Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

EPA Guidance on the

Management of Stormwater for Industrial and Waste Licensed Activities

Environmental Protection Agency

The EPA is responsible for protecting and improving the environment as a valuable asset for the people of Ireland. We are committed to protecting people and the environment from the harmful effects of radiation and pollution.

The work of the EPA can be divided into three main areas:

- **Regulation:** Implementing regulation and environmental compliance systems to deliver good environmental outcomes and target those who don't comply.
- **Knowledge:** Providing high-quality, targeted and timely environmental data, information and assessment to inform decision making.
- **Advocacy:** Working with others to advocate for a clean, productive and well-protected environment and for sustainable environmental practices.

Our responsibilities include:

LICENSING

- Large-scale industrial waste and petrol storage activities;
- Urban wastewater discharges;
- The contained use and controlled release of genetically modified organisms;
- Sources of ionising radiation;
- Greenhouse gas emissions from industry and aviation through the EU Emissions Trading Scheme.

NATIONAL ENVIRONMENTAL ENFORCEMENT

- Audit and inspection of EPA-licensed facilities;
- Drive the implementation of best practice in regulated activities and facilities;
- Oversee local authority responsibilities for environmental protection;
- Regulate the quality of public drinking water and enforce urban wastewater discharge authorisations;
- Assess and report on public and private drinking water quality;
- Coordinate a network of public service organisations to support action against environmental crime;
- Prosecute those who flout environmental law and damage the environment.

WASTE MANAGEMENT AND CHEMICALS IN THE ENVIRONMENT

- Implement and enforce waste regulations including national enforcement issues;
- Prepare and publish national waste statistics and the National Hazardous Waste Management Plan;
- Develop and implement the National Waste Prevention Programme;
- Implement and report on legislation on the control of chemicals in the environment.

WATER MANAGEMENT

- Engage with national and regional governance and operational structures to implement the Water Framework Directive;
- Monitor, assess and report on the quality of rivers, lakes, transitional and coastal waters, bathing waters and groundwaters, and measurement of water levels and river flows.

CLIMATE SCIENCE AND CLIMATE CHANGE

- Publish Ireland's greenhouse gas emission inventories and projections;
- Provide the Secretariat to the Climate Change Advisory Council and support to the National Dialogue on Climate Action;
- Support National, EU and UN climate science and policy development activities.

ENVIRONMENTAL MONITORING & ASSESSMENT

- Design and implement national environmental monitoring systems: technology, data management, analysis and forecasting;
- Produce the State of Ireland's Environment and Indicator Reports;
- Monitor air quality and implement the EU Clean Air for Europe Directive, the Convention on Long Range Transboundary Air Pollution and the National Emissions Ceiling Directive;
- Oversee the implementation of the Environmental Noise Directive;
- Assess the impact of proposed plans and programmes on the Irish environment.

ENVIRONMENTAL RESEARCH AND DEVELOPMENT

- Coordinate and fund national environmental research activity to identify pressures, inform policy and provide solutions;
- Collaborate with national and EU environmental research activity.

RADIOLOGICAL PROTECTION

- Monitoring radiation levels and assess public exposure to ionising radiation and electromagnetic fields;
- Assist in developing national plans for emergencies arising from nuclear accidents;
- Monitor developments abroad relating to nuclear installations and radiological safety;
- Provide, or oversee the provision of, specialist radiation protection services.

GUIDANCE, AWARENESS RAISING, AND ACCESSIBLE INFORMATION

- Provide independent evidence-based reporting, advice and guidance to government, industry and the public on environmental and radiological protection topics;
- Promote the link between health and wellbeing, the economy and a clean environment;
- Promote environmental awareness including supporting behaviours for resource efficiency and climate transition;
- Promote radon testing in homes and workplaces and encourage remediation where necessary.

PARTNERSHIP AND NETWORKING

- Work with international and national agencies, regional and local authorities, non-governmental organisations, representative bodies and government departments to deliver environmental and radiological protection, research coordination and science-based decision making.

MANAGEMENT AND STRUCTURE OF THE EPA

The EPA is managed by a full-time Board, consisting of a Director General and five Directors. The work is carried out across five Offices:

- Office of Environmental Sustainability
- Office of Environmental Enforcement
- Office of Evidence and Assessment
- Office of Radiation Protection and Environmental Monitoring
- Office of Communications and Corporate Services

The EPA is assisted by advisory committees who meet regularly to discuss issues of concern and provide advice to the Board.

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This guidance does not preclude the Agency requiring different, site-specific monitoring arrangements and requirements based on the enforcement needs of any individual site, in line with our risk-based enforcement policy. Each licensee shall continue to liaise with their inspector in relation to monitoring requirements at their individual site. This guidance does not supersede any specific monitoring requirements already agreed in relation to individual sites or any future site-specific requests as determined by the Agency.

The Agency may at any time review or revoke this guidance.

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Acronyms

BAT	Best available technique
BATC	Best available technique conclusion
BOD	Biochemical oxygen demand
BREF	Best available technique reference document
CAP	Corrective action plan
CID	Commission implementing decision
COD	Chemical oxygen demand
CSM	Conceptual site model
EC	European commission
EC	Electrical conductivity
ELV	Emission limit value
EMS	Environmental management system
EPA	Environmental protection agency
EQS	Environmental quality standard
EU	European union
GI	Green infrastructure
IED	Industrial emissions directive
ISO	International organization for standards
LOD	Limit of detection
M	Median
mg/l	Milligrams per liter
mm	Millimetre
NBS	Nature-based solution
NH4+	Ammonium
pH	Power of the hydrogen ion
SD	Standard deviation
SDS	Safety data sheet
S.I.	Statutory Instrument
SPR	Source-pathway-receptor
TL	Trigger level
TOC	Total organic carbon
TSS	Total suspended solids
µg/l	Micrograms per Liter
µS/cm	Microsiemens per centimetre
WFD	Water framework directive
WWTP	Wastewater treatment plant

Introduction

Stormwater is rainwater runoff from roofs and other non-process areas of a site, for example, carparks. At EPA-licensed sites[1], stormwater is generally released into a nearby waterbody, usually after a basic form of treatment.

Ireland is required under the EU Water Framework Directive (WFD, 2000/60/EC) to protect and prevent deterioration of waterbodies, and to restore to at least "good" status any waterbodies that are at less than "good" status. To support the protection of waterbodies, this guidance document outlines best practice for the management of stormwater arising at EPA-licensed sites. These management practices include:

- Implementing measures to prevent contamination of stormwater, i.e., preventative measures [Section 1].
- Accurately monitoring stormwater [Section 2].
- Assessing stormwater data and establishing trigger levels to provide a mechanism for detecting, as early as possible, when potential stormwater contamination has occurred [Section 3].
- Managing a stormwater contamination incident, including preparing and implementing a corrective action plan (CAP) where appropriate [Section 4].

This guidance document assumes an appropriate understanding of environmental data and the environment by a competent person who is responsible for overseeing the implementation of an EPA licence at an EPA-licensed site.

Any queries in relation to this guidance or other general issues with the specification, monitoring and compliance with trigger levels should be discussed with your EPA inspector.

This guidance may be updated periodically. Stakeholders should check the EPA website to ensure they are using the most up-to-date version of this guidance.

1 EPA-licensed waste facilities, industrial installations and intensive agriculture facilities.

Section 1 Preventing stormwater contamination

To prevent stormwater contamination, it is first necessary to identify and understand the most common potential sources of contamination. Understanding this will permit a site to be designed, managed and maintained to prevent stormwater contamination.

1.1 Identify potential sources of contamination

There are two broad categories of potential sources of stormwater contamination from a site:

1. **Activity-specific contamination** – this is associated with the specific licensed activity taking place on site.
2. **General contamination** – all activities may produce contaminated water from welfare facilities, vehicle washing and rainwater runoff from process areas of the site, etc.

Table 1 contains examples of these two categories of contamination.

Table 1 Sources of stormwater contamination

Contamination category	Contamination source
Activity-specific	■ Unauthorised process discharges (spills, leaking bunds, etc.) ■ Poor material handling practices ■ Process effluent cross-contamination via leaking pipes ■ Process effluent misconnection to stormwater network
General	■ Unauthorised cleaning/welfare discharges ■ Foul/sanitary line contamination via leaking pipes ■ Foul/sanitary line misconnection to stormwater network ■ Carpark runoff (diesel, petrol, oil, metals) ■ Accumulation of organic matter (plant debris, animal waste, dust, lichens, moss) on impervious surfaces and in underground pipes ■ Litter (for example, plastic packaging materials, waste product/ materials, etc.)

The site should map all process and non-process areas and identify areas at risk of stormwater contamination. This will inform the design and management measures required to reduce the contamination risk to the greatest possible extent.

Contamination from offsite sources can also occur and, where relevant, should be addressed on a case-by-case basis in consultation with your EPA inspector.

1.2 Contamination prevention measures

All EPA-licensed sites should be designed, maintained, and managed to limit the exposure of stormwater to potential contaminants.

1.2.1 Design measures

Separation of drainage systems

Ubiquitous across the Best Available Techniques (BAT), BAT Reference (BREF) and BAT Conclusion (BATC) documents is that uncontaminated stormwater, which does not require treatment, should be segregated from water streams that do require treatment [1], [2], [3], [4], [5], [6], [7]. Pivotal to this is the complete separation of the stormwater drainage network from the foul and process drainage networks, both above and below ground (unless combined systems are accounted for in the licence).

Design of drainage systems

Engineered structures must be in place to keep stormwater out of contact with contaminants and/or contaminated areas. Design measures can include:

- Above ground drainage systems [7]
- Separate process, foul, stormwater, coolant networks, etc.
- Bunds and other leak prevention measures
- Concrete or asphalt bases with sealed liners or impermeable paints in chemical storage/handling areas [1]
- Outer kerbs [1], [7] such as an elevated rims (for example, a camber or fall) around the process area or parts of the process area
- Covers/roofing over outdoor storage areas and stocks with guttering to collect roof runoff and channel away from potential contamination sources [7]
- Shut-off valves to prevent discharge of contamination from site via the stormwater drainage system

Figure 1 Material stored uncovered outdoors

Design measures may be constructed to harvest and divert uncontaminated stormwater for reuse on the site [2], [4], [5], [6], [8], for example, for cleaning water or sanitary (toilet) water, as cooling water or in the process itself [2]. This reduces consumption of water and associated resources (energy, treatment chemicals, etc.) and reduces the hydraulic load to the receiving waterbody.

Where facilities have a large impermeable footprint (i.e., carparks and walkways), design measures may be required to:

- protect the receiving waterbody from the hydraulic load during heavy rainfall (for example retention ponds, Section 1.3.2).
- prevent discharge of accidental spills on roads or parking areas [1] (for example, use of interceptors, Section 1.3.3).
- remove "first flush" contaminants (Section 2.2.5 and Appendix B).

Design measures must be inspected (or integrity tested) and maintained, as required. EPA guidance on design measures, including the *IPC Guidance note on Storage and Transfer of Materials for Scheduled Activities* (2004), is available through the EPA document search webpage. Sector-specific information is available in the best available techniques (BAT) conclusions (BATC), BAT reference documents (BREFs) and commission implementing decisions (CID) available on the EPA website and the European Commission website [9], [10].

The licensee should be aware that any changes to infrastructure on site may require approval by the Agency.

1.2.2 Housekeeping and maintenance

Housekeeping and site maintenance practices are low-cost and highly effective measures for preventing stormwater contamination and should be employed across all EPA-licensed sites. They are particularly important for minimising the impact of the first flush (Section 2.2.5 and Appendix B). Housekeeping and site maintenance practices include:

- **Appropriate storage of materials**[2], including covering outdoor storage areas and stocks. This can be particularly relevant for metals, wood-based panels industries and slaughterhouses [4], [6], [11].
- **Loading and unloading only in designated areas** protected against leakage and runoff [5]. Nearby stormwater drains can be protected using temporary drain covers, drainage isolation valves, drip trays, etc. during loading/unloading activities.
- **Checking, inspecting and integrity testing** design measures (including bunds and underground pipelines).

Figure 2 Bund floor in disrepair (red oval)

2 See IPC Guidance Note on Storage and Transfer of Materials for Scheduled Activities

- **Cleaning** yards and roadways [4] to remove litter and debris.
- **Preventing excessive build-up of organic matter** on roofs and in gutters.
- **Blowing out/cleaning down the stormwater network** including associated sumps and tanks (particularly at older sites). Note, the blow out/clean down water cannot be discharged to the stormwater network.
- **Colour-coding** manhole covers, gullies and other surface access points. For example, stormwater features might be painted blue and foul network features painted red, etc. Other labelling or identifiable designation systems may be used. This should be coupled with training to ensure staff understand the labelling/identification system.
- **Inspecting bunds** located outside regularly for liquid build-up. Any liquid present should be tested to determine the correct disposal route as per licence requirements. All bund inspections should be documented.
- **Calibrating and maintaining equipment** including continuous monitors and probes in accordance with manufacturer/supplier/installer instructions.
- **Locating probes and sampling lines appropriately** to minimise fouling so that they collect a representative sample of stormwater discharge.

Figure 3 Outdoor bund containing liquid

1.3 Stormwater treatment

Stormwater can pick up contaminants, for example, dust, at low concentrations when it flows over large areas of impermeable surface, such as car parks. Depending on the contaminant load, this stormwater may be suitable for re-use on site. Where it cannot be reused, it may be necessary to treat it using physico-chemical and/or biological treatment processes [1], [4], [12].

Some of the measures used to treat light contamination of stormwater, such as retention ponds, can also be used to manage the stormwater discharge flow rate. It can be important – and is required in some licences – to manage the rate of stormwater discharge to the receiving environment, to prevent streambed erosion of sensitive river waterbodies for example.

1.3.1 Nature-based solutions/green infrastructure

Nature-based solutions (NBS)/green infrastructure (GI) – also known as sustainable urban drainage systems (SuDS) – include green roofs, trees, green walls, wetlands, bioretention, pervious pavements, infiltration trenches, constructed wetland and reed beds, sedimentation basins and vegetated swales [10]. A large body of Irish and international guidance and literature is available in this regard, including the "Nature-based Solutions to the Management of Rainwater and Surface Water Runoff in Urban Areas – Best Practice Interim Guidance Document" prepared by the Irish Department of Housing, Local Government and Heritage [9]. Nature-based solutions/green infrastructure can also be used to reduce and slow the volume of surface runoff, thus attenuating stormwater volume and discharge rate.

1.3.2 Retention ponds

Retention/settling ponds, basins and lagoons retain a permanent pool of water within a designated area and rely on physical, biological and chemical processes to remove pollutants from rainwater runoff [1]. They allow time for sediment such as grit and sand to settle at the bottom of the pond [1], [13] and decrease the potential for downstream flooding and riverbank erosion [1].

1.3.3 Oil separators/interceptors

Oil separators or "interceptors" are frequently used to "intercept" oil and/or suspended solids from stormwater before the point of discharge. Interceptors are based on the tendency for suspended solids to settle to the bottom of water and for oil to float on top of water. The two-part European Standard EN 858-1:2002 [14] and EN 858-2:2003 [15] provides standards for the design, use, selection, installation, operation and maintenance of prefabricated oil separators.

1.3.4 Sand filters

Sand filters/beds may be used to remove undissolved pollutants such as suspended solids and undissolved phosphate, and may be useful where there is insufficient space for a retention pond [1]. Sand filters are effective in treating rainwater from lightly contaminated surfaces and are usually composed of two components: a sedimentation chamber to remove floatables and heavy sediment, and a filtration chamber to remove smaller particles [1].

1.3.5 Wastewater treatment plants (WWTPs)

A number of BREFs outline how stormwater can be segregated and treated separately depending on the level of contamination [3], [5], [8], [16] and some industries consider stormwater runoff a wastewater stream in the first instance [3]. Some sites treat stormwater in on-site wastewater treatment plants (WWTPs) or discharge stormwater to sewer as a condition of their licence; however, in general, diverting stormwater to the municipal sewer network or an on-site WWTP is not considered a long-term sustainable method of managing contaminated stormwater.

Section 2 Stormwater monitoring

Monitoring stormwater is crucial to ensure that any contamination is identified and actioned quickly. Licences generally require stormwater monitoring by visual inspection [Section 2.1] and chemical analysis [Section 2.2].

2.1 Stormwater visual inspections

Visual inspections should be carried out by collecting a sample of the discharge and inspecting the stormwater at eye level in a transparent vessel. When carrying out visual inspections, the licensee should assess and describe the following:

- **Colour:** does the liquid have a colour?
- **Opacity:** is the liquid opaque (slightly opaque, completely opaque, etc.)?
- **Suspended solids:** are there suspended solids in the liquid?
- **Sheen:** is there a sheen on the top of the liquid?
- **Any other observations:** is there an odour, tissue paper, litter, other?

The results of this inspection should be recorded, along with details of rainfall at the time of visual inspection and during the two hours before inspection, the time of the inspection and initials of the sampler who carried out the visual inspection. Visual inspections should be carried out at the frequency required by the licence irrespective of rainfall.

The visual inspections should allow the licensee to build up a profile of the stormwater. Any changes in the profile may indicate contamination and should be investigated, with a sample sent for laboratory analysis and a quick turnaround time on reporting requested. Licensees should consider incorporating a protocol for visual inspections into their Environmental Management System (EMS).

2.2 Stormwater chemical monitoring

Sampling and analysis must follow internationally accepted protocols, including International Organization for Standards (ISO) protocols and the JRC Reference Report on Monitoring of Emissions to Air and Water from IED Installations [11]. Planning for appropriate stormwater monitoring requires:

- selecting the appropriate parameters to monitor [Sections 2.2.1 & 2.2.2].
- determining the appropriate type and frequency of monitoring [Sections 2.2.3 & 2.2.4].
- ensuring representative stormwater samples are collected [Section 2.2.5].
- using a suitable laboratory limit of detection (LOD) [Section 2.2.6].

2.2.1 Water quality parameters: general parameters

The stormwater quality parameters that are monitored will depend on the site's activities and their significance to the receiving waterbody [1]. Licences will often stipulate one or more parameter(s) which are useful general indicators of contamination, such as:

- pH
- electrical conductivity (EC)
- total suspended solids (TSS)
- total organic carbon (TOC)
- chemical oxygen demand (COD)
- biochemical oxygen demand (BOD)

The **pH** of a liquid is a measure of whether it is acid or alkaline. The pH scale ranges from 0 (very acid) to 14 (very alkaline). The range of pH in fresh waters extends from around 4.5, for acid, peaty upland waters, to over 10.0 in waters where there is intense photosynthetic activity by algae; however, the most frequently encountered natural pH range is 6.5-8.0. The pH of a liquid can be altered by contamination with liquid that has an extreme pH, such as sodium hydroxide (caustic soda) or nitric acid – two chemicals commonly used to alter the pH of effluent at on-site wastewater treatment plants. The pH affects the biological and chemical functioning of waterbodies and particularly affects fish. The pH can be accurately determined rapidly using a probe and is suitable for continuous, in-situ monitoring.

Electrical conductivity (EC) is the ability of a liquid to conduct an electric current. It is related to the ionic content, which is a function of the dissolved (ionisable) solids concentration. Thus, EC is an indicator of the dissolved solids content of the liquid. Dissolved solids are the solids that will generally pass through a 2 µm filter (i.e., very small solids). Electrical conductivity can be accurately determined rapidly using a probe and is suitable for continuous, in-situ monitoring.

Total suspended solids (TSS) is a measure of the suspended particulate material in liquid, which can be a good indicator of overall site cleanliness [12]. Suspended solids are the particles which are large enough to be held back by a 2 µm filter. Particulate matter can result from erosion of industrial soils, deposited particulate matter on the drainage area and erosion/corrosion of materials present on the site [17]. Many pollutants of interest in industrial stormwater are associated with particulate matter of various sizes [12], including phosphorus, heavy metals and hydrophobic organic chemicals such as oils and steroids [12], [17]. Stormwater TSS concentrations can be highly correlated with concentrations of metals such as copper, cadmium, nickel, lead, and zinc [17].

Chemical oxygen demand (COD), biochemical oxygen demand (BOD) and **total organic carbon (TOC)** provide a measure primarily of organic contamination. Generally, the COD in a sample will be higher than TOC, which will be higher than BOD.

- BOD:
  - measurement of the amount of oxygen consumed by microorganisms to break down biodegradable organic matter.
  - also measures ammonia unless nitrogen inhibitors are included in the analysis. Nitrogen inhibitors are generally not used in BOD analysis unless specifically requested.
- TOC:
  - measures the total amount of the organic carbon only in a sample, including that which cannot be broken down by microorganisms.
  - does not measure inorganic substances like ammonia, sulphides or sulphates.
- COD:
  - measures both organic and inorganic substances (such as sulphides and sulphates) that can be oxidized.
  - a standard COD test does not measure ammonia.

COD is increasingly being replaced by TOC as a monitoring parameter for environmental and economic reasons [1], [12], [13]. Where it is decided to move from monitoring COD to TOC, a correlation between COD and TOC should first be established at site level [13] and similar for a move from monitoring both BOD and COD to monitoring COD only.

2.2.2 Water quality parameters: site-specific parameters

Notwithstanding the licence monitoring requirements, it is the licensee's responsibility to ensure that the parameters which are monitored in stormwater reflect the potential on-site sources of contamination. Site-specific parameters should be determined by considering the hazards posed by the chemicals that might be discharged. This includes chemicals brought to site (check relevant chemical safety data sheets (SDSs)), and chemicals that might be intentionally or inadvertently produced on site, for example, galvanized roofs may generate zinc.

Some Best Available Technique (BAT) reference documents (BREF) outline the substances likely to be present in wastewater for a given industry. These may provide a useful guide on potential process contaminants in stormwater.

It should be remembered that materials that might be considered relatively "safe" can cause serious damage to the environment; for example, a spill of milk can cause more harm to a waterway than the same volume of sewage [18].

Table 2 suggests parameters that may be useful indicators of contamination from various sources.

Figure 4 Leaking process pipe (leaked material indicated by red oval)

Table 2 Contamination sources and potential water chemistry indicator parameters

Broad category	Specific contamination source	Potential parameter
Site-specific	Unauthorised process discharges (spills, leaking bunds, etc.)	Site-specific
	Process line cross-contamination via leaking pipes	
	Process line misconnection to stormwater network	
General	Unauthorised cleaning/welfare discharges	Orthophosphate, surfactants, pH, electrical conductivity
	Foul/sanitary line contamination via leaking pipes or misconnection to stormwater network	TOC, COD, BOD, ammonia, *E. coli*, pH, electrical conductivity
	Carpark runoff (diesel, petrol, oil, metals)	Hydrocarbons, TOC, COD, BOD, TSS, metals, pH, electrical conductivity
	Accumulation of organic matter (plant debris, animal waste, dust) on impervious surfaces and underground pipes	TOC, COD, BOD, TSS, ammonia, pH, electrical conductivity
	Litter – visual inspection*	

* *As laboratory analysis of water quality parameters will generally not detect litter contamination, a thorough visual inspection of the yard area and gullies should be carried out to determine if litter contamination is a concern on site.*

2.2.3 Types of monitoring

Stormwater may be monitored continuously by in-situ sensors which collect data continuously, or by grab sampling, with samples collected periodically and parameters analysed in a laboratory rather than in-situ. Grab sampling provides information on a snapshot in time only. While grab sampling may detect chronic, ongoing contamination, such as cross-contamination from leaking foul/ underground process pipes, it is unlikely to detect discrete contamination events. Licensees should consider the type of events that might occur at their site when determining the type of monitoring that is required to protect receiving waterbodies.

2.2.4 Frequency of monitoring

The frequency of monitoring (i.e., continuous, weekly, quarterly, etc.) depends on a combination of factors, including:

- the requirements specified in the licence or as agreed by the Agency.
- the risk posed by the activities carried out on site.
- the chemicals that might be released from the site and their significance to, and the sensitivity of, the receiving waterbody.
- the frequency of rainfall [4], [5].
- whether data demonstrates stable or variable stormwater quality.

A more frequent interval of monitoring than that required by the licence may be appropriate in certain circumstances. It is the licensee's responsibility to ensure that the frequency of monitoring is sufficient to permit detection of any potential stormwater contamination.

2.2.5 Timing of stormwater sampling

Stormwater sampling should be carried out only during or immediately after rainfall, when there is active stormwater discharge. Standing water in pipes (i.e., water that is not flowing) is not representative of a stormwater discharge and should not be sampled.

There may be some periods for which there are no samples (no data) as there is not enough rainfall to generate runoff at times when sampling personnel could reasonably be expected to be on site. The licensee may be requested to provide supporting information such as local rainfall data where samples have not been collected due to insufficient rainfall. Notwithstanding this, it is expected that every effort is made by licensees to collect stormwater samples during rainfall events.

2.2.6 Analytical limit of detection

The laboratory analytical limit of detection (LOD) should be sufficiently sensitive (low) to permit the licensee to:

- detect when there is potential contamination of stormwater, and
- understand the impact of stormwater discharge on the receiving waterbody.

First flush

Contaminants can accumulate on impermeable surfaces (yard areas, roofs, etc.) during dry periods. These contaminants can be washed off in the stormwater that discharges during the initial stages of a rainfall event. This results in higher concentrations of pollutants during the initial period of stormwater discharge, followed by a rapid decrease in concentrations as rainfall continues [19]. This phenomenon is called the "first flush" [19], [20], [21] and usually applies to the stormwater discharge during the first approximately 1-2 mm [19] or 10-20 minutes of rainfall, depending on rainfall intensity and the specific characteristics of the drainage network.

The contaminant load in the first flush must not result in contamination of the receiving waterbody. A variety of contamination prevention measures [Section 1.2] are available to reduce the contaminant load in the first flush. A number of BREFs state that best practice is to treat the more severely contaminated first flush stormwater, with subsequent uncontaminated rainfall discharged to the surface waterbody [1],[8]. Depending on the concentrations of contaminants in the first flush, licensees might consider capturing the first flush and its entrained contaminants for basic treatment (sedimentation) prior to discharge. For example, a yard with area 100 m x 100 m which receives 2 mm of rainfall will lead to approximately 20 m^3 of stormwater; relatively simple engineering solutions are available for such volumes. Additional treatment may be required for larger areas or for soluble contaminants, however, ongoing treatment of stormwater by wastewater treatment plants is not a good use of resources and should be used as a last resort. Good housekeeping in yard areas is critical to reducing first flush impacts. Stormwater monitoring data that correlates peaks in contaminants with the start of rainfall events should be used to:

- generate data on the site-specific characteristics of the first flush.
- distinguish between the first flush and other contamination events.
- determine if the first flush stormwater should be collected and treated before discharge.

The impact of stormwater discharge on receiving waterbodies is assessed in terms of the requirements of the EU Water Framework Directive (WFD 2000/60/EC [21]), Surface Water Regulations (S.I. No. 272/2009 [22] and amendments), Groundwater Regulations (S.I. No. 9/2010 [23]) and amendments) and other relevant legislation. For stormwater discharges to surface waterbodies, the LOD should be at least as low as the relevant mean Environmental Quality Standard (EQS[3]) applicable to the ecological status of the receiving waterbody (Table 3).

Table 3 Analytical laboratory limit of detection (LOD) requirements

Receiving waterbody ecological status	LOD should be equal to
Bad, Poor or Moderate status	mean EQS for waterbodies at **good** status
Good status	
Good status but high *objective*	mean EQS for waterbodies at **high** status
High status	

3 Surface Water Regulations (S.I. No. 272/2009) and amendments [22]

Section 3 Assessing stormwater quality

3.1 Expected stormwater quality

To permit interpretation, stormwater monitoring data must be assessed relative to some expected value. Emission limit values (ELVs) are generally not set for stormwater discharges in industrial and waste licences. Ordinarily, stormwater data is compared to trigger levels [Section 3.2]. In the absence of trigger levels which have been approved by the EPA, or when instructed by the EPA, stormwater data should be considered relative to the relevant environmental quality standards (EQS) as contained in the Surface Water Regulations (S.I. No. 272/2009, [22]) and amendments, or another suitable benchmark in the absence of an EQS.

The chemistry of rainfall provides a useful framework to understand the chemistry of unpolluted rainwater, and, along with the EQS, provides a means of understanding stormwater quality data. Information on the chemistry of rainfall is included in Appendix A and further details of the EQS are provided in Section 3.1.1.

3.1.1 Environmental quality standards

This section applies to stormwater discharges to surface waterbodies. Where stormwater discharges to groundwater or an estuary, the principles described below should be adapted accordingly.

It is accepted that the chemistry of stormwater may differ from rainwater as contaminants will be picked up as rainwater flows over impermeable surfaces, as is evidenced by the first flush phenomenon. While the chemistry of stormwater may differ from that of rainfall, it is expected that:

- the median concentrations of contaminants in stormwater should generally be less than or similar to the relevant mean environmental quality standards (EQS) for surface waterbodies at "good status".
- individual concentrations of contaminants should generally be lower than the EQS 95th percentile value (95%ile).

Where an EQS does not exist for a given parameter, as in the case of some metals, electrical conductivity and TOC for example, the licensee should compare their data to another sensible benchmark. The benchmark should be determined by a qualified, experienced environmental scientist and the rationale and workings provided to the Agency in the proposal for setting trigger levels.

3.1.2 Salting in winter

It is acknowledged that salting/gritting is required at some facilities during winter for health and safety reasons. The licensee should record when salting/gritting is taking place so they can demonstrate this is the cause of elevated electrical conductivity, chloride or other relevant parameters. Sites should ensure that salting/gritting is carried out as a controlled programme that minimises the volume of salt/grit applied while ensuring health and safety on site. The Agency may request to see the details of the salting programme.

Stormwater samples which are impacted by the salting should not be included in the baseline dataset used to calculate trigger levels for the impacted parameters.

3.2 Trigger levels

3.2.1 Introduction

A trigger level[4] is a parameter value, the achievement or exceedance of which requires certain actions to be taken by the licensee. Assessing stormwater data relative to trigger levels provides a tool for early detection and intervention in the case of possible contamination, protecting Ireland's streams, rivers, lakes, estuaries and coastal waterbodies. Trigger levels are calculated from an **uncontaminated** baseline dataset collected at the site. Trigger levels take account of site conditions (based on an extended sampling period) and, therefore, in some cases, may be somewhat less conservative than the EQS/other benchmark. Trigger levels are site-specific. Every site, and every discharge point on a site, should be assessed on a case-by-case basis. This may result in different trigger levels for the same parameter at different discharge points within the same site. Trigger levels are determined using a stepwise process:

1. Collect the baseline dataset [Section 3.2.2] that will be used to calculate trigger levels.
2. Assess the baseline dataset using visual data display tools such as graphs [Section 3.2.3].
3. Calculate trigger levels [Section 3.2.4].

3.2.2 Collect the baseline dataset

The baseline dataset should:

- comprise at least 20 datapoints collected over a 12-month period.
- have good seasonal (temporal) representation across the entire year. This may necessitate sampling more frequently than is required by your licence, for a period of time.
- be reviewed as it is being collected to detect any potential contamination events.
- not include contaminated samples.
- include samples collected during the first flush (see Section 2.2.6 and Appendix B).
- be collected during the period before the activity has commenced. Where the activity has already commenced, the licensee may use the most recent available data.
- not include samples/data of standing water. This is of particular note for continuous monitoring probes which often record data during periods of no rainfall and, consequently, no stormwater discharge.

4 EPA licences refer to both "trigger levels "and "trigger values"; these terms are interchangeable and "trigger levels" is used throughout this document.

3.2.3 Graph and assess the baseline dataset

Data should be graphed as it is collected (e.g., Figure 5). Graphs should display:

- timeframe on the x-axis
- parameter concentration on the y-axis
- the entire dataset on one graph
- the relevant EQS/other benchmark

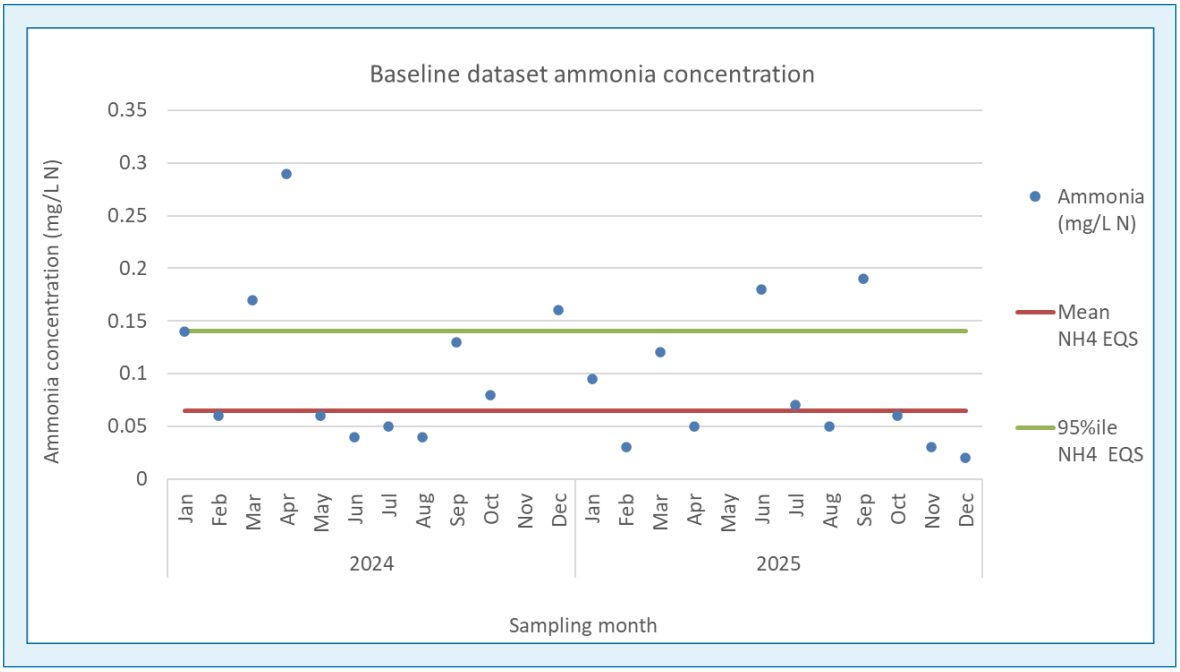

Figure 5 Example graph of an uncontaminated baseline dataset

The graphed data should be assessed relative to the relevant EQS or other benchmark, and upward trends and outliers (pollution events) identified and investigated. Figure 6 illustrates a total organic carbon (TOC) dataset provided by an EPA-licensed facility where graphed data indicates potential outliers (pollution events) in the first half of the dataset and a potentially increasing trend in concentrations in the second half of the dataset.

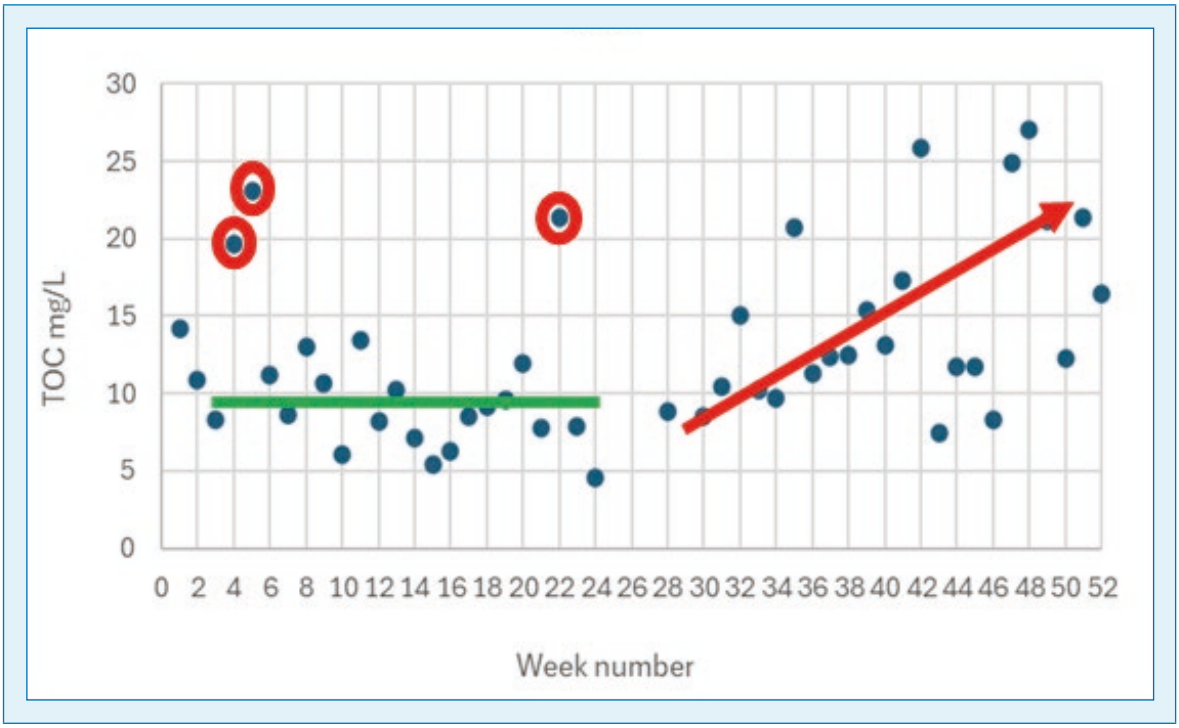

Figure 6 Graphed dataset with potential outliers (red ovals) and potential upward trend (red line) indicated

3.2.4 Calculate trigger levels

Licensees should approach the setting of trigger levels[5] from the perspective of "how **low** the trigger levels should be in order to detect even a small contamination event". Different methods for calculating trigger levels are used depending on whether the baseline dataset was collected by grab sampling or continuous monitoring.

The pH of stormwater should not be lower than 6 or greater than 9. Licensees should investigate and report any sudden changes in pH in the stormwater discharge even if it is within that range.

*Calculating trigger levels for **grab sample datasets***

Step 1: Calculate the median

Calculate the median (M) of the baseline dataset. The **median** (rather than mean/average) should be used to calculate trigger levels.

Step 2: Calculate the standard deviation

Calculate the standard deviation (SD) of the baseline dataset. Determine if the standard deviation is high or low.

5 Some older licences include two trigger levels, the "warning level" and "action level", while newer licences include just one "trigger level". This guidance refers to the computation of one single trigger level as included in newer licences. For licences that refer to "warning" and "action" levels, the trigger level described in this guidance corresponds to the "action level".

The standard deviation may be considered low where, as a % of the median, it is:

- <200% for concentrations expressed in units ≤ 9. For example, for a median 2 mg/L, a low standard deviation is <4 mg/L.
- <50% for concentrations expressed in units of 10 – 99. For example, for a median of 50 mg/L, a low standard deviation is <25 mg/L.
- <20% for concentrations expressed in units of 100 – 1000. For example, for a median of 500 µS/cm, a low standard deviation is <100 µS/cm.

Step 3: Determine if outliers need to be removed

An outlier is a value that lies at an abnormal distance from the other values in a set of data and is thus inconsistent with the other values of that data set [11]. Inclusion of outliers may inflate the trigger level and reduce the sensitivity of the trigger level to detect potential contamination events. Use Figure 7 to determine if an outlier removal process should be used on your baseline dataset or if you can proceed straight to setting trigger levels.

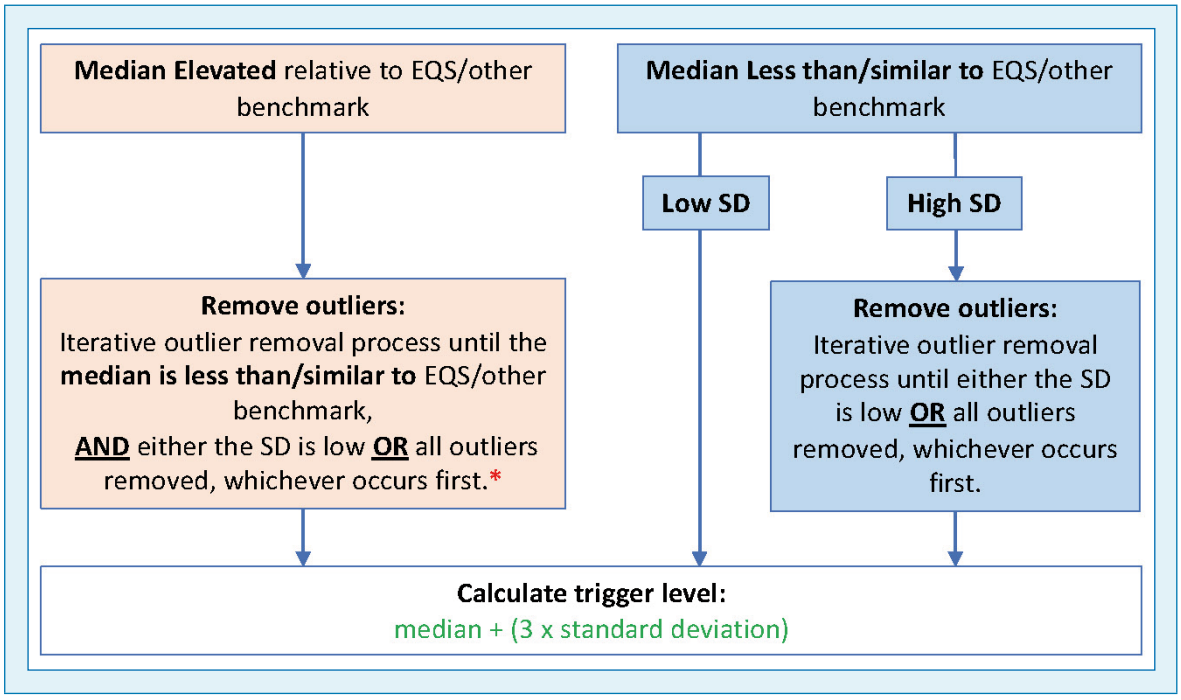

Figure 7 Calculating trigger levels for grab sample datasets

* *Where all outliers have been removed and the median remains elevated relative to the EQS/other benchmark, the dataset may have insufficient uncontaminated samples to calculate trigger levels. In such cases, generally, the EQS/other benchmark should be used in lieu of a calculated trigger level. The licensee should investigate and remove the contamination, collect the baseline dataset and then proceed with calculating trigger levels.*

Step 4: Carry out iterative outlier removal process, where appropriate

- Calculate the median (M) plus twice the standard deviation (SD), i.e., M + (2 x SD).
- **Remove** datapoints that are **greater than** the median plus twice the standard deviation, i.e., remove datapoint(s) > [M + (2 x SD)].
- **Repeat** this outlier removal process until (a) the median is similar to the EQS/other benchmark and (b) the SD is low **or** all outliers have been removed, whichever occurs first.

Where removal of outliers reduces the dataset to less than 20 datapoints, or results in insufficient seasonal variation, trigger levels should not be determined. Additional monitoring should be carried out to collect a complete, representative baseline dataset. The relevant EQS (or other benchmark) should be used to assess stormwater quality data until the trigger levels are calculated.

Tab A of the excel file accompanying this guidance includes an example of assessing a grab sample dataset for outliers. Tab B includes a worked example of the iterative outlier removal process for a grab sample dataset.

Step 5: Calculate trigger levels

Calculate trigger levels for a grab sample dataset using the formula:

median + (3 x standard deviation]

Tab B in the accompanying excel file provides a worked example of how to calculate trigger levels for a grab sample dataset.

*Calculating trigger levels for **continuous monitoring datasets***

To calculate trigger levels for continuous monitoring datasets, calculate the median of the baseline dataset and follow the steps presented in Figure 8.

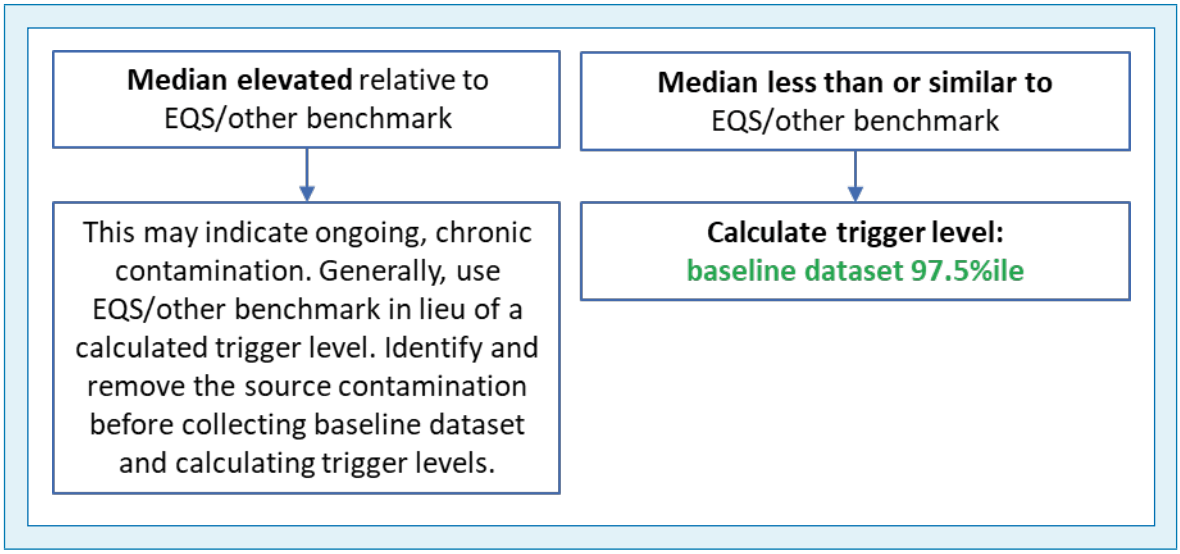

Figure 8 Calculating trigger levels for continuous monitoring datasets

3.2.5 Trigger levels proposal report

Trigger levels should be presented in a report which contains information on the site and receiving waterbody. Useful information that might be included in the report, as appropriate to the size, complexity, risk and any issues at the installation is included in Appendix C.

Where a licensee proposes a trigger level that is elevated relative to the EQS/other benchmark, the licensee must:

- provide a clear justification for this.
- demonstrate that this will not have an adverse impact on the receiving waterbody.
- in certain cases, propose a CAP [Section 4] to remove the contamination and reduce the trigger level.

Where a trigger level proposal is rejected, the EPA will provide the basis for this decision.

3.2.6 Reviewing trigger levels

It is recommended that trigger levels be reviewed when relevant changes occur on site, such as changes in materials or chemicals used or held on site, or improvements in stormwater management practices. In any case, it is recommended that trigger levels be reviewed every three years, at a minimum. Trigger levels should not be revised upwards.

The EPA may at any time require that trigger levels be reviewed for a site or a discharge point.

Section 4 Incident response and corrective action plan

Licensees must have a documented incident response procedure[6] that is activated as soon as a trigger level, EQS or another approved benchmark is reached. The response procedure is important for the quick implementation of measures to reduce environmental damage. Where any analyses or observation of stormwater quality indicate potential contamination:

- an investigation to identify the source of the contamination should commence immediately.
- measures should be put in place to prevent further contamination and to minimise the effects of any contamination on the environment.
- potential contamination should be notified to the EPA in accordance with the EPA's "Guidance on the notification management and communication of Environmental Incidents" and licence requirements.
- a corrective action plan (CAP) should be implemented to remove the contamination source and prevent recurrence, where appropriate. Ongoing contamination of stormwater will require a CAP [Section 4.1], which must be submitted to the EPA for approval.

4.1 Corrective action plan

In most cases where a pollution event of short duration has occurred and ceased, an incident investigation will be sufficient to determine the likely cause, corrective actions and protective actions. A corrective action plan (CAP) may be required in cases where the pollution is ongoing, chronic or where the impacts require management. A CAP is a document which details the additional assessments, actions, management strategies, and potentially the remediation techniques, which will be implemented when contamination has been detected. The goal of the CAP is to fix the immediate problem and implement a long-term solution to prevent the issue from recurring. Depending on the severity of the incident, a CAP should address the following:

1. Measures to prevent discharge of polluted stormwater to receiving waterbodies as an interim measure
2. Identify the location of the source(s) of contamination
3. Characterise the nature and extent of contamination source(s)
4. Identify all potential pathways and receptors
5. Identify, develop and implement corrective actions to prevent further stormwater contamination
6. Where contamination has occurred, develop and implement actions to remediate the impact on the receiving waterbody/other receptors
7. Design and implement a programme to monitor the performance of the corrective actions for a period agreed by the EPA to ensure the environment (and human health) are protected

6 May be included as emergency response procedure in some licences.

A CAP should include:

- timelines for implementation of the actions and attainment of the objectives (and possibly interim objectives).
- source-pathway-receptor (SPR) based conceptual site model (CSM) that includes all potential source-pathway-receptor linkages. This information will be relevant in determining the urgency of the remediation and thus the required resourcing.
- details of proposed periodic reporting to the EPA regarding the progress of the CAP.

There is large overlap between preventative measures [Section 1.2] and corrective actions in stormwater management. Actions are "**preventative**" when they are put in place to prevent stormwater contamination and "**corrective**" when they are put in place to mitigate contamination following its detection. The techniques applied to mitigate – either prevent or correct – contamination of stormwater will depend on the activities carried out at the site and their significance to any receiving waterbody [5].

Corrective actions might include infrastructural changes, additional monitoring (additional locations, parameters or increased frequency), additional training, or procedural changes including changes to roles and responsibilities.

Appendix A
Rainfall chemistry

Met Éireann holds comprehensive rainfall chemistry datasets. This data is publicly available upon request from Met Éireann (enquiries@met.ie)[7]. Summary statistics of total ammonia and electrical conductivity in rainwater are contained in Table 4[8].

Table A.1 Electrical conductivity and ammonia in rainwater in Ireland

Parameter	Sample number (n)	LOD	Median	Mean	Standard Deviation	Min.	Max.
Electrical conductivity (µS/cm)	812*	na	33.2	50.3	47.3	4.00	276
Ammonia (mg/L N)	707**	<0.04	0.02***	0.04	0.04	0.02***	0.20

* *The top and bottom 1% of data were removed as very improbable (1 in 100 rainfall events) and likely outliers.*

** *Excludes values greater than 0.2 mg/L (<15% of total dataset) with suspected influence from agricultural activities in adjacent land. When assessing the rainfall dataset, it was noted that some elevated ammonia values occur in late spring and early summer every year. These concentrations ranged from 0.5 to 1.97 mg/L (total ammonia as N) and accounted for less than 5% of the dataset (and thus might occur once in every 20 rainfall events). Values greater than 1 mg/L ammonia as N were recorded less than 2% of the time (and thus might occur once every 50 rainfall events). Concentrations between 0.2 and 0.5 accounted for <10 % of the dataset (and thus might occur once every 10 rainfall events) and were also most frequent in late spring and early summer. Met Éireann note that some of these values were due to spreading of slurry adjacent to the weather station.*

*** *Where concentration is less than the limit of detection (<LOD), half the LOD (i.e., 0.5 x LOD) was used for computation purposes.*

7 Met Éireann provides raw datasets which have not been analysed to identify and remove outliers.

8 Based on the compiled datasets for Belmullet Weather Station, Co. Mayo, Valentia Observatory, Co. Kerry, and Malin Head Weather Station, Co. Donegal, for the period 01 January 2020 through 31 December 2023.

Appendix B
First flush – identifying and assessing

Figure B.1 presents continuous total organic carbon (TOC) data from an EPA-licensed site during January 2024 in the top graph and Met Éireann rainfall data from January 2024 on the bottom graph. The following should be noted in relation to these graphs:

- As the first flush generally occurs during the initial period of active rainfall, the first peaks in TOC that coincide with rainfall days are the first flush peaks (orange markings in Figure B.1).
- A peak much larger than the usual first flush peak may indicate a small unauthorised discharge which has remained in the stormwater network until the next rainfall event for example (Peak A in Figure B.1).
- A peak that occurs after the first flush peak during a rainfall event may indicate an unauthorised discharge during the rain event, or different sections of the site may drain at different rates and result in more than one "first flush" peak for a given site or a delayed first flush where roof runoff may discharge before yard water, etc. (Peak B in Figure B.1).
- In circumstances where there is a peak in TOC that is not correlated with Met Eireann rainfall, this should be investigated as a potential contamination event (Peaks C in Figure B.1).

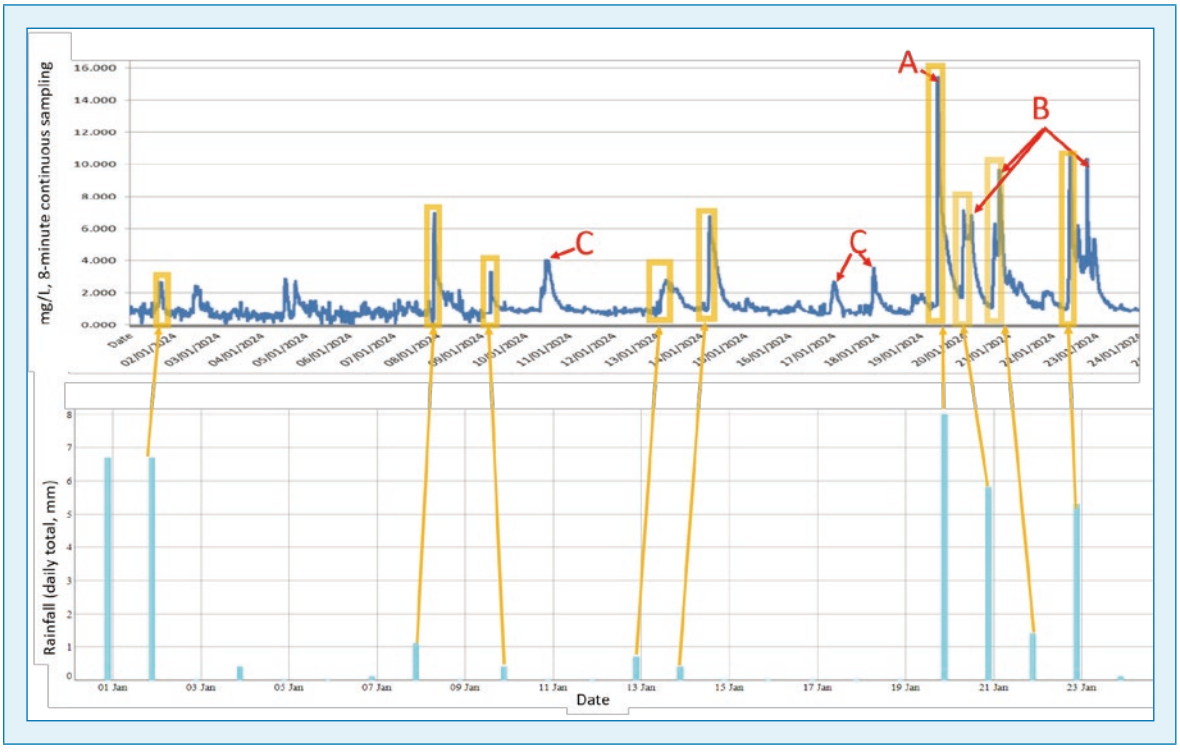

Figure B.1 Continuous TOC monitoring data, January 2024 (top panel) and Met Eireann rainfall data, January 2024 (daily total, mm) (bottom panel) with first flush (orange) and potential non-first flush events (red) indicated

Appendix C
Contents of trigger levels proposal report

Useful information that might be included in the trigger levels proposal report, as appropriate to the size, complexity, risk and any issues at the installation includes:

- the complete raw dataset used to calculate the trigger levels (include in all cases)
- up-to-date, complete drainage maps
- findings of the most recent underground pipeline survey (including the survey method)
- whether the stormwater shut off valve(s) is manual or automatic
- site house-keeping practices
- inputs to the stormwater network from other sources (such as groundwater), or inputs upstream/upgradient of the site boundary
- sampling point location(s)
- type and frequency of monitoring, and details of person(s) responsible for sampling
- whether water chemistry analysis is completed in-house or externally
- laboratory analytical units and limits of detection (LOD), and details of accreditation status of chemical analyses
- Information on the receiving waterbody:
  - *outline if the stormwater discharges directly to a surface water body or travels via a municipal (or other) stormwater drainage network*
  - *name, location and Water Framework Directive (WFD) code*
  - *WFD status (and objective, where relevant) and risk status*
  - *details of protection status (of waterbody or species present in the waterbody) or other special status (for example, blue dot)*
  - *an assessment of the impact of the stormwater flow rate*[9]
- Map(s) displaying:
  - *location of the site*
  - *location of stormwater discharge point(s)*
  - *all receiving waterbody(ies)*

9 The flow rate of the stormwater discharge should be limited to prevent erosion of the riverbed in the case of sensitive rivers [1], [6].

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An Ghníomhaireacht um Chaomhnú Comhshaoil

Tá an GCC freagrach as an gcomhshaol a chosaint agus a fheabhsú, mar shócmhainn luachmhar do mhuintir na hÉireann. Táimid tiomanta do dhaoine agus don chomhshaol a chosaint ar thionchar díobhálach na radaíochta agus an truaillithe.

Is féidir obair na Gníomhaireachta a roinnt ina trí phríomhréimse:

- Rialáil: Rialáil agus córais chomhlíonta comhshaoil éifeachtacha a chur i bhfeidhm, chun dea-thorthaí comhshaoil a bhaint amach agus díriú orthu siúd nach mbíonn ag cloí leo.
- Eolas: Sonraí, eolas agus measúnú ardchaighdeáin, spriocdhírithe agus tráthúil a chur ar fáil i leith an chomhshaoil chun bonn eolais a chur faoin gcinnteoireacht.
- Abhcóideacht: Ag obair le daoine eile ar son timpeallachta glaine, táirgiúla agus dea-chosanta agus ar son cleachtas inbhuanaithe i dtaobh an chomhshaoil.

I measc ár gcuid freagrachtaí tá:

CEADÚNÚ

- Gníomhaíochtaí tionscail, dramhaíola agus stórála peitril ar scála mór;
- Sceitheadh fuíolluisce uirbigh;
- Úsáid shrianta agus scaoileadh rialaithe Orgánach Géinmhodhnaithe;
- Foinsí radaíochta ianúcháin;
- Astaíochtaí gás ceaptha teasa ó thionscal agus ón eitlíocht trí Scéim an AE um Thrádáil Astaíochtaí.

FORFHEIDHMIÚ NÁISIÚNTA I LEITH CÚRSAÍ COMHSHAOIL

- Iniúchadh agus cigireacht ar shaoráidí a bhfuil ceadúnas acu ón GCC;
- Cur i bhfeidhm an dea-chleachtais a stiúradh i ngníomhaíochtaí agus i saoráidí rialáilte;
- Maoirseacht a dhéanamh ar fhreagrachtaí an údaráis áitiúil as cosaint an chomhshaoil;
- Caighdeán an uisce óil phoiblí a rialáil agus údaruithe um sceitheadh fuíolluisce uirbigh a fhorfheidhmiú
- Caighdeán an uisce óil phoiblí agus phríobháidigh a mheasúnú agus tuairisciú air;
- Comhordú a dhéanamh ar líonra d'eagraíochtaí seirbhíse poiblí chun tacú le gníomhú i gcoinne coireachta comhshaoil;
- An dlí a chur orthu siúd a bhriseann dlí an chomhshaoil agus a dhéanann dochar don chomhshaol.

BAINISTÍOCHT DRAMHAÍOLA AGUS CEIMICEÁIN SA CHOMHSHAOL

- Rialacháin dramhaíola a chur i bhfeidhm agus a fhorfheidhmiú lena n-áirítear saincheisteanna forfheidhmithe náisiúnta;
- Staitisticí dramhaíola náisiúnta a ullmhú agus a fhoilsiú chomh maith leis an bPlean Náisiúnta um Bainistíocht Dramhaíola Guaisí;
- An Clár Náisiúnta um Chosc Dramhaíola a fhorbairt agus a chur i bhfeidhm;
- Reachtaíocht ar rialú ceimiceán sa timpeallacht a chur i bhfeidhm agus tuairisciú ar an reachtaíocht sin.

BAINISTÍOCHT UISCE

- Plé le struchtúir náisiúnta agus réigiúnacha rialachais agus oibriúcháin chun an Chreat-treoir Uisce a chur i bhfeidhm;
- Monatóireacht, measúnú agus tuairisciú a dhéanamh ar chaighdeán aibhneacha, lochanna, uiscí idirchreasa agus cósta, uiscí snámha agus screamhuisce chomh maith le tomhas ar leibhéil uisce agus sreabhadh abhann.

EOLAÍOCHT AERÁIDE & ATHRÚ AERÁIDE

- Fardail agus réamh-mheastacháin a fhoilsiú um astaíochtaí gás ceaptha teasa na hÉireann;
- Rúnaíocht a chur ar fáil don Chomhairle Chomhairleach ar Athrú Aeráide agus tacaíocht a thabhairt don Idirphlé Náisiúnta ar Ghníomhú ar son na hAeráide;
- Tacú le gníomhaíochtaí forbartha Náisiúnta, AE agus NA um Eolaíocht agus Beartas Aeráide.

MONATÓIREACHT AGUS MEASÚNÚ AR AN GCOMHSHAOL

- Córais náisiúnta um monatóireacht an chomhshaoil a cheapadh agus a chur i bhfeidhm: teicneolaíocht, bainistíocht sonraí, anailís agus réamhaisnéisiú;
- Tuairiscí ar Staid Thimpeallacht na hÉireann agus ar Tháscairí a chur ar fáil;
- Monatóireacht a dhéanamh ar chaighdeán an aeir agus Treoir an AE i leith Aeir Ghlain don Eoraip a chur i bhfeidhm chomh maith leis an gCoinbhinsiún ar Aerthruailliú Fadraoin Trasteorann, agus an Treoir i leith na Teorann Náisiúnta Astaíochtaí;
- Maoirseacht a dhéanamh ar chur i bhfeidhm na Treorach i leith Torainn Timpeallachta;
- Measúnú a dhéanamh ar thionchar pleananna agus clár beartaithe ar chomhshaol na hÉireann.

TAIGHDE AGUS FORBAIRT COMHSHAOIL

- Comhordú a dhéanamh ar ghníomhaíochtaí taighde comhshaoil agus iad a mhaoiniú chun brú a aithint, bonn eolais a chur faoin mbeartas agus réitigh a chur ar fáil;
- Comhoibriú le gníomhaíocht náisiúnta agus AE um thaighde comhshaoil.

COSAINT RAIDEOLAÍOCH

- Monatóireacht a dhéanamh ar leibhéil radaíochta agus nochtadh an phobail do radaíocht ianúcháin agus do réimsí leictreamaighnéadacha a mheas;
- Cabhrú le pleananna náisiúnta a fhorbairt le haghaidh éigeandálaí ag eascairt as taismí núicléacha;
- Monatóireacht a dhéanamh ar fhorbairtí thar lear a bhaineann le saoráidí núicléacha agus leis an tsábháilteacht raideolaíochta;
- Sainseirbhísí um chosaint ar an radaíocht a sholáthar, nó maoirsiú a dhéanamh ar sholáthar na seirbhísí sin.

TREOIR, ARDÚ FEASACHTA AGUS FAISNÉIS INROCHTANA

- Tuairisciú, comhairle agus treoir neamhspleách, fianaise-bhunaithe a chur ar fáil don Rialtas, don tionscal agus don phobal ar ábhair maidir le cosaint comhshaoil agus raideolaíoch;
- An nasc idir sláinte agus folláine, an geilleagar agus timpeallacht ghlan a chur chun cinn;
- Feasacht comhshaoil a chur chun cinn lena n-áirítear tacú le hiompraíocht um éifeachtúlacht acmhainní agus aistriú aeráide;
- Tástáil radóin a chur chun cinn i dtithe agus in ionaid oibre agus feabhsúchán a mholadh áit is gá.

COMHPHÁIRTÍOCHT AGUS LÍONRÚ

Oibriú le gníomhaireachtaí idirnáisiúnta agus náisiúnta, údaráis réigiúnacha agus áitiúla, eagraíochtaí neamhrialtais, comhlachtaí ionadaíocha agus ranna rialtais chun cosaint chomhshaoil agus raideolaíoch a chur ar fáil, chomh maith le taighde, comhordú agus cinnteoireacht bunaithe ar an eolaíocht.

BAINISTÍOCHT AGUS STRUCHTÚR NA GNÍOMHAIREACHTA UM CHAOMHNÚ COMHSHAOIL

Tá an GCC á bainistiú ag Bord lánaimseartha, ar a bhfuil Ard-Stiúrthóir agus cúigear Stiúrthóir. Déantar an obair ar fud cúig cinn d'Oifigí:

- An Oifig um Inbhunaitheacht i leith Cúrsaí Comhshaoil
- An Oifig Forfheidhmithe i leith Cúrsaí Comhshaoil
- An Oifig um Fhianaise agus Measúnú
- An Oifig um Chosaint ar Radaíocht agus Monatóireacht Comhshaoil
- An Oifig Cumarsáide agus Seirbhísí Corparáideacha

Tugann coistí comhairleacha cabhair don Ghníomhaireacht agus tagann siad le chéile go rialta le plé a dhéanamh ar ábhair imní agus le comhairle a chur ar an mBord.

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An Ghníomhaireacht um Chaomhnú Comhshaoil

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