

NRA-Water Quality 41



939



**CHARGING FOR
DISCHARGES
S C H E M E**

GUIDANCE TO THE
ENGINEERING INDUSTRY



NRA

National Rivers Authority

CFD/ENG001

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ENVIRONMENT AGENCY

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Due Date

WHAT IS THE SCHEME FOR?

The National Rivers Authority (NRA) has introduced a charging scheme to recover the cost of operations for control and monitoring of consented discharges and associated receiving waters. With effect from 1 JULY 1991, the NRA will levy annually a charge for each consented discharge and effluent to recover these costs. The current arrangements for consent application charges are incorporated in this scheme.

This brochure provides guidelines on how the scheme applies to the Engineering Industry and should be used with the Explanatory Booklet "Proposed Scheme of Charges in respect of discharges to controlled waters - 1991" which can be obtained from NRA Regional Offices.

APPLICATION OF THE SCHEME

1. GENERAL

The charge will be levied for all discharges of effluents authorised by consents. There is no appeal against the payment of charge.

2. STATUS OF CONSENTS

There will be consents still in force for sites which have been closed or restored or, where the consent conditions do not reflect the actual nature, composition and volume of the discharge.

Such consents are eligible for,

- a) revocation where discharge has ceased, or
- b) a review of the consent where the discharge has changed.

However, the NRA will only revoke, or review consents on justifiable grounds.

Some consents have been granted unconditionally and are known as DEEMED CONSENTS (SEE 1.8 and 2.5 page 9).

3. VALIDATION OF CONSENT INFORMATION

The NRA is currently undertaking a validation of consents, and plans to complete this for the majority of discharges during 1991.

Consent holders will be contacted where necessary.

The validated consent information will be used to determine the charging parameters and calculate the annual charge.

Reviews are to be carried out where existing conditions are no longer appropriate but it is likely this task will extend beyond the commencement date of the charging scheme. Therefore, the Authority has made provision for temporary charging to avoid inappropriate charges.

If you have any queries regarding the validation of your consented discharge and its charging parameter banding and factors, please consult your local NRA office.

4. MULTIPLE DISCHARGES AND EFFLUENTS

A consent may authorise the discharge of one or more effluents via one or more outlets. Guidance on the charging of these, is given in the section on Guidance For Charging Multiple Outlets - Page 4.

5. CHARGING FORMULA

The charging formula is based on:

1. the consented volume
2. the content of the discharge (its chemical and physical composition)
3. the type of receiving water

These charging parameters and their associated banding and weighting factors are detailed in the Charging Scheme Booklet. The charging bands and the charge formula are given in Appendix A.

6. PAYMENT

- a) The Application Charge shall be due and payable in full on the making of an application or the giving of a consent if no application is made.
- b) Payment of the Annual Charge shall be due on 1 April except in the first year of the Scheme when it shall be due on the commencement of the Scheme.
- c) If a consent is given after 1 April the Annual Charge is due 28 days after issue of the consent.
- d) Where discharges are from premises subject to authorisations issued by Her Majesty's Inspectorate of Pollution (HMIP) under the Environmental Protection Act 1990 and involve NRA regulation and monitoring, the NRA costs will be determined under the NRA Scheme. The NRA charges will be submitted to HMIP for collection and reimbursement of the NRA.

7. FURTHER INFORMATION

The guidance given in this document will cover the majority of consented discharges.

For various reasons, however, there may be some discharges or circumstances of discharge, which are not readily categorised.

In such cases, the discharger should seek advice from the relevant NRA Regional Office.



GUIDANCE FOR CHARGING MULTIPLE OUTLETS

1. GENERAL

It has been necessary, for charging purposes, to closely define a chargeable discharge. The charging policy, together with illustrations, are set out below. The same rules will apply for both annual and consent application charges.

2. GLOSSARY OF TERMS

CONSENT:	The authorisation of a discharge.
OUTLET:	The structure through which the discharge is made into the water environment.
DISCHARGE:	One or more effluents as defined in the attached table.
EFFLUENT:	The material i.e., trade, sewage or other matter which is discharged from a site.
SITE:	An area of premises (including land) occupied by a single discharger, which gives rise to an effluent.

3. CHARGING POLICY

Discharges which are consented will be charged separately although several may be included in one document.

Example 1

SITE WITH MULTIPLE DISCHARGE OF DIFFERENT EFFLUENTS WITH SEPARATE OUTLETS

(including sewage treatment works and industrial sites.) Each separate discharge will have a separate charge. For example, treated final effluent, partially treated storm tank effluent and untreated storm overflow will have a separate charge. Separate storm overflows from the same sewer or drain, but at different locations, will also have separate charges.

Example 2

SITE WITH MULTIPLE DISCHARGES OF DIFFERENT EFFLUENTS FROM ONE OUTLET

(including sewage treatment works and industrial sites.)

2a) Each separate discharge will have a separate charge.

For example, treated final effluent, partially treated storm tank effluent and untreated storm overflow, will have a separate charge.

2b) If 'different' effluents receive common or no treatment, or treatment such that it is not necessary for the effluents to be backsampled and monitoring takes place

at a single point, only one charge will apply.

2c) If a different effluent recombines with a treated effluent, it will be treated as two separate discharges and each will have a charge, and similarly if it does not recombine.

2d) If an emergency or storm overflow bypasses a treatment system, it will be considered as a separate discharge and will be charged in addition to other discharges.

Example 3

SITE WITH ONE DISCHARGE OF EFFLUENT AND MULTIPLE OUTLETS

(including sewage treatment works, where final effluent may be discharged at different points, depending on the grass plots in use at the time.)

3a) If the discharge is to only one receiving water, this will count as one discharge.

3b) If the discharge is to more than one receiving water, then two charges will be made, unless groundwater or land is one of the two receiving waters, then only one charge will be made, the discharge to ground/land being ignored for charging purposes, i.e. considered part of the treatment.

Example 4

SITE WITH A DISCHARGE OF SEVERAL COMMON EFFLUENTS AND ONE OUTLET

(including industrial premises with cooling water from separate parts of the site combining and discharging in one place.) The effect on the receiving water from the combined discharge, will be considered and will count as one discharge and one charge will apply. It would be appropriate for the consent conditions to apply at the point of discharge in a revised consent.

Where separate consents permit the discharge of a number of effluents that discharge via a single outlet, but are monitored separately at agreed sampling points, example 2a) will apply.

Example 5

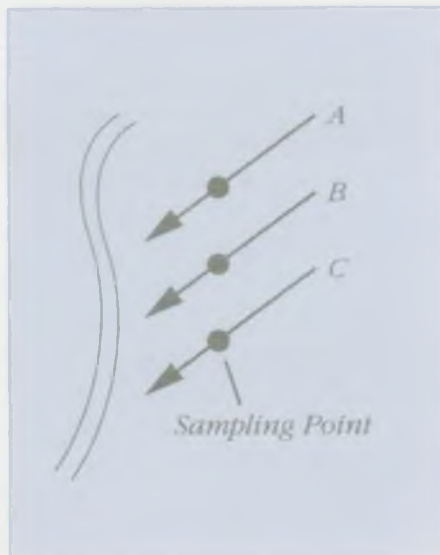
SITE WITH DISCHARGES OF SEVERAL COMMON EFFLUENTS AND MULTIPLE OUTLETS RECEIVING NO TREATMENT

(including industrial premises and quarries, opencast sites, and fish farms which count as one discharge.)

Where different treatment is provided, the effluents are no longer common and should be dealt with accordingly.

MULTIPLE DISCHARGE ROUTES - ENGINEERING INDUSTRY

EXAMPLE 1



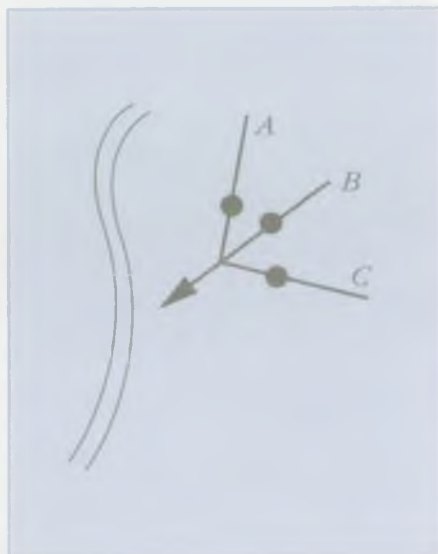
3 DISCHARGES:

- A) Discharge of tip drainage
 - B) Direct cooling water
 - C) Settling lagoon water
- via 3 separate discharges and sampling points.

i.e.

3 Annual Charges & 3 Application Charges

EXAMPLE 2(A)



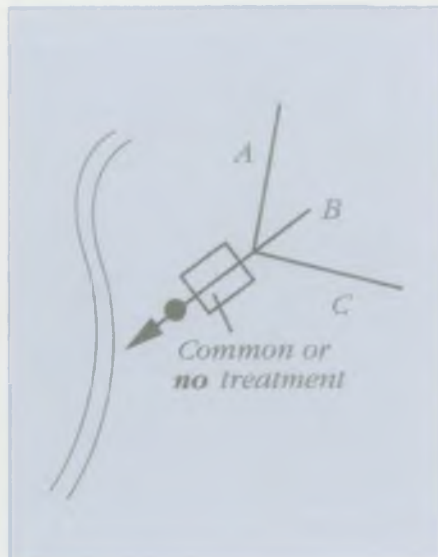
3 DISCHARGES

As example 1 - but discharge is from a common outlet.
Effluents sampled separately to monitor separate conditions.

i.e.

3 Annual Charges & 3 Application Charges

EXAMPLE 2(B)



1 DISCHARGE

- A) Cooling water - purge
- B) Stockyard drainage
- C) Boiler blowdown effluent

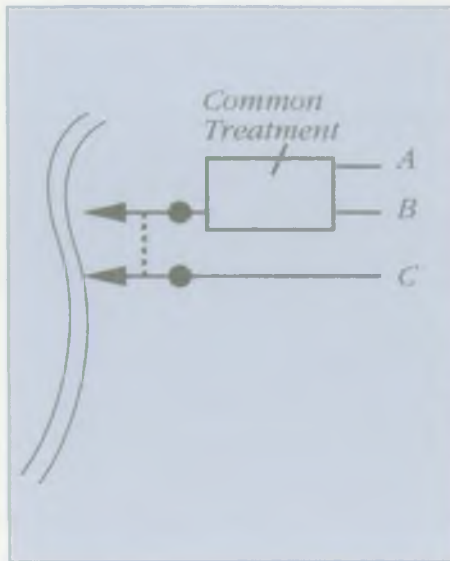
Common effluent, single sample only to monitor common conditions.

i.e.

1 Annual Charge & 1 Application Charge

MULTIPLE DISCHARGE ROUTES - ENGINEERING INDUSTRY

EXAMPLE 2(C)



2 DISCHARGES: ONE OR TWO OUTLETS

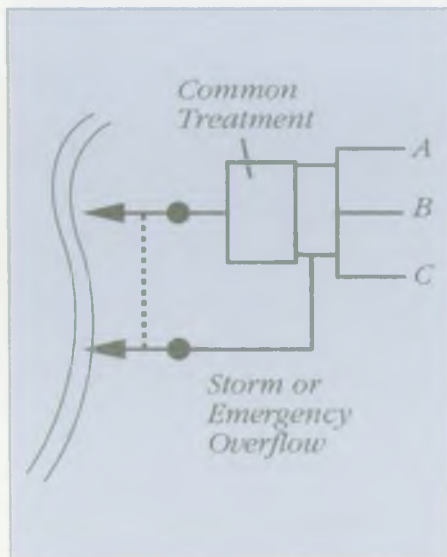
- A) Metal processing water
- B) Site drainage
- C) Sewage effluent

Two separate samples required to monitor separate conditions.

i.e.

2 Annual Charges & 2 Application Charges

EXAMPLE 2(D)



2 DISCHARGES: ONE OR TWO OUTLETS

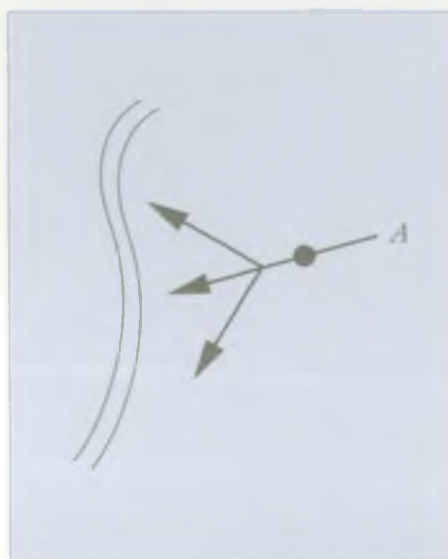
- A) Metal processing water
- B) Coal stockyard drainage
- C) Site drainage from waste disposal areas and active workings

Two separate samples required to monitor separate conditions.

i.e.

2 Annual Charges & 2 Application Charges

EXAMPLE 3(A)



1 DISCHARGE

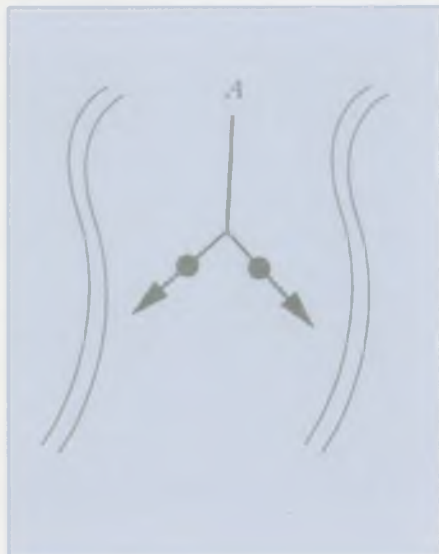
Discharge of single effluent from variable outlets from settlement lagoon system - single sample required.

i.e.

1 Annual Charge & 1 Application Charge

MULTIPLE DISCHARGE ROUTES - ENGINEERING INDUSTRY

EXAMPLE 3(B)

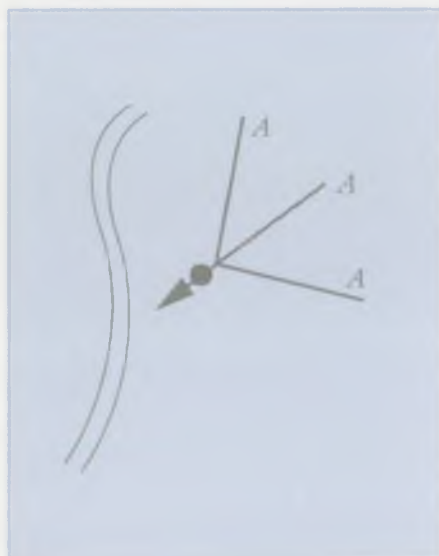


2 DISCHARGES

As example 3 (A) but to a different watercourse - both effluents sampled.

i.e.
2 Annual Charges & 2 Application Charges

EXAMPLE 4

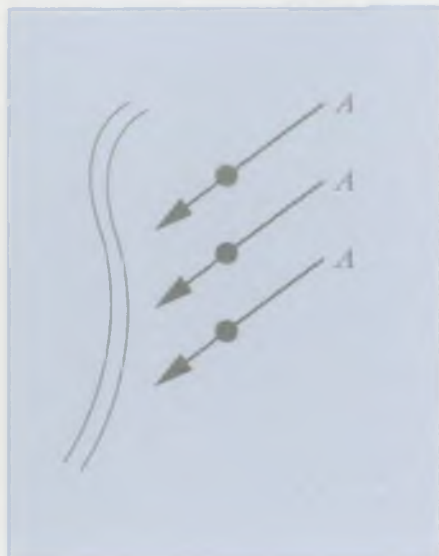


1 DISCHARGE

Eg. Discharge of 3 lagoon effluents or 3 cooling waters at one outlet with same treatment and one set of conditions - single sample required. 3 volumes are summated for charging

i.e.
1 Annual Charge & 1 Application Charge

EXAMPLE 5



1 DISCHARGE

Eg. 3 discharges of same effluent cooling water (direct) or lagoon effluent.

3 volumes are summated for charging.
Single sample required from any outlet.

i.e.
1 Annual Charge & 1 Application Charge

SELECTION PROCEDURES FOR CHARGING PARAMETERS

1. VOLUME BANDING

1.1 GENERAL

Volume is a key parameter contained in a consent which has great influence on the frequency, and hence costs, with which a discharge is sampled and inspected. Volumes have been ranged into bands and given a weighting factor to reflect costs of monitoring. The volume bands and factors are detailed in the charging scheme booklet and Appendix A.

1.2 SELECTION PROCEDURES FOR CHARGEABLE VOLUME

The chargeable volume will usually be taken as the maximum daily volume limit contained in the consent, subject to exceptions as described later in this section. This value is then allocated to the appropriate volume band, i.e. a maximum daily volume of 50m³/day would be put in band >20 - 100m³.

1.3 INDUSTRIAL PROCESS EFFLUENTS

The volume to be used will normally be the volume specified in the consent. This is usually stated as the maximum daily volume in cubic metres per day (m³/DAY). (For process effluents, where a daily dry weather flow may be specified, that rate shall be taken to be the maximum daily volume in m³/DAY).

Where a process effluent contains a significant input of rainfall and surface water drainage (which cannot be dealt with separately by the terms of the consent), then the maximum daily volume shall be taken to be 3 times the daily dry weather flow.

There will be cases where the consented flow does not realistically represent the volume of discharge which is actually made, e.g. pumped effluents, since the consented volume often represents the maximum duty of pumps installed for emergency situations.

This results in peak discharges, which only occur in emergency situations in order to protect life and limb. These discharges are afforded a defence for causing pollution by Section 108(2) of the Water Act 1989, but are not exempt from the consenting procedures.

In such cases, a normal maximum daily volume should be assessed and agreed with the NRA as a basis for charging.

1.4 COOLING WATER DISCHARGES

The volume used will be the maximum daily (24 hours) volume specified in the consent, or, where this is inappropriate for the normal operational circumstances, an

assessed volume should be agreed with the NRA.

The different types of cooling waters and their relative consenting and monitoring requirements, are reflected in the content banding (see 2.7, page 10).

1.5 SEWAGE EFFLUENTS

The chargeable volume will generally be based on the consented volume. Where no volume is specified in the consent, the volume band is >20 - 100m³/day (Factor 1.0). For domestic sewage effluent (i.e. containing no trade effluent) from a plant serving less than 25 people, the volume band is 0 - 5 m³ (Factor 0.4). However, it is likely that no charge will be levied in the latter case in the scheme period.

1.6 DISCHARGES WHICH ARE RAINFALL AND/OR GROUNDWATER RELATED

GENERAL

Surface water drainage from premises is classified as:

- i) Site Drainage - ie, rainfall and/or groundwater related drainage from trade premises, which is contaminated by trade process activities and consented for contaminants. (Contaminated site drainage requires a consent for discharge under the Water Act 1989).
- ii) Surface Water - ie, rainfall and/or groundwater related drainage not contaminated by trade process activities or sewage effluent. (Uncontaminated surface water does not legally require a consent* for discharge, although a discharger may apply for and may be granted or refused consent at the discretion of the NRA.)

* N.B. There will be situations where surface water drainage to land and streams needs to be controlled for pollution prevention purposes. Control of these discharges is provided for, under section 107 (2) (a) and (b) of the Water Act 1989, by the serving of a PROHIBITION NOTICE. A prohibition notice will be served to prevent a discharge being made or, the discharge may be made subject to a consent with conditions. The latter is eligible for an annual charge.

SITE DRAINAGE VOLUMES

The chargeable volume will be as stated in the consent and allocated to the relevant band, unless it is inappropriate to specify a daily volume when the >20 100 m³ band is allocated.

Surface water drainages from factory surfaces, raw material and product stocking sites, electricity substations, waste disposal sites, etc, for which a consent has been obtained but does not contain a volume figure, will be allocated to

volume band 20 - 100 m³. General drainage from these and other industrial areas which is discharged together with process effluents will include the element for surface water under the assessed volume of process effluent as detailed in 1.3.

SURFACE WATER VOLUMES

The chargeable volume will NOT be as stated in the consent, but will be allocated to the 0 - 5 m³/day band (Factor 0.4).

1.7 OTHER DISCHARGES

Emergency, batch and trade discharges which are permitted to discharge on not more than 4 days per year where no volume is stated in the consent, are assumed as less than 5 m³/day. This situation will be appropriate to emergency discharges from pumping sumps and overflows from flow balancing tanks/ponds. Combined emergency and storm overflows are allocated to the >20 - 100 m³ band.

1.8 DEEMED CONSENTS

These consents are temporary and will be reviewed in due course. They have been granted unconditionally in terms of numeric volume and quality limits. The volume to be allocated is the >20 - 100 m³ band.

Descriptive consents with no numeric volume limits are also allocated to this band.

The content band allocated will depend on the type of effluent, i.e. sewage or trade effluent, site drainage, etc.

2. CONTENT BANDING

2.1 GENERAL

The chemical and physical content of a consented discharge is particularly important in terms of potential impact on river quality. Consents usually impose content quality conditions, which are set in order to achieve the River Quality Objectives and/or Environmental Quality Standards designated for the receiving water.

Any discharge containing specified conditions requires monitoring to assess compliance with consent. The conditions and subsequent monitoring are commensurate with the significance of the effect of the discharge on the river, and pollution risk.

These chemical, physical and other quality conditions have been grouped into bands which reflect these effects and could be set in numerical and/or descriptive terms.

The bands reflect increased complexity and costs of monitoring and the relative significance in terms of pollution impact as shown by the weighting factors.

These are detailed in the Charging Scheme Booklet and Appendix A.

2.2 SELECTION PROCEDURES FOR CONTENT BAND

An effluent will normally be placed in the content band which corresponds to the consent condition attracting the greatest weighting factor, except where the band specifically excludes (or includes) a designated type of effluent.

Further guidance is given in the content band guidance note -Appendix B.

2.3 WHERE A CONSENT STATES NUMERIC QUALITY CONDITIONS

The banding into which the effluent falls is determined by examining the consent conditions and selecting the highest weighted CONSENTED DETERMINAND. For example, an effluent which contained numerical limits for solids, BOD and PCB, would fall into Group A - PCB being the determinand attracting the highest weighting factor.

NB: A 'CONSENTED DETERMINAND' means one which is PERMITTED SUBJECT TO NUMERICAL LIMITS, including consents containing incremental conditions or comparative conditions relating to abstracted and returned water, but not one which is prohibited entirely or by conditions specified in descriptive terms.

2.4 WHERE A CONSENT STATES PROHIBITIVE CONDITIONS

Where a consent states that PCB (Band A) or Cyanide (Band B) must not be present in a process effluent, then the allocated band would not be A or B, but C or D (provided no other determinands of Band A or B are numerically limited).

Conversely, where the effluent, say site drainage, would normally be allocated to Band E, the inclusion of a numerically limited determinand of Band B, would place the effluent in Band B for charging purposes.

2.5 DEEMED CONSENTS

(and descriptive consents with no numeric quality conditions) These discharges are defaulted to Bands D, E, F or G depending on type of effluent. They cannot be placed in Bands A, B or C.

2.6 MIXED EFFLUENT DISCHARGES

There may be process effluents or cooling waters of high volume/low content which are discharged in admixture with relatively low volume/high content effluents, where the consent conditions apply to the total combined volume and quality.

This could lead to disproportionate charging. In these circumstances, subject to regulatory and pollution control requirements being satisfied, separate conditions of volume, quality and monitoring for the component effluents, could be stipulated within the consents by review.

2.7 COOLING WATER DISCHARGES

DIRECT COOLING WATER

- (a) Where the cooling water is direct i.e. does not come into contact with process materials and is without the addition of biocides (excluding chlorination) or other water treatment chemicals and returned directly to the river without passing through cooling towers, only on-site monitoring for volume, temperature, pH and chlorine is normally required. Thus a low content factor applies (Band G).
- (b) Where other numerically limited determinands are applied to direct cooling water, e.g. because of the addition of water treatment chemicals, Band E is allocated irrespective of the determinand types.
- (c) Where direct cooling water contains trade and sewage effluents and is consented for determinands to control such effluents, the relevant content Band A, B, C or D will be applicable. However, the provisions of Section 2.6 may be applied.

NON-DIRECT COOLING WATER

Cooling waters, which use recirculation systems and cooling towers, are usually operated on a purge system, and are normally controlled by consent limits which require increased monitoring compared to direct cooling water discharges. The content Band for non-direct discharges is D.

Any non-direct cooling waters consented for determinands in Bands A or B with numeric conditions, will be allocated to those bands unless the circumstances as described in Section 2.6 are applicable.

3. RECEIVING WATER BANDING

3.1 GENERAL

Consents to discharge usually stipulate the watercourse into which the effluent or effluents can be discharged.

For charging purposes, there are 4 categories of receiving water. Weighting factors are determined by taking account of the varied frequency of both discharge and related environmental monitoring, with particular regard to the analytical cost and complexity of tidal water sampling.

3.2 RECEIVING WATER BANDS

DESCRIPTION	WEIGHTING FACTOR
G GROUNDWATERS - (any water contained in underground strata) and land	0.5
C COASTAL - waters which extend seaward from the baselines of estuarial waters and high water marks	0.8
S INLAND SURFACE WATERCOURSES AND RIVERS - waters as defined by Section 103 of the Water Act 1989 and above the freshwater limit	1
E ESTUARIAL - waters between the estuarial baseline and the freshwater limit	1.5

3.3 ALLOCATION OF BAND

This will be done by the NRA by reference to maps drawn up to the above baselines and saline limits. The maps are displayed at NRA Regional Offices.

4. CALCULATION OF CHARGE

The Annual Charge will be calculated by the NRA from the charging bands determined from the consent, using the formula and factors listed in Appendix B.

THE CHARGE FORMULA

The charges will be assessed on the following basis:

$$\text{Annual charge } \pounds = R (V_b \times C_b \times RW_b)$$

where R = national unit cost which is presently estimated at £270.

V_b = Weighting factor based on volume band.

C_b = Weighting factor based on content band.

RW_b = Weighting factor based on receiving water band.

EXAMPLE

a) A discharge of foundry gas scrubber effluent of 1500 m³/day to an inland watercourse with consented quality conditions for solids and pH only, will be charged as follows:

	Factor
Volume Band 1000 -10,000 m ³	3.0
Content band - D	2.0
Receiving water - surface - S	1.0
National Unit Rate - R	£270

$$\begin{aligned} \text{Therefore charge} &= R(V_b \times C_b \times RW_b) \\ &= \pounds 270 \times 3.0 \times 2.0 \times 1.0 \\ &= \pounds 1620 \text{ per annum.} \end{aligned}$$

b) The same discharge with additional numerically limited toxic metals (e.g. nickel, lead, barium) would have a content band of B (Factor 5.0)

$$\begin{aligned} \text{Therefore charge} &= \pounds 270 \times 3.0 \times 5.0 \times 1.0 \\ &= \pounds 4,050 \text{ per annum.} \end{aligned}$$

NB: Further examples for discharges from the engineering industry are given in Appendix C.

APPENDIX A: CHARGING BANDS AND WEIGHTING FACTORS

CATEGORY	BAND	FACTOR
Volume (M ³ /DAY)	0-5	0.4
	>5-20	0.7
	>20-100	1.0
	>100-1,000	2.0
	>1,000-10,000	3.0
	>10,000-50,000	5.0
	>50,000-150,000	9.0
	>150,000	14.0
Content	A	15.0
	B	5.0
	C	3.0
	D	2.0
	E	1.0
	F	0.5
	G	0.3
Receiving Water	Groundwater & Land	0.5
	Coastal	0.8
	Surface	1.0
	Estuarial	1.5

APPENDIX B. GUIDANCE NOTES TO CONTENT BANDS

BAND A

Trade or sewage effluents:

- i) *Where the consent conditions contain any of the following substances:*
 - Pesticides, including organotins
 - Polychlorinated Biphenyls
 - Polycyclic Aromatic Hydrocarbons
 - 'Complex' Phenolic Compounds
 - 'Complex' Organic Solvents, including HCB
 - Plasticisers
 - Fungicides
 - Herbicides
- ii) Where the consent conditions include viruses.
- iii) Where the consent conditions specify Toxicity tests to determine compliance other than those specified in Band B (ii).

EXAMPLES

Complex chemical trade effluents, sewage effluents containing pesticides, pesticide washings and sheep dip effluents where numeric conditions are applied.

Consented determinands falling in Band A, will require sophisticated and costly technical/analytical techniques.

BAND B

Except where the consent falls in Band A, or when Band F (ii) applies, trade or sewage effluent where the consent conditions contain any of the following substances:

- (i) Metals and Metalloids
 - Cyanides
 - Sulphides
 - 'Simple' Phenolic Compounds
 - Bacteria
 - 'Simple' Organic solvents
- (ii) Where the consent conditions include rapid bacterial toxicity tests.

EXAMPLES

Process waters from iron and steel industries/non ferrous metal industries, less complex chemical trade effluents, ash lagoon effluents, some mine water discharges (with non ferrous metal contents), farm effluent with metals, sewage effluents with metal limits, refuse tip leachates where numeric conditions are applied.

Simple phenolic compounds and simple organic solvents are substances which require significantly less costly monitoring techniques than similar compounds in Group A.

NB.

There may be circumstances where the high content factor of a mixed effluent, e.g. cooling or minewater of high volume, is caused by the inclusion of a low volume, high content process or site drainage.

In such cases, the NRA may consider the separate monitoring, consenting and charging of each effluent accordingly, subject to regulatory requirements being satisfied.

BAND C

Except where the consent falls in Band A or B:

- i) Sewage effluent with numeric conditions other than volume or those specified in Band E(ii).
- ii) Trade effluent of an organic nature with numeric conditions other than volume or those included in Band G(ii).

EXAMPLES

- i) ALL sewage effluents WITH NUMERIC CONDITIONS OTHER THAN VOLUME, with a volume of $>5\text{m}^3$ including sewage effluent from premises NOT used only for domestic purposes (WITH NUMERIC CONDITIONS OTHER THAN VOLUME).

Premises NOT used only for domestic purposes will include:-

Water Services PLC works, Local Authority works, Public Houses, Restaurants, Golf Clubs, Caravan Sites, Garden Centres, Stables, Shops, any Trade Premises, etc.

- ii) Food industry effluents, abattoir effluent, farm effluents, refuse tip leachates, etc.

NB:

Sewage and Trade Effluents of an Organic Nature - Liquids containing organic material and controlled by a determinand or parameter including one or more of Biochemical Oxygen Demand (BOD), BODATU; Chemical Oxygen Demand (COD); Total Organic Carbon (TOC); Permanganate Value (PV); Total Organic Nitrogen (TON), and Ammoniacal Nitrogen (NH₃) will usually fall into this band.

BAND D

Except where the consent falls in Bands A, B or C:

i) Sewage effluent with no numeric conditions other than volume, or only descriptive conditions other than those specified in Band E (ii).

(ii) All other discharges of trade effluents other than those specified in Bands E, F and G.

NB:

Annual charges will not be made for discharges of sewage effluent of 5 cubic metres or less per day provided that the sewage does not contain trade effluent.

EXAMPLES

i) All sewage effluents with descriptive conditions discharging in excess of 5 m³/D.

ii) Water treatment plant discharges, purges, blowdowns and quench waters, non domestic swimming pool discharges, mineral washwaters. Purge water from recirculatory systems with cooling waters, ash lagoon effluents.

BAND E

i) **SITE DRAINAGE** - site drainage is defined as rainfall or groundwater related drainage from trade premises, which is contaminated and consented for that contaminant.

ii) **DIRECT COOLING WATER** - Direct cooling water is defined as a discharge of cooling water which does not come into contact with a process and is not modified by additions of biocides* or other water treatment chemicals.

NB.

* Discharges of **direct** cooling water having only consent conditions of volume, pH, chlorine and temperature will fall in Band G.

Similar discharges with other determinands with numeric limits in the consent, will fall in Band E.

Purge and blowdown discharges from cooling systems, ie **non direct**, will fall into Band D.

iii) Any discharge of sewage from a sewerage system, storm and emergency discharges at sewage treatment works unless consent conditions direct to Band A or B, will fall in Band E.

EXAMPLES

i) Oil contaminated site drainage; commercial vehicle park drainage.

ii) Direct cooling waters with numeric conditions other than volume, temperature pH and chlorine.

BAND F

i) **DEFINITION OF SURFACE WATER** - surface water or groundwater or a mixture of the two not contaminated by trade or sewage effluent or any other matter.

ii) **MINE AND QUARRY WATERS** must be discharged solely to **prevent interference** with the extraction technique, to fall in this band. If the consent includes no conditions (not one or more), allocate this band.

Any site drainage that cannot realistically be separated from process waters and does not materially affect the quality, can be dealt with in admixture in this band.

This band will not include site drainage from spoil heaps, stocking areas, mineral wash effluents.

BAND G

All direct cooling waters having either no conditions or only conditions for one or more of volume, temperature, pH and chlorine will be placed in this band.

DEFINITION OF TRADE EFFLUENT

Any effluent from premises which are used for any trade or industry; or from premises wholly or mainly used (whether for profit or not) for agriculture, aquaculture and scientific research or experiment, other than surface water and domestic sewage. Effluents should be included in this band only if they arise from processes as distinct from site drainage.

APPENDIX C: CHARGES FOR DISCHARGE - General examples

N.B. Total Units is product of volume, content and waters factor

TYPE OF DISCHARGE	VOLUME BAND		CONTENT		RECEIVING WATERS		Total Units (Vx Cx Rw)	Unit Cost £	Annual Charge £
	VOLUME BAND m ³ /d	FACTOR Vb	CONTENT BAND	FACTORCb	WATERS	FACTOR RWb			
	0 - 5	0.4	A	15.0	G = Ground	0.5			
	>5 - 20	0.7							
	>20 - 100	1.0	B	5.0	C = Coastal	0.8	'x'	270	'y'
	>100 - 1,000	2.0	C	3.0	S = Surface	1.0			
	>1,000 - 10,000	3.0	D	2.0	E = Estuarial	1.5			
	>10,000 - 50,000	5.0	E	1.0					
	>50,000 - 150,000	9.0	F	0.5					
	>150,000	14.0	G	0.3					
ENGINEERING EFFLUENTS									
COOLING WATER (Non-Direct)									
Medium/Large (Purge)	>10,000 - 50,000	5.0	D	2.0	S	1	10	270	2,700
COOLING WATER (Direct)									
Large Volume - pH, Chlorine and Temperature conditions only	>150,000	14.0	G	0.3	C	0.8	3.4	270	907
WATER TREATMENT									
Filter backwash	>100 - 1,000	2.0	D	2.0	S	1.0	4	270	1,080
Ion Exchange	>1,000 - 10,000	3.0	D	2.0	S	1.0	6	270	1,620
SEWAGE TREATMENT									
Small/Medium Works	>100 - 1,000	2.0	C	3.0	S	1.0	6	270	1,620
SITE DRAINAGE									
Surface Water (uncontaminated)	No flow conds. (<5)	0.4	F	0.5	S	1	0.2	270	54
Surface Water (with trade effluent)	No flow conds. (>20 - 100)	1.0	E	1.0	S	1.0	1	270	270
TIP DRAINAGE (with metals)									
	>20 - 100	1.0	B	5.0	S	1.0	5	270	1,350
FLUE GAS SCRUBBER									
Trade effluents (with metal conds)	>1,000 - 10,000	3.0	B	5.0	S	1.0	15	270	4,050
SETTLEMENT LAGOON									
Trade effluents (without metals)	>1,000 - 10,000	3.0	D	2.0	S	1.0	6	270	1,620
STEELWORKS									
Process effluent (with metals and cyanide)	>1,000 - 50,000	5.0	B	5.0	S	1.0	25	270	6,750

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