

1. PURPOSE

When working in a wastewater environment there is potential for exposure to a wide range of illnesses and infections. The purpose of this instruction is to provide a procedure, which if followed, will minimise the risk associated with exposure to wastewater.

This SOP applies to EGW staff, including contractors, who carry out works involving contact with wastewater. Information may also be applicable to visitors to EGW sites and facilities and to reclaimed water users.

2. APPROVAL

Managing Director

3. DEFINITIONS

“**Wastewater**” includes raw sewage, treated sewage and effluent (except disinfected Class A effluent) that may be encountered in any sewerage pipeline or treatment and disposal system (including sewer gravity or rising mains, sewage treatment plant, effluent irrigation system, septic tank waste, sewage sludge, etc), and any other liquid waste or by-products encountered that may be dangerous to human health.

“**Reclaimed water**” means treated wastewater.

4. SAFETY

Working with wastewater can lead to exposure to infectious agents like bacteria and viruses, which can enter the body via various routes (see Appendix 1). Common adverse health effects associated with exposure to these agents include tinea, eye infections, Tetanus, Hepatitis A, Hepatitis B, gastro-enteritis, dysentery, Giardia, pneumonia, influenza and, less likely, HIV (through needles and syringes).

5. PROCEDURE

5.1 In the Event of Sewage Contamination:

- Remove contaminated clothing immediately
- Shower or wash down with copious amounts of water
- Use eye wash if eyes are contaminated
- If wastewater is ingested, then advice from a doctor should be sought immediately regarding a preventative dose of immunoglobulin against Hepatitis A, if you are not already immunised
- Report the incident to your supervisor and complete an Incident/Accident Report form
- If you develop any symptoms of nausea, vomiting, diarrhoea or fever, then immediately consult your doctor and inform him/her of your wastewater exposure
- Carry out a full accident investigation to identify and address contributory factors in order to prevent a recurrence

5.2 Personal Protective Equipment:

Employees working in a wastewater environment must wear protective clothing and equipment appropriate to the task;

- Gloves protect the skin and reduce the risk of penetrating injuries;
- Use a face shield if there is a risk of splashes to eyes, nose and mouth; and
- Waders or gumboots and overalls reduce skin exposure to wastewater.

Ensure that any cuts, abrasions, or skin irritations are protected from contact with wastewater either by personal protective equipment or barrier creams.

5.3 Personal Hygiene Practices:

- Wash your hands prior to eating, drinking and smoking and before and after going to the toilet;
- Keep your lunch room clean and free from contamination;
- Shower at the end of the day; and
- Segregate contaminated clothing from clean clothing

5.4 Needles and Syringes:

- Dispose of any needles or syringes found in the wastewater environment promptly in an appropriate plastic yellow biohazard container;
- Don't place hands in places where needles/syringes could be concealed, use an implement and ensure that there is good lighting

You should consider any blood, body fluids, needles and /or syringes to be infectious.

IN THE EVENT OF A NEEDLE-STICK OR "SHARPS" INJURY:-

- Encourage the wound to bleed slightly, then wash it with soap and warm water
- Report it immediately to your supervisor and complete an Incident/Accident report form – the supervisor is to inform the OHS Officer (or in his absence, Manager Business Risk and Compliance) without delay
- See your doctor immediately as an "antidote" to reduce your risk can be effective if given as soon as possible within 24 hours of the injury. Relevant blood testing can be conducted if required.
- Previous vaccinations for Hepatitis B etc. do not necessarily guarantee immunity because immunity can wear off over time and some individuals don't react as expected
- The supervisor is to arrange for a full accident investigation to identify and address contributory factors in order to prevent a recurrence

6. RISK MANAGEMENT

Adherence to this procedure will minimise the adverse health effects of exposure to waste water and associated costs of medical expenses / compensation claims.

7. REFERENCES

Occupational Health & Safety Act 2004

Health Act 1958

Health (Infectious Diseases) Regulations 2001

SafeAS Volume 2 Management Guide I4

Appendix 1

BIOLOGICAL AGENTS – ROUTES OF ENTRY

Infectious agents like bacteria and viruses can enter the body via the following routes:-

Skin

Skin cannot fully protect us from harmful effects of infectious agents like bacteria and viruses. In day to day life, it generally protects us well, however it cannot offer a barrier against penetrating objects, in particular needles, syringes, razor blades, glass etc., all of which could be found in some wastewater environments.

The skin and membranes of the eye, mouth and nostrils are less resistant to infectious agents, in comparison with normal skin. Therefore, it is essential to protect those areas from contact with wastewater or from infection on hands being transferred to eyes and mouth.

The diseases that can be contracted through damage to the skin include wound infections, tinea, eye infections, Tetanus, Hepatitis B and less likely HIV (through needles and syringes).

Ingestion (mouth)

Wastewater is composed of a variety of micro-organisms that inhabit the gut of humans. Some of these have the potential to cause disease if they enter the body via splashes to the mouth/face/nose region or from hands while eating, drinking and smoking.

The types of illnesses that may result are Hepatitis A, gastro-enteritis, dysentery and Giardia. Symptoms may include nausea, vomiting, diarrhoea, fever, abdominal discomfort etc.

Inhalation (breathing)

The vapours and mists, which are present in the wastewater environment, can contain large numbers of micro-organisms that can cause disease such as pneumonia, gastro and influenza type illnesses.