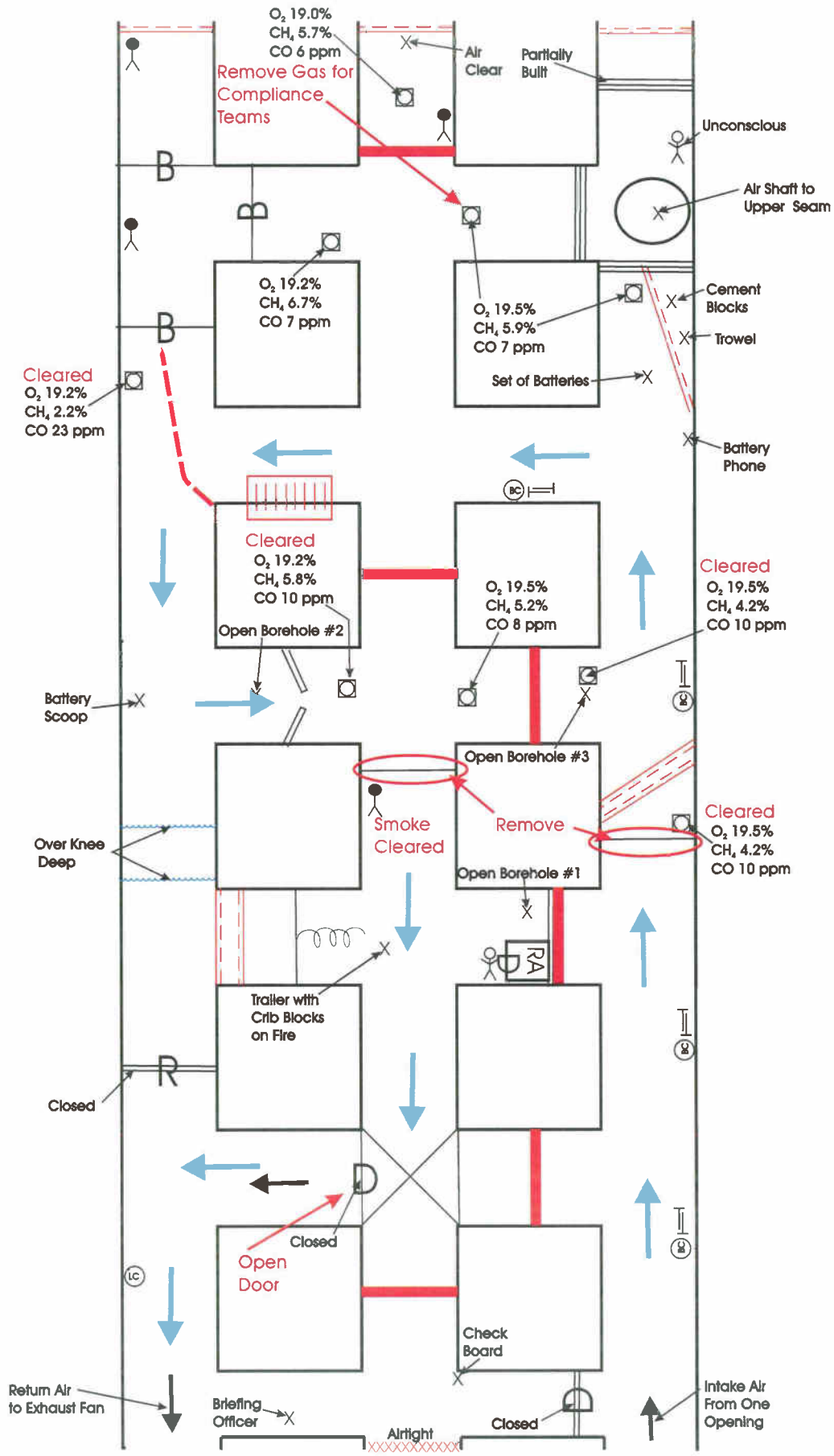
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STEP 1 VENTILATION ENTRIES CONTINUE INTO SECTION



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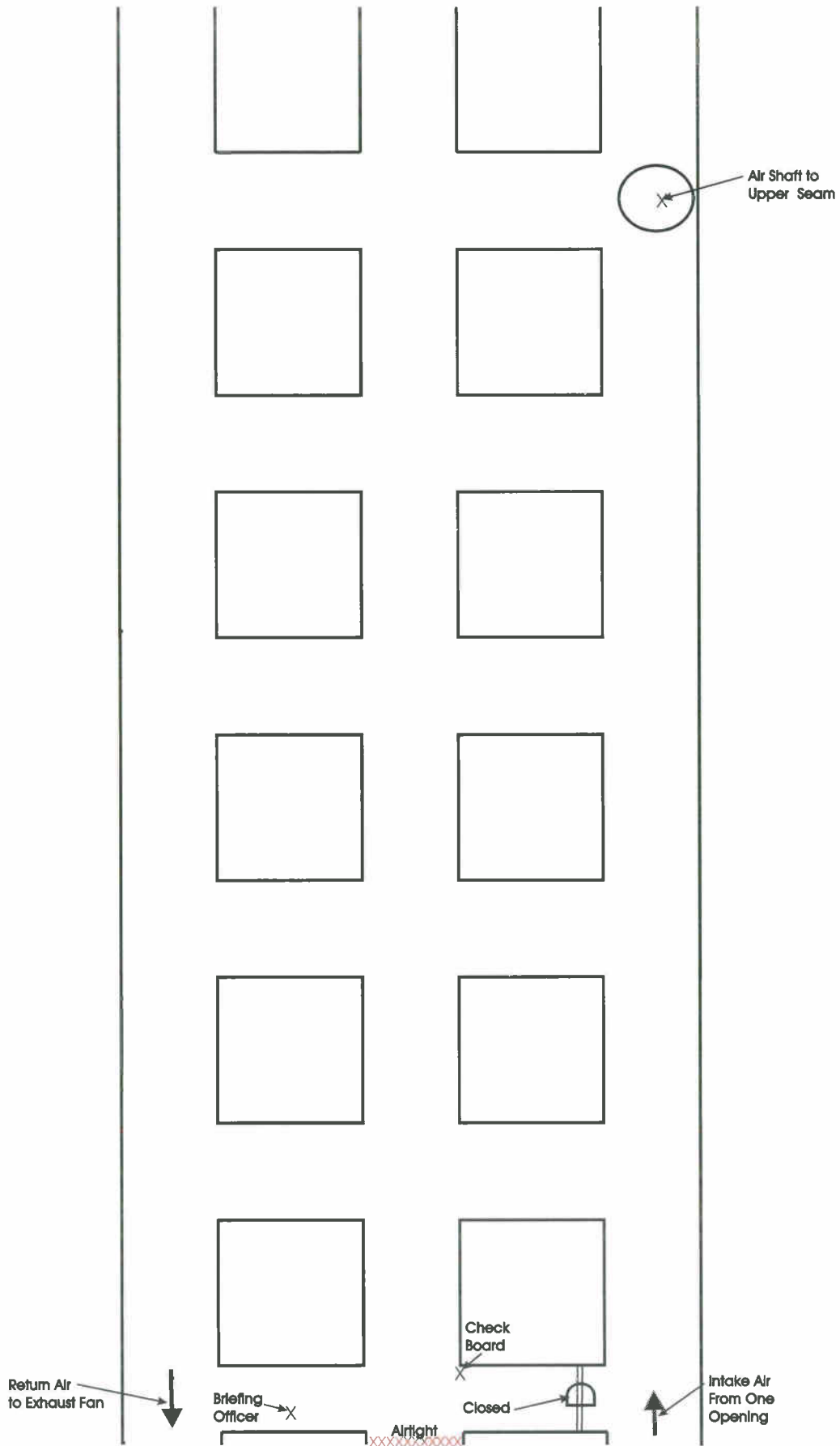
STEP 2 VENTILATION ENTRIES CONTINUE INTO SECTION



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TEAM MAP

ENTRIES CONTINUE INTO SECTION



2010 – DELTA, CO MINE RESCUE CONTEST INFORMATION

- A 90-MINUTE TIME LIMIT WILL APPLY. WARNINGS AT 20, 10, AND 2 MINUTES REMAINING WILL BE PROVIDED TO THE BRIEFING OFFICER BY THE JUDGE.
- THE FOLLOWING DISCOUNTS WILL APPLY IF TEAM FAILS TO COMPLETE PROBLEM IN 90 MINUTES:
 - **RULE 51** - 15 DISCOUNTS WILL BE ASSESSED FOR FAILURE TO FOLLOW WRITTEN INSTRUCTIONS IF PROBLEM IS NOT FINISHED BEFORE THE 90-MINUTE TIME LIMIT.
 - **RULE 5** – 2 POINTS FOR EACH OBJECT/CONDITION THAT SHOULD HAVE BEEN FOUND AND MAPPED IF PROBLEM HAD BEEN COMPLETED.
 - **RULE 32** – 10 DISCOUNTS FOR EACH MISSING PERSON NOT LOCATED.
 - **RULE 33** – 20 DISCOUNTS FOR EACH LIVE PERSON NOT BROUGHT TO THE FRESH AIR BASE.
 - **RULE 45.A.** – 4 DISCOUNTS FOR NOT EXPLORING ALL ACCESSIBLE AREAS OF THE MINE THAT CAN BE EXPLORED SAFELY IF PROBLEM REQUIRES SUCH.
- **RULE 43** – WHEN VENTILATION STRUCTURES ARE MOVED THEY MUST BE COMPLETELY DISMANTLED PRIOR TO MOVING. THE BRATTICE CLOTH MUST BE REMOVED FROM THE PVC PIPING AND THE TOP CROSS MEMBER MUST BE REMOVED FROM THE SIDE UPRIGHTS. THE SIDE UPRIGHTS AND BASES CAN REMAIN TOGETHER.
- **RULE 3** – AVERAGE WORKING TIME AND OVERTIME DISCOUNTS WILL NOT APPLY TO PROBLEMS WITH TIME LIMITS.
- **VELCRO STRAP/STOPPING DESIGNATIONS** – 3 STRAPS ON CROSS MEMBER INDICATE THE STOPPING IS INTACT WITH DOOR (IF APPLICABLE) CLOSED. 2 STRAPS ON CROSS MEMBER INDICATE THE STOPPING IS NOT FINISHED OR THE DOOR (IF APPLICABLE) IS OPEN.
- **MINE RESCUE Q & A'S – RULE 1 – COMPARING MAPS AFTER FINAL VENT.**
1) CAN COMPARE MAPS VERBALLY. 2) CANNOT COMPARE MAPS EVEN IF NOT LAID BACK TO BACK (SIDE BY SIDE) 3) TEAM MEMBERS CANNOT REVIEW BRIEFING OFFICER'S MAP. 8) CAN DISCUSS MAPS IF NOT LAID SIDE BY SIDE. 12) NO VISUAL COMPARISON OF MAPS. 15) TEAM MEMBER CANNOT BE CLOSE TO BRIEFING OFFICER AND VERBALLY INSTRUCT PLACEMENT OF CARDS(OBJECTS & CONDITIONS)/VENTILATION CONTROL ON BRIEFING OFFICERS MAP.

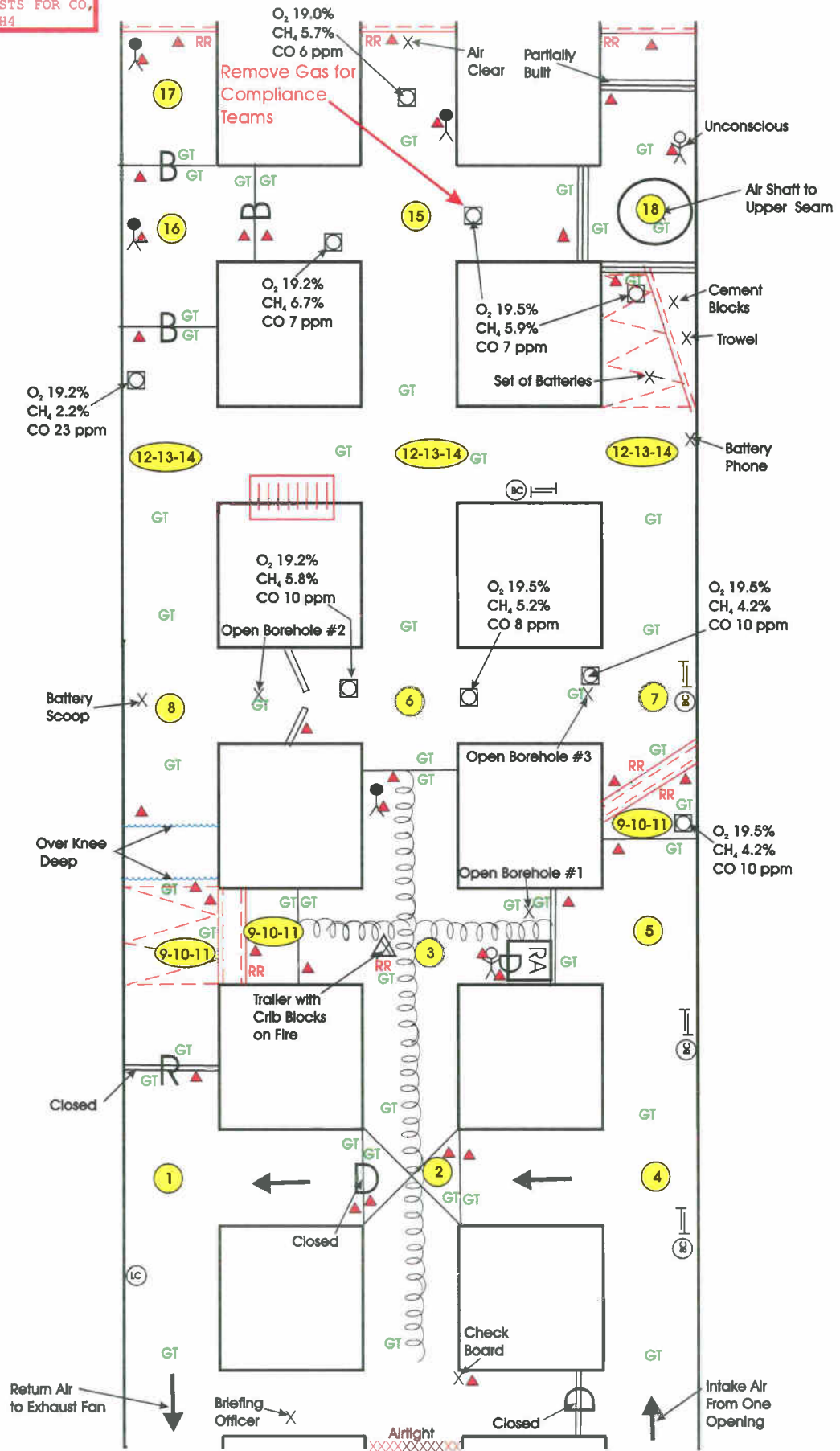
- **RULE 22** TEAMS USING RADIOS SHALL SECURE THEIR LIFELINE IN A LOCATION THAT IS CLEAR OF SMOKE AND CONTINUE WITH THAT LIFELINE TRAVELING INTO OR THROUGH THE SMOKE TO AIR CLEAR OF SMOKE, AND RETREAT THROUGH THE SMOKE USING THE REVERSE PROCEDURE.
- **RULE 30 B.** TRAVEL INTO OR THROUGH WATER OVER KNEE DEEP. WHEN WATER IS ENCOUNTERED, THE EXTENT OF THE WATER WILL BE DENOTED BY PLACARDS.
- **RULE 34. FAILURE TO PROPERLY PROTECT A LIVE OR POTENTIALLY LIVE PERSON(S), EACH OMISSION___ 10** - PROPER PROTECTION MUST BE USED ON PERSONS EXPOSED TO OR FOUND IN IRRESPIRABLE ATMOSPHERES. ATMOSPHERES CONTAINING LESS THAN 19.5 PERCENT OXYGEN, CONCENTRATIONS OF CARBON MONOXIDE IN EXCESS OF 50 PPM OR SMOKE ARE IRRESPIRABLE ATMOSPHERES. IN AN IRRESPIRABLE ATMOSPHERE, UNCONSCIOUS PATIENTS MUST BE PROTECTED BY AN APPROVED BREATHING APPARATUS OR DEVICE WITH FULL FACE PIECE. ON A CONSCIOUS PERSON, IF CONDITIONS PERMIT, AN APPROVED SELF-RESCUER MAY BE USED. TRAINING MODELS MAY BE USED IF STERILIZED AND PROPERLY ASSEMBLED. SIMULATION OF PROPER DOWNING OF APPROVED RESPIRATORY APPARATUS SHALL NOT BE PERMITTED.
- **RULE 42.A. FAILURE TO REMOVE PATIENT(S) PROMPTLY TO THE FRESH-AIR BASE, EACH INFRACTION___ 6** - WHEN A TEAM FINDS A PATIENT(S), EITHER BY VISUAL OR VERBAL CONTACT, EVERY EFFORT MUST BE MADE TO REMOVE THEM SAFELY AND PROMPTLY TO THE FRESH-AIR BASE. VISUAL CONTACT WILL REQUIRE THE CAPTAIN'S PRESENCE IN THE AREA. VERBAL CONTACT IS ANY VOICE COMMUNICATION FROM THE PATIENT(S) THAT CAN REASONABLY BE EXPECTED TO BE HEARD BY THE TEAM. PATIENT(S) FOUND IN REFUGE ALTERNATIVE(S) ARE TO BE ALIVE, UNINJURED AND CONSCIOUS. ONLY ONE (1) PERSON MAY BE FOUND IN EACH REFUGE ALTERNATIVE.

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JUDGES MAP

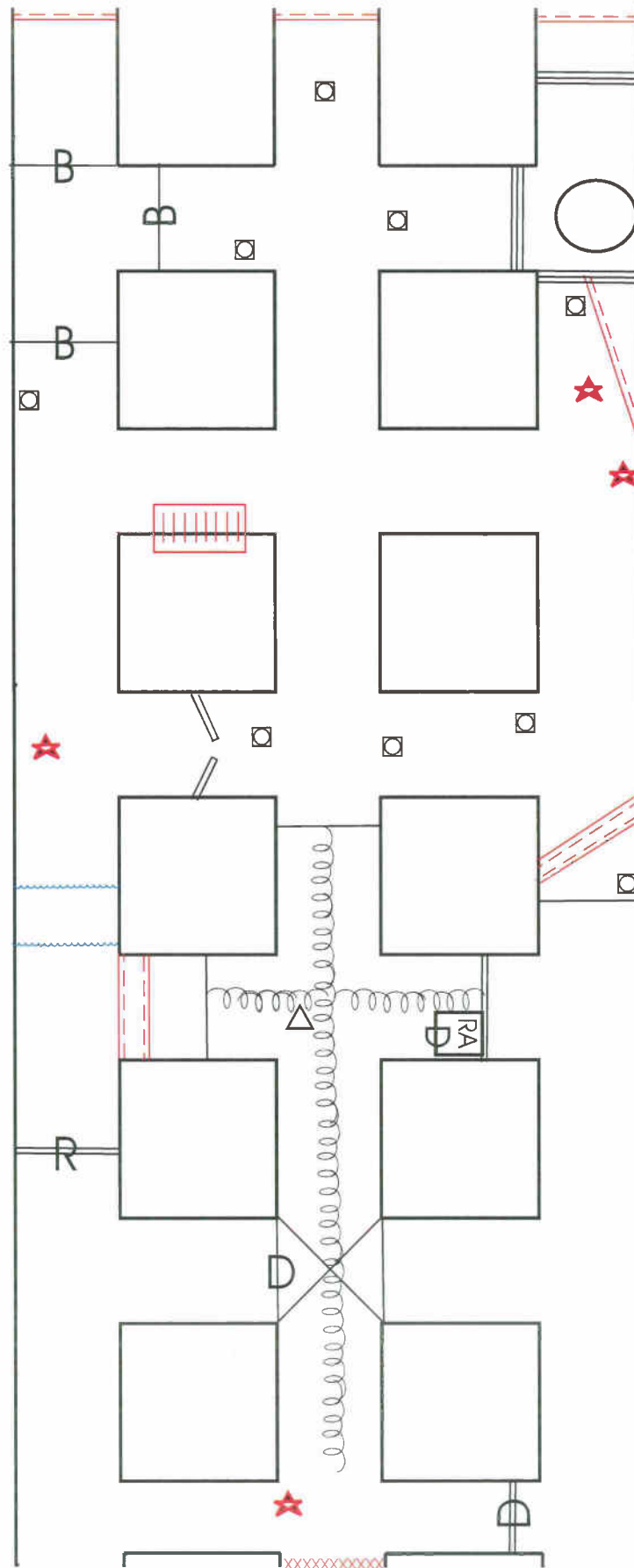
ENTRIES CONTINUE INTO SECTION



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ENTRIES CONTINUE INTO SECTION

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PLACARD MAP

ENTRIES CONTINUE INTO SECTION

