Water Use

Supporting Guidance (WAT-SG-87)

Compliance Monitoring for Sewer Network Licences

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Update Summary

Version	Description
v1	First issue for Water Use reference using approved content from the following documents: *SNL Inspection Guidance 11 June 2012 v12*
v1.1	New verification inspection guidance (s5.1) and DAS contact (s5.3)
v2.1	Clarifications: CAS assessment; outfall is dependent activity; modification/ removal of assets added. Lic. template links updated
v2.2	Clarification on additional informaiton and dual manholes (s5.1)

Notes

References: Linked references to other documents have been disabled in this web version of the document. See the References section for details of all referenced documents.

Printing the Document: This document is uncontrolled if printed and is only intended to be viewed online.

If you do need to print the document, the best results are achieved using Booklet printing or else double-sided, Duplex (2-on-1) A4 printing (both four pages per A4 sheet).

Always refer to the online document for accurate and up-to-date information.

Table of Contents

1. Background to Sewer Network Licensing

This document sets out SEPA's approach to compliance monitoring for Sewer Network Licences (SNLs) operated by Scottish Water.

PFI/private sewer networks are not authorised by SNLs.

A combined sewer network consists of all Scottish Water's assets upstream of the Sewage Treatment Works (STW) boundary. Primarily these are sewer pipes, combined sewer overflows and emergency overflows at pumping stations.

Combined sewer overflows (CSOs) are essential structures within a combined sewer system. They are designed to operate intermittently in response to rainfall. When the sewer system is full a CSO acts as a release valve by allowing any excess flow to discharge to the local water environment. CSOs are dependent on substantial dilution and if discharging to a watercourse, depend on this watercourse having been swollen by rainfall therefore maximising dilution.

Emergency overflows (EOs) are overflows at sewage pumping stations which should only operate in an emergency due to electrical failure, rising main failure or blockage of the downstream sewer.

When a private EO or CSO is adopted by Scottish Water, the overflow needs to be incorporated into the SNL. (Refer to *WAT-RM-09: Modifications to CAR Authorisations* section 6.4)

2. Sewer Network Licences (SNLs)

SEPA has licensed Scottish Water's sewer network via over 350 licences. This was done by a neutral translation of existing overflow COPA consents and CAR licences along with additional asset information provided by Scottish Water.

This means that all discharge locations on any sewer network draining to an individual Scottish Water sewage treatment works (STW) are regulated through a single licence. The licence establishes a level of management SEPA expects Scottish Water to meet in order to protect the water environment.

This provides substantial benefits to SEPA and Scottish Water. For the first time SEPA can view the network holistically and change the focus to management of the whole sewer network, rather than managing individual sewer overflows. This is the most effective means of controlling pollution since overflows on a network often interact with one another.

The licence focuses particularly on Environmentally Critical Assets (discussed in Section 5.2.1) within the network and requires preventative maintenance for these assets to address aspects affecting overflow operation such as sewer siltation and failure of pumps.

The licence is a very powerful tool in delivering environmental improvement and will through time result in fewer pollution incidents and a reduction in the staff resource that is required to respond to them.

3. Compliance / Inspection Framework

Generally, the traditional form of regulation of sewer overflows (EOs and CSOs) was through visual inspection as part of planned assessment or in response to an incident where the problem had already manifested itself in the environment. Such inspections were often of limited value with regard to the former, or in the latter did not get to the root of the problem which could be far more complex. Sewer Network Licences allow a more audit based assessment of the network as a whole which can focus on such aspects as:

- pass forward flows
- preventative maintenance
- critical assets, and
- particular substandard overflows

This approach should link to the output from drainage area studies undertaken by Scottish Water which can also identify problem areas.

While the general approach for SNL assessments will be about auditing the management of the sewer network as a whole, there will still be a need for site inspections of overflows causing environmental harm and/or public complaint.

- *WAT-RM-07 Regulation of Sewer Overflows* provides useful information on the regulation of sewer overflows.

4. DREAM – Compliance / Inspection Frequency

SEPA's *DREAM risk assessment model* is used to establish the inspection frequency for each SNL. The information inserted has been set up centrally and forms the initial inspection frequency. This should be taken as the minimum amount of regulatory effort which is considered appropriate for the level of risk that is posed by the SNL. Staff should focus on examining significant conditions of the SNL rather than simply carrying out visual inspections.

The initial inspection frequency can vary between four per year to one every five years depending on the hazard score derived from the various factors (e.g. scale, dilution, protected areas etc) and the annual compliance assessment.

Teams will be asked to schedule inspections within NEMS according to the specified inspection frequency and local concerns. This will enable networks of particular concern to be prioritised.

In due course teams will be able to amend certain hazard categories based on site specific information such as designations and dilution. This will refine the audit inspection frequency.

Appendix 1 shows:

- the initial inspection frequencies for Scottish Water SNLs.
- a chart showing SNLs categorised by the number of overflows per licence.

5. Compliance Assessment Scheme

Sewer Network Licences will be compliance assessed according to the criteria contained in Annex 5 of the *Compliance Assessment Scheme Manual*.

Further guidance is provided in sections 5.2 to 5.6 of this document including Table 2.

Key aspects to be taken into account are environmental events and data returns associated with the SNL. SNL data returns are submitted centrally along with STW data returns and are available from the *Compliance Assessment Scheme* intranet page (in OPTIC).

Compliance records will be set up in a phased basis over 5 years depending on the inspection frequency. This is being done to ease the resource burden on SEPA and Scottish Water. In the first year (2012), 20 SNLs were set up in CAS, inspected and compliance assessed.

The local team may wish to schedule inspections to prioritise networks of particular concern, i.e. bring forward inspections for certain high priority but low inspection frequency licences (e.g. ones at a frequency of 1 in 5 years) to earlier in that period.

A CAS assessment may be made for other SNLs if:

- There is a new and / or a significant* environmental event relating to that SNL or
- The SNL fails to comply with an annual data return licence condition (if return required).

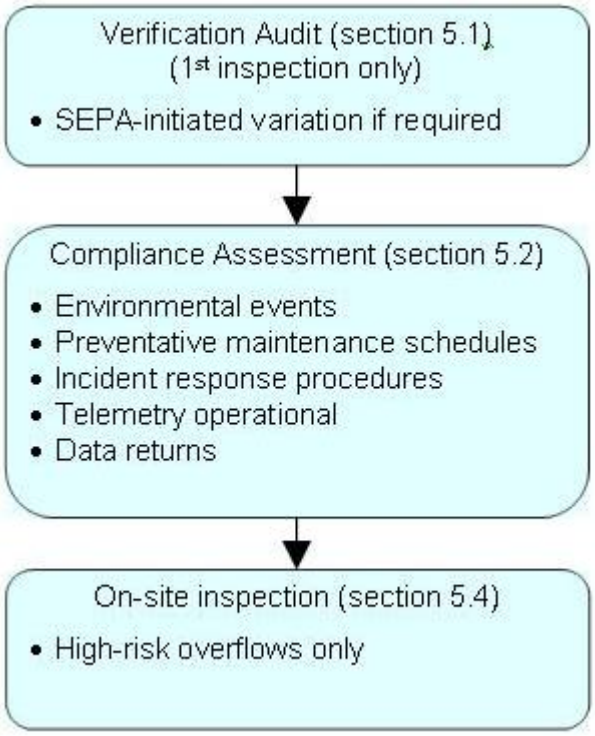
* 'significant' means a Category 1 or 2 Environmental Event.

In any given year CAS can be based upon all or a limited number of licence conditions. For example during one inspection you may wish to focus on maintenance schedules or telemetry and any environmental events resulting from the network. Note that conditions can be assessed over a 3- or 6-year period depending on the hazard band (see section 4.7 of the *Compliance Assessment Scheme Manual*).

The phasing and detail of planned inspection is dealt with in the sections below.

N.B. SNLs may cover more than one SEPA team area, i.e. some overflows may be located in a different team area to the team area where the STW is located. Teams should therefore liaise with each other to ensure that a co-ordinated approach is taken and that the team undertaking the inspection is aware of any issues relating to any overflows in another team area.

Figure 1 Compliance Assessment



5.1 Verification Audit

Given that 350 licences were issued based on information from numerous previous licences/consents some of which were very old, it is accepted by both Scottish Water and SEPA that there are errors and omissions within the licences. Therefore the first planned audit inspection of a SNL should be a desk based meeting with local Scottish Water staff. Such meetings will allow staff to familiarise themselves with the licences but its main purpose is to establish that all information (such as overflow names, NGRs, screening etc) in the licence is **correct and fit for purpose** and all known overflows included.

The SW Area Environmental Regulation Adviser should be contacted to co-ordinate SW representation.

For larger catchments it may be worth SEPA and SW coming prepared to the meeting with a list of proposed corrections to the licence.

Reference may need to be made to previous (now revoked) COPA consents or CAR licences to ensure no conditions have been accidentally revoked. These superseded licences can be identified from the SNL CLAS record and if not locally available, paper copies of all superseded licences can be found in the SNL file on the Public Register.

Where there is on-site deviation from the authorisation details (such as incorrect NGRs, overflows not listed in the licence, or telemetry/standby pumps etc present but not on licence etc) or where some licence conditions

are clearly inappropriate, a **SEPA-initiated variation should be made** following the inspection.

In addition the variation should:

- replace the DWF definition with a new agreed percentile definition (in the Interpretation of Terms)
- insert a Responsible Person definition (in the Interpretation of Terms)
- insert a schedule authorising the construction, modification or removal of an outfall at an overflow.
- The construction, modification or removal of an outfall at an overflow is considered a dependent controlled activity and requires authorising. The SNL template has a condition requiring the design and method statement for the outfall to be submitted and agreed by SEPA. This means that an engineering licence variation will not be required when an outfall is constructed / modified.
    - Adherence must be given to the following Good Practice Guides:
      WAT-SG-23: Good Practice Guide - Bank Protection
      WAT-SG-25: Good Practice Guide - River Crossings
      WAT-SG-26: Good Practice Guide - Sediment Management
      WAT-SG-28: Good Practice Guide - Intakes & Outfalls
      WAT-SG-29: Good Practice Guide - Construction Methods
    - See also *WAT-TEMP-67: Sewer Network Licence Variation Schedule*.

N.B. There will be circumstances where the licence should be issued without all the information needed to populate licence tables 5 and 6 being available/known (eg DWF or PFF in Table 5). If and when additional information becomes available, this would require an operator initiated variation.

Where equipment essential for environmental protection such as screens, telemetry and pumps is required by the licence and is appropriate but is not present in the sewer network, then there may be scope to agree and deliver this via the Quality and Standards (Q & S) investment process where this has not been highlighted and agreed previously.

In situations of ongoing significant environmental harm, an accelerated delivery may be possible via SW's Capital and Maintenance budget. Enforcement action may also be necessary in these cases.

N.B. CSOs/EOs outwith the boundary of the STW should be authorised by the SNL and not the STW licence. Licences should be varied as necessary to reflect this.

The CLAS record should be checked and corrected if required.

Any errors/additions to the SEPA GIS sewer network layer should also be flagged up to Scottish Water so these can be rectified.

Dual manholes should not be included in the network licence as they are not designed to spill flows from the foul system.

5.2 Compliance Inspections

5.2.1 Environmentally Critical Assets (ECA)

ECAs are considered to be key assets which if they fail or malfunction, could cause pollution of the water environment (this includes impact on users of the water environment).

Condition 3.2.1 of the SNL defines ECAs more specifically as “any item of plant or instrumentation that it relies on for the prevention, or limitation, of pollution of the water environment from its sewer network”.

The following types of equipment have been designated as Environmentally Critical Assets.

Table 1 Environmentally Critical Assets at EOs and CSOs

ECA	Including
Pumps	All duty, standby and assist foul pumps and any storm pumps
Screens	Any screen required by the SNL
Emergency Storage	Any emergency storage required by the SNL
Sewer Network Storage	Where this is required for water quality purposes
Telemetry or alternative communications kit	Any alarms which highlight to SW that an environmentally critical piece of kit has broken down or is malfunctioning and likely to lead to pollution of the water environment and non-compliance with related licence conditions
Power	Any standby plant SW relies on for the prevention of prolonged emergency overflow caused by power outage provided that requirement is in the SNL
Penstocks and associated flow monitors	Any penstock and associated flow monitor which can affect the pass forward flow

Licence condition 3.1.1(e) requires SW to keep a register of ECAs, which includes the location, function and design specification of each said item. Condition 3.1.2 requires this to be made available to SEPA on request.

N.B. Scottish Water may not have a design specification for older pieces of equipment and this should not necessarily affect compliance as long as it does not result in an environmental impact.

Standby pumps of the same capacity as duty pumps are not always essential. For example in a large pumping station with 4 duty pumps, it may not be necessary to have 4 standby pumps, since it is highly unlikely that all 4 duty pumps would fail at the same time.

5.2.2 Incident Response / Preventative Maintenance

The purpose of designating assets as 'environmentally critical' is to ensure there are appropriate incident response procedures and risk-assessed maintenance schedules in place to prevent and minimise pollution of the water environment. The level of maintenance and the urgency of response will be dependent on the sensitivity of the receiving environment. For example, a small CSO in the upper part of the network discharging into a large river will require a lower level of maintenance than a large pumping station at the lower end of the network that discharges into a designated Bathing Water.

It is obviously preferable to take proactive measures and prevent pollution occurring rather than react once environmental damage has occurred. Routine planned preventative maintenance is therefore key.

The **risk assessed maintenance schedules** in condition 2.1.3 should define the planned frequency of inspection and maintenance of each ECA.

Evidence that appropriate maintenance of an ECA has been undertaken in accordance with the planned schedule should be checked if environmental risk warrants it.

The **incident response procedures** will primarily be generic, following a general standard, such as that outlined in the Appendices of *CAS-SNL: Scottish Water Compliance with Condition 2.1.4*. In some cases however, the response should relate to the environmental sensitivity – i.e response procedures may be expected to be more robust for potentially high impact / low dilution discharges to high sensitivity watercourses.

The response procedures for these high risk sites should capture information or actions that are essential for a swift reaction, but which otherwise may not always have been to hand. This would include information such as the model/type and location of a replacement pump or overpumping provisions at the pumping station.

These incident response procedures and maintenance schedules should be held locally (rather than corporately) by Scottish Water and can be provided to SEPA on request.

It may be appropriate to assess whether the telemetry (if required in the licence) is operational.

5.3 Sewer Modelling/Drainage Area Studies

A Drainage Area Study (DAS) is an in-depth assessment of a sewer network which can identify problems which may give rise to pollution. Such problems may include unacceptably high frequency of operation of storm overflows and any underlying causes such as a restricted pass forward flow due to poor structural integrity of the sewer or susceptibility to siltation.

Licence condition 3.3 relates to sewer modelling, which predicts overflow frequencies and volumes and forms part of the DAS.

DAS assessments can be obtained by emailing Scottish Water (*asset.studies@scottishwater.co.uk*).

5.4 On-site inspection

On site inspection will be generally be limited to known problem overflows (those which cause environmental harm and/or amenity issues) and particularly significant or large overflows. Clearly the record of public complaint logged on ELMS should be taken into account when deciding which overflows to inspect.

On site inspection of overflows assesses the impact that intermittent discharges are having on the water environment, such as giving rise to sewage debris downstream.

Joint visits with Scottish Water may be appropriate if access to inspect assets such as overflow chambers and/or the operation/maintenance of screens is required.

On site inspection will not generally be planned for any other overflows which do not fit the above criteria.

5.5 Corporate Assessment

The SNL has certain conditions which are most appropriately assessed on a corporate level, rather than locally.

Similarly there are a number of conditions which SEPA and Scottish Water consider that a single corporate submission is appropriate, as opposed to local submission to every SEPA office.

Conditions where a corporate assessment or submission is to be made are listed in Table 2 below.

Corporate level conditions data received from Scottish Water is held on SEPA's Intranet site and is available for officers to check during their inspection.

Guidance is also provided in Table 2 to assist on assessing local compliance with certain other conditions.

Table 2 Assessment of Licence Conditions

Condition number	Condition	Assessment	Comments
1.1.1 (c)	The controlled activities authorised by this licence are…conveyance of sewage to and discharge from combined sewer overflows and emergency overflows not listed in that table.	Local Assessment	This allows the general conditions in the licence to apply to any overflows not listed in Table 1
2.1.2	Maintenance of management systems, organisational structure, procedures and resources*	Corporate Assessment	Submission available in *Wastewater* area of SEPA intranet
2.1.3	In relation to Environmentally Critical Assets (see condition 3.2.1 below) , incident response procedures and risk assessed maintenance schedules	Local Assessment	see section 5.2.2 - Incident Response / Preventative Maintenance
2.1.4	Notify SEPA within 3 months from issue of licence of management system, organisational structure procedures and resources	Corporate submission and local assessment	
2.1.5	Notification of changes to management system etc within 28 days of proposed change etc	Corporate submission	
2.7.1	Flow/event reporting (if required) eg submit by 31 Jan the following year, as part of STW returns	Corporate submission and local assessment	Submission available in *CAR Guidance and Updates*
2.9.2	Update GIS every 6 months or when significant change	Corporate submission	
3.1.1	Compile register of assets within 12 (or 24) months from issue of licence	Local Assessment if required	This is kept by Scottish Water and excerpts can be provided on request
3.1.3	Formal review of register of assets every 5 years	Corporate Assessment	
3.2.1	Identify and designate Environmentally Critical Assets within 12 (or 24) months from issue of licence	Corporate Assessment	As per Section 5.2.1 and the generic list shown as Table 1. Specifics available on request from SW. *SEPA considers that SW has complied with this condition*
3.3	Sewer Model	Assessment by the Q&S Unit	The sewer model or drainage area study can provide useful information such as modelled overflow frequencies and volumes.

* in *CAS-SNL: Scottish Water Compliance with Condition 2.1.4*

5.6 Monitoring/data reporting

Any local monitoring and data reporting requirements should be discussed.

There are a small number of Scottish Water overflows (on sewer networks or at STWs) which require flow/event data collection and/or reporting. If required this information should normally be submitted annually to SEPA (Corporate) by 31 January each year. Once SEPA receives this overflow event data, it is made available on SEPA's Intranet site here for officers to inspect.

Overflow event returns can provide a picture of the performance of the overflow over a prolonged period, not just at the time of the visit. This information can be compared against modelled overflow event data from the Drainage Area Study (if available) in order to identify problem areas.

By exception, certain existing high risk overflows may justify the installation of monitoring, in particular event recorders. Event monitoring provides start/stop time of overflow events and may be justified for problematic or very sensitive locations, possibly on a temporary basis. Refer to *WAT-RM-07 Regulation of Sewer Overflows* for more details.

6. Enforcement approach

Sewer network licences were issued without site verification, often based on limited information. Therefore any deviation on site from the authorisation conditions should not be automatically considered as a non-compliance. In general, on site deviation should result in a SEPA-initiated variation as discussed above.

However if there is a clear case of non-compliance (such as screens, telemetry or pumps not being operational) the usual enforcement options should be used.

Appendix 1: SNL Statistics

Figure 2 Numbers of SNL categorised on Initial Frequency of Inspection

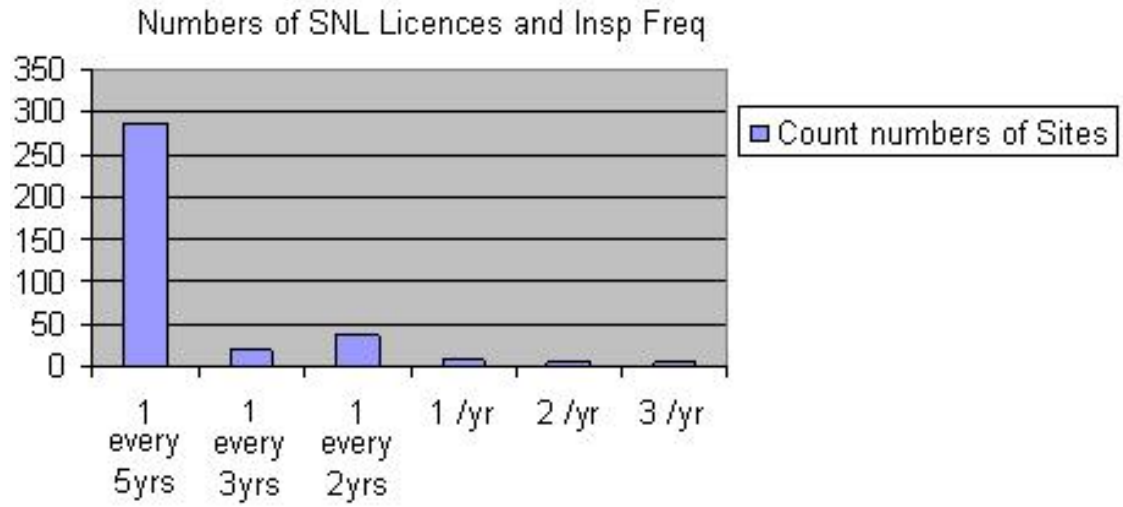
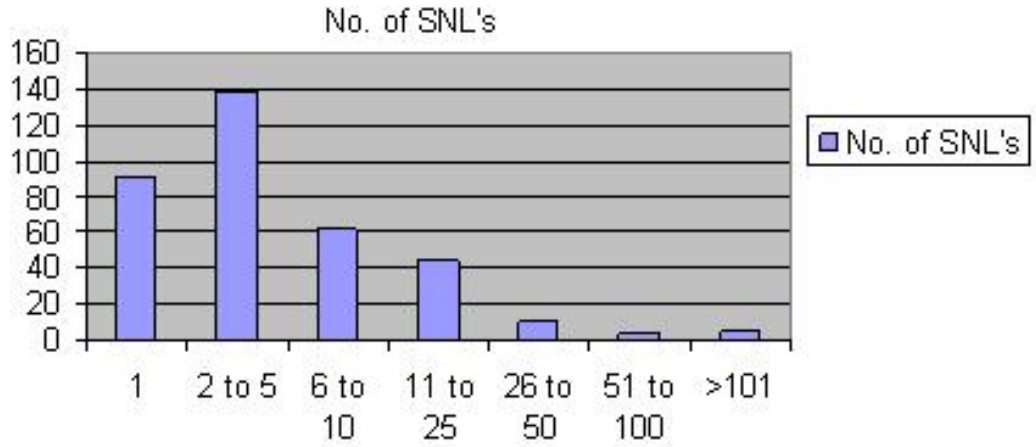


Figure 3 Numbers of SNL categorised on Number of Overflows per licence



References

NOTE: Linked references to other documents have been disabled in this web version of the document.

See the Water >Guidance pages of the SEPA website for Guidance and other documentation (*www.sepa.org.uk/water/water_regulation/guidance.aspx*).

All references to external documents are listed on this page along with an indicative URL to help locate the document. The full path is not provided as SEPA can not guarantee its future location.

Water Documents

WAT-RM-07 Regulation of Sewer Overflows

WAT-RM-09: Modifications to CAR Authorisations

WAT-SG-23: Good Practice Guide - Bank Protection

WAT-SG-25: Good Practice Guide - River Crossings

WAT-SG-26: Good Practice Guide - Sediment Management

WAT-SG-28: Good Practice Guide - Intakes & Outfalls

WAT-SG-29: Good Practice Guide - Construction Methods

WAT-TEMP-67: Sewer Network Licence Variation Schedule

Other References

CAR Guidance and Updates (SEPA Intranet)

CAS-SNL: Scottish Water Compliance with Condition 2.1.4
(SEPA Intranet doc, in *OPTIC > Compliance Assessment*)

Compliance Assessment Scheme (SEPA Intranet)

Compliance Assessment Scheme Manual - Annex 5, under *Better Regulation* on SEPA website (www.sepa.org.uk)

Drainage Area Studies (DAS) from: *asset.studies@scottishwater.co.uk*

DREAM risk assessment model (SEPA Intranet)

OPTIC Operations Technical Information Centre (SEPA Intranet)

Wastewater (SEPA Intranet)

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