

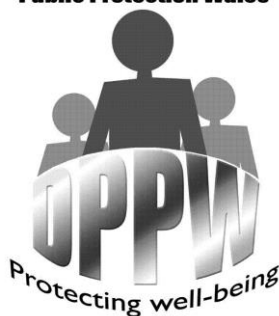
# Managing public health risks from environmental incidents. Guidance for Wales

Version 4.0c



**Cyfoeth  
Naturiol  
Cymru  
Natural  
Resources  
Wales**

**Directors of  
Public Protection Wales**



**Llywodraeth Cymru  
Welsh Government**

## Background

This guidance supports the public health response to environmental incidents. It covers incidents that are not “major” and covered by the Civil Contingencies Act or the period before formal command and control is established. It aims to strengthen collaboration by:

- Defining what “an environmental incident” is;
- Stating incident notification and management procedures,
- Clarifying agency roles and responsibilities, and
- Noting resources available to inform action.

It describes how to manage incidents that are minor or localised using an Incident Management Team (IMT) approach. It can also apply to the early stages of potentially major incidents. The approach mirrors that used in major incident response; the only difference is in the formal structures used and the number and range of partners involved.

It is based on the need to apply the Joint Emergency Services Interoperability Programme (JESIP) doctrine of “*working together - saving lives - reducing harm*” and the [Joint Decision Model](#). This ensures a consistent approach to incident risk communication, assessment, management and appropriate escalation of incidents.

It may be used in conjunction with the Communicable Disease Outbreak Management plan. At writing, this document is under revision.

Part 1 of the guidance covers the basic principles of environmental incident management using an IMT approach.

Part 2 lists some useful resources that may be needed in conjunction with this document.

Version	Date	Revision lead by:-	Reason for update
Version 1.0	March 2014		
Version 2.0	January 2017		
Version 3.0	March 2017	Kristian James Kristian.James@wales.nhs.uk	
Version 4.0	November 2021	Sarah Jones Sarah.jones27@wales.nhs.uk	4 years since last review
Version 4.0a	June 2023	Sarah Jones Sarah.jones27@wales.nhs.uk	Decision taken on change to part 2
Version 4.0b	July 2023	Sarah Jones Sarah.jones27@wales.nhs.uk	Edits following consultation
Version 4.0c	October 2023	Sarah Jones Sarah.jones27@wales.nhs.uk	Edits following consultation

<b>Part 1 – Environmental Incident Management .....</b>	<b>4</b>
<b>1. Managing environmental incidents in Wales .....</b>	<b>4</b>
1.1 What is an environmental incident? .....	4
1.2 What is environmental incident management? .....	4
1.3 Who declares an environmental incident? .....	6
1.4 Who is involved in environmental incident management? .....	6
1.5 What does an IMT do? .....	7
1.6 What do IMT members do? .....	8
IMT Meeting Agenda .....	9
1.7 What does each organisation contribute to the IMT? .....	9
Public Health Wales (PHW) .....	9
UK Health Security Agency (UKHSA) .....	10
Health Boards (HBs) .....	10
Local Authorities (LAs) .....	10
Natural Resources Wales (NRW) .....	10
1.8 How should the IMT operate? .....	10
1.9 Risk assessment .....	13
1.10 Risk assessment recording .....	15
1.11 Escalation – beyond the IMT .....	16
1.12 Debrief and Evaluation .....	17
<b>Part 2 - Supporting information .....</b>	<b>18</b>
<b>2. Information to support incident management .....</b>	<b>18</b>
2.1 Air quality incidents .....	18
2.2 Chemical incidents .....	18
2.3 Radiation incidents .....	19
2.4 Water quality incidents .....	19
2.5 Weather related incidents .....	19
2.6 Contaminated land .....	19

# Part 1 – Environmental Incident Management

## 1. Managing environmental incidents in Wales

### 1.1 *What is an environmental incident?*

An environmental incident, in public health terms, is ***an acute or chronic event where there are, or could be, people exposed to chemicals and/or other environmental hazards, which cause, or could cause, health harms.***

Incidents **not** covered by this guidance include:

- environmental incidents with no associated public health risks,
- occupational exposures with no public health risk,
- incidents involving non-ionising radiation and
- incidents involving drugs, other substances of abuse and single case poisonings, except for carbon monoxide (CO) incidents.
- deliberate incidents (may also be referred to as CBRN), but at the beginning of an incident it may not be clear whether it is accidental or deliberate.
- animal health related incidents.

The scale of environmental incidents can range from those affecting few people, such as a contaminated private water supply, to a large-scale chemical release or smouldering waste fire with a plume affecting local communities over some weeks.

Incidents may be identified through complaints, community concerns, environmental monitoring, routine regulatory activity or public health surveillance.

This guidance covers environmental incidents that **do not** or **do not yet** need formal Command and Control structures; these include TCG (Tactical Command Group), SCG (Strategic Command Group) and STAC (Scientific and Technical Advice Cell). It is, however, based on the principles that these groups would work to. Escalation into these structures is covered by [section 1.11](#).

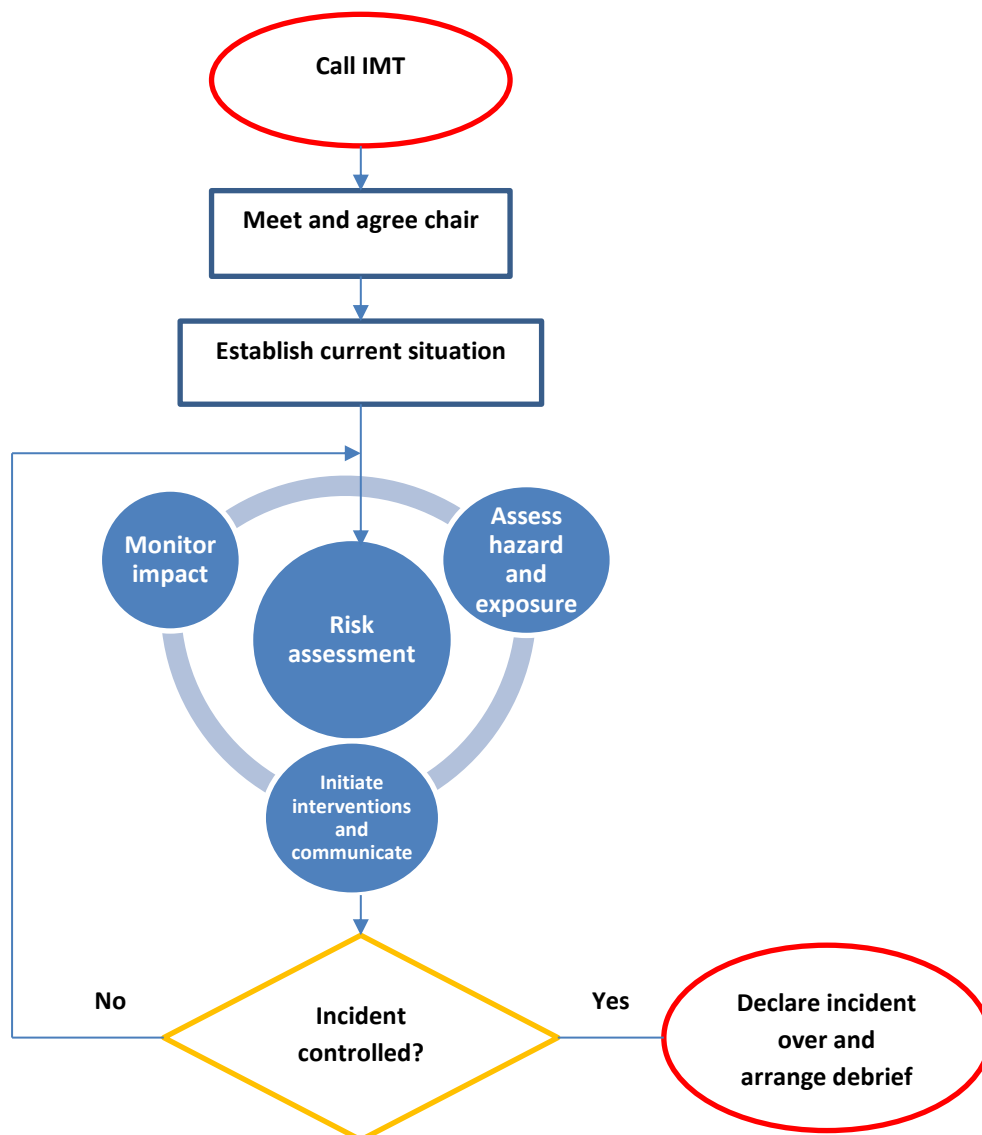
### 1.2 *What is environmental incident management?*

Environmental incident management is the set process for protecting public health following an [environmental incident](#) (figure 1). It involves a number of agencies working together with a common purpose.

Environmental incident management aims to **protect public health** by:-

- Breaking source-pathway-receptor links to prevent further exposure
- Identifying learning points and actions for the future.

Figure 1: Summary of incident management process



### **1.3 Who declares an environmental incident?**

Any organisation, but most likely one of those listed below (table 1), dealing with an event that they believe meets the [definition](#) above can declare an incident and call an Incident Management Team (IMT). The IMT is the collective name for the group of agencies tasked with [environmental incident management](#) and may be virtual or face to face. The IMT may also include the site owner or manager.

**Table 1: Organisations potentially involved in incident response in Wales**

<b>Core organisations</b>	Local authorities Public Health Wales UK Health Security Agency (UKHSA) Radiation, Chemicals and Environmental Hazards Directorate (Wales) Health Boards Natural Resources Wales
<b>Likely partner organisations</b>	Emergency Services, particularly the Fire and Rescue Services Health and Safety Executive Drinking Water Inspectorate (DWI) and Water companies Food Standards Agency Maritime and Coastguard Agency Other Local Resilience Fora partners

The organisation declaring the incident, and calling the IMT, should contact the other partners needed to manage the situation.

If an incident is declared by one organisation, all core partner organisations should join the IMT. Any core partner who does not believe that they have a role in the incident and IMT should then explain and document why.

The responsibility for managing environmental incidents is shared by **all** members of the IMT.

### **1.4 Who is involved in environmental incident management?**

A range of organisations contribute to an IMT and need to work together and share information to protect public health.

Mobilising the response to any incident needs the appropriate agencies to be able to contact each other quickly. This should be by telephone and email and use generic / service email addresses, rather than individual or personal routes.

Welsh Government does not contribute directly to incident response, but updates should be provided “for information”; this can inform broader briefings to officials and Ministers.

Information sharing during environmental incidents should use the [METHANE](#) approach.

## 1.5 What does an IMT do?

### Administrative tasks

- Appoint a chair and review membership.
  - The decision to chair will depend on the type and nature of the incident. Typically the agency who called the IMT (the lead agency) will take the initial chair and lead a review of membership.
  - A standing agenda item is to review whether another agency should take over the chair.
  - Terms of reference will need to be set.
- Appoint a loggist to start, and keep, a decision log and an action log (form 1).
- Agree how the IMT will meet (in person / virtually / both) and make arrangements for this.
- Agree meeting duration, frequency and expected life-span.
- Agree arrangements for out of hours contact.
- Review and evaluate the incident response with a formal debrief and / or multi-agency evaluation report.

Form 1: Suggested action log sheet

Loggist name and organisation				
Date, time and location of meeting				
Action number	Time	Action	Rationale for action	Responsible IMT member and organisation
1.				
2.				

### Incident management tasks

- Check that the situation meets the environmental incident [definition](#).
  - Does the incident have actual/possible public health impacts?
  - Identify the population at risk.
  - Describe the source – pathway – receptor route.
- Form an incident management plan,
  - Carry out a [risk assessment](#) based on currently available information.
    - Identify the hazard and possible health problems resulting from it.
    - Consider how health effects vary with exposure.
    - Assess how much of the hazard people have been exposed to, how they were exposed and how many people were exposed.
    - Characterise the risk – what is the extra risk of health problems in exposed people, including vulnerable people.
  - Document and record the [findings of the risk assessment](#).

- Consider if an IMT is needed / appropriate or if escalation to major incident is needed.
- Discuss and agree whether environmental monitoring data are needed.
- Discuss actions to reduce risks and protect health e.g. risk communications, shelter, evacuation, clean-up, remediation, decontamination, counter measures.
- Discuss and agree the purpose of the plan and intended outcomes (with timescales).
- List the plan, the actions and who is taking them forwards.
- Agree communications messages, who is leading / issuing them and a timetable for updates.
- Regularly review the plan, the decisions / actions and update the risk assessment, including consideration of possible changes to exposure and risk.
- Provide support, advice, and guidance on incident management to individuals / organisations directly involved.
- Consider recovery arrangements.
- Update Welsh Government.

A suggested IMT agenda is provided (Figure 2).

## **1.6 What do IMT members do?**

Core members of the IMT should:-

- Co-ordinate action through the IMT.
- Be able to make decisions, make resources available and take action on behalf of their organisation.
- Invite other relevant members to the IMT and consider requests to join the IMT.
- Provide all relevant information to inform incident investigation and management (applies to all members, not just core).
- Support the agreed communications strategy by providing resources, support and advice as necessary. There shall be no communications from IMT members outside of the agreed strategy, unless permitted by all members.

Where an incident affects other parts of the UK e.g. a chemical incident related plume, all relevant incident management partners in all areas should join one IMT. Border incidents can be more challenging to manage, but the lead generally comes from the area in which the incident is located.



Figure 2: Suggested IMT agenda

<b>IMT Meeting Agenda</b>	
<b>Incident name and location:-</b>	
<b>Local authority area of incident:-</b>	
<b>Date:-</b>	
<b>Time:-</b>	
<ol style="list-style-type: none"><li>1. Introductions and apologies</li><li>2. Review of decisions and actions from previous meeting</li><li>3. Agree / review chair / membership and terms of reference</li><li>4. Incident update<ul style="list-style-type: none"><li>• Information from each member agency</li></ul></li><li>5. Current Risk Assessment</li><li>6. Consideration of need for escalation e.g. establishing multi agency response structures (Tactical Coordinating Group / Strategic Coordinating Group)</li><li>7. Plan to manage incident<ul style="list-style-type: none"><li>• Control Measures</li><li>• Environmental and biological investigations</li><li>• Epidemiological data</li><li>• Communications<ul style="list-style-type: none"><li>○ Public</li><li>○ Media</li><li>○ Healthcare providers (e.g. GPs, A&amp;E etc)</li><li>○ Others</li></ul></li></ul></li><li>8. Summary of decisions, actions and lead for actions</li><li>9. Any other business</li><li>10. Are further IMTs required?</li></ol>	

### ***1.7 What does each organisation contribute to the IMT?***

This covers core organisations only.

#### **Public Health Wales (PHW)**

- CCA Category 1 responder.
- 24/7/365 health protection service advising and supporting others to interpret, manage and communicate incident risks.
- Assess and monitor population impacts, and risks, where possible to inform targeted intervention.
- Draws upon specialist expertise, particularly chemical and radiation and other hazardous substance-related toxicology, via UK Health Security Agency (UKHSA) Radiation, Chemicals and Environmental Hazards Directorate (Wales).

## **UK Health Security Agency (UKHSA)**

- CCA Category 1 responder.
- 24/7/365 health protection service advising and supporting others to interpret, manage and communicate incident risks.
- Supports PHW with specialist expertise, particularly chemical and radiation and other hazardous substance-related toxicology, via Radiation, Chemicals and Environmental Hazards Directorate (Wales).

## **Health Boards (HBs)**

- CCA Category 1 responder.
- Statutory responsibility to protect and improve local population health and wellbeing.
- Where there is an impact on NHS services e.g. primary and secondary care, HB Emergency Planners may be involved.
- Usually supported by PHW acting in conjunction with the Executive Director of Public Health (EDPH) or their representative.

## **Local Authorities (LAs)**

- Category 1 responder.
- Activity often co-ordinated across a number of different departments.
- Environmental Health are key contributors with expertise and ability to support incident exposure or risk assessments, management and recovery.
- During recovery, LAs lead community rehabilitation and environmental restoration.

## **Natural Resources Wales (NRW)**

- Category 1 responder.
- Prevents or minimises environmental pollution due to release of substances from prescribed (permitted) processes.
- Aims to prevent any poisonous, noxious or polluting or solid waste matter from entering controlled waters and to remove or dispose of the matter, mitigate the impacts and where reasonably practicable restore the waters.

**Non-core IMT** members will come from a range of other organisations depending on the nature and scale of an incident.

### ***1.8 How should the IMT operate?***

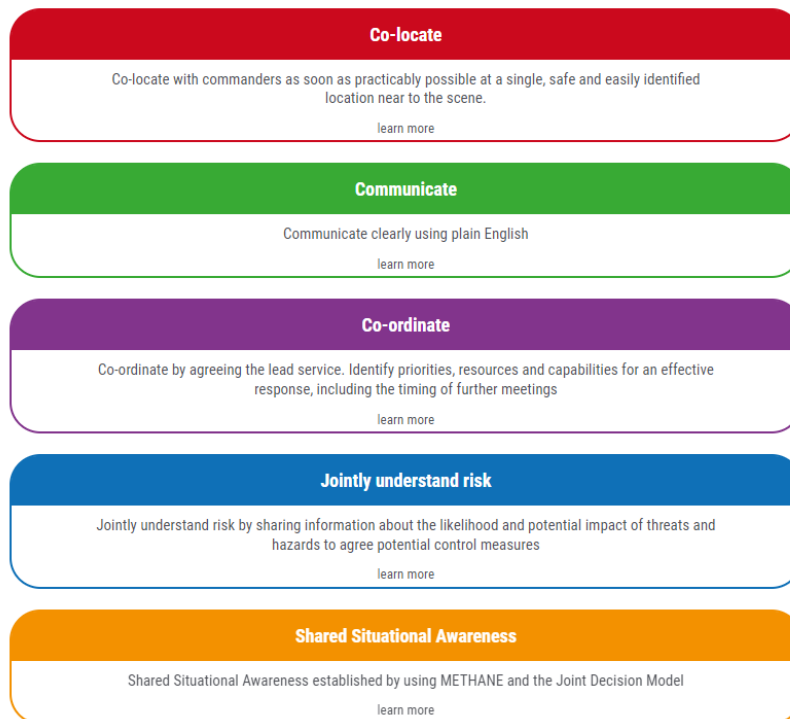
The IMT should follow the Joint Emergency Services Interoperability Programme ([JESIP](#)) principles around information sharing, often known as [METHANE](#) (figure 3), [working together](#)

to save life and reduce harm (figure 4) and [joint risk assessment, management and escalation decision making](#) (figure 5). The IMT should look to use Resilience Direct to aid information sharing during the response and recovery phases of the incident.

**Figure 3: M/ETHANE approach to information sharing**



**Figure 4: JESIP Principles of Joint Working**



**Figure 5: JESIP Joint Decision Model**



## 1.9 Risk assessment

To protect public health in an environmental incident, a risk assessment is carried out. The following checklist can help guide this.

Table 2: Risk assessment checklist

### Assessing the hazard

---

- ☐ What is the source of the contamination or complaint? Water, air or land?
- ☐ Who and/or what is affected?
- ☐ Identify actual or suspected contaminants
  - Chemical
  - Biological
- ☐ What monitoring or testing has been undertaken or is planned?
  - What samples have been taken and what analysis should be done
  - Analytical techniques and timescale for analysis.
  - Availability of historical environmental monitoring data (e.g. is this a recurring event)
  - Health based guidelines?
- ☐ Is it chemical?
  - Acute and chronic toxicity
  - Is there a latency period and/or delayed effects?
  - Main route of exposure?
  - Susceptible / vulnerable persons
- ☐ Are the current data sufficient or are more data needed?

### Assessing Exposure

---

- ☐ Define the population at risk
  - Who is currently affected/exposed?
  - Populations at risk of future exposure?
  - High risk populations (e.g. hospitals, nursing homes, dialysis patients, children)?
  - Consider mapping affected areas.
- ☐ What is the likely duration of the incident?
  - How long has the incident been on-going?
  - Weather conditions and forecast, e.g. rain, wind speed and direction?
  - Travel within the water supply system or water course under normal operating conditions.

- ☐ How long have people been exposed?
- ☐ Collect epidemiological information on cases / exposed
  - Person (age, sex, occupation)
  - Place (residence, recent travel history etc)
  - Time (onset of symptoms)
- ☐ Laboratory results, confirmation of diagnosis or exposure (e.g. biomonitoring)
- ☐ Are the current data sufficient or are more data needed?

## Key public health actions

---

- ☐ Define case.
- ☐ Compared measured concentrations in environment with relevant health based guidelines and standards.
- ☐ Assess plausibility (biological, temporal, spatial) between exposure and symptoms.
- ☐ Determine probable health effects following exposure especially for high risk individuals.
- ☐ Consider population health surveillance.
- ☐ Consider descriptive or analytical epidemiological study to evaluate impact on health
- ☐ Issue advice to public, health professionals, local authorities etc.  
Consider use of helplines, social media to communicate with public, patients and partner agencies.
- ☐ Ensure provision of medical care such as GPs/Primary Care, Hospitals etc.
- ☐ Agree and initiate control measures to reduce exposure e.g. shelter or evacuation, do not use/drink etc.
- ☐ Prepare a written report on the incident.
- ☐ Debrief and disseminate any lessons to be learned.

## 1.10 Risk assessment recording

The results of the risk assessment should be recorded (form 2).

Form 2: Risk assessment recording form

RISK ASSESSMENT		NOTES	
Incident Description / Characteristics E.G. Fire, Spill, Plume Etc:			
Hazard(s) :			
Name Of Substances:			
Size Of Fire, Spill, Release Etc:			
Affected Geographical Area:			
Vector Or Pathway Of Contamination: Air / Water / Land / Food			
Number Of People	Affected:		
	Dead:		
	Taken To Hospital:		
Risk to Population e.g. direct contact, explosion, toxic fumes etc.			
Potential Health Effects Of Hazard			
Has Any Organization Declared A Major Incident?		Yes: <input type="checkbox"/> No: <input type="checkbox"/>	
If yes, which:			
		Tick	Rationale
Current Risk Assessment:	No Public Health Risk <i>No Incident</i>	<input type="checkbox"/>	
	Low Public Health Risk <i>Minor Incident (Advice Only)</i>	<input type="checkbox"/>	
	Medium Public Health Risk <i>Minor Incident (Advice &amp; Further Actions)</i>	<input type="checkbox"/>	
	High Public Health Risk <i>Major Incident</i>	<input type="checkbox"/>	
List Any Assumptions Guiding The Risk Assessment:			
Actions Taken:			
Summary Of Advice Provided:			
Communications Team Involved:	Yes: <input type="checkbox"/> No: <input type="checkbox"/>		
Further Actions Required:			

### **1.11 Escalation – beyond the IMT**

A major incident may be declared by one or more emergency responder agencies.

If there is a significant or ‘major’ incident or the situation escalates beyond an IMT (and this guidance), formal Civil Contingencies incident response structures should be implemented as agreed by the Local Resilience Forum (LRF).

**A ‘major incident’ is:**

*“An event or situation, with a range of serious consequences, which requires special arrangements to be implemented by one or more emergency responder agencies”<sup>1</sup>*

- a major incident is beyond the scope of business-as-usual operations, and is likely to involve serious harm, damage, disruption or risk to human life or welfare, essential services, the environment or national security;
- a major incident may involve a single-agency response, although it is more likely to require a multi-agency response, which may be in the form of multi-agency support to a lead responder;
- the severity of consequences associated with a major incident are likely to constrain or complicate the ability of responders to resource and manage the incident, although a major incident is unlikely to affect all responders equally;
- the decision to declare a major incident will always be a judgement made in a specific local and operational context, and there are no precise and universal thresholds or triggers. Where LRFs and responders have explored these criteria in the local context and ahead of time, decision makers will be better informed and more confident in making that judgement.
- ‘emergency responder agencies’ describes all Category one and two responders as defined in the Civil Contingencies Act (2004) and associated guidance;

Some LRF plans are more flexible in terms of when they are used. Most events would not meet the major incident criteria as set out in the definition. In some cases, Tactical Coordinating Group (TCG) / Strategic Coordinating Group (SCG) activation does not need a major incident declaration. A TCG can be established without an SCG by any LRF member who needs incident management structures above the operational level.

---

<sup>1</sup> <https://www.gov.uk/government/publications/emergency-responder-interoperability-lexicon>



## 1.12 Debrief and Evaluation

A debrief should follow any IMT to evaluate the actions and response of the IMT. This should be as quickly as possible after an incident, but always within three months of the last IMT (form 3). Formal evaluations should be sent to Welsh Government so they can be considered by the Environmental Public Health sub-group of the CMO's Health Protection Advisory Group.

Form 3: Sample evaluation form

<b>Incident/enquiry summary</b>	
<b>Date of incident/enquiry</b>	
<b>Partners involved (list all)</b>	
<b>Major incident declared</b>	Yes/No (delete as appropriate)
<b>Multi-agency group(s) convened</b>	
<b>Partner submitting feedback</b>	
<b>Date of feedback submission</b>	

	Comment(s)	Proposed action(s)
<b>What went well?</b>		
<b>What did not go well?</b>		
<b>What could be done differently next time?</b>		
<b>Other points to raise?</b>		

# Part 2 - Supporting information

## 2. Information to support incident management

### 2.1 *Air quality incidents*

#### **Working Together Agreement – Approach to Air Quality Cell in Wales**

via NRW's Air Quality Cell Wales page, Resilience Direct

[Air Quality Cell Wales \(resilience.gov.uk\)](https://resilience.gov.uk/air-quality-cell-wales)

#### **Air Quality in Wales** - A website with near-real time ambient air quality data

<http://www.welshairquality.co.uk>

**Acute exposure guideline levels (AEGs)** representing threshold exposure limits for the general public applicable to emergency exposure periods from 10 minutes to 8 hours.

[Acute Exposure Guideline Levels for Airborne Chemicals | US EPA](#)

**Daily Air Quality Index** provides recommended actions & health advice relating to levels of air pollution <http://uk-air.defra.gov.uk/air-pollution/daqi>

### 2.2 *Chemical incidents*

#### **WHO chemical incident management guidance**

[Manual for the public health management of chemical incidents \(who.int\)](https://www.who.int/publications-detail/manual-for-the-public-health-management-of-chemical-incidents)

#### **Chemical hazards**

<https://www.gov.uk/topic/health-protection/chemical-hazards>

#### **UK Recovery Handbook for Chemical Incidents**

<https://www.gov.uk/government/publications/uk-recovery-handbook-for-chemical-incidents-and-associated-publications>

#### **Chemical decontamination guidance**

[Initial Operational Response \(IOR\) to Incidents Suspected to Involve Hazardous Substances or CBRN Materials - JESIP Website](#)

## **2.3    *Radiation incidents***

### **Radiation incident preparedness and response**

[Radiation incidents: public health preparedness and response - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/radiation-incidents-public-health-preparedness-and-response)

[UK recovery handbooks for radiation incidents 2015 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/uk-recovery-handbooks-for-radiation-incidents-2015)

## **2.4    *Water quality incidents***

### **Water incident framework**

Via Water Health Partnership website.

[Publications | Dŵr Cymru Welsh Water \(dwrcymru.com\)](https://www.dwrcymru.com/publications)

### **UK Drinking water standards and regulations**

<https://www.dwi.gov.uk/drinking-water-standards-and-regulations/>

### **Communicating public health risks associated with the maritime transportation of hazardous substances**

<http://www.arcopol.eu/?/=section/resources/search/1/resource/148>

### **Management of Algal Blooms**

Via Water Health Partnership website.

[Publications | Dŵr Cymru Welsh Water \(dwrcymru.com\)](https://www.dwrcymru.com/publications)

### **Public health water quality / scarcity issues**

[Flooding - Public Health Wales \(nhs.wales\)](https://www.nhs.uk/public-health/wales/flooding)

## **2.5    *Weather related incidents***

### **Public health information on weather related incidents**

[Extreme Weather Events - Public Health Wales \(nhs.wales\)](https://www.nhs.uk/public-health/wales/extreme-weather-events)

## **2.6    *Contaminated land***

### **Land contamination risk assessment**

<https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm>

### **Generic contaminated land screening levels (category 4 screening levels or C4SLs)**

<https://www.claire.co.uk/projects-and-initiatives/category-4-screening-levels#:~:text=The%20C4SLs%20consist%20of%20cautious,of%20contaminants%20in%20the%20environment.>