

Confined Space



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Introduction

- Identify confined spaces
- Know the entrant's, attendant's, and supervisor's roles
- Know how to determine dangerous atmospheres
- Determine available resources during an Avian Influenza (AI) response



Topics of Discussion

- Regulations
- Definitions
- AI Applicability
- Dangerous atmospheric conditions
- Risks (physical, biological, chemical, and radiological)
- Emergency operating procedures

Regulations

- 29 CFR 1910.120 (Revised 7/1/02)
 - ◆ (q) Emergency Response
 - ★ Appendix A - (b.)(1) First responder level
 - (E) Review of...confined space...

- 29 CFR 1910.146 (Revised 7/1/02)



Confined Space

- **Large enough to enter and perform assigned work**
- **Limited or restricted means for entry or exit**
- **Not designed for continuous employee occupancy**

Non-Permit Confined Space

- Does not contain, nor has the potential to contain, any hazard capable of causing death or serious physical harm

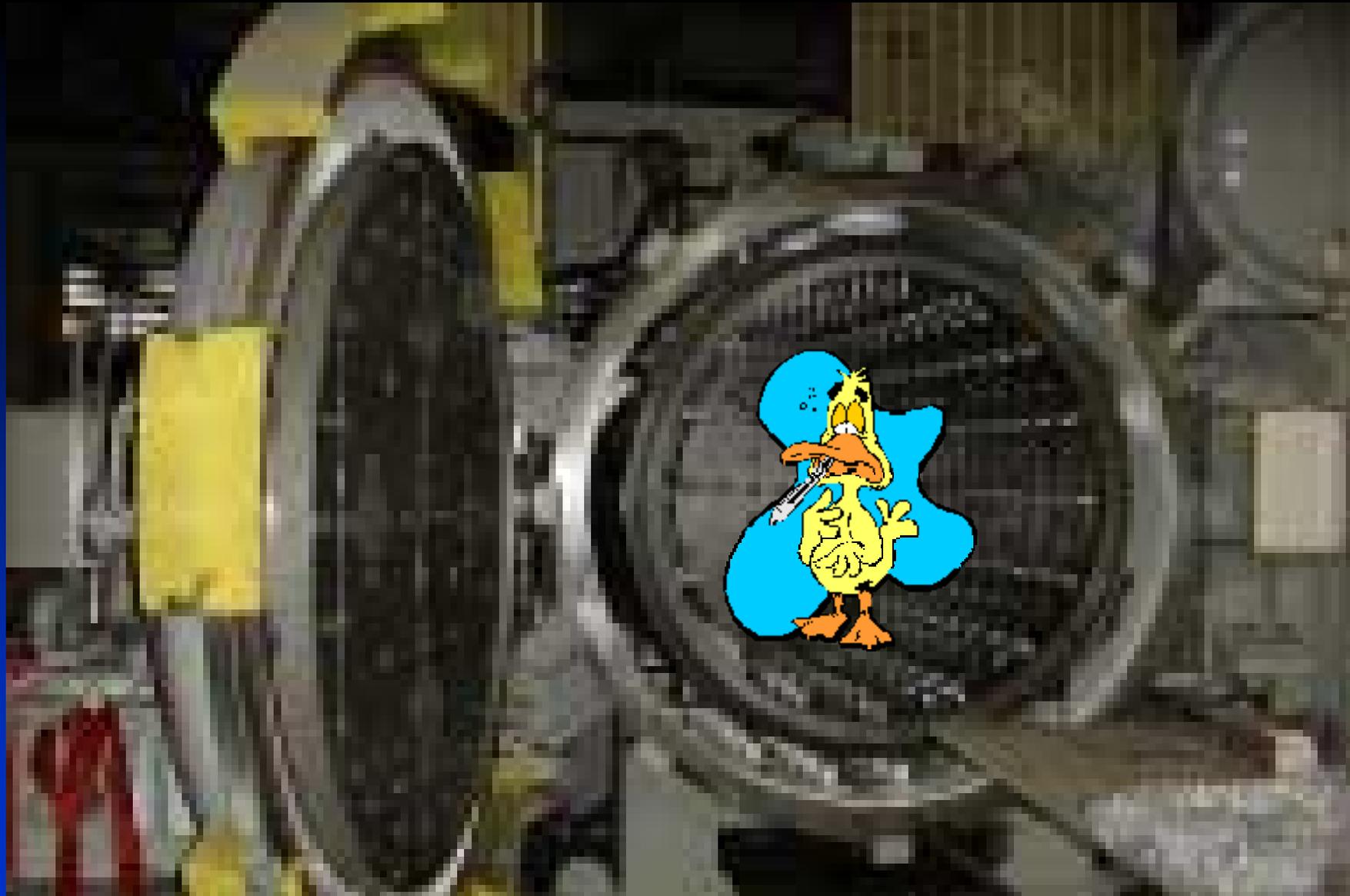


Examples of Non-Permit Confined Spaces

- Interiors of HVAC units
- Certain air plenums and pipe chases
- Attics
- Walk-in freezers or refrigerators
- Some building crawl spaces

Permit-Required Confined Space

- Has one or more of the following characteristics
 - ◆ hazardous atmosphere
 - ◆ potential for engulfing an entrant
 - ◆ internal configuration could trap or asphyxiate entrant by
 - ★ inwardly-converging walls
 - ★ by a floor that slopes downward and tapers to a smaller cross-section







Permit-Required Confined Space

- Contains any other recognized serious safety or health hazard
 - ◆ Fall hazards
 - ◆ Unguarded machinery
 - ◆ Extreme heat or cold
 - ◆ Steam pipes or chemical lines
 - ◆ Hazardous noise levels
 - ◆ Electrical hazards
 - ◆ Presence of asbestos
 - ◆ Potentially hazardous levels of dust

Authorized Entrant



- Know hazards
 - ◆ means of exposure
 - ◆ inhalation
 - ◆ dermal absorption
 - ◆ signs of symptoms exposure
- Use appropriate PPE
- Maintain communication
- Order evacuation as necessary

Authorized Entrant – Continued

- Exit from the permit space when ordered
- Recognizes the
 - ◆ warning signs
 - ◆ symptoms of exposure
 - ◆ automatic alarm is activated
- Alert the attendant

Attendant



- Remain outside
- Perform non-entry rescues
- Know existing and potential hazards
- Maintain communication
- Order evacuation
- Notify entrant when emergency outside the confined space exists

Attendant – Continued

- Summon rescue and other services during an emergency
- Ensure that unauthorized people stay away or exit immediately
- Inform authorized entrants and the entry supervisor if any unauthorized person enters the permit space
- Perform no other duties that interfere

Supervisor

- Know hazards
- Verify emergency plan
- Verify specified entry conditions
 - ◆ permits
 - ◆ tests
 - ◆ procedures
 - ◆ equipmentbefore allowing entry

Supervisor – Continued

- Terminate entry and cancel permits
- Verify that rescue services are available
- Ensure entry conditions are maintained

Confined Space Hazards

- Oxygen-deficient atmospheres
- Flammable atmospheres
- Toxic atmospheres
- Mechanical and physical hazards

Oxygen-Deficient Atmospheres

- Normal
 - ◆ 79% nitrogen
 - ◆ 21% oxygen
- Atmospheres of less than 19.5% oxygen
- Warning - oxygen-rich atmospheres

Flammable Atmospheres

- Oxygen-rich are 22% or higher
- Usually caused by poor ventilation
- Heavier than air gases will accumulate in lower areas
- Work being performed can cause flammable atmospheres

Toxic Atmospheres

- Product stored in confined spaces
- Work being conducted
- Produced by processes being near confined spaces

Mechanical and Physical Hazards

- Mechanical
 - ◆ Rotating or moving parts
 - ◆ Energy sources
- Physical
 - ◆ Heat and cold
 - ◆ Noise
 - ◆ Vibration
 - ◆ Fatigue
 - ◆ Excavations (engulfment)

Risks

- Physical
- Chemical
- Biological
- Radiological





Plan the Entry

- Gather data
- Identify hazards
- Ventilate as necessary
- Isolate the confined space
- Purge or clean the confined space
- Place warning signs
- Identify all personnel
- Identify necessary equipment



Pre-Entry Training

- Identify space
- Identify work detail
- Identify hazards
- Inform team of hazards
- Identify isolation procedures
- Identify equipment
- Identify PPE
- Establish communication
- Protect from external hazards
- Pre-plan rescue procedures

Emergency Operations



- Remember – You did not cause this emergency; therefore, it is not your emergency.
- Do not create one by rushing to get the job done.

Now ---

- I will take you through the stages of confined space entry



**Attention displayed
by the attendant**



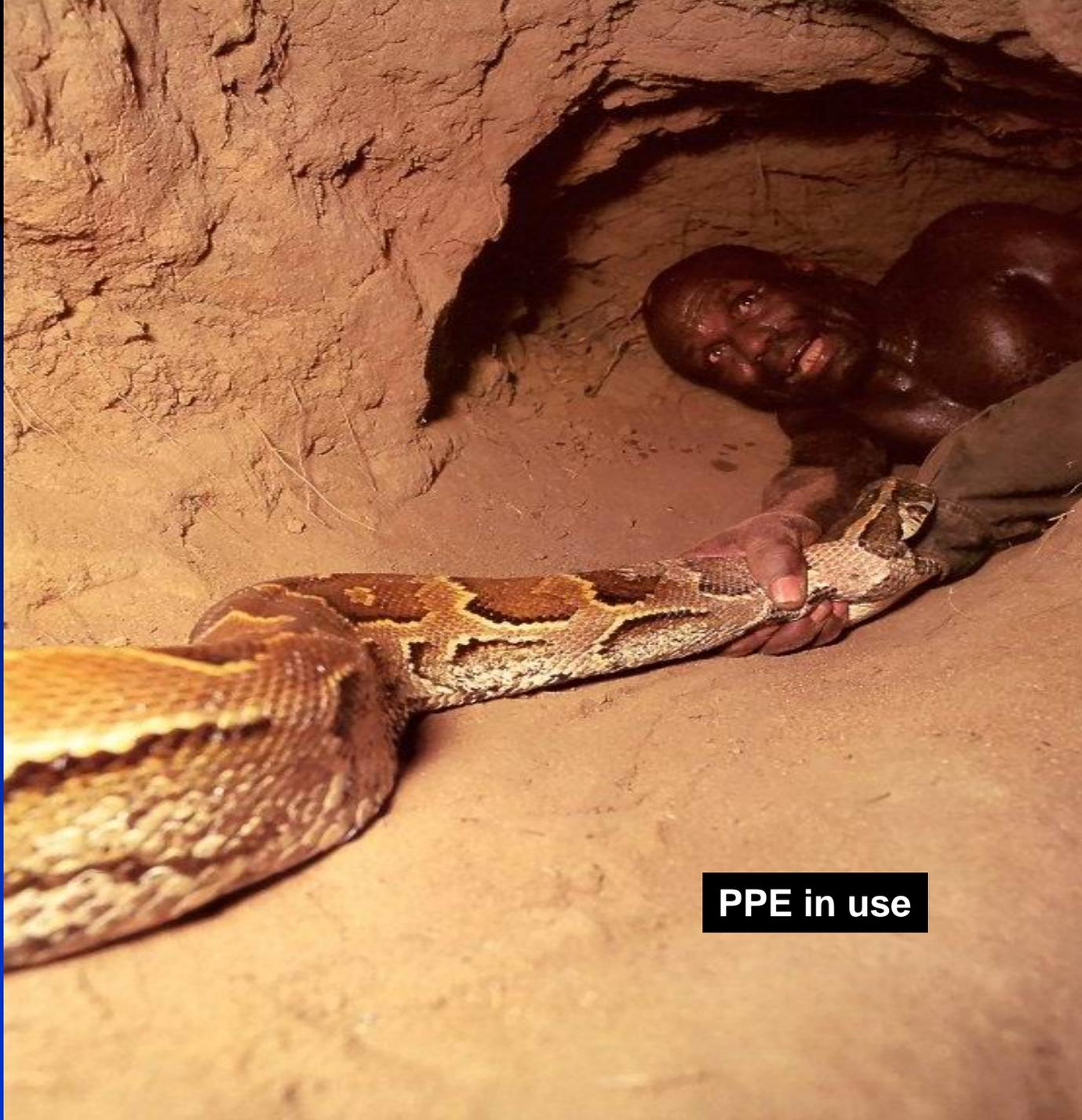
Use of lighting inside the space

Hazard Identification

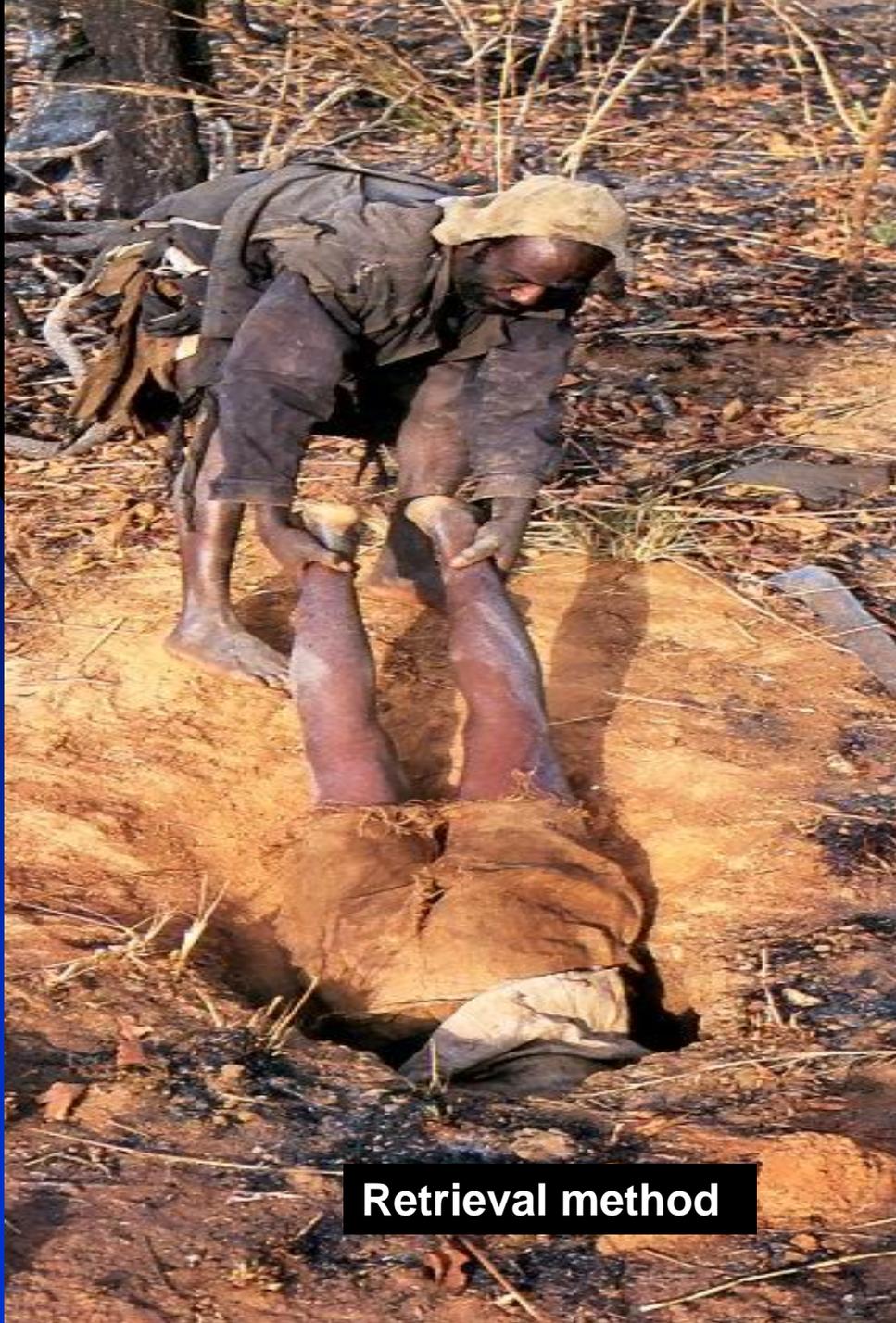


Hazards encountered

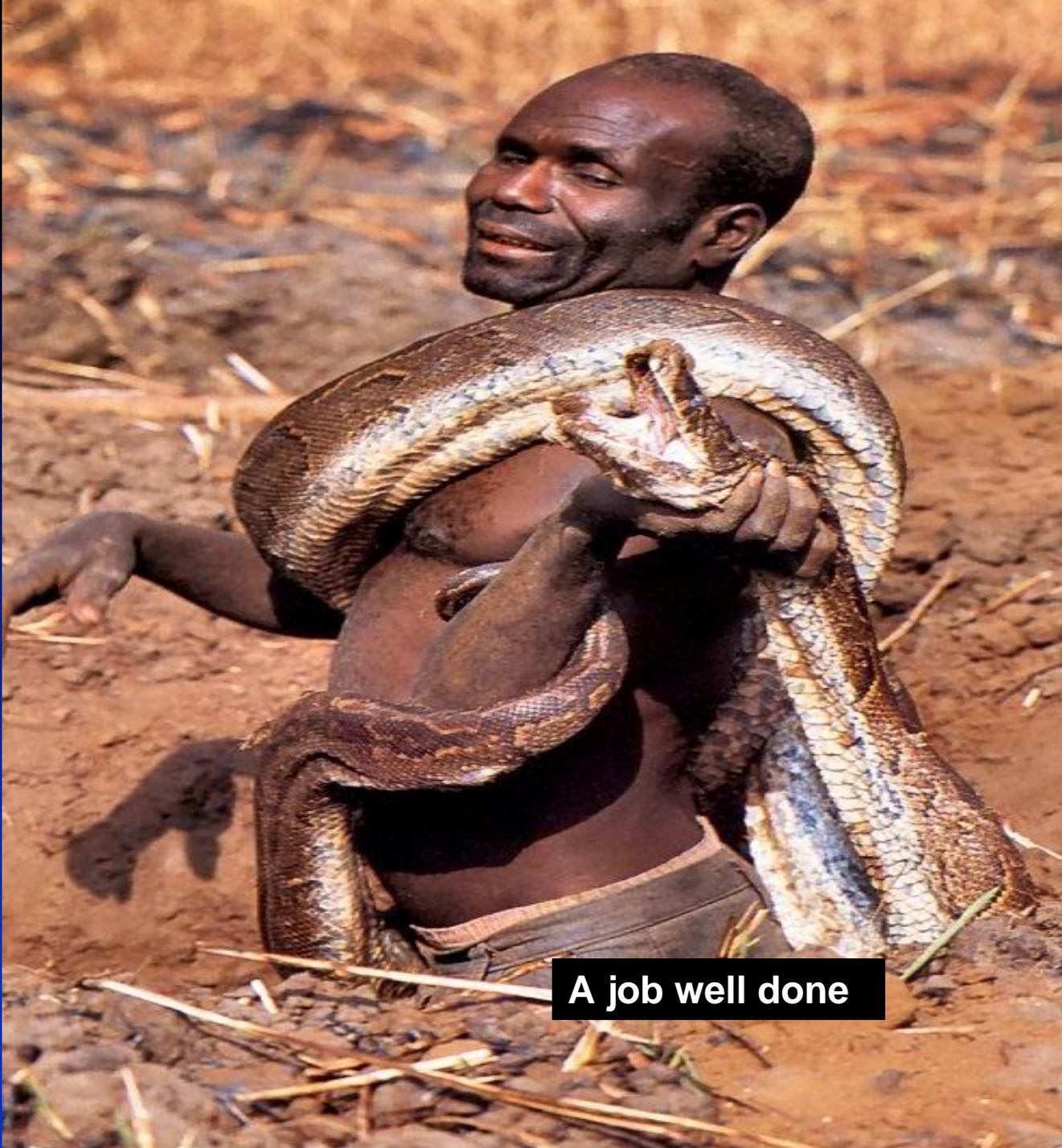




PPE in use



Retrieval method



A job well done



Crew exiting job site

Have a great afternoon.

