



Inspection and Troubleshooting of Onsite Wastewater Management Systems

Workplace Health and Safety Risk Management

Centre for Environmental Training 


Workplace Health and Safety (WHS)

- Managing risks to the health and safety of everyone in your workplace
- Risk management aims to mitigate risks by identifying the risk, analysing trends, developing and implementing mitigation measures

Centre for Environmental Training 


Hazard Identification - Sources

- Physical
 - Structural instability (lid collapse)
 - Manual handling (lifting covers)
 - Falls (open pits and covers)
 - Vehicles, weather, electricity
 - Solo operations, sometimes remote
 - Fatigue, sunburn and heat stress
 - Confined spaces

Centre for Environmental Training 

Structural Instability




Centre for Environmental Training 

Hazard Identification - Sources


- Chemical
 - Disinfectant
 - Gases
 - Tracer dyes
- Microbiological
 - Infectious material
 - Poor hygiene
 - Splashes



Centre for Environmental Training 

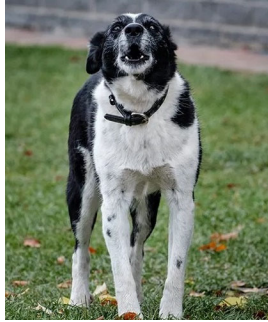
Microbiological



Centre for Environmental Training 

Hazard Identification - Sources

- Bites and kicks
 - Dogs
 - Snakes
 - Spiders, ticks, ants
 - Cattle, horses, goats!



Centre for Environmental Training cet

Bites – Look where you put your hands!



Hazard Identification - Sources

- Biosecurity - agricultural
 - Weeds
 - Pathogens
- Psychological
 - Confrontation
 - Verbal abuse
 - Physical abuse



Centre for Environmental Training cet

Mitigation Measures

- Elimination (Remove the hazard)
 - Contractor to complete the inspections (?)
- Substitution (Replace the hazard)
 - Use less harmful marker dye

Centre for Environmental Training cet

Engineering (isolate people from the hazard)

- Barriers
- Power tools auto off
- Vehicle mounted auger
- Close covers ASAP
- Mark open holes

Centre for Environmental Training cet

Close covers ASAP



Centre for Environmental Training cet

Administrative (change the way people work)

- Training and experience
 - Inspection techniques
 - Safe manual handling
 - Confined spaces
 - First aid
 - Dangerous dog handling
 - Conflict resolution

Centre for Environmental Training 

Administrative

- Procedures
 - Standardised inspection process
 - Inspection and assessment checklists
 - Remote or isolated work
 - Hygiene protocols (personal and vehicle)
 - Risk assessment

Centre for Environmental Training 


Administrative

- Preparation –
 - Notice of inspection letter
 - Equipment list
- Warning signs
- Chemical safety data sheets

Centre for Environmental Training 

PPE (protect the worker)

- The relevant PPE must be available
 - UV protection (clothing, hat, sunscreen)
 - Gloves (disposable and safety gloves)
 - Safety glasses
 - Insect protection (repellent, gaiters)
 - Shoes (uneven ground/ safety and gumboots)
- First aid and snake bite kits

Centre for Environmental Training 

Review and improvement

- Review incident reports and field notes
- Update site details in register including challenges
- Consult with staff
- Update procedures
- Public feedback

Centre for Environmental Training 

Remote and isolated work

- Telephone coverage availability
- Communications plan (check-ins/ safety devices)
- Emergency response plan (no contact)
- Emergency Position Indicating Radio Beacon (EPIRB)
- Two staff (?)

Centre for Environmental Training 

Hygiene procedures

- PPE (gloves, glasses)
- Rubbish bags for soiled equipment
- Soap and water for washing
- Hand sanitizer
- Disinfectant for equipment
- Paper towels

Centre for Environmental Training 

Risk Management – More than WHS

- Objectives of stakeholders in OWMS influence risk management
 - Regulator and policy makers
 - Designer
 - Technology supplier / manufacturer
 - Installer
 - Service agent
 - End users (owner and occupants)
 - Community and environmental advocates


Centre for Environmental Training 

Hazards for proposed systems

- Site investigation
- Design
- Construction and installation
- Regulation
 - Approvals
 - Inspections

HAZARDS

Poor quality of data and information
 Poor staff training and experience
 Inadequate funding availability
 Poor quality control

Centre for Environmental Training 

Hazards for existing systems

- Owner
 - Operation and maintenance
- Regulator
 - Approval
 - Inspection
- Technology
- Natural hazards

HAZARDS


Disinterested owners
 Low skill levels
 Change in owner
 Change in loading – quantity and quality
 Unreliable technologies
 High water table
 Flooding and bushfire

Who should be involved in the hazard identification process?

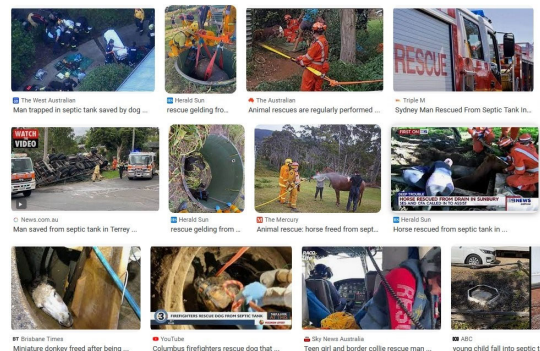
Centre for Environmental Training 


Hazards

- Injury
- Abandoned tanks
- Illness – local or widespread outbreaks
- Planning
 - Limiting development through restrictions
 - Excessive financial burden on owners
- Public confidence in regulators

Centre for Environmental Training 


Abandoned and old tanks



Centre for Environmental Training 

Hazards

- Costs – who pays?
- Technology and physical infrastructure
- Regulator effectiveness (\$ v outcomes)
- Pollution (surface and ground water) from poorly designed, maintained or regulated systems
- Habitat destruction (clearing, modification)
- Vulnerable ecological communities

Centre for Environmental Training 


Hazards – Legal

- Unenforceable approval conditions
- Misconduct or the perception of it
- Effective enforcement action
 - Inadequate evidence gathering for compliance and enforcement action
- Litigation against councils for approvals or enforcement action

Centre for Environmental Training 

Hazards - Designer

- Inexperienced staff (assessment, design, installation)
- Inadequate assessment (site and soil, existing components, proposed use)
- Impacts on design sizing and mitigation measures
- Inadequate consultation with owner
- = **Poor design outcomes**

Centre for Environmental Training 

Mitigation Measures

- Reticulated sewer to replace OWMS
- New treatment system replace old tank
- Subsurface irrigation replace surface irrigation
- Policies
 - Code of conduct, compliance and enforcement

Centre for Environmental Training 

Mitigation Measures

- Procedures
 - Inspection program
 - Compliance and enforcement
 - Feedback and complaints management
- Training
 - Site and soil evaluation and design
 - Compliance and enforcement
 - Writing enforceable conditions of consent

Centre for Environmental Training 

Mitigation Measures

- Insurance
 - Professional indemnity
 - Public liability
- Legal
 - Conduct risk assessment and mitigation periodically

Centre for Environmental Training 

