

SEPA POLICY:

**CONTROL OF PRIORITY AND DANGEROUS SUBSTANCES
AND SPECIFIC POLLUTANTS IN THE WATER ENVIRONMENT**

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1. Overview

SEPA is establishing a policy on the control of toxic, persistent and bioaccumulative substances (listed substances) as defined under European Directives¹ set to protect the water environment. This guidance paper defines SEPA's proposed policy and procedures for controlling discharges containing listed substances.

The Water Framework Directive (2000/60/EC) requires the cessation or phasing-out of priority hazardous substances and the progressive reduction of pollution from discharges of priority substances and compliance with the environmental standards set for specific pollutants. The Dangerous Substances Directive and the Shellfish Waters and Freshwater Fish Directive are revoked by the WFD in 2013.

New environmental quality standards (EQS) are being developed for priority substances by Europe and for specific pollutants by the UK. The Scottish Government consulted in July 2008 on these new standards. SEPA's proposed approach to controlling listed substances will apply to the new standards and, until they are superseded, to old standards.

The first step in assessing the controls needed over a discharge is to identify whether the discharge is *liable to contain* a listed substance. SEPA has defined *liable to contain* as being detected by chemical analysis at or above the minimum reporting value for a specified number of samples. A discharge is also *liable to contain* a listed substance if it is: permitted to be discharged into the sewer upstream of the discharge or otherwise known to be present in trade process discharges in the catchment (e.g. Scottish Water trade effluent consent, PPC permit); or known to be added to the effluent at the discharge's site as a result of on-site activities.

Once it has been established that a discharge is liable to contain a listed substance, SEPA will determine if the discharge contains a listed substance above a significant concentration or load. A numeric standard will be applied if the discharge is above a significant concentration or load. A discharge of a listed substance above a significant concentration is defined by the assessment criteria derived using the following assumptions:

- For priority hazardous substances and List I substances - concentration in discharge is $\geq 1/10^{\text{th}}$ EQS or $\geq \text{SPRI}^2$ reporting threshold
- For priority substances, List II substances and specific pollutants - concentration in discharge is $\geq 2 \times \text{EQS}$ or $\geq 5 \times \text{SPRI}$ reporting threshold

Where concentrations or loads exceed the above thresholds, it will be subject to monitoring by SEPA. The sampling regime will assess whether the discharges comply with the numeric standards and will monitor the trends of the listed substances within the water environment. Charges set under the Water Environment Charging Scheme will recover the costs of this monitoring.

SEPA will be undertaking a review of the charging scheme in 2008 and will consider changes to factor multipliers and the band definitions to ensure that they are appropriate to the new approach to controlling listed substances.

¹ Water Framework Directive and Dangerous Substances Directive

² Scottish Pollution Release Inventory - <http://www.sepa.org.uk/spri/index.htm>

2. Background

Chemical pollution of surface water can have adverse effects on aquatic ecosystems, potentially resulting in loss of habitats and biodiversity and accumulation of pollutants in the food chain. SEPA is committed to preventing chemical pollution of surface waters by reducing and limiting the discharge of toxic, persistent and bioaccumulative substances.

This policy and guidance provides a consistent approach and appropriate level of discharge monitoring and control to ensure point source continuous discharges to surface waters do not compromise compliance with environmental quality standards or emission limit values for chemical pollutants and that the accumulation of chemical pollutants within the water environment is minimised.

The Dangerous Substances Directive (76/464/EEC, codified and repealed by 2006/11/EC) introduced the concept of List I and List II substances. The purpose of the Dangerous Substances Directive is to eliminate pollution from **List I substances** and to reduce pollution from **List II substances**.

The Water Framework Directive (2000/60/EC) will take over the provisions of the Dangerous Substances Directive, which will be repealed in 2013. In the meantime, there is a transitional period until 2013 from the 'old' Dangerous Substances Directive to full implementation of the Water Framework Directive.

The Water Framework Directive provides for measures to be taken against chemical pollution of the water environment by certain pollutants, namely:

- an indicative list of main pollutants (from this the UK has identified a list of **specific pollutants** considered being discharged in significant quantities);
- a list of **priority substances** (which includes the subset of **priority hazardous substances**).

Most of the substances identified in List I for the Dangerous Substances Directive will be Priority Substances or Priority Hazardous Substances under the Water Framework Directive. Specific pollutants includes certain List II Substances, and chemicals identified as emerging issues. The current list of List I, List II, priority substances and specific pollutants is provided in Appendix 1. Further detail on the Water Framework Directive and Dangerous Substances Directive is available in Appendix 2.

The Water Framework Directive requires measures to be implemented with the aim of:

- Preventing deterioration of the status of all surface and groundwater bodies;
- Protecting, enhancing and restoring all bodies of surface water and groundwaters with the aim of achieving good surface water status and good groundwater status by 2015;
- Ceasing or phasing out of discharges, emissions and losses of priority hazardous substances; and
- Progressively reducing pollution by discharges, emissions and losses of priority substances.

Surface water bodies will be assigned to one of the Water Framework Directive's five ecological classes – High, Good, Moderate, Poor or Bad. The environmental quality standards for specific pollutants will contribute to ecological status – when a standard is failed the water body cannot be classed as Good status. Compliance with EQSs for priority and priority hazardous substances will determine the chemical status of water bodies.

Environmental quality standards for priority substances will be determined at a European level and for specific pollutants at a UK or Scotland level. [Proposals by the European Commission for priority substances](#) as completed its passage through the European Parliament and will be enter into force before the end of 2008. Similarly, [proposals for environmental quality standards for specific pollutants](#) have been developed by the United Kingdom's Technical Advisory Group on the Water Framework Directive (UKTAG).

3. Scope of Approach

“**Listed substance**” will refer to any priority substance, priority hazardous substance, specific pollutant, List I substance or List II substance identified in the table of substances provided in Appendix 1. This list of substances will be subject to ongoing review in light of identification of any additional substances within each category.

This policy provides SEPA’s approach for authorisation of **point source continuous discharges to surface waters** (i.e. rivers, lochs, coastal and transitional waters) that are liable to contain a listed substance, by means of a:

- licence under the Water Environment (Controlled Activities) (Scotland) Regulations 2005;
- permit under the Pollution Prevention and Control (Scotland) Regulations 2000; and
- waste management licence under the Waste Management Licensing Regulations 1994.

All hereinafter referred to as “**licences**”.

It is recognised that the environmental quality standards for a number of substances have still to be determined or are under review. This policy establishes the principles for control of listed substances and will take effect for ‘new’ listed substances when environmental quality standards are available.

This policy **does not relate to**:

- discharge of List I and List II substances to groundwater as defined by the Groundwater Directive;
- use of cage fish farm chemicals which are regulated by means of limits upon the quantity of the substances applied,
- substances which are not persistent and bioaccumulative such as substances which influence only the oxygen balance; or contribute only to eutrophication. Separate guidance is available on the control of such discharges,

4. Policy framework

SEPA regulates polluting discharges so as to maintain concentrations in the water environment within the environmental quality standard (EQS). This ensures that there is no impact upon ecology outwith the mixing zone downstream of the discharge.

This approach is not sufficient for toxic, persistent and bioaccumulative substances which accumulate within the water environment. For these chemicals it is the cumulative load of chemicals which poses the risk of environmental harm (especially in the marine environment) and this risk cannot be managed solely by ensuring EQS compliance.

Policy statement 1

SEPA will take the following approach to controlling listed substances.

- SEPA will regulate discharges so as to ensure compliance with EQS in the receiving water environment.
- Where a discharge has a significant concentration or load of listed substances but does not cause the failure of an EQS, SEPA will set discharge standards based upon current discharge quality. This will prevent increases in loading which could contribute to pollution of the marine environment.

Policy statement 2

SEPA will identify discharges which have significant concentrations or loads of listed substances by reference to thresholds for both the concentration in the discharge and the discharge load of listed substances. This will ensure that large volume discharges with low concentrations of listed substances are controlled where the load exceeds specified criteria.

Policy statement 3

SEPA will set thresholds by reference to the risk posed by the listed substances. More stringent thresholds will be set for the most hazardous substances included in List 1 of the Dangerous Substances Directive and Priority Hazardous Substances specified under the WFD.

Policy statement 4

Where List I or Priority Hazardous Substances exceed the specified thresholds, SEPA will require an action plan which aims to eliminate the discharge of these substances.

Where Priority Substances exceed the specified thresholds, SEPA will require an action plan which aims to progressively reduce the discharge of these substances. Where a site or operation increases production SEPA will consider an application for an increase in the loadings.

Progressive reduction of Priority Substances will be undertaken subject to instances where it is technically feasible and the costs are not disproportionate.

5. Initial Assessment Process

This section explains how SEPA will decide whether a discharge is liable to contain hazardous substances.

For new or modified discharges the applicant will be required to provide in the licence application form information on the presence of listed substances in the effluent (before and after treatment, where applicable).

For existing discharges, the investigation work currently being undertaken by SEPA to identify discharges which may contain high levels of priority substances and specific pollutants will inform the licence review process. As part of the licence review process, the discharger may be required to provide further information on the use of listed substances in industrial processes or the presence of listed substances in the effluent (before and after treatment, where applicable). SEPA does not expect a site to undertake a full analytical suite of all listed substances, but to analysis for listed substances which could be in the effluent.

Discharges Liable to Contain Listed Substances

The Dangerous Substances Directive requires that discharges "*liable to contain*" List I or List II substances are subject to prior authorisation. SEPA will continue to apply this principle of "*liable to contain*" for priority substances, priority hazardous substances and specific pollutants. All discharges that are *liable to contain* listed substances will be controlled by licence conditions in the authorisation. Such licence conditions will be descriptive or numeric depending on criteria detailed in Section 6.

For priority substances, priority hazardous substances and any remaining List I substances, SEPA will consider that a discharge is *liable to contain* a listed substance if the listed substance is:

- Permitted to be discharged into the sewer upstream of the discharge or otherwise known to be present in trade process discharges in the catchment (e.g. Scottish Water trade effluent consent, PPC permit); or
- Known to be added to the effluent at the discharge's site as a result of on-site activities;
- Known to be in the effluent and detected by chemical analysis in the discharge at or above the minimum reporting value.

For "specific pollutants", SEPA will consider that a discharge is *liable to contain* a specific pollutant if the chemical is present in the treated effluent discharge at concentrations above the minimum reporting value. If the specific pollutant is removed by the treatment process then the discharge will not be considered to be *liable to contain*.

The listed substance must be found at or above the minimum reporting value in at least the minimum number of samples taken at regular, but randomised, intervals (as described in Appendix 2). The minimum reporting value is defined as the lowest concentration detectable and reported (i.e. above less than results).

This assessment will be undertaken for each individual substance indicated in the application form to be present in the influent (or in the case of a sewerage system, permitted to be discharged into the sewer).

A discharge will not be viewed as being *liable to contain* a listed substance if it is discharged to the same water body from which the raw water supply was abstracted and the site does not add

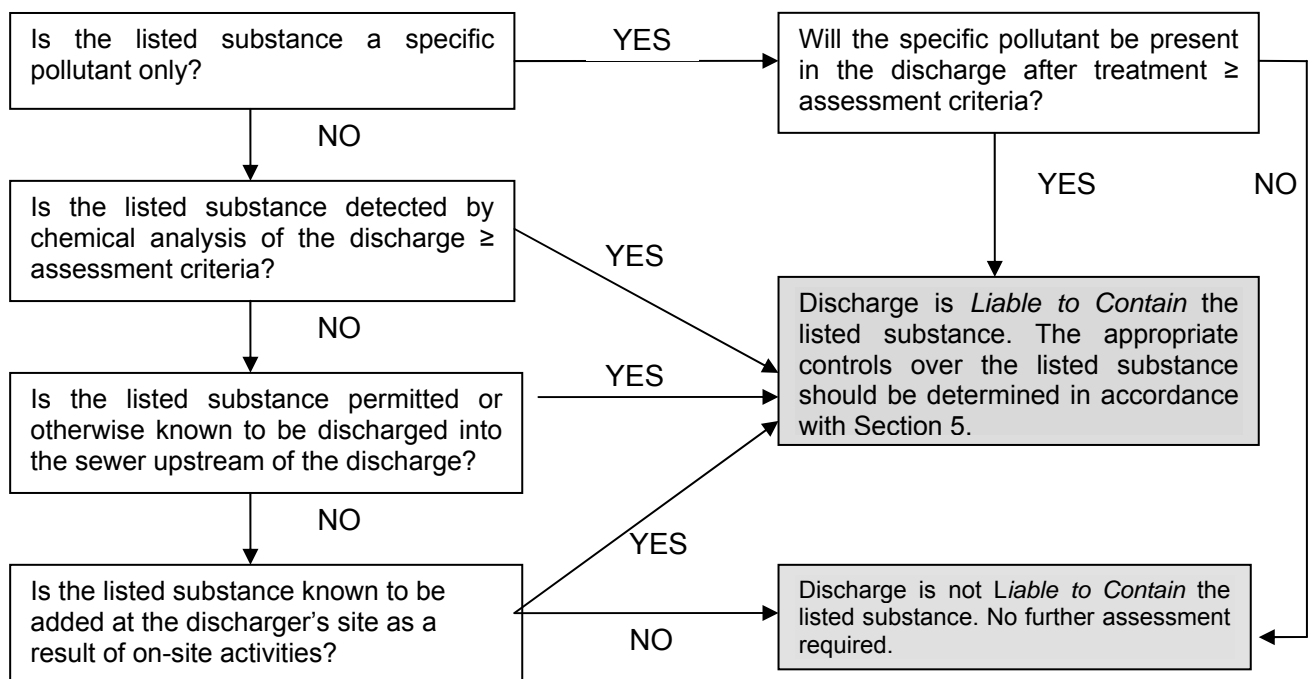
the listed substance (i.e. the raw water contains levels of the listed substance but the site does not further add the listed substance).

The onus will be on the discharger to prove that the discharge does not contain listed substances. SEPA does not expect a site to undertake a full analytical suite of all listed substances, but to analysis for listed substances which could be in the effluent.

It should be noted that new standards are currently being proposed for WFD priority substances and specific pollutants. Consequently, the minimum reporting values (and therefore the level of significance as detailed in Section 6.1) may change as new standards become legally binding.

Discharges not liable to contain listed substances will be discussed in Section 6.3.

Figure 1. Determination if Discharge Liable to Contain Listed Substances



6. Controls on Listed Substances

This section explains how SEPA will decide whether to apply numeric standards in a licence.

SEPA proposes to use a two-stage licence approach to authorising listed substances. An appropriate **numeric discharge quality standard** will apply to discharges that are *liable to contain* a listed substance(s) (as described in section 5) at **significant levels or loadings**. Where a discharge is *liable to contain* a listed substance, but not **present in significant levels or loadings**, a **descriptive condition** will be used (as detailed in figure 2).

To derive appropriate licence conditions and authorise an activity, the following process will be undertaken:

- Determine which listed substance the discharge is *liable to contain* in accordance with Section 5.
- For each individual listed substance the discharge is *liable to contain*, determine whether the concentration or load is significant in accordance with Section 6 below.

Discharges Liable To Contain Significant Levels or Loadings

The aim of the Water Framework Directive is to progressively cease or reduce the discharge of listed substances and to prevent deterioration in status. SEPA will normally treat the following as significant levels or loadings³ and appropriate numeric standards will apply should any of the assessment criteria be exceeded. The assessment criteria have been derived using the following assumptions:

- For **priority hazardous substances and List I substances** - concentration in discharge is $\geq 1/10^{\text{th}}$ EQS or $\geq \text{SPRI}^4$ reporting threshold
- For **priority substances, List II substances and specific pollutants** - concentration in discharge is $\geq 2\text{xEQS}$ or $\geq 5\text{xSPRI}$ reporting threshold

SEPA will also impose numeric conditions where there is a threat to the EQS in the receiving water from the discharge, for example, due to low dilution or a number of similar discharges to the same receiving water.

The assessment criteria has been derived from an EQS which includes any statutory, draft or operational EQS deemed appropriate. For substances where an EQS is not currently available, the discharge will be authorised using the descriptive conditions below and the licence will be reviewed when standards become available. Where a listed substance has been identified under both the Dangerous Substances Directive and the Water Framework Directive, the more stringent criteria will apply.

Details of the assessment criteria for substance concentration and loading are available in Appendix 1.

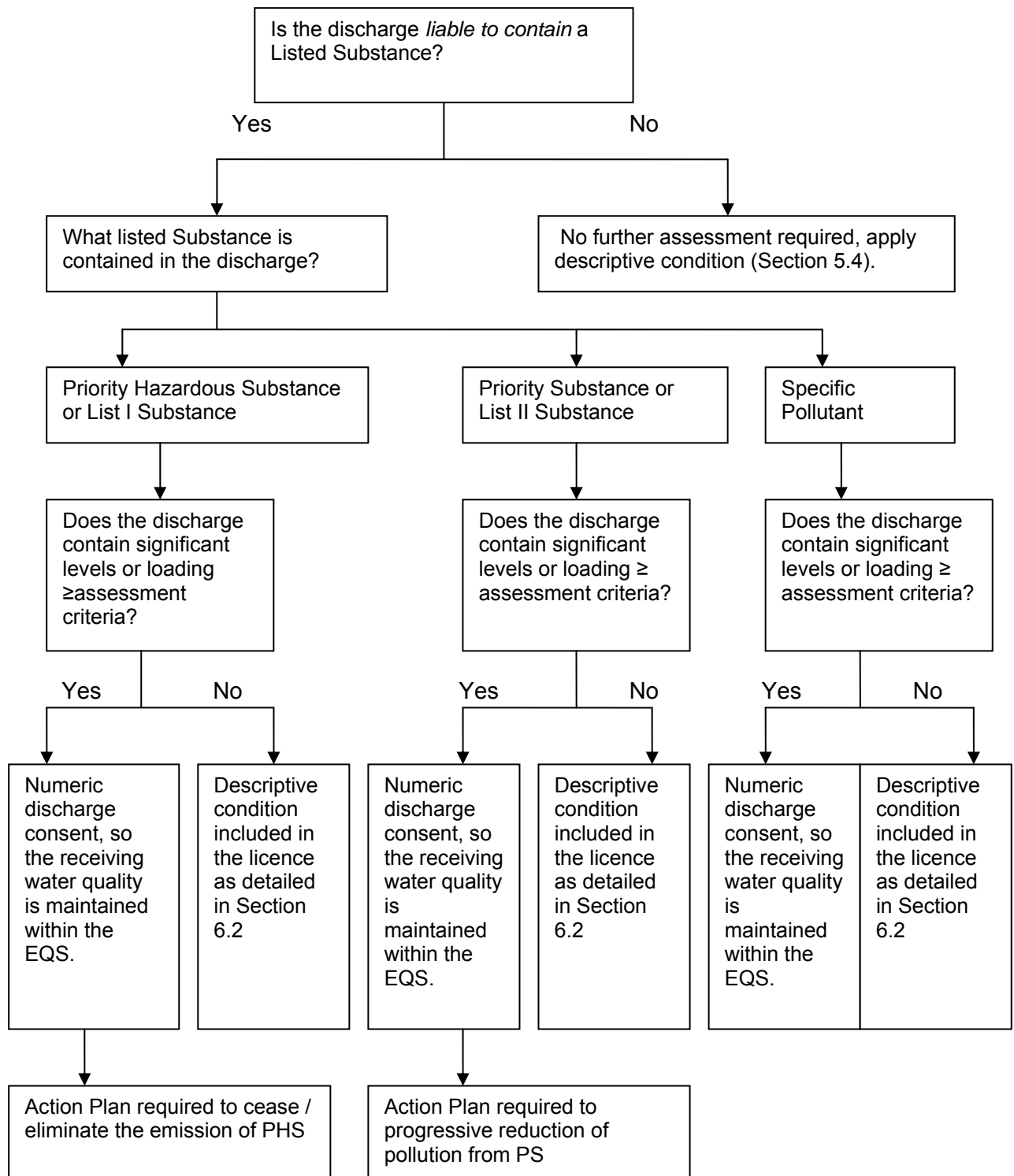
The purpose of the policy is to prevent an increase in the loadings discharged. Where a site or operation increases production SEPA will consider an application for an increase in the loadings. Any application will be expected to have controls to limit the increase in concentration or load from a discharge.

³ In certain circumstances, the discharge may be *liable to contain* significant loadings of a listed substance but not contain large concentrations of the substance, for example, large volume but low concentration in a discharge. In such situations, the discharge should contain numeric values limiting the load of the substance.

⁴ Scottish Pollution Release Inventory - <http://www.sepa.org.uk/spri/index.htm>

The progressive reduction of Priority Substances will be undertaken subject to instances where it is technically feasible and the costs are not disproportionate.

Figure 2 Is the Discharge Significant?



Licence Conditions

SEPA will apply numeric licence limits for listed substance where a discharge contains significant levels or loadings. Numeric licence limits will normally be applied as a concentration limit but may, where required be applied as a loading limit. For example, in certain circumstances, the discharge may be liable to contain significant loadings of a substance but not contain large concentrations of the substance, for example, large volume but low concentration in a discharge. In such situations, the discharge should contain numeric values limiting the load of a substance.

SEPA will set numeric licence limits in the following form:

- lower tier limit to be met for at least 95% of the time and assessed annually using an appropriate look up table; and
- upper tier limit set at twice the 95% limit, to be met all of the time;

Descriptive conditions requiring monitoring and recording of any changes in the use or discharge of listed substances will also be included.

SEPA currently uses lower and upper tier limits for compliance assessment for 'sanitary' determinands such as BOD and ammonia. The lower tier 95%ile limit provides the main control on discharge quality. The upper tier allows enforcement in case of a significant short term pollution event. A look up table provides for sampling variation from year to year.

Failure of the lower-tier standard will require the number of exceedences of the 95%ile standard to be greater than those specified in the table in Annex 2. Compliance will be calculated on a rolling 12 month basis.

Setting lower tier discharges limits

Where a discharge contributes to the failure of the EQS in the receiving water, the discharger will be required to reduce, over an agreed period, the discharge load to a level that ensures EQS compliance. The discharge lower tier limit will be calculated so as to ensure compliance with the EQS set in the receiving water.

Where the discharge does not cause the failure of the EQS in the receiving water, SEPA will set conditions to prevent increases in listed substances as compared to current concentrations and loads. Under these circumstances, SEPA will set the 95%ile on the basis of current discharge concentrations as determined from samples taken over the previous 3 years. The standard will be set at the upper 95% confidence limit round the calculated 95%ile. This will limit the discharge of listed substances to current levels and therefore prevent any increase in the level of pollution.

Where discharge sampling data is insufficient to define current performance the discharge standard will be derived from the EQS of the receiving water. This discharge standard may be reviewed when three year's discharge data has been collected.

Upper tier limit

The upper-tier standard will be set at twice the 95%ile. No sample is allowed to exceed the upper-tier standard.

Other numeric conditions

For complex discharges, an assessment of the toxicity of the discharge may be required as detailed in [SEPA Policy 52 - Direct Toxicity Assessment approach](#).

Emission limit values are in place for List I substances and will be included as the minimum requirement in the licence.

Descriptive conditions

Descriptive conditions 1 and 2 (Appendix 4) will be applied as appropriate so as to ensure that the operators maintains an awareness of the potential for listed substances to be discharged to the water environment and will notify SEPA where there is an increase in the discharge of listed substances.

Descriptive condition 3 requiring the development of an action plan produced to SEPA satisfaction, to accompany a new or variation application or within 2 years of a licence which has been reviewed, will be applied where significant concentrations or loads of list 1 substances or priority hazardous substances are discharged. An action plan may also be required if the discharge of priority substances or specific pollutants result in the failure of an EQS.

The Action Plan will detail how the licence holder intends to:

- eliminate or cease a discharge of a priority hazardous substance;
- progressively reduce a priority substance; or
- comply with the discharge concentration for a specific pollutant.

Discharges Liable to Contain Listed Substances not at Significant Levels or Loadings

Where SEPA considers that a discharge is liable to contain a listed substance but the discharge does not exceed the assessment criteria in section 6.1, SEPA will impose a standard condition requiring that the discharge of this substance shall not exceed the significance criteria specified. An example of this condition is provided in Appendix 4 licence condition 4.

Licence condition 1 (Appendix 4) will also be applied to ensure that any increase in the concentration or load above the threshold is reported to SEPA.

Discharges where the concentration and load of listed substances have been reduced.

Where the use or discharge of a listed substance has reduced or has ceased a licence may be reviewed to remove related conditions provided:

- a) The responsible person demonstrates that the discharge is no longer *liable to contain* the listed substance and SEPA agrees with the responsible persons evaluation; and/or
- b) For discharges containing numeric standards, a minimum of one year's monitoring of the discharge will normally be required to demonstrate that the discharge does not exceed the thresholds which define significant concentration or loading in Section 6.1 (above).

SEPA will remove a listed substance from licenses where it has been assessed that the discharge no longer contains the listed substance with a 95% confidence.

7. Application of new policy and procedures

This section explains how SEPA will apply the policies and procedures.

SEPA will use the principles from the existing licence structure to implement the Water Framework Directive requirements of progressively reducing pollution from priority substances and List II substances and the cessation or elimination of priority hazardous substances and List I substances.

New or Modified Discharges

This policy will be applied immediately for an application to SEPA for a new discharge (or a modified discharge containing listed substances not previously discharged).

Existing Discharges

Licences will be reviewed to comply with this policy and guidance as part of SEPA's planned programme of licence reviews to ensure compliance with the requirements of the Water Framework Directive. Licences containing descriptive or numeric standards for listed substances will also be subject to ongoing periodic review.

Work is currently being undertaken by SEPA to identify discharges which may contain high levels of priority substances and specific pollutants. The outcome of this investigatory work will inform the licence review process.

Reviews will take into account any changes in environmental quality standards and results of SEPA monitoring of the water environment.

Licence conditions will be amended taking account of Scottish Water's Quality and Standards investment process or an agreed programme of work necessary to achieve the good surface water status requirements of the Water Framework Directive. Any changes to numerical conditions (i.e. removal or addition of numeric limits controlling listed substances) will be phased and will not take effect until 1 April 2009.

A review of licences issued under Water Environment (Controlled Activities) (Scotland) Regulations 2005 ("CAR") will begin in 2008. Reviews of authorisations under Part I of the Environment Protection Act 1990 - Integrated Pollution Control ("IPC") or permits under the Pollution Prevention and Control (Scotland) Regulations 2000 ("PPC") will have a different review timescale but will follow this guidance, in addition to other specific IPC or PPC guidance, for control of discharge of listed substances. In particular, the [UK PPC Horizontal Guidance H1 Environmental Assessment and Appraisal of BAT](#) provides an approach for quantifying impacts of emissions to surface water. The approach within this policy extends beyond that detailed in the H1 guidance. The proposed approach will therefore be used to supplement with the H1 guidance and will take precedent where more stringent criteria applies.

8. Monitoring

Discharge Monitoring

Where a discharge has been assessed as having significant concentrations or loadings of listed substances it will be normally included in SEPA's annual monitoring plan. The monitoring will assess measured discharge concentrations and loads against the numeric discharge quality standards (limits) in the licence.

Where a discharge is liable to contain listed substances, but these are not present in significant concentrations or loadings, then the discharge will not be subject to routine discharge monitoring for these substances. SEPA may subject such discharges to occasional screening surveys to ensure that concentrations or loads of listed substances have not increased above the significance thresholds.

Environmental Monitoring

SEPA undertakes monitoring of water quality of rivers, lochs, estuaries and coastal waters to determine compliance with EQS and identify where pollution reduction programmes may be required. The need for environmental monitoring of listed substances will depend on the type of substances (i.e. List I etc.) and the impact on the receiving water.

SEPA has recently produced a new aquatic monitoring strategy to ensure that sufficient environmental information is gathered, to enable progress towards attainment of the WFD objectives to be measured and reported with adequate statistical confidence and confirm whether SEPA's regulatory approach is delivering as planned. SEPA also carries out monitoring of all environmental media to detect long-term changes in quality, which has resulted from discharges and releases of persistent, bio-accumulative and toxic substances.

Environmental monitoring of listed substances will be focused upon those parts of the water environment which are subject to significant loadings of listed substances. Some environmental monitoring will also be undertaken to assess the cumulative impact of discharges which are liable to contain listed substances but not at significant concentrations or loads.

9. Charging

Subsistence Charging

Discharges monitored by SEPA are subject to annual subsistence charges based on the volume, content of the discharge and the receiving water. Details of SEPA's current legal scheme and guidance for fees and charges under the Water Environment (Controlled Activities) (Scotland) Regulations 2005 is available from SEPA's [website](#).

Currently discharges containing numeric limits for listed substances will fall within the highest factor content Band A or B depending on the type of listed substance.

SEPA will be undertaking a review of the charging scheme in 2008 and will consider changes to factor multipliers and the band definitions to ensure that they are appropriate to the new listed substances under the Water Framework Directive. In revising the charging scheme, SEPA will take account of the consequences of applying the hazardous substances policy. SEPA will consult on the proposed revision of the charging scheme in the autumn of 2008.

The revised charging scheme is expected to come into effect on 1 April 2009, when the policy will be applied to existing discharges.

10. Appendix 1 – Listed Substances

Table 1 below details the current 'listed substances', the significant concentration assessment criteria derived from EQS and the significant loads assessment criteria. As per section 6.1, for PHS and List I substances the significant concentration assessment criteria are derived using one tenth of the EQS and for PS, SP and List II the criteria is derived using twice the EQS. The EQS used to determine the assessment criteria is the lowest long-term standards regardless of receiving water type and quality.

It should be noted that new standards are currently being proposed for WFD priority substances under Article 16 of the Daughter Directive. The proposed standards have been used in determining the assessment criteria.

Table 1 Listed substances and Significant Discharge Assessment Criteria

Listed Substance		Concentration Assessment Criteria (ug/l)	Load Assessment Criteria (kg/yr)
Alachlor	PS	0.6	-
Aldrin	LIST I	0.0005	0.0005
Anthracene	PHS	0.01	-
Arsenic	LIST II	50	25
Atrazine	PS, LIST II	1.2	0.25
Azinphos-methyl	LIST II		0.025
Bentazone	LIST II		-
Benzene	PS, LIST II	16	50
Biphenyl	LIST II		5
Boron	LIST II		-
Cadmium	PHS, LIST I	0.08	1
Carbon tetrachloride	LIST I	1.2	1
Chlorfenvinphos	PS	0.2	-
Chloroalkanes, (C10-13)	PHS	0.04	1
Chloronitrotoluenes	LIST II		-
2-Chlorophenol	LIST II		-
4-Chloro-3-methylphenol	LIST II		-
Chlorpyrifos	PS	0.06	5
Chromium	SP, LIST II	1.2	100
Copper	SP, LIST II	5	100
Cyanide	SP	2	250
Cyfluthrin	LIST II	0.002	-
Cypermethrin	SP	0.0002	0.25
2,4-D (ester and non-ester)	SP, LIST II	0.6	2
DDT	LIST I	0.0025	0.0005
pp-DDT	LIST I	0.001	0.0005
Demeton	LIST II		1
Di(2-ethylhexyl)phthalate (DEHP)	PS	2.6	5
Diazinon	SP	0.02	0.05
1,2 Dichloroethane	PS, LIST I	1	10
Dichloromethane	PS	40	50
2,4-Dichlorophenol	SP, LIST II	40	-
Dichlorvos	LIST II		0.0025
Dieldrin	LIST I	0.0005	0.0025
Dimethoate	SP, LIST II	0.96	1
Diuron	PS	0.4	0.4
Endosulphan	PHS, LIST II	0.00005	0.0005
Endrin	LIST I	0.0005	0.0005
Fenitrothion	LIST II	0.02	0.0025
Fluocifuron	LIST II	2	-

Fluoranthene	PS	0.2	-
Hexachlorobenzene	PHS, LIST I	0.001	0.02
Hexachlorobutadiene	PHS, LIST I	0.01	0.1
Hexachlorocyclohexane (Lindane)	PHS, LIST I	0.0002	0.01
Iron	SP, LIST II	2000	-
Isodrin	LIST I	0.0005	-
Isoproturon	PS, List II	0.6	0.4
Lead and its compounds	PS, LIST II	14.4	100
Linuron	SP, LIST II	1	0.4
Malathion	LIST II	0.02	0.0025
Mecoprop	SP, LIST II	0.6	5
Mercury and its compounds	PHS, LIST I	0.005	0.1
Mevinphos	List II	0.04	-
Naphthalene	PS	2.4	5
Nickel and its compounds	PS, LIST II	40	100
Nonylphenols	PHS	0.03	100
Octylphenols	PS	0.02	500
Omethoate	LIST II	0.02	-
PCSDS	LIST II	0.1	-
Pentabromodiphenylether (PBDE))	PHS	0.00002	1
Pentachlorobenzene	PHS	0.00007	-
Pentachlorophenol	PS, LIST I	0.04	0.05
Perchloroethylene	LIST I	1	-
Permethrin	LIST II	0.02	0.005
Phenol	SP	15.4	100
Poly Aromatic Hydrocarbons	PHS	Not applicable	5
Benzo(a)pyrene	PHS	0.005	-
Benzo(b)fluoranthene	PHS	Σ0.003	-
Benzo(k)fluoranthene			-
Benzo(ghi)perylene	PHS	Σ0.0002	-
Indeno(123-cd)pyrene			-
Simazine	PS, LIST II	2	0.2
Sulcofuron	LIST II	50	-
Toluene	SP, LIST II	80	50
Triazophos	LIST II	0.01	-
Tributyltin compounds	PHS, LIST II	0.00002	0.005
Trichlorobenzene	PS, LIST I	0.04	0.04
1,1,1-Trichloroethane	LIST II	200	-
1,1,2-Trichloroethane	LIST II	600	-
Trichloroethylene	LIST I	1	-
Trichloromethane (chloroform)	LIST I, PS	0.25	4
Trifluralin	PS, LIST II	0.06	0.02
Triphenyltins	LIST II	0.016	-
Vanadium	LIST II	40	-
Xylene	LIST II	60	50
Zinc	SP, LIST II	16	500

KEY: PHS – Annex X priority hazardous substance
PS – Annex X priority substance
PSR – Annex X priority substance subject to review
SP – specific pollutant i.e. Annex VIII substance
List I - Dangerous Substances Directive List I substance
List II - Dangerous Substances Directive List II substance

11. Appendix 2 – Liable to Contain Based on Chemical Analysis

Table 2 below gives the criteria for assessing that the discharge as *liable to contain* on the basis of chemical analysis alone.

Table 2: *Liable to contain* based on chemical analysis

Number of Samples in the Assessment period	Minimum number of sample results at or above the Minimum Reporting Value (MRV)
4 – 8	3
9 – 14	4
15 – 20	5
21 – 27	6
28 – 34	7
35 – 41	8
42 – 48	9
49 – 56	10
57 – 63	11
64 – 71	12
72 – 79	13
80 – 86	14
87 – 94	15
95 – 102	16

Table 2 is applied separately for each listed substance. In a regular but randomised series of samples of a discharge, taken in the assessment period, if at least the minimum numbers of samples contain a particular listed substance at or above the MRV, then the discharge shall be considered as *liable to contain* that listed substance. Ideally the previous 12 months should be used as the assessment period. Sample results from a regular sampling programme should be used.

12. Appendix 3 – Directive Requirements

1.1 Dangerous Substances Directive (76/464/EEC)

The Dangerous Substances Directive (DSD) introduced the concept of List I and List II substances. The purpose of the DSD is to eliminate pollution from **List I substances** and to reduce pollution from **List II substances**.

In broad terms, List I substances are controlled at European Community level by emission limit values (ELVs) or environmental quality standards (EQSs), and List II substances are controlled nationally by EQSs.

List I includes a number of groups and families of pollutants from which certain individual substances were to be selected on the basis of their persistence, toxicity and bioaccumulation, but only those selected, and for which ELVs are set by a specific Daughter Directive in accordance with Article 6, are treated as List I substances. The other substances belonging to List I groups or families of substances, but for which no ELVs are set, are treated as List II substances.

The List I and List II substances are detailed in Appendix 1.

18 individual List I substances are now regulated in five specific ‘Daughter’ Directives to the DSD, which set ELVs and EQSs on a Community level:

- [82/176/EEC Mercury discharges by the chlor-alkali electrolysis industry](#)
- [83/513/EEC Cadmium discharges](#)
- [84/156/EEC Mercury discharges by sectors other than chlor-alkali electrolysis industry](#)
- [84/491/EEC Hexachlorocyclohexane discharges](#)
- [86/280/EEC \(as amended by 88/347/EEC, 90/415/EEC and 91/692/EEC\) Limit values and EQSs for certain List I substances](#)

Following a series of advice notes, consolidated guidance was issued in a Scottish Development Department Circular No 34 in 1985 on the general provisions and implementation requirements for the 1976 Directive and Daughter Directives. This guidance was updated in 1993 by Scottish Office Environment Department Circular No 6 to take account of subsequent Daughter Directives.

Environmental quality standards for List I substances established in Daughter Directives and EQSs for List II substances are set out in a series of Regulations issued by Scottish Ministers.

- [Surface Waters \(Dangerous Substances\) \(Classification\) \(Scotland\) Regulations 1990, \(SI 1990/126\)](#)
- [Surface Waters \(Dangerous Substances\) \(Classification\) \(Scotland\) Regulations 1992, \(SI 1992/574\)](#)
- [Surface Waters \(Dangerous Substances\) \(Classification\) \(Scotland\) Regulations 1998, \(SI 1998/250\)](#)
- [Surface Waters \(Dangerous Substances\) \(Classification\) \(Scotland\) \(No.2\) Regulations 1998, \(SI 1998/1344\)](#)

A 1982 Communication by the European Commission to the Council set out a list of 129 substances prioritised for inclusion on List I of the DSD. Some of these 'candidate' List I substances are covered by the 5 DSD Daughter Directives. The regulation of other [candidate List I substances](#) was suspended in the beginning of the 1990s due to the preparation of a more comprehensive and integrated permitting system for industrial installations. In 1996, the Directive on Integrated Pollution Prevention and Control, the [IPPC Directive](#) (96/61/EC) was adopted. The Directive includes the ELVs for the 18 List I substances from the [DSD Daughter Directives](#) as minimum requirements for large installations.

List II includes groups and families of substances that have a deleterious effect on the aquatic environment. It also contains all the substances belonging to List I groups or families of substances that are not regulated on a Community level, i.e. do not have daughter directives. For List II substances, Member States must establish pollution reduction programmes including water quality objectives. Environmental quality standards for List II substances were established by the above legislation and operational environmental quality standards derived by organisations such as SEPA, the Environment Agency, the Scottish and Northern Ireland Forum for Environmental Research (SNIFFER) etc.

Directive 76/464/EEC has been codified and repealed by a new Dangerous Substances Directive, 2006/11/EC.

1.2 Transposition from the DSD to the Water Framework Directive

The Water Framework Directive (2000/60/EC) (WFD) will take over the provisions of the Dangerous Substances Directive, which will be repealed in 2013. In the meantime, there is a transitional period until 2013 from the 'old' Dangerous Substances Directive to full implementation of the Water Framework Directive. In summary, the transitional provisions for the Dangerous Substances Directive are:

- DSD Article 6 (List I substances) was repealed with entry into force of the Water Framework Directive – however DSD Daughter Directives and standards will remain in effect until reviewed and replaced by WFD standards;

Article 16 of WFD required the European Commission to:

- propose a list of priority substances which, on adoption by the European Parliament and Council, would become Annex X to the WFD and replace the list of candidate List I substances communicated by the Commission in 1982 i.e. those without daughter directives;
- propose emission controls and EQSs for those priority substances; and
- review the 5 DSD Daughter Directives within 6 years of entry into force of WFD.

1.3 Implementation of WFD Article 16

By Decision 2455/2001/EC, the European Parliament and Council adopted a list of 33 **priority substances** proposed by the Commission, on the basis of their toxicity, persistence and liability to accumulate in the environment. This list is now Annex X to the WFD and has replaced the list in the 1982 Commission Communication. Within this list, 13 substances of particular concern were identified as **priority hazardous substances**. The list of priority substances must be reviewed by the Commission every 4 years.

The priority substances (PS) and priority hazardous substances (PHS) are listed in Appendix 1.

In July 2006, the Commission proposed a WFD Daughter Directive:

- establishing EQSs for the 33 priority substances in accordance with WFD Article 16(7), to be met by Member States by 2015;
- repealing the 5 DSD daughter directives; and
- identifying 2 further priority hazardous substances out of the 14 priority substances that were under review.

Article 16 provides that if Community-wide EQSs are not adopted by the end of 2006, Member States have to set national EQSs. Although this deadline appears to have been missed, the Commission states that it favours Community-level action on EQSs, so will await the outcome of deliberations by the European Parliament and Council before pursuing the implementation of this obligation by Member States.

The Commission also states that it has not proposed emission controls, preferring to leave these to Member States, and to existing Community legislation that already provides for such controls, such as the IPPC Directive, the Pesticide Directives and the new REACH Regulation.

1.4 Water Framework Directive (2000/60/EC)

The Water Framework Directive (WFD) (as amended) provides for measures to be taken against pollution of surface waters and groundwater by certain pollutants:

- Annex VIII provides an indicative list of main pollutants, from which the UK has identified a list of specific pollutants - see below;
- Annex IX confirms that emission limit values and environmental quality standards established under the DSD Daughter Directives for List I substances are to be used, pending review of those Directives;
- Annex X identifies a list of priority substances (which includes the subsets of priority hazardous substances and priority substances subject to review for possible identification as priority hazardous substances).

Measures must be implemented with the aim of:

- Cessation or phasing-out of discharges, emissions and losses of priority hazardous substances, within 20 years of the adoption of the 2006 Commission proposal, and
- Progressive reduction of discharges, emissions and losses of priority substances.

As well as the aims above, priority substances will still be considered in the key objective of achieving good surface water status. Good status of a surface water-body will be achieved when, amongst other criteria, good chemical status is achieved. The achievement of good chemical status is dependent on meeting agreed EQSs, including those for priority substances.

As part of the development of emission controls for priority substances, existing legislation and controls have been reviewed to assess whether they are sufficient to meet the requirements of the WFD. Existing legislation and measures that may be used to address emission controls include IPPC Directive, Marketing and Use Directive, Best Available Technology, voluntary agreements etc.

In addition to the priority substances, specific polluting substances are listed in Annex V of the WFD as one of the physio-chemical quality elements that form part of the classification of good ecological status. Annex VIII of the WFD lists the generic groups of substances that should be

considered as possible 'specific pollutants'. The UK is responsible for EQSs for specific pollutants for UK waters according to the procedure set out in the WFD.

There are many substances that may be considered as potential specific pollutants. A programme was therefore established to identify, prioritise and review the EQSs for those substances identified as potential Specific Pollutants. The UK Technical Advisory Group (UKTAG) identified an initial list of 311 substances for consideration. This list was then prioritised using a scheme based upon that used under EU Existing Substances Regulations. This considers the hazard and exposure for each substance to provide a ranking between 1 and 5. Substances that attracted a ranking of 1 or 2 were then considered further as candidate UK Specific Pollutants. These included some existing List II substances, controlled under the Dangerous Substances Directive, but not included in the Priority Substance list, for which there are existing statutory standards; and other substances for which there is no UK standard but that are recognised on the basis of effect and level of exposure as posing a risk to UK waters.

The UK Technical Advisory Group (UKTAG) has published proposed standards for 17 substances considered as UK Specific Pollutants (listed in Appendix 1). The UKTAG report can be found at [Proposals for environmental quality standards for specific pollutants](#)⁵.

Good surface water chemical status also requires concentrations of specific pollutants to be below the EQS.

⁵ http://www.wfduk.org/stakeholder_reviews/stakeholder_review_1-2007/LibraryPublicDocs/UKTAG_2007_%20Final_Specific_Pollutants_Master

13. Appendix 4 – Descriptive Licence Conditions

Licence Condition 1: Notice of change condition

SEPA shall be notified in writing, using the contact details for notifications in the explanatory notes attached to this licence, if any known material change occurs, that may increase or introduce into the influent or effluent any List I or II substances as defined under EC Directive 2006/11/EC or Annex II Priority Substance as listed under EC Directive 2008/105/EC or specific pollutant listed, within 28 days of the responsible person identifying, or being informed of, any such change.

Licence Condition 2: Operational surveillance condition

- a) The responsible person **OR** operator shall produce and maintain records that demonstrate to the satisfaction of SEPA the composition of materials supplied to them for use on site which contain any List I substances as defined under EC Directive 2006/11/EC or Annex II Priority Substances and Priority Hazardous Substances as listed under EC Directive 2008/105/EC;
- b) The records kept in accordance with paragraph a) above shall be made available to SEPA on request.

Licence Condition 3: Action plan general requirements

A plan shall be submitted to SEPA in writing within 2 years of the licence review (dated dd/mm/yyyy, which will contain detailed procedures on the elimination of Priority Hazardous Substances and the reduction of Priority Substances as listed under EC Directive 2008/105/EC and shall hereafter be referred to as the Action Plan. The Action Plan will require to be in terms satisfactory to SEPA and SEPA will notify the responsible person/operator within Enter Number of days days of receipt of the Action Plan confirming or rejecting same.

All operations shall be carried out in accordance with the Action Plan. Where any Licence condition conflicts with the Action Plan, the Licence condition shall take precedence over the Action Plan.

Any proposed change **OR** changes by the Operator to the Action Plan shall be submitted in writing to SEPA at least 14 days before the implementation of the proposed change. The proposed change **OR** changes shall only be implemented and the Action Plan amended accordingly where

- a) SEPA gives written consent to the proposed change **OR** changes; or
- b) SEPA has not indicated to the Operator in writing within 28 days of receiving the proposed change **OR** changes that the proposed change **OR** changes are rejected.

Licence Condition 4: Limits on Listed Substances which are not present in significant concentrations or loads

The concentration, in the discharge **OR** discharges, of the substances listed in column 1 of the table in schedule X appended to this licence shall not exceed the concentration listed in column 2.

The load, in the discharge **OR** discharges, of the substances listed in column 1 of the table in schedule X appended to this licence shall not exceed the load listed in column 3.

Licence Condition 5: Two tier licence condition

As per Condition number 4.4 in [WAT-TEMP-06: Municipal STW Licence Template](#), or Condition 3.12 in [WAT-TEMP-22: Trade Effluent Licence Template](#).

WAT-TEMP-06: Condition 4.4 Discharge Quality Standards (Part)

For the following conditions, insert the appropriate numbering as per the licence under review

<<Condition No.(i)>>) Subject to Condition <<Insert No.(ii)>> below, no instantaneous **OR** composite sample of treated sewage effluent shall contain more than:
<<Insert Value>> milligrams per litre of <<copper / chromium etc>>.

<<Condition No.(ii)>>) The limit for any of the parameters set out in Condition <<Insert No.(i)>> may be exceeded where, in any series of treated sewage effluent samples taken at regular but randomised intervals over a year (as listed in Column 1 of the table at Appendix 1 to this licence), no more than the number of samples (as listed in Column 2 of the said table) exceed the applicable limit for that parameter.

<<Condition No.(iii)>>) Notwithstanding Condition <<Insert No.(ii)>> above, no instantaneous **OR** composite sample of treated sewage effluent shall contain more than:
<<Insert Value>> milligrams per litre of <<copper / chromium etc>>.

WAT-TEMP-22: Condition 3.12 Discharge Quality Standards (Part)

The appropriate discharge quality standards will depend on the type of effluent, its constituents and nature of the receiving waters. Consult the guidance before determining which parameters and standards to include. The EXAMPLE conditions given below are for organic effluents - other parameters should be considered on a site-by-site basis.

(Single tier standards should also be used for effluents with abnormal flow and quality patterns such as rainfall dependant / pumped discharges e.g. intermittent quarry effluents)

Set 'B' Conditions

For the following conditions, insert the appropriate numbering as per the licence under review

<<Condition No.(i)>>) Subject to Condition <<Insert No.(ii)>> below, any instantaneous **OR** composite sample of effluent shall contain no more than:

<<Insert Value>> milligrams per litre of <<copper / chromium etc>>.

<<Condition No.(ii)>>) The limit for any of the parameters set out in Condition <<Insert No.(i)>> may be exceeded where, in any series of effluent samples taken at regular but randomised intervals over a year, comprising a number within a range listed in the first column of the table at Appendix 1 to this licence, no more than the corresponding number of samples in the second column of the said table exceed the applicable limit for that parameter.

<<Condition No.(iii)>>) Notwithstanding Condition <<Insert No.(ii)>> above, any instantaneous **OR** composite sample of effluent shall contain no more than:

<<Insert Value>> milligrams per litre of <<copper / chromium etc>>

Annex III: Key consultation responses to the Policy and Guidance Consultation.

Key theme responses received from the consultation.

SEPA response

It is too onerous for operators to monitor for all listed substances, to ensure that those listed substances which are liable to contain are notified to SEPA.

Re emphasis of the requirement that for priority substances, priority hazardous substances and any remaining List I substances, SEPA will consider that a discharge is *liable to contain* a listed substance if the listed substance is:

- Permitted to be discharged into the sewer upstream of the discharge or otherwise known to be present in trade process discharges in the catchment (e.g. Scottish Water trade effluent consent, PPC permit); or
- Known to be added to the effluent at the discharge's site as a result of on-site activities;
- Known to be in the effluent and detected by chemical analysis in the discharge at or above the minimum reporting value.

There is no allowance for industrial sites to expand production and to keep within the remit of reducing listed substances.

Addition of sentence to reflect sites ability to expand, whilst ensuring appropriate standards are met.

Where Priority Substances exceed the specified thresholds, SEPA will require an action plan which aims to progressively reduce the discharge of these substances. Where a site or operation increases production SEPA will consider an application for an increase in the loadings.

The 2x EQS is considered to restrictive for operating practice.

SEPA considered a variety of parameter prior to consultation (EQS, 2x EQS and 5x EQS). The 2x EQS provided appropriate environmental protection whilst allowing industry to operate. This is a criteria for when SEPA starts to monitor, the consent limits for PS and SP will be determined in line with current guidance.

The eliminate requirement of all metals is too onerous.

SEPA are only seeking to eliminate Priority Hazardous Substances, and to reduce Priority Substances and Specific Pollutants. The standards used have been generated from the United Kingdom Technical Advisory Group (UKTAG).