

## TEAM BRIEFING

You have arrived at the Winnemucca Trona Mine. This is a single level mine with two entry portals. The #1 Entry is the fresh air intake and there is a suction fan at #4 Entry. We recently purchased the mine and it is being reopened after being shut down for several months. We are not sure if the map is accurate.

Three miners went underground this morning on a Kubota tractor to determine the conditions in the mine. We have not heard from them.

About an hour ago, we felt a bump and heard what sounded like an explosion on the surface. Shortly thereafter, light smoke and gases began coming out of the exhaust and the main fan tripped. Electricians are working on the fan now. They expect to have it repaired soon.

The electricity is on in the mine. This is historically a non-gassy mine. However, it has been known to liberate variable amounts of ammonia (NH<sub>3</sub>.) We do not store fuel underground. That is about all we know about the conditions underground.

If you are willing to be of assistance, we would like you to explore the entire mine, extinguish or seal all fires, and account for the three miners. We believe all supplies you will need to accomplish this are stored underground.



# TEAM MAP

ramp development  
ventilated with 150 hp  
auxiliary fan and  
vent bag

CX 3

CX 2

CX 1

ramp development  
(12% downgrade)

shifter's  
office

shop

storage  
area

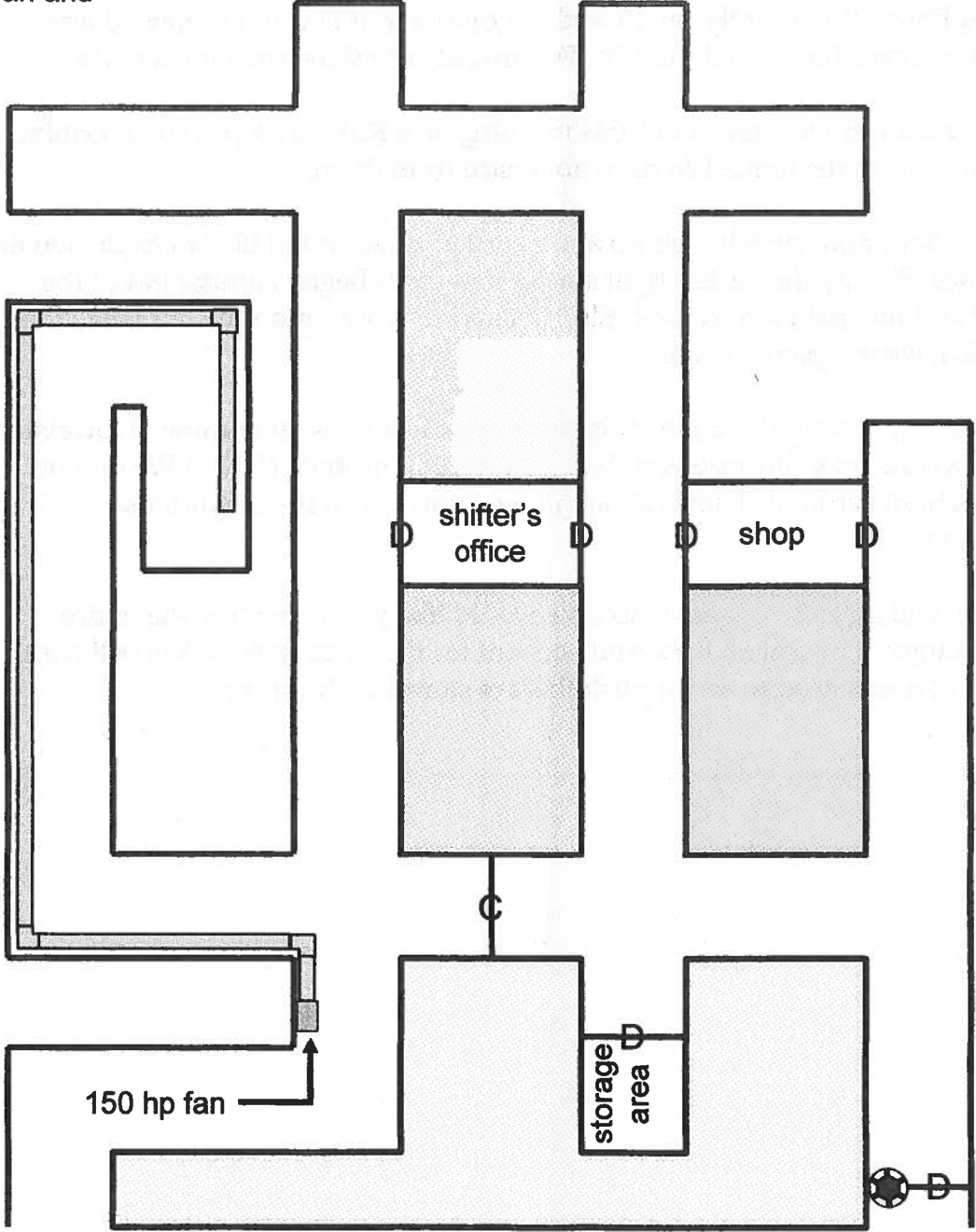
150 hp fan

entry  
001

entry  
002

entry  
003

entry  
004



## SOLUTION

After preparation work at the field, the team checks both entries. At Entry 1, they find clear air. At entry 4 they find light smoke, a closed door, and the main fan off. They must enter the mine through Entry 1.

The team counts off and advances into Entry 1 and does their 50' team check. They find light smoke and a 150hp fan with vent bag attached at the corner of Entry 2. They count off going into smoke. The fan is off. They advance in Entry 2 to the intersection with CX 1 and do gas checks across both sides of CX 1 within 25' of Entry 2. They may advance either way in CX 1. If they go left, they will find a decline with water over knee deep. If they go right, they will pass through a closed check curtain and continue to the intersection of CX 1 and Entry 3. They do gas checks across both sides of Entry 3. When they check the closed door on the right they do not get a response. They continue advancing to the intersection of CX 1 and Entry 4 where they do gas checks across Entry 4. They advance to the back side of the door in Entry 4.

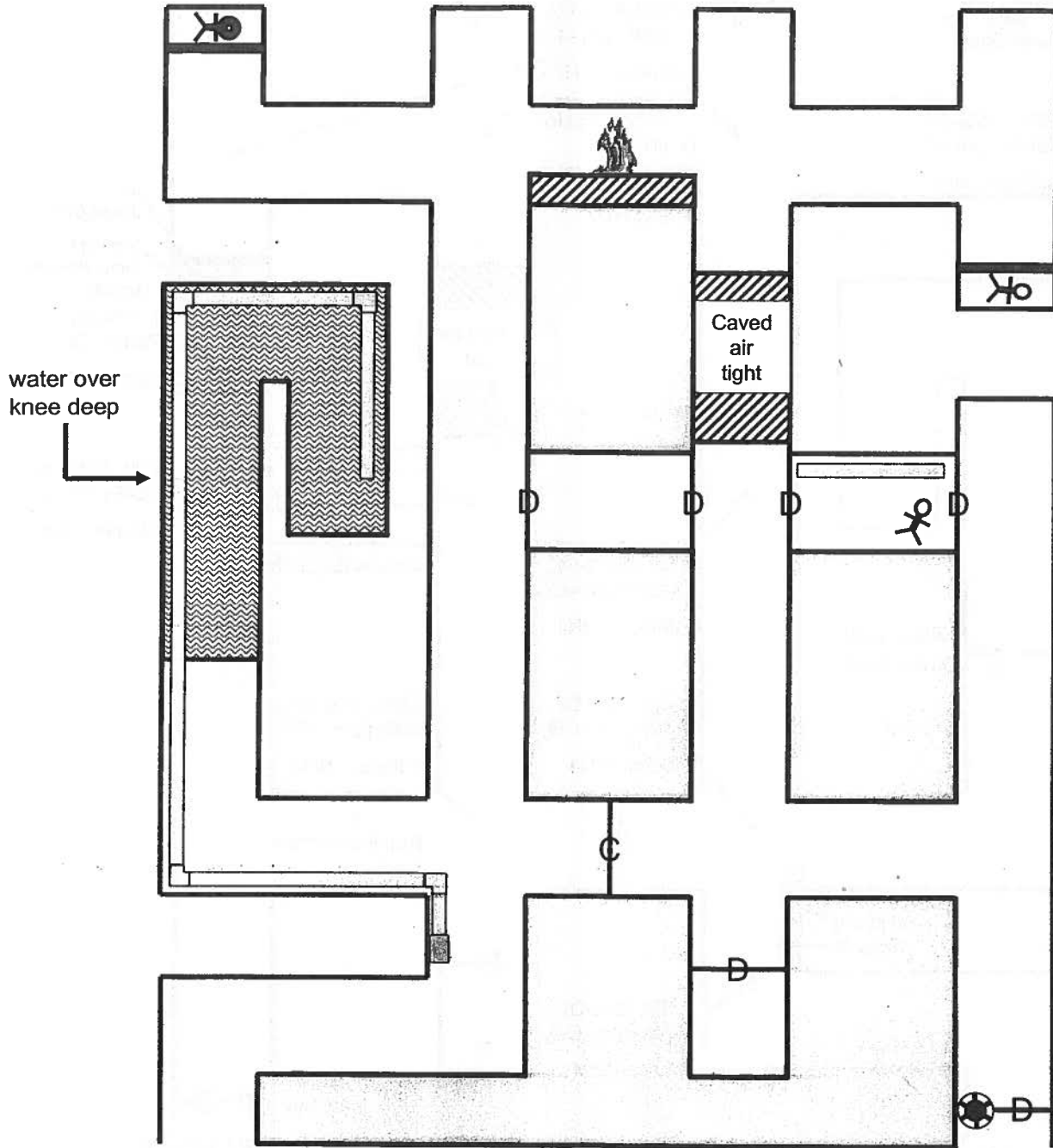
The team now checks Entries 2, 3, and 4 to CX 2 where they find closed doors with irrespirable atmospheres outside the doors. The team finds a dead end in Entry 4 and Entry 3 caved air tight. Realizing that starting the main fan will not change ventilation in the rest of the mine, they may now open the check curtain in CX 1 and start the fan to ventilate in front of the door to the storage area. (If they choose to continue exploring beyond CX 2 without checking the storage area, they will be docked for failure to systematically explore.) The team must airlock into the storage area which they will find empty.

To ventilate in front of the door at the corner of CX 2 and Entry 2, the team builds a temporary stopping across Entry 2, breaks the vent bag at the water over knee deep in the decline, and extends it up Entry 2. They turn on the 150hp fan and flush in front of the door. They then turn off the fan and airlock into the shifter's office where they check the mine phone. Knowing the conditions in Entry 3, they may open the other door of the office. The team now converts the check curtain in CX 1 to a stopping and turn on the Main fan which ventilates Entry 3. They now turn off the Main fan and airlock into the shop through the door in Entry 3 where they find Jim Jones and two sections of vent bag. They open the office door, take down the temporary stopping in Entry 3 and escort Jim out of the mine. They then open the shifter's office door into Entry 3 and turn on the Main fan.

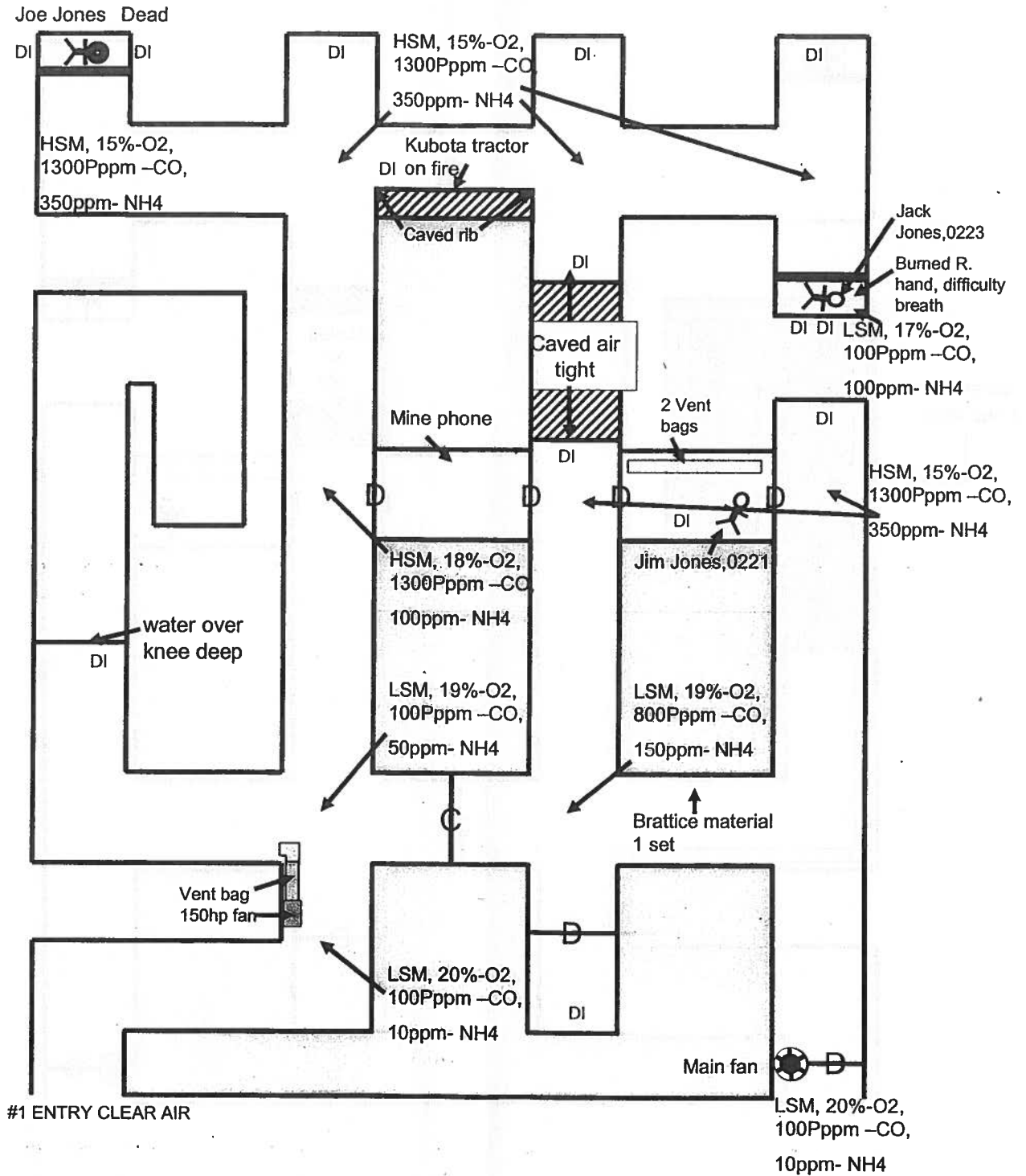
The team now opens the temporary stopping in Entry 2 beyond CX 2. They explore the rest of the mine and find a barricade in the extension of Entry 1. They find a burning tractor partially under caved rib between Entry 2 and Entry 3. They extinguish the fire with their fire extinguisher. They then find another barricade in Entry 4. To ventilate in front of the barricade in Entry 1, they extend the vent bag using a section of bag found in the shop and turn on the 150hp fan. They check for gases and airlock into the barricade where they find Joe Jones who is deceased.

They now extend the vent bag to Entry 4 using the other section of bag found in the shop and ventilate in front of the barricade. Inside, they find Jack Jones who has a burned hand and is having difficulty breathing. The team finds a gas placard indicating low oxygen. They must immediately open the airlock or put an apparatus on Jack. They then treat his burns and escort him from the mine. The team counts off out of the mine, turns in the maps and stops the clock.

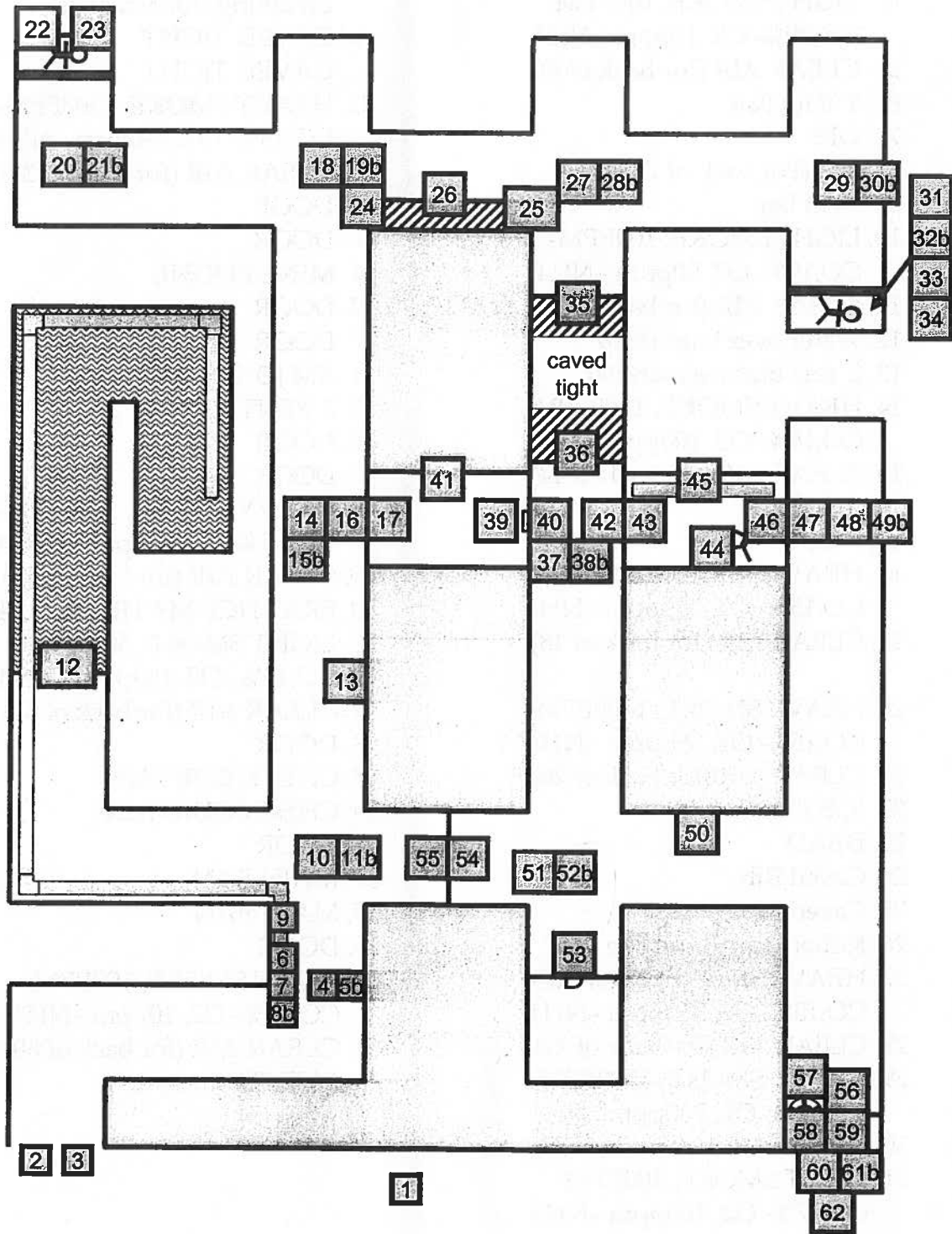
# FIELD JUDGES MAP



# MAP JUDGES MAP



# PLACARD MAP



# Placard Key

1. Fresh Air Base
2. #1 ENTRY
3. CLEAR AIR
4. LIGHT SMOKE, 100PPM-  
CO,20%- O2, 10ppm -NH4
5. CLEAR AIR (for back of 4)
6. 150 hp Fan
7. OFF
8. ON (For back of 7)
9. Vent Bag
10. LIGHT SMOKE, 100PPM-  
CO,19%- O2, 50ppm -NH4
11. CLEAR AIR (for back of 10)
12. Water over knee deep
13. 2 sets brattice material
14. HEAVY SMOKE, 1300PPM-  
CO,18%- O2, 100ppm -NH4
15. CLEAR AIR (for back of 14)
16. DOOR
17. DOOR
18. HEAVY SMOKE, 1300PPM-  
CO,15%- O2, 350ppm -NH4
19. CLEAR AIR (for back of 18)
20. HEAVY SMOKE, 1300PPM-  
CO,15%- O2, 350ppm -NH4
21. CLEAR AIR (for back of 20)
22. JOE JONES 0222
23. DEAD
24. Caved Rib
25. Caved Rib
26. Kubota tractor on fire
27. HEAVY SMOKE, 1300PPM-  
CO,15%- O2, 350ppm -NH4
28. CLEAR AIR (for back of 27)
29. HEAVY SMOKE, 1300PPM-  
CO,15%- O2, 350ppm -NH4
30. CLEAR AIR (for back of 29)
31. LIGHT SMOKE, 100PPM-  
CO,17%- O2, 100ppm -NH4
32. CLEAR AIR (for back of 31)
33. Jack Jones, 0223
34. Burned right hand, difficulty  
breathing (turned over)
35. CAVED TIGHT
36. CAVED TIGHT
37. HEAVY SMOKE, 1300PPM-  
CO,15%- O2, 350ppm -NH4
38. CLEAR AIR (for back of 37)
39. DOOR
40. DOOR
41. MINE PHONE
42. DOOR
43. DOOR
44. JIM JONES, 0221
45. 2 VENT BAGS
46. DOOR
47. DOOR
48. HEAVY SMOKE, 1300PPM-  
CO,15%- O2, 350ppm -NH4
49. CLEAR AIR (for back of 48)
50. BRATTICE MATERIAL 1 SET
51. LIGHT SMOKE, 800PPM-  
CO,19%- O2, 150ppm -NH4
52. CLEAR AIR (for back of 51)
53. DOOR
54. CHECK CURTAIN
55. CHECK CURTAIN
56. DOOR
57. MAIN FAN
58. MAIN FAN
59. DOOR
60. LIGHT SMOKE, 100PPM-  
CO,20%- O2, 10ppm -NH4
61. CLEAR AIR (for back of 60)
62. #4 ENTRY