Work safety and protection of health

The following equipment must be brought along:

- Helmets are provided, but you may use your own safety helmets
- Safety shoes (S3)
- Personal protective equipment (jacket, trousers, etc.)
- Leather gloves, rubber gloves

Gloves with holes or fingerless gloves are not permitted!

Description

The team has the task of rescuing an injured person from a sewage pumping station. The person to be rescued entered the station in violation of the applicable safety regulations and had an accident. The injured person is unable to leave the sewage pumping station under their own steam. To do this, the team must enter the pumping station in accordance with the applicable safety rules. The person to be rescued is then lifted out of the shaft structure with the aid of the rescue winch and placed in an upright position in the marked area next to the shaft entrance. The execution time and the quality of the work are evaluated.

The team has 5 minutes to prepare.

The team captain may interrupt the preparation time at any time in the event of disruptions by lodging an objection with the chief referee. In the event of an objection, all activities by the team must be stopped immediately. The preparation time is interrupted until the disruption has been remedied and the preparation time is restarted by the team captain's command.

The team captain gives the start and stop command. The time is measured with two independent stopwatches. The team captain may interrupt the competition at any time in the event of disruption by lodging an objection with the head referee. In this case, one of the stopwatches is stopped while the other continues to run. Once the disruption has been resolved and the team captain has given the restart command, the second stopwatch is restarted.

Preparation

The team is allowed to check all equipment for five minutes. The equipment may not be installed during the preparation time. All equipment must be within the marked area at the end of the preparation time.

The team captain informs the examiners which team member will enter the shaft and who will be the supervisor. This must be recorded in writing in the work log (all names must be legible).

The rescue harness of the rescuer may be adjusted.

At the end of the preparation time, the rescue harness must be returned to its starting position.

Before the end of the preparation time, all team members must move to the marked starting area.

The examiners will not answer any questions during the preparation time; these can be asked before the start of the competition.

During the preparation time, a team member must switch on the gas detector (GASALERTMICRO 5IR) and check that it is working.

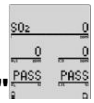
The following steps must be followed (points a - i):

a) Connect the hose to the gas detector.

b) To switch on, press the button  until all elements of the LCD 
display is shown simultaneously. In addition, an audible and
flashing signals and a vibration alarm are emitted and the backlight is briefly activated.

c) Command by the team member: "***MULTIWARN SWITCHED ON***".

d) Wait until the device has completed its self-test.

e) When "  " appears on the screen, close the end of the hose with your thumb.

f) Command by team member**: "*PUMP IS BEING CHECKED*"**

g) Once **the "test alarm"** has been triggered, the function test is complete.

h) Command by the team member: **"*Pump ready*"**

i) Wind up the hose neatly and place the gas detector in the marked area with the power switched on.

Execution

1. The team members start the competition behind the starting line.
2. The team captain gives the command "Start" to begin the competition.
3. The team member entering the water puts on the rescue harness.
4. One team member tests the atmosphere at 3 different depths from bottom to top for 15 seconds using the gas detector and a stopwatch. The data recorded here must be entered into the work log (points a - h).

a. Command by the team member: "MULTIWARN SWITCHED ON".
b. Insert the hose into the shaft and carry out the measurement. The measurement is taken from the bottom of the shaft upwards to the shaft entrance.
c. Measure the atmosphere in the shaft. There are three markings on the hose. Each marking must be at the edge of the shaft for 15 seconds during the measurement. The team member with the gas detector must also measure the time.
d. At the end of the measurement, the values for oxygen (O_2), carbon dioxide (CO_2), methane (CH_4) and hydrogen sulphide (H_2S) must be entered in the work log. The concentrations determined must be noted in the work log to one decimal place (e.g. 20 PPM as 20.0 PPM).
e. Command by the team member: "GAS MEASUREMENT OKAY".
f. Remove the hose from the gas detector.
g. Before entering, attach the gas detector to the safety harness or to the outside of the work clothing. Carrying the gas detector in a pocket or inside the work clothing is not permitted and will result in time penalties.
h. Before entering, the team member must be secured, and the gas detector must be switched on.

5. The gantry crane must be set up in a stable position and raised to its highest position. The person entering must be connected to the fall protection device before the hatch cover is removed.

a. Remove the safety pins on the gantry crane.
b. Raise the gantry crane to its highest position.
c. The safety pins must be attached to the gantry crane and pushed in as far as they will go.
d. Install the fall arrest device on the gantry crane.
e. Attach the pulley block including carabiner and secure it firmly.
f. Check that the safety function is triggered in free running mode.
g. Position the gantry crane over the shaft.
h. Connect the fall arrest device to the D-ring of the entry aid extension of the safety harness.

6. Remove the shaft cover.

7. Install the ventilation hose in the shaft and secure it against falling. Connect the ventilation hose to the fan. The fan must be located at the entry point 1.5 m in front of the shaft edge outside the marking. The team is free to choose where to place the blower, as long as it is outside the marking. Switching on the blower is simulated by activating the main switch and giving the command "Fan ON".

8. One team member climbs into the shaft via a ladder. There is no entry aid. Every step of the ladder must be used.

9. As soon as the person enters the shaft, constant visual or verbal contact must be maintained with them until they got out.

10. The person entering the shaft attaches the person to be rescued to the designated rescue eyelet on their back. The person entering the shaft may detach themselves from the safety rope in order to attach the person to be rescued.

11. The person to be rescued is brought up using only the winch function of the fall arrest device. The person entering assists from below but must NOT lift the person to be rescued.

12. The team member pulls the person rescued to the designated area. The person to be rescued keeps the rescue harness on until the end of the competition.

13. The team member who maintains visual contact brings the climber up using the height safety device, releases the rope safety device and places the person in the marked area. They then close the shaft.

14. The team members store the equipment "behind the line" in the marked area. The crane system and ventilation must be completely dismantled and returned to their original state. The winch cable must be completely rolled up. The person entering the shaft still wears the safety harness and gas detector; the harness and gas

detector do not need to be removed. The clock stops when all team members are behind the starting line and the team captain gives the command "Stop".

15. No further activities may be carried out after the stop command has been given.

16. All team members must remain in the starting area until the jury dismisses them. The jury collects the work log, stopwatch, safety harness and gas detector.

17. The team remains in the starting area to discuss the result with the jury.

Notes on the evaluation of the task
The quality and execution time of the work are evaluated.

Literature:
See Appendices 1 to 5
1. GasAlertMicro5IR
2. Gantry crane
3. Safety harness
4. Multi-purpose fan EX-protected
5. Honeywell OxyPro