

Sustainable management of hazardous waste contaminated sites

Presentation 4.3
Phase 4 – Risk management

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December 2019

Content

- Risk management
- Preparation working safe
 - ✓ HSE plan & risk management
 - ✓ Toolbox meeting
 - ✓ Start Work analyses
- Why must we monitor?
- How do we manage & monitor the health and safety risks?



Risk Management Goals

*Control all risks during the complete
life cycle of the project*

*A **Healthy, Safe, Environmentally** friendly and successful project
realization*

*Guarantee a safe and successful use
after completion*



Preparation working safe

To work safe, we must

- Write a HSE plan
- Organize a Toolbox meeting
- Organize daily a **Start Work Analyses**



If risks are not managed proper



Project risks

- Safety not guaranteed – You may get an accident
- Quality below standard – You may get bad results
- Cost higher than calculated budget – You may exceed your budget
- Execution longer than planned – You may not meet your deadline
- The customers and our image at risk – You may lose your reputation

We need to know all risks during project design and project preparation



Five hallmarks for risk management

1. Preoccupation with failures
2. Reluctance to simplify interpretation
3. Sensitivity to operations
4. Commitment to resilience
5. Deference to expertise



Mindfulness



Risk Management

Principle

- 7 origins of risks
- Cause and Consequence
- Cyclic process

Goal

- Mitigate or prevent, accept or control, reduce or insure risks

Definitions

- Risk = an event, that, when triggered, causes problems
- Risk = likelihood x impact



Seven origins of risks

1. Technical
2. Organizational
3. Juridical and Legislative
4. Environmental
5. Financial / Budget
6. Social
7. Political



Risk, cause and Consequence

Example

- Risk : Accident
- Cause : Too fast driving
- Consequence : Get injured

Example

- Risk : Exposure
- Cause : Working without proper PPE
- Consequence : Illness



Risk Management

Risk analysis in 4 steps

- Set project targets
- Inventory risks
- Prioritize risks
- Select control measures

Risk reduction

- Insure
- Prevent
- Accept
- Reduce



Project Risk Assessment

Likelihood

1. Not likely
2. Possible
3. Likely
4. Probably
5. Very likely

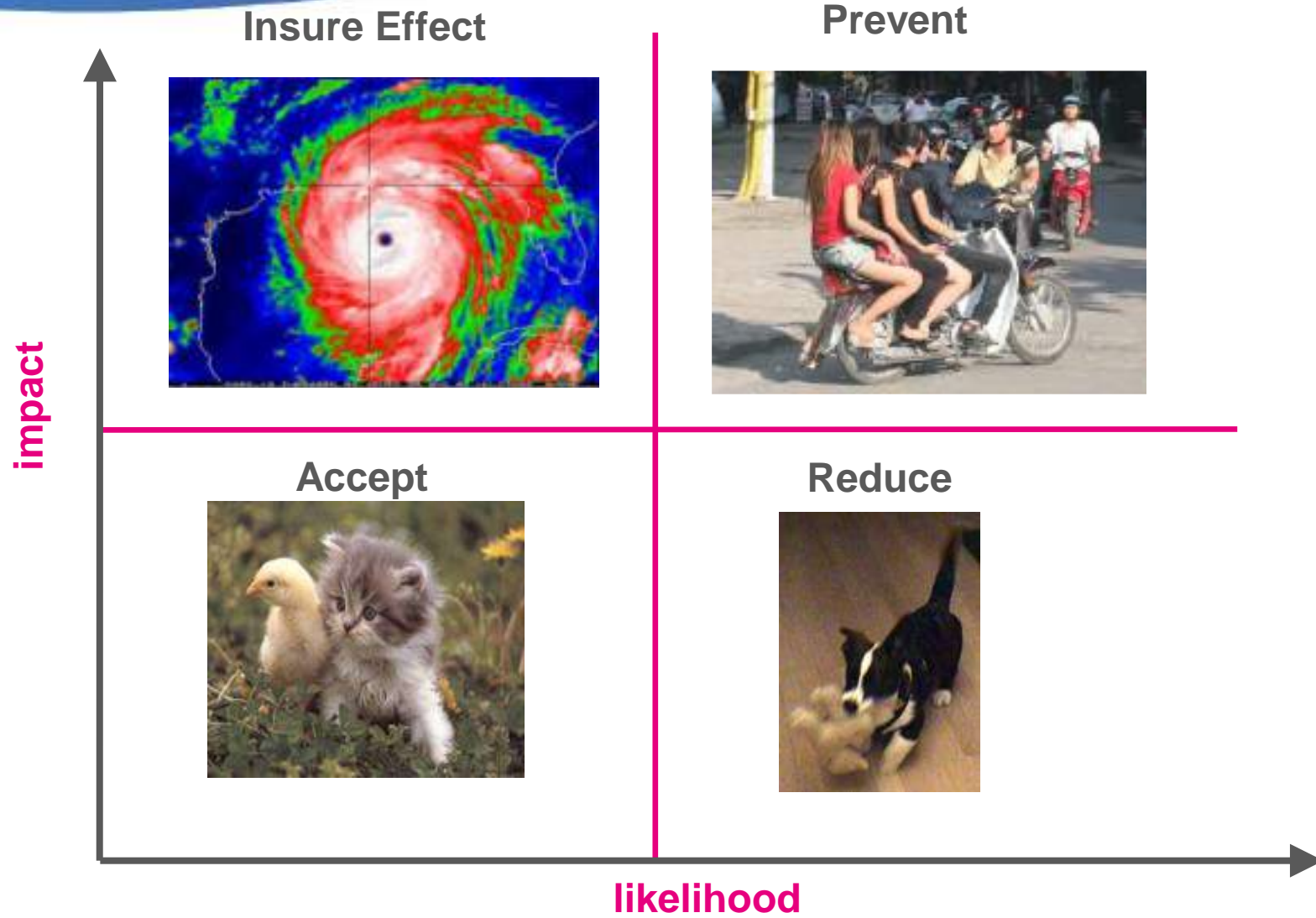
Impact

1. Very small
2. Small
3. Reasonable
4. Large
5. Very large

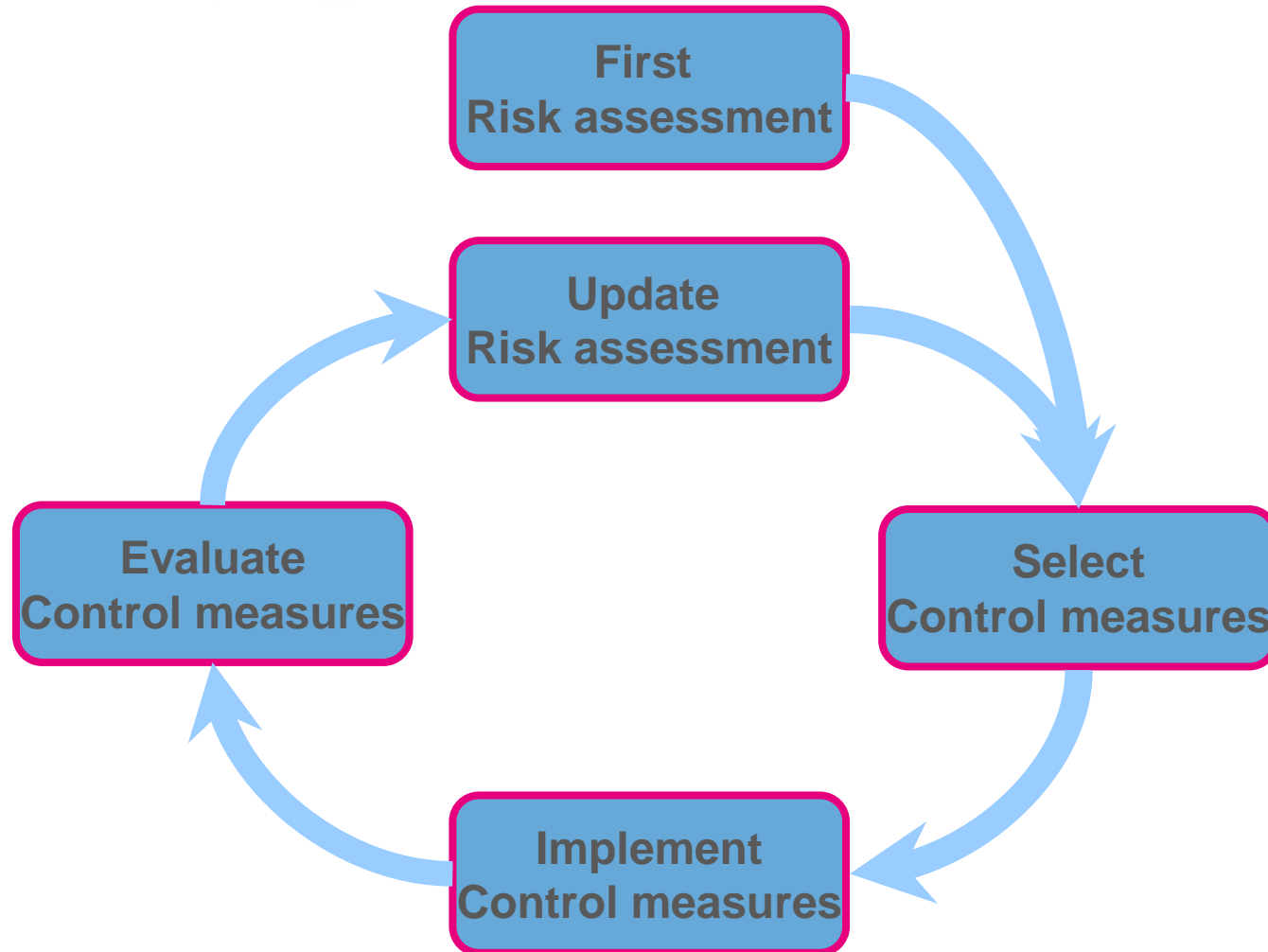
Risk: Exposure to POP pesticides during repackaging									
Likelihood					Impact on				
					<ul style="list-style-type: none"> • Human health • Ecosystem • Migration 				
Not likely	Possible	Likely	Probably	Very likely	Very small	Small	Reasonable	Large	Very large
1	2	3	4	5	1	2	3	4	5



Different types of risks require different types of control measures



Risk Management is a cyclic process



Risk Management is a cyclic process

- Task Based Risk Analyses
 - First after the preliminary design completed in Phase 3
- Project meeting always TBRA on the agenda
 - TBRA is updated based on the discussion
- Toolbox meeting during the Phase 4
 - To inform
 - To update the TBRA
- Start Work Analyses daily basis Phase 4 implantation
 - To inform
 - To update the TBRA



Evaluation

Have you really assessed all the risks?



What is a HSE plan

- Assess health and safety risks
- Prioritize the risks
- Select and describe risk control measures

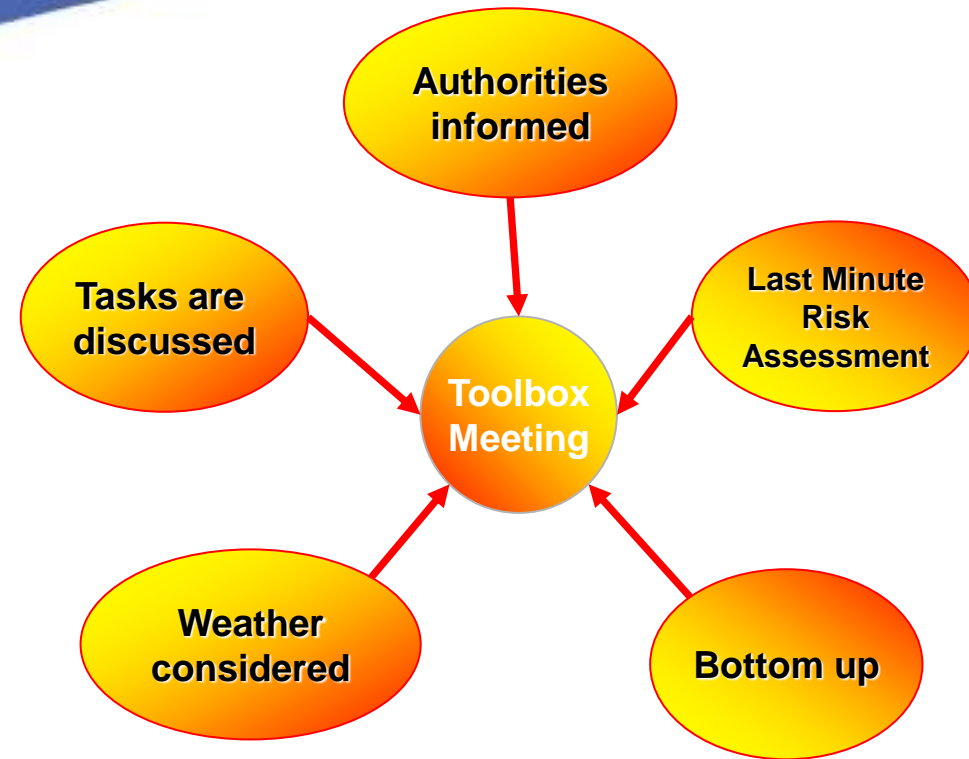
Example

- Activity : Repackaging POP pesticides
- Risk : To be exposed to POP pesticides
- Prioritization : Very likely
- Control : Divide site in clean, decontaminated and contaminated zone and use proper PPE



What is a toolbox meetings?

- A meeting with the team
- Held by the job supervisor
- Part of safe execution of work
- Held at regular intervals
- The topics are related to the specific task(s) ongoing
- Related information authorities
- Workers sharing their opinion for a safe work



New information and recommendations may arise from the evaluation of the context around



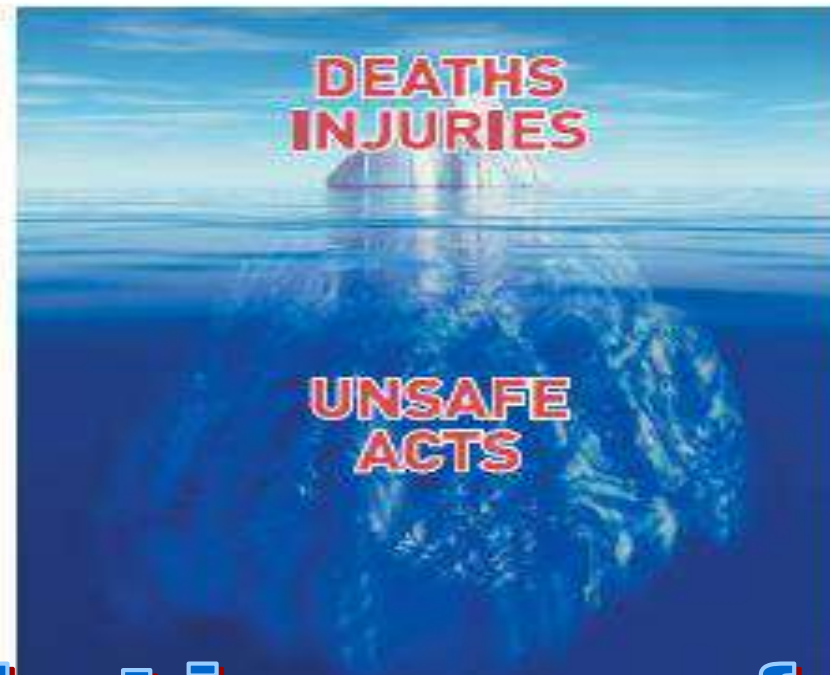
The objectives of a toolbox meeting

- To raise awareness of the risks involved during the work
- To build capacity on safe behavior
- To discuss the work and its risks
- To verify if all safety preparations are adequate and adequate
- To allow all workers to raise questions

All to healthy an safely return home



THE ICEBERG THREAT....



**What is an unsafe act
and an unsafe condition ?**



ACCIDENTS ARE JUST THE TIP OF THE ICEBERG



... POTENTIAL ONES ARE THOSE HIDDEN IN THE MURKY LIGHTS OF THE FUTURE.



What's Wrong or Right?



This is unsafe!



Corrected Situation



What's Wrong or Right?



This is unsafe!

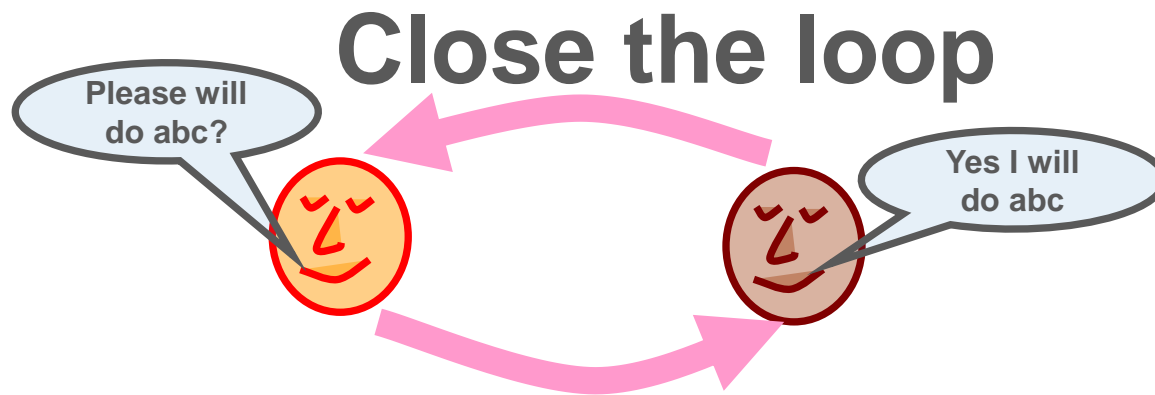


Corrected Situation



What is a Start Work Analysis?

- An on-site meeting
- Max 10 – 15 minutes
- A last-minute risk assessment



The objectives of a SWA meeting

- To raise awareness of the risks involved during the work
- To build capacity on safe behavior
- To verify if conditions and risks assessed are changed
- To give instruction and verify if tasks are understood
- To verify if all PPE are adequate

All to healthy and safely return home



Do not take contamination home



Why WE have to monitor safe behavior?

- To be prepared for unexpected events
- The person to monitor keeps
 - ✓ The overall view, situation may change
 - ✓ The workers alert when tired you are less concentrated
- Intervene when
 - ✓ Workers are too tired
 - ✓ Workers are having heat stressed
- Prevent cross contaminations
- To be prevent unsafe acts

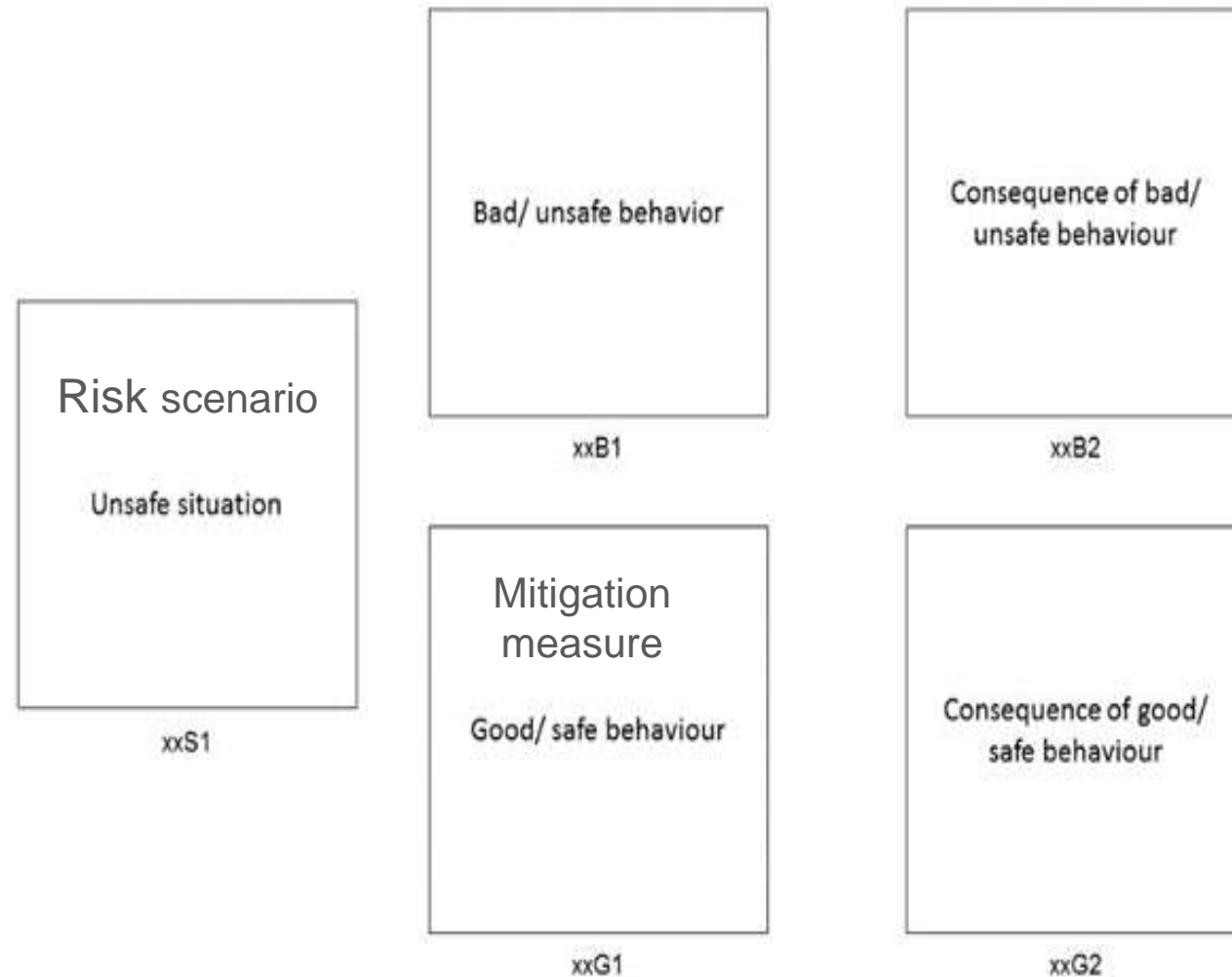


We take care of each other, so that everyone arrives home safely & healthy



A set tiles with the infographics and the codes

Exercise



Scenario 01 - Processing asbestos



01S1



01B1



01B2



01G1



01G2



Scenario 02 - Working with contaminated soil



02S1



02B1



02B2



02G1



02G2



Scenario 03 - Housekeeping



03S1



03B1



03B2



03G1



03G2



Scenario 04 Lifting or carrying heavy objects



04S1



04B1



04B2



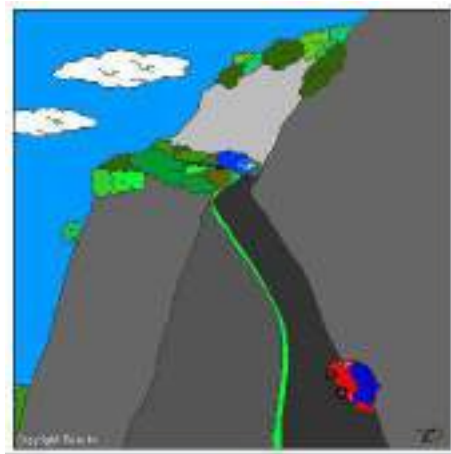
04G1



04G2



Scenario 05 Driving



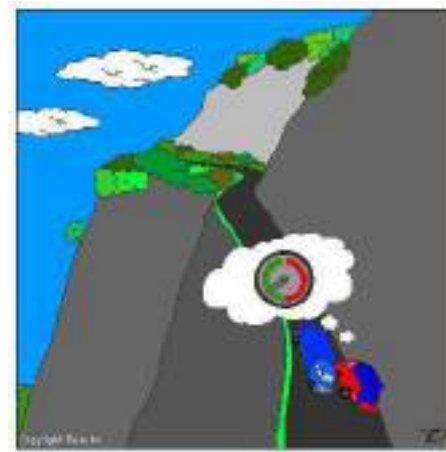
05S1



05B1



05B2



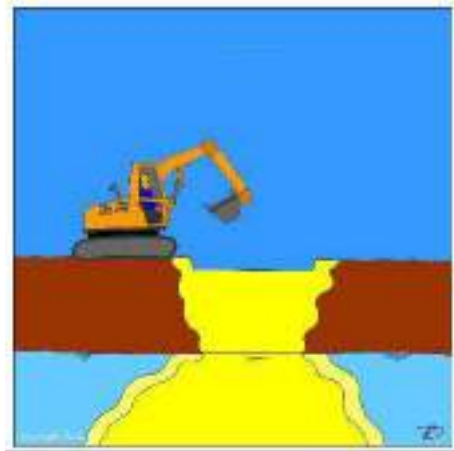
05G1



05G2



Scenario 06 Moving and operating equipment



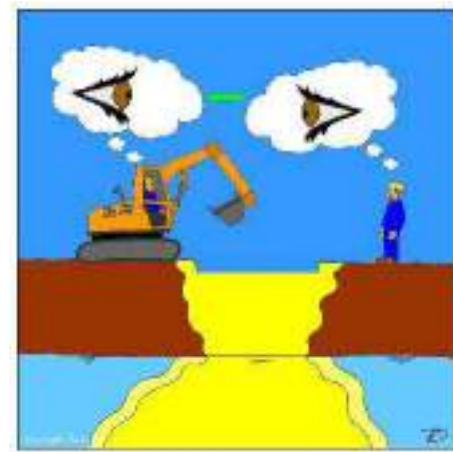
06S1



06B1



06B2



06G1



06G2



Scenario 07 Moving transport equipment



07S1



07B1



07B2



07G1



07G2



Scenario 08 Welding



08S1



08B1



08B2



08G1



08G2



Scenario 09 Working in an environment with toxic vapour in the air



09S1



09B1



09B2



09G1



09G2



Scenario 10 Using mechanical-driven tools



10S1



101B1



10B2



10G1



10G2



Scenario 11 Closing working day & going home



11S1



11B1



11B2



11G1



11G2

Scenario 12 Taking a break



12S1



12B1



12B2



12G1



12G2



Scenario 13 Moving contaminated packages



13S1



13B1



13B2



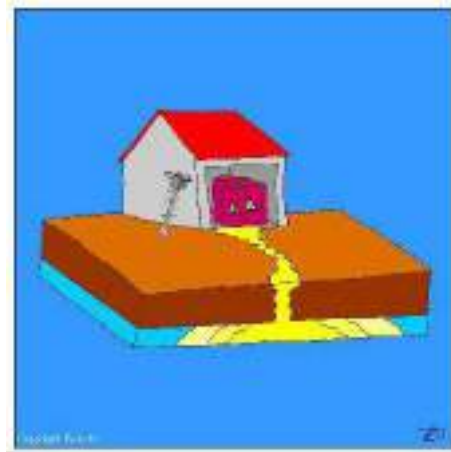
13G1



13G2



Scenario 14 Taking soil samples



41S1



14B1



14B2



14G1



14G2



Scenario 15 Child labour



15S1



15B1



15B2



15G1



15G2



Scenario 16 Working under hot conditions



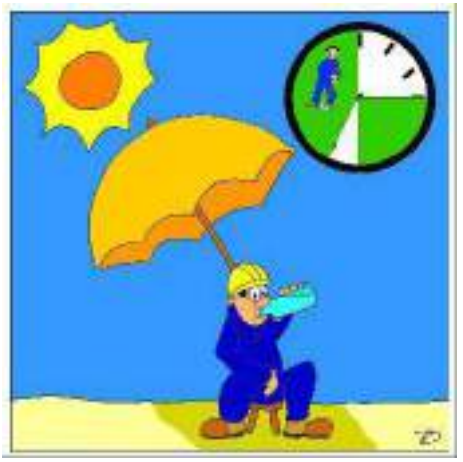
16S1



16B1



16B2



16G1



16G2



Scenario 17 Open shoe laces and lose clothing



17S1



17B1



17B2



17G1



17G2



Scenario 18 Using damaged tools



18S1



18B1



18B2



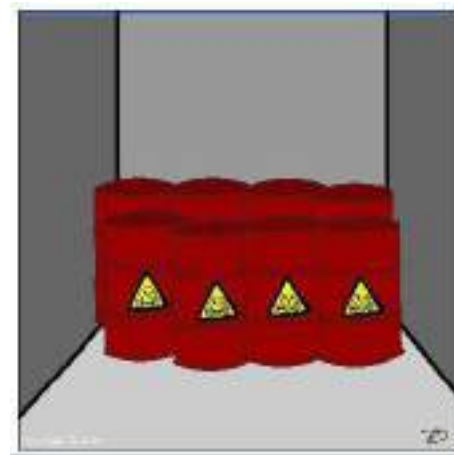
18G1



18G2



Scenario 19 Using undamaged & adequate tools incorrect



19S1



19B1



19B2



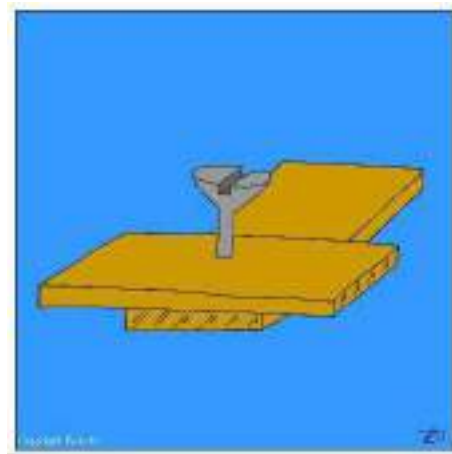
19G1



19G2



Scenario 20 Using inadequate tools



20S1



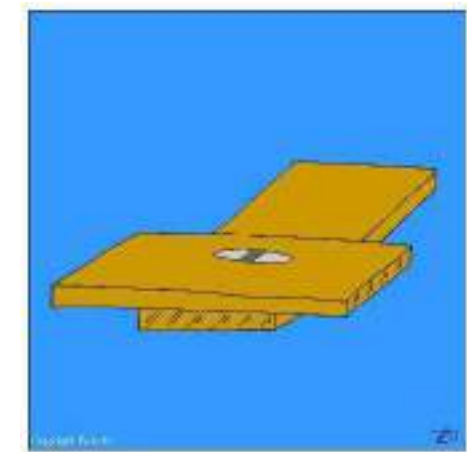
20B1



20B2



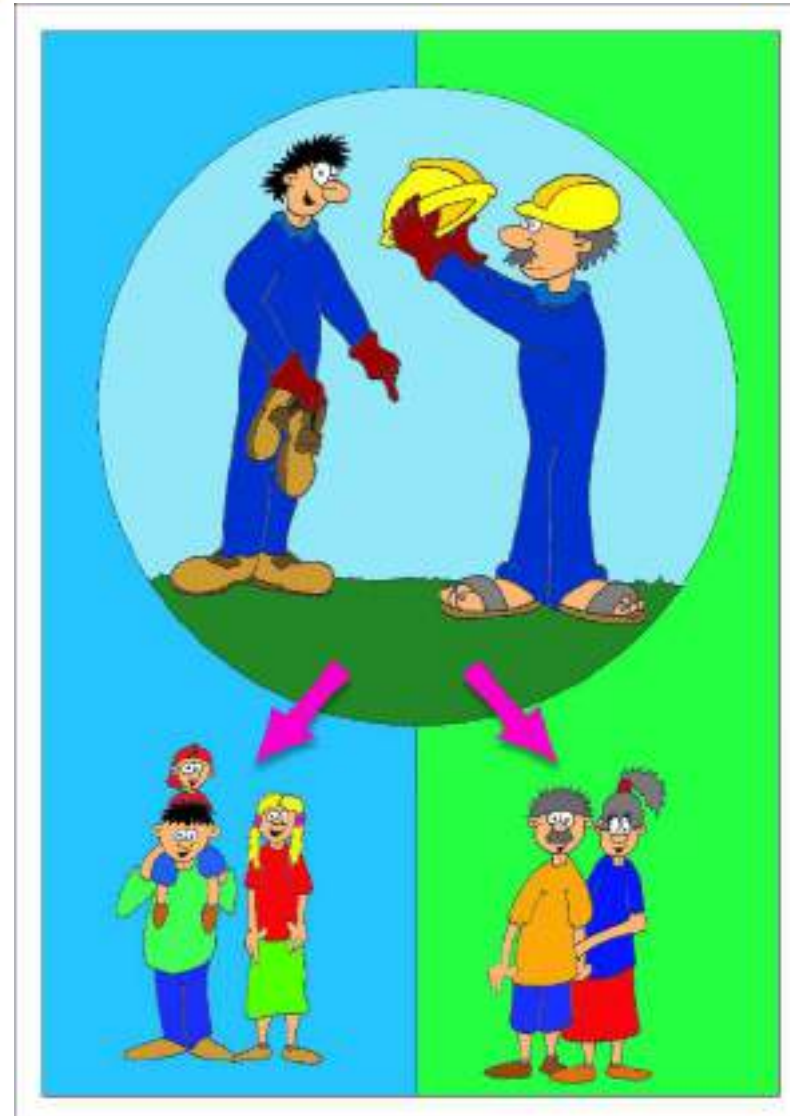
20G1



20G2



We take care of each other, so that everyone arrives home safely and healthy



No	Scenario	Risk	Mitigation measure
01	Processing asbestos	Exposure to asbestos because of inhalation of asbestos fibers when not using proper PPEs	Use adequate PPEs and implement safety measures when working with asbestos
02	Working with contaminated soil	Exposure to contaminated soil and groundwater when not using proper PPEs	Use adequate PPEs and implement safety measures when working with contaminated soil
03	Housekeeping	Accidents because of improper housekeeping resulting in a messy environment	Tidy and neat workplace and signaling of hazards
04	Lifting or carrying heavy objects	Injuries due to physical overload	Working together and using proper carrying tools
05	Driving	Accidents due to too fast and /or unsafe driving	Careful driving within speed limits and respecting all traffic rules
06	Moving digging equipment	Serious injury due staying in the line of fire of moving digging equipment (excavator)	Holding eye contact and staying outside the line of fire
07	Moving transport equipment	Serious injury due staying in the line of fore of moving transport equipment (trucks/cars)	Holding eye contact, using sound and light signs when moving (reverse) and staying outside the line of fire
08	Welding	Injuries (permanent eye injury) when not using PPEs	Using proper PPEs and implement safety measures when welding
09	Working in an environment with toxic vapor in the air	Inhalation of toxins due to inadequate use of RPE	Using Respiratory Protection Equipment (RFP) correctly
10	Using mechanical-driven tools	Hurting someone when changing working position without switching off the tool	Switching off the tool when changing working position

No	Scenario	Risk	Mitigation measure
11	Closing the working day and going home	Secondary exposure because dirty working clothes are taken home	Leave contaminated clothes, tools and other material at the working side
12	Taking a break	Ingestion of contaminants because hygiene rules are not respected	Wearing gloves and other adequate PPE's during work and washing hands, face and body before break, drinking, eating and going home
13	Moving packed waste drums, sacks and/or boxes	Dermal exposure because of improper use of PPE	Using PPEs (gloves, boots and (c)overall proper
14	Taking (soil) samples	Inhalation of toxic dust due to not, or improper use of PPEs and working upwind	Wearing the correct and proper PPEs and working positioning is upwind
15	Child labour	Illiterate adults	Child labour is not allowed. Children go to school
16	Working under hot conditions	Circulation problems and dehydration	Take breaks and stay hydrated
17	Open shoelaces and loose clothing	Injury through tripping and slipping	Tight shoe laces and wear close-fitting clothes
18	Using damaged tools	Injury through failure of using damaged tools	Discard or repair damaged tool and use intact tools
19	Using tools adequate and undamaged tools wrong	Injury through using the correct tools in the wrong way	Using tools correctly
20	Using inadequate tools	Injury through using the wrong tools	Using the right tools

Thank you!

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Questions?

