Protocol for the disposal of contaminated water and associated wastes at incidents

Jointly issued by Water UK, Environment Agency, NIEA, Natural Resources Wales, DWI, Fera, Defra's CBRN Recovery Team, NFCC National Resilience

Version 16 - 30 April 2018

Document control

Version	Date	Change
1	Jul 2002	Original issue
2	Apr 2003	Amendments for changed Fire Service procedures
2.1	Sep 2003	Amendments to reflect comments from DoE NI: Addition to para 1.5 New para 7.4
2.2	Sep/Oct 2010	Updating of document to reflect current (2009) guidance and procedures
3	Mar 2011	Initial consultation with Fire and Rescue Service
4	May 2011	Working group established draft
5	Sept 2011	Consultation with Fire and Rescue Service and update of procedures and legislation
6	Sept 2011	Circulated to CBRN NWG, Environment Agencies and Water Companies/Undertakers.
7	Dec 2011	Final draft re-circulated to confirm amendments
8	Dec 2011	Amendments from CBRN NWG group partners
9	Jan 2012	Amendments from Water Industry partners
10	Jan 2012	Amendments from Environment Agency partners
11	Jan 2012	Final version for UK
12	Feb 2012	Amendments to reflect letter from SEPA withdrawing from Protocol
13	Mar 2012	Recirculation of document with amendments
14	Apr 2012	Final document
15	Sept 2012	Correct CFOA Logo added to Final Document
16	October 2017	Full review and revision

Sign off

This document has been produced jointly by t Water UK, Environment Agency, NIEA, Natural Resources Wales, DWI, Fera, Defra's CBRN Recovery Team, NFCC National Resilience. These organisations support the protocol and agree to keep the document under review, producing updates as required.

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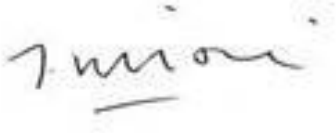
Toby Willison Executive Director of Operations	Environment Agency	
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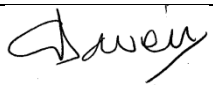
Ceri Davies Executive Director for Evidence, Policy and Permitting	Natural Resources Wales	
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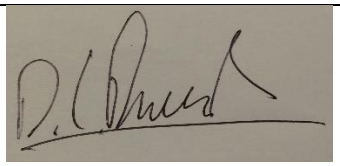
David Phillips Strategic Portfolio Director	Fera	
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Contents

1. Introduction

The purpose of this protocol is to provide guidance to all those involved in planning for, and responding to, incidents involving contaminated water and associated solid waste, regardless of the source, which could cause harm to human health, the environment, business or property. Effective co-operation between all parties is essential for managing the impacts of contaminated water and associated solid waste.

This document refers to both water and sewerage undertakers. These two functions will often be delivered by a single undertaker but in some locations they are delivered by separate companies. Where this is the case, both water supply and wastewater service providers need to be included in any communications.

All parties should be aware of and adhere to the relevant legislation applicable when working together on an incident of this nature.

2. Health and safety implications

Water and sewage undertakers and environmental agencies must be notified as soon as any contamination is identified or deemed likely, and / or consulted as soon as practicable. This will enable the instigation of health and safety measures in the drainage system, and/or receiving water body, to allow the relevant party to formulate their operational response.

3. Scope

This protocol is intended to support existing major incident procedures, to assist in the decision making process, by providing guidance for the safe management and control of polluting substances that can be hazardous to human health, business, property or the environment by the nature of the substance itself and the environment in which it is released. This includes chemicals, biological pathogens, radiological and nuclear materials.

Incidents that fall within the scope of this document may include but not be limited to potential or actual uncontrolled release of:

- Decontamination wash water (e.g. containing chemical or biological agents, radioactive material, and/or decontamination chemicals such as bleach or surfactants);
- Firewater run-off including fire-fighting agents such as foam, products of combustion and products stored on site, released by the fire;
- Chemicals, oil and fuels wastes or other polluting substances such as food and beverages;
- Contaminated potable or process water.

4. Roles and responsibilities

Successful incident management will be achieved through early engagement with all parties so that they can then decide if they need to be involved and, if they do, the extent of their involvement. Key stakeholders that should be notified immediately include:

- Water / waste water companies
- Environmental agencies

- Fire and rescue services
- Police
- Local authorities
- Public Health England/Public Health Wales/Public Health officials

If the event or incident becomes more serious or increases in scope then it is possible that Civil Contingencies arrangements may be invoked, for example the establishment of central control through relevant civil contingencies structures appropriate in the relevant devolved administration. In these cases, responders may be asked to act in an advisory capacity. The principles outlined in this protocol should still apply.

5. Managing contaminating substances

When managing potentially contaminating substances it should be recognised that discharge into sewerage systems and/or direct to surface water or indirectly to groundwater through discharges to soil or ground can cause a variety of impacts/damage both in short and long term. Examples could include, direct exposure to pollutants, closure/contamination of drinking water supplies and/or food chain, damage to wildlife and disruption of economic and amenity uses of water such as bathing and fishing. Therefore both primary and secondary impacts should be considered when determining the most appropriate action to take on the management of contaminating substances.

As a result, responders and those managing any incident must take all reasonable steps at all times to prevent damage or harm to human or animal health and wellbeing, the environment or property. In order to do so responders should follow the following generic steps: contain, identify, treat, dispose. (Figure 1).

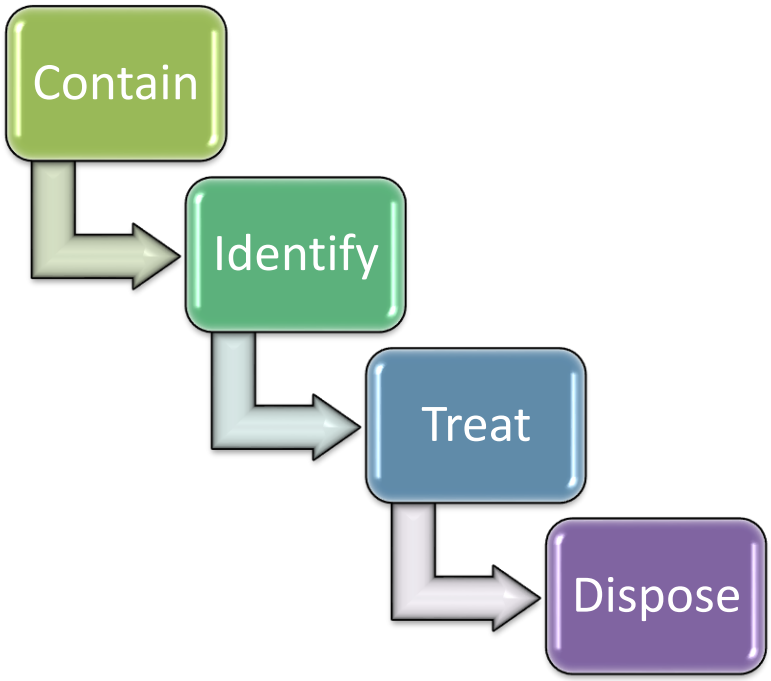


Figure 1 – Steps for managing contaminating substance

Guidance to consider at each of these steps is provided in the following sections.

5.1 Contain

Many contaminants (especially those of a radioactive nature) have the potential to have a long term impact on people, the environment and drainage infrastructure. Therefore, all reasonably practicable measures should be taken to contain contaminated or potentially contaminated run off. However containment may lead to safety issues for those managing the waste and a risk assessment for the option of choice is essential.

Contaminants and contaminated water and associated wastes should be contained either at the point of release or appropriately off-site at a suitable location until they have been properly identified.

The following hierarchy should be followed to prevent and mitigate the impact of contaminated run off: (see Figure 2)

- contain at source;
- contain close to source;
- contain in closed containers on the surface;
- contain in the drainage system or in the watercourse

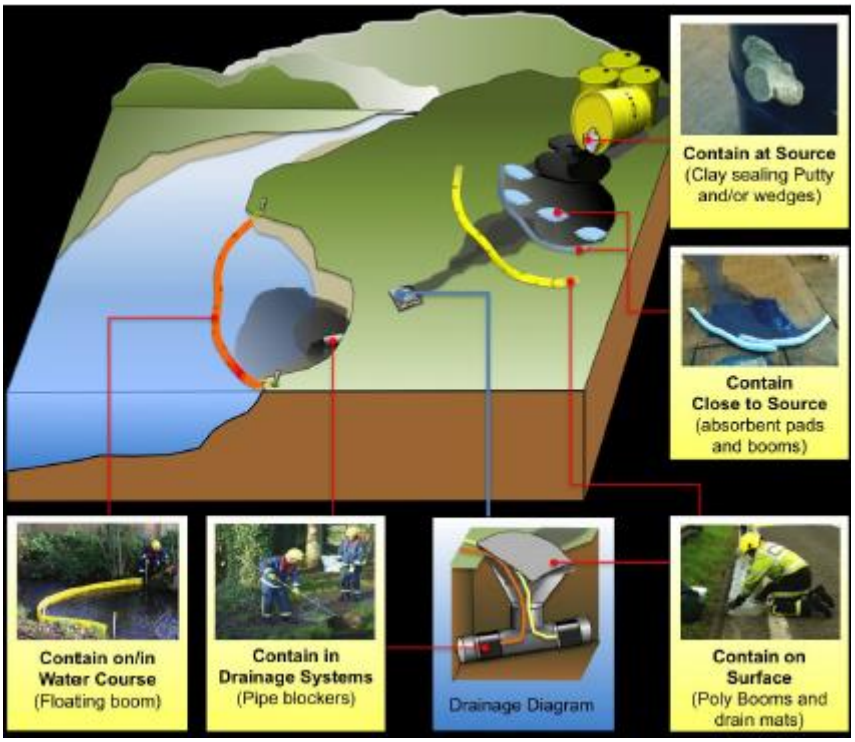


Figure 2 – Steps for managing contaminating substance (Source - Environmental Protection Handbook for the Fire and Rescue Service)

Any containment action should be carried out in conjunction with measures to prevent further contamination. However environmental agencies and sewerage undertakers recognise that responders do not have an infinite capacity to contain water run-off. They will therefore make arrangements to provide timely advice on environmental impact, drainage issues and suitable mitigation measures.

Advice on containment methods and techniques is given in the FRS National Operational Guidance on Environmental Protection and supporting Environmental Protection Handbook for the Fire and Rescue Service.

5.2 Identify

The identification of released contaminants is the responsibility of the owner / operator/landowner where they are known. The owner / operator or managing authority may seek specialist assistance from any of the following organisations:

- Manufacturer or supplier
- On site owner and specialists
- Fire and rescue service
- Environmental agencies
- Specialist accredited laboratories
- Government organisations (PHE, PHW, PHA NI,)
- National Chemical Emergency Centre

5.3 Treat

Once identified, a decision should be made by the responsible body at the time on whether treatment is required or practicable. Any treatment regime required in order to allow safe disposal would be governed by the type, volume and concentration of contaminants, and the location of the contained water or waste.

5.4 Dispose

The final decision on disposal of contaminated water or solids will be made by relevant organisations (including regulators).

Where FRS/EA/NRW is requesting a sewerage undertaker to accept contaminated material for holding / disposal then this needs to be made in writing.

6. Communication

Appropriate and timely communications are the key to retaining control of the response. This may include a multi-agency communication strategy to provide information to stakeholders and the general public.

7. Additional Information

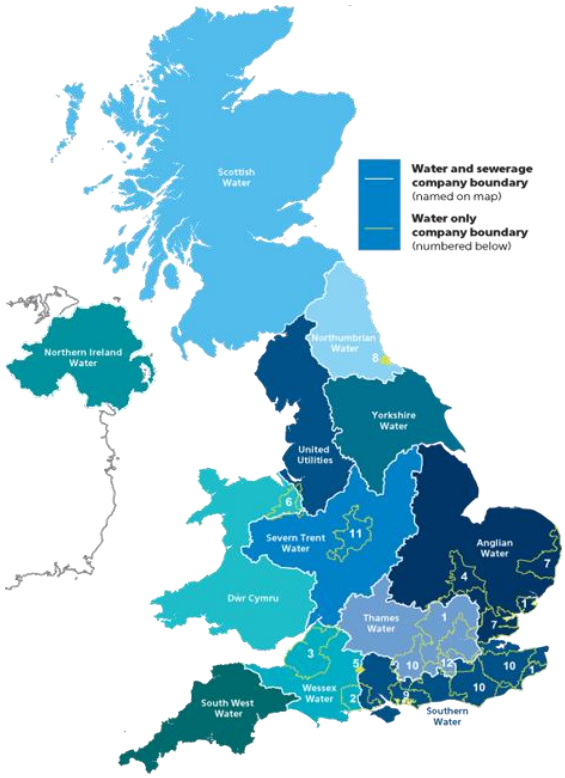
The following appendices are attached to this document to provide further information for those implementing this protocol.

- Appendix 1: Useful information
- Appendix 2: Glossary
- Appendix 3: Field guidance for discharging waste run-off from decontamination of casualties
- Appendix 4: Guidance on identifying drainage systems
- Appendix 5: Disposal of wash waters

Reference documents

Further guidance is available in the National Operational Guidance – Environmental Protection and supporting "Environmental Protection Handbook for the Fire and Rescue Service". See https://www.ukfrs.com/guidance/environmental-protection

Appendix 1: Useful information



Water and sewerage undertakers	**Water Undertakers Only**
Anglian Water	Affinity Water
Northern Ireland Water	Bournemouth Water
Northumbrian Water	Bristol Water
Scottish Water	Cholderton & District Water Company
Severn Trent Water	Dee Valley Water
South West Water	Essex & Suffolk Water
Southern Water	Hartlepool Water
Thames Water	South East Water
United Utilities	Portsmouth Water
Welsh Water	Cambridge / South Staffordshire Water
Wessex Water	SES Water
Yorkshire Water	

Inset appointees
Albion Water
ICOSA water
IWNL
Leep Water
Scottish and Southern Energy (Water)
Veolia Water Projects

For further information regarding this document please contact:

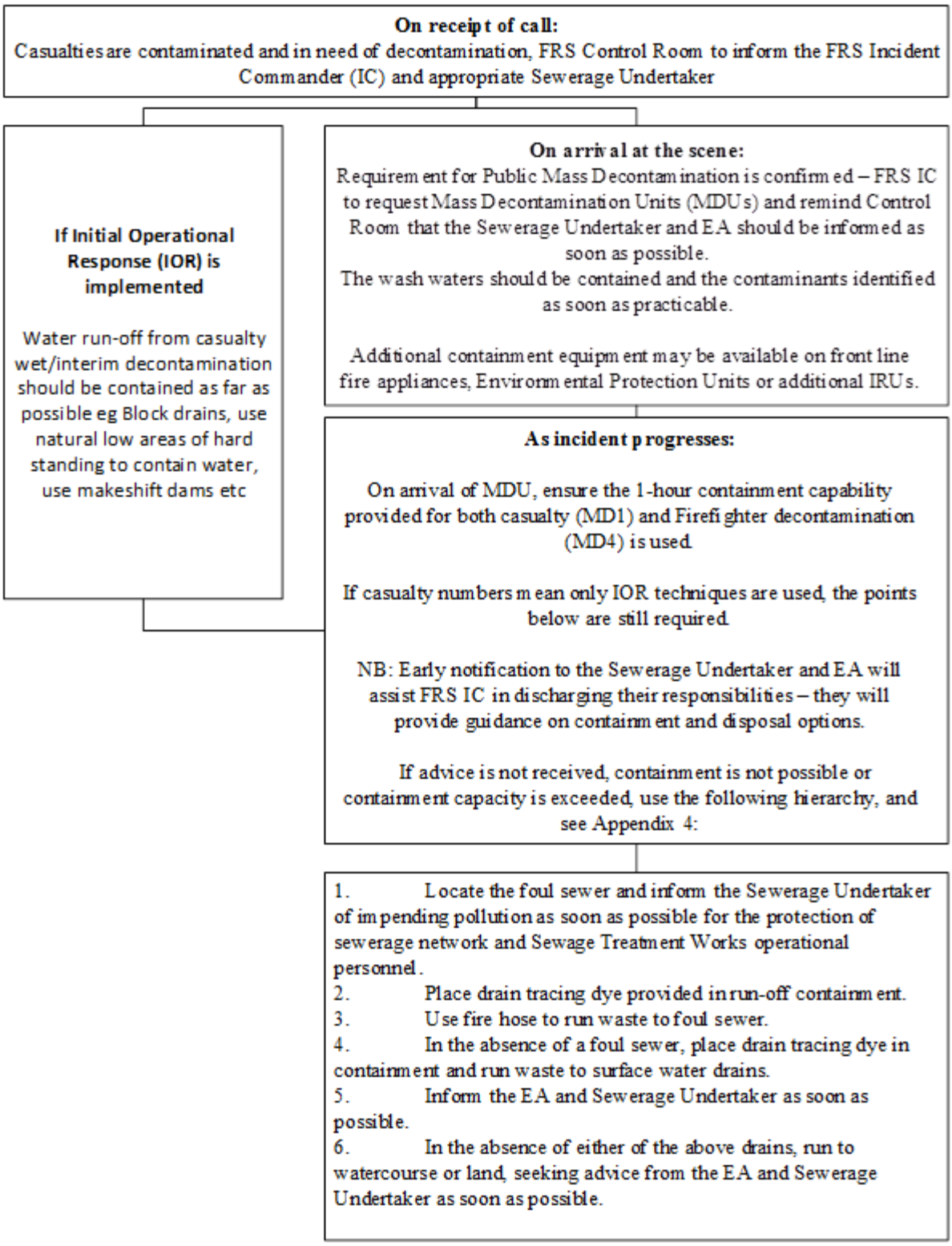
Organisation	Website
Water UK	water.org.uk
Environment Agency	gov.uk/government/organisations/environment-agency
Northern Ireland EA	daera-ni.gov.uk
Natural Resources Wales	naturalresources.wales
SEPA	sepa.org.uk
National Fire Chiefs Council	nationalfirechiefs.org.uk/
Fera Science Ltd	Fera.co.uk
Defra	gov.uk/government/organisations/department-for-environment-food-rural-affairs
DWI	Defra.dwi.gov.uk
DWI-NI	daera-ni.gov.uk/articles/duties-drinking-water-inspectorate-dwi
DWQR	dwqr.scot

Appendix 2: Glossary

CBRN	Chemical, biological, radiological and nuclear
COBR	Cabinet Office Briefing Room
Combined Sewer	*A drain/sewer pipe that accepts both sewage and runoff from roads/roofs. Combined sewers are more common in older housing stock (pre-1945) and form a large part of the sewerage systems in major cities.*
CSO	Combined Sewer Overflow. *A CSO is effectively a one-way valve that allows sewage within the combined sewer to discharge directly into a river during times of extreme flow when the capacity of the sewer is exceeded.*
DBB	Decontamination of Body Bags
DCLG	Department for Communities and Local Government
DAERA	Department of Agriculture, Environment and Rural Affairs, Northern Ireland
DWI	Drinking Water Inspectorate
DWI – NI	Drinking Water Inspectorate Northern Ireland
DWQRS	Drinking Water Quality Regulator, Scotland
EA	Environment Agency (England)
Effluent	*Water that has been through a treatment stage to remove contaminants, e.g. the discharge from a waste water treatment works.*
Foul water	See sewage
FRS	Fire & Rescue Service
HPS	Health Protection Scotland
IOR	Initial Operational Response
MD	Mass Decontamination
MDU	Mass Decontamination Unit
NIEA	Northern Ireland Environment Agency
NRW/CNC	Natural Resources Wales / Cyfoeth Naturiol Cymru
OGD	Other government department
PHA	Public Health Agency (Northern Ireland)
PHE	Public Health England
PHW	Public Health Wales
Potable water	*Water that has been treated to attain specified standards with regards to the concentration of chemicals etc. in order to be fit to drink.*
SAGE	Scientific Advisory Group for Emergencies
SEPA	Scottish Environmental Protection Agency
Sewage	*Used water from kitchens, bathrooms, toilets, washing machines etc. commonly containing microbial and biological contaminants. It can include industrial liquid waste and liquid waste from hospitals etc.*
Sewerage	*A network of pipes/drains and associated infrastructure designed to transport sewage and/or runoff from its source to the point of treatment/discharge.*
SOR	Specialist Operational Response
SSSI	Site of Special Scientific Interest

STAC	Science and Technical Advice Cell
STW	Sewage treatment works – see WwTW
Storm drain	See surface water drain
Storm sewer	See surface water drain
Surface water drain	*These accept road and roof runoff generated from rainfall. As the water is relatively clean, it discharges directly to surface water (or groundwater) to reduce the burden on WWTW. Surface water drains are also known as storm drains or storm sewers.*
WTW	Water Treatment Works. *Converts raw water (groundwater, river etc.) into drinking/potable water.*
WwTW/WwTP	Wastewater Treatment Works/Plant. *Treats foul water/sewage to remove contaminants and discharges the treated water (effluent) back into rivers. Also known as a sewage treatment works (STW).*

Appendix 3 – Field guidance for discharging waste run-off from decontamination of casualties



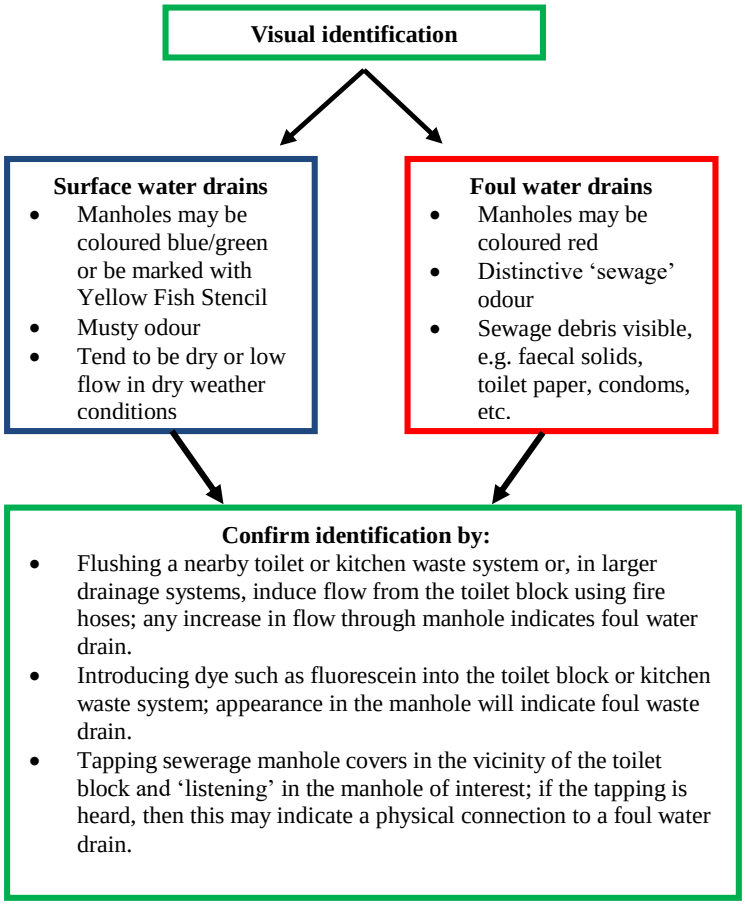
Appendix 4: Guidance on identifying drainage systems

The purpose of this note is to help the appropriate emergency responders and others identify foul water drains. The guidance on how to identify drainage systems is as follows:

- Inform and consult with the appropriate sewerage undertaker and environmental agency to obtain drainage advice;
- If you do not have a drainage plan for the area/site – consult site managers, Local Authority, or talk to local people who may know. See the National Operational Guidance - Environmental Protection and the Environmental Protection Handbook for further guidance on drainage identification;
- Due to the possibility of crossed connections or a faulty assessment, a discharge may still occur to the environment.

So you should still tell:
1) The sewerage undertaker that a discharge may be made to their foul sewer before it happens.
2) The appropriate environmental agency so that they can assess the potential impact of the discharge to the environment and take remedial measures including notifying abstractors and other water users.

Follow this procedure, if you are still unable to identify the drains:



Appendix 5: Disposal of wash water

- Improvised Decontamination - The use of an immediately available method of decontamination prior to the use of specialist resources (consider use of dry agent such as blue roll)
- Interim Decontamination - The use of standard FRS frontline equipment to provide a planned and structured decontamination process prior to the availability of purpose-designed decontamination equipment
- Mass Decontamination - The planned and structured procedure delivered by the FRS using purpose-designed decontamination equipment for large numbers of contaminated people
- Clinical Decontamination - The process in which contaminated casualties are treated individually by trained healthcare professionals using purpose-designed decontamination equipment.
- Decontamination of Body Bags (DBB) – The process in which CBRN body bags containing CBRN fatalities are decontaminated by specialist FRS personnel.

The Initial Operational Response system of removing a casualty's clothing, using dry agent to blot skin and the provision of disrobe packs to casualties before washing will also considerably reduce the potential impact.