

# Preparing national regulations for water resources management

Principles and practice



Food  
and  
Agriculture  
Organization  
of  
the  
United  
Nations



# Preparing national regulations for water resources management

Principles and practice

by  
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Development Law Service  
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## FOREWORD

Essentially finite stocks of freshwater resources have been coming under increasing pressure to satisfy the ever-growing economic, social and environmental demands of today's complex, interdependent societies. In response to this pressure, Governments virtually everywhere are substituting themselves for individual landowners as the masters or simply the guardians of water resources. As a result, Government-administered legislation regulating the development, use and protection of water resources has almost everywhere supplanted litigation of basic tort and property doctrines as the primary framework of rights and obligations for all those who, in the public and in the private sector, use and manage water resources. Enactment of such legislation involves settling issues of policy and principle on the one hand, and matters of implementing detail on the other hand. The two facets of water resources legislation are complementary and interdependent, yet it is often found that policies and principles fail to be implemented precisely for lack of the necessary legislation giving them effect. As a result, legislation laying down policies and principles of water resources management may remain without practical effect and fall quickly into disuse.

This Manual is intended to contribute to bridging the gap between policy and implementation in the field of water legislation. The objective of the Manual is to provide, in a form easily accessible to a multidisciplinary audience, original analytical material on, and actual legislative examples of, the kinds of legal machinery which are needed to operationalize the policies and principles enshrined in water resources management legislation. To a certain extent, this Manual follows on and complements the then United Nations Economic Commission for Asia and the Far East (ECAFE) Study on **Guidelines for the Drafting of Water Codes** (New York, 1973), the focus of which had been on matters of principle.

This Manual has been written by Mr. S. Burchi, Senior Legal Officer with this Service, who has carried out the bulk of the work while a guest of the R.B.A. - Centre for Comparative Studies in River Basin Administration, Delft Technical University, The Netherlands, from December 1991 to March 1992. FAO is indebted to the R.B.A. Centre for the support extended to Mr. Burchi during his tenure there in pursuit of this publication project. The assistance of Mr. B. Picciché in the research and collection of the legislative material for this publication, and the secretarial assistance of Ms. B. Moauro-Pacifico, are gratefully acknowledged.

Lawrence Christy  
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## **INTRODUCTION**

This publication illustrates the type of legal machinery for the management of freshwater resources which is usually reflected in subordinate water resources management legislation. There is no pretense here to encyclopaedic exhaustiveness of the ways in which water resources management is dealt with by subordinate legislation. Rather, this publication has been born with aims and limitations which need to be explained.

### **1. The target audience of the Manual**

This Manual has been written having in mind a composite target audience consisting of lawyers and non-lawyers who, in one capacity or another, are engaged in the framing of subordinate legislation for water resources management. This is why a conscious effort has been made in the descriptive part of the Study to avoid cryptic legal language, and to make the material accessible to a broad audience. It is hoped that, as a result, this publication will provide food for thought and practical examples for the reference and use of the various disciplines involved in the writing of subordinate water legislation.

### **2. Scope and purpose of the Manual**

#### **(a) Purpose:**

This publication is intended for use both as a source of conceptual material to assist in giving systematic thought to the typical substance of subordinate water management legislation, and as a reference for those actually engaged in the drafting of such legislation. It is not intended to offer or imply a critical review and assessment of the performance of the legislation presented.

The language limitations mentioned at sub-paragraph (b) below notwithstanding, and with due allowance for the diversity of legal systems, it is believed that this publication will be of relevance and practical use to a broad spectrum of users, regardless of language. The variety of approaches to, and legal machinery for, giving practical effect to the prescriptions of principal water legislation through the implementing regulations presented in this Manual has implications for a wide range of countries. For the rationale that prompts the adoption of one or the other legal mechanism of implementation, and the very nature of the mechanism itself are shared across national and language barriers and even across legal systems. What varies is generally the formal configuration of a particular mechanism, seldom its substance. As a result, even though admittedly the examples of actual subordinate legislation presented in this Manual may be of greater practical value to a restricted group of countries, it is hoped that users from other countries will find the legislative material and the narrative which complements it of value from a comparative law perspective.

(b) Language, vintage and status of the legislation selected

Practice varies considerably with regard to the style of drafting and to the contents of subsidiary water management legislation. With particular regard to the former, for the sake of both expediency of the research and consistency of the supporting legislation presented, the scope of the basic research has been restricted to legislation available in the English language - both the legislation of countries where English is the official language, and official translations of other legislation into English. Exceptionally, unofficial translations of legislation of particular interest have been also presented in the Manual.

An effort has been made to identify legislative examples of recent vintage. Recourse has also been made to less recent legislation which could usefully illustrate a particular mechanism or approach of significance to today's circumstances, in the belief that the comparative usefulness of legislation is not measured only by its recentness or even its being still in force.

(c) Formal and substantive criteria for the selection of legislation

From a more general formal standpoint, this Manual is concerned with, and based upon, legislation setting out the details of implementation of policies, principles, approaches and mechanisms which are typically reflected in principal legislation. Such details are typically found in "subordinate" or "subsidiary" legislation variously styled Regulations, Rules, Orders, Decrees and By-laws. However, principal legislation may go beyond the confines of policy and principle and provide also for matters of implementing detail, i.e., matters which could be legitimately regarded as the province of subordinate legislation. Since, as a result of these "borderline" cases, a substantive criterion for the selection of legislative material for inclusion in this Manual would have had significant judgmental overtones, it was decided at the outset to adopt a formal criterion based on the type and denomination of pertinent legislative instruments. At the same time, however, an allowance has been made in particular for implementing legislative material which is formally incorporated in an Act of Legislature and has thus the formal status of primary legislation, and yet it so plainly sets out implementing substance that it is detached from the main body of the Act and is annexed to it as a "Schedule" or appendix. This has been found to be rather typical of British law-making style, where in a number of instances the substance of subordinate legislation is appended as Schedules to principal legislation, of which the Schedules form an integral part. With this exception, it is in legislation belonging to the "subordinate" category of lawmaking mentioned at paragraph 3 below that the matters of implementing detail which form the substance of this Manual are found.

(d) Substantive scope of coverage of the Manual

The Manual covers a number of "functions" regarded as fairly representative of water resources management. Managing available water resources, i.e., allocating such resources to users, preventing and abating water pollution from a variety of "point" and "non-point" sources, and controlling development of, respectively, underground and surface water resources, are given a central role in the Manual (Chapters I to IV). In addition, special in-depth attention is given to the two uses of water which tend to receive priority attention in

water management and in legislation, namely, provision of public water supplies to satisfy domestic and other allied needs, and irrigation (Chapters V and VI, respectively). Management of water resources involves also preventing or minimizing the damage to life and property due to poor drainage of lands and buildings (Chapter VII). Finally, charging for water resources at the source - as opposed to at the tap - has been singled out for separate treatment in view of its growing importance as a prime instrument of demand management, having significant policy and political overtones (Chapter VIII). Other significant but lesser aspects of water management, such as users' groups and reuse of wastewater, are dealt with in the chapters to which they most closely relate.

### **3. The meaning and scope of subordinate water management legislation, and relevance to the Manual**

This Study is concerned with, and based upon, written "statutory" law or "legislation" which is promulgated by a properly empowered law-making body. In most countries, legislation issues from a variety of bodies and, as a result, is differently styled depending on its "parent" body. A clear distinction must be made between legislation which issues from the highest lawmaking body or authority of the land, i.e., the Legislature and legislation made by Government in the exercise of lawmaking authority delegated to them by the Legislature.

Legislation made by the Legislature (also known as Congress or Parliament) generally lays down policies and principles and, in addition, may reflect varying degrees of detail of implementation. Such legislation is commonly styled "principal" or "primary" - and it will be accordingly referred to in this publication. For the reasons given in paragraph 2(c) above, as a rule this publication is not concerned with primary legislation.

Legislation made by Government in the exercise of delegated lawmaking authority generally sets out the details of implementation of the provisions of "principal" legislation, i.e., it gives practical effect to such legislation. This type of legislation is variously styled "subordinate" or "subsidiary" or "ancillary" or "secondary", and tends to be collectively referred to by the term "regulations". Depending on the level of specificity, regulations may span the entire spectrum from matters of mostly administrative procedure to matters of substance and, occasionally where principal legislation is silent, even of policy. It is primarily with this type of legislation that this Manual is concerned.

A list of the legislation presented in this publication is given in Appendix IX.

### **4. Structure and format of the publication**

This publication is divided into eight chapters. Each chapter consists of an Introduction sketching the outlines of the scope of coverage of typical subordinate legislation on the particular aspect(s) or function(s) of water management under consideration, and of sub-chapters which seek to present in systematic fashion the approaches and administrative processes provided for in the legislation to regulate the function(s) or aspect(s) under review.

Each such presentation consists of a narrative part describing such approaches and processes, and of one or more examples of pertinent legislation. For the ease of reading and use of the legislative material, the "Forms" which feature frequently in subordinate legislation with a view to standardizing certain administrative actions, have been arranged in Appendices following the main body of the publication. In view of the considerable diversity of extent and depth of subject-matter coverage in the available legislation, the size of individual chapters and the variety of examples given vary considerably.

Footnotes have been added for cross-referencing and, wherever useful and possible, for clarification purposes. Captions to the text of sections or articles, which feature in much of the legislative material selected for this publication, have been omitted as a rule as a space-saving measure. Exceptionally they have been included to assist the reader in the use of unusually complex material.

## CHAPTER I

### ALLOCATING WATER FOR USE: WATER RIGHTS AND PERMITS

See also:

**PREVENTION AND CONTROL OF WATER POLLUTION (CHAPTER II)**  
**GROUNDWATER DEVELOPMENT AND CONSERVATION (CHAPTER III)**  
**WATER RESOURCES DEVELOPMENT (CHAPTER IV)**  
**CHARGING FOR WATER (CHAPTER VIII)**

#### **1. INTRODUCTION**

"Allocating" water as used in this Chapter is the function of assigning water from a given source to a given user or number of users for abstracting it and applying it to a given use. As such, an act of allocation postulates (a) a person or governmental authority who allocates water and (b) a person - be it a physical individual or a corporation or a government agency - who abstracts and uses the water allocated to him/it. This definition reflects a fairly typical situation nowadays where the allocation of water is in the hands of a governmental (or para-governmental) authority or agent, whether this be a judge sitting in court and adjudicating water rights disputes, or a government water administrator empowered to grant permits, licences or the like legal titles to abstract and use water. In this situation, the fundamental decision as to who should abstract and use water, and to what use that water should be applied rests with a judge or a government administrator - i.e., with what we could conveniently term a "public authority".

This statement captures perhaps the truth about water allocation in a vast majority of cases in a vast majority of countries the world over. However, there are water allocation decisions which do not fall in this pattern. All decisions concerning the abstraction and use of water resources which legally "belong" to an individual or a corporation are for him or it to make, with no or limited interference from the Government. These - which we can call "user-controlled" allocation decisions - are governed by rules of neighbourliness between adjoining landholdings, and by specific bodies of rules known, respectively, as "riparianism" and "prior appropriation". These rules have developed essentially from the practice of the courts in resolving disputes between neighbouring landholders/water users, and are administered mostly by the courts via litigation. These court-developed and -administered rules of "water law" are sometimes available in the form of legislation - or in what are also styled "Water Codes". "User-controlled" allocation decisions represent an ever shrinking minority of water allocation decisions overall. This is a direct consequence of the increasing scope of governmental authority in this field in response to the growing complexity of water resources management to satisfy all of society's demands, which complexity reflects the increasing interdependence of water quantity-related and water quality-related factors, and the intense interface between water and other environmental resources. The growing scope of governmental authority generally translates into legislation vesting in the State "ownership" of the water resources. Under legal systems to which the notion of ownership of water is alien, notions of State "guardianship" or "trusteeship" have been employed instead. Under all legal systems, ownership, guardianship or trusteeship concepts essentially provide the



underpinnings to the practical result of placing water allocation decisions under the direct control of the Government. In view of the diminishing significance and role in water resources management of user-controlled water allocation decisions, relevant bodies of rules have been left out of the scope of this book in general and of this Chapter in particular. As a result, this Chapter will focus on legal mechanisms for the allocation of water resources by, or under the full control of, a government water department or agency.

As anticipated earlier in this Introduction, typically governmental control of water resources allocation decisions is achieved through the instrumentality of government grants variously styled permits, licences, concessions, or authorizations, all of which convey a "water right" - i.e., a right to take and use water subject to the terms and conditions of the grant. For practical purposes, permits, licences, concessions and authorizations can be regarded as equivalent terms, and will be collectively referred to in this Chapter as simply "permits". A policy decision to introduce a Government-controlled water allocation mechanism is typically reflected in principal legislation. This will also lay down the main features of the mechanism selected, leaving to subordinate legislation the procedural and substantive details of implementation which are presented in this Chapter.

These concern the process resulting in the granting - or in the denial - of permits (sub-chapter 2); the general obligations of permit holders (sub-chapter 3); the suspension, cancellation and variation of permits (sub-chapter 4); succession to permits (sub-chapter 5); charging for the use of water under a permit (sub-chapter 6 and Chapter ..); protection of "existing" water uses (sub-chapter 7); easements and other mechanisms complementary to permits (sub-chapter 8); dispute resolution (sub-chapter 9); and law enforcement (sub-chapter 10).

In principle, legal mechanisms and instruments for Government-controlled allocation of water resources are equally applicable in respect of the abstraction and use of surface waters and groundwater resources alike. As a result, the mechanisms and instruments presented in this Chapter have, by implication, a corresponding scope of application. However, aspects of the allocation process dealt with by legislation with separate or specific reference to groundwater resources have been presented in Chapter III on **GROUNDWATER DEVELOPMENT AND CONSERVATION**.

## **2. THE GRANTING OF PERMITS FOR THE USE OF WATER**

Typically, the process which results in the grant - or denial - by the Government of a permit for the use of water is structured in the legislation as a sequence of steps, as follows:

### **Step One - Filing of an application**

#### Pre-requisites to the filing of an application

The profile of applicants may be subject to qualifications which have the effect of narrowing down the range of prospective applicants. Corresponding pre-requisites of applicants are generally laid down in principal legislation, subordinate legislation providing the implementing details generally as a matter of documentary evidence in support of an

application (see Supporting documents below). Occasionally, however, substantive pre-requisites are found in subordinate legislation. In the example given herebelow, the profile of applicants has been qualified by reference to nationality criteria. Furthermore, this example is a useful indication of how regulations can clarify a point which, however implied in the principal legislation, can be the source of controversy and confusion. It is generally implied in an Act of Legislature introducing for the first time a system of water use permits that Government departments and agencies are subject to permit requirements like any user of the resource. However, deeply entrenched privileges, and the dimmed perception that powerful governmental or para-governmental water supply agencies tend to have of themselves as "users" of water, may leave in doubt as to whether the licencing requirements extend to the governmental and para-governmental sector. Unless the contrary is expressly stated in the principal legislation, the implied principle that the government and para-governmental sector is subject to the licencing requirements could be usefully clarified in the implementing regulations.

**PHILIPPINES - Water Rules and Regulations**

2. Only the following may file an application with the Council for permit/authority:
  - a. Citizens of the Philippines;
  - b. Associations, duly registered cooperatives or corporations organized under the laws of the Philippines, at least 60 percent of the capital of which is owned by the citizens of the Philippines;
  - c. Government entities and instrumentalities, including government-owned and controlled corporations.

Authorities competent to receive applications

While precise answers to this question are more a matter for the organization of labour internal to the Government water administration than for legislation to provide for, subordinate legislation may provide useful guidance particularly where different Government departments or agencies share the responsibility for administering a permit mechanism, as in the example given.

**PHILIPPINES - Water Rules and Regulations**

3. Except for those on cloud seeding, any application for permit/authority in Section 1 shall be filed with the Office of the Public Works District Engineer, the NIA Provincial Irrigation Engineer, NPC Regional Managers or the LWUA Water District General Manager whichever is designated as agent by the Council in the province where the point of diversion is situated in the case of appropriation of waters or where the project is located in all other cases.

Format of applications

Formats of applications tend to be standardized and appended to subsidiary legislation as "Forms" for the convenience of the applicant. Practice in regard to the design of Forms varies considerably, with formats of varying complexity generally covering a variety of uses combined in one Form (I to III). In addition, different standard forms may be prescribed with respect to different categories of water - notably, surface water as opposed to groundwater

(Forms for applications in respect of groundwater resources are presented in Chapter III on **GROUNDWATER DEVELOPMENT AND CONSERVATION**) - and with respect to different classes of applicants (see, in this particular respect, sub-chapter 7 below).

**I - TANZANIA - Water Utilization (General) Regulations, 1975**

First Schedule - Form A - Application for Water Right - See Appendix I, page 221.

**II UNITED KINGDOM - Water Resources (Licences) Regulations, 1985**

Model Form 1 - Application for a Licence (Other than a Licence of Right) to Abstract Water from an Inland Water - See Appendix I, page 223.

**III MALAWI - Water Regulations, 1969**

Form WRB.1 - Application for a Grant of Water Right/Certificate of Existing Water Rights (Surface Water Only) - See Appendix I, page 227.

Supporting documents

Documentary evidence supporting the application may be required to assist the decisionmakers in the appraisal of a proposed water utilization or project. Relevant requirements may feature as a matter of standardized practice in the forms provided for the filing of applications (see the preceding paragraph), or may be separately provided for (I to V). Supporting evidence requirements can also be used to qualify the profile of prospective applicants. In the particular example given at VI herebelow, the basic qualification as to ownership or possession of riparian land is laid down in the principal legislation, i.e., section 27 of the United Kingdom Water Act, 1963. The Regulations clarify that the prescribed statutory requirement is also met if the circumstances described in the Regulations occur.

**I - KENYA - Water (General) Rules**

28. (1) Except as otherwise provided, any plan filed in accordance with these Rules shall be either:

- (a) in duplicate, the original of which shall be on tracing cloth, drawn in indian ink or other indelible manner acceptable to the Water Apportionment Board, and shall be retained by the Board; and the duplicate shall be such blue or other print on sensitized paper as is acceptable to the Board; or
- (b) in triplicate, one copy of which shall be on such substantial linen-backed material or sensitized linen as is acceptable to the Water Apportionment Board; and the other copies shall be such blue or other prints on sensitized paper as are acceptable to the Board.

Provided that no sensitized print which has been pasted or gummed on linen or other material shall be accepted by the Water Apportionment Board.

(2) All plans shall be rolled and not folded.

29. (1) Every plan shall have a title, in which shall be incorporated the name of the applicant and the name of the body of water concerned in the application to which it relates.

(2) A space not less than 1 1/2 inches wide by 8 inches long in the lower left-hand corner of the drawing shall, where practicable, be reserved for use by the Water Apportionment Board.

30. Except where otherwise specially provided in these Rules or at the discretion of the chairman, every longitudinal section shall be drawn to the same horizontal scale as the corresponding plan, and shall show the intended level of the proposed works, the height of every embankment, if any, and the depth of cutting, and shall likewise show a horizontal datum line.

31. Every plan shall be drawn to such a scale as will permit of all the details being legibly recorded, and where a scale has been prescribed shall not be drawn to any less scale.

Provided that the chairman, at his sole discretion, may accept plans drawn to other scales.

32. (1) Every plan shall be signed and dated by the person making it, and, if it is made by any person other than the applicant to whom it relates, the applicant or his lawfully authorized agent shall also approve, sign and date it.

(2) Every plan prepared by a qualified engineer shall have endorsed thereon a certificate in the following form:

CERTIFICATE

I/We ..... of ..... hereby certify that this plan was made by me/us [or under my/our direction] and that it correctly represents the places, lands, areas and works shown thereon.

.....  
Qualified Engineer[s].

33. (1) Every plan on tracing cloth shall be drawn and lettered neatly with waterproof drawing ink, and shall be prepared so as to print clearly on sensitized paper.

(2) Every plan, other than those on tracing cloth and unamended prints therefrom, shall be drawn on linen-backed material or other substantial material acceptable to the Water Apportionment Board, and shall be drawn and lettered neatly with waterproof drawing ink.

34. All reduced levels or elevations shown on any plan, or set of plans, longitudinal sections or cross sections of any work or works shall be to the same datum, and reference shall be made on at least one sheet of any set of plans, longitudinal sections or cross sections indicating the datum used, and also the positions of all bench marks, which shall be properly located and described on the general map (and of which bench marks one shall be in the immediate vicinity of the point of diversion, abstraction or storage), from which the datum may be gained.

35. Every plan shall have clearly marked thereon the scale or scales, and when the nature of the plan allows it shall have the north point, true or magnetic, or both, shown thereon.

36. Except where otherwise expressly provided, with every application for a permit the following plans shall be submitted in duplicate.

(a) a general plan;

(b) if such plan necessitates the filing of three or more separate sheets, an index plan to a scale of not less than one inch to one mile;

(c) such detail plans as are required under these Rules or as may be required for a better understanding of the applicant's proposals;

Provided that detail plans need not be submitted until the application has been conditionally approved by the Water Apportionment Board, or until such time as they are called for by the chairman.

37. Every plan shall be given a registered number by the Water Apportionment Board, and shall thereafter be referred to by such number.

Provided that when a plan is amended the amended plan may, if the chairman thinks fit, be given an amended number; and the date on which any plan is amended, together with the nature of the amendment, shall be marked on such plan.

38. Where in any project requiring a plan or plans to be submitted under these Rules

(a) the total quantity of water to be used exceeds:

(i) three cusecs for irrigation purposes, or

(ii) two hundred thousand gallons a day for any other purposes; or

(b) the quantity of water to be stored exceeds fifty acre-feet; or

(c) the maximum depth of water impounded by the dam or weir measured from stream bed level (or ground level where no stream exists) to spillway sill level is more than 10 feet; or

(d) it is proposed to develop power exceeding one hundred brake horse power (B. H. P.); or

(e) the project is liable to cause pollution; or

(f) the Water Apportionment Board so directs,

the applicant shall submit such of the detail plans referred to in rules 39 to 48 of these Rules as are applicable, and such plans shall be prepared by a qualified engineer unless the Water Apportionment Board otherwise permits;

Provided that, if in the opinion of the Water Apportionment Board the nature of the works is such as not to require the submission of detail plans, the chairman may in writing dispense with such requirements or part thereof.

42. (1) In every case where a canal is to be constructed, there shall be submitted, when so required by the Water Apportionment Board, a site plan drawn to a scale of not less than 1 in 5,000 and a longitudinal section of the canal with a sufficient number of typical cross sections to illustrate the forms which the canal, when constructed, will take.

- (2) The following particulars shall be shown on the longitudinal section:
- (a) the original ground levels and the nature of the ground traversed;
  - (b) the bed levels of the canal and the bed gradients;
  - (c) the full supply depth and freeboard;
  - (d) the bed width and side slopes; and
  - (e) the calculated velocity and discharge at full supply depth.

(3) The cross section shall also show such of the above particulars as are relevant, and the position of each cross section shall be shown on the longitudinal section.

43. (1) Where a canal is to be constructed and the carrying capacity at full supply level is expected to exceed three cusecs for any purpose other than a power purpose, all plans shall be prepared by a qualified engineer, unless the Water Apportionment Board decides otherwise, and there shall be submitted, in addition to the plan required by rule 42 of these Rules, an accurate longitudinal section of the proposed canal, on which shall be recorded in addition to the information required under rule 42 of these Rules, the position of all structures in connection with the canal, the natural surface and proposed bed levels, full supply depths, proposed gradients and top level of embankments.

(2) The scale of such longitudinal section shall not be less than 1 inch to every 500 feet horizontal and not less than 1 inch to every 10 feet vertical, or shall be such other scales as the chairman may in writing approve.

44. For all the structures, including regulators, escapes, spillways, drops, chutes, flumes, syphons, tunnels, outlets, bridges, railway crossings, canal crossings, culverts, overchutes, gauging devices, valves or any other apparatus, device or thing, in connection with canals or pressure conduits, there shall be submitted, when required by the Water Apportionment Board, plans showing plan views, elevations and general cross sections, drawn to a scale of not less than 1/8 inch to one inch, except where any structure is 200 feet or more in length, when the plan view and elevations may be shown to a scale of not less than one inch to 50 feet.

45. (1) Whenever the quantity of water to be diverted by means of a pipeline or other pressure conduit is less than 200,000 gallons per day, there shall be submitted, when required by the Water Apportionment Board, a sketch longitudinal section, on which shall be marked the low and normal water levels and the bed level of the body of water, at the intake from which the water is to be diverted or abstracted, the location of any works such as pumping plants, intake levels, pressure tanks and stand-pipes, and the internal diameter and material of the pipes, with the invert level of the pipe at which any changes in size or material occur, and the level of the pipe at the point of discharge; and the scales used shall not be less than 1 inch to 500 feet horizontally and 1 inch to 25 feet vertically, or such other scales as the Water Apportionment Board may approve.

(2) Whenever the quantity of water to be conveyed by means of a pipeline or other pressure conduit is greater than 200,000 gallons per day, there shall be submitted, when required by the Water Apportionment Board, an accurate longitudinal section to a horizontal scale of not less than 1 inch to 500 feet and a vertical scale of not less than 1 inch to 25 feet, on which shall be shown the low, normal and high flood levels, and the bed level of the body of water at the proposed intake, the invert levels, the hydraulic gradients of the pipeline, the natural surface of the ground, the location of any works such as pumping plants, pump house, intake wells, stand-pipes, air valves, break pressure tanks and valves, and the internal diameter and material of the pipes, with the invert levels of the pipes at the points at which changes in size or material occur.

(3) The provisions of this rule shall not apply to the distribution or reticulation of any water works for any community, public or urban project, or water undertaker.

46. If a permit is required for a power purpose for the development of more than 100 brake horse-power, there shall be submitted, when so required by the Water Apportionment Board, a contour plan, to a scale of not less than 1 inch to 100 feet, with a contour interval of not more than 5 feet, showing the proposed location of the power house and other buildings and the point of return of the water, for each power-house site that will be a part of any project.

49. All designs of earth dams, except as hereinafter provided, shall be prepared in accordance with the following minimum conditions:

- (a) the line of saturation above the foundation shall in all cases be contained within the cross section of the dam;
- (b) adequate freeboard, which in no such case shall be less than 2 feet above high flood level, shall be provided for;
- (c) the side slopes of the dam shall be such that there is no possibility of the earth, or other material used in its construction, sloughing or slipping;
- (d) whenever an outlet pipe or scour pipe is carried underneath an embankment, it shall, unless the Water Apportionment Board decides otherwise, be surrounded throughout its entire length by concrete, which shall rest throughout its length on solid rock or in a trench in undisturbed soil; and concrete or other collars, approved by the Water Apportionment Board, shall be provided to prevent the percolation of water along the lines of the junctions of the concrete surround to the said pipe and the earth in the embankment.

50. An applicant shall, when so required by the Water Apportionment Board, submit a specification, which shall include the following:

- (a) a general statement outlining the extent and purpose of the proposed works;
- (b) statements in detail of all data upon which the design is based, including stream measurements, rainfall, stream flow, evaporation records, drainage areas and any other pertinent information;
- (c) specifications covering the materials to be used and methods of construction;
- (d) if the application is for a power purpose, a statement of the proposed type, number and rated capacity of the water wheels and generators to be installed; and
- (e) such further details as may be required by the chairman.

## **II - PHILIPPINES - Water Rules and Regulations**

4. All applications shall be filed in the prescribed form, sworn to by the applicant and supported by the following:

### **A. For a Water Permit for Agricultural Purposes:**

1. Any document of ownership/possession of the land to be developed such as:
  - (a) Certificate of Title;
  - (b) Tax Declaration;
  - (c) Certificate of Land Transfer; or
  - (d) Contract of lease, if applicant is a lessee.
2. Location Plan of Area showing:
  - (a) Point of Diversion determined graphically by its latitude and longitude;
  - (b) Delineation of area indicating hectareage for which water will be used and adjoining lands and their corresponding owners duly indicated relative to the point of diversion;
  - (c) Nature of diversion works, whether temporary or permanent; manner of appropriation, whether by gravity pump; kind of crop; and approximate location of conveyance canal or conduit, and
  - (d) In case of appropriation of ground water, location and spacing of proposed drilling sites, kind of crop, and approximate location of conveyance canal or conduit in lieu of items (a) and (c) above.

### **B. For a Water Permit for Hydraulic Power Development and Industrial Purposes, or for a Permit to Dump Mine Tailings or Wastes:**

1. Location and conceptual plans on convenient scale showing the source of water, layout of proposed works, and point of diversion determined graphically by its latitude and longitude;
2. Brief description of project including among others, how water will be used, amount of water needed for the purpose, power expected to be generated if applicable, amount of water to be discharged back to the source and measures to be taken to insure that such waters are not polluted, other relevant information;
3. Articles of Incorporation or Articles of Partnership in case applicant is a private corporation or partnership, or certificate of registration in case of cooperatives, and
4. When the application is for industrial use of ground water, the location and spacing of drilling well sites instead of diversion point should be indicated in the location plan.

### **C. For a Water Permit for Municipal Purposes:**

1. Location, topographic and layout map showing the relative position of source area to be supplied, and diversion point determined graphically by its latitude and longitude;
2. Brief description of the project, including nature and amount of water to be used, population

3. Articles of Incorporation or Articles of Partnership in case applicant is a private corporation or Partnership, or Certificate of Registration in case of cooperatives;
  4. When the application is for industrial use of ground water, the location and spacing of drilling well sites determined graphically by latitude and longitude should be indicated in the location plan; and
  5. When it involves the reuse of waste water for human consumption, the application should be accompanied by a clearance from the Department of Health allowing the reuse of said waste water and setting forth the conditions therefor.
- D. For a Water Permit for Recreational, Fisheries and Other Purposes:
1. Location and conceptual plan showing the relative location of the project with the body of water to be utilized for the purpose, determined graphically by its latitude and longitude;
  2. Brief description of the project including among others, how the water is to be used, area of water surface needed for the purpose or amount of water to be appropriated and location of diversion canal if diversion is to be made, scheme of development, and other relevant information; and
  3. Articles of Incorporation or Articles of Partnership in case applicant is a private corporation or partnership, or Certificate of Registration in case of cooperatives.
- ...
- F. Such other documents that may be required by the Council.
5. In addition to the requirements under Section 4, the following are required in the specific instances indicated:
- ...
- D. For all Applications to Appropriate Water. Water permit applications filed for any purpose shall be accompanied by a Certificate of tree planting, survival, or completion as the case may be in the name of the applicant as provided under P.D. 1153.

### III - ZIMBABWE - Water (Water Courts) Regulations, 1968

15. (1) Where an application specified in Part 1 has been lodged with the water registrar he may require a signed report thereon from any one or more reporting officers.

(2) Where a report has been required in terms of subsection (1) the reporting officer shall furnish the required report in the appropriate form specified in the Third Schedule or, where no appropriate form is specified, in such other form as may be approved by a judge.

(3) Any report submitted in terms of subsection (2) shall be in quadruplicate with such additional copies as the water registrar may require.

(4) Notwithstanding the provisions of subsections (1) and (2), an applicant or objector may submit for the consideration of a water court reports by a consulting engineer or agricultural consultant.

(5) Where an application has been made to a mining commissioner in terms of section 19 of the Act, the report required by that section from a mining engineer shall be furnished in quadruplicate in form "W.R. 6" specified in the Third Schedule.

16. (1) Any report required in terms of subsection (1) of section 15 or referred to in subsection (5) of section 15 shall be open to inspection and the water registrar shall serve copies thereof on all parties to the proceedings.

(2) Copies of reports submitted in terms of subsection (4) of section 15 and made available in sufficient time before a hearing by a water court shall be served by the water registrar on all parties to the proceedings and any person required to report in terms of subsection (1) of section 15.

Form "W.R. 1" - Report on Application for Water Rights - See Appendix I, page 235.

Form "W.R. 2" - Hydrological Report on Application for Water Rights - See Appendix I, page 236.

Form "W.R. 3" - Report on Application for Water Rights - See Appendix I, page 237.

Form "W.R. 6" - Report by Government Mining Engineer - See Appendix I, page 240.

### IV - UNITED KINGDOM - Water Resources (Licences) Regulations, 1965

5. (2) The application shall be accompanied by a map (as mentioned in regulation 4 (5)) for the purpose of showing the matters required so to be shown by whichever is appropriate of the three next following regulations and shall also be accompanied by such other documents (if any) as thereby required.

...

6. ... (2) The matters required to be shown on the map accompanying the application are:
- (a) every point of abstraction to which the application relates;
  - (b) the relevant land for the purposes of section 27 of the Act specified in the application;
  - (c) save where it is an application for a licence falling within the exception in section 30 (3) of the Act (which exception relates to a licence granted to a river authority, or to water undertakers for purposes of their water undertaking), the land on which it is proposed to use, for the purposes proposed in the application, water abstracted in pursuance of the licence, distinguishing as necessary between parts of the land on which it is proposed to use such water for different purposes.

... (4) The application shall be accompanied by:

- (a) copies of the newspaper or newspapers containing the appropriate section 28 notice (as mentioned in regulation 4 (4)), and
- (b) a declaration, signed by or on behalf of the applicant, that such a notice has also been published in the London Gazette (giving the date of publication) and, where the notice is required by virtue of section 28 (1)(b) of the Act to be served on any authority therein mentioned, that such requirement has been complied with (giving particulars of the service).

7. ... (2) The matters required to be shown on the map accompanying the application (including any section 58(2) application) are the matters specified in paragraph (2) of the last preceding regulation (except the relevant land for the purposes of section 27 of the Act referred to in subparagraph (2)(b) as required in the case of applications to which that regulation applies.

(3) A section 33(1)(a) application, and a section 58(2) application, shall be accompanied:

- (a) where the relevant statutory provision relied on is a licence under section 14 of the Water Act 1945, by that licence or a true copy thereof, or, if for any sufficient reason (which shall be specified) the foregoing requirement cannot be complied with, by sufficient evidence in writing of the grant of such licence and of its terms;
- (b) in any other case (except where the statutory provision in question is contained in a public general Act), by a copy of the relevant statutory provision on which the applicant relies.

(4) A section 33(1)(a) application, made in reliance on a statutory provision which does not specify or otherwise limit the quantity of water authorised to be abstracted, shall also be accompanied by evidence in writing for the purpose of proving to the reasonable satisfaction of the river authority any particulars included in the application with respect to quantities of water abstracted in the relevant period ending with 1st April 1965 and other matters, as mentioned in section 34 (3) to (5) of the Act.

(5) A section 33(1)(b) application shall be accompanied by evidence in writing for the purpose of proving to the reasonable satisfaction of the river authority any particulars included in the application with respect to quantities of water abstracted in the relevant period ending with 1st April 1965 and other matters, as mentioned in section 35 (2) to (4) of the Act and a statement included in the application with respect to matters referred to in section 35(5) of the Act.

(6) Where evidence in writing provided by an applicant in pursuance of paragraph (4) or paragraph (5) of this regulation relates to any quantity of water which is shown in the application to be an estimated quantity, that evidence shall include a statement explaining how the estimate in question was made.

B. ... (3) In relation to any application in pursuance of section 37 (3) of the Act for a combined licence, the relevant provisions of this part of the regulation shall have effect, subject to the following provisions of this paragraph, as if the application comprised an application for a licence to impound and a separate application for a licence to abstract water; and:

- (a) the documents which, by virtue of this paragraph, are required to be put together for the purpose of the application (including any accompanying documents) shall be clearly marked so as to show that those which relate to impounding works and those which relate to abstraction of water are associated with each other as parts of an application for a combined licence,
- (b) the requirements relating to the submission of a map with every application for a licence, and to the showing thereon of the matters required so to be shown by whichever is relevant of the regulations with respect to an application for a licence to abstract water and by the foregoing provision of this regulation with respect to an application for a licence to impound, may, if the requisite particulars can be satisfactorily shown on a single map, be complied with by submitting with the application for a combined licence one map containing all the particulars required to be shown in respect of that application;



- (c) the appropriate section 28 notice shall be a notice in the form indicated as appropriate to an application for a combined licence in Schedule 2 (and therein numbered N3)<sup>1</sup>, or in a form substantially to the like effect.

**V - AUSTRALIA - NORTHERN TERRITORY - Control of Waters Regulations**

4. (1) An application shall be in accordance with the First Schedule and shall be accompanied by a plan showing:

- ... (d) the land on to which it is proposed to divert or take the water;
- (e) the point on the watercourse or lake where the work is constructed or installed or where the work is proposed to be constructed or installed; and
- (f) any land situated between that land and that point.

(2) Where the land on which the work is constructed or installed, or proposed to be constructed or installed, or across which water is proposed to be taken, is not owned or occupied by the applicant, the application shall, in addition to the requirements of the last preceding sub-regulation, be accompanied by a copy of an agreement under which the owner or occupier of the land has agreed to permit the applicant to construct or install the work on, or take water across, the land and to have access to or across the land for the purposes of constructing or installing, and operating and maintaining, the work, or taking the water.

(3) The provisions of the last preceding sub-regulation shall not apply in relation to land of the Crown or the Commonwealth unless that land is dedicated or reserved or is the subject of a lease.

...

**VI - UNITED KINGDOM - Water Resources (Licences) Regulations, 1965**

6. ... (3) If the applicant is not a person who is entitled to make the application in accordance with section 27 of the Act by virtue of occupying relevant land for the purposes of that section, the application shall be accompanied by the evidence which the applicant tenders with a view to satisfying the river authority:

- (a) as respects any proposed abstraction from an inland water or from underground strata, that he has entered into negotiations for the acquisition of an interest in relevant land such that, if the interest is acquired by him, he will be entitled to occupy that land;

...

### Payment of filing fees

Payment of filing fees or charges is customarily required to help defray the administrative costs of processing applications. Practice in this regard - as reflected in subsidiary legislation - is fairly consistent, with requirements that applications be accompanied by evidence of payment of a given sum of money, complemented by exemptions (I and II) and refunds (III and IV).

**I - PHILIPPINES - Water Rules and Regulations**

6 - There shall be imposed and collected a fee of One Hundred Pesos (P 100.00) from every applicant, except government agencies, water districts, and duly organized associations or cooperatives for irrigation or rural water supply which shall be paid to the Council in postal money order through the Office where the application is filed.

<sup>1</sup> See Step Three - Review of Applications, example V.

**II - ZIMBABWE - Water (Water Court) Regulations, 1965**

7. (1) Subject to the provisions of subsection (2), an applicant shall when lodging an application specified in the Second Schedule pay the appropriate fee specified in the Second Schedule.

(2) No fee shall be charged for an application lodged by the Minister or the Commissioner of Roads and Road Traffic.

**III - TANZANIA - Water Utilization (General) Regulations, 1975**

25. (1) The fees set out in the Second Schedule to these Regulations shall be payable to the Water Officer in respect of the matters specified in that Schedule.

(2) Where an appellate authority allows an appeal under section 32 of the Act, it may, if it deems it fit, direct the Water Officer to refund any fee or any part thereof paid in respect of the appeal and the Water Officer shall give effect to the direction.

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**Second Schedule - Fees**

Item	Matter	Fee Shs.
1.	Application for a water right to be made appurtenant to land (including an application for water right which comprises an application for the water right to be made appurtenant to land)	100/-
2.	Application for a water right other than an application specified in item 1	50/-

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**IV - BRITISH COLUMBIA - Regulation and Tariff of Fees, Rentals and Charges under the Water Act**

2.08 The applicant shall also, within the said sixty days, pay the prescribed application fees and the first year's rental payable in respect of the application and licence.

5.01 An application fee is payable in respect of every application for a licence, and where the application indicates that water is to be used for more than one purpose, the application fee shall be the sum of the fees that would be payable if a separate application were made in respect of each purpose.

5.02 The application fee payable in respect of any application for power purpose shall be based upon the amount of power that the Comptroller estimates could be developed at the power-site from the flow available in the stream affected, and shall be computed at the rates set out in Schedule A'. When the licence is issued, the Comptroller may adjust the amount of the application fee and may collect, refund, or credit any deficiency or excess arising from any underestimate or overestimate.

5.03 When considering an application, the Comptroller shall settle the amount of the application fee and of the first rental payable under this tariff, and, if the sum previously paid to him by the applicant be less than the aggregate of the amounts so determined, he shall collect the insufficiency from the applicant, if the said sums be greater than the said aggregate, the Comptroller may either refund the excess to the applicant or apply it in payment of rental coming due subsequently, as he deems expedient.

5.04 Notwithstanding the settling of any application fee or rental as aforesaid, the Comptroller shall have authority to and shall collect an additional application fee and rental if the plans filed or the works commenced or constructed show to the Comptroller's satisfaction that the application fee and rental previously paid were based or computed on insufficient information as to the quantity of water to be diverted or the amount of power that could be developed.

5.05 When an application is withdrawn or abandoned before it is adjudicated upon by the Comptroller, he may refund the application fee or the rental paid, or both or any part thereof.

5.06 When an application is refused, the Comptroller may refund to the applicant the initial application fee and any rental paid by the applicant.

5.21 No fees, rentals, or other charges shall be payable in respect of any licence or permit where the Minister of Lands and Forests is the applicant or the holder of a licence or permit.

5.23 The Lieutenant Governor in Council may accept a percentage of power or other resource, or the monetary equivalent thereof, in lieu of fees, rentals, or other charges established by these regulations.

### Other procedural requirements

Subsidiary legislation may provide details which have the effect of clarifying matters left in doubt by principal legislation. The example given herebelow concerns applications in connection with proposed uses contemplating multiple points of abstraction from one source of water or individual abstractions from a multiplicity of sources.

#### **KENYA - Water (General) Rules**

125. (1) A separate application shall be made for each point of diversion or abstraction or storage from a body of water or for each separate point of diversion from a reservoir or dam.

(2) In the case of any works taking water from several bodies of water, a separate application shall, in all cases, be made for each source of supply.

### **Step Two - Recording of applications**

This is a matter generally left to the internal organizational procedures and functioning of the government department or agency responsible for receiving and processing applications. However, special requirements may be laid down by legislation with a view to ensuring access by the general public to the information concerning applications made.

#### **UNITED KINGDOM - Water Resources (Licences) Regulations, 1965**

17. (1) The register which, by virtue of section 53 of the Act, is required to be kept by a river authority and to be available for inspection by the public at all reasonable hours shall contain the following information with respect to every application made to the river authority for the grant, revocation or variation of a licence under the Act, namely:

(a) the name and address of the applicant, the date of the application and brief particulars of its proposals;

...

(5) Every entry in the register with respect to an application made after 30th June 1965, or to

a decision on any application, shall be made, within 14 days from the date of receipt of the application or of the issue of the decision, and every such entry with respect to an application made before 1st July 1965 shall be made within 28 days from the date of receipt of the application.

### **Step Three - Review of applications**

Subsidiary legislation evidences a fairly consistent practice of requiring the responsible government department or agency to elicit the views of users of water who may be affected by the proposals contained in the application. Relevant requirements are cast in the form of

an obligation of either the applicant or the Government to give prescribed publicity to an application, and to invite objections (I to VI). While a well-informed government water resources administration will already have all the data concerning the rights and water entitlements of other potentially affected water users, seeking the views of such users may minimize the potential for conflict among water users in general, and, in particular, for confrontation and appeal against the government water administration at a later stage of the process. At any rate, the information provided by users in their own self-interest may be of great value in upgrading the water rights data base available to the government water administration. The views of the general public may also be elicited, particularly where the proposed utilization or project has or may have an appreciable environmental impact. Formal Environmental Impact Assessment requirements may be mandated by separate environment protection legislation, in which case water resources management regulations will ordinarily defer to it. Field investigations may also be required to determine whether the hydraulic structures proposed are adequate; whether the applicant could use all the water or facilities for which he applies, or whether the proposed use will adversely affect other water users or other related interests (VII and VIII).

**I - MALAWI - Water Regulations, 1989**

6. (1) The Water Resources Board shall, on receipt of an application for a grant under section 10 and before making such grant, and may on receipt of any other application under the Act in respect of which in its opinion public notification should be given, cause to be published in the Gazette and in at least one newspaper circulating in Malawi in such manner as it may deem necessary a notice giving the purport of the application and inviting objections to be submitted within a period of 30 days from the date of publication

(2) Objections made in response to a notice under subsection (1) shall be submitted in writing to the Water Resources Board within the time specified and shall state:

- (a) the name and address of the objector;
- (b) the matter to which objection is made;
- (c) the grounds of the objection;
- (d) the objector's interest in the matter;
- (e) whether the objector desires to make a personal representation to the Water Resources Board.

(3) It shall be within the discretion of the Board to adjudicate upon any objection made without hearing any personal representations.

(4) No application in respect of which a notice has been given under subregulation (1) shall be considered by the Water Resources Board until the expiration of 30 days after the publication of such notice

**II - PHILIPPINES - Water Rules and Regulations**

B. Upon receipt of an application for water permit, the Office concerned shall process the same to determine compliance with the requirements prescribed in Section 4 hereof. If found in order, and upon payment of the filing fee, notices of the application shall be posted in a conspicuous place in said office and shall remain posted for a period of Sixty (60) days. Notices of application shall, likewise, be sent by the said office to the following for posting in a conspicuous place for the same period.

- (a) Barangay Chairman of the place where the point of diversion is located;
- (b) Municipal Secretary of the town where the point of diversion is located;
- (c) The Secretary of the Sangguniang Panlalawigan of the province where the point of diversion is located;
- (d) Public Works District Engineer or Provincial Irrigation Engineer as the case may be.

Copies of the notice of application shall, likewise, be furnished to concerned Regional Offices of the Ministry of Public Works, National Irrigation Administration, National Power Corporation and Ministry of Natural Resources and Local Water District Office, if any.

9 . B. Any person who may be adversely affected by the proposed appropriation may file a verified protest with the Council or with any deputized agency investigating the application within sixty (60) days after posting of the Notice of Application in the office where the application was filed. Protests to an application for water permit shall be governed by the rules prescribed for resolving water use controversies.

**III - ZIMBABWE - Water (Water Court) Regulations, 1966**

10. (1) Where an application referred to in section 8 or in terms of subsection (2) of section 102 or section 111 of the Act, has been lodged with the water registrar, he shall give notice thereof:

- (a) in the *Gazette* for the information of persons whose rights may be affected thereby; and
- (b) to the provincial commissioner and district commissioner of the area which may be affected; and
- (c) where practicable to such other persons as may be affected by the application.

(2) A notice required to be given by paragraph (c) of subsection (1) shall be given in such manner as the water registrar may consider best suited to the circumstances.

(3) All notices required to be given by subsection (1) shall state the period within which objections to the application shall be lodged.

11. Any objection to an application referred to in subsection (1) of section 10 shall, subject to the provisions of section 12, be lodged with the water registrar by the date specified in terms of subsection (3) of section 10 and shall be accompanied by a full statement of the grounds for the objection:

Provided that a judge may, on application by an objector, condone the late lodging of an objection.

12. Before the expiration of the period allowed for lodging objections to an application, any person who wishes to object may apply to a judge through the water registrar for an extension of time which may be granted subject to such conditions as the judge may deem fit.

13. At the end of the period allowed for the lodging of objections to an application, the water registrar shall:

- (a) where no objection has been lodged, inform the applicant and the reporting officers of the Hydrological Branch, the Ministry and the Department of Conservation and Extension accordingly;
- (b) where an objection has been lodged, advise the applicant and the reporting officers specified in paragraph (a) of the objection.

**IV - TANZANIA - Water Utilization (General) Regulations, 1975**

3. Where an application is made in accordance with section 15 of the Act, the Water Officer shall prepare a notice setting out the particulars of the application and cause it to be:

- (a) published in the *Gazette*;
- (b) served upon all person named in the application as being liable to be affected by the grant of the right for which the application is made, and upon such other persons as he thinks fit; and
- (c) displayed at the District Office of the district in which the right for which the application is made will, if granted, be exercised.

5. (1) A Water Officer may refuse to consider any objection to an application for a water right, the apportionment of water right, or an easement if the objection reaches him forty days after the relevant date.

(2) In this regulation the expression "relevant date" means:

- (a) in the case of an objector served with a notice under regulation 3 or copy of an application under regulation 4, the date on which such notice or copy was served upon him;
- (b) in the case of an objector who is not entitled under regulation 3 to have notice of an application served upon him, the date on which particulars of the application were first published in the *Gazette*;

...

**V - UNITED KINGDOM - Water Resources (Licences) Regulations**

4. ... (4) The forms numbered N1 to N4 in Schedule 2 to these regulations are the forms of notice prescribed for the purposes of section 28 of the Act (and for the purposes of that section as applied by sections 37 (5) and 42 (2) of the Act), by virtue of which applicants are required (with certain exceptions) to publish, and in some circumstances serve, notices with respect to their applications; and any reference in this part to the appropriate section 28 notice in relation to an application is a reference to a notice in that one of the forms mentioned above which is appropriate to the application, or in a form substantially to the like effect.

10. ... (2) In the case of any application for a licence (other than a licence of right) in pursuance of which the applicant proposes either to abstract water, or to construct or alter impounding works (or to do both) in the area of a National Park:

- (a) the river authority, on receipt of the application, shall give notice in writing of the making of the application to the National Park planning authority, or, as the case may be, to each National Park planning authority, in whose area it is proposed to effect or carry out any such abstraction or work (together with a copy of the application and a map sufficient to enable the land which is the subject of the application to be identified), and shall include in the notice a statement to the effect that the planning authority may, if they so desire, make representations in writing with respect to the application in question within a period of 21 days from the date on which the notice is given;
- (b) the application shall not be determined until after the last date on which representations may be made with respect to it in pursuance of a notice given under this paragraph, and the matters to which the river authority or the Minister, as the case may be, is to have regard in dealing with the application shall include any representations duly made with respect to the application by a National Park planning authority in pursuance of such a notice.

**Form N1 - Notice of Application for Licence to Abstract Water - See Appendix I, page 241.**

**Form N2 - Notice of Application for Licence to Obstruct or Impede the Flow of an Inland Water by Means of Impounding Works - See Appendix I, page 242.**

**Form N3 - Notice of Application for a Combined Licence to Obstruct or Impede the Flow of an Inland Water by Means of Impounding Works and to Abstract Water - See Appendix I, page 243.**

**VI - BRITISH COLUMBIA - Regulation and Tariff of Fees, Rentals, and Charges under the Water Act**

2.04. The applicant shall also, within fifty days of the posting of the application on the ground, serve a signed copy of the application on:

- (a) every owner of any land or mine that will be affected physically by the proposed works or by the operation or utilization thereof;
- (b) every person holding a licence on the same stream whose point of diversion is at or below the applicant's proposed point of diversion; and
- (c) every person who has filed with the Water Recorder a prior application for a licence on the same stream whose point of diversion is at or below the applicant's proposed point of diversion.

Provided, however, that where more than ten persons are required to be so served, the Comptroller may authorize publication of the application in lieu of service.

2.05 The applicant shall also publish a copy of the application in a local newspaper if, when, and as directed by the Comptroller.

2.10 Any person required to be served with a copy of the application under section 2.04 may file with the Comptroller or Water Recorder an objection in writing to the granting of the application. The objection shall be filed within thirty days of the serving of a copy of the application, or where publication is required, within thirty days of the date of the first publication. Where the objection is filed with the Water Recorder, it shall be filed in duplicate.

**VII - PHILIPPINES - Water Rules and Regulations**

**9. A. Investigation and Studies**

After seven (7) days from the first day of posting of notice at the office where the application is filed, the office concerned shall determine:

1. The approximate seasonal discharge of the water source;
  2. The amount of water already appropriated for beneficial use;
  3. The water requirement of the applicant is determined from standards of beneficial use prescribed by the Council;
  4. Possible adverse effects on existing grantees/permittees or public/private interest;
  5. Environmental effects;
  6. Land-use economics;
  7. Whether the area to be irrigated can be integrated with that of an existing or proposed irrigation association for common irrigation facilities and
- B. Other relevant factors.

...

**VIII - ZIMBABWE - Water (Water Court) Regulations, 1968**

14. (1) Where a report by a reporting officer is required in terms of section 15 the water registrar shall forward particulars of the application to the Hydrological Branch, the Ministry and the Department of Conservation and Extension

(2) Where evidence in connection with an application is required from any person not referred to in subsection (1) the water registrar shall forward particulars of the application to that person.

15. (1) Where an application specified in Part 1 has been lodged with the water registrar he may require a signed report thereon from any one or more reporting officers.

(2) Where a report has been required in terms of subsection (1) the reporting officer shall furnish the required report in the appropriate form specified in the Third Schedule<sup>1</sup> or, where no appropriate form is specified, in such other form as may be approved by a judge.

(3) Any report submitted in terms of subsection (2) shall be in quadruplicate with such additional copies as the water registrar may require.

(4) Notwithstanding the provisions of subsections (1) and (2), an applicant or objector may submit for the consideration of a water court reports by a consulting engineer or agricultural consultant.

(5) Where an application has been made to a mining commissioner in terms of section 19 of the Act, the report required by that section from a mining engineer shall be furnished in quadruplicate in form "W.R. 6" specified in the Third Schedule<sup>1</sup>.

16. (1) Any report required in terms of subsection (1) of section 15 or referred to in subsection (5) of section 15 shall be open to inspection and the water registrar shall serve copies thereof on all parties to the proceedings

(2) Copies of reports submitted in terms of subsection (4) of section 15 and made available in sufficient time before a hearing by a water court shall be served by the water registrar on all parties to the proceedings and any person required to report in terms of subsection (1) of section 15.

## Step Four - Deciding on applications

Decisions as to whether to grant or refuse a permit or to grant it subject to terms and conditions departing from the applicant's requirements, are typically left to the discretion of the responsible government decisionmaker, with or without the prescription of a time-limit within which decisions on applications must be arrived at (I to III). Whilst the law cannot and should not prescribe specific decisions, it can nonetheless orientate the water licencing

<sup>1</sup> See under the heading Supporting documents, above

decisionmaking by prescribing "criteria" or guidelines by which the factors entering the decision are to be weighed. Such criteria will, inter alia, provide useful ammunition for challenging a decision on its merits (IV). Also, subsidiary legislation may provide for decisions resulting in the grant of a "temporary" permit, pending further review of the application and a final decision on it (V). When this is provided for directly by principal legislation, regulations may simply provide special Forms required in connection with the conversion of a permit from temporary to final (VI).

**I - KENYA - Water (General) Rules**

25 . (5) The Water Apportionment Board shall consider such application, and may issue a permit on such terms and conditions as it thinks fit, or may refuse it

...

**II - PHILIPPINES - Water Rules and Regulations**

11. The Council shall approve or disapprove applications for water permits, within sixty (60) days after receipt of recommendation of its deputized agent and other agencies requested to comment, unless a longer period is needed for the disposition of protests filed with the Council. In cases of application for industrial use or in cases of such other use where waters may become polluted, the Council shall refer the application to the National Pollution Control Commission for comment and recommendation. If deemed necessary, the Council shall refer the application to other agencies concerned as the case may be.

**III - UNITED KINGDOM - Water Resources (Licence) Regulations, 1965**

10. ... (4) The period within which the river authority shall give notice to an applicant for a licence of their decision on his application, or, as the case may be, of the reference of the application to the Minister in pursuance of directions given under section 38 of the Act, shall be the following period from the date of receipt of the application, namely:

- (a) in the case of an application for a licence of right, a period ending on (31st March 1966);
- (b) in the case of an application for a licence other than a licence of right, being an application made before 1st July 1965, a period ending on 30th September 1965; and
- (c) in any other case, three months.

...

**IV - PHILIPPINES - Water Rules and Regulations**

20. Except when otherwise justified by type of irrigation system, soil conditions, kind of crop, topography and other factors, water permits for agricultural use shall be granted on the basis of one litre per second per hectare of land to be irrigated.

**V - PHILIPPINES - Water Rules and Regulations**

28. The Council may grant temporary permits for the appropriation and use of water in situations such as the following.

- (a) Irrigation of an area pending the construction of a larger system to be operated either by the government or by an irrigation association which will serve said area. Such permit shall automatically expire when water becomes available for the area from the larger system. In cases where the supply from the larger system is not adequate, the permit may be modified accordingly.
- (b) When there is need to use water for municipal purposes in emergency situations pending the availability of an alternative source of supply as provided in Article 22 of the Code.
- (c) For special research projects requiring the use of water for certain periods of time;
- (d) For temporary use of water needed for the construction of roads, dikes, buildings, and other infrastructures; and
- (e) When there are unforeseen delays in the approval of the application and appropriation of water is necessary pending the issuance of a water permit, unless the application is protested.

Temporary permits shall be granted by the Council on a case to case basis specifying the conditions and period under which the permit is valid. The Council may delegate the issuance of temporary permits for a period of not exceeding six (6) months and a quantity of not more than 200 litres per second.



**VI - ZIMBABWE - Water (Water Court) Regulations, 1986**

Form "W, 11" - AFFIDAVIT - Application for Extension of Time - See Appendix I, page 244.

Form "W.R. 7" - Report for Issue of Final Grant - See Appendix I, page 244.

### Step Five - Formatting of permits

A decision to grant, in whole or only in part, a proposed water utilization or project results in a legal instrument variably styled permit, licence, authorization or concession - which terms, as already mentioned in the Introduction to this Chapter, will be collectively referred to as "permits". A permit is the instrument of the grant, and at the same time it constitutes and is evidence of, a right to use water, with the limitations specified in the grant. Standard formats of permits may be appended to subsidiary legislation as Forms for the convenience of the responsible government department or agency. Practice with respect to the design of Forms ranges from standard formats of varying complexity and of uniform applicability to all water uses (I to III) to different formats for different uses (IV) to separate formats for the construction of works instrumental to a use (V). Seldom if ever do permits grant the holder an unfettered privilege to take and utilize water or to implement a project unconditionally. To the contrary, the holder's rights will be qualified by the insertion in the instrument of the grant of terms and conditions. Whilst the framing of such terms and conditions is typically left to the discretion of the permit-granting government authority, standard clauses may be crystallized in the permit Forms (III to V) or they can be prescribed directly by legislation for express or implied incorporation in the permit (VI and VII). In addition, permit holders will be subject to a number of obligations spelt out in the legislation as a matter of general applicability to all or particular classes of permit holders, regardless of such obligations being recorded in the permit (these obligations will be reviewed in sub-chapter 3 hereinbelow).

**I - TANZANIA - Water Utilization (General) Regulations, 1975**

Form E - Provisional/Final Grant of Water Right - See Appendix I, page 245.

**II - MALAWI - Water Regulations, 1969**

Form WRB.3 - Grant/Certificate of Water Right - See Appendix I, page 246.

**III - AUSTRALIA - NORTHERN TERRITORY - Control of Waters Regulations**

Second Schedule - See Appendix I, page 247.

**IV - SOUTH AUSTRALIA - Control of Waters Regulations, 1971**

Form F - Irrigation Licence - Metered - See Appendix I, page 248.

Form G - Irrigation Licence - Unmetered - See Appendix I, page 248.

Form H - Industrial Licence - See Appendix I, page 249.

Form J - Stock and Domestic Licence - See Appendix I, page 249.

**V - KENYA - Water (General) Rules**

Form WAB.15 - Authorization to Construct Works for the Diversion, Abstraction, Storage or Use of Water - See Appendix I, page 251.

**VI - PHILIPPINES - Water Rules and Regulations**

13. Water Permits issued by the Council shall be subject to such terms, restrictions and limitations as it may deem proper to impose, and to any, or all, of the following conditions:

- a. That within one (1) year from the receipt of the permit the applicant shall submit to the Council for approval, the plans and specifications for the diversion works, pump structure, water measuring device, and other required structures and in addition for private sector

projects the implementing schedules of construction. No construction work or private sector projects shall commence until the plans, specifications and implementing schedules are duly approved. When the diversion dam is temporary and less than two (2) meters high, the submission of plans for the dam may not be required.

- b. The construction of the necessary structures and diversion works shall begin within ninety (90) days from the date of receipt of the approved plans, specifications and implementing schedules and shall be completed within the approved schedule unless extended by the Council for valid or justifiable reasons: Provided, that water shall not be diverted, pumped or withdrawn until after such structures and work shall have been inspected and approved by the Council, unless otherwise allowed. Except in cases of emergency to save life or property or repairs in accordance with plans originally approved, the alteration or repair of these structures shall not be undertaken without the approval of the Council.
- c. The right of a permittee to the Amount of water allowed in the permit is only to the portion or extent that he can use beneficially for the purpose stated in the permit. The diversion of the water shall be from the source and for the purpose indicated in the permit and in no case should said use exceed the quantity and period indicated therein. In gravity diversions, regulating gates of the canal shall be closed when water is not needed.
- d. The Council may, after due notice and hearing, reduce at anytime the quantity of water or adopt a system of apportionment, distribution, or rotation thereof when the facts and circumstances in any situation would warrant the same in the interest of the public and/or legal appropriators.
- e. The Council may, after due notice and hearing, revoke the permit in favour of projects for greater beneficial use or for multi-purpose development, subject to compensation in proper cases.
- f. The Council shall revoke or suspend the permit if the permittee violates effluent/water quality standards as determined by the National Pollution Control Commission.
- g. At any time after completion of diversion works and necessary structures, non-use of the water for the purpose stipulated in the permit for a period of three consecutive years shall render said permit null and void, except as the Council may otherwise allow for reasons beyond the control of the permittee.
- h. Any person in control of a well shall prevent the waste of water therefrom and shall prevent water from flowing onto the surface of the land or into any surface water without being beneficially used, or into any porous stratum underneath the surface.
- i. Any person in control of a well shall prevent water containing mineral or other substances injurious to the health of humans or animals or to agriculture and vegetation from flowing onto the surface of the land or into any surface or into any other aquifer or porous stratum.

#### VII - MALAWI - Water Regulations, 1968

3. (1) The following covenants on the part of the grantee shall, unless otherwise expressly stated therein, be implied in every grant:

- (a) to pay the rent reserved by the grant on the day and in the manner therein provided;
- (b) to erect any works required for the abstraction of water (hereinafter called the "works") in a substantial and workmanlike manner to the satisfaction of the Minister and so as to cause no unnecessary damage or disturbance to the bed, banks or surrounds of the river or stream (hereinafter called the "said river or stream") from which abstraction is authorized;
- (c) not to discharge or allow to be discharged into the said river or stream:
  - (i) any water of less purity than or of a temperature sensibly differing from the water in the said river or stream, or
  - (ii) any substance or matter which shall prejudicially affect the said river or stream or any fish contained therein which shall be or cause a nuisance;
- (d) for the purpose of bilharzia and malaria control to keep and maintain the margin of the works and all water channels leading therefrom to an appropriate depth free of all vegetation and to do all other suitable measures that may be necessary to prevent the collection of pools of water in the vicinity of the works;
- (e) not to assign the grant without the previous consent in writing of the Minister;

- (f) to indemnify and keep indemnified the Minister against all actions, claims and demands which may be brought or made against the Minister by reason of anything done by the Grantee under the authority of the grant; and
- (g) within six months after the expiration or prior termination of the grant and if requested by the Minister so to do, to remove the works and to restore the land on which the works were erected to the same or as good a state as it was immediately before the works were constructed or in default of so doing to repay to the Minister such costs and expenses as may be incurred by him in effecting such removal and restoration.

(2) For the purposes of this regulation "temperature sensibly differing" shall mean a difference in temperature which can be appreciated by the senses without the use of a thermometer.

4. The following conditions shall, unless expressly excluded therefrom, be implied in every grant:

- (a) a grant shall not limit in any way the exercise of the existing or future water rights vested in the Minister nor imply any guarantee that the quantity of water referred to is or will become available;
- (b) the water used under a grant and returned to any stream or body of water shall not be polluted with any matter derived from the course of the water to such an extent as to be liable to cause injury or damage whether directly or indirectly to the health of the public or to livestock, animals, fish, crops, orchards or gardens by the use of consumption of or irrigation by such water or to any project in the processing of which such water is used;
- (c) all reasonable precautions shall be taken by the grantee to the satisfaction of the Water Resources Board to prevent accumulation in any river, stream or watercourse of silt, sand, gravel, stones, sawdust, refuse, sewerage, waste or any other substance which may injuriously affect the use of such water; and
- (d) a grant shall be revokable by the Minister at any time in the event of the non-compliance by the grantee with any of the covenants on his part therein contained or implied.

5. The following additional conditions shall, unless otherwise expressly stated in the grant, be implied in every grant for mining, industrial purposes or generation of power:

- (a) the water used shall be returned, if reasonably practicable, to the stream or body of water from which it was taken or to such other stream or body of water as the Water Resources Board may direct; and
- (b) the water used shall, insofar as the use to which it is to be put allows, be returned substantially undiminished in quantity.

## Step Six - Recording of decisions and permits

Records of successful applications and of permits issued as a result are generally prescribed by the law, for the Government's own future reference and for the information of the public. Records of water use permits are commonly styled "registers", and are made accessible to the public as directed by the law. Registers generally also contain a record of events concerning the permit after its grant (see in this regard sub-chapter 4 herebelow). In addition, the reasons for unsuccessful applications may be required to be recorded in writing, also for the benefit of the unsuccessful applicant should he contemplate appealing from the relevant decision (see in this regard **Step Seven - Appealing from Adverse Decisions** herebelow). Subsidiary legislation lays down, or simply clarifies the import of, recording requirements (I and II), and provides the details of formation and contents of, and access to, the prescribed registers (III).

### I - PHILIPPINES - Water Rules and Regulations

12. Approved applications shall be issued water permits subject to such conditions as the Council may impose. Such permit must bear the seal of the Council and the signature of the Executive Director. A copy of said permit shall be furnished the Office where the application was filed. Disapproved applications shall be returned to applicants through the office where the same was

filed, within thirty (30) days of such disapproval, stating the reasons therefor.

The Council shall, moreover, furnish periodically all PW Regional Directors, PW District Engineers, and NFA Regional Directors and Provincial Irrigation Engineers, a list of approved water permits granted within their respective areas of jurisdiction.

**II - UNITED KINGDOM - Water Resources (Licences) Regulations**

10. ... (5) Where the river authority decide to grant a licence subject to conditions or departing in a material respect from the proposals in the application, or to refuse a licence, they shall state their reasons in writing, and the river authority shall send with their decision a notification in (or substantially in) the terms of the relevant notification set out in Schedule 3 to these regulations".

...

**III - UNITED KINGDOM - Water Resources (Licences) Regulations**

17. (1) The register which, by virtue of section 53 of the Act, is required to be kept by a river authority and to be available for inspection by the public at all reasonable hours shall contain the following information with respect to every application made to the river authority for the grant, revocation or variation of a licence under the Act, namely:

- ... (b) the decision, if any, of the river authority, the date of that decision and brief particulars (including the serial number) of any licence granted, or revocation or variation effected, by virtue of that decision;
- (c) the decision, if any, of the Minister (whether on the reference of the application to him or on appeal from the river authority), the date of the Minister's decision and brief particulars of any licence directed to be granted (and the serial number of such licence when granted), or of any revocation or variation directed to be effected, in pursuance of that decision;

...

### Step Seven - Appealing from adverse decisions

Principal legislation may allow for administrative or judicial review of water allocation decisions, i.e., for a judge in court or for a government administrator ranking higher in the hierarchical ladder to the one who took the decision impugned to screen water allocation decisions for consistency with formal and substantive legal requirements. This review process constitutes an appeal. If water allocation decisions are appealable, subsidiary legislation generally provides the necessary procedural and substantive details as to the filing and disposal of an appeal (I to III).

**I - ZIMBABWE - Water (Water Court) Regulations, 1988**

33. (1) Any party who wishes to appeal from a decision of a water court in terms of section 55 of the Act shall note his appeal by lodging his written notice of appeal with the water registrar within twenty-one days of the decision being made known to him.

(2) A copy of any notice of appeal lodged in terms of subsection (1) shall be lodged with the Registrar of the Appellate Division forthwith.

**II - TANZANIA - Water Utilization (General) Regulations, 1975**

19. (1) Any person wishing to appeal under section 32 of the Act shall give to the Water Officer and to the appellate authority a notice of his intention to appeal within thirty days of the notification to him of the decision of the Water Officer or the service upon him of the certificate of the grant in respect of which the appeal is to be made or, if he is not a person upon whom the Water Officer is required by the Act or by these Regulations to serve notice of such decision,

within thirty days of the decision.

(2) Notwithstanding paragraph (1), the appellate authority may, for good cause, extend the period within which notice of appeal may be given.

20. Upon receipt of a notice of intention to appeal and within twenty-one days of the receipt of the notice, the Water Officer shall cause to be prepared and transmitted to the appropriate appellate authority:

- (a) in the case of an appeal against a decision given in respect of any application, three copies of:
  - (i) a written statement showing the name and address of the applicant and every objector to the application, and the decision appealed against;
  - (ii) the application in respect of which the decision appealed against was given;
  - (iii) the relevant portion of the minutes showing the advice of the Board, if any was given;
  - (iv) any objection which was referred to the Board;
  - (v) all other documents which were considered by the Water Officer in arriving at the decision appealed against; and
  - (vi) a written statement signed by the Water Officer indicating concisely the grounds of the decision appealed against and any conclusion of fact arrived at by him.
- (b) in every other case, three copies of the documents specified in sub-paragraphs (iii), (v) and (vi) of paragraph (a), together with any notice relevant to the matter served by the Water Officer on the appellant and any representation or statement made by him to the Water Officer.

21. The appellant shall, within twenty one days after giving notice of appeal, transmit to the appellate authority and the Water Officer three copies of his memorandum of appeal setting out concisely and under distinct and consecutively numbered heads the grounds of his objection to the decision of the Water Officer.

22. (1) Subject to paragraph (2), upon receipt of the memorandum of appeal, the appellate authority shall proceed to consider and determine the appeal.

(2) The appellate authority may, if it thinks it desirable, give an opportunity to the appellant to be heard in support of his memorandum of appeal.

(3) When the appellate authority decides to hear the appellant in support of his memorandum of appeal, it shall give an opportunity to be heard to

- (a) the Water Officer; and
- (b) if the appeal is against the decision of the Water Officer on an application:
  - (i) all objectors to the application if the appellant was the original applicant; or
  - (ii) the original applicant if the appellant was an objector to the application.

(4) In deciding on the appeal the appellate authority shall not confine its considerations to the grounds of appeal set out in the memorandum of appeal.

22A. (1) The Water Officer shall, in addition to each case where he is required by the Act to give notice, give notice of every decision from which an appeal lies under section 32 of the Act to:

- (a) the person whose application has been determined by such decision or whose water right, easement, or works have been so affected;
- (b) all persons who have objected to the application where an application may be objected to; and
- (c) all persons on whom the Water Officer is required to serve notice of the making of an application.

(2) Notwithstanding paragraph (1), the Water Officer may not give notice under this regulation to any person on whom, as a result of the decision, he has already served a certificate or grant under the Act.

### III - UNITED KINGDOM - Water Resources (Licensing) Regulations, 1965

12. (1) Any person who wishes to appeal in accordance with section 39 of the Act against the decision of a river authority on his application for a licence under the Act (or by reason of the failure of the river authority to give notice of their decision or of the reference of the application to the Minister) shall give notice of appeal in writing to the Minister within one month from the date of receipt of notice of the river authority's decision, or of the expiry of the appropriate period for any agreed extension thereof specified in regulation 10 (4) of these regulations, as the case

may be, or within such longer period as the Minister may at any time allow.

(2) Such a person shall provide the Minister with a copy of the following documents:

- (a) the application for a licence made to the river authority;
- (b) all relevant maps and particulars submitted to the authority;
- (c) the notice of the decision, if any;
- (d) all other relevant correspondence with the river authority.

(3) On receipt of the copy of the notice of appeal which the applicant is required by section 39 (2) of the Act to serve on the river authority, that authority shall within a period of 14 days serve a copy of the notice:

- (a) on each of the persons, if any, who made representations with respect to the application to which the appeal relates within the period allowed in that behalf by the appropriate section 28 notice relating to that application; and
- (b) on any National Park planning authority who, having been served with notice of the application to which the appeal relates in accordance with the provisions of regulation 10(2) of these regulations, duly made representations with respect to the application.

(4) Any person or authority who is served with a copy of a notice of appeal under the preceding paragraph may make further representations to the Minister in writing within a period of 21 days from the date on which the copy of the notice is served on him, and the Minister shall take into account any further representations duly made to him by a National Park planning authority as well as any such representations made to him by a person referred to in subparagraph (a) of the last preceding paragraph.

### 3. GENERAL OBLIGATIONS OF PERMIT HOLDERS

In addition to being subject to the terms and conditions spelt out in the permit, permit holders may also be subject to obligations of general applicability to all of them. These obligations are generally laid down in subsidiary legislation, or, in the alternative, this may provide details of implementation of obligations laid down in the principal legislation. These obligations can be immediately operational or be engaged by the Government's act of requesting a given permit holder to comply with a given obligation (I to V). The following are matters typically covered by such obligations:

#### Maintenance and upgrading of works

##### **I - KENYA - Water (General) Rules**

68. An operator shall, at his own expense, construct, secure and maintain to the satisfaction of the Water Apportionment Board, or of any person appointed by it for the purpose, all works necessary for the passage of waste and superfluous water flowing from any works constructed by him, and shall, unless anything to the contrary is endorsed on his licence, sanction or permit, as the case may be, return the said waters to the same body of water from which it was originally diverted or abstracted.

69. An operator or other person lawfully abstracting or diverting water or draining a swamp by means of a canal or other work shall at all times keep such canal or other works free from all weeds.

70. An operator when so directed by the Water Apportionment Board, shall, at his own expense, and within such period as the Water Apportionment Board may specify, line any pervious canal or structure with an impervious lining approved by such Board, or shall replace any pervious canal by an impervious conduit approved by the Board:

Provided that any operator aggrieved by such direction may appeal therefrom to the Water Resources Authority.

### Status of existing works if permit or activities under a permit cease

When a permit ceases because of cancellation, expiry of the term of duration, or renunciation by the permit holder, this is generally placed under an obligation to dispose of existing works as directed by the responsible government agency.

#### **II - KENYA - Water (General) Rules**

59. The Water Apportionment Board may, within six months of the cancellation or determination of a licence, sanction or permit, serve upon the operator or former operator whose licence, sanction or permit has been cancelled or determined an order for the disposal of all or any portion of the works previously used under the authority of the licence, sanction or permit.

60. Any person who fails to comply with any order made under rule 59 of these Rules shall be guilty of an offence.

#### **III - MALAWI - Water Regulations, 1969**

3. (1) The following covenants on the part of the grantee shall, unless otherwise expressly stated therein, be implied in every grant:

... (g) within six months after the expiration or prior termination of the grant and if requested by the Minister so to do, to remove the works and to restore the land on which the works were erected to the same or as good a state as it was immediately before the works were constructed or in default of so doing to repay to the Minister such costs and expenses as may be incurred by him in effecting such removal and restoration.

### Taking of records of water intakes

Requirements in this regard may be in the form of a legal prescription or standardized in special forms.

#### **IV - KENYA - Water (General) Rules**

BB. If required by the Water Apportionment Board, a full and correct record, in such manner as the Board may from time to time require, shall be kept by the operator of all water abstracted, diverted or stored, giving the date, time and quantity and methods of such abstraction, diversion or storage, and the purpose or purposes for which such water was used, and such records shall be furnished to the Water Apportionment Board at such times as it may demand them.

#### **V - SOUTH AUSTRALIA - Control of Waters Regulations, 1971**

Form K - Quarterly Return of Diversions - Metered Supply - See Appendix I, page 252.

Form L - Quarterly Return of Diversions - Unmetered Supply - See Appendix I, page 253.

### Restraining the intake of water

A permit may be qualified by reference to the permit holder's ability to make a "beneficial" use of the water he is entitled to under a permit. An obligation of corresponding scope has the effect of constraining the permit holder's entitlement, however quantified.

**VI - KENYA - Water (General) Rules**

82. Notwithstanding the quantity of water granted by his licence, sanction or permit, as the case may be, no operator shall divert more water from any body or bodies of water than can for the time being be beneficially used by him in accordance with the terms of his licence, sanction or permit, as the case may be.

83. Having due regard to the priority of the purpose for which the water is granted, an operator shall, on being so directed by the Water Apportionment Board or a water bailiff, divert the quantity of water which may be necessary for his purpose at such times and under such system of rotation with other operators on the same body of water, or other body of water, as may, in the opinion of the Water Apportionment Board or water bailiff, secure the most economical use of water.

Construction and operation of inflow control works

**VII - KENYA - Water (General) Rules**

87. (1) Every operator diverting water from any body of water into any canal, pipe, conduit or other works shall construct and maintain, to the satisfaction of the Water Apportionment Board, a substantial head-gate or valve at the point where the water is diverted.

(2) Such head-gate or valve shall be capable of being operated at all stages of the flow of the body of water, and shall be of such construction that it can be regulated and locked in any position and kept closed at the direction of the Water Apportionment Board or a water bailiff.

Return of excess and "return" flow

Return of after use water flow - as opposed to return of excess, unused water - has a dual connotation. On the one hand, the so called "return flows" may have an impact on the water balance overall of the receiving river or other hydrological system, inasmuch as such flows replenish the quantities of water in the system they are returned to. On the other hand, return flows may have an impact also on the quality of the system waters they are returned to. In view of the distinctive traits of this latter aspect of return flows, its treatment in subsidiary legislation has been separately presented in Chapter II on **CONTROL AND PREVENTION OF WATER POLLUTION**. The examples which follow herebelow deal with the "quantitative" aspect of return flows and with excess, unused water (VIII and IX).

**VIII - MALAWI - Water Regulations, 1968**

5. The following additional conditions shall, unless otherwise expressly stated in the grant, be implied in every grant for mining, industrial purposes or generation of power:

- (a) the water used shall be returned, if reasonably practicable, to the stream or body of water from which it was taken or to such other stream or body of water as the Water Resources Board may direct; and
- (b) the water used shall, insofar as the use to which it is to be put allows, be returned substantially undiminished in quantity.



**IX - KENYA - Water (General) Rules**

68 An operator shall, at his own expense, construct, secure and maintain to the satisfaction of the Water Apportionment Board, or of any person appointed by it for the purpose, all works necessary for the passage of waste and superfluous water flowing from any works constructed by him, and shall, unless anything to the contrary is endorsed on his licence, sanction or permit, as the case may be, return the said waters to the same body of water from which it was originally diverted or abstracted.

#### **4. MANAGEMENT OF PERMITS**

Water allocation decisions are crystallized in permits, but are not cast in concrete as a result. Circumstances may change. A new national or regional water master plan may come into being, requiring adjustments in the water resources allocation pattern as crystallized in as many permits as are in operation at any given point in time. Or a prospective user may seek water which has already been allocated under a permit. If the utilization applied for is regarded by the government decisionmaker as preferable to the one which already exists, it may be necessary to sacrifice the latter. Or a drought or other emergency may strike, forcing the Government to curtail allocations under the existing permits (see on this particular score VI and X). The permit holder himself may request that his permit be amended in certain respects, or he may decide to relinquish it before its expiration date. On expiration of his permit, a permit holder may wish to have it continue for an additional term. In all these cases, the government department or agency in charge of administering the permit system has to be in a position to react to change, and to adjust permits to the new circumstances - in other words, it must have at its disposal the legal machinery necessary to "manage", on its own motion or also at the permit holder's request, all permits outstanding at any particular time. Such machinery typically consists of the review and variation of the terms and conditions of permits; the suspension or cancellation of a permit under given circumstances including, in particular, for breach of legal provisions (this particular aspect of permit cancellation is investigated at sub-chapter 10 herebelow); the renewal of permits on expiration; and the transfer of a permit from one water user to another. All these mechanisms are cast in the legislation under the guise of a grant of corresponding authority to the government department or agency concerned. Such grant is generally found in the principal legislation and is qualified so as to protect the holder of a permit from undue governmental interference with his rights under the permit. As already intimated above, permit management mechanisms can be activated at the request of the permit holder, or at the initiative of the government department or agency responsible for administering the permit system.

Subsidiary legislation typically provides procedural and substantive requirements and relevant standard formats of permit management mechanisms (i.e. renewal of permits: I and II; variation of permits: II, VII, VIII and X; suspension and cancellation of permits: III, V to X, XII and XIII). In addition, it may clarify certain legal side effects of permit management action taken by the Government - or of action taken unilaterally by the permit holder (IV). Provisions as to the recording of permit management action taken in the registers of permits, and as to appeals from such action tend to appear in context with general provisions on such registers and appeals, respectively (see sub-chapter 2, under Steps Five and Six above).

**I - SOUTH AUSTRALIA - Control of Waters Regulations, 1971**

**Form B** - Application for Renewal of Water Diversion Licence - Irrigation - Metered - See Appendix I, page 254.

**Form C** - Application for Renewal of Water Diversion Licence - Irrigation - Unmetered - See Appendix I, page 254.

**Form D** - Application for Renewal of Water Diversion Licence - Industrial - See Appendix I, page 255.

**Form E** - Application for Renewal of Water Diversion Licence - Stock and Domestic - See Appendix I, page 255.

**II - AUSTRALIA - NORTHERN TERRITORY - Control of Waters Regulations**

4. (1) An application:

- ... (b) for the renewal of a licence under section fourteen F of the Ordinance; or
- (c) for an amended licence under section fourteen H of the Ordinance;

shall be in accordance with the First Schedule<sup>1</sup> and shall be accompanied by a plan showing:

- (d) the land on to which it is proposed to divert or take the water;
- (e) the point on the watercourse or lake where the work is constructed or installed or where the work is proposed to be constructed or installed; and
- (f) any lands situated between that land and that point.

...

5. A licence issued under section fourteen C, section fourteen F or section fourteen H of the Ordinance shall be in accordance with the Second Schedule<sup>2</sup> but in the case of the renewal of a licence under section fourteen F of the Ordinance shall have the word "Renewal" endorsed thereon.

**III - KENYA - Water (General) Rules**

56. (1) Every permit to develop an amount of power less than the full power potential of the site may be subject to special conditions if the Water Apportionment Board consider that the full power development of the site at a later date may be required.

(2) If an existing operator is unable, or unwilling, to enlarge his works to develop the full power potential of the site, and it is considered by the Water Apportionment Board to be in the public interest to do so, the Water Apportionment Board may cancel the licence, sanction or permit and authorize the works to be carried out by another person.

(3) When action is taken under paragraph (2) of this rule, the former operator shall be entitled to a supply of power from the new operator at a price and under conditions equivalent to those existing before the cancellation of the licence or permit.

(4) For the purpose of ascertaining the power developed or capable of development under any licence or permit, the Water Apportionment Board shall have free access to all books, plans and records bearing on the quantity of power developed, and may do such other things as may be necessary for such purpose.

**IV - KENYA - Water (General) Rules**

58. Abandonment or cancellation of a licence, sanction or permit or any part thereof shall not have the effect of relieving the owner of the land or undertaking to which the licence, sanction or permit is or was appurtenant of liability for any damage resulting from the works constructed, operated or maintained by the operator, or from any defect or insufficiency in the works.

**V - PHILIPPINES - Water Rules and Regulations**

18. Any permit issued pursuant to these rules may be revoked by the Council, after due notice and hearing, for any of the grounds provided herein or in the Code.

85. Water Permits or other rights to use the water may be revoked or suspended summarily by the Council if any of the following facts and/or conditions exists:

- (a) That the suspension/revocation will rebound to greater public interest, public health and safety;
- (b) That the acts complained of are grossly illegal per se;
- (c) That the violative act is the second offense on record involving the same infraction;

<sup>1</sup> Omitted.

<sup>2</sup> See Appendix I, page 247.

- ld) That the non-observance of or non-compliance with the rules, order or regulation is willful and deliberate;
- le) When there is a prima facie showing that the non-observance of any standard for the beneficial use of water or non-compliance with any of the terms or conditions in a water permit or water rights grant is prejudicial to the life and property of third person;
- lf) When the suspension or revocation thereof is sought by an injured party, provided he files a bond to cover any damage which may be sustained by the permittee or grantee arising from such summary revocation/suspension;
- lg) In times of emergency, where there is a prima facie showing that the use of water by the permittee/grantee is wasteful;
- lh) When health authorities so recommend to prevent or control the spread of disease due to inadequate facilities;
- li) When in a decision of a competent court the revocation or suspension of the water permit or grant is ordered or recommended; and
- lj) Such other serious offenses or gross violations and infractions as the Council may decide

**VI - PHILIPPINES - Water Rules and Regulations**

85. Water Permits or other rights to use the water may be revoked or suspended summarily by the Council if any of the following facts and/or conditions exists:

- ... i) In times of emergency, where there is a prima facie showing that the use of water by the permittee/grantee is wasteful;

...

**VII - UNITED KINGDOM - Water Resources (Licences) Regulations, 1965**

9. In relation to any application under section 42(2) of the Act (which provides that the holder of a licence under the Act may apply to the river authority to vary the licence), regulations 5 to 8 of these regulations<sup>1</sup>, except the provisions relating to publication and service, as required, of the appropriate section 28 notice (which shall be in, or substantially in, the form N4 in Schedule 2), shall not apply; and the said provisions relating to the appropriate section 28 notice shall not have effect in any case where the variation proposed by the applicant is limited to reducing the quantity of water authorised to be abstracted in pursuance of the licence during one or more periods.

18. The notice which is required by section 43(3) of the Act to be served and published with respect to any proposals for revoking or varying a licence, formulated by a river authority under that section, shall be in the form of the notice prescribed for this purpose in Schedule 2 to these regulations (and therein numbered N5), or in a form substantially to the like effect.

19. The notice which is required by section 47(3) of the Act to be served with respect to an application made to the Minister by an owner of fishing rights under that section for the revocation or variation of a licence to abstract water from an inland water, shall be in the form of the notice prescribed for this purpose in Schedule 2 to these regulations (and therein numbered N6), or in a form substantially to the like effect.

...

**Form N4** Notice of Application to Vary \* (a Licence to Abstract Water) (a Licence to Obstruct or Impede the Flow of an Inland Water by Means of Impounding Works) (a Combined Licence to Obstruct or Impede the Flow of an Inland Water by Means of Impounding Works and to Abstract Water) (an "Alternative Statutory Provision" Authorising the Obstruction or Impeding of the Flow of an Inland Water by Means of Impounding Works) - See Appendix I, page 256.

**Form N5** - Notice of Proposals for \*(Revoking) (Varying) (a Licence to Abstract Water) (a Licence to Obstruct or Impede the Flow of an Inland Water by Means of Impounding Works) (a Combined Licence to Obstruct or Impede the Flow of an Inland Water by Means of Impounding Works and to Abstract Water) (an "Alternative Statutory Provision" Authorising the Obstruction or Impeding of the Flow of an Inland Water by Means of Impounding Works) - See Appendix I, page 257.

**Form N6** Notice of Application by Owner of Fishing Rights for \*(Revocation) (Variation) of a Licence to Abstract Water - See Appendix I, page 258.

<sup>1</sup> See sub-chapter 2 above: Step One - Filing of an Application - Supporting documents, example IV

**VIII - ZIMBABWE - Water (Water Court) Regulations, 1966**

Form "W. 8" - Application for Revision of Water Right - See Appendix I, page 259.

Form "W. 13" - AFFIDAVIT - Application for Reduction of a Final Grant - See Appendix I, page 260.

**IX - MALAWI - Water Regulations, 1989**

4. The following conditions shall, unless expressly excluded therefrom, be implied in every grant:
- ... (d) a grant shall be revokable by the Minister at any time in the event of the non-compliance by the grantee with any of the covenants on his part therein contained or implied

**X - LESOTHO - Water Resources Regulations, 1980**

2. The Water Officer appointed under section 5 (4) shall:

- ... (d) in times of drought, or in the public interest, on the advice of the Minister, may revoke or vary water use permits.

**XI - NEPAL - Irrigation Regulation, 1989**

**7.4 Approval to be taken for Decreasing or Increasing the Quantity of Water.**

- 7.4.1 An institution obtaining the licence pursuant to Rule 7.2 shall, if it requires to decrease or increase the quantity of water fixed in the licence, submit an application to that effect to the District Irrigation Office along with the justification for it.
- 7.4.2 Upon receipt of application pursuant to sub-rule 7.4.1, the Chief of the District Irrigation Office may, after making necessary enquiries on it, give his approval for such decrease or increase, provided that it does not cause adverse effect to the irrigation or any other use of water being made by systems operated within that area by any other individual, group organization or project. The fact of giving such approval shall be mentioned by the Chief of the District Irrigation Office in the record book as well as in the licence.

**XII - NEPAL - Irrigation Regulation, 1989**

**7.5 Notification to be Given for Deleting the Name from the Record Book of Licence:**

- 7.5.1 In case an institution obtaining the licence pursuant to Rule 7.2 is not desirous to use the water resources as mentioned in the licence, it shall give a notice in writing, for deleting its name from the record book of Licence, to the Chief of the District Irrigation Office within thirty five days from the date of such decision made by the institution.
- 7.5.2 In case an information is received pursuant to sub-rule 7.5.1, and if the Chief of the District Irrigation Office, after making necessary enquiry, finds that such institution has ceased to use the water resources, he shall cancel the licence within a period of three months and record such cancellation in the record book.
- 7.5.3 An institution whose licence and record of licence has been cancelled pursuant to sub-rule 7.5.2, shall not be obliged to pay an annual fee imposed under Rule 7.3.

**XIII - ZIMBABWE - Water (Water Court) Regulations, 1966**

Form "W. 12" - AFFIDAVIT - Application for Cancellation of a Final Grant - See Appendix I, page 261.

## 5. SUCCESSION TO PERMITS

The question of succession to permits is of general relevance when permits are regarded as appurtenant to a given piece of land they "serve". This is typically, but not exclusively, the case of permits for the abstraction and use of irrigation water. What the status of a permit is if the permit holder dies, or if the land the permit "serves" is sold or transferred or is divided up into separate holdings, are typical issues dealt with in subsidiary legislation both on substantive grounds complementary to those covered by principal legislation (I and II), and through the provision of standard Forms in aid to principal legislation (III and IV). Sometimes pertinent substantive rules are incorporated in the permit itself and crystallized as a standard term in the permit Forms appended to subsidiary legislation (V).

1 - UNITED KINGDOM - Water Resources (Succession to Licences) Regulations 1969

2. Interpretation. - (1) In these regulations, unless the context otherwise requires:

"successor" means a person who becomes the occupier of any land formerly occupied by the holder of a licence under the Act to abstract water for use on specified land consisting of, or comprising, the land in question;

and in relation to any successor and to his entitlement under the regulations:

"the original holder" means the last preceding occupier of the land in question, who, immediately before he ceased to be the occupier, held a licence under the Act to abstract water for use on that land, with or without other land;

"the original licence" means the original holder's licence as it has effect for the purposes of the successor's entitlement at the time when he becomes the occupier of the land in question, or, if the relevant provisions of that licence are then contained in a new licence which has been substituted therefor in pursuance of the regulations, means that substituted licence;

"the original land" means all the land of which the original holder was the occupier immediately before the relevant event, in so far as it was, or formed part of, the land then specified in the original licence as the land on which water abstracted in pursuance of that licence was to be used;

"the relevant event" means the death of the original holder, or the other act or event by reason of which the original holder ceased to be the occupier of land consisting of, or comprising, the land of which the successor has become the occupier.

...

4. Rights of a successor on becoming the occupier of the whole of the original land. - (1) Subject to the following provisions of this regulation, where the original holder ceases to be the occupier of the whole of the original land and, whether immediately thereafter or subsequently, a successor becomes the occupier of the whole of that land but, by reason of the original land being only a part of the land specified in the original licence as the land on which water abstracted in pursuance of the licence is to be used, does not thereupon become the holder of the original licence by virtue of section 32(1) of the Act:

(a) the original holder (except where, being an individual, he has died) shall cease to be the holder of the original licence, and

(b) the successor shall become the holder of that licence.

(2) Where the preceding paragraph has effect, the successor shall cease to be the holder of the licence at the end of the period of one month beginning with the date on which he became the occupier of the original land, unless before the end of that period he has given notice to the river authority of the change in the occupation of that land.

(3) Where, in the case of a change or proposed change in the occupation of land in the circumstances mentioned in paragraph (1) of this regulation, it is the intention of the parties, or of the one who is the original holder, that the licence should be held by the original holder for the purposes for which he could lawfully make use of it but for the operation of the said paragraph (1), then:

(a) if notice of that intention is given to the river authority by both the parties and is not withdrawn, before the change in occupation takes place, paragraph (1) of this regulation shall not apply in relation to that change; and

(b) if notice of that intention is given to the river authority by both the parties, and is not withdrawn, before the end of the period specified in paragraph (2) of this regulation (but not before the change in occupation takes place), or if such notice is given to the river authority by the original holder, and is not withdrawn, before the end of that period and the successor does not within that period give notice to the river authority for the purpose of the said paragraph (2), the original holder shall in either case become the holder of the original licence immediately after the successor has ceased, by virtue of that paragraph, to be the holder of it.

(4) A successor who becomes the holder of the original licence by virtue of paragraph (1) of this regulation, and who does not cease to be the holder of the licence by virtue of paragraph (2), shall, in relation to any other person having a relevant entitlement under the next following regulation with respect to the same original licence, stand in the place of the original holder for the purpose of paragraph (3) of that regulation and shall for that purpose be entitled to apply for an appropriate new licence in pursuance of regulation 6 as if he were the original holder in the

circumstances specified in regulation 6(1)); and, if when the successor becomes the holder of the original licence as aforesaid there is an application made by the original holder with respect to the original licence for the purpose of regulation 5(3) which has not been disposed of, that application shall be deemed to have been adopted by the successor on becoming the holder of the original licence and may be determined accordingly; provided that reasonable notice shall be given to the successor before a decision is issued on the application as so adopted.

In this paragraph "a relevant entitlement" means an entitlement with respect to the original licence which a person acquires by becoming the occupier of land of which the original holder ceased to be the occupier on an occasion prior to the relevant event pursuant to which the successor becomes the holder of the original licence as aforesaid.

5. **Rights of a successor on becoming the occupier of a part of the original land.** - (1) Where the original holder ceases to be the occupier of the whole, or a part, of the original land and a successor becomes the occupier of a part of the original land within a period of two years beginning with the date of the relevant event, the successor, if he satisfies the conditions of section 27 of the Act (as modified by regulation 8), shall be entitled to apply, within a period of one month beginning with the date on which he becomes the occupier as aforesaid, for the grant of a new licence in accordance with the following provisions of these regulations.

(2) Subject to the next following paragraph, a successor who accordingly applies for a new licence and who when a decision falls to be made on the application, is the occupier of any of the land specified therein as land of which he has become the occupier in the circumstances mentioned in the preceding paragraph, shall be entitled to the grant of a new licence for the abstraction of water for use on land of which he is the occupier as aforesaid, containing provisions determined by reference to the provisions of the original licence in accordance with regulation 7 of these regulations.

(3) It shall be a condition of the successor's entitlement under this regulation to the grant of a new licence that the original holder or, as the case may be, the holder for the time being of the original licence who stands in place of the original holder for this purpose by virtue of regulation 4(4), has duly made, and has not withdrawn, an application in pursuance of the next following regulation for the grant of an appropriate new licence in substitution for the original licence, or an application under section 42 of the Act for the revocation of the original licence or for its variation in such a manner as will secure that those of its provisions with respect to the abstraction of water which (with any modifications) are to be included in the new licence for which the successor has applied cease to have effect as provisions of the original licence.

This condition shall not apply where the original holder has ceased to be the holder of the original licence and there is for the time being no holder of that licence in the place of the original holder as aforesaid.

(4) The Schedule hereto shall have effect in relation to the applications for the new licences in pursuance of this, or the next following, regulation.

6. **Rights of the original holder with respect to the grant of a new licence.** - (1) Where a successor duly applies in pursuance of the last preceding regulation for the grant of a new licence, and the original holder continues to be the occupier of a part of the original land, the original holder, if he satisfies the conditions of section 27 of the Act (as modified by regulation 8), shall be entitled to apply for the grant of a new licence, in substitution for the original licence, in accordance with the following provisions of this regulation.

(2) On the grant of a new licence on the successor's application, the original holder, if he has duly applied, shall be entitled to the grant of a new licence, in substitution for the original licence (including any provision relating to the use of water on land of which the original holder is not the occupier) in so far as effect is not given to those provisions in the new licence granted to the successor.

7. **Provisions of a new licence granted to a successor.** - (1) Subject to this regulation, the provisions of a new licence granted on the application of a successor in pursuance of regulation 5 shall be such as appear to the river authority to correspond as nearly as may be to the provisions of the original licence, modified so as to provide for the abstraction of water:

- (a) from any point of abstraction specified in the original licence which having regard to section 27 of the Act (as modified by regulation 8) and to the provisions of the original licence, is available to the applicant for the purposes of the next following sub-paragraph; and
- (b) for use on any part of the original land occupied by the applicant and for a purpose of the original licence appropriate to that part

In the following provisions of the regulations, "the applicant's land" means that part of the original land which is occupied by the applicant and to which his application relates, and any reference, however expressed, to a point of abstraction available to the applicant is a reference to such a point of abstraction as is mentioned in sub-paragraph (a) of this paragraph.

(2) Subject to the next following paragraph, provision as to any quantity of water authorised to be abstracted in pursuance of the new licence shall be made as follows, that is to say,

- (a) where the original licence specifies or otherwise limits a quantity of water to be abstracted during a period or periods so specified from any point available to the applicant, for use on the whole or a part of the applicant's land and not also on any other land, the new licence shall make the like provision;
- (b) where the original licence specifies or otherwise limits a quantity of water to be abstracted as aforesaid for use on the whole or a part of the applicant's land and also on other land, the new licence shall make the like provision with such modification as is required to secure that the quantity thereby authorised for use on the applicant's land, or, as the case may be, on the relevant part of the land, shall be an appropriate share of the relevant quantity provided for by the original licence, that is to say, either,
  - (i) an amount which bears to the whole of the relevant quantity provided for by the original licence the same proportion as the area of the applicant's land, or of the relevant part of that land, bears to the area of the land on which that quantity was to be used in accordance with the original licence, or
  - (ii) such other amount as the river authority (having regard to the provisions of the original licence, the manner in which any water abstracted has been used in accordance with that licence and any other material considerations) may determine to be the amount which would have been used on the land in question under the original licence if the original holder had continued to be the occupier of the applicant's land and had abstracted the whole of the relevant quantity

(3) Where

- (a) the original licence authorises the abstraction of water from a source of supply at two or more points of abstraction, not all of which have become available to the applicant as mentioned in paragraph (1) of this regulation, and
- (b) the river authority are satisfied that, if the original holder had continued to be the occupier of the applicant's land, it would have been his practice in accordance with the original licence to use on that land water abstracted at any point of abstraction which has not become available to the applicant,

the river authority may, if the applicant so requests, provide in the new licence for the abstraction, at any point or points of abstraction specified in the original licence and available to the applicant as aforesaid, of a quantity or quantities of water not exceeding whichever is the smaller of -

- (i) the corresponding quantity which, in the opinion of the authority, would have been abstracted and used on the applicant's land as mentioned in sub-paragraph (b) of this paragraph, and
- (ii) the capacity of the existing means of abstraction at the relevant point or points, regard being had to any quantity of water to be authorised in pursuance of the foregoing paragraphs of this regulation.

(4) In determining under this regulation what quantity of water is to be authorised in a new licence by reference to the provisions of the original licence, any relevant apportionment for the purposes of a licence previously granted hereunder by reference to the provisions of the same original licence shall (subject to the effect of any material revocation or variation) be deemed to be conclusive.

(5) Any reference in this regulation to the river authority shall be construed as including a reference to the Minister on appeal.

#### SCHEDULE Applications for New Licences

1. (1) An application in pursuance of these regulations for a licence to abstract water from a source of supply in a river authority area shall include the particulars and be verified by the evidence hereafter prescribed, and shall be made to the river authority in accordance with the provisions of this Schedule

(2) The application and any accompanying documents, together with such additional number of copies (not exceeding two) as the river authority may require, shall be addressed to the Clerk of the authority and posted to or delivered at the river authority's principal office or such other place as the authority may direct.

2. (1) The application shall be accompanied by an ordnance map to a scale of not less than six inches to one mile for the purpose of showing the matters specified in the next sub-paragraph:

Provided that the river authority may dispense with this requirement, or may accept a map to a smaller scale, if on the request of the applicant they are satisfied in the circumstances of the case that a map is unnecessary or, as the case may be, that a smaller scale will suffice.

(2) There shall be shown clearly on the map (if any).

- (a) the point or points of abstraction specified in the original licence (each with a reference number) at which the applicant proposes to abstract water;
- (b) as respects each point of abstraction, the relevant land for the purposes of section 27 of the Act (as modified by regulation 8);
- (c) the applicant's land (as defined in regulation 7(1), distinguishing as may be necessary between parts of that land on which it is proposed to use water abstracted in pursuance of the licence for different purposes.

(3) In this Schedule the expression "relevant land", used in connection with section 27 of the Act, means land contiguous to the existing point of abstraction at which the applicant proposes to abstract from an inland water, or land consisting of or comprising underground strata and with access to the existing point of abstraction at which he proposes to abstract from those strata, being in either case land in relation to which the applicant claims such rights of occupation or access, actual or prospective, as satisfy the relevant conditions of section 27 (as modified by regulation 8).

3. (1) Subject to sub-paragraph (2) with respect to an application made by the holder of the original licence, the application shall include the following particulars:

- (a) The applicant's name and address, and the name and address of any other person authorised to act on the applicant's behalf in the matter.
- (b) The source of supply to which the application relates.
- (c) The serial number of the original licence by reference to which the application is made, and the name and address (if known) of the original holder.
- (d) The name and address (if known) of any other person who to the applicant's knowledge has become the holder of the original licence.
- (e) Particulars of the applicant's claim to be entitled to make the application, including:
  - (i) a description (by reference to the map, if any) of the applicant's land (as defined in regulation 7(1));
  - (ii) the date on which, and the manner in which, the applicant became the occupier of the relevant part of the original land, and (if different and so far as known to the applicant) the date on which, and the relevant event by reason of which, the original holder ceased to be the occupier of that part;
  - (iii) a statement showing how the applicant claims to be entitled to make the application in accordance with section 27 of the Act (as modified by regulation 8), with reference, where appropriate, to relevant land for the purpose of section 27 shown on the map.
- (f) Particulars of the application, including:
  - (i) a brief description of the point or points of abstraction specified in the original licence at which the applicant proposes to abstract (with reference, where appropriate, to the point or points shown and numbered on the map);
  - (ii) the provisions which the applicant proposes the licence should contain, including provisions as to the quantity of water authorised to be abstracted during a period or periods specified at each point of abstraction or group of points specified, and provisions as to the land on which and the purposes for which the water abstracted is to be used, all being provisions framed by reference to the corresponding provisions of the original licence;
  - (iii) a statement showing how the quantities of water specified have been assessed in accordance with the provisions of regulation 7.

(2) In the case of an application by the original holder in pursuance of regulation 6, or by a person who has become the holder of the original licence and who is entitled to make such an application by virtue of regulation 4(4), sub-paragraph (1) of this paragraph shall have effect with the following modifications:



- (a) the particulars required at head (c) shall include the statement that the applicant is the original holder, or, as the case may be, that he has become the holder of the original licence by virtue of regulation 4;
- (b) for the particulars required at head (d) there shall be substituted brief particulars sufficient to identify the application by a successor for a new licence (or, if there is more than one, each such application) in consequence of which the applicant is applying for a new licence;
- (c) for the particulars required at head (e)(i) there shall be substituted a description of the part of the original land of which the original holder has continued to be the occupier, or, in the case of an application by a person who is the holder of the original licence by virtue of regulation 4(1), a description of the original land of which that person has become the occupier;
- (d) the particulars required at head (e)(ii) shall not apply in the case of the original holder, and, in the case of a person who has become the holder of the original licence by virtue of regulation 4, there shall be substituted for those particulars the date on which, and the circumstances in which, he became the occupier of the whole of the original land;
- (e) in head (f)(ii) for the words "in accordance with the provisions of regulation 7" there shall be substituted the words "having regard to the provisions of regulation 6".

4 (1) The application shall be accompanied by evidence for the purpose of satisfying the river authority with respect to such of the following matters as are contained in the application, or shall include a statement as to the nature of any evidence which the applicant can produce for that purpose if the authority shall so require:

- (a) that the claim to have become the occupier of a part, or the whole, of the original land, and (in so far as material) to have done so at the time specified, is well founded;
- (b) that the claim to be entitled to make the application in accordance with the provisions of section 27 of the Act (as modified by regulation 8) is well founded;
- (c) in the case of a proposal that the new licence should authorise a quantity of water determined in accordance with regulation 7(2)(b)(iii), that the quantity proposed is the quantity which ought to be so determined;
- (d) in the case of a request that, in accordance with regulation 7(3), there should be added to any quantity of water determined in accordance with regulation 7(2) a quantity which the original holder would have abstracted at a point of abstraction which has become available to the applicant, that the circumstances are such as to enable the river authority to be satisfied with respect to the relevant matters specified in regulation 7(3).

(2) The application shall be accompanied by such information as the applicant is able to provide with respect to the following matters:

- (a) whether the holder (if any) of the original licence has applied, or is prepared to apply, for the grant of a new licence, or for the revocation or variation of the original licence, as mentioned in regulation 5(3);
- (b) whether there is, or is likely to be, any related application for a new licence, made by another successor by reference to the same original licence, which might appropriately be considered together with the applicant's application.

5. Regulation 10 of the Water Resources (Licences) Regulations, 1965 shall have effect in relation to the application as if it were an application for a licence of right and as if the period therein prescribed for dealing with the application were a period of 3 months; and regulation 12 of those Regulations shall have effect in relation to any appeal to the Minister in pursuance of the application, but, save as aforesaid, Part II of the said Regulation of 1965 shall not have effect in relation to applications made in pursuance of these regulations.

#### 11 - UNITED KINGDOM - Water Resources (Licences) Regulations, 1965

17 .. (3) The register shall also contain, with respect to any person who by virtue of the provisions of section 32(1) or (5) of the Act, or of regulations under section 32(3) thereof, becomes the holder of a licence on succeeding to the occupation of land occupied by the previous licence holder or on transfer of the licence under section 32(5), the following information, namely, that person's name and address, the serial number of the licence and the date on which he notified the river authority of the change in the occupation of the relevant land, or of the transfer of the licence, as the case may be.

**III - ZIMBABWE - Water (Water Court) Regulations, 1966**

Form "W. 7" - Apportionment or Allocation of Water Right on Subdivision of Land - See Appendix I, page 262

Form "W. 8" - Application for Apportionment or Allocation of Scheduled Irri-gable Area on Sub-division of Land - See Appendix I, page 263.

Form "W.R. 5" - Report on Application for Apportionment or Allocation of Water Right on Subdivision - See Appendix I, page 264.

**IV - TANZANIA - Water Utilization (General) Regulations, 1975**

Form B - Notice of Apportionment of Water Right on Subdivision of Land - See Appendix I, page 267

**V - SOUTH AUSTRALIA - Control of Waters Regulations, 1971**

Forms F-J (standard clause #4) - See Appendix I, pages 248-250

## 6. CHARGING FOR THE USE OF WATER UNDER A PERMIT

This particular aspect of the water abstraction and use permit mechanism has been dealt with in Chapter VIII on **CHARGING FOR WATER**.

## 7. DEALING WITH "EXISTING" USES OF WATER

When permit requirements are introduced for the first time, or when important changes are introduced to an established system of water use permits or comparable requirements, it is standard practice for the relevant legislation to provide relief to water users who are lawfully utilizing water at the time the new or changed requirements come into operation. The rationale for this special treatment is one of fairness to users of water relying on the law as it existed prior to the changes brought about by subsequent legislation. Principal legislation ordinarily features the outlines of the special legal regime accorded "existing" water uses. Subordinate legislation provides complementary, mostly procedural requirements in connection with the filing of applications - essentially to have "existing" water rights acknowledged and allowed by the government water administration to continue subject to qualifications -, and with relevant grants, as in the examples given.

**I - UNITED KINGDOM - Water Resources (Licences) Regulations, 1965**

7. (1) This regulation shall apply in relation to any application for a licence of right and, to the extent hereinafter expressly provided, in relation to any application for a licence by virtue of section 56 (2) of the Act; and in this regulation any reference to a section 33 (1) (a) application, a section 33 (1) (b) application, or a section 56 (2) application is a reference respectively to an application made by virtue of section 33 (1) (a) of the Act in reliance on a statutory provision (other than an order under the Water Act 1958, in force on 1st April 1965, an application made by virtue of section 33 (1) (b) of the Act in reliance on abstraction of water by the applicant within the period of five years ending with 1st April 1965 (otherwise than by virtue of a statutory provision), or an application made by virtue of section 56 (2) of the Act in reliance on a statutory provision coming into operation after 1st April 1965 in pursuance of an application made at any time before 1st July 1965.

(2) The matters required to be shown on the map accompanying the application (including any section 56(2) application) are the matters specified in paragraph (2) of the last preceding regulation (except the relevant land for the purposes of section 27 of the Act referred to in sub-paragraph (2)(b)) as required in the case of applications to which that regulation applies.

(3) A section 33(1)(a) application, and a section 56(2) application, shall be accompanied -

- (a) where the relevant statutory provision relied on is a licence under section 14 of the Water Act 1945, by that licence or a true copy thereof, or, if for any sufficient reason (which shall be specified) the foregoing requirement cannot be complied with, by sufficient evidence in writing of the grant of such licence and of its terms;
- (b) in any other case (except where the statutory provision in question is contained in a public general Act), by a copy of the relevant statutory provision on which the applicant relies.

(4) A section 33(1)(a) application, made in reliance on a statutory provision which does not specify or otherwise limit the quantity of water authorised to be abstracted, shall also be accompanied by evidence in writing for the purpose of proving to the reasonable satisfaction of the river authority any particulars included in the application with respect to quantities of water abstracted in the relevant period ending with 1st April 1965 and other matters, as mentioned in section 34 (3) to (5) of the Act.

(5) A section 33(1)(b) application shall be accompanied by evidence in writing for the purpose of proving to the reasonable satisfaction of the river authority any particulars included in the application with respect to quantities of water abstracted in the relevant period ending with 1st April 1965 and other matters, as mentioned in section 35 (2) to (4) of the Act and a statement included in the application with respect to matters referred to in section 35 (5) of the Act.

(6) Where evidence in writing provided by an applicant in pursuance of paragraph (4) or paragraph (5) of this regulation relates to any quantity of water which is shown in the application to be an estimated quantity, that evidence shall include a statement explaining how the estimate in question was made.

10. ... (4) The period within which the river authority shall give notice to an applicant for a licence of their decision on his application, or, as the case may be, of the reference of the application to the Minister in pursuance of directions given under section 38 of the Act, shall be the following period from the date of receipt of the application, namely:

- (a) in the case of an application for a licence of right, a period ending on 31st March 1966;

...

**Model Form 4** - Application for a licence of right made under Section 33 in reliance on a statutory provision - See Appendix I, page 268.

**Model Form 5** - Application for a Licence of Right Made under Section 33 in Reliance on Abstraction within the Period of 5 Years Ending with 1st April 1965 - See Appendix I, page 273.

## **II - MALAWI - Water Regulations, 1969**

**Form WRB.1** - Application for a grant of water right/certificate of existing water rights (surface water only) - See Appendix I, page 227.

**Form WRB.2** - Application for a grant of water right/certificate of existing rights (ground water) - See Appendix III, page 310.

**Form WRB.3** - Grant/Certificate of water right - See Appendix I, page 245.

**Form WRB.4** - Grant of water right/certificate of existing rights in respect of ground water - See Appendix III, page 320.

## **8. MECHANISMS COMPLEMENTARY TO THE GRANT OF PERMITS**

The grant of a permit alone may not suffice to operationalize the water utilization or project contemplated in it. Unless the permit holder owns or possesses all the land which is needed for the contemplated use or project - such as land to be traversed by permanent water pipes, or to be occupied by temporary facilities, or to be submerged as a result of damming a stream - a right to occupy temporarily or permanently the land in question will have to be secured from the owner of the land. These issues may be dealt with and disposed of already

at the stage of applying for a permit, and an applicant may be required to secure "ancillary" rights in accordance with general legislation - i.e., through contractual mechanisms, or by resorting to condemnation or expropriation of private property under pertinent legislation. However, water resources legislation may provide specific mechanisms of its own to address the issue, consisting of the grant, by a judge or government administrator, of "easements" or "servitudes", or of a formal permission to an actual or prospective permit holder to take or occupy the necessary land over the opposition of the relevant owner, subject to terms and conditions. Subsidiary legislation will generally fill in the operational and formal details of substantive provisions found in the principal legislation (I and II), but it may also cover substantive ground (III and IV). In addition, water bailiffs can be appointed essentially to perform a water allocation function as amongst users of water having a title to it. Subordinate legislation lays down the procedural rules and substantive criteria governing appointments (V).

**I - ZIMBABWE - Water (Water Court) Regulations, 1968**

**Form "W.10" - Application for Servitude - See Appendix 1, page 280.**

**II - TANZANIA - Water Utilization (General) Regulations, 1975**

**Form C - Application for an Easement - See Appendix 1, page 281.**

**Form D - Certificate of the Creation of an Easement - See Appendix 1, page 281.**

**III - BRITISH COLUMBIA - Regulation and Tariff of Fees, Rentals and Charges under the Water Act**

3.01 Every person who maintains or uses any works that cause the flooding of any Crown land, or proposes to construct or use any works that might cause such flooding, or maintains or uses or proposes to construct or use any works on such land, shall apply to the Minister for a permit to authorize the flooding of the land or the construction, maintenance, or operation of the works thereon, and shall show in his application or otherwise the location and dimensions of the works and the dimensions of the land to be flooded or occupied by the works.

3.02 Where the Crown land affected is lawfully occupied by any home-steader, pre-emptor, purchaser, or holder of a timber licence or lease, or otherwise, the Comptroller may require the applicant to obtain and file with the Comptroller the written consent of the occupant of the land to the construction and maintenance of the proposed works.

3.03 Any number of permits may be issued covering the same land.

3.04 Every permit shall be subject to cancellation for failure to pay the rental prescribed in respect of it.

3.05 Every permit shall become void if the water licence with respect to which the permit is issued is cancelled or abandoned.

4.01 Every licensee who wishes to acquire any land on which to construct or maintain any works authorized under his licence, or any land for the protection of his water-supply, or any land that might be flooded as a result of the utilization of any dam authorized under his licence, shall file with the Comptroller and the Registrar and shall serve on each registered owner of the land a notice and plan showing the character of the works to be constructed or maintained and the area and general description of the land required, together with a draft of the instrument considered necessary to vest in the licensee the title to or right over the said land and a statement showing the amount of compensation offered. After the filing of the notice and plan with the Registrar, no further notice need to be given to any person who acquires any interest in the land affected or applies to register any documents relating thereto and the title of every such person shall be subject to the rights of the licensee.

4.02 Every licensee who wishes to acquire any land that might be flooded as a result of the utilization of any dam shall petition for and obtain the consent of the Lieutenant-Governor in Council before commencing the proceedings referred to in section 4.01.

4.03 If the address of any registered owner cannot be ascertained, the Comptroller may direct substituted service of the plan, notice, instrument, and statement.

4.04 Each registered owner shall, within thirty days after service of the plan, notice, instrument, and statement, notify the licensee whether or not he will accept the compensation offered and execute the instrument desired.

4.05 If any owner does not accept the compensation offered or, having agreed to accept the same, does not forthwith execute the instrument desired, the compensation and the nature and terms of the instrument to be executed shall be determined by the Comptroller or by any engineer named by him.

4.06 Where, in the Comptroller's opinion, the probable cost of having the amount of compensation determined by an arbitrator would be disproportionate to the value of the land affected, the amount of the compensation to be paid and the nature of the instrument to be executed shall be determined by the Comptroller or by any engineer named by him.

4.07 Where in the opinion of the Comptroller of Water Rights the amount of compensation to be paid to an owner of land and the nature of the instrument to be executed by the owner following an expropriation should be determined by three arbitrators, the Comptroller may, by written order given to the owner and to the licensee direct that such matters be determined by three arbitrators appointed in the manner provided by the Arbitration Act.

4.08 After a direction has been given under section 4.07, the expression "arbitrator" appearing in the following sections shall be deemed to include a reference to the three arbitrators appointed pursuant to section 4.07 and the Arbitration Act.

4.09 Except as provided in sections 4.06 and 4.07, the amount of the compensation to be paid and the nature of the instrument to be executed shall be determined by a single arbitrator chosen by the owner, the licensee, and the Comptroller, or, failing unanimous agreement, by any two of them. For the purpose of choosing the arbitrator, the owner, the licensee, and the Comptroller, or any of them, may designate another person to act in his place.

4.10 Upon receiving notice of his appointment, the arbitrator shall proceed forthwith to determine the amount of compensation to be paid for the land required and the nature of the instrument to be executed by the owner, and shall notify the owner, the licensee, and the Comptroller of his award.

4.11 If the amount of compensation awarded is not greater than the amount offered by the licensee, the owner of the land shall be charged with all costs of the arbitration proceedings, and if the amount awarded is greater than the amount offered, the licensee shall be charged with the said costs.

4.12 Upon tender by the licensee of the amount of compensation awarded and any costs charged against him as aforesaid, and the appropriate conveyance or other instrument, the licensee shall be entitled to enter upon the land and to construct and maintain the works thereon, and no owner or other person shall hinder or prevent the licensee from constructing or maintaining the works.

4.13 The arbitrator shall make his award in writing, and upon receipt of his fees shall deliver two signed copies of the award to the licensee and one signed copy to the owner of the land. If, under section 4.11, the costs of the arbitration are charged against the owner and he fails to pay the same within three days after being notified of the amount thereof, the licensee may pay the said costs to the arbitrator and deduct the amount thereof from the amount of the compensation payable to the owner of the land.

4.14 Any award made by an arbitrator chosen under sections 4.07 and 4.09 may be set aside by any Judge of the Supreme Court if it is found to have been improperly procured or if the arbitrator has misconducted himself.

4.15 When an award of compensation is made and the amount tendered to the owner and he fails to execute and deliver to the licensee the required conveyance or other instrument, the licensee shall thereupon be constituted the attorney of the owner, and upon the licensee paying the amount of compensation to the Comptroller and filing with the Registrar the proper fees under the Land Registry Act, the Registrar shall register the licensee as owner of the land affected or holder of a charge thereon as indicated in the award.

4.16 If any action taken under any of the foregoing fifteen sections proves ineffective or any dispute arises with respect thereto or with respect to the arbitrator's remuneration, or in the event of any dispute arising among the owners of the land as to the division of the amount of compensation, or in the event of the expropriation proceedings being abandoned, the Comptroller shall have authority to direct any further action that appears to him necessary or advisable to complete or terminate the expropriation proceedings, and every such direction shall be complied with by the person or persons to whom it is directed.

**IV - MALAWI - Water Regulations, 1989**

7. (1) Every application for an easement shall be in form WRB.5 in the First Schedule hereto.  
(2) Every certificate of easement shall be in form WRB.6 in the First Schedule hereto.  
(3) When any certificate of easement has been granted a copy of such certificate shall be forwarded by the Water Resources Board to every person who is known to have an interest in the land affected by such easement and to the Deeds Registrar.
8. (1) Any certificate of easement granted by the Minister shall lapse:  
(a) if the works authorized thereby are not completed and the water utilized within one year from the date of grant or within such further period as the Water Resources Board may allow;  
(b) if at any time the grant is not substantially made use of in accordance with its terms for a continuous period of two years; or  
(c) on the expiration (unless renewed) or prior determination of the grant for the exercise of which the easement has been granted.
- (2) On the lapse of a certificate of easement under subregulation (1):  
(a) any works constructed by the grantee on the lands of another person shall, where the grantee is the sole user, if not removed by the grantee within six months from the date of expiration or termination, become the property of such other person unless otherwise decided by the Water Resources Board;  
(b) the Water Resources Board shall notify all persons known to be interested in the land affected by the easement and the Deeds Registrar that the easement has lapsed.

**Form WRB.5 - Application for an Easement - See Appendix I, page 2B2.**

**Form WRB.6 - Certificate of Easement - See Appendix I, page 2B2.**

**VI - KENYA - Water (General) Rules**

61. When it appears to the Water Apportionment Board that the water of any body of water is not being divided in accordance with the rights of operators or any other persons entitled thereto, or is not likely to be so divided unless the division thereof is placed under the control of a disinterested person, the chairman may appoint one or more water bailiffs for such period as he may deem necessary or he may appoint one or more water bailiffs for one or more bodies of water or for any locality.

62. (1) The following persons shall perform the duties and have the powers of water bailiffs:  
(a) any person holding the post of water bailiff on the establishment of the Ministry for the time being responsible for water works;  
(b) any other officers of the Ministry authorized in that behalf by the chairman;  
(c) persons other than officers of that Ministry, appointed by the chairman by notice in the Gazette, as water bailiffs, which persons may receive such payment in respect of their services as the Minister may determine.

(2) Every person appointed to perform the duties and have the powers of water bailiffs shall carry a letter of appointment, and shall produce it when required in the performance of his duties.

63. (1) The cost incurred by the Minister owing to the appointment of a water bailiff under rule 61 of these Rules shall, if so decided by the Minister, be paid by the operators or other persons entitled to abstract, divert, store or use water from the body or bodies of water under the control of the water bailiff, in such proportions as the Water Apportionment Board or the chairman may from time to time assess.

(2) In assessing such proportions the quantity of water used by each operator or other person, and the purpose for which such water is used, may be taken into account.

64. (1) The amount of the costs to be paid, under rule 63 of these Rules, by each operator or other person shall be a debt due to the Government, and shall be payable to the Water Apportionment Board within thirty days of the date of notification of assessment, and if such amount is not paid within the said thirty days the water bailiff may take whatever action may be necessary to prevent the abstraction, diversion, storage or use of any water by the person in default, and no further water shall be diverted, abstracted, stored or used until the amount due has been paid.

(2) When so required by the Water Apportionment Board or the chairman, each operator or other person diverting, abstracting, storing or using such water shall deposit with the Water Apportionment Board such sum of money as it may specify to cover the anticipated costs of the appointment of such water bailiff.

73. All disputes shall be decided within sixty (60) days after the parties submit the same for decision or resolution. Decisions shall be in writing, stating clearly and concisely the cause or causes of action, findings of facts and the law or rules upon which they are based.

The Council shall have the power to issue writs of execution and enforce its decisions with the assistance of national or local law enforcement agencies subject to prior notice to the party concerned in accordance with Article 84 of the Code.

74. Decisions, resolutions or orders of the Council shall be furnished to the contending parties through their counsel if represented, or by personal/substituted service or registered mail with return card. Personal/substituted service to the parties shall be acknowledged in writing, indicating the date of receipt and the name of the person serving. Should any person refuse to receive the decision, resolution or order, a written statement to such effect duly signed by the person serving shall be submitted. Decisions, resolutions or orders coursed through the deputies/agents of the Council, shall in all cases, be served upon counsel, if represented, or to the party within five (5) days from the date of receipt by the Office concerned.

75. A) Appeal from the decision of the Council in accordance with Article 89 of the Code shall be made by the party adversely affected within fifteen (15) days from receipt of the decision unless a petition for reconsideration or reinvestigation is filed with the Council within the same period. The filing of said petition suspends the running of the 15-day period within which to file an appeal with the Court.

B) Petition for reconsideration/reinvestigation shall be based on any of the following grounds:

1. Fraud, accident, mistake or excusable negligence which ordinary prudence could not have guarded against and by reason of which the aggrieved party has probably been impaired in his rights;
2. Newly discovered evidence which petitioner could not, with reasonable diligence, have discovered, and produced at the investigation and which if presented would probably alter the result; and
3. Palpable errors in the findings of facts and conclusions of law or decisions that are not supported by the evidence adduced in the investigation.

Only one petitioner for reconsideration/reinvestigation accompanied by proof of service upon the other party shall be entertained. Resolution or petitions for reconsideration/reinvestigation shall be served upon the parties concerned in accordance with Section 73 hereof.

76. The filing of petition for reconsideration and/or reinvestigation under the preceding section or an appeal with the Court of First Instance under Article 89 of the Code shall not stay the execution of the decision, resolution or order of the Council unless a bond as provided for in Article 88 shall have been posted.

11 - LESOTHO - Water Resources Regulations, 1980

2. The Water Officer appointed under section 514) shall:

... (e) In the first instance hear disputes between users.

## 10. ENSURING COMPLIANCE WITH THE LAW

Permit holders are subject to obligations stemming from the permit, and to obligations of general import laid down in the legislation. In addition, the general public is also subject to certain fundamental obligations, most notably, the obligation to refrain from utilizing water resources unless a permit is first obtained from the concerned government department or agency. While spontaneous compliance with these obligations is to be expected of the majority of the citizenry in general and of permit holders in particular, it is standard practice for legislation - including, in particular, subordinate legislation - to deter non-compliance by declaring generic or specific violations an offence (I), and subjecting these to penalties. These typically include fines and imprisonment, and, under the appropriate circumstances, non-conventional measures such as suspension or cancellation of permits (II), or a reduction in the amount of water allowed to be taken under a permit upon its renewal (III), or the demolition of illegal water abstraction works (IV).

Offences and penalties can be regarded as an integral part of law enforcement, i.e., of mechanisms and processes aimed at ensuring compliance with the law in general. In addition to offences and penalties, law enforcement involves certain powers for the Government to do things which impinge on the individual's personal freedom, privacy and property. In addition to the general-purpose power of arresting offenders under the appropriate circumstances, law enforcement authority for the purposes of legislation on water resources use permits generally includes the powers of entering and inspecting private property. In view of the constraining effect on some of the individual's basic liberties which the exercise of these powers has, an express grant of such powers is found in principal legislation.

**I - KENYA - Water (General) Rules**

21. An operator who interferes with, or who knowingly permits any person to interfere with, any controlling or measuring device so that the quantity of water abstracted, diverted or stored is not in accordance with the terms of his licence, sanction or permit, or not in accordance with the terms of an order of the Water Apportionment Board or a water bailiff, shall be guilty of an offence.

24. Any person who without authority opens, or permits any person to open, any controlling device or work closed by order of the Water Apportionment Board, the chairman or a water bailiff in the execution of its or his duty shall be guilty of an offence.

25. ... (6) Any person who, not being in possession of a permit granted for that purpose, diverts water in the manner described in this rule shall be guilty of an offence.

**II - PHILIPPINES - Water Rules and Regulations**

77. A fine of not more than Two Hundred (P200.00) Pesos and/or suspension of the permit/grant for a period of not more than sixty (60) days shall be imposed for any of the following violations:

- a. illegal taking or diversion of water in an open canal or reservoir;
- ... d. failure of the appropriator to keep a record of water withdrawal when required by the Council or by the rules and regulations of other water oriented agencies such as Water Districts created pursuant to Presidential Decree No. 198, as amended, provided that such rules and regulations have been approved by the Council;
- e. repair without permission of hydraulic works or structures involving alteration of its hydraulic or structural features as originally approved; and
- f. such other infractions as the Council may determine.

78. A fine of more than Two Hundred (P200.00) Pesos but not exceeding Five Hundred (P500.000) Pesos and/or suspension of the water permit/grant for a period of one hundred twenty (120) days shall be imposed for the following violations:

- a. unauthorized sale, lease or transfer of water permits and/or water rights;
- b. failure to install a regulating and measuring device for the control of the volume of water appropriated when required;
- c. non-payment of water charges; and
- d. violation of or non-compliance with any order, rule or regulation of the Council.

79. A fine of more than Five Hundred (P500.00) Pesos but not exceeding One Thousand (P1,000) Pesos and/or revocation of the water permit/grant of any other right to the use of water shall be imposed for any of the following violations:

- ... d. failure to provide adequate facilities to prevent or control disease whenever required in the construction of any work for the storage, diversion, distribution and utilization of water;
- e. construction of any hydraulic work or structure without duly approved plans and specifications;
- f. failure to comply with any of the terms or conditions in a water permit or water rights grant not covered by the preceding sections;
- g. non observance of any standard for the beneficial use of water and/or schedule of water distribution;
- h. use of water for a purpose other than that for which a right or permit was granted;
- i. malicious destructions of hydraulic works or structure valued at not exceeding Five Thousand (P5,000.00) Pesos;
- j. unauthorized sale of water in violation of the permit; and
- k. such other serious violations as the Council may determine.



**III - SOUTH AUSTRALIA - Control of Waters Regulations, 1971**

13. ... (3) If any licensee diverts excess water in any year the Minister, in addition to recovering the rates therefor, may if issuing a licence for the succeeding year reduce the licensee's water allocation for such succeeding year by the amount of excess diverted.

**IV - PHILIPPINES - Water Rules and Regulations**

82. In cases where the violator is not a permittee or grantee or has no right to use the water whatsoever, the Council through its deputies or authorized representatives shall cause the stoppage of the use of the water either by plugging or sealing of the well if the same involves ground water appropriation or demolition of the dam or hydraulic structures if the same involves surface water, without prejudice to the institution of a criminal/civil action as the facts and circumstances may warrant.

## CHAPTER II

### PREVENTION AND CONTROL OF WATER POLLUTION

See also:

**ALLOCATING WATER FOR USE: WATER RIGHTS AND PERMITS (CHAPTER I)**  
**PROVISION OF WATER SUPPLIES TO THE PUBLIC (CHAPTER V)**

#### **1. INTRODUCTION**

##### **1.1 Scope of the chapter**

Preventing and controlling pollution of water resources, both surface and underground, has come to be firmly established as a function of government in view of the far-reaching economic, social and public health implications of widespread degradation in the quality of available water resources. In principle and in administrative practice, preventing and controlling water pollution is distinct from controlling the quality of water supplied by public utility concerns to the general public for human consumption and other associated uses. The quality - or purity - of this water, also styled "mains water", after it has entered the supplier's mains is subject to standard prescriptions laid down in response to the paramount concern for the health of the public which consumes such water for drinking, cooking, washing, and bathing. These prescriptions bear no relationship to the more general rules which seek to avoid a deterioration in the quality of water in its natural state, before it is tapped for conveyancing to the general public. Furthermore, ensuring the purity of mains water is a function of the public utility responsible for the water supply service, and it responds to a paramount non-negotiable public health concern; preventing and controlling pollution of raw water resources, to whatever use they be put - be it domestic or industrial or irrigation or stockwatering or recreational or just preservation of the waters in their natural state - is instead a function of general government, dictated by a host of mostly negotiable factors at play in the political and in the legislative drafting and law implementation and enforcement processes. At the same time, the quality of "raw" water and that of "mains water" interface at the level of measures for the prevention and control of pollution of raw water intended for a public water supply. There is little doubt in fact that the more uncontaminated the source of water supplied to the public, the purer will be the water at the tap - or, at least, the lesser the treatment required at the water supply system intakes. For the purposes of this book, however, preventing and controlling water pollution and ensuring the wholesomeness of mains water will be dealt with separately in, respectively, this Chapter and in Chapter V on **PROVISION OF WATER SUPPLIES TO THE PUBLIC**.

Pollution of water resources is known to originate from a variety of sources. These can be conveniently grouped into two basic categories styled, respectively, "point" and "non-point" or "diffuse" sources. The former group is identified with pollution traceable to specific sources, such as industrial outfalls, domestic drains, municipal sewers and wastewater treatment plants, injection wells, and waste dumps, whose entry point into specific bodies of water, surface or underground, can be determined with sufficient accuracy. "Point" sources

may impact the quality of water also indirectly, via deposition or dispersion on the ground or just leakage. "Point" sources may thus have a "diffuse" effect on water quality via overland runoff or percolation under the ground which may be difficult or impossible to trace with accuracy to the ultimate origin. The "non-point" category groups sources whose discrete origins are difficult to pin down with accuracy, such as the runoff of agricultural land where fertilizers and pesticides are employed, or the runoff of urban stormwater, and whose point of entry into water bodies - surface or underground - is difficult or impossible to determine with accuracy. In view of the comparatively recent vintage of principal legislation enacted to tackle this latter group of sources, far fewer - but no less significant - examples of subordinate legislation have been uncovered for presentation in this book.

The alternative to the Government assuming it amongst its functions is for the control of water pollution to be left at the hands of the general public and, in particular, to the initiative of citizens who have a cause for complaint which is actionable before the courts. The complexity, uncertainty, length and costs of court battles initiated to vindicate the specific property rights of individual complainants or "diffuse" non-property interests of groups or classes of complainants have resulted in a shift to direct government intervention in a vast majority of countries, and a parallel shift in emphasis from remedying the effects of pollution to preventing this from occurring. In response to this generalized trend, and also in view of the far greater specificity which characterizes legislation regulating this particular function of government as opposed to the general procedural rules governing action in the courts, this chapter will focus on the former only and on the relevant operational mechanisms in particular.

## **1.2 Legislative approaches to water pollution prevention and control by the Government, and the role of subsidiary legislation**

A policy decision to replace Government-directed pollution prevention and control for litigation-driven court action to remedy the effects of pollution is typically implemented through the adoption of legislation subscribing to one or any combination of a variety of approaches to achieving water pollution control goals. These approaches tend to fall into one of the following basic categories, namely, (a) forbidding the discharging of wastes into bodies of freshwater, on the ground or under the ground; (b) restricting such discharges through permits, licences, consents or authorizations granted by the Government - the mentioned terms can, for practical purposes, be taken to be synonymous, and will be collectively referred to as "permits" in this Chapter; and (c) charging for the discharging of wastes in such a way that the external costs of pollution are factored or "internalized" in the discharger's decisions. These approaches are employed primarily in connection with the control of "point-source" pollution. Another approach consists of (d) zoning and attendant land use controls. These tend to feature in legislation primarily in connection with the control of water pollution from "diffuse" sources. In addition, "diffuse" pollution from "point" sources tends to be approached in a preventative manner by (e) prescribing precautionary measures in respect of selected land-based activities.

These approaches can also be combined, and licensing of waste discharges be complemented by charges for the wastes discharged, and by absolute prohibitions enjoining a core of impermissible actions. Also, zoning is generally complemented by relative or absolute prohibitions. It should be noted that governmental control over the discharging of wastewater

- also termed "effluent" - resulting from a given water utilization or process can be achieved by inserting specific clauses as to the so-called "return flows" in the permit for the abstraction and use of water reviewed in Chapter I. It should also be mentioned that the target of permit requirements - and hence the mode of achieving governmental control of water pollution via the permit approach - varies from the generic act of discharging to the construction of works instrumental to the act of discharging, and from the carrying on of activities or processes which may result in the act of discharging to the departing from standard legislative prescriptions as to the quality which the waste must meet before being discharged.

These water pollution control mechanisms generally operate in combination with other mechanisms also specifically designed to fight pollution of water, namely, standards of quality for the waste-receiving waters - also termed "ambient" water quality standards -, and standards of quality for the waste or effluent discharged - also termed "effluent" quality standards. Other specific mechanisms include inventories of the type, extent and sources of pollution, water quality management planning, and sampling and testing the quality of waters and wastes. These mechanisms complement, and are complemented by, permit requirements.

The basic policy decisions underlying the choice of approach is generally reflected in an Act of Legislature specifically dealing with water pollution prevention and control alone, or in combination with the control and prevention of pollution of other environmental media, or in conjunction with other aspects of water resources management - notably, allocation of water to different uses. In addition to spelling out the operational details of the approach opted for by the Legislature, subsidiary legislation provides for the complementary mechanisms needed to fully operationalize the course of action charted by principal legislation.

## 2. CONTROLLING WATER POLLUTION THROUGH PROHIBITIONS

Absolute prohibitions to jeopardize the quality of water resources - i.e., behaviours which are enjoined under any circumstances - may be used selectively to protect generic or specific environmental interests (I and III respectively), and to ban generic or specific substances from entering water bodies (II, IV and VIII). Prohibitions may be also relative, i.e., they may be qualified by reference to extenuating circumstances. In this case, an otherwise impermissible behaviour becomes permissible if given circumstances occur (V and VI). Prohibitions to discharge waste not meeting given standards (VII), or "except" under a permit or other instrument fall in this category. This is a commonly used technique in legislation introducing the waste discharge permit requirements which will be reviewed in sub-chapter 3 below.

These prohibitions are backed up by penalties designed to deter non-compliance. Ultimately, the effectiveness of absolute prohibitions as a mechanism to achieve pollution control depends entirely on the availability and effective use of penalties and other complementary mechanisms of law enforcement, i.e., mechanisms to force compliance on recalcitrant members of society. These mechanisms are reviewed in sub-chapter 8 below.

**I - ST. LUCIA - Public Health (Water Quality Control) Regulations, 1978**

3. (1) No person shall commit or cause to be committed any act which may impair the quality of water in any river, stream, spring, well, pond, reservoir or any other place.

...

**II - ST. LUCIA - Public Health (Water Quality Control) Regulations, 1978**

3. ... (2) No person shall commit or cause to be committed any act which may impair the quality of any underground water by the discharge of any sewage, industrial or trade waste, filth, or any other matter into any well or abandoned well, hole or other opening in the ground.

...

**III - KENYA - Water (General Rules)**

77. Any person who deposits or who causes or allows to be deposited, into any body of water or any tributary thereof, any sawdust, any vegetable or mineral refuse, the effluent from a sheep or cattle dip, factory, premises or work, any sewage effluent or any other matter or thing of any kind which is harmful to the fish, fish life, the fry or ova of fish, or fish food contained in such body of water shall be guilty of an offence.

**IV - MALAYSIA - Environmental Quality (Sewage and Industrial Effluents) Regulations, 1979**

6. No person shall discharge or cause or permit the discharge of any of the following substances into any inland waters:

- (1) any inflammable solvent;
- (2) any tar or other liquids immiscible with water;
- (3) refuse, garbage, sawdust, timber, human or animal waste or solid matters.

**V - QUEENSLAND - Clean Waters Regulations, 1973**

29. ... (a) A person shall not discharge wastes from any premises by means of an overflow drain except as the result of accidental damage, excessive rainfall or other emergency situation.

- (b) The occupier of any premises at which an overflow drain is provided shall ensure that any prescribed control equipment is installed and operated and that any conditions and requirements imposed by the Council are observed at all times; provided that, where no control equipment has been prescribed and no conditions or requirements have been imposed, the occupier shall take all practicable measures to avoid any discharge and to minimise adverse effects on the receiving waters.

...

**VI - WESTERN AUSTRALIA - Health Act (Sewerage, Drainage and Underground Water Supply) Regulations, 1959**

13. A person shall not deposit on, in or under any land any sewage or offensive matter, or any other substance or thing that may pollute or render unfit for human consumption the water in any well or other underground source of water supply, which water is used or intended or likely to be used for human consumption, unless the place where that sewage, offensive matter or other substance or thing is deposited is situated not less than one hundred (100) feet distant from that well or other underground source of water supply.

**VII - PHILIPPINES - Water Rules and Regulations**

45. No person shall discharge into any source of water supply any domestic sewage, industrial waste, or pollutant not meeting the effluent standards set by the National Pollution Control Commission.

**VIII - NIGERIA - The National Environmental Protection (Pollution Abatement in Industries and Facilities Generating Wastes) Regulations, 1991**

1. No industry or facility shall release hazardous or toxic substances into the air, water or land of Nigeria's ecosystems beyond limits approved by the Agency.

### 3. CONTROLLING POLLUTION THROUGH WASTE DISCHARGE OR OTHER PERMITS OF COMPARABLE SCOPE

As already intimated in the Introduction to this chapter, permit requirements may be directed at, *inter alia*, the act of discharging waste into a water medium or the carrying on of activities or processes which result in the act of discharging waste. In both approaches the emphasis is on preventing water pollution by minimizing the polluting potential of waste releases into a receiving water medium. A permit requirement in respect of the carrying on of a potentially polluting activity or process, however, reflects a somewhat more radical preventative approach to water pollution control insofar as it may result in a proposed activity or process from ever moving past the blueprint stage. While the philosophy of approach differs substantially, the mechanics of implementation of the two approaches to a permit mechanism are essentially the same.

Subsidiary legislation provides the procedural and substantive details of implementation of permit mechanisms with specific regard to the process leading to the grant - or to the refusal to grant - permits (sub-chapter 3.1), general obligations of permit holders (sub-chapter 3.2), suspension, cancellation and variation of permits (sub-chapter 3.3), succession to permits (sub-chapter 3.4), charging in connection with permits (sub-chapter 3.5), and the safeguarding of "existing" discharges and processes (sub-chapter 3.6).

#### 3.1 The granting of waste discharge permits

Typically, the grant - or refusal - by the Government of a waste discharge permit is the resultant of a process which is structured in the legislation as a sequence of steps, as follows:

##### Step One - Fulfilling requirements precedent to the filing of applications

Publicizing through the prescribed media of communication one's intention to apply for a waste discharge permit may constitute a pre-requisite to the actual filing of an application (1).

###### 1 - IRELAND - Local Government (Water Pollution) Regulations, 1978

5. (1) Prior to the making of a licence application, the applicant shall publish in a newspaper circulating in the functional area of the local authority notice of his intention to make such application.

(2) A notice under sub-article (1) shall contain, as a heading, the words "Discharge of Effluent to Waters" and shall:

- (a) state the name of the applicant and the name of the local authority to which application is made;
- (b) give a general description of the effluent;
- (c) in the case of trade effluent, state the nature of the trade or industry;
- (d) state the name and location of the premises from which the effluent is to be discharged, and
- (e) indicate the waters to which the effluent is to be discharged.

(3) Sub-article (1) shall not apply to a licence application made before the 1st day of October,

1978 in respect of:

- (a) an existing discharge, or
- (b) a discharge from a development for which a permission (other than outline permission) or an approval consequent on an outline permission has been granted under the Local Government (Planning and Development) Acts, 1963 and 1978 during the period of five years prior to the 1st day of October, 1978.

## Step Two - Filing of applications

### Circumstances under which a permit is required

It is not uncommon to find a clarification as to the kinds of "discharges", "processes" and receptor media requiring a permit, and hence a delineation of the precise scope of application of waste discharge or process permit requirements, in subsidiary legislation. This takes the form of descriptions of the circumstances under which a permit is required (I to IV).

#### **I - PHILIPPINES - Water Rules and Regulations**

1. When Permit/Authority from the National Water Resources Council Must be Secured. As required under the provisions of P. D. 1087<sup>1</sup>, a permit/authority shall be secured from the Council in the following instances:

...

- (i) Dumping of mine tailings or wastes into a river or a waterway;

...

#### **II - MALAWI - Water Resources (Water Pollution Control) Regulations, 1978**

4. (1) Except with the prior written consent of the Minister granted in accordance with these Regulations, no person shall discharge or cause to be discharged into public water:

(a) any water or effluent resulting from:

(i) any sewage treatment works,

(ii) any water-borne sanitation system, or

(iii) the use of water for any manufacturing, mining or other industrial purposes; and

(b) any storm-water sewer effluent.

(2) The provisions of sub-regulation (1):

(a) shall, in respect of the waste or effluent specified in paragraph (a) thereof, apply whether the discharge of such waste or effluent is through seepage or drainage; and

(b) shall not apply where any waste or effluent specified therein has been accepted into a local authority sewer.

#### **III - UNITED KINGDOM - The Environmental Protection (Prescribed Processes and Substances) Regulations 1991**

3. (1) Subject to the following provisions of these Regulations, the descriptions of processes set out in Schedule 1 hereto<sup>2</sup> are hereby prescribed pursuant to section 2(1) of the Act as processes for the carrying on of which after the prescribed date an authorization is required under section 6.

...

4. (1) Subject to paragraph (6), a process shall not be taken to be a Part A process if it has the following characteristics, namely:

...

- (iii) that it cannot result in the release into water of any substance prescribed by regulation 6(2) except in a concentration which is no greater than the background concentration;

...

(6) Paragraphs (1) and (2) do not exempt any process described in Schedule 1<sup>2</sup> from the requirement for authorization if the process may give rise to an offensive smell noticeable outside the premises where the process is carried on.

<sup>1</sup> Presidential Decree No. 1087 of 31 December 1976 (Water Code)

<sup>2</sup> Omitted. The Schedule contains detailed lists of "Processes", arranged in six chapters on, respectively, Production of Fuel and Power and Associated Processes (chapter 1); Metal Production and Processes (chapter 2); Mineral Industries (chapter 3); the Chemical Industry (chapter 4); Waste Disposal and Recycling (chapter 5); and Other Industries (chapter 6). In each chapter, processes are grouped under two separate headings styled Part A and Part B, respectively. A statutory definition of "process" is given in section 3(5) of the Environmental Protection Act 1990, as follows: "(5) 'Process' means any activities carried on in Great Britain, whether on premises or by means of mobile plant, which are capable of causing pollution of the environment and 'prescribed process' means a process prescribed under section 2(1) below."

(7) In these regulations, "background concentration" means any concentration of the relevant substance which would be present in the release irrespective of any effect the process may have had on the composition of the release and, without prejudice to the generality of the foregoing, includes such concentration of the substance as is present in:

- (a) water supplied to the premises where the process is carried on;
- (b) water abstracted for use in the process;
- (c) precipitation onto the premises on which the process is carried on.

6. ... (2) The descriptions of substances set out in Schedule 5<sup>1</sup> are so prescribed as substances the release of which into water is subject to control under those sections.

**IV - NIGERIA - The National Environmental Protection (Pollution Abatement in Industries and Facilities Generating Wastes) Regulations, 1991**

15. (1) No effluent with constituents beyond permissible limits shall be discharged into public drains, rivers, lakes, sea or underground injection without a permit issued by the Agency or any organisation designated by the Agency.

(2) No oil, in any form, shall be discharged into public drain, rivers, lakes, sea, or underground injection without a permit issued by the Agency or any organisation designated by the Agency.

...  
(8) An industry or a facility with a new point source of pollution or a new process line with a new point source shall apply to the Agency for discharge permit not later than 180 days before commencing the discharge of any effluent arising from any operation.

### Format of applications

Standard formats for waste discharge applications may be appended to subsidiary legislation as "Forms" for the convenience of the user. The prescribed forms may concern the proposed generic activity of discharging waste (I and II), or equipment or structures instrumental to the activity (III).

**I - MALAWI - Water Resources (Water Pollution Control) Regulations, 1978**

Form WRB.7 - Application for Minister's Consent to Discharge Waste or Effluent into Public Water - See Appendix II, page 285.

**II - QUEENSLAND - Clean Waters Regulations, 1973**

Form 1 - Application for Licence to Discharge Wastes - See Appendix II, page 288.

Form 1A - Report Attached to Application for Licence to Discharge Wastes - See Appendix II, page 288.

Form 2 - Application for Licence to Transport Wastes - See Appendix II, page 289.

Form 2A - Report Attached to Application for Licence to Transport Wastes - See Appendix II, page 289.

**III - NEW SOUTH WALES - Clean Waters Regulations, 1972**

Form 2 - Application for Approval to Install, Construct or Modify Apparatus, Equipment or Works - See Appendix II, page 290.

<sup>1</sup> Omitted. The Schedule lists twenty-three "Prescribed Substances".



## Supporting documents and evidence

Documentary evidence in support of the application is generally required to assist decisionmakers forming an opinion on the merits of a proposed waste discharge operation. Relevant requirements may feature in the standard Forms of applications (see, for example, Malawi's Water Resources (Pollution Control) Regulations, 1978, Form WRB.7 reproduced in this sub-chapter under Format of applications, example I or be separately prescribed (I to VI).

### **I - MALAWI - Water Resources (Water Pollution Control) Regulations, 1978**

15. Where the Minister requires him so to do, an applicant for the Minister's consent or a person to whom the Minister's consent has been granted shall, at no expense to the Minister or the Board take samples of waste or effluent in the manner which the Minister may prescribe and have such samples analyzed by an analyst recognized by the Minister and furnish the results of such analysis to the Minister.

### **II - PHILIPPINES - Water Rules and Regulations**

4. All applications shall be filed in the prescribed form, sworn to by the applicant and supported by the following:

... (B) For a Permit to Dump Mine Tailings or Wastes:

... 2. Brief description of project, including among others, ... amount of water to be discharged back to the source and measures to be taken to insure that such waters are not polluted, other relevant information:

...

### **III - IRELAND - Local Government (Water Pollution) Regulations, 1978**

7. (1) A licence application shall be accompanied by:

- (a) such plans, in duplicate, and such other particulars as are necessary to describe the premises, drainage system and any works, apparatus or plant from which the effluent is to be discharged and to identify the waters to which the discharge is to be made and the point of discharge,
- (b) particulars of the nature, composition, anticipated temperature, volume and rate of discharge of, and the proposed method of any treatment of, the effluent and the period or periods during which the effluent is to be discharged, and
- (c) in the case of a trade effluent, a general description of the process or activity giving rise to the discharge.

(2) A licence application for an existing discharge shall be accompanied by a statement that it is such a discharge in addition to the information specified in sub-article (1).

(3) An applicant for a licence, other than a licence for an existing discharge, shall also furnish such other particulars as the local authority may reasonably require for consideration of the application, including particulars of the quality, volume and flow rate of receiving waters, the effects of the discharge on such waters and the results of any investigation made, or required by the local authority to be made, in relation to such matters.

### **IV - QUEENSLAND - Clean Waters Regulations, 1973**

5. ... (a) The applicant shall furnish complete information on Form 1A<sup>1</sup> of the Schedule regarding:
- (a) the quantities, the times and the rates of discharge, and the physical, chemical, biological and radioactive components and characteristics of the wastes to which he desires such licence to apply;
  - (b) the control equipment provided or proposed to be provided in relation to such discharge;
  - (c) the location or proposed location of such discharge;
  - (d) any investigations into the effects of the discharge of such wastes at such location

...

<sup>1</sup> See Appendix II, page 288

6. ... (iii) If an application is in relation to the transport of wastes from premises for disposal on or in any land, the applicant shall furnish complete information on Form 2A<sup>1</sup> of the Schedule regarding:

- (a) the quantities, the times and the rates of transport and the physical, chemical, biological and radioactive components and characteristics of the wastes to which he desires such licence to apply;
- (b) the control equipment provided or proposed to be provided in relation to such disposal;
- (c) the method of operation of such disposal;
- (d) the location or proposed location of such disposal;
- (e) any investigation into the effects on any waters of the disposal of such wastes at such location;
- (f) the names and addresses of the persons responsible for the transport and disposal of such wastes if not performed by the occupier.

(iv) If an application is in relation to the transport of wastes from premises for subsequent discharge to any waters, the applicant shall furnish the information prescribed in form 1A<sup>2</sup> of the Schedule.

(v) The applicant shall furnish such additional information as the Director considers necessary for the purposes of the prescribed report and recommendation to the Council on the application and such other additional information as the Council may require after consideration of such report and recommendation.

..

#### V - CAYMAN ISLANDS - Water Authority Regulations, 1985

14. (1) All applications for a permit under this part of the regulations shall be made to the Authority on the appropriate form issued by and obtainable from the Authority, shall include such of the appropriate particulars as are material to the application, shall be accompanied by satisfactory evidence of planning permission, if such permission is required under the Development and Planning Law (Revised), and shall comply with such provisions of this part of the regulations as are relevant.

...

#### VI - UNITED KINGDOM - Environmental Protection (Applications, Appeals and Registers) Regulations, 1991

2. (1) An application to an enforcing authority for an authorization under section 6 of the 1990 Act shall be in writing and, subject to paragraphs (2) and (3) below, shall contain the following information:

- (a) the name of the applicant, his telephone number and address and, if different, any address to which correspondence relating to the application should be sent and, if the applicant is a body corporate, the address of its registered or principal office;
- (b) in a case where the prescribed process will not be carried on by means of mobile plant:
  - (i) the name of any local authority in whose area the prescribed process will be carried on;
  - (ii) the address of the premises where the prescribed process will be carried on;
  - (iii) a map or plan showing the location of those premises; and
  - (iv) if only part of those premises will be used for carrying on the process, a plan or other means of identifying that part;
- (c) in a case where the prescribed process will be carried on by means of mobile plant:
  - (i) the name of the local authority in whose area the applicant has his principal place of business; and
  - (ii) the address of that place of business;
- (d) a description of the prescribed process;
- (e) a list of prescribed substances (and any other substances which might cause harm if released into any environmental medium) which will be used in connection with, or which will result from, the carrying on of that process;

<sup>1</sup> See Appendix II, page 289

<sup>2</sup> See Appendix II, page 288

- (f) a description of the techniques to be used for preventing the release into any environmental medium of such substances, for reducing the release of such substances to a minimum and for rendering harmless any such substances which are released;
- (g) details of any proposed release of such substances into any environmental medium and an assessment of the environmental consequences;
- (h) proposals for monitoring any release of such substances, the environmental consequences of any such release and the use of any techniques described in accordance with sub-paragraph (f) above;
- (i) the matters on which the applicant relies to establish that the objectives mentioned in section 7(2) of the 1980 Act including the objective referred to in section 7(7) will be achieved and that he will be able to comply with the general condition implied by section 7(4);
- (j) any additional information which he wishes the enforcing authority to take into account in considering his application

...

### Payment of filing fees

Payment of filing fees is generally required to help defray the administrative costs of processing applications. Flat (I) or variable fees are prescribed, the latter varying as a function of given variables - notably, the monetary value of waste discharge works (II), or the quantity of the waste involved (III).

#### **I - PHILIPPINES - Water Rules and Regulations**

6. There shall be imposed and collected a fee of One Hundred Pesos (P100.00) from every applicant, except government agencies, water districts, and duly organized associations or cooperatives for irrigation or rural water supply which shall be paid to the Council in postal money order through the Office where the application is filed.

#### **II - NEW SOUTH WALES - Clean Waters Regulations, 1972**

12. (1) For the purposes of section 19(2) of the Act:

...

(b) the prescribed fee is, where the total cost estimated by the Under Secretary of the proposed installation, construction or modification is:

- (i) not more than \$20,000 - \$10;
- (ii) more than \$20,000 but not more than \$50,000 - \$20;
- (iii) more than \$50,000 but not more than \$100,000 - \$40;
- (iv) more than \$100,000 but not more than \$250,000 - \$100;
- (v) more than \$250,000 but not more than \$500,000 - \$200;
- (vi) more than \$500,000 but not more than \$1,000,000 - \$400;
- (vii) more than \$1,000,000 but not more than \$1,500,000 - \$650;
- (viii) more than \$1,500,000 but not more than \$2,000,000 - \$900; or
- (ix) more than \$2,000,000 - \$1,000.

...

#### **III - QUEENSLAND - Clean Waters Regulations, 1973**

13. (1) The fee for an application for a licence shall be:

- (a) Wastes discharged from premises to water. For each 100 cubic metres per day or part thereof \$10.00 with a minimum fee of \$40.00.

...

### Step Three - Review of applications

The discharging of waste may adversely affect the quality of the receiving waters, and, as a result, may interfere with plans, programmes and projects under the control of government departments and agencies, with the rights of users of such waters - from commercial users to conservationists - and with the diffuse interest of the general public in a healthy and clean living environment. As a result, the potential for controversy and conflict both within Government and outside tends to be considerable. The potential for conflict of water polluting activities can be reduced through prior consultation within Government and with the public, and this is generally and most effectively achieved at the review and appraisal stage of permit applications. To this end, prior consultation with concerned government departments and agencies, public notice and inspection of an application, and comment requirements are generally featured in the legislation, subsidiary legislation in particular providing the procedural and substantive details of implementation (I, III, IV). Field investigations may also be required to determine whether the proposed waste discharge structures and processes are adequate; and whether and to what extent the proposed discharge or activity will impact on the quality of the receiving waters and of the surrounding environment, and on the specific rights of water abstraction permit holders and on the "diffuse" rights of the general public. While such investigations will ordinarily be required in connection with the provision by the applicant of the prescribed evidence in support of his application (see in this regard **Step Two - Filing of applications - Supporting documents and evidence**, above), independent or complementary investigations may be carried out by the reviewing government department or agency (II and V).

#### **1 - MALAWI - Water Resources (Water Pollution Control) Regulations, 1978**

6. (1) Any person may apply for the Minister's consent to discharge any waste or effluent specified in regulation 4<sup>1</sup>.

(2) An application for the Minister's consent shall be made in Form 'WRB7'<sup>2</sup> set out in the Schedule hereto and shall be submitted through the board which shall, within fourteen days after receiving the application, give notice thereof in the Gazette and in at least two consecutive issues of the most frequently circulated paper in Malawi, the date of such Gazette and the date of either of such issues not being more than five days apart.

...

7. Where notice of any application has been published under regulation 5, any person having an interest in the matter may, within thirty days after the date of such publication in the Gazette, object to the application in writing addressed to the board, stating:

- (a) his name and address
- (b) his interest in the matter
- (c) the matter in respect of which he is objecting to the application;
- (d) the grounds of his objection; and
- (e) whether or not he wishes to be heard on his objection.

8. The Board shall consider every application for the Minister's consent and any objection thereto and may consult such persons and authorities as it deems necessary for the purpose of considering such application or objection.

<sup>1</sup> See this sub-chapter, **Step Two - Filing of applications**, Circumstances under which a permit is required, example II.

<sup>2</sup> See Appendix II, page 285

9. (1) Every person who, pursuant to regulation 8, objects to an application for the Minister's consent shall, during the consideration of his objection, be entitled to attend before the Board in person or, if such person is a body corporate, by a senior director or executive of such body corporate or to be represented thereat by a legal practitioner and shall be entitled to be heard and to adduce evidence in respect of any matter relevant to his objection.

(2) The Board shall, by letter sent by ordinary post to the address stated in the objection, notify the person objecting to an application for the Minister's consent of the date, time and place of consideration of his objection.

#### II - IRELAND - Local Government (Water Pollution) Regulations, 1976

8. Where an applicant fails or refuses to comply with any requirement of a local authority under article 7(3) in relation to the furnishing of results of any investigation within three months of such requirement, the local authority may carry out, or arrange to have carried out, such investigation and may require the applicant to defray or contribute towards the cost of any such investigation.

#### III - IRELAND - Local Government (Water Pollution) Regulations, 1978

10. A local authority shall make available for public inspection during normal office hours at the offices of the local authority, from the time of receipt of the relevant documents until the licence application or any appeal relating thereto is determined, the application and any plans and other particulars submitted by the applicant to the local authority, including any plans or other particulars submitted in pursuance of article 7.

#### IV - UNITED KINGDOM - Environmental Protection Act, 1990

##### Schedule 1 - Authorisations for Processes: Supplementary Provisions

1. .. (2) An application to the enforcing authority for an authorization must also, unless regulations made by the Secretary of State exempt applications of that class, be advertised in such manner as may be prescribed in regulations so made.

...

2. (1) Subject to sub-paragraph (2) below, the enforcing authority shall give notice of any application for an authorization, enclosing a copy of the application, to the persons who are prescribed or directed to be consulted under this paragraph and shall do so within the specified period for notification.

...

(3) Any representations made by the persons so consulted within the period allowed shall be considered by the enforcing authority in determining the application.

(4) For the purposes of sub-paragraph (1) above:

- (a) persons are prescribed to be consulted on any description of application for an authorization if they are persons specified for the purposes of applications of that description in regulations made by the Secretary of State;
- (b) persons are directed to be consulted on any particular application if the Secretary of State specifies them in a direction given to the enforcing authority;

and the "specified period for notification" is the period specified in the regulations or in the direction.

(5) Any representations made by any other persons within the period allowed shall also be considered by the enforcing authority in determining the application.

(6) Subject to sub-paragraph (7) below, the period allowed for making representations is:

- (a) in the case of persons prescribed or directed to be consulted, the period of twenty-eight days beginning with the date on which notice of the application was given under sub-paragraph (1) above, and
- (b) in the case of other persons, the period of twenty-eight days beginning with the date on which the making of the application was advertised in pursuance of paragraph 1(2) above.

(7) The Secretary of State may, by order, substitute for the period for the time being specified in sub-paragraph (6)(a) or (b) above, such other period as he considers appropriate.

3. (1) The Secretary of State may give directions to the enforcing authority requiring that any particular application or any class of applications for an authorization shall be transmitted to him for determination pending a further direction under sub-paragraph (5) below.

(2) The enforcing authority shall inform the applicant of the fact that his application is being transmitted to the Secretary of State.

131 Where an application for an authorisation is referred to him under sub-paragraph (1) above the Secretary of State may:

...  
    (b) afford the applicants and the authority concerned an opportunity of appearing before and being heard by a person appointed by the Secretary of State;  
and he shall exercise one of the powers under this sub-paragraph in any case where, in the manner prescribed by regulations made by the Secretary of State, a request is made to be heard with respect to the application by the applicant or the local enforcing authority concerned.

**V - UNITED KINGDOM - Environmental Protection Act, 1990**

**Schedule 1 - Authorisations for Processes: Supplementary Provisions**

3. ... (3) Where an application for an authorisation is referred to him under sub-paragraph (1) above the Secretary of State may:

    (a) cause a local inquiry to be held in relation to the application; or

...

### Step Four - Deciding on applications

Decisions as to whether or not to grant a permit, or to grant it subject to terms and conditions departing from those sought by the applicant are typically left to the discretion of the responsible decisionmaker (I). Whilst the law cannot prescribe the nature and contents of specific decisions, it can nonetheless orientate their making by prescribing "criteria" which decisionmakers are to follow in arriving at decisions on applications (II to IV). It is worth pointing out that such criteria will provide useful ammunition for challenging decisions on their merits on appeal (see in this regard Step Six below). In addition, a time-limit may be prescribed for decisions to be made, failing which a non-decision may be treated as a negative decision (V). Finally, pending further review of an application and a final decision on it, an interim decision can be made resulting in the grant of a "temporary" permit (VI).

**I - MALAWI - Water Resources (Water Pollution Control) Regulations, 1978**

11. (1) The Minister, having considered an application and the report of the Board thereon and such other documents as were submitted to him under regulation 9, shall decide whether or not he should grant his consent and where he has decided so to do he shall grant his consent in Form WRB.8<sup>1</sup> set out in the Schedule hereto.

...

**II - NEW ZEALAND - Waters Pollution Regulations, 1963**

12. ... (2) When considering any such application the Council shall have regard to the effect of other discharges for which permits have been or may be issued on the waters that will be affected by the discharge in respect of which the permit is sought.

...

**III - QUEENSLAND - Clean Waters Regulations, 1973**

28. ... (e) In considering an application for a licence or the renewal of a licence or the transfer of a licence for the discharge or disposal of wastes the Council shall have special regard to:

- (i) the requirements of any prescribed water quality plans and objectives;
- (ii) any recommendations of the Environmental Control Council;

<sup>1</sup> See Appendix II, page 29b

- (iii) the desirability of preserving the quality of the waters at the existing level;
- (iv) the desirability of restoring the quality of the waters to a higher level;
- (v) the desirability of ensuring that the best practicable available treatment or control of wastes is employed;
- (vi) the desirability of making provision for future waste discharges;
- (vii) the combined effects of the discharge or disposal of wastes and other discharges and disposals of wastes on the waters;
- (viii) effects of periods of no flow in the watercourse;

and shall determine whether the general standard shall apply or whether and what specific standards shall be attached to the licence, the renewed licence or the transferred licence and shall also determine whether and in what manner the standards attached to any other licence shall be varied.

#### IV - MALAYSIA - Environmental Quality (Sewage and Industrial Effluents) Regulations, 1979

11. ... (3) The Director-General may refuse to grant the application for a licence if he is satisfied that the granting of application for such a licence is likely to cause a worsening of condition in the inland waters or cause pollution in any other segment or element of the environment.

(4) Without prejudice to the generality of paragraph (3) of this regulation, the Director-General may grant the application for a licence if he is satisfied that:

- (a) there is no known practicable means of control to enable compliance with the acceptable conditions; or
- (b) the estimated cost to be incurred for compliance will be prohibitive having regard to the nature and size of the industry, trade, or process being carried out in the premises discharging the effluent; or
- (c) the design and construction of any treatment plant or other control equipment and their commissioning require a longer period than the period for compliance with these Regulations; or
- (d) the imposition of the acceptable conditions as prescribed may result in circumstances which, in his opinion and having regard to all factors, are not reasonably practicable or are contrary to the intent and spirit of the Act; or
- (e) a sewerage system is to be provided and the effluent is permitted to be admitted into the sewerage system.

...

#### V - UNITED KINGDOM - Environmental Protection Act, 1980

##### Schedule 1 - Authorisations for Processes: Supplementary Provisions

5. (1) Except in a case where an application has been referred to the Secretary of State under paragraph 3 above and subject to sub-paragraph (3) below, the enforcing authority shall determine an application for an authorization within the period of four months beginning with the day on which it received the application or within such longer period as may be agreed with the applicant.

(2) If the enforcing authority fails to determine an application for an authorization within the period allowed by or under this paragraph the application shall, if the applicant notifies the authority in writing that he treats the failure as such, be deemed to have been refused at the end of that period.

(3) The Secretary of State may, by order, substitute for the period for the time being specified in sub-paragraph (1) above such other period as he considers appropriate and different periods may be substituted for different classes of application.

#### VI - NEW ZEALAND - Waters Pollution Regulations, 1963

12. ... (3) Where an application for a permit relates to an outfall from which pollutants are already being discharged, the Council, in its absolute discretion, may grant a temporary permit authorising the continuation of the discharge subject to such terms and conditions (if any) as may be prescribed in the temporary permit. Any such temporary permit shall cease to have effect when the application is finally dealt with by the Council under subclause (1) hereof.

## Step Five - Formatting of waste discharge permits

A decision to allow a proposed waste discharge or a proposed activity or process results in a legal instrument variably styled permit, licence, authorization or consent - collectively referred to in this Chapter as "permits" for ease of reference. These are the instruments of the grant, and at the same time they constitute and are evidence of, a right to discharge wastes into a body of water or on or under the ground, or to carry on a given activity or process. Standard formats of such instruments may be provided by subsidiary legislation for the convenience of government administrators (I, II, IV and VII). The rights evidenced in the instrument of a grant are generally qualified by terms and conditions. Whilst the framing of such terms and conditions is typically left to the discretion of the permit-granting government authority (VI and VIII), subsidiary legislation may provide, directly in the standard Forms (IV) or otherwise (VIII), checklists of items which the permit-framers must provide for in the permit, or standard terms for express or implied incorporation in the permit (III). In addition, the holders of permits may be subject to obligations of general import laid down in the legislation for direct compliance, i.e., without the need for such obligations to be recorded in the permit (see sub-chapter 3.3 below).

### I - NEW SOUTH WALES - Clean Waters Regulations, 1972

Form 3 - To install, Construct or Modify Apparatus, Equipment or Works - See Appendix II, page 291.

Form 6 - Licence - See Appendix II, page 291.

### II - QUEENSLAND - Clean Waters Regulations, 1973

Form 5 - Licence - See Appendix II, page 292.

### III - CAYMAN ISLANDS - Water Authority Regulations, 1985

16. (1) Permits under this Part of the Regulations shall have validity for:

- (a) one year, in case of permits for discharge into ground water into or onto the ground and into territorial waters;

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### IV - CAYMAN ISLANDS - Water Authority Regulations, 1985

Discharge Permit - See Appendix II, page 293.

### V - IRELAND - Local Government (Water Pollution) Regulations, 1978

Form 1 - Licence to Discharge Trade or Sewage Effluent to Waters - See Appendix II, page 294.

### VI - MALAYSIA - Environmental Quality (Sewage and Industrial Effluents) Regulations, 1979

5. ... (2) The Director-General may grant such application either subject to conditions or unconditionally and may require the applicant:

- (a) to repair, alter, replace or install control equipment;
- (b) to conduct a monitoring programme at his own expense or bear the cost of such programme within such period or at such time and in such manner as the Director-General may specify.

### VII - MALAWI - Water Resources (Water Pollution Control) Regulations, 1978

Form WRB.8 - Minister's Consent to Discharge Waste or Effluent into Public Water - See Appendix II, page 295.

### VIII - MALAWI - Water Resources (Water Pollution Control) Regulations, 1978

11. ... (3) In every consent granted under sub-regulation (1), the Minister

- (a) shall specify the period for which such consent shall remain valid, but such consent may be renewed thereafter, at the discretion of the Minister, for any further period.

- (b) may specify any conditions upon which such consent has been granted.

(4) The determination of the period specified under paragraph (a) and the conditions specified under paragraph (b) of sub-regulation (1) shall lie solely in the discretion of the Minister.



## Step Six - Appealing from adverse decisions

Legislation may allow for judicial or administrative review of permit decisions, i.e., for a judge in court or for a government administrator ranking hierarchically higher to the one who took the decision impugned to screen the above decisions for consistency with formal and substantive legal requirements. This review process constitutes an appeal. The procedural and substantive rules governing the appeal process are generally found in subsidiary legislation, as in the examples below.

### I - QUEENSLAND - Clean Waters Regulations, 1973

17. (i) An application for the review of a decision of the Council regarding the conditions of a licence, a notice under section 25 of the Act, the refusal to grant, renew or transfer a licence or the revocation of any condition of a licence shall be made in Form 9 of the Schedule and accompanied by the prescribed fee.

(ii) The applicant shall submit information including technical information prepared by a qualified engineer, or a scientist, acceptable to the Council, regarding:

- (a) such alternative conditions as he considers would be as effective for the purposes of the Act as the conditions determined by the Council; or
- (b) such conditions as he considers would, if attached to a licence, permit compliance with the requirements of the Act

(iii) The applicant shall furnish such additional information as the Director considers necessary for the purposes of the prescribed report and recommendation to the Council on the application and such other additional information as the Council may require after consideration of such report and recommendation.

Form 9 - Application for Review - See Appendix II, page 296.

### II - NEW SOUTH WALES - Clean Waters Regulations, 1972

18. (1) An appeal to the Board pursuant to section 25 of the Act shall be made in or to the effect of Form 8,

(2) The appeal shall be lodged with the Chairman of the Board within twenty-one days after the Under Secretary makes the decision or gives the direction, as the case may be, in respect of which the appeal is made.

(3) The Board shall forward a copy of the appeal to the Under Secretary.

(4) The appeal shall, as far as practicable, be set down for hearing and be determined by the Board within a period of two months after the date the appeal was lodged with the Chairman.

(5) The Board shall give at least twenty-one days notice in writing to the Under Secretary and the appellant of the date and place where the appeal will be heard.

(6) Any such notice shall, in the case of the appellant, be served by posting the notice by certified mail in an envelope duly stamped and addressed to the appellant at the place last shown in the records of the Under Secretary as his place of abode or business.

(7) The Under Secretary may, by himself or his representative, be present and be heard at the hearing.

(8) The Board shall, within seven days after reaching its decision in respect of the appeal, notify the Under Secretary of that decision.

Form 8 - Appeal under Section 25 of the Clean Waters Act, 1970 - See Appendix II, page 297.

### III - CAYMAN ISLANDS - Water Authority Regulations, 1985

39. (1) Appeals to the Magistrate's Court in accordance with section 48 of the Law shall be made within fourteen days of the Authority's notice being served in accordance with section 62 of the Law.

(2) An appeal notice shall be lodged at the Magistrate's Court, and shall be copied to the Authority not later than four days after it has been lodged at the Magistrate's Court.

(3) Upon receipt of an appeal notice in pursuance of section 48 of the Law, the Magistrate's Court shall send to the appellant an acknowledgement in writing, including a statement that the appellant may, if he so wishes, appear in person, or in the person of a duly appointed representative, before the officer and on the date indicated in the acknowledgement.

...

#### IV - NEW ZEALAND - Waters Pollution Regulations, 1963

20. (1) Every applicant for a permit or person to whom a permit is granted, if he is dissatisfied with any decision of the Council relating to a refusal to grant a permit, or the conditions on which a permit is granted, or any variation of those conditions, or any revocation of a permit, and every person, authority, or body notified under paragraph (a) of regulation 9 hereof, dissatisfied with any decision of the Council relating to the classification to which the notification relates, may, within a period of three months after being notified of the decision of the Council, give notice of appeal to the Secretary of the Council.

(2) Upon receipt of notice of appeal the Secretary of the Council shall forthwith inform the Minister, who shall thereupon take all steps necessary for the constitution of an Appeal Tribunal consisting of a Magistrate and two assessors.

(3) The Appeal Tribunal so constituted shall as soon as practicable hear the appeal; and may confirm or vary or cancel the decision of the Council, or may make such other order as the case may require.

(4) On any appeal under this regulation the decision of the Appeal Tribunal shall be final and conclusive.

(5) On any appeal under this regulation the Appeal Tribunal shall be deemed to be a Commission of Inquiry under the Commissions of Inquiry Act 1908, and all the provisions of that Act shall apply accordingly.

#### V - IRELAND - Local Government (Water Pollution) Regulations, 1978

25. In this Part,

"appeal" means an appeal under section 8 or section 20, except where otherwise provided,

"party to an appeal" means:

(a) in the case of an appeal under section 8

(i) the appellant,

(ii) the local authority which granted, refused or reviewed a licence in relation to which an appeal is made,

(iii) the applicant for a licence in relation to the grant or refusal of which an appeal is made by another person,

(iv) the person making, causing or permitting a discharge in the case of an appeal by another person in relation to a review of a licence for that discharge;

(b) in the case of an appeal under section 20

(i) the appellant,

(ii) the sanitary authority which granted, refused or reviewed a licence in relation to which an appeal is made.

26. The prescribed period for the purpose of an appeal under section 8 shall be:

(a) in the case of an appeal relating to the grant or refusal of a licence the period of one month beginning on the date of the grant or refusal of the licence,

(b) in the case of an appeal relating to the decision of a local authority on a review of a licence the period of one month beginning on the date of the local authority's decision.

27. An appeal shall:

(a) be made in writing

(b) state the subject matter of the appeal, and

(c) state the grounds of appeal.

28. The Board shall give a copy of an appeal to each other party to the appeal.

29. (1) Where an appeal is made to the Board, the local authority or sanitary authority which granted, refused or reviewed the licence in relation to which the appeal is made shall give to the Board such information or evidence in its possession or procurement as the Board may require for the purpose of determining the appeal, including in the case of an appeal relating to the grant or refusal of a licence a copy of the application and of the plans and particulars which accompanied it.

(2) A party to an appeal (other than a local authority or sanitary authority) shall give to the Board any document, information or evidence in his possession or procurement which the Board consider necessary for the purpose of determining the appeal.

(3) Where a person neglects or refuses to give the Board any document, information or evidence within such period as may at any time be specified by the Board, the Board may determine the appeal without such document, information or evidence.

(4) A copy of any document relevant to an appeal which is given to the Board by any party shall be given by the Board to each party not already possessed of a copy of such document, or shall be made available for inspection at the offices of the Board or at the offices of the local authority or sanitary authority which granted, refused or reviewed the licence in relation to which the appeal is made or at such convenient place as the Board may specify and each party not possessed of a copy of the document shall be informed that it is so available for inspection.

30. A party to an appeal to whom a copy of an appeal has been given under article 26 may, within such period as may at any time be specified by the Board, make in writing to the Board such observations on the appeal as he thinks fit and a copy of such observations shall be given by the Board to each other party to the appeal or, where a number of persons have made the appeal jointly, to any one of such persons.

31. (1) A party to an appeal may request an oral hearing of the appeal and any such request shall be made in writing to the Board.

(2) A request for an oral hearing may be withdrawn at any time.

(3) Where the Board decide to hold an oral hearing, the Board shall inform each of the parties to the appeal and shall give each party not less than seven days notice of the time and place of the opening of the oral hearing or such shorter notice as may be accepted by all the parties to the appeal.

(4) The Board may, at any time before the opening of an oral hearing, alter the time or place of the opening of the hearing and, in the event of such alteration, the Board shall give each party not less than seven days notice of the new time and place or such shorter notice as may be accepted by all the parties to the appeal.

(5) Where the parties to an appeal have been informed that an oral hearing is to be held and where, following the withdrawal of a request for an oral hearing, or a decision by the Board, the appeal fails to be determined without an oral hearing, the Board shall give notice accordingly to the parties and shall not determine the appeal until seven days after the date of the giving of the notice or such longer period as the Board may specify in the notice.

(6) An oral hearing shall be conducted by the Board or by a person appointed for that purpose by the Board generally or for a particular appeal or for appeals of a particular class.

(7) If, for any reason, the person appointed is unable or fails to conduct, or to complete the conduct of, an oral hearing or, for any reason, is unable or fails to furnish a report on an oral hearing to the Board, the Board may appoint another person to conduct the oral hearing or to conduct a new oral hearing.

32. The Board or other person conducting an oral hearing shall have discretion as to the conduct of the hearing and in particular shall:

(a) conduct the hearing without undue formality,

(b) decide the order of appearance of the parties,

(c) permit any party to appear in person or to be represented by another person, and

(d) hear, if they think fit, any person who is not a party to the appeal.

33. (1) Subject to sub-articles (2) and (3), the Board or other person conducting an oral hearing may adjourn or re-open any hearing or, notwithstanding that any party has failed to attend a hearing, proceed with the hearing.

(2) Notice of the time and place of the re-opening of an oral hearing or resumption of an oral hearing that has been adjourned indefinitely shall be given by the Board to each of the parties to the appeal not less than seven days before the said time unless all such parties accept shorter notice.

(3) Unless the Board consider it expedient to do so and so direct, an oral hearing shall not be re-opened after the report thereon has been submitted to the Board.

34. (1) The Board shall notify every party to an appeal of its decision on the appeal.

(2) Every notification under sub-article (1) to a person, other than a local authority or sanitary authority, shall specify the nature of the decision, including any directions given to the local authority or sanitary authority relating to the granting or revoking of a licence or the attachment, amendment or deletion of conditions.

35. On complying with directions of the Board in relation to a licence the local authority or sanitary authority shall notify the holder of the licence of such compliance.

**V UNITED KINGDOM - Water Resources (Miscellaneous Provisions) Regulations, 1985**

4. (1) The time within which notice in writing of appeal may be served on the Minister by an aggrieved applicant for consent under section 72 of the Act (which relates to the control of discharges into underground strata) shall be:

- (a) one month from the date on which the applicant is notified by the river authority of the decision on his application, or,
- (b) if notice of decision is not given to the applicant by the river authority within the period allowed in that behalf by section 72(4) of the Act (namely, three months and any duly agreed extension), one month from the end of that period,

or such longer period as the Minister may at any time allow.

(2) The appellant shall provide the Minister with a copy of the following documents:

- (a) the application for consent made to the river authority;
- (b) all relevant maps and particulars submitted to the authority;
- (c) the notice of the authority's decision, if any;
- (d) all other relevant correspondence with the river authority.

5. (1) This regulation applies to an appeal under section 74 of the Act against the revocation or variation by a river authority of a consent under section 72 to discharge into underground strata, or against the refusal of the river authority to vary such a consent in accordance with the terms of an application in that behalf made by the person to whom the consent was granted.

(2) The notice of appeal shall be in writing and shall be served on the Minister:

- (a) within one month from the date on which notice of the revocation or variation, or, as the case may be, refusal, is given by the river authority to the person to whom the consent was granted, or
- (b) where, in the case of an application for variation of a consent, the river authority do not give notice of their decision to the applicant within the period allowed in that behalf by section 74(3) of the Act (namely, three months and any duly agreed extension), within one month from the end of that period,

or such longer period as the Minister may at any time allow.

(3) The appellant shall provide the Minister with a copy of the following documents:

- (a) the relevant consent,
- (b) if the appeal is against the refusal of the river authority to vary the consent in accordance with the terms of an application for variation, the relevant application;
- (c) the notice of revocation or variation, or the notice of refusal, if any;
- (d) all relevant correspondence with the river authority.

**VI UNITED KINGDOM - Environmental Protection (Applications, Appeals and Registers) Regulations, 1991**

9. (1) A person who wishes to appeal to the Secretary of State under section 15 or 22(5) of the 1990 Act shall give to the Secretary of State written notice of the appeal together with the documents specified in paragraph (2) below and shall at the same time send to the enforcing authority a copy of that notice together with the documents specified in paragraph (2)(a) and (f) below.

(2) The documents mentioned in paragraph (1) above are:

- (a) a statement of the grounds of appeal;
- (b) a copy of any relevant application;
- (c) a copy of any relevant authorization;
- (d) a copy of any relevant correspondence between the appellant and the enforcing authority;
- (e) a copy of any decision or notice which is the subject-matter of the appeal;
- (f) a statement indicating whether the appellant wishes the appeal to be in the form of a hearing or to be disposed of on the basis of written representations.

(3) If the appellant wishes to withdraw an appeal he shall do so by notifying the Secretary of State in writing and shall send a copy of that notification to the enforcing authority.

10. (1) Subject to paragraph (2) below, notice of appeal in accordance with regulation 9(1) above is to be given:

- (a) in the case of an appeal by a person who has been refused the grant of an authorization under section 6 of the 1990 Act, before the expiry of the period of six months beginning with:
  - (i) the date of the decision which is the subject-matter of the appeal; or
  - (ii) in the case of an appeal against a deemed refusal of an application for an authorization, the date on which the application is deemed under the provisions of paragraph 5(2) of Schedule 1 to the 1990 Act to have been refused,

- (b) in the case of an appeal by a person who is aggrieved by the conditions attached to his authorization or who has been refused a variation of an authorization on an application under section 11 of the 1990 Act, before the expiry of the period of six months beginning with the date of the decision which is the subject-matter of the appeal;
- (c) in the case of an appeal in respect of a decision of an enforcing authority to revoke an authorization, before the date on which the revocation of the authorization takes effect;
- (d) in the case of an appeal by a person on whom a variation notice, an enforcement notice or a prohibition notice is served, before the expiry of the period of two months beginning with the date of the notice which is the subject-matter of the appeal;

(2) The Secretary of State may in a particular case allow notice of appeal to be given after the expiry of the periods mentioned in paragraph (1)(a), (b) or (d) above.

11. (1) Subject to paragraph (4) below, the enforcing authority shall, within 14 days of receipt of the copy of the notice of appeal in accordance with regulation 9(1) above:

- (a) in the case of an appeal by a person in respect of a decision of an enforcing authority to revoke an authorization or on whom a variation notice, an enforcement notice or a prohibition notice is served, give written notice of it to any person who appears to the enforcing authority likely to have a particular interest in the subject-matter of the appeal; and
- (b) in any other case give written notice of it:
  - (i) to any person who made representations to the authority with respect to the grant or variation of the authorization; and
  - (ii) to any person who was required to be consulted on the application under paragraph 2, 6 or 7 of Schedule 1 to the 1990 Act pursuant to regulation 4 (1) above.

(2) A notice under paragraph (1) above shall:

- (a) state that an appeal has been lodged;
- (b) give the name of the appellant and:
  - (i) where the prescribed process will not be carried on by means of mobile plant, the address of the premises where the prescribed process will be carried on;
  - (ii) where the prescribed process will be carried on by means of mobile plant, the address of this principal place of business.
- (c) describe the application or authorization to which the appeal relates;
- (d) state that a copy of any representations made to the enforcing authority by any person mentioned in paragraph (1)(b) above will be sent to the Secretary of State and the appellant and will be considered by the Secretary of State when determining the appeal unless, within 21 days of the date of the notice, the person who made the representations requests the Secretary of State to disregard them;
- (e) state that representations with respect to the appeal may be made to the Secretary of State in writing by any recipient of the notice within a period of 21 days beginning with the date of the notice; and
- (f) state that if a hearing is to be held wholly or partly in public, a person mentioned in paragraph (1)(a) or (b)(i) above who makes representations with respect to the appeal and any person mentioned in paragraph (1)(b)(ii) above will be notified of the date of the hearing.

(3) The enforcing authority shall, within 14 days of sending a notice under paragraph (1) above, send to the Secretary of State a copy of any representations made to that authority by any person mentioned in paragraph (1)(b) above and shall notify the Secretary of State of the persons to whom and the date on which the notice was sent.

...

12. (1) Where the appellant informs the Secretary of State that he wishes the appeal to be disposed of on the basis of written representations, the enforcing authority shall submit any written representations to the Secretary of State not later than 28 days after receiving a copy of the documents mentioned in regulation 9(2)(a) and (f) above.

(2) The appellant shall make any further representations by way of reply to any representations from the enforcing authority not later than 17 days after the date of submission of those representations by the enforcing authority.

(3) Any representations made by the appellant or the enforcing authority shall be dated and submitted to the Secretary of State on the date they bear.

14) When the enforcing authority or the appellant submits any representations to the Secretary of State they shall at the same time send a copy of them to the other party.

15) The Secretary of State shall send to the appellant and the enforcing authority a copy of any representations made to him by the person mentioned in regulation 11(1) above and shall allow the appellant and the enforcing authority a period of not less than 14 days in which to make representations thereon.

16) The Secretary of State may in a particular case:

(a) set later time limits than those mentioned in this regulation;

(b) require exchanges of representations between the parties in addition to those mentioned in paragraphs (1) and (2) above.

13. (1) The Secretary of State shall give the appellant and the enforcing authority at least 28 days written notice for such shorter period of notice as they may agree of the date, time and place fixed for the holding of any hearing in respect of an appeal under section 15 or 22(5) of the 1990 Act.

(2) Subject to paragraph (4) and (5) below, in the case of a hearing which is to be held wholly or partly in public, the Secretary of State shall, at least 21 days before the date fixed for the holding of the hearing, publish a copy of the notice mentioned in paragraph (1) above:

(a) in a case where the prescribed process will not be carried on by means of a mobile plant, in a newspaper circulating in the locality in which the prescribed process which is the subject of the appeal will be carried on; and

(b) in a case where the appeal is in respect of a decision of an enforcement authority to revoke an authorization or against a variation notice, an enforcement notice or a prohibition notice in respect of a prescribed process carried on by means of a mobile plant, in a newspaper circulating in the locality in which the prescribed process was carried on at the time when the notice of revocation, variation notice, enforcement notice or prohibition notice was served,

and shall serve a copy of the notice mentioned in paragraph (1) above on every person mentioned in regulation 11(1)(a) and (b)(i) above who has made representations in writing to the Secretary of State and on any person who was required under regulation 11(1)(b)(i) above to be notified of the appeal.

(3) The Secretary of State may vary the date fixed for the holding of any hearing and paragraphs (1) and (2) above shall apply to the variation of a date as they applied to the date originally fixed.

(4) The Secretary of State may also vary the time or place for the holding of a hearing but shall give such notice of any such variation as appears to him to be reasonable.

...  
(6) The persons entitled to be heard at a hearing are:

(a) the appellant;

(b) the enforcing authority; and

(c) any person required under regulation 11(1)(b)(ii) above to be notified of the appeal.

(7) Nothing in paragraph (6) above shall prevent the person appointed to conduct the hearing of the appeal from permitting any other person to be heard at the hearing and such permission shall not be unreasonably withheld.

(8) After the conclusion of a hearing, the person appointed to conduct the hearing shall make a report in writing to the Secretary of State which shall include his conclusions and his recommendations or his reasons for not making any recommendations.

14. (1) The Secretary of State shall notify the appellant in writing of his determination of the appeal and shall provide him with a copy of any report mentioned in regulation 13(8) above.

(2) The Secretary of State shall at the same time send:

(a) a copy of the documents mentioned in paragraph (1) above to the enforcing authority and to any persons required under regulation 11(1)(b)(ii) above to be notified of the appeal; and

(b) a copy of his determination of the appeal to a person mentioned in regulation 11(1)(a) and (b)(i) above who made representations to the Secretary of State and, if a hearing was held, to any other person who made representations in relation to the appeal at the hearing.

## Step Seven - Recording of decisions and permits

Records of successful applications and of permits issued as a result are generally prescribed by the law, for the Government's own future reference and for the information of the general public. Records of waste discharge permits are commonly styled "registers" and are

accessible to the public as directed by the law. Registers generally also contain a record of events concerning the permit after its grant (see in this regard sub-chapter 3.3 below). Subsidiary legislation provides the details of formation, contents and accessibility of such Registers as shown in the examples below.

**I - NEW SOUTH WALES - Clean Waters Regulations, 1973**

17. For the purposes of section 23 of the Act the registers of licences are registers which record, in respect of each licence, details of:

- (a) the identification number;
- (b) the date of issue;
- (c) the name and address of the licensee;
- (d) the address of any premises from which wastes are or are likely to be discharged pursuant to the licence;
- (e) the licence fee paid in respect of the licence;
- (f) the conditions (if any) applicable from time to time in respect of the licence; and
- (g) any renewal, transfer, suspension or revocation relating to the licence.

**II - QUEENSLAND - Clean Waters Regulations, 1973**

18. The Council shall cause to be kept the following registers:

- (i) A register of licences and exemptions which shall contain the following information concerning each licence:

- Licence number
- Date of issue
- Name of licensee
- Address of licensee
- Address of premises to which the licence applies
- Date of any transfers of licence
- Name and address of persons to whom the licence was transferred on each occasion
- Dates of any variations or revocations of conditions
- Dates of any renewals of the licence
- Amount of the licence fee and the fee for renewal each year
- Dates of suspension and reinstatement of a licence
- Date of cancellation of licence
- Date of return of licence
- Date of issue of any duplicate licence
- Date of granting of any exemption
- Date of expiry or revocation of any exemption

...

- (iii) Any action taken under sections 34 or 35 of the Act shall be entered in the register of licences or notices as appropriate;
- (iv) Any convictions under the Act or these Regulations shall be entered in the register of licences or notices as appropriate.

**III - IRELAND - Local Government (Water Pollution) Regulations, 1978**

Form 3 - Register of Licences under Section 4 for the Discharge of Trade and Sewage Effluents to Waters - See Appendix II, page 298.

**IV - UNITED KINGDOM - Water Resources (Miscellaneous Provisions) Regulations, 1985**

6. (1) The register which by virtue of section 75 of the Act is required to be kept by a river authority and to be available for inspection by the public at all reasonable hours shall contain the following particulars of every consent granted by the authority, and for the time being in force, under section 72 of the Act, that is to say:

- (a) the date of grant of the consent and the name and address of the person to whom it was granted;
- (b) brief details of the consent, including any conditions attached to it;
- (c) the date and brief details of any variation of the consent, indicating whether the variation was effected in pursuance of an application or otherwise;

and, where a consent is granted or varied in accordance with a direction given by the Minister on appeal, the relevant particulars shall include a statement to that effect.

(2) The register shall include an index, which shall be in the form of a map unless the Minister approves some other form for enabling a person to trace any entry in the register.

(3) The particulars specified in paragraph (1) of this regulation shall be entered in the register within 14 days from the grant, or, as the case may be, variation, of the consent to which they relate.

(4) The register shall be kept at the principal office of the river authority.

#### V - UNITED KINGDOM - Environmental Protection (Applications, Appeals and Registers) Regulations, 1991

15. Subject to sections 21 and 22 of the 1990 Act, a register maintained by an enforcing authority under section 20 of the Act shall contain:

- (a) all particulars of any application for an authorization made to the Authority;
- (b) all particulars of any notice to the applicant by the authority under paragraph 1(3) of Schedule 1 to that Act and of any information furnished in response to such a notice;
- (c) all particulars of any representations made by any person required to be consulted under paragraph 2, 6 or 7 of Schedule 1 to the 1990 Act pursuant to regulation 4(1) above;
- (d) all particulars of any authorization granted by the authority;
- (e) all particulars of any variation notice, enforcement notice or prohibition notice issued by the authority;
- (f) all particulars of any notice issued by the authority withdrawing a prohibition notice;
- (g) all particulars of any notification given to the holder of an authorization by the authority under section 10(5) of that Act;
- (h) all particulars of any application for the variation of the conditions of an authorization under section 11(4)(b) of that Act;
- (i) all particulars of any revocation of an authorization effected by the authority;
- (j) all particulars of any notice of appeal under section 15 of that Act against a decision by the authority, the documents relating to the appeal mentioned in regulation 9(2)(a), (d) and (e) above, any written notification of the Secretary of State's determination of such an appeal and any report accompanying any such written notification;
- (k) details of any conviction of any person for any offence under section 23(1) of that Act which relates to the carrying on of a prescribed process under an authorization granted by the authority, including the name of the offender, the date of conviction, penalty imposed and the name of the Court;
- (l) all particulars of any monitoring information relating to the carrying on of a prescribed process under an authorization granted by the authority obtained by the authority as a result of its own monitoring or furnished to the authority in writing by virtue of a condition of the authorization or section 19(2) of that Act;
- (m) in a case where any such monitoring information is omitted from the register by virtue of section 22 of that Act, a statement by the authority, based on the monitoring information from time to time obtained by or furnished to them, indicating whether or not there has been compliance with any relevant condition of the authorization;
- (n) all particulars of any report published by an enforcing authority relating to an assessment of the environmental consequences of the carrying on of a prescribed process in the locality of premises where the prescribed process is carried on under an authorization granted by the authority; and
- (o) all particulars of any direction (other than a direction under section 21(2) of the 1990 Act) given to the authority by the Secretary of State under any provision of Part I of that Act.

17. Nothing in regulation 15 or 16 above shall require an enforcing authority, to keep in a register maintained by them,

- (a) monitoring information four years after that information was entered in the register; or
- (b) information which has been superseded by later information four years after that later information was entered in the register.

### 3.2 General obligations of permit holders

In addition to the terms and conditions spelt out in the permit, relevant holders may also be subject, explicitly or by implication, to obligations applicable to all of them or to categories of them. Obligations of this kind are generally found in subsidiary legislation. As to their



nature vis-a-vis the obligations recorded in a permit, see the considerations made in Chapter I, sub-chapter 3. As to their contents, they tend to cover the following matters:

### Standards of effluent quality

To the extent that one cannot discharge waste or carry on an activity or process without a permit, the holders of such permits are bound by requirements as to the quality of effluents laid down in the legislation for general compliance. Subsidiary legislation on these particular standards is presented in sub-chapter 7.4 herebelow.

### Changes in the quantity and/or quality of the waste discharged

In view of the critical importance of permitted quantities and/or the nature and composition of discharges, permit holders are generally under an obligation to refrain from effecting changes in either the quantitative or the qualitative specifications stated in a permit. This negative obligation however may be qualified by a requirement that an intended change be cleared in advance with, or expressly consented to by, the permit-granting government authority (I and II). If a change is proposed in connection with a request for the renewal of a permit, a fresh new permit may be required (III).

#### I - NEW ZEALAND - Waters Pollution Regulations, 1963

13. ... (2) Every person, being the owner or user of an outfall in respect of which a permit is issued, shall advise the Council if at any time it is proposed to discharge a volume of waste larger than, or waste of a character different from, that stated in the permit.

#### II - MALAYSIA - Environmental Quality (Sewage and Industrial Effluents) Regulations, 1979

13 (1) The holder of a licence shall not make, or cause to permit to be made, any change to the premises or in the manner of running, using, maintaining or operating the premises or in any operation or process carried on at the premises, which change causes, or is intended or is likely to cause, a material increase in the quantity or quality of effluent or both discharged from the premises, unless prior written approval of the Director-General has been obtained for the change.

(2) For the purposes of paragraph (1), changes to licensed premises include:

- (a) any change in the construction, structure or arrangement of the premises or any building serving the premises;
- (b) any change in the construction, structure, arrangement, alignment, direction, or condition of any channelling device, system, or facility serving the premises; and
- (c) any change of, to, or in any plant, machine, or equipment used or installed at the premises.

#### III - QUEENSLAND - Clean Waters Regulations, 1973

7. An application for the renewal of a licence shall be made in Form 3<sup>1</sup> of the Schedule, if there has been any change in the nature of the wastes to which the licence applies which causes or may cause increased water pollution, an application shall be made for a new licence instead of a renewal.

<sup>1</sup> Omitted.

### Dilution of the effluent discharged

Permit holders may be under a general obligation not to dilute the effluent covered by the permit. This negative obligation may be qualified by the requirement that dilution be expressly consented to by the permit-granting government authority, and be undertaken subject to the terms prescribed by it as in the example below.

**I - MALAYSIA - Environmental Quality (Sewage and Industrial Effluents) Regulations, 1979**

17. No person shall dilute, or cause or permit to be diluted, any effluent, whether raw or treated at any time or point after it is produced at any premises unless prior written authorization of the Director-General has been obtained for the dilution and the dilution is done according to the terms and conditions of the authorization.

### Spills or accidental discharges

In the examples herebelow, general obligations in this regard concern reporting of occurrences to the responsible Government authority, containment of the consequences of an accidental discharge, and remedying the effects of it or paying for the cost of Government-executed clean-up.

**I - MALAYSIA - Environmental Quality (Sewage and Industrial Effluent) Regulations, 1979**

18. (1) In the event of the occurrence of any spill or accidental discharge of the substances specified in regulation 8 which either directly or indirectly gains or may gain access into any inland waters, the person or persons responsible for such occurrence shall immediately inform the Director General of the occurrence.

(2) The person or persons responsible for the occurrence of the spill or accidental discharge referred to in paragraph (1) shall be required, to every reasonable extent, to contain, cleanse or abate the spill or accidental discharge or to recover substances involved in the spill or accidental discharge in a manner satisfactory to the Director-General.

(3) The Director-General shall estimate any damage caused by the spill or accidental discharge and may recover all costs and expenses from the person or persons responsible for the occurrence of the spill or accidental discharge.

**II - QUEENSLAND - Clean Waters Regulations, 1973**

21. (i) The occupier of any premises shall ensure that all employees are instructed in procedures to avoid accidental discharges of wastes, to remove, disperse or destroy any wastes accidentally discharged to any waters and to otherwise prevent, abate or mitigate any water pollution caused by any accidental discharge of wastes.

(ii) The occupier of any premises shall furnish to the Director any information concerning an accidental discharge of wastes which causes or is likely to cause water pollution and shall comply with any reasonable requirements of the Director for the prevention, abatement or mitigation of any such water pollution.

(iii) The Director shall, if he considers such action necessary, report the circumstances of any such accidental discharge to the Minister, recommending action under section 35 of the Act.

### Monitoring and recording of measurements

Permit holders generally are under an obligation to monitor and to keep records of measurements and data concerning a permitted discharge. These obligations become

operational upon an explicit request made by the permit-granting authority to the concerned permit holder (I to III) or by virtue of the direct operation of the law (IV).

**I - MALAYSIA - Environmental Quality (Sewage and Industrial Effluents) Regulations, 1979**

19. A person who discharges effluent into any inland waters or onto any land shall, in connection with such discharge, install such sampling test point or points, inspection chambers, flow-meters, and recording and other apparatuses as the Director-General may, from time to time, require.

**II - MALAWI - Water Resources (Water Pollution Control) Regulations, 1978**

12. (1) A person to whom the Minister's consent has been granted shall:

...

- (c) if so required by the Minister, erect, in such workmanlike manner as shall satisfy the Minister, works which are required for the sampling and testing of any waste or effluent capable of being discharged by such person:

...

15. Where the Minister requires him so to do, an applicant for the Minister's consent or a person to whom the Minister's consent has been granted shall, at no expense to the Minister or the Board, take samples of waste or effluent in the manner which the Minister may prescribe and have such samples analyzed by an analyst recognized by the Minister and furnish the results of such analysis to the Minister.

**III - NEW ZEALAND - Waters Pollution Regulations, 1963**

19. Every person, being the owner or user of a registered outfall in respect of which a permit is required under these regulations, shall keep such records as may reasonably be required by the Council by notice in writing addressed to that person.

**IV - NIGERIA - National Environmental Protection (Pollution Abatement in Industries and Facilities Generating Wastes) Regulations, 1991**

2. An industry or a facility shall:

- (a) have a pollution monitoring unit within its premises;
- (b) have on site a pollution control; or
- (c) assign the responsibility for pollution control to a person or body corporate accredited by the Agency.

3. A discharge, including solid, gaseous and liquid waste from any industry or facility shall be analysed and reported to the nearest office of the Agency every month, through a Discharge Monitoring Report.

Construction of works instrumental to the discharge

General obligations in this particular regard aim at upholding generic or specific standards of workmanship and care, as shown by the example below.

**MALAWI - Water Resources (Water Pollution Control) Regulations, 1978**

12. (1) A person to whom the Minister's consent has been granted shall

...

- (b) erect, in such workmanlike manner as shall satisfy the Minister, works which are required for the discharge of waste or effluent into any public water, and in this case the works shall be erected in a manner which shall ensure that the effluent does not cause any unnecessary damage or disturbance to the bed, banks or surroundings of such public water nor collect into pools within the vicinity of the works;

...

### 3.3 Management of waste discharge permits

The conceptual meaning and scope of coverage of this sub-chapter have been illustrated in Chapter I on **ALLOCATING WATER FOR USE; WATER RIGHTS AND PERMITS**, sub-chapter 4. Subsidiary legislation provides standard formats and procedural and substantive requirements of permit management mechanisms (i.e., renewal of permits (I and III); suspension, cancellation and variation of permits (IV, VI, and VIII); transfer of permits (II, III, V and VII). Provisions as to the recording of action taken pursuant to these mechanisms in the registers of waste discharge permits, and as to appeals from action taken by the responsible government department or agency, tend to appear in context with general provisions on the said registers and appeals, respectively (see sub-chapter 3.1, Steps Six and Seven, respectively).

#### I - NEW SOUTH WALES - Clean Waters Regulations, 1972

18. For the purposes of section 21 of the Act the prescribed time is not less than thirty days before the date on which the licence is due to expire.

#### II - NEW SOUTH WALES - Clean Waters Regulations, 1972

Form 7 - Application for Transfer of a Licence - See Appendix II, page 299.

#### III - QUEENSLAND - Clean Waters Regulations, 1973

26. ... (c) (See sub chapter 3.1 above, Step Four - Deciding on applications, example III).

#### IV - IRELAND - Local Government (Water Pollution) Regulations, 1979

13. (1) Where a local authority intends to review a licence it shall:

- (a) give notice of such intention to the person making, causing or permitting the discharge to which the licence relates, and
- (b) publish notice of such intention in a newspaper circulating in the functional area of the local authority.

(2) Every notice under sub-article (1) shall specify:

- (a) the reference number relating to the licence in the register.
- (b) the reasons for the review if a period of less than three years has elapsed since the date of the licence or the last review of the licence; and
- (c) that representations relating to the review may be made in writing to the local authority within one month of the date of the notice.

14. (1) Where a local authority gives notice under article 13 (1)(a) such notice may also require the person making, causing or permitting the discharge to which the licence relates to submit such plans or other particulars as it considers necessary for the purpose of the review.

(2) A local authority shall make available for public inspection during normal office hours at the offices of the local authority, from the time of receipt of the relevant documents until the review or any appeal relating thereto is determined, any plans and other particulars submitted to the local authority in connection with the review, including any such plans or other particulars submitted in pursuance of sub-article (1).

(3) Where a person fails or refuses to comply with any requirement of a local authority under sub-article (1) within three months the local authority may complete the review.

15. (1) On completion of a review of a licence the local authority shall give notice of its decision to the person making, causing or permitting the discharge to which the licence relates and to any person who submitted representations in writing to the local authority under article 13(2)(c).

(2) A notice by a local authority under sub-article (1) shall include a statement that an appeal under section 8 may be made to the Board by any person within the period prescribed in article 26 and that any such appeal must be accompanied by a deposit of £10 and shall specify:

- (a) whether any condition of the licence the subject of the review has been deleted,

- (b) whether and in what way any condition of the licence the subject of the review has been amended.
- (c) any new conditions attached to the licence, and
- (d) the date of the local authority's decision.

**V - MALAWI - Water Resources (Water Pollution Control) Regulations, 1978**

12. (1) A person to whom the Minister's consent has been granted shall

...

- (d) not assign the consent to any other person, unless the Minister has first agreed in writing to such assignment;

...

**VI - NEW ZEALAND - Waters Pollution Regulations, 1963**

16 (1) Every permit under these regulations shall remain in force until it is revoked.

(2) The Council may amend or revoke any of the terms and conditions of a permit or add any new terms and conditions which in its opinion are necessary in the public interest:

Provided that if the terms and conditions imposed in any permit have been complied with, no new or altered terms or conditions shall, without the consent of the holder, be imposed for a period of three years after the date of the issue of the permit.

(3) The Council shall give to the holder of the permit and to every other person who in its opinion is likely to be affected three months' notice of its intention to vary or revoke a permit.

17 The Council, if it is satisfied after due inquiry that the holder of a permit under these regulations has not complied with any of the terms and conditions of a permit, may vary or revoke the permit.

**VII - NEW ZEALAND - Waters Pollution Regulations, 1963**

18. Any permit under these regulations may be transferred to any person.

**VIII (First part) - UNITED KINGDOM - Environmental Protection Act, 1990**

**Schedule 1 - Authorisations for Processes: Supplementary Provisions**

6. (1) The requirements of this paragraph apply where an enforcing authority has decided to vary an authorization under section 10 and is of the opinion that any action to be taken by the holder of the authorization in consequence of the variation will involve a substantial change in the manner in which the process is being carried on.

(2) Subject to sub-paragraph (3) below, the enforcing authority shall give notice of the action to be taken by the holder of the authorization to the persons who are prescribed or directed to be consulted under this paragraph and shall do so within the specified period for notification; and the holder shall advertise the action in the manner prescribed in regulations made by the Secretary of State.

(3) The Secretary of State may, by regulations, exempt any class of variation from all or any of the requirements of this paragraph or exclude any class of information relating to action to be taken by holders of authorizations from all or any of those requirements, in all cases or as respects specified classes only of persons to be consulted.

(4) Any representations made by the persons so consulted within the period allowed shall be considered by the enforcing authority in taking its decision.

(5) For the purposes of sub-paragraph (2) above:

(a) persons are prescribed to be consulted on any description of variation if they are persons specified for the purposes of variations of that description in regulations made by the Secretary of State;

(b) persons are directed to be consulted on any particular variation if the Secretary of State specifies them in a direction given to the enforcing authority;

and the "specified period for notification" is the period specified in the regulations or in the direction.

(6) Any representations made by any other persons within the period allowed shall also be considered by the enforcing authority in taking its decision.

(7) Subject to sub-paragraph (8) below, the period allowed for making representations is:

(a) in the case of persons prescribed or directed to be consulted, the period of twenty-eight days beginning with the date on which notice was given under sub-paragraph (2) above, and

(b) in the case of other persons, the period of twenty-eight days beginning with the date of the advertisement under sub-paragraph (2) above.

(8) The Secretary of State may, by order, substitute for the period for the time being specified in sub-paragraph (7)(a) or (b) above, such other period as he considers appropriate.

7. (1) The requirements of this paragraph apply where an application is made to an enforcing authority under section 11(4) for the variation of an authorization.

(2) Subject to sub-paragraph (3) below, the enforcing authority shall give notice of any such application for a variation of an authorization, enclosing a copy of the application, to the persons who are prescribed or directed to be consulted under this paragraph and shall do so within the specified period for notification; and the holder of the authorization shall advertise the application in the manner prescribed in regulations made by the Secretary of State.

(3) The Secretary of State may, by regulations, exempt any class of application from all or any of the requirements of this paragraph or exclude any class of information furnished with applications for variations of authorizations from all or any of those requirements, in all cases or as respects specified classes only of persons to be consulted.

(4) Any representations made by the persons so consulted within the period allowed shall be considered by the enforcing authority in determining the application.

(5) For the purposes of sub-paragraph (2) above:

(a) persons are prescribed to be consulted on any description of application for a variation if they are persons specified for the purposes of applications of that description in regulations made by the Secretary of State;

(b) persons are directed to be consulted on any particular application if the Secretary of State specifies them in a direction given to the enforcing authority;

and the "specified period for notification" is the period specified in the regulations or in the direction.

(6) Any representation made by any other persons within the period allowed shall also be considered by the enforcing authority in determining the application.

(7) Subject to sub-paragraph (8) below, the period allowed for making representations is:

(a) in the case of persons prescribed or directed to be consulted, the period of twenty-eight days beginning with the date on which notice of the application was given under sub-paragraph (2) above; and

(b) in the case of other persons, the period of twenty-eight days beginning with the date on which the making of the application was advertised in pursuance of sub-paragraph (2) above.

(8) The Secretary of State may, by order, substitute for the period for the time being specified in sub-paragraph (7)(a) or (b) above, such other period as he considers appropriate.

#### VIII (Second part) - UNITED KINGDOM - Environmental Protection (Applications, Appeals and Registers) Regulations, 1991

3. . . (2) An application to an enforcing authority under any provision of section 11 of the 1990 Act for the variation of the conditions of an authorization shall be in writing.

(3) A person making:

... (b) an application to such an authority under any provision of section 11 for the variation of the conditions of an authorization,

shall furnish the authority with his name, address and telephone number and shall also furnish the authority:

(i) in a case where the prescribed process will not be carried on by means of mobile plant, with the address of the premises where the prescribed process will be carried on;

(ii) in a case where the process will be carried on by means of mobile plant, with the address of his principal place of business;

(iii) in all cases, with a statement of any changes as respects any information supplied under regulation 2(1)(a) to (c) above.

(4) Subject to paragraph (5) below, a person making:

... (b) an application to such an authority under section 11(5) for the variation of the conditions of an authorization,

shall also furnish the authority with:

(a) a description of any proposed change in the manner in which the prescribed process will be carried on;

(b) a statement of any changes as respects the matters dealt with in regulation 2(1)(e) to (f) above which would result if any proposed change in the manner of carrying on the prescribed process were made;

- (iii) any additional information which he wishes the authority to take into account in considering his application;
- (iv) in the case of an application under section 11(5) of the 1990 Act, an indication of the variations which he wishes the authority to make.

...

(6) A person making an application to an enforcing authority under section 11(3)(b) or (4)(b) of the 1990 Act for the variation of the conditions of an authorization shall also furnish the authority with:

- (a) an indication of the variations which he wishes the authority to make;
- (b) a statement of any changes in any information supplied to the authority under paragraph (3) above; and
- (c) any additional information which he wishes the authority to take into account in considering his application.

(7) A person making an application to an enforcing authority for the variation of the conditions of an authorization under section 11(6) of the 1990 Act shall also furnish the authority with:

- (a) an indication of the variations which he wishes the authority to make; and
- (b) any additional information which he wishes the authority to take into account in considering his application.

4. (1) Subject to regulations 8 and 7(2) below the persons to be consulted under paragraph 2, 6 or 7 of Schedule 1 to the 1990 Act are:

- (a) the Health and Safety Executive, in all cases;

- ...
- (a) the National Rivers Authority, in the case of all prescribed processes designated for central control which will be carried on in England and Wales and which may result in the release of any substance into waters which are controlled waters for the purposes of Chapter I of Part III of the Water Act 1989;

...

(2) Subject to regulation 7(5)(a) below, the period for notification under paragraph 2(1), 6(2) or 7(2) of Schedule 1 to the 1990 Act shall be the period of 14 days beginning with:

- ...
- (b) in the case of a notification under paragraph 6(2), the day on which the authority notifies the holder of an authorization in accordance with section 10(5) of that Act; and
  - (c) in the case of a notification under paragraph 7(2), the day on which the authority receives the application for a variation of an authorization.

...

5. (1) Subject to paragraph (4) and regulation 6 below, an advertisement:

...

(b) by the holder of an authorization under paragraph 6(2) or 7(2) of that Schedule<sup>1</sup>; shall be published in one or more newspapers circulating in the locality in which the prescribed process will be carried on.

(2) Subject to regulation 7(5)(b) below, any such advertisement as is mentioned in paragraph (1) above shall be published within a period of 28 days beginning 14 days after:

- ...
- (b) in the case of an advertisement under paragraph 6(2) of that Schedule<sup>1</sup>, the day on which the holder of the authorization is notified in accordance with section 10(5) of that Act;
  - (c) in the case of an advertisement under paragraph 7(2) of that Schedule<sup>1</sup>, the day on which the application for a variation is made.

(3) Subject to regulation 7(4) below, any such advertisement as is mentioned in paragraph (1) above shall:

- (a) state the name of the applicant or, as the case may be, of the holder of the authorization;
- (b) give the address of the premises on which the prescribed process will be carried on;
- (c) describe briefly the prescribed process;
- (d) state where any register which contains particulars of the application or of the action to be taken may be inspected and that it may be inspected free of charge; and

<sup>1</sup> In , Schedule 1 to the 1990 Act.

(e) explain that any person may make representations in writing to the enforcing authority within the period of 28 days beginning with the date of the advertisement and give the authority's address.

(4) The preceding provisions of this paragraph do not apply in relation to any prescribed process which will be carried on by means of mobile plant.

### 3.4 Charges for discharging waste under a permit

A charging mechanism can complement a system of permits to discharge waste into water bodies or on or under the ground. Charges - also styled "fees" - leviable under this heading are conceptually and practically distinct from the fees payable upon the filing of applications. These are paid once only, and their rationale is to cover, at least nominally, the administrative costs of processing applications. Charges instead are payable at regular intervals so long as a permit continues, and they can be - but are not necessarily - calculated so as to reflect the basic characteristics of the waste which is discharged, and hence internalize to some extent the external effects generated by the discharge. Flat charges payable at regular intervals are also in use in view of the greater ease of administration required, and can be then differentiated by categories of waste. Charging can also be practised independently of a system of waste discharge permits, as an alternative approach to achieving pollution control goals essentially through a financial mechanism. For the purposes of this book, only charging as a complementary mechanism to a system of waste discharge permits is considered.

While the principle of charging in respect of permits or other instruments should find its proper place in principal legislation, operational details ranging from the level and categories of flat charges (I), and from criteria to calculate the level of variable charges (II to IV), to pinpointing the circumstances under which charges can be waived (V), are found in subsidiary legislation.

#### 1 - CAYMAN ISLANDS - Water Authority Regulations, 1985

16. ... (4) Upon the filing of an application for a permit under this Part of the regulation, or of an application for the renewal of the said permit, and annually thereafter so long as the permit having validity for more than one year in accordance with sub-section (1) of this regulation continues in force, there shall be payable to the Authority the fee prescribed in Schedule 2 to these regulations.

#### Schedule 2 - Fees and Charges

##### 2. Fees for Discharge Permits

- (a) Discharge permits for a hotel or condominium group \$100 per annum.
- (b) Discharge permit for a business or commercial enterprise considered a high consumer of water \$100 per annum.
- (c) Discharge permit for a business or commercial enterprise considered a low consumer of water \$20 per annum.
- (d) Discharge permit for individual household \$10 per annum.
- (e) Discharge permit for apartment buildings not registered as condominium group \$10 per apartment per annum.
- (f) Discharge permit for any trade waste \$150 per annum.
- (g) Renewal of permits: there shall apply the annual fees specified in this section.



7. ... (2) A licence application for an existing discharge shall be accompanied by a statement that it is such a discharge in addition to the information specified in sub-article (1) .

...

**IV - UNITED KINGDOM - Environmental Protection (Prescribed Processes and Substances) Regulations, 1991**

4. Application for authorization to carry on an existing process shall be made in the relevant period specified in the following Table.

Table - See Appendix I, page 301.

#### **4. CONTROLLING POLLUTION THROUGH PERMITS FOR THE ABSTRACTION AND USE OF WATER**

Another approach to water pollution prevention and control is by factoring in the water utilization permit process concern for the polluting impact of (a) "return flows" - i.e., the waste water or effluent which results from a permitted water utilization - on the water body into which the effluent is discharged, and (b) well drilling, on the quality of groundwater formations. This approach is evidenced in subsidiary legislation by a variety of techniques. These include specific requirements as to the documentary evidence to be submitted by applicants for a water utilization permit (I); standard obligations applicable to all water utilization permit holders in respect of the level and type of treatment required of the effluent resulting from a permitted use (II); procedural and substantive prescriptions which reflect specific concern for water pollution in the process of reviewing and deciding on permit applications for the use of water (III and IV), requirements to the effect that, in the formatting of water abstraction and use permits, terms and conditions be entered with specific regard to water pollution prevention and control (V and VI); and the grant of authority to curtail a water abstraction and use permit in the specific case of disregard by the permit holder of the permit's anti-pollution clauses (VII).

**I - KENYA - Water (General) Rules**

48. Whenever water is used, or proposed to be used, in any works or in any process whatsoever which, in the opinion of the Water Apportionment Board, may cause pollution or any of the things forbidden in rule 72 of these Rules, there shall be submitted, when so required by the Water Apportionment Board, a plan showing:

- (a) the proposed or existing works for the disposal or purification of the effluent;
- (b) a detailed description or specification of the works, methods or processes used or to be used in the purification of the effluent.

**II - KENYA - Water (General) Rules**

72. (1) The effluent from any works in which water is used in any process or for any purpose shall be returned to the body of water from which it is diverted or abstracted, or to such other body of water as may be authorized by the Water Apportionment Board, in such a degree of purity as will satisfy the Board, and the effluent shall contain no matter poisonous or otherwise likely to be injurious.

<sup>1</sup> See sub chapter 3.1 above, Step Two - Filing of applications, Supporting documents and evidence, example III.

directly or indirectly to public health, to livestock or to crops or to orchards or gardens irrigated with such water, or to any product for which such water is used in any process whatsoever, and it shall not contain a burden of silt, gravel or boulders in excess of that normally at that time carried by the body of water from which it is diverted or abstracted.

(2) Any person the effluent from whose works does not comply with the provisions of this rule shall be guilty of an offence.

73. (1) When water is used in ore washing, hydraulic mining or similar processes which give rise to the harmful accumulation of silt, sand, stones or drift, efficient precautions, to the satisfaction of the Water Apportionment Board, shall be taken by the operator from time to time to keep such silt, sand, stones or drift from at any time entering into any body of water or into any watercourse or from encroaching upon any property other than that of the operator.

(2) Any operator who is aggrieved by the refusal of the Water Apportionment Board to approve such precautions as satisfactory may appeal from such refusal to the Water Resources Authority.

74. When water is used for the pulping, hulling or washing of coffee:

- (a) the effluent shall be efficiently screened or separated in such manner that no coffee berry or portion thereof shall be returned to any body of water or into any watercourse, and the residue obtained by means of such screening or separation shall daily be removed to such place as may be approved from time to time by the Water Apportionment Board, so that there shall be no possibility of such residue at any time being washed into or, from any cause whatsoever, entering into or upon any watercourse or body of water; and, unless the contrary is specifically stated in the licence, sanction or permit, the place to which such residue shall be removed shall not be nearer to any obvious body of water or watercourse than fifty yards;
- (b) the pulp separator or screen shall not be further away from the pulper than 100 feet, unless the contrary is specifically endorsed on the licence, sanction or permit;
- (c) there shall be no surface flow or drainage from pulp dumps into any body of water or watercourse;
- (d) there shall be constructed along the channel conveying the water from the pulp separator or screen to the body of water or watercourse several pits of such size as to reduce the velocity of the water to enable any solid matter in it to settle, and the sediment collected in such pits shall be removed daily to such place that there shall be no possibility of the sediment at any time being washed into or, from any cause whatsoever, entering into or upon any watercourse or body of water;
- (e) the effluent from the first and second washings of the pulped coffee and effluent from the main tank shall be diverted into seepage pits, and such seepage pits shall be of sufficient capacity to deal with peak flow, and there shall be no direct flow from the seepage pits into any body of water or watercourse;

Provided that nothing in this rule shall relieve the operator of the necessity of complying with rule 72 of these Rules.

75. The Water Apportionment Board shall have authority to determine whether or not any sawdust, tailings, gravel, refuse, sewage, effluent from any works or any other material or substance of any kind being put, or proposed to be put, into any body of water or watercourse is prejudicing or will prejudice the beneficial use for any purpose of the water of such body of water or watercourse, or is impeding or interfering or may impede or interfere, with the natural flow of any body of water, and the Board may at any time and from time to time order any person not to put any such thing into or adjacent to such body of water or watercourse, and further may order the removal of any such matter from, or from any site adjacent to, any body of water or watercourse, and any person who refuses to obey such order shall be guilty of an offence.

#### III - PHILIPPINES - Water Rules and Regulations

4. All applications shall be filed in the prescribed form, sworn to by the applicant and supported by the following:

- (B) For a Water Permit for Hydraulic Power Development and Industrial Purposes, or for a Permit to Dump Mine Tailings or Wastes:

2. Brief description of project, including among others, how water will be used, amount of water needed for purpose, power expected to be generated if applicable, amount of water to be discharged back to the source and measures to be taken to insure that such waters are not polluted, other relevant information;

...

9. A. Investigation and Studies.

After seven (7) days from the first day of posting of notice at the office where the application is filed, the office concerned shall determine.

5. Environmental effects;

...

10. ... C. Investigation and Studies - Upon receipt of the report on drilling operations, the investigating office shall consider the proposed withdrawal of ground water in relation to the following:

5. Danger of contamination of aquifers, deterioration of water quality or salt water intrusion;

...

11. The Council shall approve or disapprove applications for water permits, within sixty (60) days after receipt of recommendation of its deputized agent and other agencies requested to comment, unless a longer period is needed for the disposition of protests filed with the Council. In cases of application for industrial use or in cases of such other use where waters may become polluted, the Council shall refer the application to the National Pollution Control Commission for comment and recommendations. If deemed necessary, the Council shall refer the application to other agencies concerned as the case may be.

**IV - TANZANIA - Water Utilization (General) Regulations, 1975**

Form A - Application for Water Right - See Appendix 1, page 221 (in particular, item No. 5 on the Form).

**V - PHILIPPINES - Water Rules and Regulations**

13. Water Permits issued by the Council shall be subject to such terms, restrictions and limitations as it may deem proper to impose, and to any, or all of the following conditions:

...

- (1) The Council shall revoke or suspend the permit if the permittee violates effluent/water quality standards as determined by the National Pollution Control Commission.

...

- (2) Any person in control of a well shall prevent water containing mineral or other substances injurious to the health of humans or animals or to agriculture and vegetation from flowing onto the surface of the land or into any surface or into any other aquifer or porous stratum.

**VI - MALAWI - Water Regulations, 1969**

3. (1) The following covenants on the part of the grantee shall, unless otherwise expressly stated therein, be implied in every grant:

...

(a) not to discharge or allow to be discharged into the said river or stream:

- (i) any water of less purity than or of a temperature sensibly differing from the water in the said river or stream, or
- (ii) any substance or matter which shall prejudicially affect the said river or stream or any fish contained therein which shall be or cause a nuisance;

...

(2) For the purposes of this regulation "temperature sensibly differing" shall mean a difference in temperature which can be appreciated by the senses without the use of a thermometer.

4. The following conditions shall, unless expressly excluded therefrom be implied in every grant:

...

- (b) the water used under a grant and returned to any stream or body of water shall not be polluted with any matter derived from the course of the water to such an extent as to be liable to cause injury or damage whether directly or indirectly to the health of the public or to livestock animals, fish, crops, orchards or gardens by the use of consumption of or irrigation by such water or to any project in the processing of which such water is used;

...

**VII - LESOTHO - Water Resources Regulations, 1980**

2. The Water Officer appointed under section 5(4) shall

...

- (c) Where water is used in contravention of the provisions of the Water Resources Act 1978 or where the user causes pollution, on the advice of the Minister, may revoke the permit, order corrective action or initiate prosecution. He shall then serve notice on the permit holder and offer him opportunity of being heard.

...

## 5. CONTROLLING WATER POLLUTION THROUGH ZONING

As already mentioned in the Introduction to this Chapter, zoning features in the more recent legislation on water pollution control as the prime mechanism to curb pollution from "non-point" sources - notably, the runoff of cropland on which fertilizers and pesticides have been applied. Control of land use in general and, in particular, control of agricultural practices features prominently in the more recent legislation enacted in response, in particular, to the threat posed to high-quality groundwater reserves by agricultural runoff. The subsidiary legislation presented below has been enacted with a view to curbing pollution of water resulting in particular from the runoff of agricultural land on which nitrogen fertilizer is employed. Aside from the procedural and substantive requirements for the designation of target areas of agricultural land use restrictions (I), the subordinate legislation presented below (a) provides the procedural details of implementation of the "mandatory" option of pollution control provided for by principal legislation (II), and (b) operationalizes in respect to designated areas the "contractual" option for the imposition of agricultural land use restrictions provided for by principal legislation (III). The different kinds of agreement which may be made as between the Government and concerned farmers are spelt out, together with standard conditions for the entering into such agreement, and standard detailed obligations as to agricultural land management practices to be incorporated in an agreement. Other complementary aspects dealt with in the subordinate legislation presented below are monitoring of compliance with an agreement, payments to be made as compensation for the restrictions agreed to, and relevant rates; and recovery of payments for, *inter alia*, non-performance under the agreement, including, in particular, arbitration as the prescribed manner of solving disputes concerning performance (III).

Zoning is also generally available in connection with the protection of the purity and dependability of the sources of public water supply systems. This particular application of zoning is reviewed at Chapter V on **PROVISION OF WATER SUPPLIES TO THE PUBLIC**.

**I - UNITED KINGDOM - Water Resources Act, 1991**

Schedule 12 - Applications by the Authority for Designation Orders

1 (1) Subject to sub-paragraphs (2) and (3) below, the relevant Minister shall not make an order under section 94 of this Act by virtue of which any land is designated as land comprised in a nitrate sensitive area, except with the consent of the Treasury and on an application which:

- (a) has been made by the Authority in accordance with paragraph 2 below; and
- (b) in identifying controlled waters by virtue of sub-paragraph (2)(a) of that paragraph, identified the controlled waters with respect to which that land is so comprised by the order.

- (2) This paragraph shall not apply to an order which reproduces or amends an existing order without adding any land appearing to the relevant Minister to constitute a significant area to the land already comprised in the areas for the time being designated as nitrate sensitive areas.
2. (1) The Authority shall not for the purposes of paragraph 1 above apply for the making of any order under section 94 of this Act by which any land would be comprised in the areas for the time being designated as nitrate sensitive areas unless it appears to the Authority:
- (a) that pollution is or is likely to be caused by the entry of nitrate into controlled waters as a result of, or of anything done in connection with, the use of particular land in England and Wales for agricultural purposes; and
  - (b) that the provisions for the time being in force in relation to those waters and that land are not sufficient, in the opinion of the Authority, for preventing or controlling such an entry of nitrate into those waters.
- (2) An application under this paragraph shall identify:
- (a) the controlled waters appearing to the Authority to be the waters which the nitrate is or is likely to enter; and
  - (b) the land appearing to the authority to be the land the use of which for agricultural purposes, or the doing of anything in connection with whose use for agricultural purposes, is resulting or is likely to result in the entry of nitrate into those waters.
- (3) An application under this paragraph shall be made:
- (a) where the land identified in the application is wholly in Wales, by serving a notice containing the application on the Secretary of State; and
  - (b) in any other case, by serving such a notice on each of the Ministers.

## II - UNITED KINGDOM - Water Resources Act, 1991

### Schedule 12 - Applications by the Authority for Designation Orders

3. (1) This paragraph applies where the relevant Minister proposes to make an order under section 94 of this Act which:
- (a) makes or modifies any such provision as is authorised by subsection (3)(a) of that section; and
  - (b) in doing so, contains provision which is not of one of the following descriptions, that is to say:
    - (i) provision reproducing existing provisions without modification and in relation to substantially the same area; and
    - (ii) provision modifying any existing provisions so as to make them less onerous.
- (2) The relevant Minister shall, before making any such order as is mentioned in sub-paragraph (1) above:
- (a) publish a notice with respect to the proposed order, at least once in each of two successive weeks, in one or more newspapers circulating in the locality in relation to which the proposed order will have effect;
  - (b) not later than the date on which that notice is first published, serve a copy of the notice on:
    - (i) the Authority;
    - (ii) every local authority and water undertaker whose area includes the whole or any part of that locality; and
    - (iii) in the case of an order containing any such provision as is authorised by section 94(3)(b) of this Act, such owners and occupiers of agricultural land in that locality as appear to the relevant Minister to be likely to be affected by the obligations in respect of which payments are to be made under that provision; and
  - (c) publish a notice in the London Gazette which:
    - (i) names every local authority on whom a notice is required to be served under this paragraph;
    - (ii) specifies a place where a copy of the proposed order and of any relevant map or plan may be inspected; and
    - (iii) gives the name of every newspaper in which the notice required by virtue of paragraph (a) above was published and the date of an issue containing the notice
- (3) The notice required by virtue of sub-paragraph (2)(a) above to be published with respect to any proposed order shall:
- (a) state the general effect of the proposed order;
  - (b) specify a place where a copy of the proposed order, and of any relevant map or plan, may be inspected by any person free of charge at all reasonable times during the period of forty-two days beginning with the date of the first publication of the notice; and

(c) state that any person may, within that period, by notice to the Secretary of State or, as the case may be, to one of the Ministers object to the making of the order.

4. The Secretary of State and, in a case where he is proposing to join in making the order, the Minister shall, at the request of any person and on payments by that person of such charge (if any) as the Secretary of State or the Minister may reasonably require, furnish that person with a copy of any proposed order of which notice has been published under paragraph 3 above.

5. (1) Where notices with respect to any proposed order have been published and served in accordance with paragraph 3 above and the period of forty-two days mentioned in sub-paragraph (3)(b) of that paragraph has expired, the relevant Minister may:

(a) make the order either in the proposed terms or, subject to sub-paragraph (2) below (but without any further compliance with paragraph 3 above), in those terms as modified in such manner as he thinks fit; or

(b) decide not to make any order.

(2) The relevant Minister shall not make such a modification of a proposed order of which notice has been so published and served as he considers is likely adversely to affect any persons unless he has given such notices as he considers appropriate for enabling those persons to object to the modification.

(3) Subject to sub-paragraph (2) above and to the service of notices of the proposed modification on such local authorities as appear to him to be likely to be interested in it, the modifications that may be made by the relevant Minister include any modification of any area designated by the proposed order as a nitrate sensitive area.

(4) For the purposes of this Schedule it shall be immaterial, in a case in which a modification such as is mentioned in sub-paragraph (3) above incorporates land in England in an area which (but for the modification) would have been wholly in Wales, that any requirements of paragraph 3 above in relation to the proposed order have been complied with by the Secretary of State, rather than by the Ministers.

6. Without prejudice to section 213 of this Act, where notices with respect to any proposed order have been published and served in accordance with paragraph 3 above, the Secretary of State or, as the case may be, the Ministers may, if he or they consider it appropriate to do so, hold a local inquiry before deciding whether or not to make the proposed order or to make it with modifications.

### III - UNITED KINGDOM - Nitrate Sensitive Areas (Designation) Order, 1990

2. (1) In this Order, unless the context otherwise requires:

"agreement" means an agreement entered into by the Minister under section 112(2) of the Water Act 1989 as regards agricultural land in an area designated by article 3;

"Agricultural Land Tribunal" means an Agricultural Land Tribunal established under Part V of the Agriculture Act 1947;

"arable land" means land used for the production of any crop other than grass;

"autumn sown cereals" means cereals normally sown between 31st July in one year and 1st January the following year;

"basic scheme agreement" means an agreement whereby a farmer agrees to comply with the obligations set out in Schedule 1;

"controlled waters" means the waters referred to in section 103(1) of the Water Act 1989;

"cover crop" means a crop sown primarily in order to take up nitrogen from the soil in autumn or winter;

"economic optimum" means the amount of inorganic nitrogen fertiliser applied in any year, such that if extra inorganic nitrogen fertiliser were applied in that year, having regard to the crop in question and the characteristics of the land on which it was planted, the cost of applying that fertiliser would be greater than the extra value of the additional yield of the crop produced;

"the farmer" means a person who has an interest in agricultural land in an area designated by article 3 and who has entered into an agreement with the Minister;

"Farm Woodland Scheme" means the Farm Woodland Scheme 1988;

"forage crop" means crop, other than grass, sown in July or August to be cut or grazed in the following autumn or winter;

"grassland" means land on which the vegetation consists predominantly of grass species;

"holding" means all the land farmed as a unit by or on behalf of a farmer;

"inorganic nitrogen fertiliser" means material, containing nitrogen, the main function of which is to provide plant food, and is in the form of inorganic salts obtained by extran, physical industrial processes, chemical industrial processes, or a combination of any or all of these, and includes calcium cyanamide, and urea and its condensation products;

"the Minister" means the Minister of Agriculture, Fisheries and Food;

"organic nitrogen fertiliser" means animal manure, sewage sludge or any other organic materials containing nitrogen, but excluding calcium cyanamide, and urea and its condensation products;

"pig place" means the facilities needed to house one fattening pig, save that one pig with progeny over 4 weeks old shall be taken to need 6.5 pig places and one pig with weaners up to 4 weeks old shall be taken to need 1.4 pig places;

"poultry place" means the facilities needed to house one chicken (layers), one duck, or two chickens (broilers);

"premium scheme agreement" means an agreement whereby a farmer agrees to comply with the obligations set out in Schedule 2;

"slurry" means animal manure with a dry matter content by weight of less than 15% at any time.

...

4. (1) An application to enter into an agreement shall be made in the form prescribed by the Minister.

(2) An application by a producer of pigs or poultry which are permanently housed shall be accompanied by a plan showing how the applicant proposes, in order to comply with the obligations specified in Schedule 1 and otherwise avoid the entry of nitrate into controlled waters, to store, handle, transport and dispose of slurry or poultry manure, and to spread it on his own or any other land.

(3) An application to enter into an agreement in 1990 shall be made before 1st August 1990.

(4) An application to enter into an agreement in 1991 shall be made before 1st June 1991.

(5) A farmer who enters into a basic scheme agreement in 1990 may, before 1st June 1991, elect to enter into a premium scheme agreement.

(6) The Minister shall not enter into an agreement in respect of an application made after 31st May 1991.

5. (1) Subject to paragraphs (3), (4) and (6) the Minister shall not enter into a basic scheme agreement except in respect of all the land in a nitrate sensitive area occupied by a farmer, or on his behalf, for agricultural purposes.

(2) The Minister shall not enter into a premium scheme agreement in respect of any land unless that land is the subject of a basic scheme agreement and has been arable land continuously since 31st July 1989.

(3) The Minister may enter into an agreement with a landlord and his tenant notwithstanding the fact that the land is not occupied by the landlord or on his behalf for agricultural purposes.

(4) The Minister may enter into an agreement with a farmer in respect of land in a nitrate sensitive area:

(a) of which the farmer has the freehold interest; or

(b) which the farmer holds under a tenancy from a landlord who has given his consent in writing to the making of an agreement;

although that farmer has other land in that nitrate sensitive area which he holds under a tenancy from a landlord who has not given his consent in writing to the making of an agreement.

(5) The Minister shall not enter into a premium scheme agreement in respect of a strip of land unless such strip is at least 15 metres wide.

(6) The Minister may refuse to enter into an agreement if he is satisfied that the farmer will be unable to comply with such agreement throughout the whole of its duration but he may enter into an agreement in respect of that part of the farmer's land in a nitrate sensitive area on which the farmer will be able to comply with such agreement throughout the whole of its duration.

(7) A farmer who enters into a premium scheme agreement and agrees to comply with the obligations listed in Option D in Schedule 2 but whose application to enter the Farm Woodland Scheme 1988 is rejected shall, on receipt of written notice of such rejection, notify the Minister with which of the Options A, B or C in that Schedule he will instead comply, and he shall receive payments in respect of the Option so notified in respect of the period of the agreement.

(B) The Minister shall refuse to enter into an agreement if he is satisfied that any payment under this Order would duplicate any assistance previously given or to be given out of money provided by Parliament or by the European Economic Community.

6. An agreement shall contain a provision for the Minister and his servants or agents, where necessary in order to monitor compliance with that agreement or to assess the effectiveness of preventing the entry of nitrate into controlled waters of the measures contained within it:

- (a) to enter upon any land which is the subject of such agreements;
- (b) to take samples from the land;
- (c) to install equipment on the land; and
- (d) to examine all records kept in compliance with the said agreement.

7. (1) An agreement shall provide that the Minister shall make payments, in accordance with Schedule 4 in respect of land which is the subject of that agreement, following receipt of a claim by the farmer.

(2) The rates of payment specified in Schedule 4 above shall be reviewed by the Minister in 1993.

8. (1) An agreement shall provide that where the farmer fails without reasonable excuse to comply with any of its provisions the Minister may:

- (a) by notice in writing terminate the agreement and thereafter withhold the whole or any part of any payment payable to the farmer, and recover the whole or any part of any payment already made to him;
- (b) withhold the whole or any part of any payment payable to the farmer in respect of the year in which he failed to comply and recover the whole or any part of any payment made to him.

(2) Subject to paragraph (3), any question arising under an agreement as to whether the agreement has been complied with shall be determined by the arbitration of a single arbitrator, to be agreed between the parties or, in default of agreement, to be appointed by the President of the Royal Institution of Chartered Surveyors, in accordance with the provisions of the Arbitration Acts 1950-1979.

(3) Any dispute as to the economic optimum shall be determined by a person appointed by agreement between the parties or, in the absence of such agreement, by a person appointed by the Chairman of the Regional Panel constituted by the Minister for the area in which the land is situated.

...

#### Schedule 1 - Obligations to be included in a Basic Scheme Agreement

As regards any land which is the subject of a basic scheme agreement:

1. The farmer shall not apply in a single application inorganic nitrogen fertiliser in excess of that which contains 120 kilograms of nitrogen per hectare.

2. (a) In the case of the following crops the farmer shall not apply to any crop more inorganic nitrogen fertiliser than is specified:

- (i) wheat and barley sown between 31st July in one year and 1st January in the following year: the amount which contains 25 kilograms of nitrogen per hectare below the economic optimum;
- (ii) oilseed rape sown between 31st July in one year and 1st January in the following year: the amount which contains 50 kilograms of nitrogen per hectare below the economic optimum;
- (iii) forage crop sown between 30th June and 1st September in any year: the amount which contains 25 kilograms of nitrogen per hectare below the economic optimum.

(b) In all other cases the farmer shall not apply to any crop more nitrogen in the form of inorganic nitrogen fertiliser than the economic optimum.

3. The farmer shall not apply any inorganic nitrogen fertiliser to grassland between 31st August in one year and 1st February in the following year, or to any land which is not grassland, between 15th August in one year and 15th February in the following year.

4. The farmer shall not in any period of 12 months apply organic nitrogen fertiliser in excess of that which contains 175 kilograms of nitrogen per hectare.

5. The farmer shall store any slurry or liquid sewage sludge in a way which will avoid the entry of nitrate into controlled waters.

6. The farmer shall not apply slurry, poultry manure, or liquid sewage sludge to grassland between 31st August and 1st November in any year, or to land which is not grassland, between 30th June and 1st November in any year.



7. The farmer shall not cultivate any grassland between 30th September in one year and 1st February in the following year. Where slurry, poultry manure or liquid sewage sludge is applied to grassland between 30th June and 1st September in any year he shall not cultivate the grassland nor kill off the grass for a period of 4 weeks following the application.

8. The farmer shall ensure that where in any year grassland is cultivated or re-seeded, the following crop is sown as soon as soil conditions allow, and in any event not later than 30th September of that year.

9. Where a crop is harvested before 15th October in any year:

(a) the farmer shall drill autumn sown cereals by 15 October in that year; or

(b) if it is not intended to sow the next crop before 1st January in the following year, the farmer shall sow a cover crop as soon after harvesting as soil conditions allow.

10. Before sowing a cover crop, the farmer shall obtain the approval of the Minister to the cover crop which he intends to sow.

11. The farmer shall not apply any inorganic nitrogen fertiliser prior to the establishment of a cover crop or to the cover crop once sown.

12. The farmer shall not remove any cover crop whether by mechanical cultivation, herbicides, burning or by grazing:

(a) before 1st February in the year after its establishment if the land is in the Boughton NSA, Widmoor NSA, Wellings NSA or Teem Hill NSA;

(b) before 1st December in the year in which it was established if the land is in the Sleaford NSA, Branston Booths NSA, Oghbyanne St George NSA, Old Chafford NSA, Eglord NSA or Kilham NSA;

unless the next crop is sown within 4 weeks of the removal of the cover crop.

13. If the farmer uses an irrigation system he shall use a scheduling system which optimises water use and avoids excessive applications of water.

14. Unless the organic nitrogen fertiliser is produced within the nitrate sensitive area in which the farmer's land is situated he shall not use in any period of 12 months commencing on 1st August organic nitrogen fertiliser which would increase by more than 25% the total amount of nitrogen in organic nitrogen fertiliser being applied in the 12 month period commencing on 1st August 1989.

15. The farmer shall not remove hedgerows or woodland unless he plants with hedgerows or woodland at least an equivalent area of land to that on which the hedgerows or woodland were situated.

16. The farmer shall not convert grassland to arable land unless that grassland is a grass ley in arable rotation.

17. The farmer shall keep records of the amount of all applications of organic and inorganic nitrogen fertiliser; the dates and times when such fertiliser was applied; and the areas of the land and the crop to which application was made.

18. The farmer shall, if he is a producer of pigs or poultry which are permanently housed, adhere to the plan referred to in article 4(2).

#### **Schedule 2 - Obligations to be included in a Premium Scheme Agreement**

As regards any land which is the subject of a premium scheme agreement:

1. The farmer shall cease arable production and establish a grassland sward by 1st October which next occurs after entering into the said agreement.

2. The farmer shall increase the overall area of grassland on all his land within the nitrate sensitive area to at least the area of grassland as at 31st July 1989 plus the amount of arable land converted to grassland or grassland with woodland and shall maintain an equivalent area as grassland or grassland with woodland for the period of the agreement.

3. The farmer shall maintain:

(a) as grassland for the period of the agreement any arable land converted to grassland since 31st July 1989, or

(b) as grassland with woodland for the period of the agreement any arable land converted to grassland with woodland since 31st July 1989.

4. The farmer shall not cultivate the grassland except to re-seed it.

5. The farmer shall not re-seed the grassland without the approval in writing of the Minister.

6. The farmer shall use only a seeds mixture which does not include legumes.

7. The farmer shall comply with the obligations listed in any one of the Options, headed Option A, Option B, Option C or Option D, set out below.

**Option A - Conversion of arable land to grassland, unfertilised and ungrazed**

- (i) The farmer shall not apply any organic nitrogen fertiliser or inorganic nitrogen fertiliser to the grassland or land planted with grass seed.
- (ii) The farmer shall cut the grass at least twice each year and remove the cuttings from the land.
- (iii) The farmer shall not irrigate the grassland.
- (iv) The farmer shall not allow the grass to be grazed.

**Option B - Conversion of arable land to grassland with grazing**

- (i) The farmer shall not apply any organic nitrogen fertiliser or inorganic nitrogen fertiliser to the grassland or land planted with grass seed.
- (ii) The farmer shall not allow overgrazing of the grass.
- (iii) If the farmer cuts the grass, he shall remove the cuttings from the land.
- (iv) The farmer shall not irrigate the grassland.
- (v) The farmer shall not increase the number of livestock on the land above that which may be fed from the grass alone.

**Option C - Conversion of arable land to grassland with grazing and limited application of nitrogen fertiliser**

- (i) The farmer shall not in any period of 12 months apply organic nitrogen fertiliser or inorganic nitrogen fertiliser in excess of that which contains 150 kilograms of nitrogen per hectare.
- (ii) The farmer shall not allow overgrazing of the grassland.
- (iii) If the farmer cuts the grass, he shall remove the cuttings from the land.
- (iv) The farmer shall not irrigate the grassland.
- (v) The farmer shall not increase the number of livestock on the land above that which may be fed from the grass alone.

**Option D - Conversion of arable land to grassland with woodland**

- (i) The farmer shall not apply any organic nitrogen fertiliser or inorganic nitrogen fertiliser to the grassland or land planted with grass seed.
- (ii) The farmer shall not allow the grass to be grazed.
- (iii) If the farmer cuts the grass he shall remove the cuttings from the land.
- (iv) The farmer shall plant woodland complying with the conditions of the Farm Woodland Scheme by 1st April which next occurs after entering into the said agreement.
- (v) When planting woodland:
  - (a) the farmer shall plant at least 50 per cent of that woodland with broadleaved species of tree; and
  - (b) any conifers planted shall be interspersed with broadleaved species of tree.
- (vi) The farmer shall not plant alder trees.
- (vii) When planting trees, the farmer shall not remove an area of grass of more than one square metre per tree.

...  
**Schedule 4 - Rates of Payment** See Appendix II, page 302.

## 6. PREVENTING WATER POLLUTION THROUGH PRECAUTIONARY PRESCRIPTIONS

As evidenced in recent legislation on the subject, controlling pollution of water resources of the "diffuse" type originating from "point" sources tends to be approached by emphasizing prevention under the guise of the prescription of precautionary measures which certain land-based activities must take. In the example given below, subordinate legislation spells out the nature and kind of such measures - generally consisting of standard design and operating requirements in respect of regulated structures and activities -, the kind of activities subject to such measures, a time frame for compliance, and exemptions from the prescribed requirements.

**UNITED KINGDOM - The Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) Regulations, 1991**

1. These Regulations may be cited as the Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) Regulations and shall come into force on 1st September 1991.

2. In these Regulations, unless the context otherwise requires:

"construct" includes install and cognate expressions shall be construed accordingly,

"fuel oil" means oil intended for use as a fuel for the production of heat or power but does not include oil intended for use exclusively as a fuel for heating a farmhouse or other residential premises on a farm and stored separately from other oil;

"livestock" means:

(a) any animals kept for the production of food or wool, or

(b) any birds kept for the production of food;

"reception pit" means a pit used for the collection of slurry before it is transferred into a slurry storage tank or for the collection of slurry discharged from such a tank;

"relevant substance" means slurry, fuel oil or, as the case may be, the crop being made into silage;

"slurry" means:

(a) excreta produced by livestock whilst in a yard or building; or

(b) a mixture consisting wholly or mainly of such excreta, bedding, rainwater and washings from a building or yard used by livestock or any combination of these, of a consistency that allows it to be pumped or discharged by gravity at any stage in the handling process;

"slurry storage system" means:

(a) a slurry storage tank,

(b) any reception pit and any effluent tank used in connection with the slurry storage tank; and

(c) any channels and pipes used in connection with the slurry storage tank, any reception pit or any effluent tank; and

"slurry storage tank" includes a lagoon, pit (other than a reception pit) or tower used for the storage of slurry.

3. (1) Subject to regulation 7 below, no person shall have custody or control of any crop which is being made into silage unless:

(a) it is kept in a silo in relation to which the requirements of Schedule 1 are satisfied or which is an exempt structure by virtue of regulation 6 below; or

(b) it is compressed in the form of bales which are wrapped and sealed within impermeable membranes (or are enclosed in impermeable bags) and are stored at least 10 metres from any inland or coastal waters which effluent escaping from the bales could enter.

(2) No person having custody or control of any crop which is being, or has been, made into silage in the manner described in paragraph (1)(b) above shall open or remove the wrapping of any bales unless he does so at a place at least 10 metres from any inland or coastal waters which silage effluent could enter as a result.

4. (1) Subject to paragraph (2) below, a person having custody or control of slurry shall store it only in a slurry storage system in relation to which the requirements of Schedule 2 are satisfied or which is an exempt structure by virtue of regulation 6 below.

(2) Paragraph (1) above shall not apply to slurry whilst it is stored temporarily in a tanker with a capacity not exceeding 18,000 litres which is used for transporting slurry on roads or about a farm.

5. (1) Subject to paragraph (2) below, no person shall have custody or control of fuel oil on a farm unless it is stored:

(a) in a fuel storage tank within a storage area in relation to which the requirements of Schedule 3 are satisfied;

(b) in drums within such a storage area;

(c) temporarily in a tanker used for transporting fuel oil on roads or about the farm;

(d) in a fuel storage tank which is an exempt structure by virtue of regulation 6 below; or

(e) in an underground fuel storage tank.

(2) Paragraph (1) above shall not apply if the total quantity of fuel stored on the farm does not exceed 1,500 litres.

6. A silo, slurry storage system or fuel storage tank is for the time being an exempt structure if:
- (a) it was used before 1st March 1991 for the purpose of making silage, storing slurry or, as the case may be, storing fuel oil;
  - (b) where it was not used before 1st March 1991 for that purpose, it was constructed before that date for such use; or
  - (c) a contract for its construction was entered into before 1st March 1991 or its construction was commenced before that date and in either case was completed before 1st September 1991,

and it has not ceased to be an exempt structure by virtue of regulation 8(1) below.

7. (1) Subject to the following provisions of this regulation and regulation 8(2) below, regulation 3 above shall not apply where a person makes silage on a farm.

- (a) unless he has given notice to the Authority before 1st September 1991 of his intention to do so and he keeps any crop which is being made into silage in a place at least 10 metres from any inland or coastal waters which silage effluent could enter if it were to escape;
- (b) on or after 1st September 1996.

8. (1) A structure which is an exempt structure by virtue of regulation 6 above shall cease to be an exempt structure if:

- (a) any requirement of a notice under regulation 9 below is not complied with within the period stated in the notice; or
- (b) at any time on or after 1st March 1991 it is substantially enlarged or substantially reconstructed unless a contract for the work was entered into or the work was commenced before that date and in either case the work was completed before 1st September 1991.

(2) The exemption conferred by regulation 7 above shall cease if any requirement of a notice under regulation 9 below is not complied with within the period stated in the notice.

(3) Any reference in paragraphs (1) and (2) above to the period stated in a notice is to that period as extended if it has been extended under regulation 9(4) below or by virtue of regulation 10(5) below; and any reference in those paragraphs to a requirement of a notice is to that requirement as modified if it has been modified under regulation 9(4) below.

9. (1) Where the Authority is satisfied that there is a significant risk of pollution of controlled waters as a result of:

- (a) the use of an exempt structure mentioned in regulation 6 above for storage of a relevant substance; or
- (b) the making of silage in circumstances in which the exemption conferred by regulation 7 above applies,

it may serve notice on the person having custody or control of the relevant substance requiring him to carry out such works and to take such precautions and other steps as it considers appropriate, having regard to the requirements of Schedule 1, Schedule 2 or, as the case may be, Schedule 3, for reducing that risk to a minimum.

(2) The notice shall specify or describe the works, precautions or other steps which the person is required to carry out or take, state the period within which any such requirement is to be complied with and inform him of the effect in relation to the notice of regulation 10 below.

(3) The period for compliance stated in the notice shall be such period as is reasonable in the circumstances and shall not in any case be less than 28 days.

(4) The Authority may at any time:

- (a) withdraw the notice;
- (b) extend the period for compliance with any requirement of the notice;
- (c) with the consent of the person on whom the notice is served, modify the requirements of the notice,

and shall do so if so directed by the Secretary of State under regulation 10(4) below.

10. (1) A person served with a notice under regulation 9 above may within the period of 28 days beginning with the day on which that notice is served (or within such longer period as the Secretary of State may allow) appeal to the Secretary of State against the notice.

(2) An appeal under this regulation shall be made by the appellant serving notice on the Secretary of State and the notice shall contain or be accompanied by a statement of the grounds of appeal.

(3) Before determining an appeal under this regulation the Secretary of State shall, if requested to do so by the appellant or the Authority, afford them an opportunity of appearing before and being heard by a person appointed by the Secretary of State for the purpose.

(4) On determining an appeal under this regulation the Secretary of State shall have power to direct the Authority to withdraw the notice under regulation 9 above, to modify any of its requirements, to extend the period for compliance with any requirement or to dismiss the appeal.

(5) The period for compliance with a notice under regulation 9 above shall, subject to any direction under paragraph (4) above, be extended by a period equal to the period beginning with the date on which notice of appeal is served and ending on the date on which the Secretary of State finally determines the appeal or, if the appeal is withdrawn, the date on which it is withdrawn.

11. A person who proposes to have custody or control of any relevant substance which is to be kept or stored on a farm in a silo, slurry storage system or, as the case may be, fuel storage area constructed, substantially enlarged or substantially reconstructed on or after 1st September 1991 shall serve notice on the Authority specifying the type of structure to be used and its location at least 14 days before it is to be used for such keeping or storage.

12. (1) A person who contravenes regulation 3(1) or (2), 4(1) or 5(1) above shall be guilty of an offence and liable:

- (a) on summary conviction, to a fine not exceeding the statutory maximum;
- (b) on conviction on indictment, to a fine.

(2) A person who contravenes regulation 11 above shall be guilty of an offence and liable on summary conviction to a fine not exceeding level 2 on the standard scale.

#### Schedule 1 - Requirements for Silos [Regulation 31](a)]

1. The requirements which have to be satisfied in relation to a silo are that:

- (a) it complies with the following provisions of this Schedule; or
- (b) it is designed and constructed in accordance with the standard on cylindrical storage tower silos published by the British Standards Institution and numbered BS 5061:1974.

2. The base of the silo shall extend beyond any walls of the silo and shall be provided at its perimeter with channels designed and constructed so as to collect any silage effluent which may escape from the silo and adequate provision shall be made for the drainage of that effluent from these channels to an effluent tank through a channel or pipe.

3. The capacity of the effluent tank:

- (a) in the case of a silo with a capacity of less than 1500 cubic metres, shall be not less than 20 litres for each cubic metre of silo capacity; and
- (b) in the case of a silo with a capacity of 1500 cubic metres or more, shall be not less than 30 cubic metres plus 6-7 litres for each cubic metre of silo capacity in excess of 1500 cubic metres.

4. The base of the silo, the base and walls of its effluent tank and channels and the walls of any pipes shall be impermeable.

5. The base and any walls of the silo, its effluent tank and channels and the walls of any pipes shall, so far as reasonably practicable, be resistant to attack by silage effluent.

6. No part of the silo, its effluent tank or channels or any pipes shall be situated within 10 metres of any inland or coastal waters which silage effluent could enter if it were to escape.

7. If the silo has retaining walls:

- (a) the retaining walls shall be capable of withstanding minimum wall loadings calculated on the assumptions and in the manner indicated by paragraphs 13.9.1 to 13.9.9 of the code of practice on buildings and structures for agriculture published by the British Standards Institution and numbered BS 5505: Part 22: 1987;
- (b) the silo shall at no time be loaded to a depth exceeding the maximum depth consistent with the design assumption made in respect of the loadings of the retaining walls; and
- (c) notices shall be displayed on the retaining walls in accordance with paragraph 13.9.9 of that code of practice.

8. Subject to paragraph 9 below, the silo, its effluent tank and channels and any pipes shall be designed and constructed so that with proper maintenance they are likely to satisfy the requirements of paragraphs 2 to 5 and, if applicable, 7(a) above for a period of at least 20 years.

9. Where any part of an effluent tank is installed below ground level, the tank shall be designed and constructed so that without maintenance it is likely to satisfy the requirements of paragraphs 4 and 5 above for a period of at least 20 years.

#### Schedule 2 - Requirements for Slurry Storage Systems [Regulation 41]]

1. The requirements which have to be satisfied in relation to a slurry storage system are as follows.

2. The base of the slurry storage tank, the base and walls of any effluent tank, channels and reception pit and the walls of any pipes shall be impermeable.

3. The base and walls of the slurry storage tank, any effluent tank, channels and reception pit and the walls of any pipes shall be protected against corrosion in accordance with paragraph 7.2 of the code of practice on buildings and structures for agriculture published by the British Standards Institution and numbered BS 5502: Part 50: 1989.

4. The base and walls of the slurry storage tank and of any reception pit shall be capable of withstanding characteristic loads calculated on the assumptions and in the manner indicated by paragraph 5 of that code of practice.

5. (1) Any facilities used for the temporary storage of slurry before it is transferred to a slurry storage tank shall have adequate capacity to store the maximum quantity of slurry which (disregarding any slurry which will be transferred directly into a slurry storage tank) is likely to be produced on the premises in any two day period.

(2) Where slurry flows into a channel before discharging into a reception pit and the flow of slurry out of the channel is controlled by means of a sluice, the capacity of the reception pit shall be adequate to store the maximum quantity of slurry which can be released by opening the sluice.

6. (1) Subject to sub-paragraph (2) below, the slurry storage tank shall have adequate storage capacity for the likely quantities of slurry produced from time to time on the premises in question having regard to:

(a) the proposed method of disposal of the slurry (including the likely rates and times of disposal); and

(b) the matters mentioned in sub-paragraph (3) below.

(2) Where it is proposed to dispose of the slurry on the premises by spreading it on the land nothing in sub-paragraph (1) above shall require the tank to have a greater storage capacity than is adequate, having regard to the matters mentioned in sub-paragraph (3) below, to store the maximum quantity of slurry which is likely to be produced in any continuous four month period.

(3) The matters to which regard is to be had under sub-paragraphs (1) and (2) above are:

(a) the storage capacity of any other slurry storage tank on the premises in question;

(b) the likely quantities of rainfall (including any fall of snow, hail or sleet) which may fall or drain into the slurry storage tank during the likely maximum storage period; and

(c) the need to make provision for not less than 750 millimetres of freeboard in the case of a tank with walls made of earth and 300 millimetres of freeboard in all other cases;

7. No part of the slurry storage tank or any effluent tank, channels or reception pit shall be situated within 10 metres of any inland or coastal waters which slurry could enter if it were to escape.

8. The slurry storage tank and any effluent tank, channels, pipes and reception pit shall be designed and constructed so that with proper maintenance they are likely to satisfy the requirements of paragraphs 2 to 4 above for a period of at least 20 years.

9. Where the walls of the slurry storage tank are not impermeable, the base of the tank shall extend beyond its walls and shall be provided with channels designed and constructed so as to collect any slurry which may escape from the tank and adequate provision shall be made for the drainage of the slurry from those channels to an effluent tank through a channel or pipe.

10. (1) Subject to sub-paragraph (2) below, where the slurry storage tank, any effluent tank or reception pit is fitted with a drainage pipe there shall be two valves in series on the pipe and each valve shall be capable of shutting off the flow of slurry through the pipe and shall be kept shut and locked in that position when not in use.

(2) Sub-paragraph (1) above does not apply in relation to a slurry storage tank which drains through the pipe into another slurry storage tank of equal or greater capacity or where the tops of the tanks are at the same level.

11. In the case of a slurry storage tank with walls which are made of earth the tank shall not be filled to a level which allows less than 750 millimetres of freeboard.

#### Schedule 3 - Requirements for Fuel Oil Storage Areas (Regulation 51)(a)

1. The requirements which have to be satisfied in relation to a fuel oil storage area are as follows.

2. The fuel storage area shall be surrounded by a bund capable of retaining within the area:

(a) in a case where there is only one fuel storage tank within the fuel storage area and fuel oil is not otherwise stored there, a volume of fuel oil not less than 110 per cent of the capacity of the tank;

- (b) in a case where there is more than one fuel storage tank within the fuel storage area and fuel oil is not otherwise stored there, a volume of fuel oil not less than whichever is the greater of:
    - (i) 110 per cent of the capacity of the largest tank within the storage area; and
    - (ii) 25 per cent of the total volume of such oil which could be stored in the tanks within the area;
  - (c) in a case where there is no fuel storage tank within the fuel storage area, a volume of fuel oil not less than 25 per cent of the total of such oil at any time stored within the area;
  - (d) in any other case, a volume of fuel oil not less than any of the following:
    - (i) 110 per cent of the capacity of the fuel storage tank, or as the case may be, of the largest tank within the fuel storage area;
    - (ii) where there is more than one fuel storage tank within the fuel storage area, 25 per cent of the total volume of such oil which could be stored in the tanks within the area;
    - (iii) 25 per cent of the total volume of such oil at any time stored within the area.
3. The bund and the base of the storage tank shall be impermeable and shall be designed and constructed so that with proper maintenance they are likely to remain so for a period of at least 20 years.
4. Every part of any fuel tank shall be within the bund.
5. Any tap or valve permanently fixed to the tank through which fuel oil can be discharged to the open shall also be within the bund, shall be so arranged as to discharge vertically downwards and shall be shut and locked in that position when not in use.
6. Where fuel from the tank is delivered through a flexible pipe which is permanently attached to the tank:
  - (a) it shall be fitted with a tap or valve at its end which closes automatically when not in use; and
  - (b) it shall be locked in a way which ensures that it is kept within the bund when not in use.
7. No part of the fuel storage area or the bund enclosing it shall be situated within 10 metres of any inland or coastal waters which fuel oil could enter if it were to escape.

## 7. OTHER COMPLEMENTARY WATER POLLUTION CONTROL MECHANISMS

Waste discharge prohibitions, waste discharge permit requirements, and wastewater discharge requirements built in water utilization permits can be complementary to, or complemented by, other water pollution control mechanisms. The following such complementary mechanisms can be the subject of subsidiary legislation:

### 7.1 Water quality management planning

Subsidiary legislation provides procedural requirements for the implementation of water quality management planning mechanisms provided for by principal legislation. Requirements in the example below are aimed at providing opportunities for public review and comment on plans being formed, and public information of plans which have been made.

#### IRELAND - Local Government (Water Pollution) Regulations, 1978

39. In this Part:

"plan" means a water quality management plan under section 15.

40. (1) Where a local authority proposes to make, revise or replace a plan it shall publish notice of such intention in at least one newspaper circulating in its functional area.

(2) A notice under sub-article (1) shall indicate:

(a) the waters to which the plan relates,

(b) that a copy of the plan may be inspected at a stated place and at stated times during a stated period of not less than three months (and the copy shall be kept available for inspection accordingly),

(c) that any person may make written representations relating to the plan to the local authority within the period stated under paragraph (b), and

(d) in the case of a plan to be made, revised or replaced jointly by two or more local authorities, that the plan is to be so made, revised or replaced and the local authorities concerned.

41. (1) Where a local authority makes, revises or replaces a plan, it shall publish notice to this effect in at least one newspaper circulating in its functional area.

(2) A notice under sub-article (1) shall state that a copy of the plan is available for inspection at a stated place and at stated times.

(3) Where the plan has been made, revised or replaced jointly by two or more local authorities the notice under sub-article (1) shall indicate that the plan has been so made, revised or replaced and shall specify those local authorities.

42. Where application is made to a local authority for a copy of a plan or part thereof, the local authority shall issue a copy to the applicant on payment by him to the local authority of a sum which shall not exceed the reasonable cost of making the copy.

## 7.2 Inventory of pollution

Inventories of the nature and extent of pollution, and of its causes can be viewed as a prerequisite to a pollution control programme, and as the first step in water quality management planning. The example below clarifies the scope of the inventories and who can initiate an inventory. In addition, it conveys to the responsible Government officials the powers which are needed for the necessary field investigations, most notably, the power to enter private property and take samples and inspect records. In this connection, it further clarifies the extent of the Government's liability for damage resulting from the exercise of the said powers.

### NEW ZEALAND - Waters Pollution Regulations, 1963

3. (1) The Council may from time to time carry out investigations for the purpose of ascertaining:

(a) The extent of the pollution of waters in any locality;

(b) The cause of any such pollution;

(c) The number of outfalls from which pollutants are discharged into the waters;

(d) The persons or authorities by which any such outfalls are controlled;

(e) The type and amount of pollutants being discharged from each such outfall;

(f) The uses for the time being made or likely in the future to be made of the waters;

(g) The extent to which any pollution found to exist should, in the circumstances, be controlled or mitigated;

(h) Any other information necessary for the purposes of these regulations.

(2) Any such investigation may be carried out at the request of any person or authority having an interest in the mitigation of pollution of the waters affected or the Council may decide to carry out an investigation on its own motion.

(3) Investigations shall be carried out in such order of priority as the Council thinks fit.

4. (1) For the purpose of carrying out any investigation under these regulations the Council, or any person authorised specially or generally in that behalf in writing by the Council, may make surveys, investigations, tests, and measurements in respect of waters pollution, and for that purpose may:

(a) Enter and re-enter from time to time upon any land to which the authority relates with such assistants, gear, appliances, and equipment as may be necessary;



(b) Require any person to furnish such information and returns in respect of the pollution of waters as may be considered necessary;

(c) Take samples of waters;

(d) Generally do all things necessary in respect of any such survey, investigation, test, or measurement.

(2) Where practicable, reasonable notice of the intention to enter upon any land owned by another person shall be given to the owner and occupier thereof

(3) Every person who is authorised in writing as aforesaid shall produce his authority when so required by the owner or occupier of any land on which he intends to enter or has entered.

(4) Every person having any estate or interest in land injuriously affected and every person suffering any damage whatever from the exercise of any power under this regulation shall be entitled to full compensation from the Council. Any such compensation may be claimed and may be determined in the manner provided by the Public Works Act 1928.

### 7.3 Standards of water quality ("ambient" water quality standards)

Ambient water quality standards are generally fixed in relation to different categories of water. In the examples below, subsidiary legislation crystallizes the procedure and criteria for the classification of waters, and the ambient quality standards relative to the different classes of water.

#### 1. NEW ZEALAND - Waters Pollution Regulations, 1963

5. (1) The Council, after carrying out an investigation under these regulations in any locality, shall decide whether or not the waters should be classified for the purposes of these regulations

(2) Any classification under this regulation shall specify the waters to which the classification relates by reference to a map or plan attached to the classification.

(3) Where inland waters are classified, they shall be classified as:

(a) Class A, being water-supply waters in a controlled catchment area; or

(b) Class B, being water-supply waters in an uncontrolled catchment area; or

(c) Class C, being waters to which the public have ready access and used regularly for bathing; or

(d) Class D, being inland waters in classified areas not included in any of the foregoing classes.

(4) Where coastal waters are classified they shall be classified as:

(a) Class SA, being waters from which edible shellfish are regularly taken for human consumption; or

(b) Class SB, being waters to which the public have ready access and used regularly for bathing; or

(c) Class SC, being coastal waters to which the requirements of the Seventh Schedule hereto are applicable; or

(d) Class SD, being coastal waters to which the requirements of the Eighth Schedule hereto are applicable.

(5) Each of the foregoing classes of waters shall be subject to the requirements in respect of pollution specified regarding that class in the appropriate Schedule to these regulations being:

(a) In respect of Class A, the First Schedule

(b) In respect of Class B, the Second Schedule

(c) In respect of Class C, the Third Schedule

(d) In respect of Class D, the Fourth Schedule

(e) In respect of Class SA, the Fifth Schedule

(f) In respect of Class SB, the Sixth Schedule

(g) in respect of Class SC, the Seventh Schedule'

(h) in respect of Class SD, the Eighth Schedule'

6. The Council shall prepare a preliminary classification after considering such matters as it considers relevant.

7. Where the Council proposes to classify or reclassify any waters, a preliminary classification shall be advertised and circulated to interested local authorities and other interested parties in such manner as the Council thinks fit.

8. (1) The Council may hear such evidence and consider such submissions, whether in writing or otherwise, as it considers relevant.

(2) After considering any objections and representations with respect to a preliminary classification the Council shall decide whether or not it will make a classification, and if it decides to do so it shall prepare a final classification.

(3) The Council shall have the right to reclassify any waters from time to time.

9. Where a final classification is made under these regulations, the following provisions shall apply:

(a) Details of the classification shall be made public by advertising and by notifying all local authorities and other persons responsible for discharging pollutants and all bodies considered by the Council to have a substantial interest in the classification;

...

## II - NEW SOUTH WALES - Clean Waters Regulations, 1972

8. For the purposes of section 11(f) of the Act, wastes shall be classified as follows:

**CLASS S: Specially Protected waters** - waters into which:

- (a) no wastes are to be discharged; and
- (b) only Class P waters flow.

**CLASS P: Protected Waters** - waters into which:

- (a) wastes are not to be discharged except as provided in respect of this classification;
- (b) where sewerage is available, wastes which are of a type acceptable to the sewerage authority are not to be discharged otherwise than by way of a sewer;
- (c) overflows from sewers, wastes pumping stations, treatment works or other parts of a sewerage system are not to be discharged;
- (d) organic wastes are not to be discharged unless they are so treated that the resulting effluent has:
  - (i) where the relative proportion of water to the wastes is 19.1 or more - a biochemical oxygen demand of not more than twenty milligrams per litre and a non-filtrable residue of not more than thirty milligrams per litre; or
  - (ii) where the relative proportion of water to the wastes is less than 19.1 and the oxygen content of the waters is, or is likely to be, reduced as a result of the discharge - such a lower biochemical oxygen demand and non-filtrable residue as may be approved;
- (e) wastes are not to be discharged unless the concentration of plant nutrients in the wastes is controlled so as to prevent excessive plant growth in, abnormal variation in dissolved oxygen or pH levels in, or degradation of the appearance of, the waters;
- (f) infectious wastes or wastes in which faecal coliforms are likely to be present are not to be discharged unless:
  - (i) the wastes are treated in an approved manner; and
  - (ii) in the case of waters likely to be used for bathing - the faecal coliform density in representative portions of the water does not exceed 200 per 100 millilitres;
- (g) wastes are not to be discharged unless they are visually free of grease, oil, solids and unnatural discoloration and free of settleable matter;
- (h) wastes are not to be discharged if the resulting concentration of the wastes in the waters:
  - (i) is or is likely to be harmful, whether directly or indirectly, to aquatic life or water-associated wildlife;

- (ii) gives rise to or is likely to give rise to abnormal concentrations of the wastes in plants or animals; or
- (iii) in the case of fresh waters, is likely to affect the use of the waters for human consumption, domestic or industrial purposes, watering of stock or the irrigation of land;
- (i) wastes are not to be discharged if the concentration of any restricted substance in the wastes exceeds the concentration specified opposite that substance in Schedule 2<sup>1</sup>;
- (j) wastes are not to be discharged into the waters if the pH value of the wastes is less than 6.5 or more than 8.5 or if the discharge induces a variation in the pH value of the waters of more than 0.2;
- (k) wastes are not to be discharged if the radioactivity level of the wastes exceeds the levels specified in Schedule 3<sup>1</sup>;
- (l) thermal wastes are not to be discharged into the waters.

CLASS C: *Controlled Waters* - waters into which:

- (a) wastes are not to be discharged except as provided in respect of this classification;
- (b) where sewerage is available, wastes which are of a type acceptable to the sewerage authority are not to be discharged otherwise than by way of a sewer;
- (c) overflows from sewers, wastes pumping stations, treatment works or other parts of a sewerage system are not to be discharged into the waters except in accordance with approved conditions;
- (d) organic wastes are not to be discharged unless they are so treated that the resulting effluent has:
  - (i) where the relative proportion of water to the wastes is 19:1 or more - a biochemical oxygen demand of not more than twenty milligrams per litre and a non-filtrable residue of not more than thirty milligrams per litre; or
  - (ii) where the relative proportion of water to the wastes is less than 19:1 and the oxygen content of any portion of the waters is, or is likely to be reduced as a result of the discharge to, less than 70 per cent of saturation during average dry weather conditions for the area in which the waters are located - such a lower biochemical oxygen demand and non-filtrable residue as may be approved;
- (e) wastes are not to be discharged unless the concentration of plant nutrients in the wastes is controlled so as to prevent excessive plant growth in, abnormal variation in dissolved oxygen or pH levels in, or degradation of the appearance of, the waters;
- (f) infectious wastes or wastes in which faecal coliforms are likely to be present, are not to be discharged unless:
  - (i) the wastes are treated in an approved manner; and
  - (ii) in the case of waters likely to be used for bathing or recreational purposes - the faecal coliform density in representative portions of the waters does not exceed 400 per 100 millilitres;
- (g) wastes are not to be discharged unless they are visually free of grease oil, solids and unnatural discoloration and free of settleable matter;
- (h) wastes are not to be discharged if the resulting concentration of the wastes in the waters:
  - (i) is or is likely to be harmful, whether directly or indirectly, to aquatic life or water-associated wildlife;
  - (ii) gives rise to or is likely to give rise to abnormal concentrations of the wastes in plants or animals; or
  - (iii) in the case of fresh waters, is likely to affect the use of the waters for human consumption, domestic or industrial purposes, watering of stock or the irrigation of land;
- (i) wastes are not to be discharged if the concentration of any restricted substance in the wastes exceeds the concentration specified opposite that substance in Schedule 2<sup>1</sup>;
- (j) wastes are not to be discharged into the waters if the pH value of the wastes is less than 6.5 or more than 8.5 or if the discharge induces a variation in the pH value of the waters of more than 0.5;

<sup>1</sup> Omitted.

- (k) thermal wastes are not to be discharged into the waters except in approved cases and subject to approved conditions;
- (l) wastes are not to be discharged if the radioactivity level of the wastes exceeds by more than ten times the levels specified in Schedule 3' and the radioactivity level of the receiving waters beyond the approved zone is caused by that discharge to exceed the levels specified in that Schedule.

CLASS R: *Restricted waters* - waters into which:

- (a) wastes are not to be discharged except as provided in respect of this classification;
- (b) where sewerage is available, wastes which are of a type acceptable to the sewerage authority are not to be discharged otherwise than by way of a sewer;
- (c) overflows from sewers, wastes pumping stations, treatment works or other parts of a sewerage system are not to be discharged into the waters except in accordance with approved conditions;
- (d) organic wastes are not to be discharged unless they are so treated that the resulting effluent has:
  - (i) where the relative proportion of water to the wastes is 9:1 or more but not more than 19:1 - a biochemical oxygen demand of not more than twenty milligrams per litre and a non-filtrable residue of not more than thirty milligrams per litre or such other biochemical oxygen demand or non-filtrable residue as may be approved;
  - (ii) where the relative proportion of water to the wastes is less than 9:1 and the oxygen content of any portion of the waters is, or is likely to be reduced as a result of the discharge to, less than 80 per cent of saturation during average dry weather conditions for the area in which the waters are located - such a lower biochemical oxygen demand and non-filtrable residue as may be approved, or
  - (iii) where the relative proportion of water to the wastes is more than 19:1 and the oxygen content of the waters is, or is likely to be maintained after the discharge at, more than 75 per cent of saturation during average dry weather conditions for the area in which the waters are located - such a higher biochemical oxygen demand and non-filtrable residue as may be approved;
- (e) infectious wastes or wastes in which faecal coliforms are likely to be present, are not to be discharged unless:
  - (i) the wastes are treated in an approved manner; and
  - (ii) in the case of waters likely to be used for recreational purposes - the faecal coliform density in representative portions of the waters does not exceed 1,000 per 100 millilitres as determined otherwise than during a period of rainfall run-off and within an approved period thereafter;
- (f) wastes are not to be discharged unless they are visually free of grease, oil, solids and unnatural discoloration and free of settleable matter;
- (g) wastes are not to be discharged if the resulting concentration of the wastes in the waters:
  - (i) is or is likely to be harmful, whether directly or indirectly, to aquatic life or water-associated wildlife;
  - (ii) gives rise to or is likely to give rise to abnormal concentrations of the wastes in plants or animals; or
  - (iii) is likely to affect the use of those waters for watering stock or the irrigation of land; or
  - (iv) gives rise to or is likely to give rise to abnormal plant or animal growth;
- (h) wastes are not to be discharged if the concentration of any restricted substance in the wastes exceeds the concentration specified in Schedule 2' opposite that substance;
- (i) wastes are not to be discharged if the pH value of the wastes is less than 6.5 or more than 8.5 or if the discharge induces a variation in the pH value of the waters of more than 0.5;
- (j) thermal wastes are not to be discharged into the waters except in approved cases and subject to approved conditions;

(k) wastes are not to be discharged if the radioactivity level of the wastes exceeds by more than ten times the levels specified in Schedule 3<sup>1</sup> and the radioactivity level of the receiving waters beyond the approved zone is caused by that discharge to exceed the levels specified in that Schedule.

CLASS O: *Ocean Outfall Waters* - waters into which:

- (a) wastes are not to be discharged except as provided in respect of this classification;
- (b) wastes are so discharged that the rate and volume of the nature and concentration thereof will not adversely affect beaches;
- (c) wastes are to be so discharged that the maximum effect of the wastes on the waters shall be confined to an approved zone (in this classification referred to as the "mixing zone");
- (d) wastes are not to be discharged:
  - (i) unless the wastes are visually free from grease, oil and solids and free from settleable matter; and
  - (ii) where the pH value of the wastes is more than 8.5 or where the discharge induces a variation of more than 0.1 in the pH value of any waters outside the mixing zone;
- (e) wastes are not to be discharged if the resulting concentration of the wastes in the waters:
  - (i) is or is likely to be harmful, whether directly or indirectly, to aquatic life or water-associated wildlife;
  - (ii) gives rise to or is likely to give rise to abnormal concentrations of the wastes in plants or animals; or
  - (iii) gives rise to or is likely to give rise to abnormal plant or animal growth

CLASS U: *Underground Protected Waters* - waters into which

wastes shall not be discharged unless the discharge is an approved discharge by reason of its not being likely to reduce the quality of the waters below an approved level.

10 (1) The Board shall set down for hearing and determine any objection lodged pursuant to this Part not later than four months after the expiration of the prescribed time within which the objection could have been lodged.

(2) The Board shall, within fourteen days after the expiration of the prescribed time within which an objection could have been lodged, notify the objector and the Under Secretary of the time and place at which the objection shall be heard.

(3) Any such notification shall, in the case of an objector, be served by posting the notice by certified mail in an envelope duly stamped and addressed to the objector at the place last shown in the records of the Under Secretary as his place of abode or business.

(4) The Board shall, as far as practicable, hear all objections relating to a particular classification of waters at a single hearing at a single venue.

(5) The Under Secretary may, by himself or his representative, be present and be heard at any hearing.

(6) The Board shall, upon reaching its decision in respect of an objection, transmit that decision to the Under Secretary within seven days thereof.

## 7.4 Standards of effluent quality ("effluent" quality standards)

Standards of effluent quality may be found in subsidiary legislation. In view of their highly technical nature, they have not been reproduced here. As the example below illustrates, effluent quality standards may be complemented by a grant of authority to responsible Government officials to tailor to the circumstances particular to each case more or less stringent standards than those laid down in the legislation.

**I - QUEENSLAND - Clean Waters Regulations. 1973**

26. (a) In any case where the Council considers that the observance of the general standard set out in Regulation 25(a) will not ensure that the receiving waters will be fit for some other water use, the Council shall determine such other standards for the waste discharge which, in its opinion, will ensure that such receiving waters will be fit for such water use.

(b) In any case where the Council considers that the observance of a less stringent standard than the general standard set out in Regulation 25(a) will ensure that the receiving waters will be fit for all other water uses, the Council may determine other standards for the waste discharge which, in its opinion, will ensure that such receiving waters will be fit for such water uses and may determine the periods during which such less stringent standards shall apply.

(c) In any case where the Council considers such action to be necessary or desirable, it may determine specific limits for the concentrations of any of the matters or organisms referred to in Regulation 25(b) and for any of the properties referred to in Regulation 25(c).

(d) In any case where Regulation 25 (a) does not apply, the Council shall determine specific standards for the waste discharge.

...

## 7.5 Sampling and testing of waters and effluents

Sampling and testing of the waters where wastes are discharged are an essential complement to all the water pollution control mechanisms thus far reviewed insofar as sampling and testing are instrumental in (a) ascertaining the extent of pollution and (b) monitoring progress in general in the fight against pollution, and, more specifically, compliance with legal requirements. In the examples below, subsidiary legislation prescribes various matters related to sampling and testing - notably, procedures, standard methodologies and techniques, the circumstances which qualify a grant of authority to government officials to carry out sampling and testing, and the effects which follow from the results of a test.

**I - ZIMBABWE - Water Pollution Control (Waste and Effluent Water Standards) Regulations. 1971**

10. Suitable points, acceptable to the Director of Water Development, for the taking of samples of waste or effluent waters for the purpose of testing any analysis, shall be provided where requested by the Director of Water Development

11. (1) A composite sample for the purpose of analysis for all tests, other than those for temperature, pH and dissolved oxygen, shall be taken by combining individual samples so that a minimum of five samples of equal volume of not less than 500 millilitres each of the waste or effluent water shall be taken, at the point of discharge, at approximately equal intervals of time over a minimum period of four hours within any twenty-four hour period.

(2) Temperature, pH and dissolved oxygen readings shall be taken on individual samples at the time of sampling and all samples shall comply with the prescribed standard for temperature, pH and dissolved oxygen.

(3) Where full laboratory facilities do not exist on the site for the determination of dissolved oxygen, the oxygen in the sample may be fixed at the time of sampling by adding the sulphuric acid, the permanganate, the oxalate, the manganous sulphate and the alkaline iodide only. The stopper must be replaced and the solution well mixed.

(4) The remaining steps may be carried out later in the laboratory.

I) - NEW SOUTH WALES - Clean Waters Regulations, 1972

3. (1) Where for the purposes of these Regulations any test for determining the nature or concentration in waters or in wastes of any matter is carried out, that test shall be carried out in accordance with the appropriate method specified in Schedule 1'.

(2) Notwithstanding clause (1), the person carrying out any test pursuant to that clause, may, where the result of the test would not be affected, vary the procedural details specified in the method utilised.

4. Any determination of the extent of pollution of any waters made by an authorised officer shall, if that determination is made in accordance with the test prescribed for the purposes of that determination in Regulation 3, be conclusive evidence that those waters have been polluted to the extent so determined.

III - QUEENSLAND - Clean Waters Regulations, 1973

22. (i) Sampling, testing and measurement of wastes for the purposes of ascertaining whether any of the provisions of the Act and Regulations or any conditions attached to a licence, an exemption or notice are being or have been complied with shall be done at the location prescribed in the conditions attached to such licence, notice or exemption or, if no such location has been prescribed, at the location determined by the Director.

(ii) The locations for sampling, testing and measurement of wastes for other purposes shall be selected by the inspector after consultation with the occupier.

(iii) An inspector intending to take samples and make tests for the purpose of ascertaining whether any of the provisions of the Act or any conditions attached to a licence, an exemption, or a notice, are being or have been complied with, shall observe the following requirements:

(a) he shall notify the occupier of the premises or the person in charge or apparently in charge of the premises of his intention to take any sample or make any test or make any measurement and invite him to be present at the taking of such sample or the making of such test or measurement;

(b) he shall there and then divide any sample taken by him into three parts in such a manner that the three shall be as equally representative of the whole as is practicable and cause each part to be placed in a container which is sealed and marked, provided that where the properties of the sample would be affected by such division or where it is not practicable to make the sample homogeneous prior to such division, three separate samples may be taken as equal as practicable;

(c) he shall deliver one part to the occupier or person aforesaid, retain one part for future comparison and, if the Director so determines, he shall submit one part to an analyst;

(d) he shall deliver to the occupier or person aforesaid a copy of the results of any test or measurement made:

Provided that if it is not reasonably practicable for the inspector to notify the occupier or person in charge as required by paragraph (a) of this sub-regulation before taking any sample or making any test or measurement, he shall notify such occupier or person in charge as soon as is reasonably practicable thereafter.

23. (i) The manner of collection of samples, the size of samples, the types of containers and the method of preservation between the time of sampling and the time of analysis shall, unless otherwise prescribed, be in accordance with the Instructions for Collection and Preservation of Samples from time to time approved by the Council and available for inspection at the office of the Director.

(ii) The methods of analysis of samples shall, unless otherwise prescribed, be the Methods of Analysis from time to time approved by the Council and available for inspection at the office of the Director, provided that procedural details may be varied if, in the opinion of the analyst, such variations are necessary and do not significantly affect the results of the analysis and he certifies accordingly.

(iii) The terms biochemical oxygen demand, suspended solids, dissolved oxygen and any other technical terms in relation to water or wastes which are not defined in the Act or in these Regulations shall have such meanings as apply to those terms in the aforesaid Methods of Analysis.

**IV - MALAYSIA - Environmental Quality (Sewage and Industrial Effluents) Regulations, 1979**

7. For the purpose of these Regulations, the effluent discharged into any inland waters shall be analyzed in accordance with the latest edition of the methods specified in the Second Schedule<sup>1</sup>, as amended from time to time, or in accordance with such other methods of analysis as the Director-General thinks fit.

**V - MALAWI - Water Resources (Water Pollution Control) Regulations, 1978**

12. ... (2) Any person authorized by the Board may, at any time and without prior notice to any person, enter upon any land for the purpose of testing, or taking samples of, the waste or effluent capable of being discharged by means of the works erected pursuant to paragraph (b) of sub-regulation (1), but no compensation shall be payable by such authorized person or the Board to any person in respect of any damage done to such land by reason of such entry.

**VI - CAYMAN ISLANDS - Water Authority Regulations, 1985**

21. (1) The Authority may from time to time, in pursuance of sub-paragraph (c) of sub-section (2) of section 44 of the Law, test the quality of an effluent being discharged under a permit.

(2) If, as a result of a test made in pursuance of the last preceding sub-section, the effluent discharged fails to meet the minimum quality standard laid down in regulation 19 or 20 or those regulations, as the case may be, the provisions of sub-section (1) of section 21 of the Law shall apply, and the Authority will charge for the test made the fee prescribed in Schedule 2<sup>1</sup> to these regulations.

(3) If, as a result of a test made in pursuance of sub-section (1) of this regulation, the conditions as to the quality of the effluent discharged which are contained in the relevant permit are shown to be met, no charge for the test will be made except where the test was requested by the holder of the relevant permit or by any other person, the prescribed fee being payable by one or the other, as the case may be.

## 8. ENSURING COMPLIANCE WITH THE LAW

The holders of waste discharge permits are subject to obligations stemming from the permit, and to obligations of general import laid down in the legislation. In addition, the general public is also subject to certain basic obligations, most notably, that of refraining from discharging waste into a freshwater body, on the ground or under the ground, or from carrying on given activities or processes, unless a permit has first been obtained from the concerned government department or agency. While spontaneous compliance with these obligations is to be expected of the majority of the citizenry in general and of the holders of waste discharge or other comparable permits in particular, it is standard practice for legislation to deter non-compliance by declaring generic or specific violations an offence, and subjecting these to penalties. These include fines and imprisonment and, under the appropriate circumstances, non-conventional measures such as suspension or cancellation of a permit. Also, a special use of fines is made in connection with water pollution control offenses, consisting of fining an illegal discharge on a daily basis for as long as the illegal discharge continues. The role of subsidiary legislation in this regard is prominent, as it may spell out which violation attracts what kind and level of penalty. Offenses and attendant penalties can be generically directed at any deviation from the precepts of the law (I and II), or be fine-tuned to address specific breaches in connection with permit requirements (III) or with other specific legal precepts (IV).

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<sup>1</sup> Omitted



As already explained in Chapter I, offenses and penalties are an integral part of law enforcement. In addition, law enforcement involves, in the specific case of water pollution control legislation, authority for the Government to enter and inspect private property, to take from it samples of the thing under investigation - e.g., an effluent, the soil -, to install monitoring equipment on the said property, and to examine records which must be kept by law (V to VII). As an adjunct to these powers, the property owner may be required to render active assistance in the exercise of law enforcement authority (VIII), or simply not to hinder the exercise of such authority (IX). An express grant of law enforcement authority and powers is generally found in principal legislation, but it is not uncommon to find such powers restated or elaborated on in subordinate legislation.

**I - QUEENSLAND - Clean Waters Regulations, 1973**

30. (i) When any matter or thing is by these Regulations directed or forbidden to be done, and such act so directed to be done remains undone, or such act so forbidden to be done, is done, in every such case every person offending against such direction or prohibition shall be guilty of an offence against these Regulations.

(ii) Any person guilty of an offence against these Regulations shall be liable, if no specific penalty is provided for that offence, to a penalty not exceeding four hundred dollars and if the offence is a continuing one, a further sum of forty dollars for each and every day during which the offence continues.

**II - ST LUCIA - Public Health (Water Quality Control) Regulations, 1978**

13. Any person failing to comply with these Regulations or with any notice served thereunder shall be guilty of an offence and on summary conviction shall be liable to a fine not exceeding two hundred and fifty dollars or to a term of imprisonment not exceeding three months, and in addition in the case of a continuous offence to a fine not exceeding fifty dollars for each day the offence continues after a conviction is first obtained.

**III - NEW ZEALAND - Waters Pollution Regulations, 1963**

13. (1) Every person, being the owner or user of an outfall in respect of which a permit is required under these regulations, who discharges or permits the discharge of any pollutant from the outfall otherwise than pursuant to the authority and in conformity with the terms of a permit issued under these regulations commits an offence and shall be liable on summary conviction to a fine not exceeding one hundred pounds, and, if the offence is a continuing one, to a further fine not exceeding ten pounds for every day during which the offence has continued.

...

**IV - KENYA - Water (General) Rules**

75. The Water Apportionment Board shall have authority to determine whether or not any sawdust, tailings, gravel, refuse, sewage, effluent from any works or any other material or substance of any kind being put, or proposed to be put, into any body of water or watercourse is prejudicing or will prejudice the beneficial use for any purpose of the water of such body of water or watercourse, or is impeding or interfering or may impede or interfere, with the natural flow of any body of water, and the Board may at any time and from time to time order any person not to put any such thing into or adjacent to such body of water or watercourse, and further may order the removal of any such matter from, or from any site adjacent to, any body of water or watercourse, and any person who refuses to obey such order shall be guilty of an offence.

77. Any person who deposits, or who causes or allows to be deposited, into any body of water or any tributary thereof, any sawdust, any vegetable or mineral refuse, the effluent from a sheep or cattle dip, factory, premises or work, any sewage or sewage effluent or any other matter or thing of any kind which is harmful to the fish, fish life, the fry or ova of fish, or fish food contained in such body of water shall be guilty of an offence.

**V - KENYA - Water (General) Rules**

79. (1) A fish warden, an assistant fish warden or any person authorized by a fish warden may enter upon any land or premises for the purpose of inspecting bodies of water or tributaries thereof, or for the purpose of preventing or detecting an offence under these Rules or for the purpose of collecting fish or taking samples of any matter or thing which is being deposited, or which it is proposed to deposit, into any body of water or any tributary thereof, and he may interfere summarily to prevent the deposit into any such body of water or tributary thereof of any matter or thing which is harmful to the fish, fish life, the fry or ova of fish or fish food in such body of water.

...

**VI - MALAWI - Water Resources (Water Pollution Control) Regulations, 1978**

12. ... (2) Any person authorized by the Board may, at any time and without prior notice to any person, enter upon any land for the purpose of testing, or taking samples of, the waste or effluent capable of being discharged by means of the works erected pursuant to paragraph (b) of sub-regulation (1), but no compensation shall be payable by such authorized person or the Board to any person in respect of any damage done to such land by reason of such entry.

**VII - UNITED KINGDOM - Nitrate Sensitive Areas (Designation) Order, 1980**

6. An agreement shall contain a provision for the Minister and his servants or agents, where necessary in order to monitor compliance with that agreement or to assess the effectiveness of preventing the entry of nitrate into controlled waters of the measures contained within it:

- (a) to enter upon any land which is the subject of such agreement;
- (b) to take samples from the land;
- (c) to install equipment on the land; and
- (d) to examine all records kept in compliance with the said agreement.

**VIII - MALAYSIA - Environmental Quality (Sewage and Industrial Effluents) Regulations, 1979**

20. An occupier of any premises shall provide the Director-General or any other officer duly authorised in writing by him every reasonable assistance or facility available at premises, including labour, equipment, appliances, and instruments that he may require for the purpose of taking any action that he is empowered by section 38 of the Act to take respect of the premises.

**IX - KENYA - Water (General) Rules**

79. . . (2) Any person who wilfully obstructs or hinders a fish warden, an assistant fish warden or any person authorized by a fish warden in the execution of his powers under this rule shall be guilty of an offence.

...



## CHAPTER III

### GROUNDWATER DEVELOPMENT AND CONSERVATION

See also:

**ALLOCATING WATER FOR USE: WATER RIGHTS AND PERMITS (CHAPTER I)**  
**PREVENTION AND CONTROL OF WATER POLLUTION (CHAPTER II)**  
**PROVISION OF WATER SUPPLIES TO THE PUBLIC (CHAPTER V)**

#### **1. INTRODUCTION**

##### **1.1 Scope of the chapter**

Groundwater resources have always played a critical role in meeting the water demands of traditionally water-short areas of the world. There, sooner than elsewhere, Governments have asserted themselves as guardians of the precious resource, and have restrained the indiscriminate excavation of boreholes and wells. This trend is taking hold elsewhere in the world, particularly as a result of groundwater's role as a source of high-quality water for priority uses, and as a result of the threat to such role from indiscriminate pumping and from pollution. As a result, the Government tends everywhere to substitute itself for the landowner in the latter's traditional role of master of the waters lying under his land, and Government-administered regulatory legislation tends to replace property-minded doctrines and court-administered tortious litigation between adjoining well owners as a legal frame of reference for managing groundwater resources.

In parallel to the increased role of the Government, so has grown and expanded the concept of "management" of groundwaters. This now encompasses a range of discrete functions, from controlling borehole drilling and well construction activities to allocating available groundwaters to competing uses, and from protecting groundwater from sources of pollution to artificially recharging groundwater sources under stress and to using surface and underground water resources in a conjunctive manner. Some of these functions are akin, conceptually and in legislative and administrative practice, to the functions of managing water resources in general, whether these be surface or underground. The allocation of groundwater resources from productive wells to competing uses, for instance, falls in this category. So does protecting groundwater resources from pollution. In addition to these "undifferentiated" functions of groundwater management - undifferentiated, that is, with regard to the kind of water resource being managed - there are a number of discrete functions which are peculiar to the management of groundwater resources. These include the prospecting for groundwater, i.e., searching for groundwater to ascertain the occurrence and availability of the resource in suitable quantities and of suitable quality to justify its extraction; the exercise of the profession of well driller, in view of the special skills required; the artificial recharge of groundwater, which may be resorted to to supplement the natural recharging processes when these are under stress; and the conjunctive use of surface and groundwater resources, which may be resorted to to prioritize certain uses of high-quality groundwater at the expense of established entitlements. Of these management functions which are groundwater-specific, the first may be the source of confusion - both conceptually and in relevant legislation -

inasmuch as the digging or drilling of boreholes and the construction of wells have the dual purpose of ascertaining the occurrence of groundwater and extracting it for exploitation and use. Since groundwater exploration and exploitation are frequently treated in an undifferentiated manner in the relevant legislation, the focus of this Chapter will be on the activity of digging or drilling boreholes and constructing wells for either exploration or exploitation purposes, or both.

In view of the potential for conflict amongst users of water in general inherent in the indiscriminate boring in search of or for the extraction of groundwater, controlling borehole digging or drilling and well construction and thus preventing conflict has come to be firmly established as a function of government. As a result, the alternative of leaving groundwater exploration and exploitation decisions to the individuals concerned, and of having the courts arbitrate conflicts through litigation has lost much ground - at least in the countries where groundwater resources play a significant role in the national water balance. In consideration of this generalized trend, and also in view of the far greater specificity of legislation regulating this particular function of government as opposed to legislation governing action in the courts in general, this Chapter focuses on the former, and on its implementing mechanisms in particular.

## **1.2 Legislative approaches to groundwater management**

Typically, Government control of borehole digging or drilling and well construction is achieved through prior notification, permit or registration requirements. The target of these requirements can be the activity of digging, drilling or well construction, and the exercise of the profession of well-driller. Regulatory controls can be immediately operational, or become operational as and when the Government determines. In this latter case, the Government is typically vested with "stand-by" authority to introduce control mechanisms when the need for them arises. A variation of this approach is the selective application of control mechanisms in designated areas only as opposed to the entire country. In this particular case, a mechanism for the designation of groundwater "control" areas complements the mechanism for the control of well digging or drilling and restricts its application to any number of areas in the country, as the Government determines. Permit and special area designation mechanisms are employed in the legislation also for artificial groundwater recharge and for coordinated use of surface and underground water resources. Groundwater pollution control approaches and mechanisms are presented in Chapter II on **PREVENTION AND CONTROL OF WATER POLLUTION**.

The policy decisions underlying the choice of approach to groundwater resources management are reflected in an Act of the Legislature dealing with water resources management in general, or with groundwater resources management in particular. Subsidiary legislation provides the procedural and substantive details of implementation which are presented in this Chapter.

## 2. PRIOR NOTIFICATION OF BOREHOLE DIGGING OR WELL DRILLING OPERATIONS

Prior notification to the Government of one's intention to dig or drill a borehole or construct a well may be prescribed by principal legislation in lieu of permit requirements, with subsidiary legislation spelling out the operational details of implementation as to the manner and scope of notification.

### **KENYA - Water (General) Rules**

116. (1) The notice of intention to construct a well required under section 51 of the Act shall be in form No. W.A.B. 26 in the Second Schedule to these Rules, except where such well is to be situated within a conservation area notified under section 74 of the Act, or within 100 yards of any body of surface water.

(2) Such notice shall be submitted not less than one month before construction is due to commence, and shall be accompanied by a sketch map, or Land Office plan, in duplicate, on a scale of not less than one inch to one mile, on which shall be shown the boundaries of the land on which it is proposed to construct the well, the approximate position of the proposed well and, if possible, the position of the nearest body of surface water and of the nearest existing well.

(3) Notice of the date of commencement of construction of the well shall be given by letter not later than the day on which the construction commences, and such notice shall give the name of the borehole contractor constructing the well.

(4) A notice of intention to construct a well shall be acknowledged by the Water Apportionment Board, and such acknowledgement shall state the number allocated to the well; and such number shall be used in all future references to such well.

117. Where the well is to be situated within a conservation area or within 100 yards of any body of surface water, the notice of intention to construct shall be in the form of an application for a permit, and shall be in form No. W.A.B. 29 in the Second Schedule to these Rules.

Form W.A.B. 26 - See Appendix III, page 305.

## 3. PERMITS TO DIG OR DRILL BOREHOLES AND TO CONSTRUCT WELLS

Boreholes can be dug or drilled and wells constructed and used (a) to search for groundwater, i.e., to ascertain the occurrence of groundwater in suitable quantities and of suitable quality to justify its extraction for use; and (b) to bring groundwater to the surface, i.e., to extract or abstract it, for use. Wells can also be constructed and used to dispose of waste: relevant legislation will be presented in this Chapter insofar as legislation on groundwater exploration and abstraction wells deals also with the use of wells for waste disposal purposes. Exploratory borings and groundwater abstraction wells can be treated in the legislation in an undifferentiated manner, subject to one set of rules resulting in one permit. Or, the exploration and abstraction ends of boring and drilling can be kept distinct and separate from extraction and be subjected to separate rules resulting in separate permits. Whenever possible, this differentiation of regimes, and procedural or substantive linkages between the two will be highlighted in this Chapter.

### 3.1 The granting of permits

Typically, the grant - or refusal - of a permit to carry out certain groundwater exploration and/or extraction activities is the resultant of a process structured in the legislation as a sequence of steps, patterned in the manner described in Chapter I on **ALLOCATING WATER FOR USE; WATER RIGHTS AND PERMITS**, as follows:

#### Step One - Filing of an application

##### Activities for which an application needs to be filed

The scope of permit and companion application requirements is generally defined in principal legislation. Nevertheless, implementing legislation may clarify the import of policies or principles laid down in this regard in an Act of Legislature. This particular aspect of the permit process is of particular significance in connection with groundwater management in view of the quite different ends of borehole digging or drilling and well construction, and the resulting possibility for uncertainty and confusion as to the exact scope of coverage of permit requirements. Permit and attendant application requirements are fixed with combined reference to the type of well and the kind of activity contemplated (I and II), or with reference to the intended use of groundwater or to the technique employed for the excavation - the digging or drilling or excavation of wells for the well-driller's or excavator's own "domestic" use, and the excavation of wells by hand, being generally exempted from permit requirements (respectively III and IV).

#### **I - QUEENSLAND - Regulation No. 2 under the Water Acts 1926-1973**

##### 1. (a) Applications for a license for:

- (i) A new artesian or sub-artesian well;
- (ii) Enlarging, deepening, or altering any existing artesian well;
- (iii) An existing artesian or sub-artesian well;

shall be made in the form of the Third Schedule hereto<sup>1</sup>, and shall be accompanied by a parish map, plan, or tracing drawn to scale, showing the site of the proposed well or existing well and the method of distribution and disposal of the water therefrom.

...

#### **II - WESTERN AUSTRALIA - Rights in Water and Irrigation (Construction and Alteration of Wells) Regulations, 1963**

4. Every person applying for a license for the commencement or construction of a well or for the enlargement, deepening or altering of, or the drawing of water from, an existing well, pursuant to the provisions of section 18 of the Act, shall make his application to the Minister-

- (a) in the case of an artesian well, in the form of Form 1<sup>2</sup>; and
- (b) in the case of a non-artesian well, in the form of Form 2<sup>3</sup>;

in the schedule.

<sup>1</sup> Omitted

<sup>2</sup> See Appendix III, page 308

<sup>3</sup> Idem

**III - PHILIPPINES - Water Rules and Regulations**

42 Except for domestic use, no person shall drill any well for the extraction of ground water or make any alteration to any existing well without securing a permit from the Council.

For this purpose, only wells with casings not exceeding 75 millimetres in diameter may be allowed for domestic use.

**IV - BOTSWANA - Draft Groundwater Regulations**

2. (1) In these Regulations, unless the contrary intention appears:

...

"borehole" means any drill hole, well, excavation or other opening in the ground, or any natural or artificially constructed or improved underground cavity which:

- (a) could be used, is used or may be used for the purpose of intercepting, collecting, obtaining or using groundwater, or for the purpose of disposing of any water or waste below the surface of the ground, or
- (b) which extends to an aquifer

but does not include:

- (i) a well constructed solely by hand; or
- (ii) any class of borehole exempted in whole or in part from the provisions of these regulations by the Council under section 25 of the Act.

...

3. (1) A person must not construct or deepen or cause any other person to construct or deepen any borehole, other than in accordance with a permit issued under these regulations.

...

### Pre-requisites to the filing of applications

The profile of prospective applicants may be qualified - generally by principal legislation - notably by reference to ownership or possession of, or access to, the land on which boring is to be carried out. Subsidiary legislation provides the implementing specifics generally as a matter of documentary evidence required in support of applications (see Supporting documents below). Occasionally, however, substantive pre-requisites are found in subordinate legislation, as in the example given below.

**PHILIPPINES - Water Rules and Regulations**

2. Only the following may file an application with the Council for permit/authority.

- a. Citizens of the Philippines;
- b. Associations, duly registered cooperatives or corporations organized under the laws of the Philippines, at least 50 percent of the capital of which is owned by the citizens of the Philippines;
- c. Government entities and instrumentalities, including government owned and controlled corporations.

### Format of applications

The format of applications tends to be standardized in "Forms" appended to subsidiary legislation for the convenience of prospective applicants. Practice in the design of application Forms varies considerably, as these range from one format of varying complexity covering



all occurrences (II and III) to separate formats in respect of different kinds of wells (I and IV).

**I - WESTERN AUSTRALIA - Rights in Water and Irrigation (Construction and Alteration of Wells) Regulations, 1963**

Form 1 - Artesian Well - Application for a License under Section 20 - See Appendix III, page 308.

Form 2 - Non-Artesian Well - Application for a License under Section 20 - See Appendix III, page 309.

**II - JAMAICA - Underground Water Control (Licensing) Regulations 1961**

Schedule 1 - Application for a License to construct works or abstract water in a critical area - See Appendix III, page 309.

**III - MALAWI - Water Regulations, 1969**

Form WRB.2 - Application for a grant of water right/certificate of existing rights - (Ground Water) - See Appendix III, page 310.

**IV - BOTSWANA - Draft Groundwater Regulations**

4. (1) A person who wishes to construct or deepen a borehole may make an application in the form prescribed in the First Schedule.

(2) A public authority which wishes to construct or deepen a borehole belonging to the Government must make an application in the form prescribed in the Second Schedule.

...

**First Schedule** - Application to construct or deepen a private water borehole - See Appendix III, page 311.

**Second Schedule** - Application to Construct or Deepen a Government Water Borehole - See Appendix III, page 313.

### Supporting documents

Documentary evidence in support of the application may be required to assist the decisionmakers in appraising a proposed boring and extraction project. Relevant requirements may feature in the standard Forms provided for the filing of applications (see the examples given in the preceding paragraph) or may be separately provided for as in the examples below.

**I - WESTERN AUSTRALIA - Rights in Water and Irrigation (Construction and Alteration of Wells) Regulations 1963**

5. (1) Every application made under regulation 4 shall be accompanied by:

- (a) a plan or tracing of a plan, drawn to such scale and having such bearings and distances or measurements marked thereon, as to show the exact position of the well or proposed well and its relation to an established point depicted on a Lands and Surveys Department plan;
- (b) the specifications of the construction of the well; and
- (c) a statement setting out the purposes for which the water is used, or is proposed to be used, with particulars of the extent of use for each purpose, such as the number or probable number of stock to be watered, the area or probable area to be irrigated, crops growing or proposed to be grown and the requirements for domestic use.

(2) The plan, specification and statement submitted pursuant to this regulation shall be signed by the applicant, his attorney or authorised agent and shall be dated.

**II - PHILIPPINES - Water Rules and Regulations**

4. All applications shall be filed in the prescribed form, sworn to by the applicant and supported by the following:

A. For a Water Permit for Agricultural Purposes:

... 2. Location Plan of Area showing:

... d) In case of appropriation of ground water, location and spacing of proposed drilling sites, kind of crop, and approximate location or conveyance canal or conduit in lieu of items (a) and (c) above.

B. For a Water Permit for Hydraulic Power Development and Industrial Purposes, or for a Permit to Dump Mine Tailings or Wastes:

... 4. When the application is for industrial use of ground water, the location and spacing of drilling well sites instead of diversion point should be indicated in the location plan.

C. For a Water Permit for Municipal Purposes:

... 4. When the application involves the use of groundwater, the location and spacing of drilling well sites determined graphically by latitude and longitude should be indicated in the location plan:

... 5. In addition to the requirements under Section 4, the following are required in the specific instances indicated:

A. For Well Drilling - Except when manual well drilling will be employed, all applications involving extraction of ground water shall include the name of a duly licensed well driller who will undertake the drilling. Except for manual well drilling, no person shall engage in the business of drilling wells for the purpose of extracting ground water without first registering as a well driller with the Council.

**III - BOTSWANA - Draft Groundwater Regulations**

4. ... (5) Every application must be accompanied by:

... (b) a clear map of the land on which the borehole is or will be located, showing the position of the borehole; and

(c) either:

(i) a copy of the certificate of Grant of a Customary Land Right; or

(ii) a copy of the Grant of Common Law Land Right; or

(iii) a copy of the Deed of Title of the land on which the borehole is or will be located.

(6) Notwithstanding the provisions of sub-regulation (5)(c), if the land on which the borehole is or will be located is leased, a copy of the lease and a letter from the owner of the land approving of the application must accompany the application.

**Payment of filing fees**

Payment of filing fees is customarily required to help defray the administrative costs of processing applications, as in the example herebelow.

**CAYMAN ISLANDS - Water Authority Regulations, 1985**

8. ... (2) Every such application shall be accompanied by the fee prescribed in Schedule 2<sup>1</sup> to these regulations to cover the cost of the necessary processing, and the Authority shall not entertain any application until payment of the prescribed fee has been effected.

<sup>1</sup> Omitted

### Other procedural requirements

Subsidiary legislation may provide details which have the effect of clarifying matters left in doubt by principal legislation. The example given below concerns applications in connection with multiple-point extraction from one groundwater source.

**CAYMAN ISLANDS - Water Authority Regulations, 1985**

6. ... 131 Unless, in the opinion of the Authority, special circumstances warrant otherwise, a separate application shall be filed in respect to each point of abstraction for which a licence is sought.

### **Step Two - Review of applications**

In response to the same concerns which underlie the legislation on this particular Step of the permit-granting process which has been presented in Chapter I on **ALLOCATING WATER FOR USE: WATER RIGHTS AND PERMITS**, subsidiary groundwater management legislation evidences a fairly consistent practice of requiring the responsible government department or agency to elicit the views of the public and, in particular, of users of nearby surface or groundwater sources who may be affected by a proposed digging, drilling or pumping project. As shown in I, III and IV, relevant requirements are cast as described in Chapter I above-mentioned. Formal Environmental Impact Assessment requirements may be mandated by separate environment protection legislation, in which case groundwater resources management regulations will ordinarily defer to it. Field investigations may also be required to determine whether the works and structures proposed are adequate; whether the applicant could use effectively the facilities applied for, and whether the proposed digging or drilling will adversely affect other water users in the area or other property or environmental interests (II).

**1 JAMAICA - Underground Water Control (Licensing) Regulations, 1981**

4. The Authority shall, unless it forthwith refuses the application, or grants a temporary licence under regulation 7, publish once at least in each of two successive weeks in one or more newspapers circulating in the Island a notice

(a) stating the general effect of the application;

(b) specifying a place in or within a reasonable distance of the locality in which the works concerned are, or are to be situated, where a copy of the application and of the plan furnished to the Authority in accordance with paragraph (2) of regulation 32 may be inspected by any person free of charge at all reasonable hours during a period of fourteen days from the date of the last publication of the notice;

(c) stating that any person desirous of objecting to the application may do so by giving notice of his objection to the Authority in writing before the expiration of the said period.

5. Any person affected by the application, may object to the granting of a licence to the applicant by giving to the Authority before the expiration of the fourteen days referred to in regulation 4 a notice of objection in writing stating the grounds of the objection.

## II - PHILIPPINES - Water Rules and Regulations

10. A. The application to appropriate ground water shall be processed for adherence to requirements and shall be investigated in the field to determine any adverse effect to public or private interest. Protests on the application shall be governed by Section 9-B hereof<sup>1</sup>. If the application meets the requirements and has been found not prejudicial to public or private interest it shall be transmitted, following the requirements of Section 9 hereof<sup>2</sup>, to the Regional Director of the Ministry of Public Works who is hereby authorized to issue the permit to drill which shall be subject to the following conditions:

...

## III - CAYMAN ISLANDS - Water Authority Regulations, 1985

6. ... (4) An application for an abstraction licence shall be accompanied by appropriate evidence, to the satisfaction of the Authority, that a notice setting out the particulars of the application has been prepared by the applicant, in, or substantially, in the form set out in Schedule 1 to those regulations, and that the said notice has been published in one local newspaper on one occasion. Provided that,

- (a) where the proposed abstraction forms part of a general development scheme notice whereof has been advertised in pursuance of regulation 7 of the Development and Planning Regulations, 1977, publication of a notice in pursuance of this sub-section shall not be required, and the applicant shall submit to the Authority with his application a copy of the advertisement made; and
- (b) where more than one application is filed by one applicant in respect of abstraction points situated in one and the same area, publication of one cumulative notice in one newspaper on one occasion will satisfy the requirements of this sub-section.

7. ... (2) The Authority may decline to consider any objection to, or representation on, an application for a water abstraction licence, if such objection or representation reaches the Authority 14 days after the relevant date. In this regulation the expression "relevant date" means the date on which the notice of the application was published in a newspaper in pursuance of sub-section 6(4).

(3) The Authority shall cause to be served upon the applicant for a water abstraction licence a copy of every objection or representation received by them within the period specified in sub-section (2) of this regulation, and a copy of any other objection which they intend to take into consideration.

...

Schedule 1 - Notice of Application for a Licence to Abstract Groundwater - See Appendix III, page 315.

## IV - BOTSWANA - Draft Groundwater Regulations

6. (1) On receiving a copy of an application, the Director must arrange for a notice of the application to be published in two separate issues of both the Gazette and a newspaper circulating in the area where the borehole is or will be located.

(2) The notice must state:

- (a) the name and address of the applicant;
- (b) where the borehole is or will be located;
- (c) the purpose for which the applicant proposes to use the borehole;
- (d) the amount of water the applicant wishes to use.

7. (1) Any person may object to the application within one month of the last publication of a notice under sub-regulation 6(1).

<sup>1</sup> See Chapter 1, sub-chapter 2, Step Three - Review of applications, paragraph 11.

<sup>2</sup> See ibidem, paragraph VII.

- 12) An objection must be in writing addressed to the Director and state:
  - (a) the name and address of the objector;
  - (b) the aspect of the application to which objection is made;
  - (c) the reasons for making the objection;
  - (d) why the objector has a particular interest in the outcome of the application.

### Step Three - Deciding on applications

Decisions as to whether to grant or refuse a permit, or to grant it subject to terms and conditions departing from the applicant's requirements, are typically left to the discretion of the responsible government decisionmaker. Whilst the law cannot prescribe specific decisions, it can nonetheless orientate decisionmaking by prescribing "criteria" for the guidance of decisionmakers in weighing the various factors involved (III and IV). In special circumstances, an interim grant can be made in the form of a "temporary" permit, pending further review of the application and a final decision on it (I). In addition, where permit requirements for exploratory borings are kept separate from comparable requirements for groundwater abstraction works, a decision on the latter may be made conditional upon certain requirements concerning the exploratory activities being met (II).

#### I - JAMAICA - Underground Water Control (Licensing) Regulations, 1961

7. If the Authority is satisfied, upon representations made by an applicant for a licence for the purposes of subsection (1) of section 12 of the Act, that it is necessary for the protection of existing underground works, whether water-works or not, that such a licence should be granted without delay, it may dispense with the compliance of such of the foregoing provisions of these Regulations as the Authority may think fit and grant to the applicant forthwith a temporary licence valid for a period of not more than three months.

#### II - KENYA - Water (General) Rules

121. A permit to abstract ground water shall not be issued until receipt by the Water Apportionment Board of the well record form, and of the result of such tests as the Water Apportionment Board may require.

#### III - CAYMAN ISLANDS - Water Authority Regulations, 1985

7. ... 14) Without prejudice to the provisions of section 15 of the Law, in dealing with an application for a water abstraction licence the Authority shall have regard to:

- (a) any objections or representations in writing relating to the application;
- (b) the requirements of the applicant, in so far as they appear to the Authority to be reasonable requirements; and
- (c) the requirements of existing lawful uses of water abstracted from the ground water resource to which the application relates

...

#### IV - BOTSWANA - Draft Groundwater Regulations

9. 11) After each public authority named on the reverse side of the forms contained in the First, Second and Third Schedules (other than the Council) has considered an application, the Council must consider:

- (a) the application;
- (b) any comments or recommendations made on the application by any other public authority;
- (c) any objection made to the application under regulation 7;

(d) the Policy Guidelines set out in the Seventh Schedule<sup>1</sup>,  
(e) any other policy, advice or matter which it considers material,  
and determine whether or not the application shall be granted.

...

#### Step Four - Recording of decisions and permits

The recording of successful applications and of permits granted as a result may be required as a matter of law for the Government's future reference and for the information of the general public (II and IV). In implementation of such requirements, the formation and upkeep by the government water administration of records - styled "registers" - of permits, and of action taken on them after their grant (see in this regard sub-chapter 3.4 below) may be mandated by law, with subsidiary legislation providing the details of formation and contents of, and access to, the prescribed registers (III). The reasons for decisions made on applications may be separately required to be given in writing, also in aid of an unsuccessful applicant who contemplated appealing from an adverse decision (see in this particular regard Step Five below) (I and V).

##### I - CAYMAN ISLANDS - Water Authority Regulations, 1985

7. ... (6) The Authority shall notify in writing the applicant of their decision, and, where they decide to grant a licence subject to conditions or departing in a material respect from the proposals made in the application, or to refuse a licence, they shall state their reasons in writing.

...

##### II - CAYMAN ISLANDS - Water Authority Regulations, 1985

7. ... (8) Upon the granting of a licence to abstract ground water other than a licence of right, the Authority shall cause an entry to be made to that effect in the General Register of Ground Water Abstraction Licences.

##### III - CAYMAN ISLANDS - Water Authority Regulations, 1985

12.11) The Authority shall keep, in such manner as they deem fit a General Register of Groundwater Abstraction Licences containing a copy of all licences granted in pursuance of the Law, and information concerning any action taken by the Authority in relation to such licences after the grant thereof.

(2) The General Register of Groundwater Abstraction Licences shall be available for inspection by the public at all reasonable hours at the offices of the Authority. Certified and uncertified extracts from the Register shall be obtainable on payment of the fee prescribed in Schedule 2 to these regulations<sup>1</sup>.

##### IV - BOTSWANA - Draft Groundwater Regulations

10. ... (2) The Director must enter each permit granted in a Register maintained for the purpose and allocate each permit a number.

<sup>1</sup> Overleaf.

**V - BOTSWANA - Draft Groundwater Regulations**

13. As soon as possible after receiving notice of an appeal under sub-regulation 12(2), the Council must provide the Minister and the appellant with its written reasons for making the decision appealed against.

**Step Five - Appealing from adverse decisions**

It is fairly consistent practice reflected in water resources legislation to provide for administrative or judicial review of decisions made on applications for groundwater exploration or exploitation. The review process - administered by a judge through court proceedings or by a government administrator ranking higher in the hierarchical ladder to the one who took the decision impugned - constitutes an appeal. Subsidiary legislation may restate or clarify the import of general principles in regard to groundwater exploration or exploitation decisions (III) and provide specific procedural and substantive rules governing the appeal process (all other examples).

**I - WESTERN AUSTRALIA - Rights in Water and Irrigation (Construction and Alteration of Wells) Regulations, 1963**

B. 11) A person aggrieved by any decision of the Minister made under the provisions of section 20 of the Act and advised under regulation 7, if wishing to be heard, shall give notice thereof in writing addressed to the Minister at the Department of Public Works, Perth, within thirty days of his receipt of the advice in this regulation mentioned.

12) Where the Minister causes an inquiry to be conducted for the purpose of hearing a person aggrieved by his decision, notice of the place of, and day of the commencement of, the enquiry shall be sent to the applicant, at the address shown on the application, at least fourteen clear days before that day.

13) The Minister may, from time to time, at the request of the person requiring to be heard, adjourn the commencement of the inquiry for a sufficient period to enable that person to be present and notice of the adjourned date shall be sent to that person, as provided by subregulation 12) of this regulation.

**II - CAYMAN ISLANDS - Water Authority Regulations, 1985**

39 (See Chapter II, sub-chapter 3.1, Step Six - Appealing from adverse decisions, example III)

**III BOTSWANA - Draft Groundwater Regulations**

12. (1) Within one month of a decision of the Council in relation to an application,

(a) the applicant may appeal to the Minister against the decision of the Council to reject the application, or to attach any condition to a permit;

(b) any person who has made an objection to an application under regulation 7 may appeal to the Minister against the decision of the Council to grant the application.

(2) An appeal must be lodged with the Minister and the Council.

(3) The notice of appeal must set out:

(a) the name and address of the appellant;

(b) the aspect of the decision, act or direction appealed against;

(c) the reasons for appealing;

(d) why the appellant has a particular interest in the outcome of the matter.

14 (1) Subject to the requirements of natural justice, within one month of receiving an appeal, the Minister must decide:

- (a) whether to affirm the decision of the Council;
- (b) whether to qualify the decision of the Council in any way

...

### 3.2 Format of permits

A favourable decision on a proposed borehole digging or drilling or well construction activity results in a legal instrument variably styled permit, licence or authorization - which terms can, for practical purposes, be regarded as synonyms and be collectively referred to as "permits". A permit is the instrument of the grant, and at the same time constitutes evidence of a right to carry out borehole diggings or drillings and construction of wells for groundwater exploration or extraction purposes. Standard formats of such instruments are frequently provided as "forms" in subsidiary legislation for the convenience of the government water administrators (I to IV, VII, IX and XI). One form may provide for both exploration and groundwater abstraction (II), or a groundwater exploration form may spell out whether a right to abstract the water eventually found is also included in the grant or not (III and XI). Permits spell out the terms and conditions subject to which the rights which accrue under the permit are to be exercised. The framing of such terms and conditions is typically left to the discretion of the government water administration (I to X). Subsidiary legislation, however, may provide for checklists of items for the permit-framers' consideration (V), or for standard clauses which can be either prescribed directly by the legislation for express or implied incorporation in the permit (VI, VIII and XII), or be crystallized in the permit Forms (II).

**I - SOUTH AUSTRALIA - Underground Waters Preservation Regulations, 1970**  
Schedule B - Permit - See Appendix III, page 316.

**II - WESTERN AUSTRALIA - Rights in Water and Irrigation (Construction and Alteration of Wells) Regulations, 1963**  
Form 3 - License under Section 20 - See Appendix III, page 317.

**III - JAMAICA - Underground Water Control (Licensing) Regulations, 1961**  
Form A - Licence to Drill - See Appendix III, page 318.

**IV - KENYA - Water (General) Rules**  
Form WAB 30 - Authorization to Sink a Well or Borehole - See Appendix III, page 319.

**V - PHILIPPINES - Water Rules and Regulations**

10. A. The application to appropriate ground water shall be processed for adherence to requirements and shall be investigated in the field to determine any adverse effect to public or private interest. Protests on the application shall be governed by Section 9-B hereof<sup>1</sup>. If the application meets the requirements and has been found not prejudicial to public or private interest

<sup>1</sup> See Chapter 1, sub chapter 2, Step Three - Review of applications, example 1



it shall be transmitted, following the requirements of Section 9 hereof<sup>1</sup>, to the Regional Director of the Ministry of Public Works who is hereby authorized to issue the permit to drill which shall be subject to the following conditions:

1. Drilling operations shall be in accordance with the rules provided herein;
2. The rate of water withdrawal to be approved shall be determined after pumping tests and shall in no case exceed the rate stated in the application;
3. A permit to drill shall remain valid for six (6) months, unless a longer period is allowed by the Council for reasonable grounds; and
4. The permit to drill shall be regarded as a temporary permit, and the regular permit shall be issued after the rate of water withdrawal has been determined.

...

#### **VI - PHILIPPINES - Water Rules and Regulations**

13. Water Permits issued by the Council shall be subject to such terms, restrictions and limitations as it may deem proper to impose, and to any, or all of the following conditions:

... (b) The construction of the necessary structures and diversion works shall begin within ninety (90) days from the date of receipt of the approved plans, specifications and implementing schedules and shall be completed within the approved schedule unless extended by the Council for valid or justifiable reasons: Provided, that water shall not be diverted, pumped or withdrawn until after such structures and works shall have been inspected and approved by the Council, unless otherwise allowed. Except in cases of emergency to save life or property or repairs in accordance with plans originally approved, the alteration or repair of these structures shall not be undertaken without the approval of the Council.

...

(b) Any person in control of a well shall prevent the waste of water therefrom and shall prevent water from flowing onto the surface of the land or into any surface water without being beneficially used, or into any porous stratum underneath the surface.

(c) Any person in control of a well shall prevent water containing mineral or other substances injurious to the health of humans or animals or to agriculture and vegetation from flowing onto the surface of the land or into any surface or into any other aquifer or porous stratum.

#### **VII - MALAWI - Water Regulations, 1969**

**Form WRB.4 - Grant of Water Right/Certificate of Existing Rights in Respect of Ground Water - See Appendix III, page 320.**

#### **VIII - CAYMAN ISLANDS - Water Authority Regulations, 1985**

8. A licence to abstract groundwater, other than a licence of right, shall be valid for one year from the date of the grant, and may be renewed in accordance with the provisions of regulation 5 of these regulations.

#### **IX - CAYMAN ISLANDS - Water Authority Regulations, 1985**

**Schedule 1 - Groundwater Abstraction Licence - See Appendix III, page 321.**

#### **X - BOTSWANA - Draft Groundwater Regulations**

9. ... (3) The Council may determine to grant an application in whole or in part and may attach such conditions to a permit as it sees fit. ...

#### **XI - BOTSWANA - Draft Groundwater Regulations**

**Fourth Schedule - Permit to Construct or Deepen a Private Water Borehole - See Appendix III, page 322.**

**Fifth Schedule - Permit to Construct or Deepen a Government Water Borehole - See Appendix III, page 323.**

<sup>1</sup> See Chapter I, subchapter 2, Step Three - Review of applications, example VII.

**XII - BOTSWANA - Draft Groundwater Regulations**

11. (1) In addition to any conditions attached to a permit under sub-regulation 9(3), it is a condition of every permit to construct or deepen a well that:

- (a) a public authority may enter the land on which the borehole is located and:
  - (i) inspect the borehole and take such samples or carry out such observations or tests as it sees fit;
  - (ii) give the applicant or driller such directions on behalf of the Minister as the Minister is authorised to give under section 47 of the Act;
- (b) except as provided in sub-regulation 11(3), no borehole will be constructed or deepened pursuant to the permit other than at the location specified in the permit;

...

(2) In addition to any conditions attached to a permit under sub-regulation 9(3), it is a condition of every permit to occupy a Government borehole that:

- (a) a public authority may enter the land on which the borehole is located and:
  - (i) inspect the borehole and take such samples or carry out such observations or tests as it sees fit;
  - (ii) give the applicant or driller such directions on behalf of the Minister as the Minister is authorised to give under section 47 of the Act;

...

### 3.3 General obligations of permit holders

In addition to the terms and conditions spelt out in the permit, permit holders may be subject to obligations of general import, regardless of their being recorded in the permit. Such obligations as are laid down in subsidiary legislation typically cover the conduct of digging or drilling operations, and concern such matters as the filing of regular returns and information and data (I, II, IV, V and X), the provision of notices as prescribed (III, VII and VIII), and specifications as to the construction and siting of wells (VI), and as to deadlines for completion of operations under a permit (IX).

**I - SOUTH AUSTRALIA - Underground Waters Preservation Regulations, 1970**

9. The return required by section 19 of the Act shall be in the form set out in Schedule Six hereto and shall contain all information indicated as required in the said form.

10. (1) A person engaged in operations for the drilling or construction of a well for which a permit has been issued shall keep the following records and samples and shall, within 14 days of the completion or abandonment of such work, forward the records, copies of which shall be supplied to the permit holder, and samples to the Minister, provided however, that the Minister or an authorized person may at any time inspect the records and samples or request that they be forwarded to the Minister at such other time as he may think fit:

- (a) Representative samples of not less than 1/2 lb. weight taken at each change of strata observed in the well, and in any case at intervals not exceeding 10ft. of advance of the well. Such samples to be enclosed in a suitable container, and to be clearly marked so as to identify the well and depth at which the sample was taken.
- (b) A representative sample of not less than 26fl. oz. weight of each water cut in the well preserved in a suitable bottle and clearly marked so as to identify the well and the depth at which the sample was taken.
- (c) Records showing details of:
  - (i) The depth at which water was cut and the level at which water stands below ground surface.
  - (ii) Casing inserted in the well.
  - (iii) Daily progress of drilling in each calendar week.

(iv) Construction methods used.

(2) The records required to be kept pursuant to paragraph (a) of this regulation shall be in the form set out in Schedule Seven hereto.

**Schedule Six - Permit Completion Advice - See Appendix III, page 324.**

**Schedule Seven - Weekly Record of Daily Drilling - See Appendix III, page 325.**

**II - WESTERN AUSTRALIA - Rights in Waters and Irrigation (Construction and Alteration of Wells) Regulations, 1963**

9. Every person, being the holder of a licence for the commencement, construction, enlargement, deepening or alteration of an artesian well, shall, at the expiration of each calendar month after the day of issue of the licence, until the completion of the work, and within thirty days after the completion of the work, forward to the Minister a statement regarding that well in the form of Form 4 in the schedule.

**Form 4 - Monthly or Final Statement in Respect of Artesian Wells being Constructed, Enlarged, Deepened, or Altered under License - See Appendix III, page 327.**

**III - WESTERN AUSTRALIA - Rights in Waters and Irrigation (Construction and Alteration of Wells) Regulations, 1963**

10. Every person, being the holder of a licence for the commencement, construction, enlargement, deepening or alteration of a non artesian well in a proclaimed area, shall, within thirty days after the completion of the work, forward to the Minister a statement regarding that well in the form of Form 5 in the schedule.

**Form 5 - Final Statement in Respect of Non artesian Wells being Constructed, Enlarged, Deepened, or Altered under License - See Appendix III, page 329.**

**IV - JAMAICA - Underground Water Control (Abstractions) Regulations, 1961**

3. (1) Subject to paragraph (a) of the proviso to subsection (1) of section 6 of the Act (which provides that regulations made under that section shall not apply in a case where water is abstracted by an individual for the domestic purposes of his household only) any person who abstracts water from an underground work shall keep such records as are specified in paragraph (2).

(2) The records to be kept by a person for the purpose of these Regulations shall, in respect of each underground work from which he abstracts water:

- (a) show the quantity of water abstracted each day;
- (b) if possible show as ascertained at some time in the month of March in each year:
  - (i) the rest level; and
  - (ii) the pumping level for a stated abstraction rate;
- (c) include certified copies of any chemical and bacteriological analyses of the water made on his behalf.

(3) For the purposes of this regulation:

- (a) the rest level of the water in an underground work means the water level therein when no abstraction of water is taking place, measured from a fixed point which shall be specified;
- (b) the pumping level of the water in an underground work means the water level when abstraction of water therefrom is taking place at a specified rate as measured by a method approved by the Authority;
- (c) an underground work from which water is or may be abstracted by means of pumping shall be deemed to be capable of yielding so much water a day as the pumping equipment installed in connection therewith is capable of pumping in a day as measured by a method approved by the Authority.

(4) Any record kept for the purposes of these Regulations shall be preserved for a period of five years.

4. (1) A person who is required by regulation 3 to keep the records therein mentioned shall:

- (a) in respect of each period of twelve months ending on the 31st day of March, furnish to the Authority within twenty-one days of the end of the period a return in the form shown in the First Schedule in respect of each underground work in relation to which such records are required; and
- (b) if required so to do by the Authority in writing:
  - (i) cause an analysis to be made of any water abstracted by him, in the state in which it is abstracted, and to furnish a copy of the analysis to the Authority;
  - (ii) furnish to the Authority a sample, of such quantity as the Authority may require of any water abstracted by him, in the state in which it is abstracted.

(2) An analysis for the purposes of this regulation shall be in the form set out in the Second Schedule.

**First Schedule** Annual Return - See Appendix III, page 330.

**V - PHILIPPINES - Water Rules and Regulations**

- 10. ... B. Result of Drilling Operations - A report on the result of the drilling operations shall be submitted to the investigating office within the 6-month period stated in the preceding section. The report shall include a description of each drilling site, the drilling log, the yield of the well and the assessment of data obtained.
- 15. ... In addition, in cases of appropriation of ground water the permittee shall inform the Council as to the depth and diameter of the well, the drilling log, the specifications and location of a casings, cementing, screens and perforations, and the results of tests of capacity, flow, drawdown, and shut-in pressure.

**VI - PHILIPPINES - Water Rules and Regulations**

- 43. Drilling of deep wells for the extraction of ground water shall conform with the following requirements:
  - (a) The well shall be so designed and constructed that it will seal off contaminated water-bearing formations or formations which have undesirable characteristics;
  - (b) There shall be no unsealed openings around the well which may conduct surface water or contaminated or undesirable ground water vertically to the intake portion of the well;
  - (c) All parts of a permanent well shall be of durable materials;
  - (d) Wells constructed in a sand or gravel aquifer shall be provided with a water-tight casing to a depth of 1.5 meters or more below the lowest expected pumping level, provided that where the pumping level is less than ten (10) meters from the surface, the casing shall extend three (3) meters below the lowest pumping level;
  - (e) Casings of wells constructed in sandstone aquifers where the overburden consists of unconsolidated materials shall be grouted to a minimum depth of ten (10) meters, provided, that should there be an additional overlying formation of creviced or fractured rock, the casing shall be grouted to its full depth;
  - (f) Casings of wells constructed in limestone, granite or quartzite where the overburden consists of drift materials shall be extended to a depth of at least fifteen (15) meters, and firmly seated in rock formation, provided, that where the overburden is less than fifteen (15) meters, the casing shall be extended three (3) meters into uncreviced rock, provided, finally, that in no case shall the casing be less than 15 meters;
  - (g) Wells for domestic and municipal water supply shall be constructed in accordance with sound public health engineering practice;
  - (h) The extent of pumping and extraction of ground water shall take into consideration the possibility of salt water intrusion, land subsidence and mining of ground water;
  - (i) Unless otherwise allowed by the Council, an abandoned well shall be properly plugged or sealed to prevent pollution of ground water, to conserve aquifer yield and artesian head, and to prevent poor quality water from one aquifer entering another;
  - (j) Free-flowing wells shall be provided with control valves or other similar devices to control and regulate the flow of water from such wells for conservation purposes;
  - (k) Well sites shall be provided with drainage facilities for the proper disposal/conveyance of surface water flow from the site;
  - (l) In general, spacing requirements except for wells less than 30 meters deep, shall be in accordance with the table below:

RATE OF WITHDRAWAL IN LITRES PER SECOND	MINIMUM DISTANCE BETWEEN WELLS IN METERS
2 - 10	200
More than 10 - 20	400
More than 20 - 40	800
More than 40	1000

The Council, may increase or decrease the above spacing requirements under any of the following circumstances:

- (a) for low-income housing development projects where home lot size will limit available spacing between homeowners' wells;
- (b) where the geologic formation may warrant closer or farther spacing between wells; and
- (c) where assessment of pumping test records on yields, drawdown, circle of influence, seasonal fluctuations in water table and other technical data on ground water wells, drilling and operation indicate possible closer or farther spacing between wells.

In modifying the spacing requirements the following criteria shall be applied:

- (a) No new well shall cause more than 2 meters of additional drawdown to any existing well;
- (b) If the rate of withdrawal applied for a well will cause additional drawdown of more than 2 meters to any existing well the rate of withdrawal applied for shall be reduced to satisfy the drawdown limit.
- (c) The Council shall prescribe the maximum pump size and horsepower in the water permit so that the rate of withdrawal shall not exceed that authorized;
- (d) Groundwater mining may be allowed provided that the life of the groundwater reservoir system is maintained for at least 50 years.

**VII - KENYA - Water (General) Rules**

123. The owner of a well, whether such well is constructed under permit or otherwise, shall inform the Water Apportionment Board, by letter, when such well is equipped and ready to go into service.

**VIII - CAYMAN ISLANDS - Water Authority Regulations, 1985**

8. (1) Where, in pursuance of section 14 of the Law, a ground water abstraction licence is granted subject to construction, enlargement, or alteration of works, the holder of such a licence shall notify the Authority in writing of his intention to commence the said works at least seven days prior to the intended commencement date, such a date being consistent with the period assigned in the licence for the completion of the authorized works.

...

**IX - CAYMAN ISLANDS - Water Authority Regulations, 1985**

9. ... (2) If, after commencement of the authorized works, the licence holder anticipates that he will be unable to complete the works within the period assigned to him in the licence, or upon the expiration of the assigned period without the authorised works having been completed as directed in the licence, the holder of the licence may apply in writing to the Authority for the grant of an extension of the assigned period, whereupon the Authority will exercise the powers conferred on them by sub-section (1) of section 14 of the Law.

(3) If the holder of such a licence is unable to complete the authorised works within such extended period as may have been granted by the Authority in pursuance of the last preceding sub-section, he may apply to the Authority for a second - and last - extension in pursuance of sub-section (1) of section 14 of the Law. Failure by the holder of a licence to complete the authorised works within the period so extended may result in the termination of the licence in pursuance of sub-paragraph (a) of sub-section (1) of section 21 of the Law.

**X - BOTSWANA - Draft Groundwater Regulations**

11. (1) In addition to any conditions attached to a permit under sub-regulation 9(3), it is a condition of every permit to construct or deepen a well that:

- ... (c) the holder of the permit will, at his cost:
  - (i) keep and maintain such records;
  - (ii) provide data from such record,
  - (iii) take and submit such samples to such persons, as the Director or the Director of Geological Survey may require;
- (d) the holder of the permit will, immediately upon completion of work authorised by the permit, complete and return to the director the Drilling Report and Application for a Water Right prescribed in the Ninth Schedule.

(2) In addition to any conditions attached to a permit under sub-regulation 9(3), it is a condition of every permit to occupy a Government borehole that:

- ... (b) the occupier will, at his cost:
  - (i) keep and maintain such records;
  - (ii) provide data from such records;
  - (iii) take and submit such samples to such persons, as the Director or the Director of Geological Survey may require:

...

### 3.4 Management of permits

The conceptual meaning and scope of this heading have been expounded in Chapter I on **ALLOCATING WATER FOR USE: WATER RIGHTS AND PERMITS**, sub-chapter 4. Subsidiary groundwater management legislation may provide standard formats and procedural and substantive requirements of permit management mechanisms (i.e., renewal of permits (II); and variation and termination of permits (I, II and IV).

**I - WESTERN AUSTRALIA - Rights in Water and Irrigation (Construction and Alteration of Wells) Regulations, 1963**

11. . . (2) Every application for an amended license, under the provisions of subsection (3) of section 22 of the Act, shall be accompanied by the license, a statement of the required amendments and the circumstances giving rise to that requirement.

**II - JAMAICA - Underground Water Control (Licensing) Regulations, 1961**

**Second Schedule - Form B - Licence to Increase Rate of Abstraction of Underground Water - See Appendix III, page 331.**

**III - CAYMAN ISLANDS - Water Authority Regulations, 1985**

8. A licence to abstract groundwater, other than a licence of right, shall be valid for one year from the date of the grant, and may be renewed in accordance with the provisions of regulation 5 of these regulations<sup>1</sup>.

**IV - CAYMAN ISLANDS - Water Authority Regulations, 1985**

10. (1) The holder of a licence under the Law may apply to the Authority to terminate the licence, and on such application the Authority shall terminate the licence accordingly, subject to such terms and conditions as they think fit.

...

{3} Without prejudice to the applications of regulations 8 to 9 of these regulations in relation to the termination or variation of a licence on application of the relevant holder, the Authority shall cause an entry to be made in the General Register of Groundwater Abstraction Licences in relation to any action taken in pursuance of section 20 of the Law<sup>2</sup>.

#### **4. DEALING WITH "EXISTING" WELLS**

The issue of dealing with "existing" wells is conceptually akin to the issue of dealing with "existing" water uses reviewed in Chapter I on **ALLOCATING WATER FOR USE: WATER RIGHTS AND PERMITS** - in fact, a production well can be regarded as an "existing" groundwater use. The issue of "existing" wells arises generally in connection with, and as a result of, the designation of zones or areas for the introduction of regulatory groundwater management controls and, in particular, of groundwater exploration and abstraction permits (see in this regard sub-chapter 6 herebelow). Under these circumstances, or also when permit requirements are instituted nation-wide, relief is made available to enable the continued functioning of wells in operation, under the guise of requirements that existing wells be registered or notified within a given deadline, or under the guise of the entitlement of eligible wells to the grant of a permit as a matter of right. Subsidiary legislation provides complementary procedural as well as substantive requirements in connection with registration (I) and notification requirements (II), and with the entitlement to a permit as a matter of right (III and IV).

**I - PHILIPPINES - Water Rules and Regulations**

25. It shall be registered with the Council within two years from the declaration otherwise any claim to a right on a well is considered waived and use of water therefrom shall be allowed only after a water permit is secured in accordance with Rule 1 hereof<sup>3</sup>.

**II - SOUTH AUSTRALIA - Underground Waters Preservation Regulations, 1970**

Schedule Three - Notification of an Existing Well or Bore - See Appendix III, page 332.

<sup>1</sup> See sub-chapter 4 below, example IV.

<sup>2</sup> Section 20 of the Water Authority Law, 1982 empowers the Water Authority to "terminate, vary or diminish" a groundwater abstraction licence at the request of the licensee.

<sup>3</sup> Rule 1 of the Water Rules and Regulations lists the instances under which a permit from the Government water resources administration is required.

**III - SOUTH AFRICA - Regulations in Respect of Subterranean Water Control Areas, 1963**

2. Any person who at the date of promulgation of these regulations or, as the case may be, at the

date on which these regulations become applicable to an area, abstracts or uses subterranean water from a borehole or well or natural spring situated within such area shall, within three months of the date on which these regulations are made applicable to such area, in writing, communicate to the secretary, giving:

- (i) his name, permanent address and a description indicating the name of the property, the number and date of the title deed and the extent of the land upon which the borehole or well or natural spring is situated and a plan showing their situation;
- (ii) (a) the tested yield in gallons per hour of a spring or well or borehole, which flows naturally; and  
(b) the tested maximum yield in gallons per hour, as determined by a pumping test, of a non-flowing borehole or well or a flowing borehole or well where such borehole or well has been so tested;

Provided that the dates of such tests, particulars of the pumping plant and, where the natural flow or pumped yield has been determined more than once, the relevant data for each such test shall be furnished;

- (iii) where a pumping installation has been erected over a borehole or well, the quantity of water which such installation is capable of abstracting per hour;
- (iv) the extent of land which was irrigated annually by means of water from the borehole or well or natural spring and any other purposes for which the water has been or is to be used and shall in addition, if required by the secretary, furnish any other particulars which he may specify;
- (v) the maximum quantity of water which is abstracted and beneficially used per day, per month and per year.

3. Any such person referred to in regulation 2 who is beneficially and lawfully using subterranean water from a borehole or well or natural spring shall, after the particulars mentioned in regulation 2 have been communicated to the secretary, be entitled to a permit to be issued by the Minister on such conditions as he may deem fit to impose, to enable him to continue to use the quantity of water determined by the Minister at his discretion, and specified in the permit.

**IV - CAYMAN ISLANDS - Water Authority Regulations, 1985**

3. (1) On receipt of an application for a licence of right which has been filed within the prescribed deadline the Authority shall send to the applicant an acknowledgement in writing.

(2) Within a period ending not later than six months after the coming into effect of these Regulations, the Authority shall notify the applicant in writing of the conditions subject to which they intend to grant a licence. In pursuance of sub-section (a) of section 11 of the Law, the Authority shall allow 14 days for the applicant to make representation in writing to the Authority, as to the rate and quantity of water which they intend to licence.

(3) If, at the end of the 14 day period provided for in sub-section (2), no representation has been made to the Authority, or, if a representation has been made within the fourteen day period beginning on the date of issue by the Authority of the instrument of notification, the Authority shall issue a licence of right in the form set out in Schedule 1 to these Regulations, taking due account of any representation as it considers fit and shall notify the applicant accordingly.

(4) The expressions "prescribed deadline" in sub-section (1) shall mean the 15th day of September 1983, or such later date as the Authority may determine.

4. The notice of a licence of right shall indicate the fee to be paid to the Authority, which shall be as prescribed in Schedule 2 to these Regulations. The prescribed fee shall be paid no later than fourteen days from the date of notification by the Authority of the grant of the licence, and in any case prior to the collection of the licence document from the Authority's offices.



Provided that if the prescribed fee and the prescribed surcharge have not been paid after a period of three months from the date of grant of the licence, this will be rescinded and the entitlement under section 10 of the Law will be forfeited.

5. (1) Licences of right shall be valid for a period of two years, beginning from the date of issue, and can be renewed at the discretion of the Authority upon a written request to be filed with them not later than two months prior to expiration.

Such requests shall be accompanied by the appropriate licence renewal fee prescribed in Schedule 2 to these Regulations<sup>1</sup>. Failure of the licence holder to file for the renewal of his licence within this period will result in the relevant application being entertained by the Authority as though it was an application for a new abstraction licence, or, if no application has been filed prior to the expiration date of the licence, in the termination thereof. The Authority is entitled to issue licence expiration date reminder notices to licence holders.

(2) Upon receiving an application for the renewal of a licence of right, the Authority shall notify in writing the applicant that:

- (a) the application is granted; or
- (b) the application is granted subject to the licence being varied by:
  - (i) the amendment of any one or more of the terms or conditions; or
  - (ii) the revocation of any one or more of the terms or conditions; or
  - (iii) the addition of one or more terms or conditions; or
  - (iv) a combination of two or more of the foregoing methods of variations; or
- (c) the application is refused

## 5. LICENSING OF WELL DRILLERS

As most borehole digging or drilling and well construction is done nowadays on a commercial basis, the exercise of such activity has been increasingly attracted into the scope of regulatory groundwater management legislation. This is typically exemplified by legislation subjecting commercial well digging or drilling to registration or licensing requirements. A variation of this is the provision of "stand-by" authority for the Government to introduce a drillers' licensing mechanism as and when the need for such mechanism arises (see the example given herebelow). In this connection, subsidiary legislation provides the procedural and substantive details of implementation of a registration or licensing mechanism, as illustrated by the example below.

### **BOTSWANA - Draft Groundwater Regulations**

15. (1) The Minister may require any person who undertakes the work of constructing or deepening a borehole pursuant to these regulations to be licensed under this Part.

(2) The Minister may appoint a Drillers Licensing Committee to consider applications for licences under this Part, and to grant, suspend or revoke such licences, on such conditions and in such manner as the Minister may prescribe.

(3) Without limiting sub-regulation 13(2), the Minister may prescribe:

- (a) different classes of licences to be issued under this Part;
- (b) the qualifications to be possessed by any person licensed under this Part;
- (c) the period of any licence granted under this Part;
- (d) the conditions to be attached to any licence granted under this Part;

- (e) examinations to be undertaken by applicants for licences under this Part;
- (f) fees for the issuing or renewal of licences under this Part;
- (g) the circumstances in which licences granted under this Part may be cancelled or suspended;
- (h) the procedures and policies to be adopted by a Drillers Licensing Committee.

## 5.1 Granting of licences or registering as a well driller

In step-wise fashion, the following aspects of the well drillers' licensing or registration process are typically provided for by subsidiary groundwater management legislation:

### Step One - Applying to be registered as a driller or for a driller's licence

Formats for registration or licence applications are usually standardized and appended as "forms" to subsidiary legislation for the convenience of prospective applicants. Available Forms of varying complexity centre on the applicant's record of past experience as a driller and on the kind of equipment in use (I to III). Minimum pre-requisites which applicants must meet may be also be prescribed by subsidiary legislation (IV).

#### I - AUSTRALIA - NORTHERN TERRITORY - Control of Waters Regulations

Third Schedule - Application to be Registered as a Driller - See Appendix III, page 334.

#### II - SOUTH AUSTRALIA - Underground Waters Preservation Regulations, 1970

Schedule Eight - Application for Well Driller's Licence - See Appendix III, page 335.

#### III - KENYA - Water (General) Rules

Form WAB 92 - Application for Borehole Contractor's Licence - See Appendix III, page 337.

#### IV - PHILIPPINES - Water Rules and Regulations

41. No person shall be permitted to undertake well drilling work unless he is duly registered with the Council as a well driller. No person shall be registered by the Council as a well driller unless he has at least any of the following qualifications:

- (a) Graduation from high school with three (3) years experience in well drilling work duly certified by another well driller registered with the Council; or
- (b) A holder of a bachelor's degree in geology or engineering with one (1) year experience in actual drilling work.

### Step Two - Review of applications

The review process of applications centres on the applicant's professional competency, and special examination requirements may be prescribed (I) or simply called for (II) in this regard.

**I - SOUTH AUSTRALIA - Underground Waters Preservation Regulations, 1970**

14. (1) The Well Driller's Examination Committee shall cause examinations for a well driller's licence to be held from time to time and may require an applicant for a Well Drillers' Licence to undertake such examination as the committee may think fit.

(2) The subjects of examination shall comprise.

- la) Drilling.
- lb) Casing.
- lc) Cementing.
- ld) Screens and packers.
- le) Development.
- ll) Pumps.
- lg) Safety.
- lh) Underground Waters Preservation Act, 1969.
- li) These regulations.
- lj) Such other subjects as the Well Driller's Examination Committee may from time to time deem necessary.

15. The Well Driller's Examination Committee may exempt any applicant for a well driller's licence from the obligation to pass any examination as aforementioned if the applicant satisfies the committee that he is sufficiently qualified in the subject of the examination.

**II - BOTSWANA - Draft Groundwater Regulations**

15. ... (3) Without limiting sub regulation 13(2), the Minister may prescribe:

- ... le) examinations to be undertaken by applicants for licences under this Part;

...

### Step Three - Formatting of licences

Standard "Forms" of driller's licences can be provided by subsidiary legislation for the convenience of government administrators (II and III). Terms and conditions usually qualify the rights accruing under the licence. Relevant determinations are left to the discretion of the licensing government authority, subject sometimes to standard specifications laid down in subsidiary legislation (I).

**I - SOUTH AUSTRALIA - Underground Waters Preservation Regulations, 1970**

13. A Well Driller's Licence issued pursuant to Part IV of the Act shall contain conditions:

- la) specifying the area or areas in which the licensee may operate;
- lb) setting out the types of drilling equipment which may be operated by the licensee in such areas;
- lc) stipulating the types of wells on which the licensee may work in such areas;

and shall be in the form set out in Schedule Nine hereto.

**II - SOUTH AUSTRALIA - Underground Waters Preservation Regulations, 1970**

**Schedule Nine - Well Driller's Licence - See Appendix III, page 33B.**

**III - CAYMAN ISLANDS - Water Authority Regulations, 1985**

**Schedule 1 - Well Driller's Licence - See Appendix III, page 33B.**

## Step Four - Recording of licences

Prescriptions of subsidiary legislation in this regard may concern the duty of government administrators to record well driller's licences and action taken on them after their grant, and to form and maintain permanent records of such licences, styled "registers". Provisions on the contents of, and access to, such registers may complement the above-mentioned obligations.

### CAYMAN ISLANDS - Water Authority Regulations, 1985

28. ... (3) Upon satisfactory evidence of the applicant's qualifications supplied with an application, the Authority shall grant a licence, and shall cause an entry to that effect to be made in the General Register of the Water Operators' Licences.

...

(B) The Authority shall cause an entry to be made in the General Register of Water Operators' Licences in relation to any action taken in pursuance of section 40 of the Law<sup>1</sup>.

31. (1) The Authority shall keep, in such manner as they deem fit, a General Register of Water

Operator's Licences, which shall contain a copy of all licences granted in pursuance of this Part of the regulations, and information concerning any action taken by the Authority in relation to such licences after the grant thereof.

(2) The public shall have access to this register, and extracts thereof shall be obtainable from the Authority, in accordance with sub-section (2) of regulation 12 of these regulations<sup>2</sup>.

## 5.2 Management of licences

The meaning and scope of the concept of "management" of permits in general has been illustrated in Chapter I on **ALLOCATING WATER FOR USE; WATER RIGHTS AND PERMITS**, sub-chapter 4. It is standard practice reflected in principal legislation to provide for the renewal, suspension or cancellation of a well driller's licence (or registration) under given circumstances. Subordinate legislation may provide complementary procedural and substantive details of implementation, as illustrated by the example below.

### CAYMAN ISLANDS - Water Authority Regulations, 1985

28. ... (5) Licences granted under this Part of the regulations shall be valid for a period of one year from the date of the grant, and can be renewed in accordance with regulation 5 of these regulations<sup>3</sup>, subject to payment of the appropriate fee as prescribed in Schedule 2 to these regulations<sup>4</sup>.

<sup>1</sup> Concerning revocation of a well driller's licence.

<sup>2</sup> See sub-chapter 3.1 above, Step Four - Recording of decisions and permits, example II.

<sup>3</sup> See sub-chapter 4 above, example IV.

<sup>4</sup> Omitted.

(E) Where the Authority intend to take action in pursuance of section 40 of the Law<sup>1</sup>, they shall serve on the holder of a licence notice in writing calling upon him to show cause why his licence should not be revoked. If within 14 days from the date the notice was served, the holder of the licence fails to submit to the Authority a statement in writing indicating the reasons why the licence should not be revoked, or fails to appear before the Director of the Authority within the said period, the licence shall be revoked forthwith. The Authority shall consider any written or oral statement submitted to them in pursuance of this sub-section, and may thereafter by notice in writing addressed to the holder of the licence:

- (a) declare the licence revoked, or
- (b) declare the licence unchanged.

### 5.3 General obligations of licence (or registration) holders

In addition to being subject to the terms and conditions spelt out in the licence, licence holders (or registered drillers) are subject to such obligations of general applicability as may be laid down in principal legislation and further detailed in subordinate legislation. Such obligations generally concern the duty of licence or registration holders to keep records of well digging or drilling operations for which their services have been engaged, as illustrated in the examples below.

#### I - AUSTRALIA - NORTHERN TERRITORY - Control of Waters Regulations

8. (1) The holder of a certificate of registration as a driller shall comply with the requirements of sub-section (1) of section sixteen H of the Ordinance by supplying to the Director of Water Resources, Darwin:

- (a) a written statement in accordance with the Fourth Schedule;
- (b) a sample of not less than four ounces in weight of each stratum encountered during the drilling; and
- (c) a sample of not less than twenty-six fluid ounces of each water supply encountered during the drilling.

(2) All samples required to be supplied under the last preceding sub-regulation shall be clearly labelled with:

- (a) the depth from which the sample was obtained;
- (b) the name of the driller;
- (c) the name of the property on which the bore was drilled; and
- (d) the name or number of the bore, or if the bore has no name or number, such other information as is sufficient to identify the bore.

Fourth Schedule - Final Statement of Bore - See Appendix III, page 340.

#### II - CAYMAN ISLANDS - Water Authority Regulations, 1985

40. (1) In pursuance of sub-paragraph (b) of sub-section (1) of section 41 of the Law, a duly licenced well driller who is engaged in the drilling of a well shall, not later than one month after the completion of any well, forward to the Authority a progress statement of such well and works in, or substantially in, the form issued by and obtainable from the Authority.

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<sup>1</sup> Concerning revocation of a well driller's licence

## 6. ZONING OF GROUNDWATER AREAS

General water resources legislation or specific groundwater management legislation may provide a zoning mechanism for the protection of groundwater resources from overexploitation and depletion, and from pollution. Zoning in connection with the latter is dealt with in Chapter II on **PREVENTION AND CONTROL OF WATER POLLUTION**, sub-chapter 4. Also, zoning in connection, in particular, with the protection of the sources of public water supplies - including groundwater sources - is dealt with in Chapter V on **PROVISION OF WATER SUPPLIES TO THE PUBLIC**, sub-chapter 9. As a result, this Chapter will focus on zoning mechanisms for the protection of groundwater resources in general from overexploitation and depletion. In the essence, zoning in this particular connection results in a number of regulatory restrictions to the digging or drilling of wells and pumping of groundwater. Subordinate legislation spells out the nature and extent of prescribed restrictions, and provides the procedural and substantive details of attendant requirements, as illustrated in the example III given in sub-chapter 4.

## 7. ARTIFICIAL RECHARGE OF GROUNDWATER SUPPLIES

The artificial recharge of groundwater supplies may be regulated through a permit mechanism akin in form and substance to the permit mechanism for groundwater exploration and abstraction reviewed in sub-chapter 2 above. Subsidiary legislation however may add further procedural specifications tailored to the particular nature of the activity involved, as illustrated in the example below.

### PHILIPPINES - Water Rules and Regulations.

1. ... In the following instances the granting of permit/authority required under the provisions of P.D. 1067, is delegated by the Council to the corresponding agencies indicated and permit/authority pertaining to any of these instances shall be secured from the agency delegated:  
... (c) Recharging ground water supplies - National Pollution Control Commission.  
Whenever necessary the Council may exercise any of the above delegated authorities.

## 8. ENSURING COMPLIANCE WITH THE LAW

Holders of permits to dig or drill a borehole or to construct a well to search for or extract groundwater, and holders of a well driller's licence or registration are subject to obligations stemming from the permit, licence or registration, and to obligations of general import laid down in the legislation. The general public is also subject to the fundamental obligation to refrain from undertaking digging or drilling and well construction activities unless a permit is first obtained from the responsible government department or agency. It is standard practice for legislation to deter non-compliance with these various obligations by declaring violations an offence, and subjecting these to penalties ranging from fines to imprisonment. The role of subsidiary legislation in this regard is generally one of spelling out which violation attracts what kind and level of penalty. Offences and penalties can be directed at generic violations (I and VI), or be fine-tuned to address specific instances of misbehaviour

(II and III). Permit or licence holders may be also penalized by having their permit or licence suspended or cancelled (VIII). In addition, an unlawful well may be ordered plugged or sealed (IV). Subordinate legislation may also recite certain law enforcement powers - typically, in connection with groundwater resources management, to enter and inspect private property, to take samples and to examine records which are required by law to be kept (V and VII).

**I - SOUTH AUSTRALIA - Underground Waters Preservation Regulations, 1970**

19. Any person contravening or failing to comply with any of the provisions of these regulations shall be guilty of an offence and shall be liable, on summary conviction, to a fine not exceeding \$100.

**II - JAMAICA - Underground Water Control (Abstractions) Regulations, 1961**

5. Any person who contravenes regulation 3 or 4 shall be guilty of an offence and liable on summary conviction before a Resident Magistrate to a fine not exceeding one hundred dollars or to imprisonment with or without hard labour for a term not exceeding three months.

**III - PHILIPPINES - Water Rules and Regulations**

77. A fine of not more than Two Hundred (P200.00) Pesos and/or suspension of the permit/grant for a period of not more than sixty (60) days shall be imposed for any of the following violations:

- ... (b) unauthorized utilization of an existing well or ponding or spreading of water for recharging subterranean or ground water supplies;
- (c) appropriation of subterranean or ground water for domestic use by an overlying landowner without the registration when required by the Council;

...

79. A fine of more than Five Hundred (P500.00) Pesos but not exceeding One Thousand (P1,000) Pesos and/or revocation of the water permit/grant of any other right to the use of water shall be imposed for any of the following violations:

- (a) drilling of a well without permit or with expired permit;

...

**IV - PHILIPPINES - Water Rules and Regulations**

82. In cases where the violator is not a permittee or grantee or has no right to use the water whatsoever, the Council through its deputies or authorized representatives shall cause the stoppage of the use of the water either by plugging or sealing of the well if the same involves ground water appropriation or demolition of the dam or hydraulic structures if the same involves surface water, without prejudice to the institution of a criminal/civil action as the facts and circumstances may warrant.

**V - WESTERN AUSTRALIA - Rights in Water and Irrigation (Construction and Alteration of Wells) Regulations, 1963**

12. (1) Every well, channel, ditch, flume or other work constructed under the authority of the Act and every regulator or meter used in connection therewith may, at all reasonable times, be inspected by an officer appointed by the Minister for that purpose.

(2) Every person who obstructs or impedes, or interferes with, an officer exercising or attempting to exercise the powers conferred by this regulation commits an offence.

**VI - WESTERN AUSTRALIA - Rights in Water and Irrigation (Construction and Alteration of Wells) Regulations, 1963**

13. Every person committing an offence against these regulations is liable to a penalty of twenty pounds.

**VII - BOTSWANA - Draft Groundwater Regulations**

12. (1) In addition to any conditions attached to a permit under sub-regulation 9(3), it is a condition of every permit to construct or deepen a well that:

- (a) a public authority may enter the land on which the borehole is located and:
  - (i) inspect the borehole and take such samples or carry out such observations or tests as it sees fit;
  - (ii) give the applicant or driller such directions on behalf of the Minister as the Minister is authorised to give under section 47 of the Act;

...

(2) In addition to any conditions attached to a permit under sub-regulation 8(3), it is a condition of every permit to occupy a Government borehole that:

- (a) a public authority may enter the land on which the borehole is located and:
  - (i) inspect the borehole and take such samples or carry out such observations or tests as it sees fit;
  - (ii) give the occupier such directions on behalf of the Minister as the Minister is authorised to give under section 47 of the Act;

...

**VIII - BOTSWANA - Draft Groundwater Regulations**

11 (4) If, in the opinion of the Director or an authorised officer, any condition attached to a permit is not being observed, the Director or authorised officer may direct that any work on a borehole be suspended.

(5) A person must not carry out work on a borehole or cause any other person to carry out work on a borehole while work on a borehole has been suspended pursuant to sub-regulation 11(4).





## CHAPTER IV

### WATER RESOURCES DEVELOPMENT

#### See also:

**ALLOCATING WATER FOR USE: WATER RIGHTS AND PERMITS (CHAPTER I)  
GROUNDWATER DEVELOPMENT AND CONSERVATION (CHAPTER III)  
IRRIGATION WATER DEVELOPMENT AND USERS' GROUPS (CHAPTER VI)**

#### **I. INTRODUCTION**

As used in this Chapter, the concept of water resource development has regard to (a) structural works intended generally to harness the potential of a natural body of surface water for beneficial uses, and to bestow additional benefits in terms primarily of flood damage prevention; and (b) the reclamation and drainage of naturally occurring swamps and marshlands. Projects for the development of underground water resources fall within the scope of Chapter III on **GROUNDWATER DEVELOPMENT AND CONSERVATION**.

Structural water development works range in typology from a simple weir or sluice placed on a river to divert water from it onto adjoining land to dams or other water retention or "impoundment" works, alone or in association with other "ancillary" works - first and foremost, irrigation canal networks and companion facilities (legislation concerning in particular the protection, operation and maintenance of irrigation works is separately presented in Chapter VI on **IRRIGATION WATER DEVELOPMENT AND USERS' GROUPS**). In view of the significance of the public health and safety aspects associated in particular with dam construction, operation and maintenance, and in view also of the significance of dams and other major water development structures to economic and social development and to the environment, relevant construction, operation and maintenance have long attracted the attention of lawmakers and have been subjected to regulatory controls. In particular, insofar as they are functionally associated with a beneficial use of the water resources they tap, structural water development works can be directly instrumental in operationalizing water utilization permits and water rights under them. Requirements specifically pertaining to such works may thus be found in general water utilization permit legislation, and operate in context with the process of granting such permit. Otherwise, regulatory control of dam and other waterworks construction is effected through independent permit or comparable project screening mechanisms. This Chapter will focus on requirements of an administrative nature, the technical standards and specifications of dam construction, operation and maintenance such as are found in Codes of engineering practice being outside the scope of this book. A related aspect of water resources development is the pooling of the resources - financial and otherwise - of concerned individuals in the form of water users' groups with a view to constructing, operating and maintaining surface water development works, most notably, irrigation development works. This particular aspect of the topic of this Chapter is presented in Chapter VI on **IRRIGATION WATER DEVELOPMENT AND USERS' GROUPS**, sub-chapter 4 on **Water Users' Groups**.

Swamps and marshlands, and, generally, naturally occurring collections of stagnant water can be the source of nuisances primarily as breeding grounds of water-borne vectors of diseases - malaria-bearing mosquitoes being the classic example. On the other hand, such "harmful" view of these particular collections of water is mirrored by the wildlife-supporting function of wetlands, which is beneficial to the environment in general and to man. Reclaiming and draining swamps and marshlands may bring in benefits in terms of increased availability of land and water resources for development, and abatement of the nuisances above-mentioned. On the other hand, it may be in conflict with the conservation values underlying a wetland's wildlife habitat function. In response to the potentially controversial nature of swamp and marshland drainage and reclamation projects, these tend to come within the scope of regulatory legislation for the vetting of the project, independent of a water use permit. If use of post-reclamation water is contemplated, separate water use permit requirements may have to be met.

## **2. GOVERNMENTAL CONTROL OF WATER DEVELOPMENT WORKS AND STRUCTURES**

Subsidiary legislation may lay down substantive criteria for project formulation (XIII), or formal permit requirements for pre-construction appraisal and approval of a proposed project (VIII).

At the **planning and design** stage of dam construction, a maximum amount of specific and detailed information is generally required of the project proponents so as to assist the government department or agency responsible for the granting of the necessary water use permit or separate dam construction permit in deciding whether a permit should be granted and the project should go ahead, or not. Requirements to this effect appear in standard form in the Application Forms of water permits (I, III, V), or are prescribed directly by the legislation (II, IX and XIV).

Administrative requirements of construction of an approved project may concern, inter alia, the timely implementation of the project (X).

**Operation and maintenance** of water retention structures are the subject of detailed and project-specific prescriptions negotiated by the parties to the relevant water utilization or separate dam construction permit and incorporated in the terms and conditions of the permit. In addition, prescriptions of general import can be laid down in this particular regard directly by subsidiary legislation, for compliance by operators of all or any given class of water retention works. Such prescriptions may concern the use of stored water (VI), reservoir operating rules (XI), the safety of dams (XII and VII), and the free movement of fish upriver and downriver (IV).

**I - MALAWI - Water Regulations, 1959**

Form WRB.1 - Application for a Grant of Water Rights:Certificate of Existing Water Rights  
Schedule F - See Appendix IV, page 345.

**II - UNITED KINGDOM - Water Resources (Licences) Regulations, 1965**

B. 11) The matters required to be shown on the map accompanying an application for a licence under section 36 of the Act to obstruct or impede the flow of an inland water by means of impounding works are:

- (a) The location of the impounding works to which the application relates and, in the case of any proposed alteration of existing works, the site of the proposed alteration;
- (b) if any land is proposed to be submerged, all such land,
- (c) if any points, being either control points or points at which water will be discharged into the same or another inland water, and required to be specified in the application, every such point with a reference number.

...

**III - UNITED KINGDOM - Water Resources (Licences) Regulations, 1965**

Model Form 3 - Application for a Licence under Section 36 to Obstruct or Impede the Flow of an Inland Water by Means of Impounding Works - See Appendix IV, page 347

**IV - KENYA - Water (General) Rules**

98. Where, in the opinion of the Water Apportionment Board, after consultation with the Fish Warden, it is necessary for the free movement of fish up-stream or down-stream of any dam or weir on any body of water, the Water Apportionment Board may order that an operator shall provide in such dam or weir a fish pass, fish ladder or other structure, approved by the Water Apportionment Board, whereby fish may move freely up or down such body of water;

Provided that within thirty days of the service of such order it may be appealed against to the Water Resources Authority, who shall have the power to confirm, vary or cancel such order.

**V - KENYA - Water (General) Rules**

Form W.A.B. 25 - Application for a Permit to Construct a Dam or Dams on Watercourse having no Normal Flow - See Appendix IV, page 349.

**VI - KENYA - Water (General) Rules**

84. The right to store water shall be subject to prior right to its uninterrupted flow for so much as is required for actual and beneficial use, and to the obligations imposed by the Ordinance, and the Water Apportionment Board may require an operator to store water at certain periods of the year.

85. (1) An operator who has a licence, sanction or permit to store or impound water in any body of water may, with the approval of the chairman, turn the water so stored into a natural watercourse, and may, subject to the water so stored being appurtenant to the land upon which it is to be utilized, and subject to the conditions of his licence, sanction or permit authorizing the diversion or abstraction hereinafterwards mentioned, at a point down-stream of the point of storage, divert or abstract from the body of water into which the stored water is turned the quantity of water so turned, subject to such deductions for evaporation and seepage as the chairman may, from time to time, order.

(2) Such operator, before turning water into a natural watercourse as aforesaid, shall give to the water bailiff and to all persons entitled to use water from any part of the body of water between the point of release of the stored water and the points of utilization of the said water such notice of the use of the body of water for the purpose aforesaid and such particulars regarding the time during which it will be turned into the body of water, the rate of discharge of the store water and other matters as the Water Apportionment Board may, from time to time, require.

(3) No operator, other than the operator who releases the stored water as aforesaid, shall divert or abstract any proportion of the flow of the body of water due to the water so released, nor shall any operator impound or store, except to such an extent as may be imposed upon him by the maximum capacity of his works for discharging the flow of the body of water through or around his works which abstract the flow of the water, any proportion of the flow of the body of water due to the water so released.

**VII - KENYA - Water (General) Rules**

86. An operator storing or arresting the flow of water by means of a dam or weir located on a body of water or watercourse shall, unless otherwise decided by the Water Apportionment Board, provide, at a depth measured from the top of the dam or weir and to be specified by the Water Apportionment Board in each particular case, an outlet, controlled by a valve, sluice gate or other device, which shall be capable of being operated at all stages of the flow of the body of water or watercourse so that the normal flow of such body of water or watercourse can be passed through or around such dam or weir at all stages:

Provided that where the normal flow of the body of water or watercourse is automatically by-passed around the reservoir, without any storage or arresting the flow of the water being effected, no such outlet works need be constructed.

**VIII - PHILIPPINES - Water Rules and Regulations**

29. A permit/authority shall be secured from the Minister of Public Works in the following instances:

- (a) Construction of dams, bridges and other structures in navigable or floatable waterways;

...

**IX - PHILIPPINES - Water Rules and Regulations**

31. All applications shall be filed in a prescribed form sworn to by the applicant and supported by the following:

... D. For Construction of Dams, Bridges, and Other Structures in Navigable or Floatable Waterways

- 1) Vicinity map and location plan showing the river and the proposed structure;
- 2) Cross-section of the structure with cross section of the river at the location of the structure showing minimum water level, maximum flood level without structure, and maximum flood level with structure;
- 3) Plan showing extent of maximum flooded area without structure and maximum flooded area with structure;
- 4) Schemes and details of provisions for passage of watercraft;
- 5) Construction schedule; and
- 6) Articles of Incorporation or Articles of Partnership in case applicant is a private corporation or partnership, or Certificate of Registration in case of cooperatives.

32. The Public Works District Engineer shall investigate each application filed with this Office and, if necessary, conduct public hearing thereon. He shall transmit his report and recommendation to the Public Works Regional Director who, after proper review, shall transmit the application with its supporting documents and his recommendations to the Minister of Public Works, for appropriate action

**X - PHILIPPINES - Water Rules and Regulations**

34. The construction of private flood control works and dams, bridges and other structures in navigable rivers or streams shall be undertaken within the approved construction schedule; otherwise, the permit shall automatically be cancelled unless a longer period is allowed.

...

**XI - PHILIPPINES - Water Rules and Regulations**

39. Owners or persons in control of a reservoir shall submit to the Council the reservoir operation rule curve for approval which shall be followed except during periods of extreme drought and when public interest so requires wherein the Council may change the operation during the period after due notice and hearing.

The Council shall review periodically the rule curve for possible revisions.

A rule curve is a diagram showing the minimum water level requirement in the reservoir at a specific time to meet the particular needs for which the reservoir is designed.

Furthermore anyone who operates a reservoir shall submit to the Council his plan for handling maximum discharges with a view to avoiding damage to life and property.

**XII - PHILIPPINES - Water Rules and Regulations**

40. All operators of storage dams exceeding 10 meters high or overflow dams exceeding 2 meters high from the stream bed shall make arrangements for the periodic inspection of said structures and its operating equipment by a registered civil engineer for the purpose of identifying conditions which may adversely affect the safety of these structures and giving advise to the operator on the proper maintenance and operation thereof.

**XIII - PHILIPPINES - Water Rules and Regulations**

48. As a general rule, a water resources project/program may be implemented only if it is in accordance with the national socio-economic development goals and objectives or necessary for the national security or protection of life and property. Any project/program involving the appropriation of water shall be directed towards the optimum single and/or multi-purpose utilization thereof. Whenever practicable, projects shall be conceived and viewed according to multi-purpose water resource planning concepts within the area unit of a river basin. In the case of small scale water development projects not readily covered by large-scale water development projects, development planning of the latter shall proceed alongside the implementation of the former.

49. The size and time phase of projects/programs shall satisfy appropriate socio-economic indicators, more particularly the benefit-cost and/or cost-effectiveness criteria, their supplementary and complementary roles to the projects program of other government sectoral plans, and their ecological effects.

50. Government water resources and related projects/programs shall be submitted by the proponent agencies to the Council, which may, if necessary, refer the matter to the proper deputies or concerned agencies for evaluation and comment in accordance with the above guidelines before approving the same.

51. Any private interested party may propose any water resources project through the appropriate agencies and/or deputies who shall forward the same to the Council after evaluating and commenting with respect to the above guidelines. The Council, before approving the project, may, if necessary, refer or consult with other appropriate deputies and/or concerned government agencies.

52. Project/Program proposals shall contain indicators of socio-economic justification, relationship to the National Development Plan, impact statement on the sector's project/program supports and complement, regional impact statement, environmental impact statement, and such other information as the Council may require. Projects, such as artesian wells, spring development and barangay waterworks for purely domestic and municipal use, and such other small-scale projects as the Council may determine, shall be exempted from this requirement.

53. Any conflict involving the use of water that may arise from the project/program proposal shall be resolved on the basis of national/regional priority and needs, i.e., need for power generation in multi-purpose project shall be reckoned on the quantity and time of such needs on a grid basis rather than on a single project basis alone.

Any conflict which adversely affects a particular segment of society, group of individuals or small community, may be resolved after a public hearing has been conducted by the Council or its proper deputies.

**XIV - KENYA - Water (General) Rules**

39. (1) Where the maximum depth of water impounded by the dam or weir measured from stream bed level (or ground level where no stream exists) to spillway crest level is not more than 16 feet, there shall be submitted the following plans of the dam or weir when required by the Water Apportionment Board:

- (a) a sketch longitudinal section on the centre line of the dam showing -
  - (i) the existing ground level;
  - (ii) the crest of the dam; and
  - (iii) the position of the spillways, sluiceways, sluice pipes or other outlet works, if any;
- (b) sketch-dimensioned cross-sections of the dam, showing -
  - (i) the nature of the foundation and the stream bed;
  - (ii) the materials of which the dam is to be constructed;
  - (iii) the level of the invert and details of the outlet works, if any;
  - (iv) the level of the existing river bed.

- (v) the full supply level;
  - (vi) the high flood level;
  - (vii) the maximum height of the dam above lowest foundation level; and
  - (viii) in the case of earth dams, the details of the core walls, if any, and of the precautions to be taken to prevent the erosion of the bank by wave action;
- (c) any plan showing the levels of head water and tail water and any details of any works up-stream or down stream of the proposed works which would be affected by the head and tail waters of the proposed works.

(2) In each such plan levels shall be referred to a datum line to be shown thereon.

40. Where the maximum depth of water impounded by the dam or weir measured from stream bed level (or ground level where no stream exists) to spillway sill level is more than 16 feet, the plans of the dam or weir shall, unless the Water Apportionment Board decides otherwise, include:

- (a) accurate longitudinal and cross sections, on which, in addition to the information specified in rule 39 of these Rules, there shall be shown a graphical log, properly located thereon, of such boring, test pit or other exploration as may have been made, together with a brief description of the character and dip of the underlying material and, if possible, the position of the solid rock line;
- (b) longitudinal sections along the waste weir channel or spillway from the point of ingress to the point of egress, showing the nature of the materials through which it will be constructed, the existing ground line, the proposed bed level and the position of all features such as cut-off, curtain walls, spillway, control gates and the like;
- (c) type cross-sections of the waste weir channels, on which shall be marked the calculated velocity of the water and the full supply depth and the discharge capacity of the channel at full supply depth, and the nature of the materials in which it will be constructed;
- (d) full details of the outlet works;
- (e) such stress diagrams and calculations as the Water Apportionment Board may require;
- (f) an estimate of the maximum flood flow expected at the dam and the capacities of the spillways at high flood levels;
- (g) the levels of head and tail waters and details of any works up-stream or down-stream of the proposed works which might be affected by the head and tail waters of the proposed works; and
- (h) a datum line, to which all levels be prepared.

41. In addition to the plans required for the dam, weir or other structure for raising the level of the water, the following plans shall be furnished, when so required by the Water Apportionment Board in the case of works involving storage:

- (a) when the volume of the impounded water at full supply level will not exceed 100 acre-feet, a plan to a scale of not less than 1 inch to 500 feet, showing:
  - (i) the approximate position of the contour at full supply level and at estimated maximum high flood level;
  - (ii) the approximate capacity in acre-feet and the area in acres of the reservoir at full supply level;
  - (iii) the area on each farm or other piece of land which will be affected at high flood level; and
  - (iv) the nature of the material forming the bed and sides of the reservoir (for example, "porous soil", "volcanic ash", "clay" and so on);
- (b) when the volume of the impounded water at full supply level will be greater than 100 acre-feet, a contour plan, prepared by a qualified engineer, of the reservoir site, to a scale of not less than 1 inch to 500 feet, showing:
  - (i) such contours as the Water Apportionment Board may require;
  - (ii) the original high and low water levels of the water surface;
  - (iii) the proposed high and low water levels of the water surface, which levels shall be shown by a green line;
  - (iv) the area on each holding which will be submerged at the proposed maximum high flood level;
  - (v) the nature of the material forming the bed of the reservoir; and
  - (vi) a table showing the capacities at each contour interval at the full supply level and the high flood level; and the capacities shall be stated in units of acre-feet.

### 3. DRAINAGE AND RECLAMATION OF SWAMPS AND MARSHLANDS

Projects for the drainage and reclamation of swamps and marshes may come within the purview of permit requirements of general applicability to a spectrum of water utilizations and water development projects. More specific permit requirements focus on information to be provided concerning the proposed project (I, II), and on technical specifications of design and construction to be met, protection of water rights in the swamp to be drained, effect of drainage on boundaries between landholdings demarcated by streams which have either been dried up or which have changed their course, and on separate permit requirements for the use of water developed as a result of a swamp reclamation project (III).

#### I - PHILIPPINES - Water Rules and Regulations

4. All applications shall be filed in the prescribed form, sworn to by the applicant and supported by the following:

##### E. For a Permit for Drainage Purposes:

1. Brief description of project for which drainage scheme is necessary;
2. Location and layout maps of drainage works showing area to be drained, route of drainage canal and drainage outlet which should be a natural body of water or a natural waterway;
3. Articles of Incorporation or Articles of Partnership in case applicant is a private corporation or partnership, or Certificate of Registration in case of cooperatives.

#### II - KENYA - Water (General) Rules

47. If a permit is required involving reclamation and drainage, there shall be submitted, when so required by the Water Apportionment Board, in addition to the general map required by rule 51 of these Rules:

(a) a detail plan, showing the present area flooded or waterlogged, and the area proposed to be unwatered or reclaimed;

(b) detail plans of the proposed works for lowering the level of the water, showing how the water will be carried away and where it will be discharged.

51. Every application for a permit to drain or reclaim a swamp shall be in form No. W.A.B.5 in the Second Schedule to these Rules, and shall be accompanied by a general map, drawn in Indian ink or by means of other indelible process acceptable to the Water Apportionment Board on tracing cloth or other substantial material to such a scale as will allow all requisite details to be legibly recorded, signed and dated by the applicant, showing the boundaries of the swamp, the position of the body of water it is proposed to drain and the position of any dams, weirs, canals, channels, watercourses, bodies of water, flames, wells, surface drains, subsoil drains or other works and lands, if any, which may be affected, the names of the land-holders and the land registration numbers and boundaries of the farms affected by the proposed works.

Form W.A.B. 5 - Application for a Water Permit for the Drainage and Reclamation of a Swamp - See Appendix IV, page 352.

#### III - KENYA - Water (General) Rules

52. (1) Whenever any proposal for the drainage and reclamation of a swamp involves the subsequent use by the applicant of all or any of the water conserved by the drainage or reclamation of such swamp, the applicant shall submit an application for a permit for the diversion, abstraction, storage or use of such water, and shall show, if possible, by gauging the flow of the stream at suitable points the expected conservation of water due to such drainage or reclamation.

(2) All gaugings for this purpose shall, where conveniently possible, be made by means of a gauging weir or current meter.

53. Whenever a canal is used for the purpose of passing any water around or through a swamp, the bed of such canal shall be graded to the satisfaction of the Water Apportionment Board, and the side slopes thereof shall be constructed so that no sloughing of the banks occurs.

54. (1) No works involving the drainage of a swamp shall deprive of reasonable access to water any landholder with a licence, sanction or permit relating to such body of water except by



agreement or on payment of compensation, or on supplying water from other sources or by other means, and the applicant concerned shall submit to the Water Apportionment Board all plans and documents showing his proposals to provide such landholder with access to water, and any agreements to this effect, and he shall, if his proposals include any works for supplying such landholder with water, submit an application for a permit.

{2} Any question as to whether such access, compensation or supply is reasonable shall be decided by the Water Apportionment Board.

55. (1) If, owing to any works being constructed for the drainage or reclamation of a swamp, a body of water which constitutes the boundary of two or more properties ceases to flow between or to separate such properties or is diverted into a new course, the boundaries of such properties shall, unless readjusted by mutual agreement between the parties concerned, remain as before.

{2} When such body of water is diverted into a new course the Water Apportionment Board may, under section 31 of the Act, declare the new course to be a watercourse, and may require the original course to be retained as a flood channel.

## CHAPTER V

### PROVISION OF WATER SUPPLIES TO THE PUBLIC

#### See also:

**ALLOCATING WATER FOR USE: WATER RIGHTS AND PERMITS (CHAPTER I)**  
**PREVENTION AND CONTROL OF WATER POLLUTION (CHAPTER II)**

#### **1. INTRODUCTION**

Although by no means representative of the status quo in all parts of the world, water tends to be supplied to the public in urban and rural communities via reticulation systems reaching to house connections or group distribution points - notably, public standposts or standpipes. The provision of a reliable supply of wholesome water is nowadays viewed as a direct function of government or, subordinately, as a service which, in view of its being instrumental to the satisfaction of essential social needs, comes within the scope of governmental regulatory authority. While catering primarily for such basic needs as drinking and other household purposes, water supplied via reticulation systems - also commonly referred to as "mains" water - can also be used for a variety of other purposes associated with the carrying out of economic activities, typically in an urban context where human habitation co-exists with commercial and industrial activities and other water-consuming pursuits such as street cleaning, fire-fighting, watering of public parks and home gardening. In rural and peri-urban areas, mains water can also be supplied to satisfy the irrigation requirements of crops. In sum, while typically associated with the satisfaction of drinking and household needs, the provision of water supplies to the public, particularly in an urban context, caters in fact for a great variety of social and economic needs. The legal configuration of the service reflects the latter's growing complexity in today's circumstances, from privately-owned and operated systems catering for sparse, small communities to systems owned and operated directly by a department of Government, all the way to public utility companies operating under some form of Government control.

Legislation on the provision of this essential service to the public is multi-farious in scope, ranging from defining the legal status and modus operandi of the concern operating the service to detailing standards and specifications of plumbing construction and workmanship. In this book, the focus will be on legislation covering the substantive and procedural aspects of the provision of the service, regardless of the legal configuration of the entity providing and operating the service. This latter aspect of the topic of this Chapter has been regarded as somewhat specialistic and peripheral to the main thrust of this book, and has been omitted as a result. A related aspect concerns the securing by the service operator of a legal title - i.e., a water right - to draw raw water from its source and "use" it for treatment and conveyance to consumers through a reticulation system. This particular aspect of the service falls within the scope of Chapter I on **ALLOCATING WATER FOR USE: WATER RIGHTS AND PERMITS**.

The composite subsidiary legislation on the provision of water supply services to the public has been arranged in this Chapter under headings which seek to encapsulate the salient features of the regulation of the service. Regulations provide essentially for the siting of reticulation systems; service connections; pre-construction and post-construction screening of works for compliance with administrative and engineering requirements; metering; restrictions in the service or usage of water; prevention and control of waste and misuse; water service charging; protection of system works; standards of water quality and related sampling, monitoring, record keeping and public information requirements; screening of professional plumbers; sanitary protection of water delivered at public standpipes; and penalties and law enforcement powers to ensure compliance with the law.

## 2. SITING OF PUBLIC WATER RETICULATION SYSTEMS

Subordinate legislation may prescribe criteria for the siting of public water reticulation systems, with a view essentially to minimizing the exposure of system works and the service as a whole to the occurrence of natural disasters like earthquakes and floods.

### UNITED STATES OF AMERICA - National Interim Primary Drinking Water Regulations, 1975

141.5 Before a person may enter into a financial commitment for or initiate construction of a new public water system or increase the capacity of an existing public water system he shall notify the State and, to the extent practicable, avoid locating part or all of the new or expanded facility at a site which:

- (a) Is subject to a significant risk from earthquakes, floods, fires or other disasters which could cause a breakdown of the public water system or a portion thereof; or
- (b) Except for intake structures, is within the floodplain of a 100-year flood or is lower than any recorded high tide where appropriate records exist.

The U.S. Environmental Protection Agency will not seek to override land use decisions affecting public water systems siting which are made at the State or local government levels.

## 3. SERVICE CONNECTIONS

Connecting a house or building to a public reticulation system is generally subject to the prior agreement between the prospective consumer and the provider of the service (I, III, V, VII), and to the latter's control of the construction work involved (this particular aspect of service connections is further investigated under the next following sub-heading). The prior agreement requirement provides the service operator with the flexibility to match demand with available supplies and to plan for the necessary increments of supplies. New service connections may be subjected to pre-conditions having regard, in particular, to settlement of arrears of payment outstanding on the premises, payment of a security or other deposit, and other matters of general engineering concern (II, IV, VI, VIII). Sometimes the kinds of uses for which service connections may be made - most notably, commercial, industrial and irrigation uses, in addition to domestic use - are spelled out in the legislation, and may be subject to special conditions (IX to XI). Subordinate legislation may also incorporate an explicit disclaimer of liability for damages resulting from system failure due to circumstances beyond the operator's control (XII and XIII).

**I - SAINT CHRISTOPHER NEVIS AND ANGUILLA - Watercourses and Waterworks Regulations, 1973**

2. (1) The Board when requested by application made in writing in one of the forms set out in the Schedule hereto may agree to supply water to a consumer for domestic purposes or any other purpose in accordance with the Watercourses and Waterworks Ordinance.

(2) The Board shall notify the applicant of the result of his application.

(3) An appeal shall lie to the Minister from any decision of the Board refusing to grant an application under sub regulation (1).

**Form 1 - Application for Water to be supplied to Premises where the applicant is the owner**  
- See Appendix V, page 361.

**Form 2 - Application for Water to be supplied to Premises where the applicant is not the owner**  
- See Appendix V, page 362.

**II - SAINT CHRISTOPHER NEVIS AND ANGUILLA - Watercourses and Waterworks Regulations, 1973**

3. (1) On the application being approved the Board shall connect the water service to the premises or permit the same to be connected under its supervision.

(2) The water service shall not be connected to any urinal, water closet, or other similar sanitary apparatus except through a cistern and in accordance with such directions as may be given by the Board.

(3) Every water service discharging water into any bath, sink or other similar receptacle shall be so placed as to discharge above the top water level.

(4) Every cistern or tank which is connected to a water service and is used for storing a supply of water from the waterworks shall be maintained clean and watertight and fitted with a proper cover. The cover shall be fitted with an inspection panel and the water inlet shall be provided with a suitable and effective ball valve.

(5) The water service shall not be connected to any premises unless the Board is first satisfied that surplus water may easily be drained from such premises.

(6) No new water service shall be turned on any premises on which there is no meter installed until the water rate payable on account of such water service shall have been first paid.

**III - CAYMAN ISLANDS - Water Authority Regulations, 1985**

35. (1) Subject to the service being available within the meaning of subsection (1) of section 29 of the Law, and of any relevant provision in the Plumbing Code of the Cayman Islands, any person who wishes:

(a) to connect his premises to the public water supply system; or

...

shall apply in writing to the Authority on the appropriate Form issued by and obtainable from the Authority

...

(2) An application made in pursuance of the last preceding sub section shall be accompanied by:

(a) the appropriate connection charge, which shall be promptly refunded by the Authority in full in the event that an application is rejected by them; and

(b) the certificate of satisfactory completion of plumbing works released by the Authority in pursuance of regulation 33 of these regulations.

...

**IV - CAYMAN ISLANDS - Water Authority Regulations, 1985**

35. ... (3) Upon satisfying themselves that the requirements set out in subsection 35(2), and any additional requirements or specifications of the Plumbing Code of the Cayman Islands which may apply in relation to a building, are met the Authority shall proceed to effect the requested connection to the meter referred to in section 36, the cost of connection past the meter shall be the responsibility of the person making application.

**V - BARBADOS - Water Services Regulations, 1982**

4. (1) An occupier of property may apply to the Authority for the supply of water to the property.

(2) An application made under paragraph (1) must be in such form and is subject to such terms and conditions as the Authority determines.

- .. (4) The Authority may enter into an agreement to:
- (a) supply water to premises for purposes other than domestic purposes, where the supply does not at anytime interfere with the supply for domestic purposes; and
  - (b) install water mains on lands that are being used or are intended to be used for development purposes.

**VI - WESTERN AUSTRALIA - Country Areas Water Supply By-laws**

61. (1) Applications for water service shall be made on the printed form procurable at the Head or branch Office, and shall be lodged not less than seven days before the service is required.

(2) Full information, as indicated on the prescribed form, shall be supplied, and the full amount of rates and/or other charges due on the premises, to which a service is required, shall be paid on or before application and before the work is commenced.

62. (1) Any person or persons requiring a water service to any non-rated property may be supplied on payment of an annual charge which shall be fixed by the Minister, and such person or persons may be required to pay, in addition to that annual charge, the cost of providing such water service including the cost of any necessary extension of the main.

(2) The annual charge shall then take the place of a water rate, and the general provisions of these by-laws, as applying to rate paying consumers, shall apply to consumers so required to pay an annual charge.

63. It shall be at the discretion of the Minister to supply water to any individual consumer or to any land whether rated or not.

**VII - BOTSWANA - Draft Water Supply Regulations**

4. (1) A person must not:

- ... (b) connect or cause any water service pipe to be connected to a main or any other work belonging to a water authority.

without first obtaining consent from the water authority.

...

5. (1) A person seeking a water authority's consent must apply on the appropriate form prescribed by the water authority.

(2) A water authority may consent to an application on such conditions as it sees fit, or may refuse its consent.

6. (1) Where a water service pipe has been provided for any land under these regulations or any previous Act relating to water supply, and has not been disconnected, a person seeking a supply of water must apply on the appropriate form prescribed by the water authority.

(2) The water authority may agree to supply the applicant with water on such conditions as it sees fit, or may refuse to supply the applicant.

**VIII - BOTSWANA - Draft Water Supply Regulations**

6. (1) Unless a water authority determines otherwise, any action for which its consent is required must only be performed in the presence of, and in accordance with any directions given by, an authorised officer.

(2) As a condition of granting its consent a water authority may require that work specified by it be only done by it, at the cost of the applicant.

9. (1) Before an applicant is supplied with water, he must pay to the water authority such deposit as it may prescribe as security for regular payment of water charges.

(2) Every person supplied with water by the water authority at the commencement of these regulations must pay to the water authority upon demand such deposit as it may demand as security for regular payment of water charges.

(3) Any deposit paid to a water authority under this regulation must be refunded in full when the supply agreement is terminated or the water supply is disconnected or restricted under section 42 or 52 of the Act, less such amounts as the water authority may deduct to meet:

- (a) any outstanding charges for water supplied;
- (b) any outstanding fees payable to it;
- (c) any interest or penalties payable in respect of any outstanding charges or fees.

**IX - BARBADOS - Water Services Regulations, 1982**

3. (1) The Authority shall keep and provide constant supply of water, sufficient for the domestic, commercial and industrial use of occupiers of property who are, in accordance with these regulations, entitled to be supplied with water by the Authority

(2) The Authority may enter into special contracts to provide water supply services to any premises or group of premises for irrigation or other purposes not specified in paragraph (1) subject to such terms and conditions as are agreed between the parties or as the Authority determines.

**X - WESTERN AUSTRALIA - Country Areas Water Supply By-laws**

99. (1) Where water is required for building purposes, the Minister may permit the supply of water on payment of the appropriate fees prescribed in sub bylaw (2) of this by-law and on the following terms:

- (a) All fees shall be paid in advance, and if any work is done other than that mentioned at the time of applying to the Minister, the same shall be paid for in advance, or the whole supply will forthwith be cut off.
- (b) It shall be at the discretion of the Minister as to whether or not in any case a supply of water shall be classed as a supply for building purposes.
- (c) Applications for water under this by-law shall be in writing, stating the nature of the work to be done and the purpose for which water is required.

...  
102. A supply of water for irrigation purposes and at irrigation prices shall not be granted except on such applications from consumers as may be in each case specifically approved by the Minister, and such supply may be discontinued at any time at the discretion of the Minister.

**XI - WESTERN AUSTRALIA - Metropolitan Water Supply, Sewerage and Drainage By-laws**

265. (1) Where water is required for building purposes, an application shall be lodged, in writing, on the prescribed form, and the charge shall be in accordance with the fees set forth in the schedule of prices of water in by-law 267.

... (3) When applying for a building service the applicant shall produce the plans of the building to be erected for endorsement thereon of fee paid, and shall also, if called upon, produce the specifications and contract.

...  
266. ... (3) From and after the commencement of this by-law, no apparatus shall be installed or used, and no apparatus previously installed shall be used in, on, or in connection with any property, land, or tenement unless the Board shall have first consented thereto in writing.

(4) Applications for consent to instal or use such apparatus shall state the make and type, the minimum and maximum requirements, and any other information the Board may require.

**XII - BARBADOS - Water Services Regulations, 1982**

22. No liability attaches to the Authority, in the absence of an express agreement to the contrary, for its failure to supply water where the failure arises from drought or other unavoidable cause or accident.

**XIII - SOUTH AUSTRALIA - Waterworks Regulations, 1974**

15. The Minister shall not be responsible for any stoppage of water or intermittent supply thereof, however occasioned, nor for any accident, inconvenience or damage which may be occasioned thereby.

**4. ADMINISTRATIVE AND ENGINEERING REQUIREMENTS RE:  
CONSTRUCTION AND MAINTENANCE OF PRIVATE WORKS**

Legal requirements in connection with construction of private connections to a public reticulation system are laid down with a view to pre- and post-construction governmental screening of works and to ensuring consistency in the quality of materials employed and in

the standards of workmanship. Relevant requirements range in complexity from detailed pre-construction vetting of plans and designs for indoor plumbing and building connections in relation to general development work, and from detailed post-construction screening of the said works for compliance with engineering standards and specifications (I), to the simple giving of prior notice of construction work (II), and to post-construction governmental inspection (III). These requirements are complemented by technical specifications concerning the materials to be employed and construction techniques to be followed. Relevant details may be left to a properly empowered governmental authority (IV), or may be laid down directly by subordinate legislation (V). Maintenance of private connection works in good working order is also provided for, as a matter of duty for the owner of the premises connected to the public reticulation system (VI).

**1 - CAYMAN ISLANDS - Water Authority Regulations, 1986**

33. (1) In accordance with section 57 of the Law, any person applying to the Central Planning Authority for the construction, reconstruction or extension of a building shall submit to the Authority four copies of plans showing in detail the sanitary facilities, and all plumbing, sewage treatment, effluent disposal and water supply works. Such plans shall include a general site plan of scale 1:500 or greater and detail plans of scale 1:100 or greater.

(2) Applications shall be made to the Authority in the form prescribed in the Plumbing Code of the Cayman Islands, or in such other form as the Authority may prescribe, and shall be accompanied by the fee prescribed in Schedule 2 to these regulations<sup>1</sup>. The Authority shall not entertain any application until payment of the prescribed fee has been effected.

(3) The Authority, in consultation with the Chief Environmental Health Officer, shall inspect the plans submitted to them to determine compliance thereof with the Plumbing Code of the Cayman Islands, or, in default of such code, in accordance with good engineering practice as determined by the Authority, and

- (a) if satisfied that the plans submitted to them meet the appropriate requirements, approve such plans and so inform the Central Planning Authority;
- (b) in all other cases, shall remand the plans to the applicant and direct him to amend the plans as recommended by them, and to re-submit the plans so amended within the deadline they shall indicate. The re-submission of plans which have been amended at the Authority's request shall not be accompanied by the payment of any additional fee.

(4) All works concerning sanitary facilities shall not begin until an approval has been issued by the Authority in pursuance of sub-section 3(13).

(5) Plumbing work requiring certification for approval by the Authority shall be certified on the signature of a master or journeyman plumber.

(6) Installation testing shall be carried out in accordance with the Plumbing Code of the Cayman Islands or, in default of such code, in accordance with such directions as the Authority may give, and shall be performed by a master or journeyman plumber.

(7) The person to whom approval has been given in pursuance of sub-section 3(a) shall promptly notify the Authority of the actual or proposed commencement date of the works the subject of this approval, and, in any case, shall inform the Authority at least seven days in advance of when he expects to reach the roughing-in stage. Upon being served with a written notice to the said effect, the Authority shall carry out a roughing-in inspection, and the applicant shall, if so requested by the Authority, provide labour and testing equipment as appropriate under the circumstances. Subject to satisfactory inspection, the Authority shall authorise continuation of the plumbing works by stamping accordingly the relevant certificate of plumbing approval, and no plumbing work shall continue unless authorised according to this sub-section.

(8) At least seven days prior to completion or expected completion of the authorised plumbing works the holder of a certificate of plumbing approval duly stamped in accordance with the last preceding sub-section shall notify the Authority of the expected completion date. Upon being served with a written notice to the said effect, the Authority shall inspect the works, and the applicant shall, if so requested by the Authority, provide labour and testing equipment, as

appropriate under the circumstances. Subject to satisfactory final inspection, the Authority shall issue a certificate of plumbing completion to the applicant, and copy thereof shall be promptly sent by the Authority to the Central Planning Authority.

(9) A certificate of plumbing completion issued in pursuance of the last preceding sub-section shall constitute the sole evidence of satisfactory completion of all sanitary facilities and related plumbing works to which the relevant certificate relates, and the Central Planning Authority shall not release a certificate of occupancy in relation to development works until a certificate of completion of the relevant plumbing works is issued by the Authority.

(10) Upon any violation of the provisions of sub-section (4) and (5) of this regulation, or section 57 of the Law, the Authority shall lodge a written complaint before the Central Planning Authority and petition them to commence Law enforcement proceedings in accordance with sections 15 and 16 of the Development and Planning Law (Revised). Upon failure of the Central Planning Authority to take action within thirty days beginning from the date in which written complaint is received by them, the Authority may have recourse to the powers conferred on them by section 46 of the Law for law enforcement purposes.

(11) No certificate of completion issued under this regulation shall be deemed to imply any guarantee that the works are properly designed or constructed nor shall support or justify any claim of any nature against the Crown, the Authority or any public officer in connection with such works.

(12) The Authority may modify its system of development control referred to in this section in order to conform with a centralized planning review system that may be established by the Central Planning Authority.

#### **II - WESTERN AUSTRALIA - Metropolitan Water Supply, Sewerage and Drainage By-laws**

290 The owner or occupier of any land supplied with water who shall erect, or make, or cause to be erected or made any building or addition to an existing building on such land, shall, before the commencement of same, give notice in writing thereof to the Board.

#### **III - SOUTH AUSTRALIA - Waterworks Regulations, 1974**

##### **34 PRIVATE SERVICES**

...

##### **34.3 Inspection of Private Services**

Work done on private lands or premises in connection with the water supply whether such work consists in the laying and fixing of new services, or in the extension or alteration of existing services, may be inspected by the proper officer of the Minister. Where required, due notice of such laying, extension, or alteration of service shall be given to the Minister by the person carrying out the work.

#### **IV - BARBAOODS - Water Services Regulations, 1982**

5. (1) All pipes or other fittings necessary for the conveyance, delivery or storage of water

(a) that are to be laid on an occupier's property; or

(b) that are to be connected to pipes and fittings belonging to the Authority

must be of a type approved by the Authority and shall be kept in a serviceable condition by the occupier at his own expense and to the satisfaction of the Authority.

(2) Pipes and fittings that are not approved by the Authority or are not kept in a serviceable condition may be removed by, or at the direction of the Authority, and the Authority may, where it considers it necessary, discontinue the supply of water to an occupier who fails to comply with this regulation.

#### **V - WESTERN AUSTRALIA - Metropolitan Water Supply, Sewerage and Drainage By-laws**

65. In connection with the laying down, maintenance, alteration, or repair of every private service, the following conditions shall be observed by the owner or occupier of the premises:

- (a) Except with the written consent of the Board only piping, fittings, fixtures and apparatus of approved quality or conforming to the Australian Standard Specification or such other specification as the Board determines, and tested and stamped by the Board, shall be used for services whether outside or inside the building line.
- (b) All pipes and fittings shall be of steel, or malleable iron, copper, brass, cast iron, cement asbestos, stainless steel or other approved material.
- (c) A charge shall be made by the Board for testing and branding all pipes, fittings, fixtures and apparatus to be used in connection with water supply and sanitary plumbing work.
- (d) Galvanised steel tubing shall comply with AS B105.



- (e) Galvanised steel pipe fittings shall comply with BS 1740.
- (f) Cast iron pipes shall conform to the Board's standard specification for cast iron pipe for water supply.
- (g) Asbestos cement pipes shall conform to the Board's standard specification for asbestos cement pipe.
- (h) Copper or brass pipes shall comply with Australian Standard B158-1989 (including Tables 1, 2, 3, 4 and 5 thereof) and be used in accordance with Schedule C to these by-laws<sup>1</sup>.
- (i) Approved types of plastic pipe may be used for water supply in accordance with the requirements of Schedule D to these by-laws<sup>1</sup>.
- (j) Reinforced concrete pressure pipe shall conform to the Board's standard specification.
- (k) Tees, thimbles, bands, reducing couplings, plugs, etc., shall be of the best material and manufacture, true in section, regular and of equal thickness, properly and truly cut with the British Standard thread perfectly sound and new, free from all defects; the tees, bands, tubes, etc., shall be capable of withstanding a hydrostatic pressure of 300 lb p.s.i., shall be tested to this pressure by the duly authorised officer and shall conform otherwise to the British Standard Specification existing at the time.
- (l) All joints between pipes, tees, bands, thimbles, couplings, elbows and cocks etc, shall be made with flax or other approved jointing material.
- (m) No pipe or other apparatus shall be laid through any sewer, drain, soak pit, cistern or manure bin, or through, in, or into, any place where in the event of the pipe becoming unsound the water conveyed through the pipe or apparatus would be liable to be polluted or to escape without observation, unless the pipe or apparatus is laid through an exterior approved iron pipe or box of sufficient length and strength to afford due protection to the pipe or apparatus and to bring any leakage or waste within easy detection.
- (n) All taps, stop-cocks, ball-cocks, valves, fittings or other apparatus used in connection with the supply of water shall be of approved types and capable of withstanding a pressure of 300 lb p.s.i., and shall be tested and stamped by the duly authorised officer of the Board before being fixed.
- (o) A valve, or cock or apparatus of any description shall not be used if a rise in pressure of more than 10 lb p.s.i. occurs when the valve, cock or apparatus is closing.
- (p) Every cistern and tank shall be provided with an equilibrium ball valve and stop cock and the overflow pipe shall be laid and fixed in a suitable manner, so as to discharge in some conspicuous place open to inspection.
- (q) No service pipe on private property below the ground surface shall be laid at a less depth than 18 inches, unless otherwise approved by the Board.
- (r) No part of any service shall communicate directly with any vessel, other than approved apparatus for heating water for domestic purposes, except with the written permission of the Board.
- (s) No part of any service shall communicate directly with any steam boiler or other vessel used for generating steam, or with any other vessel, in such manner that noxious liquids or gases can return into the main or service pipes.
- (t) Every water closet, urinal, slop hopper, or other fixtures as directed by the Board shall be supplied from the service pertaining to the building through an approved waste-preventing apparatus, and no service pipe shall communicate directly with the fixture or otherwise than with the cistern.
- (u) Unless otherwise approved by the Board, the outlet of every fixture, such as baths, lavatory, basins, kitchen sinks, etc., shall be distinct from and unconnected with the inlet, and the inlet shall be placed at least one inch above the highest water level of the fixtures; the outlet of every fixture shall be provided with a perfectly watertight plug, and shall be constructed so as to prevent a waste of water.
- (v) Projection pieces between a bulb tap and fitting on the end of a horizontal water service pipe shall not be permitted unless so supported as to prevent the pipe and tap swinging downwards.
- (w) All taps over fixtures shall be so arranged that any drips from the taps will fall within the fixture.

- ixl Stand pipes not secured to buildings shall be securely fixed to an approved support fixed in the ground.
- lyl Pipes shall be secured to woodwork by means of approved galvanised clips and screws and to concrete, stone or brickwork with approved galvanised hooks or bolted clips, or other approved method.
- lzl Pipes shall be laid in a straight line and where change of direction occurs underground, bands shall be used.
- laa) In all cases where a water service pipe is attached to a cistern, lavatory basin or any other plumbing fixture when directed by the responsible officer, the connection shall be made by means of an annealed copper connection or other approved method.
- labl No person shall fix any water ejector, automatic syphon, booster pump, or other water power pumping appliance to the Board's supply without the permission in writing of the Board being first obtained and in that event only in compliance with such conditions as the Board specifies in writing.

**VI - WESTERN AUSTRALIA - Metropolitan Water Supply, Sewerage and Drainage By-laws**

66. (1) The owner of any property supplied with water shall at his own risk and expense lay down his private service and keep it in good order and repair, in such a manner as to conform with the provisions of these by-laws.

(2) The service pipe or apparatus within the boundary of the property being the property of the owner of the property supplied by such service pipes or apparatus, the owner shall, upon receiving notice that his service pipe or apparatus requires repairing, or is blocked up or broken, immediately proceed to repair the same by employing a licensed plumber, subject to the provisions of these by-laws, and he shall be responsible for any loss of water or other damage which shall be caused by reason of such service pipe or apparatus being leaky or otherwise out of repair or broken, and in default, be liable on conviction to a penalty not exceeding forty dollars, and in the event of continuing the offence, to a further penalty of five dollars for each day after receipt of such notice, and the Board may stop the water from flowing into such premises either by cutting off the service pipe, or otherwise as the Board may see fit, until the necessary repairs shall have been effected. ...

## 5. METERING

Metering for the purposes of recording the quantities of water supplied to individual connections and charging accordingly is widely practised. As evidenced by the examples below, subordinate legislation on metering typically provides for the positioning, reading, testing for accuracy, and maintenance of meters, and criteria for the calculation of water consumption if a meter fails or is not read.

**I - BARBADOS - Water Services Regulations, 1982**

15. The Authority may install a meter on any property and the rates and charges to be paid by the occupier of the property shall be determined according to the quantity of water registered by the meter.

16. (1) Where a meter is found to be defective, the limits of inaccuracy and the estimate of consumption shall be regulated as follows:

- (a) where the quantity of water registered by a meter at normal flow is not more than five percent above or below the actual quantity passed, the meter shall be deemed to be accurate;
- (b) where the meter ceases to register, or is proved to register inaccurately the quantity of water passing through it, the Authority may make a fair and reasonable estimate of the quantity supplied and such estimate shall be based on:
  - (i) the registration of a substituted meter,
  - (ii) the average registration during the preceding three months,

- (iii) the average registration during the corresponding three months of the previous year, or
- (iv) whatever basis is considered equitable by the Authority, having regard to the circumstances of the case.

12) Where an occupier requests the removal and testing of a meter, he must, before the meter is removed, pay, to the Authority, the cost of removing, carting and testing the meter.

13) Where a meter is found to be inaccurate, by registering on test at normal flow more than five percent above or below correct registration, the amount paid pursuant to paragraph (1) shall be refunded to the occupier by the Authority and his account for water rates shall be adjusted in accordance with the percentage of error.

14) Where for any reason the registration of the meter is not recorded, the occupier shall be charged for each month in which registration is not recorded for a quantity of water equal to the average monthly consumption of the previous three months, determined in accordance with paragraph (1)(b)(i) to (iv).

## II - CAYMAN ISLANDS - Water Authority Regulations, 1985

36. (1) The Authority shall install within the boundary of the premises connected to the public water supply system or at an agreed point, at no other cost to the consumer than a rental fee, a meter to record the quantities of water delivered to the premises.

(3) Unless a meter is proven defective, the readings thereon shall be proof of the quantities of water delivered to the premises connected to the public water system, or of the quantities of sewerage effluent or trade effluent discharge from the premises connected to the public sewerage system, as the case may be.

14) Where a consumer is of the opinion that a meter provided by the Authority in pursuance of sub-sections 36(2) and 36(3) is inaccurate, he may apply to the Authority to have the meter tested. An application under this sub-section shall not exempt the applicant from the payment of all sums which may become due and payable under these regulations.

Provided that, if the meter is, upon testing by the Authority, found inaccurate, the Authority shall promptly refund the consumer any sums paid in excess of what was actually due. This sum to be determined by the Authority.

15) The cost for testing any meter at the request of a consumer shall be borne by the Authority if the meter is found to exceed the accuracy standards set by the Authority. If the meter so tested is found to be within the said standards, the consumer requesting the test will reimburse the Authority for the full cost of the test, as prescribed in Schedule 2 to these regulations. The said test shall be carried out by an independent agency.

## III - WESTERN AUSTRALIA - Metropolitan Water Supply, Sewerage and Drainage By-laws

274. (1) The Board may fix a meter on any service, and shall determine the size and class of meter in each case.

(2) Meters will be supplied by the Board and placed above or below the normal surface of the ground at the discretion of the Board.

275. (1) Any person supplied with water through a meter belonging to the Board shall pay the cost of making good any damage to such meter whilst on his land.

(2) Repairs required shall be done by the Officers of the Board, and the expense incurred by the Board in so doing shall, on demand, be paid by the owner or occupier of the land, and if not paid on demand shall be recoverable in the same manner as water rates.

276. Any person supplied by the Board with water through a meter shall, on finding meter damaged, or not registering, immediately give notice of the damage or non-registration to the Local Water Supply Office.

277. No person shall break or in any way interfere with the seal fixed on the meter through which water is supplied by the Board, or turn or attempt to turn any screw, bolt or nut on or attached to such meter, or use any tool or appliance on any such meter, or introduce or attempt to introduce any body or substance into such meter, or in any way interfere with any portion of such meter, or any pipes or fittings attached thereto.

278. The quantity registered by a meter at any time between ten days before and ten days after any stated date may be taken as the reading of the meter at such date.

279. During the time any meter is undergoing repair or should it cease to properly register the consumption of water, the Board or any officer appointed by the Board may, at its option, estimate the quantity of water consumed, by taking an average of the quantity used during any previous period, or by adopting any other basis of adjustment, as the Board may determine, and the quantity so ascertained shall be paid for by the consumer.

280. If any consumer shall at any time be dissatisfied with any particular reading of a meter, and be desirous of having the water tested, he shall give written notice thereof to the Board or its officer within twenty-one days from date of receipt of notice of such reading, and thereupon the said meter shall be tested by passing through it a predetermined quantity of water, and if upon such testing it shall appear to the satisfaction of the Board or its officer that the meter registered five percent, or more in excess of, or below the quantity that shall actually pass through it at such testing, then the Board shall bear the expense of and incidental to such testing and shall also adjust the charge to the said consumer; but if the meter upon such testing shall not register five percent or more in excess of, or below the quantity that shall actually pass through it, then the consumer shall pay to the Board all the expenses of and incidental to such testing: Provided that the expense of every test shall be fixed by the Board; provided also, that the consumer shall not, unless the Board decides otherwise, be at liberty to avail himself of the right to test the registration of the meter for any period other than the period of registration next preceding the date of reading in respect of which he shall have given notice as aforesaid.

#### IV - BOTSWANA - Draft Water Supply Regulations

10. (1) An authorised officer must, after consultation with the owner or occupier of the land to which water is to be supplied, determine where a meter is to be positioned.

(2) Where it is impossible or impractical for the authorised officer to consult with the owner or occupier of the land, the authorised officer must select a convenient location to position the meter on the land, as close as possible to the boundary nearest to the main.

(3) A person wishing to remove or alter the position of a meter must give seven days' notice in writing to the water authority and pay to it either:

- (a) such charge as is prescribed by the water authority; or
- (b) the actual cost of removing or altering the meter, as determined by the water authority.

(4) A meter must not be removed or altered until it has been read by an authorized officer.

(5) No person other than an authorised officer must remove, disconnect, reconnect, alter the position of, or in any way interfere with or damage a meter.

Penalty: ...

(6) No charge is to be made for installing a meter in a water service pipe which is unmetered at the commencement of these regulations.

11. (1) If:

- (a) for any reason the water authority is unable to arrange for a meter to be read in any month; or
- (b) any meter becomes defective, registers incorrectly, is tampered with or damaged, or is removed from a water service pipe for any reason,

the water authority may estimate the correct registration in any of the following ways:

- (i) by comparison with the quantity of water supplied under similar conditions during some other period; or
- (ii) by comparison with the quantity of water supplied after the meter has been restored to proper order; or
- (iii) by comparison with the registration of a substitute meter used temporarily in place of the defective meter; or
- (iv) by applying a correction factor if the meter is found to have a consistent error of registration.

(2) A water authority must not impose a charge for water based on an estimate of the registration of any meter for more than two consecutive months.

12. (1) Each meter must be read by an authorised officer at such times as the water authority directs.

(2) A meter is to be deemed to be accurate unless:

- (a) the contrary is proved;
- (b) upon testing, a meter registers above 5 percent more or less than was actually passed through the meter at the test.

## 6. RESTRICTIONS IN THE SERVICE OR IN WATER USE

The concern operating a public water supply service is customarily granted by principal legislation authority to interrupt temporarily the service and/or to restrict certain uses of mains water - typically, gardening, street washing, and the filling of large tanks - by consumers under given circumstances. These have generally regard to natural occurrences such as drought, or to repair and other works on the water supply system. Subordinate legislation may restate a legislative grant of powers to curtail the service or the uses of mains waters (II to IV) with or without the provision of advance information to the public, complemented sometimes by a disclaimer of liability for damages resulting from interruptions in the service (I).

### I - BARBADOS - Water Services Regulations, 1982

12. (1) Where:

- (a) there is a deficiency in the source of supply owing to a drought, or to any contingency affecting any supply works or machinery, or to any interruption caused by repairs, accident or other cause; or
- (b) the Authority or its General Manager considers it expedient to interrupt the supply of water,

the Authority may, without notice, reduce or temporarily discontinue the supply of water to all or any particular area.

(2) Paragraph (1) does not:

- (a) impose any liability on the Authority by reason of the reduction or temporary discontinuance of the supply of water,
- (b) affect the liability of an occupier to pay all the proper rates, charges or fees.

14. (1) Where there is a deficiency in the supply of water owing to a drought or other cause, the Authority may, by notice, prohibit either absolutely or subject to such conditions as the Authority specifies and for such period as the Authority considers necessary or expedient, the use of water supplied by, or obtained through the pipes of the Authority for:

- (a) irrigation or watering of gardens, lawns and grounds;
- (b) filling or supplying tanks, ponds, baths or swimming pools other than:
  - (i) dipping tanks for cattle;
  - (ii) domestic baths not exceeding one hundred and twenty litres in capacity; and
  - (iii) elevated reserve tanks, not exceeding eight hundred litres in capacity and connected to household sewerage or water supply systems;
- (c) washing roadways, pavements, paths, garages, outrooms or vehicles; and
- (d) any purpose that, in the opinion of the Authority, requires the use of a considerable or excessive quantity of water.

(2) A notice mentioned in paragraph (1):

- (a) must specify the date on which the prohibition takes effect; and
- (b) must be published:

- (i) in the Official Gazette, and
- (ii) in a daily newspaper circulating in Barbados for not less than four days preceding the date upon which the prohibition takes effect.

(3) While a prohibition is in effect, no person shall use or cause or permit to be used, for any prohibited purpose, any water supplied by or obtained from the pipes of the Authority.

(4) A person who contravenes this regulation is guilty of an offence and liable on summary conviction to a fine of five hundred dollars and in default of payment to imprisonment for one month.

### II - WESTERN AUSTRALIA - Country Areas Water Supply By-laws

76 (1) The Minister may, at such times and for such purposes as he may deem necessary and expedient, prohibit the use of water for garden purposes and all purposes other than commercial, domestic and industrial, except with his permission in writing

(2) The Minister may also at and for such times and for such purposes as he may deem necessary and expedient, by notice published in any newspaper circulating in the district, limit the use of water for any purpose and may prohibit the use of any hose or fixed or other mechanical

devices and/or sprinklers at such times and during such hours as he may deem fit.

{3} A person who uses a water or a hose, device or sprinkler in contravention of a notice so published shall be deemed to have committed a breach of the provisions of this by-law and shall be liable upon conviction to a penalty not exceeding forty dollars, and in the event of a continuing breach to a further penalty not exceeding ten dollars, for each day the breach continues.

#### III - WESTERN AUSTRALIA - Metropolitan Water, Sewerage and Drainage By-laws

273. {1} The Board may, from time to time as it considers necessary, by notices published at least once in a daily newspaper circulating in the Metropolitan Water, Sewerage and Drainage Area:

- {a} prohibit, regulate, or impose restrictions on the use or consumption of water by any person or class of person, within the whole or any portion of the area, for any purpose generally or for such purpose or purposes as are specified in the order, or for any period or periods;
- {b} exempt either wholly or partially any portion of the area, any person or class of person, or any place or institution or class of place or class of institution from the operation of the whole or part of the order.

{2} An order so made and published may be cancelled or varied by a subsequent order made by the Board and published in a daily newspaper circulating in the area.

{3} A person using or consuming water in contravention of an order made and published under this by-law is deemed to commit a breach of this by-law.

{4} For the purposes of this by-law a person who allows water to flow or leak from any pipe or other fittings used for or in connection with the supply of water to or in any premises shall be regarded as a person using water.

#### IV - BOTSWANA - Draft Water Supply Regulations

15. {1} A water authority may, at any time and for such period as it thinks fit, interrupt the supply of water to any district or land when, in the opinion of the water authority, it is expedient so to do in order to:

- {a} conserve water;
- {b} install, maintain or repair any works;
- {c} make any connection to or disconnection from the water authority's works;
- {d} prevent the waste of any water.

{2} Before interrupting the supply of water under this regulation the water authority must, whenever practicable, give due notice of the likely duration of the interruption to all consumers of water who are likely to be affected thereby.

## 7. WASTE AND MISUSE OF MAINS WATER

Subsidiary legislation on the provision of water supply services to the public typically lays down obligations, restrictions and prohibitions aimed at preventing or stopping waste and misuse of water supplied through a reticulation system. One approach to achieving these objectives is to simply declare all waste and misuse of mains water an offence, liable as such to prescribed penalties (I). Otherwise, customers served by the system may be placed under a standard obligation to prevent or stop leakage from the pipes, fittings and appliances under their control. Standard restrictions to prevent misuse are aimed at uses different to those for which a connection has been granted, and at the sale of water. The temporary discontinuance of the service features as a standard penalty for violation of these restrictions (II to V). Use of mains water elsewhere than on the land served by the system may also be restricted. When the service is made appurtenant to the land served by a connection, detailed rules may govern the status of the connection upon sub-division of the land into multiple holdings (VI). Exceptionally, the re use of mains water used for certain purposes - notably, cooling - may be prescribed also as a standard obligation of relevant consumers (VII). Also, reporting on

somebody else's waste and misuse can be encouraged through the provision of financial rewards (VIII).

**I - SEYCHELLES - Water Supply (Prevention of Waste) Regulations, 1965**

2. Any person who wastes water or allows water to be wasted shall be guilty of an offence and shall on conviction be liable to a fine not exceeding Rs. 500 and to imprisonment not exceeding one month.

**II - SEYCHELLES - Water Supply (Prevention of Waste) Regulations, 1965**

3. The Director of Public Works may cut off the water supply of any premises the owner or occupier of which has been given notice in writing to desist from wasting water or allowing water to be wasted and who has failed to comply with such notice within 24 hours.

**III - BARBADOS - Water Services Regulations, 1982**

13. (1) An occupier shall cause all taps to be kept properly washered, and all pipes, taps, tanks, basins, hydrants and other fittings to be maintained in such condition that leakage or other waste of water is prevented.

(2) No person shall cause or permit to run to waste any water from any pipe, or fittings connected to the pipes, of the Authority.

(3) No person supplied with water from the Authority for domestic purposes shall use the water for purposes other than domestic purposes.

(4) No person supplied with water from the Authority for purposes other than domestic purposes shall use the water for purposes other than those for which it was supplied.

(5) Where an occupier contravenes, or causes or permits the contravention of this regulation, the Authority may discontinue the water supply services of the occupier and may cease to supply the occupier with water for the duration of the contravention.

**IV - WESTERN AUSTRALIA - Metropolitan Water Supply, Sewerage and Drainage By-laws**

281. Any person entitled to a supply of water for domestic purposes only or entitled only to a supply of water for any other specified purpose, shall not use such water for any other purpose except that specified.

282. No person shall, without the written permission of the Board, use water supplied by the Board except on the premises in respect of which application was made for the service from which the water was drawn, or carry away such water from such premises or allow any other persons to carry any such water away therefrom.

283. No person, whether entitled to receive water from the Board or not shall, without the written permission of the Board, take, carry away, or allow to be taken or carried away, such water from his premises, or sell the same to any other person.

284. No person supplied with water by the Board, whether by meter or otherwise, shall allow the same to run to waste.

**V - BOTSWANA - Draft Water Supply Regulations**

22. (1) A person must not cause or allow any pipe, fitting or apparatus to be out of repair, used or contrived so that:

(a) water supplied by a water authority is likely to be wasted, misused or unduly consumed; or

(b) any water contained in mains vested in a water authority or pipes connected thereto is or is likely to be polluted.

Penalty: P

...

**VI - SOUTH AUSTRALIA - Waterworks Regulations, 1974**

**19. WATER SHALL NOT BE SOLD, WASTED OR MISUSED**

Water supplied by the Minister to any consumer is for use only upon the land to which service is laid and may not be taken by extension of pipes or otherwise to any other land, nor be sold, given, or otherwise transferred to any other person or land whatever, without the specific approval of the Minister. Water supplied shall not be conveyed from one part of a consumer's land to another except by means of pipes or other appliances properly connected to the service and capable of withstanding the pressure of water without leakage or waste.

## 20. SUBDIVISION AND RE-SUBDIVISION OF LAND

- 20.1 Where any holding of land to which a water service is laid is subdivided into allotments or parcels of land, or re-subdivided into allotments or parcels of land and any such allotment or parcel becomes owned separately or occupied separately from the remaining part of any such holding the following provisions shall have effect:
- 20.1.1 If such holding of land or any part thereof was served by a pipe directly communicating with a main pipe, the service shall attach to the allotment or parcel of land or part thereof on to which the communicating pipe is laid and no other.
- 20.1.2 If such holding of land was served otherwise than by a pipe directly communicating with a main pipe the service shall not, except where the Minister otherwise determines, attach to any allotment or parcel of land which formed part of the said holding.
- 20.1.3 Any case of dispute or doubt as to which allotment or parcel of land a service shall attach may be decided by the Minister who may determine to which allotment or parcel of land a service shall be attached or may determine that such service shall not be attached to any allotment or parcel of land. The decision of the Minister shall be final.
- 20.1.4. If consequent upon any such subdivision or re-subdivision any meter or fitting becomes situated in a street the owner of that allotment or parcel of land to which the communication pipe is actually laid shall be liable to pay to the Minister the appropriate fee for extending the service to a new alignment as provided in Regulation 3.
- 20.2. Unless the Minister otherwise directs any person upon becoming the owner of any allotment or parcel of land to which a service becomes attached by virtue of subparagraph 20.1.1 or subparagraph 20.1.2 of paragraph 20.1 of this Regulation shall immediately disconnect from the service any piping which serves or may be used to serve any other allotment or parcel of land or part of such land separately owned or occupied.

### VII - WESTERN AUSTRALIA - Metropolitan Water, Sewerage and Drainage Regulations

286. ... (5) If water used for or in the operation of any apparatus under full output exceeds one half gallon per minute, it shall be re-used, unless consent to run it to waste shall have been obtained in writing from the Board. If installation is such that the unit cuts in and out, the supply of water for cooling purposes must be automatically shut off when the unit cuts out.

(6) The quantity of water run to waste shall be limited to the quantity specified in the Board's consent. The water which shall so run to waste shall be recorded by a meter specially affixed for the purpose.

Should water in excess of the quantity so specified in the Board's consent be run to waste, every owner or occupier of the property, land, or tenement or other persons supplied by the Board who so permit or allow such excess water to be run to waste, shall be guilty of an offence against this by-law.

### VIII - WESTERN AUSTRALIA - Metropolitan Water, Sewerage and Drainage Regulations

293. The Board may in its discretion reward any person (not being the person in fault) who shall communicate timely information to the Board of any leakages or waste of water, whether the same be accidentally, negligently, or wilfully occasioned or suffered, or who shall give such information as shall lead to the conviction of any person or persons who shall steal or cause to be stolen or improperly appropriated the water of the Board.

## 8. SERVICE CHARGES AND FEES

Water supplied to individual connections through a reticulation system is charged for, mostly in relation to metered consumption or to the value of the property served. In addition, other related and consequential services - such as construction by the service operator of private connections, and disconnection and reconnection of premises - are also usually charged for.



In this regard, legislation in general and subordinate legislation in particular typically provide for criteria for and rates of water charges, kind of other services liable to be charged for and relevant rates, frequency and manner of billing and payment, penalties for non-payment and recovery of arrears of payment (I, III, V, VI). In particular, discontinuance of the service and surcharges feature frequently as penalties for failure to pay the prescribed water charges and fees (II and IV).

**I - BARBADOS - Water Services Regulations, 1982**

4. ... (3) The person mentioned in paragraph (1)<sup>1</sup> shall pay to the Authority the cost of providing and laying all pipes and fittings necessary to connect the property to the mains of the Authority.
6. Subject to regulation 7, an owner or occupier of property shall pay to the Authority at such times and at such places as the Authority specifies the rates and charges prescribed by the Authority in pursuance of the Act.
7. Where any person enters into a special contract with the authority for water supply services, that person shall pay rates and charges in accordance with the terms of the contract.
8. The Authority shall, at such intervals not exceeding three months, as the Authority determines, prepare and render to occupiers, bills for rates, charges or fees in respect of water supply services, and the occupier shall pay the bills not later than thirty days after the bills are rendered.
11. The rates, charges or fees payable by an occupier and the expenses reasonably incurred by the Authority in disconnecting or reconnecting a water supply may be recovered by the Authority as a debt due to the authority in any court of competent jurisdiction where
- (a) the occupier is in arrears with the payment of the rates and charges, or fails to pay the expenses reasonably incurred in disconnecting and reconnecting the water supply; and
  - (b) the Authority makes a demand for payment and the occupier fails to make payment within thirty days after the date of the demand.
20. (1) The Authority shall, where it enters into an agreement to install water mains on lands that are being used or intended to be used for development purposes, prepare a written estimate of the cost of the work required to be executed and the person with whom the agreement is entered into shall, before the commencement of the work, pay to the Authority such percentage of the estimated cost as the authority determines.
- (2) Any balance of the actual cost of the work executed by the authority due after the percentage referred to in paragraph (1) has been paid becomes, together with an amount equivalent to sixty percent of the actual cost, payable immediately after the water service has been installed.
- (3) Any balance or surcharge that remains unpaid after the expiration of one month after the date on which it became payable may be recovered by the Authority in any court of competent jurisdiction.
- (4) In computing the actual cost of work executed under this section, labour costs, the cost of material and of transporting the material shall be included.

**II - BARBADOS - Water Services Regulations, 1982**

9. (1) Where an occupier is in arrears with the payment of any rates, charges or fees, or neglects or fails to make payments, the Authority may, without notice, discontinue the water supply services to that occupier; and the supply may not be resumed to the premises until all such arrears, and any further charges or fees that might properly have accrued or have become payable, have been paid.
- (2) The discontinuance of the supply of water under paragraph (1) does not prevent the accrual of any further proper charges or fees.
- (3) Where a person to whom paragraph (1) applies ceases to occupy the premises in respect of which the water rates, charges or fees, are payable without having paid them, the Authority may, in relation to any other premises occupied by the person;
- (a) withhold the supply to the other property; or

<sup>1</sup> i.e. an "occupier of property"

(b) if water has already been supplied, discontinue the supply of water, to the other property, until payment is made.

10. Where, pursuant to regulation 9, the Authority discontinues water supply services to an occupier, the authority may charge the occupier the appropriate fee for reconnecting the supply.

**III - SAINT CHRISTOPHER NEVIS AND ANGUILLA - Watercourses and Waterworks Regulations, 1973**

5. Where a water service is connected, repaired, altered or extended by the Board the cost shall include the following:

- (a) The cost of all materials used (except meters) increased by 33 1/3 per centum.
- (b) The cost of labour.
- (c) Any expenses incurred in carrying out the work including the cost of repairing any part of any street or road broken open for the purpose.

6. (1) The cost of connecting, repairing, altering or extending a water service to any premises shall be recovered from the owner of the premises.

(2) the owner shall on being notified of the amount due, pay the same into the office of the Water Engineer or at such other place as the Minister may appoint.

(3) The Board shall have power to fix a time for the payment of the amount due by any person and to extend such time or to permit of payment being made by instalments.

11. (1) The water service rate due to the Board for water supplied shall be due and payable on demand.

(2) The amount due and demanded for water supplied shall be paid by and be recoverable from the person requiring, receiving or using the water supplied by the Board.

**IV - SAINT CHRISTOPHER NEVIS AND ANGUILLA - Watercourses and Waterworks Regulations, 1973**

12. ... (2) the Board may without prejudice to any other right or remedy of the Board in any of the circumstances mentioned hereunder cut off or disconnect the supply of water to any premises:

- (a) where the water rate in respect of the premises has remained unpaid for seven days after the same has become payable under these Regulations.

... (3) Where the Board supplies water to two or more premises owned or occupied by the same person and the water rate payable by such person in respect of any of those premises has remained unpaid for seven days after the date fixed for payment thereof, the Board may, if the Board shall think fit so to do, without prejudice to any other right or remedy of the Board, cut off or disconnect the supply of water to all or any of those premises until such sum together with all expenses incurred by the Board shall have been paid.

(4) When the supply of water to any premises is disconnected for default in the payment of water rate such service may be reconnected on payment by or on behalf of the defaulting party of the arrears of water rate due and in addition of an additional fee of \$10.00.

**V - CAYMAN ISLANDS - Water Authority Regulations, 1985**

35. ... (5) There shall be payable to the Authority, in respect to any premises connected to the public water supply system and to the public sewerage system, including premises connected to the public sewerage system in pursuance of section 32 and 33 of the Law:

- (a) the appropriate water supply and sewerage service charge to be prescribed by the Authority, which shall be levied annually or at such shorter intervals as the Authority may elect, so long as the service continues;

...

**VI - WESTERN AUSTRALIA - Metropolitan Water, Sewerage and Drainage By laws**

253. (1) Rates shall be payable in each year in equal moieties in advance and the first moiety shall be payable within 14 days after due service of the account and the second moiety shall be payable on the 1st day of January.

(2) Notwithstanding sub-by-law (1) of this by-law, where accounts are served on or after the 18th day of December in each year, rates shall be paid in full within 14 days after due service of the account.

254. (1) Subject to the provisions of these by-laws, every ratepayer is entitled to consume during each consumption year on each separately assessed piece of land of which he is the owner or occupier that quantity of water which, if calculated at the price specified in item (1) of the Schedule in by-law 267 of these by-laws<sup>1</sup>, would amount to the equivalent of the water rate levied in respect of that separately assessed piece of land for the rating year ending the 30th day of June during which that consumption year terminates, provided that such water is taken during that consumption year.

(2) In this by-law "consumption year" means, subject to by-law 278 of these by-laws, the period of twelve months terminating on the day (being in any year a day between the 15th day of January and the 29th day of June next following) fixed by the Board for reading, for the purpose of ascertaining the water consumed, the meter attached to the water service supplying the separately assessed piece of land.

255. When, during the currency of the year in respect of which a water rate has been levied, a meter is attached to a pipe on any land supplied with water, the consumer shall pay for the quantity of water taken, as registered by the meter, from the time when the meter was attached, at the prescribed price per 1,000 gallons, so far as the water supplied is in excess of the quantity to which the consumer is entitled in respect of the rate as provided in by-law 254 of these by-laws.

256. Every consumer taking water in excess of the quantity to which he is entitled in respect of the rates shall pay for the excess in accordance with prices set forth in the Schedule in by-law 267<sup>1</sup>.

257. In any case where the owner or occupier of any separately rated piece of land requires more than one service to be installed for supplying water to such land such additional service or services shall, at the discretion of the Board, be installed on such occupier or owner paying in advance the cost of installation and a fee of six dollars per annum, in addition to meter rent, for each additional service. Such owner or occupier shall also bear cost of installing meter and maintaining service and of having it disconnected when it is no longer required. In return for such fee an equivalent quantity of water will be supplied in each year, in the same way as water is supplied in return for water rates. The provisions of this by-law shall not apply to any apparatus referred to in by-law 266.

258. (1) In every case in which the supply of water shall have been cut-off by reason of non-payment of rates or other charges or by reason of a defective service, or by request of the occupier or owner, or when in the opinion of the Board necessary to prevent waste of water, or for other reasons, a fee as determined by the Board shall be charged, and shall be payable to the owner or occupier on demand.

(2) The service shall not be restored until the disconnection fee and a reconnection fee as determined by the Board have been paid.

261. Where water is supplied by measure to the owner or occupier of land, whether rated under the Act or otherwise, payment for same shall become due and payable within fourteen days after due service of the account, unless otherwise agreed upon.

262. Every consumer of water who received his supply of water through a meter and pays for such supply an amount exceeding the sum which he would be required to pay upon the water rating of his premises, shall, out of such excess, be allowed, so far as such excess will admit thereof, a deduction equal to the value of 5,000 gallons of water per annum on account of each water closet on the premises, for which the supply of water for the flushing shall pass through and be recorded by such meter.

## 9. PROTECTION OF WATER SUPPLY FACILITIES

Protection of the facilities of a public water distribution system, including reservoirs, from deliberate or unintentional impairment is achieved by restricting connections with, and construction of buildings above, the water mains (II and III), and by restraining, enjoining

or otherwise regulating entry and certain activities in the area surrounding system works and facilities - in the essence, through a zoning mechanism. Subordinate legislation spells out the kinds of activities subject to regulation, the nature of restrictions, and provides the procedural and substantive details of permit requirements attendant upon a zoning mechanism (I, IV and V). In addition, it may provide details of the designation procedure of the areas subject to zoning restrictions (VI).

1 - WESTERN AUSTRALIA - Metropolitan Water, Sewerage and Drainage By-laws

3. This Part applies to all Water Reserves and catchment areas constituted under or for the purposes of the act.

4. No person shall bring, convey, throw, deposit, discharge, or leave or cause, permit, or suffer to be brought, conveyed, thrown, deposited, discharged or left into or upon a catchment area any litter, rubbish, refuse, dirt, garbage, offal, fish, dung, dead animal or any noisome, noxious or polluting liquid, substance, matter, or thing which is likely to cause pollution of the catchment area, or any reservoir or watercourse in the catchment area, or which is likely to affect the purity of the water supply.

5. No person shall permit the water of any sink, sewer or drain or any filthy or polluted water discharging from premises occupied by him or under his control, to run, flow, or be brought into any reservoir or watercourse in any catchment area.

6. No person shall camp, light a fire, shoot, hunt any game or catch, or attempt to catch, any fish or marron within a catchment area.

7. No person shall in or upon any water course, lake, reservoir, aqueduct or other water works in a catchment area set afloat, sail, propel or cause to be propelled any craft or vessel, or catch or attempt to catch any fish or marron.

8. No person shall swim, bathe or wash any clothes or other articles in any stream, reservoir, aqueduct or other water works within a catchment area.

9. No person shall within a catchment area:

(a) wilfully injure, damage, disfigure, displace or remove:

- (i) any hedge, fence, stake, post, pillar, pipe or survey mark or peg of the Board; or
- (ii) any board, plate or tablet or any support, fastening or fitting of any board, plate or tablet used or constructed or adapted to be used for the exhibition of any by-law, rule, regulation or notice;

(b) wilfully injure, deface or disfigure any notice or copy of a by-law, rule or regulation displayed upon such a board, plate, tablet or structure.

(c) wilfully injure or damage any work or property belonging to or under the control of the Board upon or used in connection with a catchment area;

(d) open any gates, slip rails or other entrance into any enclosure or the property of the Board without the written permission of the Board;

(e) wilfully or carelessly break, injure, open or shut or wilfully to be open or shut any lock, sluice cock, valve, pipe or other authorised fitting or any work belonging to the Board; or

(f) do or continue to suffer to be done or continued any act or thing which will cause or be likely to cause damage or injury to any property of the Board.

10. No person shall commence or carry out any agricultural or industrial development in a catchment area without the approval in writing of the Board.

11. No person shall commence or proceed with the erection of a building, or any alterations or additions to a building, in a catchment area without the approval in writing of the Board.

12. A person shall not raise or graze horses, goats, sheep, cattle, pigs, or carry on the operations of poultry farming or dairy farming on a catchment area, without written permission of the Board.

13. A person shall not cause or permit any horse, goat, cattle, pig, duck, goose or fowls or other species of livestock to stray or depasture over any portion of a catchment area.

14. The owner or person in charge of any animals or birds shall prevent such from straying on to any lands of the Board within a catchment area.

15. Any animal or bird found straying on any lands of the Board within the catchment area may be-

- (a) driven away or otherwise removed from off such lands;
- (b) sold;
- (c) destroyed;
- (d) otherwise disposed of,

by any officer or person authorised by the Board.

16. The owner or person in charge of any animal or bird which is driven away, sold, destroyed or otherwise disposed of as provided in by-law 15 of these by-laws, shall be liable to pay to the Board all costs and expenses incurred or reasonably charged by the Board and such costs and expenses may be recovered by the Board from such person in any court of competent jurisdiction.

17. The owner or occupier of any house, land or premises situated within a catchment area shall not use any animal manure or artificial manure for cultivation purposes unless written permission therefor has been given by the Board.

18. No person shall lay, place or use upon any part of a catchment area any poison, pesticide, insecticide, or other dangerous substances without written permission of the Board.

19. Abattoirs or slaughter houses shall not be established or conducted in any part of a catchment area.

20. The owner of any animal which dies upon any part of a catchment area or the person under whose charge the animal was at or immediately before the time of its death, shall forthwith upon knowing or being informed of death of the animal remove its body or carcass and so effectively dispose of the same as to prevent pollution of the catchment area.

21. No person shall slaughter a beast in a catchment area in any place or in any manner or under any circumstances or conditions which may be likely to pollute water supply of the catchment area.

22. (1) Any person who slaughters a beast within the catchment areas shall forthwith cause all blood, offal and other refuse products to be collected and deposited in some suitable and proper receptacle constructed of iron or other non-absorbent material and to be disposed of either by removal from the catchment area or by burning or burial in such place and manner or in such other way as shall not be likely to cause pollution of any part of the catchment area or the water supply.

(2) Such person shall cause every such receptacle to be thoroughly cleansed immediately after it shall have been used for the collection and removal of the products aforesaid.

23. Any person who slaughters a beast within the catchment area shall cause every part of the floor of any shed or slaughter house in which such beast has been slaughtered and the walls thereof to a height of 6 feet from the floor and all the fittings thereof upon which any blood or refuse from such slaughtering has been spilled, splashed or deposited, to be thoroughly washed and cleared immediately after completion of the slaughtering.

24. Any person destroying or killing any rabbits or other vermin upon any part of the catchment area shall dispose of the bodies or any part thereof by removal from the catchment area or destruction by fire within all reasonable despatch or shall bury the same at a distance of not less than one hundred yards from the top water level of any reservoir or centre line of any water course or the covering of earth of not less than 10 inches in thickness.

25. No person shall without the written permission of the Board, carry out any clearing operations or destroy, cut, damage or remove any tree or shrub on lands in the catchment area.

26. A person shall not construct a cesspit upon any land within the catchment area without written approval of the Board.

27. The occupier of any land shall, upon being required by notice in writing from the Board to do so, discontinue the use of any cesspit or receptacle for the deposit of human excreta or urine, and shall comply with the requirements of any such notice directing the method to be adopted for the emptying, disinfecting and filling up of the cesspit or receptacle.

28. (1) No person shall within the catchment area dispose of human excreta or urine except in one of the following ways:

- (a) by its being deposited in water-tight metal pans, which shall be emptied and cleansed at least once in every seven consecutive days, or oftener, if necessary to prevent overflow, and the contents removed and disposed of elsewhere than on the catchment area;
- (b) by means of a septic tank or other treatment plant approved by the Board and the Health Department.

(2) Any application for permission to install a septic tank or treatment plant shall be accompanied by complete plans and specifications thereof, a statement of the way in which it is proposed to dispose of the effluent water and a statement of the number of persons to be served by the tank or plant.

(3) No alteration to any septic tank or sewage treatment plant shall be carried out without the permission of the Board.

29. A person shall not cause or permit nightsoil, faecal matter, or refuse to be buried, deposited or spread within a catchment area.

30. (1) Sanitary conveniences on catchment areas shall be constructed to comply with the Uniform Building By-laws or Local Authority By-laws and shall be in conformity with any By-laws

made under the Health Act, 1911.

(2) Sanitary conveniences shall not be constructed within fifty yards of high water mark or such greater distance as the Board may specify and any conveniences situated within this distance shall be taken down by the owner or occupier of premises on which it is situated within one calendar month after notice in writing to this effect has been given by the Board or by an Inspector to such owner or occupier.

(3) Existing sanitary conveniences on catchment areas shall whenever considered necessary by the Board be removed to any position directed by the Board and such removal or re-erection shall be at the cost of the owner who shall have the work completed within one calendar month after service of a notice in writing by the Board requiring this to be done provided that the owner may at any time within two weeks after service of such notice appeal to the Board whose decision shall be final.

31. (1) The occupier of every house or premises shall provide and keep, in a position approved by the Board, such and so many receptacles or boxes of such material and dimensions as may be required by the Board for the temporary deposit of solid house refuse.

(2) The owner or occupier of every house or premises shall regularly collect all refuse or rubbish from such premises and place the same in approved receptacles, and shall not permit or suffer such receptacles to overflow or become offensive, and shall, when necessary or directed by the Board, thoroughly disinfect the receptacles forthwith.

(3) The owner or occupier of every house or premises to which a receptacle is attached or used shall cause it to be emptied at least once a week, or as often as the Board may direct, and shall keep the receptacle in good repair, and upon notice from the Board, shall immediately replace by a new and approved receptacle any receptacle that the Board determines to be worn out or unfit for use.

(4) All receptacles shall be kept in such convenient place to allow of ready removal as may be directed by the Board, so as not to be a nuisance to any person, and shall be kept in a thoroughly sanitary condition, and removed at least once every week.

32. (1) No person shall establish upon a catchment area any camp of workmen engaged in construction of public or other works:

- (a) in such a position that any part of the camp shall be within 250 yards or such a greater distance as shown or be specified by the Board from the top water level of the reservoir or the centre line of the water course;
- (b) unless permission to establish the camp has been granted to him by the Board and in that event subject to such conditions as may be imposed by the Board.

(2) The person to whom permission is granted shall comply with all conditions subject to which such permission was granted, and shall not maintain the camp on the catchment area after the expiration or cancellation by the Board of the permission so granted.

(3) A person to whom any permission has been granted under this by-law shall:

- (a) cause the camp to be maintained at all times in good order and in a clean and sanitary condition;
- (b) provide and at all times maintain proper and convenient closet accommodation and urinals for the use of persons resorting to or occupying such camp with suitable pans constructed of iron or other non-absorbent material;
- (c) make provision that all such pans shall be so covered as to prevent the access of flies thereto;
- (d) cause such pans to be regularly emptied, cleansed and disinfected as often as shall be necessary for the preservation of the sanitation of the camp area and cause the contents of such pans to be disposed of in such place and in such manner as may be approved or directed by the Board or any officer or person authorised by the Board in that behalf;
- (e) cause all closets and urinals to be regularly hosed or disinfected;
- (f) provide a garbage removal service and cause such garbage to be regularly removed from the camp area and disposed of so as to prevent possibility of pollution of the catchment area; and
- (g) not knowingly allow any animal to be kept or to remain in any such camp.

(4) For the purpose of paragraph (f) of sub bylaw (3) of this by law, garbage includes all kinds of refuse, rubbish, manure, ashes, offal, dead animals and noisome things.

33. (1) It shall be lawful for an Inspector, or any assistants acting under the directions of an Inspector, or other authorised officer, at his discretion, at any reasonable hour, with or without notice, to enter any land, house, or premises for the purpose of ascertaining whether any act or thing is being done or permitted within such land, house or premises in breach of these by laws.

and to remove, or cause to be removed, anything therein or thereon in breach of these by-laws, or to take such steps as he may deem necessary for carrying out these provisions.

12) The cost of such removal or such other necessary act shall be borne by the owner or occupier of the premises upon which such breach shall occur.

34. Unless otherwise provided, the time which may elapse between the giving of a notice and the doing of a thing required to be done by any Inspector or other authorised officer shall be determined by the Board according to the nature of each case.

35. No person shall trespass within the fenced ground adjacent to or reserved for Water Supply, Sewerage or Stormwater Drainage Works or enter, without lawful authority, any Water, Sewerage or Stormwater Drainage Work not open to the public.

37. No person shall remove, pluck, or damage any wildflower, shrub, bush, tree or other plant growing on any land or reserve vested in the Board.

38. No person shall permit any dog of which he is the owner to trespass on any portion of the ground in the vicinity of any water, sewerage, or stormwater drainage works.

39. No person shall leave loose paper or other refuse on any portion of the grounds of any reservoir or water, sewerage or stormwater drainage works, except in the receptacles provided therefor.

40. No person shall post or distribute bills, advertisements, or other notices on any portion of any reservoir or water, sewerage or stormwater drainage works, or on any portion of the ground in the vicinity thereof.

41. No person shall commit a nuisance on any portion of the grounds in the vicinity of any reservoir or water, sewerage or stormwater drainage works.

42. No person shall drive, take or ride any vehicle, conveyance, or animal in such manner as to endanger any pipe or conduit or any branch thereof, or permit such vehicle, conveyance or animal to cross the same except where crossing places have been provided as indicated by signboards.

43. No person shall in the vicinity of any works carry on or cause to be carried on any mining or quarrying operation, or make any excavation of any sort, or cause any explosion so as to injure any waterworks, sewerage works, sewers, drains, pipes, or fittings whatsoever.

#### **II - WESTERN AUSTRALIA - Metropolitan Water, Sewerage and Drainage By-laws**

287. No person shall make any connection or interfere with any pipe, sewer, or fitting of the Board or with any water pipes, sewer, or drain communicating therewith, at any other place than shall be approved by the Board, and the main shall only be tapped by the workmen of the Board.

288. (1) Any person who, without the written consent of the Board, erects or maintains any building or structure or causes any building or structure to be erected or maintained, or places or keeps any material or thing or causes any material or thing to be placed or kept over any pipe, sewer, drain or fitting which is the property of the Board, and thereby:

- (a) trespasses on or causes injuries to such pipe, sewer, drain or fitting; or
- (b) prevents or in any way impedes or obstructs the inspection, maintenance, cleansing, repair, management or use of such pipe, sewer, drain, or fitting,

shall be guilty of an offence and be punishable on summary conviction by a penalty not exceeding eighty dollars, and in the case of a continuing breach of this by-law the offender shall be liable to a further penalty not exceeding ten dollars for each day the offence continues after notice thereof has been given by or on behalf of the Board to the offender.

(2) The Board may cause any building, structure, material, or thing erected, placed, maintained, or kept over any such pipe, sewer, drain, or fitting in contravention of this by-law to be altered, pulled down, removed, or otherwise dealt with as it thinks fit.

(3) Any person committing any breach of this by-law shall, in addition to any penalty imposed on him, pay any expense incurred by the Board in consequence of such breach.

(4) This by-law shall extend and apply to buildings, structures, materials, or things maintained or kept as aforesaid, whether they were erected or placed over the pipe, sewer, drain or fitting before or after the passing of this by-law.

#### **III - BOTSWANA - Draft Water Supply Regulations**

27. (1) A person must not, without a water authority's consent, cause or allow:

- (a) any structure to be built or any filling to be placed on land in which the water authority has a proprietary interest of any type whatsoever;
- (b) any structure to be built or any filling to be placed within three metres of any works of the water authority;

(c) any soil, rock or other matter that supports, protects or covers any works of the water authority to be removed.

Penalty: P

Default Penalty: P

(2) An application for a water authority's consent must be made in the manner prescribed by it and must be accompanied by any plans and other information that the water authority prescribes.

(3) A water authority may

(a) refuse its consent; or

(b) consent; or

(c) consent subject to any conditions it thinks fit.

(4) A person who, with the consent of a water authority, causes or allows anything referred to in sub-regulation 27(1) to be done must make sure that the thing is done in accordance with any conditions on which the water authority gave its consent.

Penalty: P

Default Penalty: P

(5) If a structure has been built or any filling placed on land contrary to this regulation, a water authority may, by notice in writing to the owner or occupier of the land, require the owner or occupier to alter, remove or relocate such structure or filling, whether or not the structure was built or the filling placed by or on behalf of the owner or occupier.

(6) Consent given by a water authority under sub-regulation 27(3) is binding upon the applicant, his heirs, successors and assignees and the owner or occupier for the time being of the land, whether or not that person has notice of the consent or the conditions thereof.

(7) A person must not contravene or fail to comply with or cause or allow any person to contravene or fail to comply with:

(a) any conditions attached to a water authority's consent;

(b) any requirement of a notice served on that person under sub-regulation 27(5).

Penalty: P

Default Penalty: P

#### IV - SOUTH AUSTRALIA - Waterworks Regulations, 1974

##### 37. - WATERSHEDS

37.1 *Disposal of Animal Carcasses in Watersheds* (Omitted)

37.2 *Control of Piggeries, Zugs and Feedlots in Watersheds* (Omitted)

37.3 *Control of Cowsheds and Cow Yards, Stockyards, Stables, Kennels, Poultry Sheds and Poultry Yards in Watersheds.* (Omitted)

37.4 *Obstruction to Watercourses in Watersheds*

37.4.1 No person shall construct or commence the construction of any dam or other obstruction so as to confine, check, restrain or divert the full and free flow of water or any part thereof in any stream or watercourse within a watershed without a written permit so to do from the Minister.

37.4.2 Application for a permit shall be made in writing to the Minister, who may grant the permit subject to such conditions as he thinks fit or refuse the permit.

37.4.3 Any person who commits a breach of paragraph (4.4) of this Regulation shall be guilty of an offence against these Regulations and the Minister may enter upon such land as is necessary to execute such work, and may recover the cost of so doing from the owner or occupier of the land upon which such work was executed or from the person to whom the notice was directed.

37.5 *Control of Quarrying, Sandwashing, etc., in Watersheds*

37.5.1 No person shall engage in quarrying, sandwashing, mining, or other operations involving the removal of soil, earth, loam, rock, sand or gravel from any land within a watershed without a permit so to do from the Minister.

37.5.2 Application for a permit shall be made in writing to the Minister, who may grant the permit subject to such conditions as he thinks fit or refuse the permit.

37.5.3 If a person is refused a permit under this regulation or has been granted a permit subject to conditions, he may request the Minister to reconsider the permit application and may submit to the Minister such written submissions as he thinks fit, and upon such request being made to the Minister shall



reconsider the application and any written submission submitted, and may reverse, vary or uphold his previous decision.

- 37.5.4 Any person who engages in any such quarrying, sandwashing, mining or other operations without a permit or who fails to comply with all of the conditions of a permit shall be guilty of an offence against these regulations.

...

#### V - BOTSWANA - Draft Water Supply Regulations

15. ... (3) In a protected zone, a person must not, unless the water authority otherwise directs, cause or allow:

- (a) any borehole to be constructed or used for the extraction of water or the disposal of waste;
- (b) any livestock to graze or be confined;
- (c) any excreta, waste or rubbish to be deposited or to flow therein either directly or indirectly;
- (d) any burial to take place;
- (e) any house, building or other structure to be erected;
- (f) the doing of any act or thing which may directly or indirectly cause the pollution or depletion of any water or injury to any borehole or works.

Penalty: F

Default Penalty: F

#### VI - BOTSWANA - Draft Water Supply Regulations

15. (1) A water authority may establish a protected zone under section 41 by resolution of a meeting of the water authority.

(2) The water authority may, by notice published in the Gazette, or served on the owner or occupier of any land:

- (a) prescribe the boundaries of any protected zone;
- (b) prohibit entry by any person to the protected zone, except for the purpose of maintaining or repairing water supply works;
- (c) prohibit, regulate or control any activities within the protected zone.

...

## 10. STANDARDS OF QUALITY OF WATER SUPPLIED THROUGH A PUBLIC DISTRIBUTION SYSTEM, AND COMPANION MONITORING, RECORDING, AND OTHER REQUIREMENTS

Concern for the quality particularly of drinking water supplied to the public through a reticulation system is reflected in legislation prescribing standards of wholesomeness of the water supplied. Additional requirements may concern water quality monitoring, including sampling and testing (I); recording of data (II); reporting on system performance (III); and making relevant information available to the public (IV).

#### I - UNITED KINGDOM - Private Water Supply Regulations, 1991

8. It shall be the duty of every local authority to take and analyse samples of water from every category one and category two private supply serving premises in their area in accordance with the following provisions of this Part.

13. (1) A local authority shall:

- (a) determine the times of the year and of the day when samples of water from a private supply are to be taken;
- (b) if a private supply serves a number of premises, select at random the premises at which samples are to be taken.

so as to ensure that, so far as is reasonably practicable, analysis of the samples will produce data which is representative of the quality of water from that supply.

(2) Samples are to be taken:

- (a) in relation to premises supplied with water for food production purposes, from a point immediately before the point where the supply is so used;
- (b) in relation to all other premises, at a tap used for supplying water for drinking or cooking.

(3) Where a local authority is required under the provisions of Schedule 3<sup>1</sup> or 4<sup>1</sup> to take more than one sample within a specified period, the samples shall be taken at regular intervals.

(4) A local authority shall, in accordance with paragraph (5), take and analyse a sample of water from any supply to which regulation 11 applies<sup>2</sup> as soon as it becomes aware of its use or proposed use.

(5) The sample of water to be taken by virtue of paragraph (4) shall be in addition to any other sample required by these Regulations and shall be analysed for compliance with the prescribed concentrations or values for:

- (a) in the case of a class A, B, 1 or 2 supply, all the parameters listed in column (1) of Schedule 3;
- (b) in the case of a class C, D, E, 3, 4 or 5 supply, the parameters listed in column (2) of Part II of Schedule 4.

(6) It shall be the duty of a local authority to take samples of water from private supplies of classes C, D, E, 3, 4 and 5 serving premises in their area from time to time to ascertain and record the extent to which any pesticides and related products are present in those supplies.

(7) A local authority shall, at the request of a person who is a relevant person in relation to a private supply serving premises in its area, take and analyse a sample from the supply for compliance of the parameters specified by that person with the prescribed concentrations or values for those parameters.

14. Subject to regulations 15 to 17, a local authority shall, in the case of a class A, B, 1 or 2 supply, take in each year not less than the standard number of samples specified in column (3) or, as the case may be, column (6) of Schedule 3 for each parameter listed in column (1) of that Schedule and shall analyse the samples for compliance with the prescribed concentrations or values for those parameters.

15. (1) Subject to paragraph (4), where:

- (a) a local authority sample in accordance with regulation 14 for three successive years and in each of those years the requirement mentioned in paragraph (2) is satisfied in relation to a parameter listed in column (1) of Part I or III of Schedule 3, and
- (b) the local authority is of the opinion that the concentration or value in respect of that parameter is unlikely to increase or, in the case of hydrogen ion, decrease to any significant extent in the next following year,

the number of samples to be taken in that year in respect of that parameter may be reduced to the frequency specified in column (2) or, as the case may be, column (5) of that Schedule in relation to that parameter.

(2) The requirement referred to in paragraph (1)(a) is that an analysis of each sample taken in relation to the parameter in question has established:

- (a) in the case of hydrogen ion, a pH value that is not less than 6.5 and not more than 8.5;
- (b) in any other case, a concentration or value which is less than 50 percent of the prescribed concentration or value for that parameter.

(3) Where in accordance with paragraph (1) the number of samples to be taken in any year in respect of the conductivity or hydrogen ion parameter may be reduced to the frequency applicable for that parameter specified in column (2) or, as the case may be, column (5) of Schedule 3, the number of samples to be taken in that year in respect of the qualitative odour and qualitative taste parameters may be reduced to the same frequency.

(4) The preceding provisions of this Regulation shall apply in relation to the period ending on 31st December 1994 so that the reduced frequency of sampling may be adopted in that period in relation to a parameter if:

<sup>1</sup> Omitted

<sup>2</sup> I.e., a supply which is to be or is being used for the first time.

- (a) it would have been permissible if these Regulations had been in force throughout the period of three years mentioned in paragraph (1); or
- (b) the local authority did not sample as frequently as required by regulation 14 during the relevant period before these Regulations came into force but they are satisfied on the basis of a scientific assessment of the samples actually taken that the reduction is justified.

16. (1) Subject to paragraph (2), where the analysis of any sample taken by a local authority has established in respect of any parameter listed in column 1 of Parts I to IV of Schedule 3 that the prescribed concentration or value for that parameter has been contravened, the sampling frequency for that parameter shall be increased:

- (a) for the remainder of that year, to the frequency specified in column (4) or, as the case may be, column (7) of that Schedule multiplied by the number of whole months in that period and divided by 12; and, where the result is not a whole number, rounded up to the nearest whole number;
- (b) for subsequent years, to the frequency so specified.

(2) If, for a whole year during the period in which the sampling frequency in respect of a parameter has been increased in accordance with paragraph (1), no sample exceeds the prescribed concentration or value for that parameter, the local authority may revert to sampling in accordance with regulation 14.

17. A local authority shall in the case of a class 2 supply take a sample twice a month for all parameters listed in column (1) of Part V of Schedule 3 from the commencement of these Regulations until they are satisfied that the supply in question complies with the prescribed concentrations or values for the parameters specified in Table C<sup>1</sup> when the authority may sample in accordance with regulation 14.

18. A local authority shall, in accordance with Schedule 4, take samples in the case of a class C, O, E, 3, 4 or 5 supply and analyse them for compliance with the prescribed concentrations or values for the parameters specified in that Schedule in relation to that class of supply.

19. (1) A local authority shall secure, so far as is reasonably practicable, that in taking, handling, transporting, storing and analysing or causing to be analysed any sample taken for the purposes of these Regulations, the appropriate requirements are satisfied.

(2) In paragraph (1) "the appropriate requirements" means such of the following requirements as are applicable:

- (a) that the sample is representative of the quality of the water at the time of sampling;
- (b) that the sample is not contaminated when being taken or subsequently;
- (c) that the sample is kept at such temperature and in such conditions as will secure that there is no material alteration of the concentration or value for the measurement or observation of which the sample is intended;
- (d) that the sample is analysed as soon as may be after the time it has been taken:
  - (i) by, or under the supervision of, a person who is competent to perform that task;
  - (ii) with the use of such equipment as is suitable for the purpose;
  - (iii) by applying such analytical systems and methods as are capable of establishing, within acceptable limits of deviation and detection, whether the sample contains concentrations or values which contravene the prescribed concentrations or values, and
- (e) that any laboratory at which samples are analysed has a system of analytical quality control that is subject from time to time to checking by a person who is:
  - (i) not under the control of either the laboratory or the authority, and
  - (ii) approved by the Secretary of State for that purpose.

(3) Within 28 days of the results of an analysis of any sample of a private supply taken from any premises being available to the local authority which took the sample, the authority shall notify the owner of those premises of the results of that analysis and any other relevant person who is to be charged for the taking and analysis of the sample from those premises under regulation 20(1).

21. (1) Subject to paragraph (2), a local authority may enter into arrangements with:
- (a) a relevant person for the taking and analysis of samples in accordance with these Regulations on behalf of, but at no expense to, the authority; or
  - (b) any other person for the analysis of samples in accordance with these Regulations on behalf of the authority (whether or not involving the authority in expense).
- (2) A local authority shall only enter into arrangements under paragraph (1) if it is satisfied that the tasks will be carried out by, or under the supervision of, a person competent to perform them and otherwise in accordance with these Regulations.
- (3) Arrangements under paragraph (1)(a) shall include a requirement for the results of any analysis to be sent to the local authority as soon as they are available.

**II - UNITED STATES OF AMERICA - National Interim Primary Drinking Water Regulations**

141.33 Any owner or operator of a public water system subject to the provisions of this part shall retain on its premises or at a convenient location near its premises the following records:

- (a) Records of bacteriological analyses made pursuant to this part shall be kept for not less than 5 years. Records of chemical analyses made pursuant to this part shall be kept for not less than 10 years. Actual laboratory reports may be kept, or data may be transferred to tabular summaries, provided that the following information is included:
  - (1) The date, place, and time of sampling, and the name of the person who collected the sample;
  - (2) Identification of the sample as to whether it was a routine distribution system sample, check sample, raw or process water sample or other special purpose sample;
  - (3) Date of analysis;
  - (4) Laboratory and person responsible for performing analysis;
  - (5) The analytical technique/method used; and
  - (6) The results of the analysis.
- (b) Records of action taken by the system to correct violations of primary drinking water regulations shall be kept for a period not less than 3 years after the last action taken with respect to the particular violation involved.
- (c) Copies of any written reports, summaries or communications relating to sanitary surveys of the system conducted by the system itself, by a private consultant, or by any local State or Federal agency, shall be kept for a period not less than 10 years after completion of the sanitary survey involved.
- (d) Records concerning a variance or exemption granted to the system shall be kept for a period ending not less than 5 years following the expiration of such variance or exemption.

**III - UNITED STATES OF AMERICA - National Interim Primary Drinking Water Regulations**

141.31 (a) Except where a shorter reporting period is specified in this part, the supplier of water shall report to the State within 90 days following a test, measurement or analysis required to be made by this part, the results of that test, measurement or analysis.

(b) The supplier of water shall report to the State within 48 hours the failure to comply with any primary drinking water regulation (including failure to comply with monitoring requirements) set forth in this part.

(c) The supplier of water is not required to report analytical results to the State in cases where a State laboratory performs the analysis and reports the results to the State office which would normally receive such notification from the supplier.

**IV - UNITED STATES OF AMERICA - National Interim Primary Drinking Water Regulations**

141.32 (a) If a community water system fails to comply with an applicable maximum contaminant level established in Subpart B<sup>1</sup>, fails to comply with an applicable testing procedure established in Subpart C<sup>1</sup> of this part, is granted a variance or an exemption from an applicable maximum contaminant level, fails to comply with the requirements of any schedule prescribed pursuant to variance or exemption, or fails to perform any monitoring required pursuant to Section 1445 (a) of the Act, the supplier of water shall notify persons served by the system of the failure or grant by inclusion of a notice in the first set of water bills of the system issued after the failure

or grant and in any event by written notice within three months. Such notice shall be repeated at least once every three months so long as the system's failure continues or the variance or exemption remains in effect. If the system issues water bills less frequently than quarterly, or does not issue water bills, the notice shall be made by or supplemented by another form of direct mail.

(b) If a community water system has failed to comply with an applicable maximum contaminant level, the supplier of water shall notify the public of such failure, in addition to the notification required by paragraph (a) of this section, as follows:

- 1) By publication on not less than three consecutive days in a newspaper or newspapers of general circulation in the area served by the system. Such notice shall be completed within fourteen days after the supplier of water learns of the failure.
- 2) By furnishing a copy of the notice to the radio and television stations serving the area served by the system. Such notice shall be furnished within seven days after the supplier of water learns of the failure.

(c) If the area served by a community water system is not served by a daily newspaper of general circulation, notification by newspaper required by paragraph (b) of this section shall instead be given by publication on three consecutive weeks in a weekly newspaper of general circulation serving the area. If no weekly or daily newspaper of general circulation serves the area, notice shall be given by posting the notice in post offices within the area served by the system.

(d) If a non-community water system fails to comply with an applicable maximum contaminant level established in Subpart B of this part, fails to comply with an applicable testing procedure established in Subpart C of this part, is granted a variance or an exemption from an applicable maximum contaminant level, fails to comply with the requirement of any schedule prescribed pursuant to a variance or exemption or fails to perform any monitoring required pursuant to Section 1445(a) of the Act, the supplier of water shall give notice of such failure or grant to the persons served by the system. The form and manner of such notice shall be prescribed by the State, and shall insure that the public using the system is adequately informed of the failure or grant.

(e) Notices given pursuant to this section shall be written in a manner reasonably designed to inform fully the users of the system. The notice shall be conspicuous and shall not use unduly technical language, unduly small print or other methods which would frustrate the purpose of the notice. The notice shall disclose all material facts regarding the subject including the nature of the problem and, when appropriate, a clear statement that a primary drinking water regulation has been violated and any preventive measures that should be taken by the public. Where appropriate, or where designated by the State, bilingual notice shall be given. Notices may include a balanced explanation of the significance or seriousness to the public health of the subject of the notice, a fair explanation of steps taken by the system to correct any problem and the results of any additional sampling.

(f) Notice to the public required by this section may be given by the State on behalf of the supplier of water.

(g) In any instance in which notification by mail is required by paragraph (a) of this section but notification by newspaper or to radio or television stations is not required by paragraph (b) of this section, the State may order the supplier of water to provide notification by newspaper and to radio and television stations when circumstances make more immediate or broader notice appropriate to protect the public health.

## 11. LICENSING OF PLUMBERS

The licensing or registration of plumbers frequently features in the legislation on water supply - and sewerage - services as a mechanism to uphold standards of professionalism in that particular trade. Subordinate legislation, as in all the examples below, typically provides the substantive and procedural details of the licensing or registration requirements, including, in particular, the formal scrutiny of applicants and their qualifications by appointed boards of examiners.

**I - SOUTH AUSTRALIA - Waterworks Regulations, 1974**

**27. EXAMINATION AND REGISTRATION OF WATER PLUMBERS**

The Sanitary Plumbers' Examining Board appointed pursuant to the Regulations under the Sewerage Act, 1929-1974 as amended, and hereinafter referred to as the Board, shall conduct examinations for Certificates of Competency in Water Plumbing and make recommendations to the Minister for registration in the various categories of water plumbing in accordance with these Regulations.

**27.1 Qualifications of Applicants for Examination**

Except with the permission of the Board only the following shall be permitted to present themselves for examination for a Certificate of Competency in Water Plumbing.

27.1.1 A person who is the holder of a Certificate of provisional registration as a water plumber issued pursuant to Regulation 27.5.1, or

27.1.2 A person who is the holder of a Temporary Permit to work as a Water Plumber issued pursuant to Regulation 27.5.2.

**27.2 Qualifications of Applicants for Certificate of Competency in Water Plumbing**

The Board shall issue to any qualified person a Certificate of Competency in Water Plumbing. The following persons shall be qualified persons as aforesaid.

27.2.1 A person who has obtained a pass in the examination for a Certificate of competency in Water Plumbing conducted by the Board or by the Department of Further Education which in the opinion of the Board is of an equivalent standard to the examination conducted by the Board,  
and

Has been engaged for a period of not less than 3 years or such other period as may be determined by the Board on cold and hot water plumbing under the direct supervision of a registered water plumber,  
or

Has been engaged for a period of not less than 3 years on cold and hot water plumbing and in addition has worked for a period of not less than 12 months or such other period as may be determined by the Board on cold and hot water plumbing under the supervision of a registered water plumber.

**27.3 Registration as a Water Plumber**

The Minister may on the recommendation of the Board issue a Certificate of Registration as a water plumber to any person who

27.3.1 Is the holder of a Certificate of Competency in Water Plumbing issued by the Board, or

27.3.2 Is the holder of a Certificate of Proficiency in Sanitary Plumbing issued pursuant to Regulations under the Sewerage Act 1929-1974 as amended, or a Certificate of Competency in Sanitary Plumbing issued by the Board for examinations held prior to 1973,  
or

27.3.3 Is the holder of and produces to the Board a licence or Certificate which is then in force and which has been issued by any authority recognized by the Board, the standard of which licence or certificate is in the opinion of the Board equivalent to a Certificate of Competency issued by the Board.

**27.4 Examinations (Omitted)**

**27.5 Provisional Registration and Temporary Permits**

27.5.1 The Minister may on the recommendation of the Board grant provisional registration as a water plumber to any person who satisfies the Board as to his competency in cold and hot water plumbing and issue to that person a certificate of provisional registration as a water plumber.

27.5.2 The Minister may on the recommendation of the Board issue to any person who has worked at the trade of water plumbing for a period of at least three years or such other time as determined by the Board a temporary permit to work as a water plumber under the immediate supervision of a registered water plumber.

**27.6 Registration - General**

**27.6.1 Duration of Registration**

Every certificate or provisional certificate of registration as a water plumber or temporary permit to work as a water plumber shall, unless cancelled or suspended by the Minister, remain in force until 30th day of June after issue.

27.6.2 Every registration and certificate of registration as a water plumber, provisional registration as a water plumber, and temporary permit to work as a water plumber may upon payment of the prescribed fee be renewed by the holder thereof.

27.6.3 *Cancellation or Suspension of Registration*

The Minister may cancel or suspend for such time as he thinks fit the registration or provisional registration of any registered water plumber, or the temporary permit issued to any person who commits any breach of the provisions of the Act or these Regulations, or who fails to carry out any lawful direction or instruction given by any officer who has authority from the Minister to issue such directions or instructions, or who obstructs or hinders any officer carrying out his lawful duty.

27.6.4 *Categories of Registration*

27.6.4.1 Registration pursuant to Regulations under the Sewerage Act 1929-1974 as amended, as a master plumber, sanitary plumber, provisional registration as a master plumber, and provisional registration as a sanitary plumber includes registration as a water plumber.

27.6.4.2 A provisional permit to work at the trade of sanitary plumbing issued pursuant to Regulations under the Sewerage Act 1929-1974 as amended includes a temporary permit to work under the immediate supervision of a registered water plumber.

27.7 *Fees (Omitted)*

27.8 *Production of Certificate of Registration*

Every person working as a registered or provisionally registered water plumber or who is the holder of a temporary permit as a water plumber shall produce his current registration when required to do so by the person on whose behalf the work is being done or by an inspector appointed pursuant to the Sewerage Act 1929-1974. The certificate shall be produced immediately, or within 24 hours at the place nominated by the person requiring the production of the certificate.

**II - WESTERN AUSTRALIA - Metropolitan Water, Sewerage and Drainage By-laws**

44. No person shall carry out any work in connection with the water supply or apparatus connected therewith, unless he is duly licensed by the Board as a "Licensed Water Supply and Sanitary Plumber" or as a "Licensed Water Supply Plumber."

47. The conditions upon which licenses will be issued by the Board are:-

- (a) The Board may grant licenses to Water Supply and Sanitary Plumbers and to Water Supply Plumbers on condition that the certificate of a Board of Examiners appointed by the Board has been obtained, the prescribed payment made and provided that he is satisfied that the applicant is a fit and proper person to hold a license and is more than 21 years of age.
- (b) Such licenses shall be issued subject to the by-laws and any special conditions that the Board may consider desirable.
- (c) The holder of a Water Supply and Sanitary Plumber's License may carry out any water supply or sewerage plumbing or drainage work within the Metropolitan Water, Sewerage and Drainage Area, and only plumbers holding such licenses shall do or cause to be done plumbing or drainage work within areas open for sewerage house connections.
- (d) The holder of a Water Supply Plumber's License may carry out water supply work only outside any area open for sewerage house connections.

48. (1) Every holder of a license from the Board:

- (a) shall execute such works in accordance with the provisions of the Act and of these by-laws and of any special directions or orders given or issued by the Board;
- (b) shall execute such works in a thorough and tradesman-like manner to the satisfaction of the Board as expeditiously as practicable;
- (c) shall on actual sewerage plumbing work, but not including drains employ only such certificated operatives as provided for in by-law 56;
- (d) shall obtain permission from the person or authorities concerned when necessary for the execution of such works on, over, or through any private property, or any streets, roads, parks, reserves, or other public places or properties;
- (e) shall pay any fees demanded by any Municipality or other local authority for opening any street, road, or thoroughfare, or otherwise in connection with such work;

- (f) shall restore any part of any street, road or thoroughfare interfered with by such work to the satisfaction of the local authority having control thereof, upon the completion of such work;
- (g) shall restore any other property interfered with by such work to the satisfaction of the Board's Inspector; and
- (h) shall, in the execution of such work, take such proper and necessary precautions that no accident or damages or unnecessary inconvenience may be directly or indirectly occasioned thereby.

42) Every license granted by the Board shall be subject to suspension or cancellation, as the Board may determine when, in the opinion of the Board, the holder thereof has failed to comply with the conditions of such license, and such suspension or cancellation shall not prejudice the Board's right to take any of the proceedings against the holder of such license which the Board is by law authorised to take.

49. Subject to the provisions of these by-laws every applicant for a License as a Water Supply and Sanitary Plumber shall pass an examination set by a Board of Examiners appointed by the Board in the following subjects, namely:

- (a) All branches of the plumber's trade, including a knowledge of all materials used by the plumber or drainer.
- (b) Water supply, sewerage and drainage work, including the proper disposal of pipes, fittings, etc. for hot water installations.
- (c) A knowledge of these by-laws, and the construction of all water supply and sewerage apparatus and appliances required thereby; and a knowledge of the by-laws of Local Authorities in the Metropolitan Water Supply, Sewerage and Drainage Area.
- (d) The general principles of sanitary and water supply plumbing work.
- (e) Every candidate shall satisfy the Board of Examiners as to his practical ability as a sanitary plumber and drainer and that he has served not less than five years at the trade and may be required to submit samples of work done by himself, and also to do any plumbing or drainage work which may be required by the Examiners.

...

51. Subject to the provisions of these by-laws every applicant for a Water Supply Plumber's License shall pass an examination by a Board of Examiners appointed by the Board in the following subjects, that is to say:

- (a) A knowledge of that branch of the plumber's trade relating to water supply.
- (b) Water supply work, including the proper disposal of pipes, fittings, etc., for hot water installations.
- (c) A knowledge of these by-laws as applied to water supply plumbing.
- (d) The general principles of water supply plumbing work.
- (e) Every candidate shall satisfy the Board of Examiners as to his practical ability as a water supply plumber and may be required to submit samples of work done by himself, and also to do any water supply plumbing work which may be required by the Examiners.

54. Every license issued by the Board under these by-laws shall be current only to the 30th June next following the date of issue and may be renewed each year for a period of twelve months expiring on the 30th June in the next succeeding year, and the holder of a Water Supply and Sanitary Plumber's License or a Water Supply Plumber's License shall apply for a renewal thereof and pay the necessary fee prior to the expiration of the period for which his existing license is current.

55. A list of licensed water supply and sanitary plumbers and water supply plumbers shall from time to time be published at the office of the Board.

56. (1) Any licensed water supply and sanitary plumber or water supply plumber who shall refuse either by himself or by those employed by him to give any needful or proper information required by an officer of the Board shall be guilty of an offence and liable on conviction to a fine not exceeding eighty dollars.

(2) Any licensed water supply and sanitary plumber or water supply plumber who commits a breach of any of these by-laws may be required by the Board to show cause why his license should not be suspended or cancelled.

(3) Any water supply and sanitary plumber or water supply plumber whose license has been suspended shall not be relicensed as a licensed water supply and sanitary plumber or water supply plumber until the term of his suspension has expired, or the Board has directed the reinstatement of his license.



**III - CAYMAN ISLANDS - Water Authority Regulations, 1985**

28. (1) Any person who wishes to perform well drilling, plumbing, or cesspool emptying work shall, in pursuance of sections 37, 39 and sub-paragraph 1(a) of sub-section (1) of section 60, of the Law shall apply to the Authority for a well driller's, plumber's or cesspool emptier's licence, as the case may be, on the form issued by and obtainable from the Authority, and shall include such of the appropriate particulars as are material to the application.

(2) An application made in pursuance of sub-section 28(1) shall be accompanied by the fee which is prescribed in Schedule 2 to these Regulations<sup>1</sup>, and no application shall be entertained by the Authority until payment of the prescribed fees has been effected.

(3) Upon satisfactory evidence of the applicant's qualifications supplied with an application, the Authority shall grant a licence, and shall cause an entry to that effect to be made in the General Register of the Water Operators' Licences.

(4) Licences granted under this Part of the regulations shall be in the form set out in Schedule 1 to these Regulations.

(5) Licences granted under this Part of the regulations shall be valid for a period of one year from the date of the grant, and can be renewed in accordance with regulation 5 of these regulations<sup>2</sup>, subject to payment of the appropriate fee as prescribed in Schedule 2 to these regulations<sup>1</sup>.

(6) Where the Authority intend to take action in pursuance of section 40 of the Law, they shall serve on the holder of a licence notice in writing calling upon him to show cause why his licence should not be revoked, if within 14 days from the date the notice was served, the holder of the licence fails to submit to the Authority a statement in writing indicating the reasons why the licence should not be revoked, or fails to appear before the Director of the Authority within the said period, the licence shall be revoked forthwith. The Authority shall consider any written or oral statement submitted to them in pursuance of this sub-section, and may thereafter by notice in writing addressed to the holder of the licence:

- (a) declare the licence revoked, or
- (b) declare the licence unchanged.

(7) For the avoidance of doubts, it is hereby clarified that the last sub-section 28 (6) shall apply in relation to:

- (a) a well driller's licence;
- (b) a plumber's licence; and
- (c) a cesspool emptier's licence

(8) The Authority shall cause an entry to be made in the General Register of Water Operators' Licences in relation to any action taken in pursuance of section 40 of the Law.

29. (1) Without derogating from the provisions of regulation 28 the Authority shall refer all applications for a plumber's licence to the Plumbers Examination Board which shall assess the ability of the applicant and shall make recommendations to the Authority. The Authority shall accept the recommendations of the Plumbers Examination Board and issue a licence as recommended, or refuse a licence.

(2) A licence under this regulation shall be issued for one of the following categories, namely:

- (a) master plumber;
- (b) journeyman plumber; and
- (c) apprentice plumber.

(3) Qualifications for the said categories are:

- (a) for a master plumber, a minimum of ten years experience of working as a plumber in the Cayman Islands, or in any other country provided proof thereof can be supplied with the relevant application;
- (b) for a journeyman plumber, a minimum of three years experience of work as a plumber in the Cayman Islands, or in any other country, provided proof thereof can be supplied with the relevant application; and
- (c) for an apprentice plumber, the sponsorship of a master or journeyman plumber who is prepared to give on-the-job training attendance of training courses given by recognized training institutions, with proof of satisfactory results; and service as an apprentice

<sup>1</sup> Omitted.

<sup>2</sup> See chapter III GROUNDWATER DEVELOPMENT AND CONSERVATION, sub chapter 4 under example IV.

plumber for a minimum period of two years. For the avoidance of doubts, it is hereby clarified that all three requirements must be met at the time an application for a licence is made.

(4) An apprentice plumber or an unlicensed workman must at all time work under the supervision of a master plumber or journeyman plumber.

(5) The plumbing work and design which shall be carried out by the classes of plumbers listed in sub-section (2) of this Regulation shall be designated in the Plumbing Code of the Cayman Islands or, in default, by the Authority.

30. (1) The Authority shall establish a Plumbers Examination Board which shall be composed of four members nominated by the Authority and appointed by the Governor.

(2) The Plumbers Examination Board shall assess the ability of a plumber making application to be licensed under the Law and shall recommend to the Authority the category of licence to be awarded to an applicant. It shall be the duty of the Plumber Examination Board to establish guidelines for the training and assessment of plumbers and to establish a uniform method of assessment.

(3) The Plumbers Examination Board shall meet as necessary or at least every six months. All members of the Plumbers Examination Board or their approved nominee shall be present during the assessment of the applicant. Minutes of all meetings and a record of recommendations shall be kept by the secretary to the Plumbers Examination Board and forwarded to the Authority.

31. (1) The Authority shall keep, in such manner as they deem fit, a General Register of Water Operator's Licences, which shall contain a copy of all licences granted in pursuance of this Part of the regulations, and information concerning any action taken by the Authority in relation to such licences after the grant thereof.

(2) The public shall have access to this register, and extracts thereof shall be obtainable from the Authority, in accordance with sub-section (2) of regulation 12 of these regulations<sup>1</sup>.

44. (1) Any person practising as a plumber in the Cayman Islands on or before the effective date of these regulations, under a trade or business licence issued by the Caymanian Protection Board, on application to the Authority made on the appropriate form issued by and obtainable from the Authority shall be entitled to the grant of a licence to operate as a journeyman plumber, provided the Authority is satisfied of the competence of the applicant, and that the appropriate registration fee prescribed in Schedule 2 to these regulations<sup>2</sup> has been paid.

(2) A plumber who is entitled to the grant of a journeyman plumber's licence may apply to the Authority for a master plumber's licence. The Authority shall grant such a licence after satisfactory assessment by the Plumbers Examination Board established under regulation 30 of these regulations, provided that the appropriate registration fee prescribed in Schedule 2 to these regulations<sup>2</sup> has been paid. The Plumbers Examination Board may use their discretion as to the type and method of examination used to determine the competence and eligibility of existing plumbers to be licensed by the Authority.

Plumber's Licence - See Appendix V, page 364.

## 12. PUBLIC STANDPIPES

When water is made available to the public through public standpipes or standposts as opposed to house connections, provision is generally made in the legislation to (a) prevent waste and misuse of water by careless users, and (b) ensure that certain basic sanitary precautions are observed by users to avoid the standpipe becoming a public health hazard (I and II). Additional provisions are aimed at fostering a standard of users' care of the facilities conducive to the long-term dependability of the service (III).

<sup>1</sup> i.e. on payment of a prescribed fee

<sup>2</sup> Omitted.

**I - SAINT CHRISTOPHER NEVIS AND ANGUILLA - Watercourses and Waterworks Regulations, 1973**

13. (1) No person shall allow water from any stand pipe to flow;
- (a) into any vessel which is at the time overflowing; or
  - (b) into any vessel which at the time, is unable to retain its contents.
- (2) No person shall turn on the tap or cock of any stand pipe and allow the water flowing therefrom to go to waste.
- (3) No person shall bathe, or wash any clothes or wash any child, animal or vehicle at or near any stand pipe.

**II - TRINIDAD & TOBAGO - Public Standpipe Regulations, 1977**

2. No person shall bathe or wash any clothes, animals or vehicles in any street or public place within a distance of thirty feet from a public standpipe.
3. No person shall:
- (a) turn on any tap or stopcock so as to cause water to flow from a public standpipe unless the water is received in a suitable receptacle or is needed for the immediate personal use of an individual;
  - (b) allow or cause water to flow from a public standpipe into a receptacle which is overflowing or which is at the same time being emptied of its contents;
  - (c) obtain water from a public standpipe:
    - (i) by means of anything connected thereto, or
    - (ii) except by operating the mechanism of the tap or stopcock fitted to the standpipe.
4. No person shall sell or otherwise dispose of for gain or reward any water obtained from a public standpipe.

**III - TRINIDAD & TOBAGO - Public Standpipe Regulations, 1977**

5. No person shall wilfully or negligently damage or injure or cause to be damaged or injured the mechanism of the tap or stopcock fitted to a public standpipe.

### 13. ENSURING COMPLIANCE WITH THE LAW

The regulatory prescriptions of legislation on the provision of water supply services to the public, and those found in subordinate legislation in particular, are sanctioned by penalties which typically include the discontinuance of service connections if certain breaches are committed by the customer (I) - waste and misuse of mains water and failure to pay the prescribed water charges have been reviewed in sub-chapters 7 and 8, respectively. In this regard, an important instrument of law enforcement is the power of the service operator or duly appointed Government agent to enter somebody's premises, inspect them with a view to ascertaining whether a breach of the law is being or has been committed and take remedial action as required (II and III).

**I - WESTERN AUSTRALIA - Metropolitan Water, Sewerage and Drainage By-laws**

66 . (3) Without prejudice to the right of the Board to proceed for any penalty for the breach or non observance of any of the provisions of this by-law, the Board may cut off the supply of water to any premises whereon the private service or any part thereof is not at all times laid, fixed, used or maintained in all respects in accordance with the provisions of the said by-law, and may keep the same cut off until such provisions have been fully observed.

**II - WESTERN AUSTRALIA - Metropolitan Water, Sewerage and Drainage By-laws**

33. (1) It shall be lawful for an Inspector, or any assistants acting under the directions of an Inspector, or other authorised officer, at his discretion, at any reasonable hour, with or without notice, to enter any land, house, or premises for the purpose of ascertaining whether any act or

thing is being done or permitted within such land, house or premises in breach of these by-laws, and to remove, or cause to be removed, anything therein or thereon in breach of these by-laws, or to take such steps as he may deem necessary for carrying out these provisions.

(2) The cost of such removal or such other necessary act shall be borne by the owner or occupier of the premises upon which such breach shall occur.

294. Any officer acting under the Board's authority may at all reasonable times enter any house or premises connected, or intended to be connected with the water mains or sewers in order to examine whether the water pipes, drains, and other fittings in such house or premises are in proper order, and any person refusing such admission or in any way hindering such officer in the execution of his duty shall be guilty of an offence and liable to a penalty as prescribed in by-law 288.

### III - BOTSWANA - Draft Water Supply Regulations

22. ... (2) An authorised person may enter upon any land where water supplied by a water authority is or is likely to be wasted, misused, unduly consumed or polluted and undertake such action as may be required to prevent such waste, misuse, undue consumption or pollution.

(3) A water authority may recover the cost of taking any action pursuant to sub regulation 22(2) from the occupier of the land upon which the action is taken.



## **CHAPTER VI**

### **IRRIGATION WATER DEVELOPMENT AND USERS' GROUPS**

#### **See also:**

**ALLOCATING WATER FOR USE: WATER RIGHTS AND PERMITS (CHAPTER I)**  
**PREVENTION AND CONTROL OF WATER POLLUTION (CHAPTER II)**  
**GROUNDWATER DEVELOPMENT AND CONSERVATION (CHAPTER III)**  
**WATER RESOURCES DEVELOPMENT (CHAPTER IV)**  
**CHARGING FOR WATER (CHAPTER VIII)**

#### **1. INTRODUCTION**

Irrigation water use involves technical, managerial, and financial approaches of increasing complexity, ranging from a landowner diverting streamwater or drawing water from his well onto his fields, to groups of landowners pooling their resources to build a system of canals benefiting them all, to the Government developing the irrigation potential of a particular area for the benefit of individual users or of their groupings. Irrigation has thus a "development" and a "use" characterization, the former hinging on construction and management of the infrastructure necessary to make water actually available for irrigation use. Irrigation "use", in turn, can follow on from the construction of an irrigation scheme or project or, in its simplest form mentioned above, it may take place outside the framework of irrigation development schemes or projects. Under both circumstances, irrigation water "use" partakes, both conceptually and practically, of legislative approaches to allocating water for different uses, and of the material presented in Chapter I on **ALLOCATING WATER FOR USE: WATER RIGHTS AND PERMITS**. This Chapter will focus instead on the development aspect of irrigation water viewed from the angle, respectively, of Government-funded and private-funded projects. In addition, in view of the key role they play in irrigation water use, this chapter will cover also water users' groupings.

#### **2. GOVERNMENT-FUNDED IRRIGATION WATER DEVELOPMENT AND USE**

Legislation on this particular subject typically empowers the Government to undertake irrigation development projects, and to make consequential arrangements for the implementation of a project and, after the construction phase, for the management of the infrastructure and of the water available through it. Subsidiary legislation covers matters like the occupation of irrigated land, the distribution and use of project water, maintenance of the irrigation infrastructure, charging for project water and law enforcement. The balance of this sub-chapter will cover these aspects, as follows:

## 2.1 Occupation of irrigated land

A licensing mechanism may be employed to regulate the occupation and use of land comprised in a Government-funded irrigation scheme (I). The Government is thus in a position to influence the manner of use of the land and companion irrigation water by the project beneficiaries, through standard and other terms and conditions written in the licence (II) or through the authority of an officer empowered to take action with respect to land cultivation in lieu of a licensee and at his expense (III). Other matters covered by subsidiary legislation in connection with licensing are succession in the licence in the event of the licensee's death (IV), and duration and termination of the licence (V). A standard format of licences may be provided for the users' convenience (VI).

### I - KENYA - Irrigation (National Irrigation Schemes) Regulations, 1977

4. Any person who resides in, carries on business in, or occupies any part of the scheme or grazes any stock thereon shall, unless he is the holder of a valid licence granted to him under these Regulations by the manager with the approval of the committee or is the authorized dependant of such licensee, be guilty of an offence.

### II - KENYA - Irrigation (National Irrigation Schemes) Regulations, 1977

8. (1) Every licence shall be granted subject to the following conditions:

- (a) a licensee shall devote his full personal time and attention to the cultivation and improvement of his holding and shall not, without the permission, in writing, of the manager, allow any other person to occupy his holding or to cultivate it on his behalf;
- (b) a licensee shall maintain the boundaries of his holding in a manner satisfactory to the manager;
- (c) a licensee shall maintain at all times his holding and all field, feeder and drainage channels to the satisfaction of the manager;
- (d) a licensee shall maintain to the satisfaction of the manager all irrigation channels and works on or serving his holding;
- (e) a licensee shall cultivate his holding to the satisfaction of, and in accordance with the crop rotation laid down by, the manager, and shall comply with all instructions given by the manager relating to the cultivation and irrigation of his holding;
- (f) a licensee shall comply with all instructions given by the manager with regard to good husbandry, the branding, dipping, inoculating, herding, grazing or watering of stock, the production and use of manure and compost, the preservation of the fertility of the soil, the prevention of soil erosion, the planting, felling, stumping and clearing of trees and vegetation and the production of silage and hay;
- (g) a licensee shall not hire, cause to be hired, or employ stock or machinery for cultural operations, other than stock and machinery owned by the manager, without prior approval, in writing, from manager;
- (h) a licensee shall not absent himself from the scheme for longer than one month without prior approval, in writing, of the manager.

(2) Any licensee who fails to comply with the conditions specified in paragraph (1) of this regulation shall be guilty of an offence.

(3) Any licensee who refuses, or without reasonable excuse fails, to comply with any of the conditions of this regulation shall, in addition to any penalty that may be imposed under paragraph (2) of this regulation, be liable to have his licence terminated by the Minister, on the recommendation of the manager (after confirmation by the committee) and the Minister's decision shall be final.

16. (1) A licensee shall not keep on his holding any stock other than those specified in his licence and shall declare to the manager annually the natural increase in such stock and shall comply with any instructions issued by the manager as to their disposal.

...

**III - KENYA - Irrigation (National Irrigation Schemes) Regulations, 1977**

13. If, in the opinion of the manager, it would be beneficial to a licensee's crops or to all the licensees in the scheme to cultivate by machinery, or to apply fertilizers, or manure, or to treat any crops or stocks in any way to protect them against diseases, pests, or damage of any kind, then the manager may do so and recover the costs thereof from the licensee or licensees.

**IV - KENYA - Irrigation (National Irrigation Schemes) Regulations, 1977**

7. (1) A licensee may, at any time after the date of being granted a licence, nominate, in writing to the manager, another person to succeed him as licensee in the event of his death; and a licensee may at any time, in writing to the manager, revoke or alter any such nomination which may have been made by him.

Provided that no person nominated as successor may succeed until he has attained the apparent age of eighteen years; if he has not reached that age, his guardian under customary law may, within one month of the licensee's death, and with the approval of the manager, appoint a person to act on his behalf until the successor is of age.

(2) No person nominated as a successor may succeed without the approval of the committee.

(3) The authorized dependant of a deceased licensee may, within thirty days of his death, appeal to the court against the nomination under paragraph (1) of this regulation, of a successor.

(4) The authorized dependant may:

(a) where a licensee dies without having nominated a successor in accordance with paragraph (1) of this regulation; or

(b) where, under paragraph (3) of this regulation, an appeal to the court against the nomination of a successor has been successful,

within one month of the death of the licensee or one month after the determination of the appeal, as the case may be, nominate, in writing to the manager, a successor who must be approved by the court.

(5) In the event of,

(a) no person being appointed within the time prescribed in the proviso to paragraph (1) of this regulation; or

(b) no person being nominated within the time prescribed in paragraph (4) of this regulation; or

(c) any person nominated or appointed under this regulation failing to accept such nomination or appointment or failing to assume the responsibilities inherent in such nomination or appointment within a period of three months from the death of the licensee; or

(d) no successor being acceptable to the committee,

the holding shall be deemed to have been vacated, the licence in respect of such holding shall terminate, and a fresh licence may be granted in accordance with regulations 5 and 6 of this regulation.

(6) In the event of a holding being deemed to have been vacated in terms of paragraph (5) of this regulation:

(a) the manager may make provision for the cultivation of any such holding and where appropriate recover the costs from the incoming licensee; and

(b) in accordance with regulation 23 of these Regulations reasonable compensation may be paid to the authorized dependant of a licensee in respect of any improvement to the holding effected by the licensee.

**V - KENYA - Irrigation (National Irrigation Schemes) Regulations, 1977**

8. ... (3) Any licensee who refuses, or without reasonable excuse fails, to comply with any of the conditions of this regulation shall, in addition to any penalty that may be imposed under paragraph (2) of this regulation, be liable to have his licence terminated by the Minister, on the recommendation of the manager (after confirmation by the committee) and the Minister's decision shall be final.

11. (1) If a licensee is sentenced to imprisonment for a term of six months or more, his licence may be terminated forthwith.

(2) If a licence is terminated under paragraph (1) of this regulation, a successor may be nominated or appointed in accordance with regulation 7 of these Regulations.



23. Where any licence is terminated in accordance with any of the provisions of these Regulations, a Board consisting of the manager and one representative of both the outgoing and the incoming licensees, shall assess the amount, if any, due to the outgoing licensee or his dependants in respect of capital and labour expended by him in improving the holding, and the manager shall make arrangements for the payment of such amount by the incoming licensee within such time as the manager considers reasonable.

25. Subject to the provisions of regulations 7, 8, 11 and 22 of these Regulations, every licence shall be valid for a period of one year and from year to year thereafter, but may be terminated at any time:

- (a) by the licensee giving to the manager six months' notice in writing of his intention to surrender his licence;
- (b) by the manager, on instruction of the Minister, giving to the licensee 12 months' notice in writing of his intention to terminate the licence.

VI - KENYA - Irrigation (National Irrigation Schemes) Regulations, 1977  
First Schedule - Licence to Occupy Holding - See Appendix VI, page 367.

## 2.2 Distribution and use of project water

Criteria may be prescribed to regulate the delivery of project water to users through the main, i.e., primary and secondary, system canals, and for the corollary power to stop the flow of water under given circumstances (I). In addition, a mechanism may be provided to settle disputes among water users as to the distribution of irrigation water (II).

### I - NEPAL - Irrigation Regulation, 1989

#### 2.4 Water Distribution System:

2.4.1 While distributing water for irrigation, the Irrigation Officer shall, by taking into account the following matters and the advice of Water Users Association Coordination Committee constituted under Rule 3.5 and concerned Agriculture office distribute it to the Water User on a rotational basis.

2.4.1.1 Area of the land

2.4.1.2 Types of crops to be grown in the land

2.4.1.3 Nature of soil of the land

2.4.1.4 Quantity of water available in the Canal, and

2.4.1.5 Condition of Canal or other irrigational structure.

#### 2.5 Distribution of Water may be Stopped;

2.5.1 The Irrigation Officer may stop the distribution of water under the following circumstances:

2.5.1.1 If it is impossible to repair, maintain or improve the condition of the Canal or other irrigational structure without stopping the flow of water in the Canal or other irrigational structure.

2.5.1.2 If it is impossible to do any public construction work without stopping the flow of water in the Canal or other irrigation structure.

2.5.1.3 To such person, who does not pay water charges or acts in contravention of this Regulation.

2.5.1.4 In case where the Canal or any other irrigational structure have been damaged or likely to be damaged.

2.5.1.5 In case where a person or an animal falls or dies in the Canal.

2.5.2 In case where the distribution of water is required to be stopped due to the occurrence of a situation referred to in sub-rule 2.5.1.1 or 2.5.1.2, the Irrigation Officer shall notify in writing, at least fifteen days in advance, the concerned panchayat, water users group and the concerned Agriculture office, so that the information could reach to the Water User

**II - NEPAL - Irrigation Regulation, 1989**

**2.8 Complaint may be Given:**

In making proper distribution and use of water if any Water Users Group gives trouble to a Water User within that area, the concerned Water User may lodge a complaint to the Irrigation Officer and the decision of the Irrigation Officer on such complaint shall be final.

**2.3 Protection and maintenance of irrigation infrastructure**

Legislation may restrict the doing of things which jeopardize the safety of the canals and, generally, of the project infrastructure (I). Maintenance of system works by project beneficiaries may be a standard condition of a licence to occupy irrigated land (II), in addition to being the subject of emergency authority vested in properly empowered Government officials (III and IV).

**I - NEPAL - Irrigation Regulation, 1989**

**4.1 Some Activities may be Prohibited for the Security of Canal or any other Irrigational Structure**

- 4.1.1 The Irrigation Officer may, for the security of Canal or any other irrigational structure and to prevent the theft of water, misuse or unauthorized use of water prohibit any person other than the person authorized by him from doing any one or all of the following works.
- 4.1.1.1 To enter into or to use, in any way, the land acquired for the construction of Canal or any other irrigational structure or the land ancillary to the Canal or any other irrigation structure.
  - 4.1.1.2 To demolish, to obstruct or to bring change in the Canal or any other irrigational structure by any means.
  - 4.1.1.3 To increase or decrease or change in anyway, the flow of water in a Canal or any other irrigational structure.
  - 4.1.1.4 To pollute the water of a Canal or any other irrigational structure.
  - 4.1.1.5 To destroy or misplace any sign or mark posted by the Irrigation Office.
  - 4.1.1.6 To handle, destroy or misplace any machine or a part of it used in controlling the flow of water of a Canal or any other irrigational structure.
  - 4.1.1.7 To drive, graze or leave astray any cattle in the area as prohibited by the Irrigation Officer.
  - 4.1.1.8 To drive vehicle in the prohibited Irrigation Areas.  
Provided that the Irrigation Officer may grant permission to drive a vehicle without causing any harm to the Irrigation Area, on payment of the fee as prescribed by concerned Irrigation Office
  - 4.1.1.9 To cut, uproot or destroy in any way, any vegetation within the land covered by Canal or any other irrigational structure.
  - 4.1.1.10 To cut the banks of the Canal or to change the course of in-let or outlet of any Canal or any other irrigational structure or to attempt to do so.
  - 4.1.1.11 To do or to attempt to do anything which adversely affects or endangers the stability of a Canal or any other irrigational structure.
  - 4.1.1.12 To control the flow of water by obstructing the current of the river or stream with an intent to lessen the utility of a Canal or any other irrigational structure.
  - 4.1.1.13 To encroach a river, stream, fountain, pond or any part thereof where water flows or accumulates naturally, with an intent to affect adversely the irrigation system.
  - 4.1.1.14 To pump-out without approval the water from a Canal or any other irrigational structure for irrigation purposes.

- 4.1.2 The Irrigation Officer shall display the notification of the prohibitions made under sub-rule 4.1.1 on the main places of concerned Irrigation Area and in the Irrigation Office for the information of the general public and a duplicate copy thereof shall be sent to the concerned Village or Town Panchayat, District Panchayat, District Office and Land Revenue office as well, for circulation and dissemination.
- 4.1.3 The Irrigation Officer may, as required, waive any of the prohibitions under sub-rule 4.1.1 by making necessary arrangements for the operation of Canal or any other irrigational structure built for the purpose of irrigation.

**II - KENYA - Irrigation (National Irrigation Schemes) Regulations, 1977**

**B. (1) ...**

(d) a licensee shall maintain to the satisfaction of the manager all irrigation channels and works on or serving his holding;

...

**III - NEPAL - Irrigation Regulation, 1989**

**4.2 Emergency Repair and Maintenance to be Made:**

- 4.2.1 In case there is a probability of obstruction in irrigation or a possibility of a heavy public loss due to accidental deposition, damage or destruction in any way, of the dam, canal, branch canal, tertiary canal, field channel or any other irrigational structures which warrant immediate maintenance work and if prior approval is not possible for such maintenance due to the lack of time, the concerned Irrigation Officer shall, pending any approval, carry on the emergency maintenance work by utilizing the available resource on condition that the necessary approval shall be taken afterwards and inform his immediate senior official as soon as possible. Provided that the justification of such emergency maintenance work shall be clearly made in making request for the approval of such work.
- 4.2.2 The Irrigation Officer may ask for necessary assistance from the Water Users Group, Water Users Association, Water Users Association Co-ordination Committee or any other authority or local people in carrying out the emergency maintenance work pursuant to sub-rule 4.2.1 and it shall be the duty of all concerned to make available necessary workers including other assistance to the extent of their respective capacity, in the case of such request.
- 4.2.3 The labour made available by the local Panchayat, Water Users Association, Co-ordination Committee, Water Users Association or Water Users Group pursuant to sub-rule 4.2.2 shall be paid as per the wage-rate fixed by the District Office of His Majesty's Government.

**IV - KENYA - Irrigation (National Irrigation Schemes) Regulations, 1977**

24. The manager shall have power, in the event of any emergency, to order all licensees to undertake emergency repair work in any part of the scheme, and any licensee who refuses to obey any such order by the manager shall be guilty of an offence.

## 2.4 Charging for project water

Charging for irrigation water made available from public treasury funds, and thus recovering from water users (a) the capital outlays of construction and/or (b) the recurrent costs of operating and maintaining the project infrastructure is an issue fraught with policy and political overtones which influence the making of principal legislation and reverberate on the approach eventually adopted. For its part, subordinate legislation implements a policy decision to have users pay for project water by operationalizing the principle of liability to charges of project beneficiaries. This is accomplished by empowering the Government in general or a designated official to set the rates of such charges (I), also in accordance with prescribed criteria (II). Other operational matters covered by subsidiary legislation concern

the manner and frequency of payment (IV), waivers of charges due (II), collection of arrears of payment (V), and inducements to pay arrears (VI).

**I - KENYA - Irrigation (National Irrigation Schemes) Regulations, 1977**

9. (1) A licensee shall pay to the manager, on demand, such rates in respect of water and other services in respect of his holding as shall be calculated in accordance with rates prescribed by the Minister from time to time.

...

**II - KENYA - Irrigation (National Irrigation Schemes) Regulations, 1977**

9. ... (2) The whole or part of any rates prescribed under paragraph (1) of this regulation may be varied or remitted by the Minister, either generally or in any particular case, in his absolute discretion.

**III - NEPAL - Irrigation Regulation, 1989**

**5.1 Water charge to be paid:**

5.1.3 The rate of water charge shall be as determined by His Majesty's Government in the case of irrigation system run by His Majesty's Government itself or run through any project, whereas in the case of irrigation system run through any Development Board, the rate of water charge shall be as determined by such Board with the approval of His Majesty's Government. In determining the water charge following matters shall also be taken into account.

- 5.1.3.1 Area of the land to be irrigated.
- 5.1.3.2 Quantity of water to be provided.
- 5.1.3.3 Purpose for which water is to be utilized.
- 5.1.3.4 Kind of water resources.
- 5.1.3.5 Kind of crop to be cultivated.
- 5.1.3.6 Maintenance, repair and operation cost of the irrigation system.
- 5.1.3.7 The investment cost of the irrigation system.

...

**IV - NEPAL - Irrigation Regulation, 1989**

**5.1 Water charge to be paid:**

5.1.6 The amount of water charge shall be paid to the concerned Irrigation Office or deposited in the revenue account of His Majesty's Government by the Water User. Provided that, in case where the water charge has been deposited in the revenue account, the evidence of such deposit shall be submitted to the Irrigation Office within fifteen days of such deposit.

5.1.7 The Irrigation Office shall give the receipt in a format as prescribed in Schedule 1<sup>1</sup> to the person who paid the water charge in the Irrigation Office and the Irrigation Office shall deposit immediately the water charge so received, in the revenue account of His Majesty's Government.

**5.2 Time-Limit for the Payment of Water Charge:**

- 5.2.1 Water charge shall be paid every year by the end of the month of Chaitra<sup>2</sup>.
- 5.2.2 A rebate of five percent of water charge shall be granted if it is paid before the end of the month of Falgun<sup>3</sup>.
- 5.2.3 An extra charge of five percent shall be levied on the payment of water charge till the end of the month of Baisakh<sup>4</sup> if it is not paid within the month of Chaitra.
- 5.2.4 An extra charge of ten percent shall be levied on the payment of water charge till the end of the month of Jestha<sup>5</sup> if it is not paid within the month of Baisakh.

<sup>1</sup> Omitted

<sup>2</sup> Corresponding to March-April

<sup>3</sup> Corresponding to February-March

<sup>4</sup> Corresponding to April-May

<sup>5</sup> Corresponding to May-June

- 5.2.5 If not paid within the month of Jostha, the water charge shall be recorded as outstanding and such outstanding shall be realized in the same manner as if it were a punishment or a fine.

**V - NEPAL - Irrigation Regulation, 1969**

**6.2 Team to be Deputed for Realization**

- 6.2.1 The Irrigation Office shall send a team, at least once each year, to the places where the person from whom the outstanding water charge, penalty, fine, imprisonment or dues imposed pursuant to the Act and entered into the record is to be realized.
- 6.2.2 The local panchayat and the members of the Water Users Group shall cooperate, as required, the team sent pursuant to sub-rule 6.2.1 in the work of making realizations. Such team may, as required, take the help of local administration and police and it shall be the duty of local administration and police to render such help.
- 6.2.3 The members of the team so deputed for the purpose of making realizations pursuant to sub-rule 6.2.1 shall get a reward of an amount equivalent to ten percent of the amount realized by them including their daily and travelling allowances.

**6.3 To be Realized as Government Dues:**

The outstanding penalty, fine or water charge imposed under the Act shall be realized by the Irrigation Officer as government dues.

**VI - NEPAL - Irrigation Regulation, 1969**

**8.3 Discount May be Granted for Paying the Arrears:**

- 8.3.1 The concerned Irrigation Office may issue a notification for paying water charge or any other outstanding amount remaining due before the commencement of this Regulation.
- 8.3.2 In case a person, who pays the outstanding water charge or any other outstanding amount within the prescribed time-limit as prescribed in the notification issued pursuant to sub-rule 8.3.1, His Majesty's Government may give a discount at ten percent on such amount.
- 8.3.3 In case where a Water Users Group assists in realizing the arrears as mentioned in sub-rule 8.3.1, an amount equivalent to twenty-five percent of the realized arrears shall be given to such Water Users Group.

## 2.5 Law enforcement

Subsidiary legislation may penalize violations of regulatory prescriptions (I), and it may provide designated government officials with authority to prescribe or take action to stop such violations or to remedy their consequences (II) or of the negligence of project beneficiaries in connection with the use of irrigated land and the water which goes with it (III).

**I - KENYA - Irrigation (National Irrigation Schemes) Regulations, 1977**

**26. Any person who:**

- (a) unlawfully interferes with the flow of irrigation water in canals or the opening or closing of control gates within the area;
- (b) makes unlawful use of irrigation water by taking irrigation water out of turn or otherwise;
- (c) refuses to permit the authorized passage of irrigation water across his holding;
- (d) wilfully damages or obstructs canals or control works; or
- (e) refuses to accept or drain off irrigation water when required to do so.

shall be guilty of an offence.

27. (1) Any person who is guilty of an offence under these Regulations shall be liable to a fine not exceeding two thousand shillings or to imprisonment for a term not exceeding two months, or to both such fine and such imprisonment.

12) Where any person is convicted of an offence under regulation 4<sup>1</sup>, regulation 14(4)<sup>2</sup> or regulation 22(7) of these Regulations<sup>3</sup>, the court may, in addition to any penalty which it may impose, authorize any administrative officer or police officer to cause such person, together with his dependants and property, if any, to be removed from the scheme.

**II - KENYA - Irrigation (National Irrigation Schemes) Regulations, 1977**

12. The manager shall have power to order the destruction of any crops planted in contravention of his instructions or of the provisions of these Regulations and to recover the expenses incurred from the licensee. No compensation shall be payable in respect of crops so destroyed.

16. ... (2) A licensee who fails to comply with the provisions of paragraph 11) of this regulation, or with any instructions issued by the manager thereunder, shall be guilty of an offence and where any additional undeclared stock is found in the possession of a licensee within the scheme, the manager may order a licensee to remove such additional stock from the scheme forthwith.

(3) If a licensee fails to remove his additional stock in accordance with an order to that effect given by the manager under paragraph 12) of this regulation, the manager may confiscate and sell such additional stock, paying the proceeds thereof, less any expenses incurred by such confiscation and sale, to the licensee.

22. (1) Where the manager is satisfied that a licensee has failed to comply with any of the provisions of these Regulations or with any instructions given thereunder or under any other law for the time being in force, he may serve a notice in writing on the licensee requiring him to comply with the said provisions, instructions or regulations within such time as is specified in the notice.

(2) If the licensee fails within such time to comply with the requirements of such notice, the manager may, by notice in writing, call upon the licensee to show good cause, by a date specified in the notice, why his licence should not be terminated.

(3) If the licensee fails to show good cause as aforesaid to the satisfaction of the manager, the manager may, with the approval of the committee, give notice in writing to the licensee requiring him to remove himself, his dependants and his stock from the scheme within a period specified in such notice.

(4) A licensee who is given notice under paragraph 13) of this regulation may, within twenty-eight days of such notice, appeal in writing to the Minister whose decision shall be final.

(5) If there is no appeal, the licence shall be deemed to have terminated on the date specified in the notice.

(6) If there is an unsuccessful appeal, the licence shall terminate on such date as the Minister may specify.

(7) Any person whose licence has been terminated under this regulation and who fails to comply with the terms of the notice given him shall be guilty of an offence.

**III - KENYA - Irrigation (National Irrigation Schemes) Regulations, 1977**

17. (1) If, in the opinion of the manager, a licensee has been negligent in the use of his land, the use of irrigation water or the cultivation of his crops, the manager may direct him to take such steps as the manager may specify to remedy the effects of such negligence, and, in the event of a licensee failing to comply with any such directions, the manager may take such measures as he considers necessary to safeguard the crop and to preserve the holding and irrigation water, and may recover the costs of any such measures from the licensee.

(2) If a licensee is absent owing to illness or any other reason, the manager may take such measures as he considers necessary to safeguard the crop and to preserve the holding and irrigation water and may recover the costs of any such measures from the licensee.

<sup>1</sup> See sub chapter 2.1 above, example 1

<sup>2</sup> Concerning the failure of a licensee to dispose of harvested crop as directed by the law.

<sup>3</sup> See example II below.

### 3. PRIVATE IRRIGATION WATER DEVELOPMENT AND USE

The pooling of the private resources - financial and otherwise - of concerned landowners with a view to developing or enhancing the irrigation potential of their landholdings may have legal ramifications which cannot be accommodated by purely contractual arrangements and companion rules of tortious conduct among the landowners concerned. If society and Government attach a priority value to irrigation development, relevant social concern will tend to colour private initiative and will translate into legislation designed to channel private initiative towards the attainment of essentially a public goal. In implementation of principal legislation enacted to this effect, subordinate regulations will provide for matters connected with operationalizing the landowners' power of initiative (I), the evaluation of the technical soundness of proposals made at the landowners' initiative (II), the formation of representative groupings of concerned landowners (this particular aspect is dealt with in sub-chapter 4 below), and the levying of assessments to raise the necessary funding (III).

#### I - ZIMBABWE - Water (Combined Irrigation Schemes) Regulations, 1982

3. Whenever two or more owners of land desire that in respect of a certain area a combined scheme of irrigation be authorized, a petition in terms of section 59 of the Act shall be submitted to the Minister substantially in accordance with form "A".

Form A - Petition for Combined Irrigation Scheme - See Appendix VI, page 368.

#### II - ZIMBABWE - Water (Combined Irrigation Schemes) Regulations, 1982

4. (1) The Committee nominated in terms of section 59 of the Act having taken steps to have the scheme investigated in terms of section 61 of the Act and having ascertained whether or not the owners of farms affected by the proposed scheme consent to participate in the scheme or do not oppose such scheme shall forward to the Water Registrar for the information of the Minister, all particulars relating to the scheme and the necessary documents to show how many owners consent as aforesaid.

(2) Where all owners of land within the area which may be affected thereby and to whom the engineer's report has been submitted in terms of section 61 of the Act have notified the committee whether or not they consent to participate in the scheme the particulars and documents mentioned in subsection (1) may be submitted notwithstanding that six months has not elapsed since the said owners received the aforesaid report.

5. The particulars and other information submitted by the said committee shall be substantially as in form "B". The engineer appointed by the committee in terms of section 61 of the Act shall supply the particulars prescribed in section 18 of these regulations. 1B. The following particulars shall be reported to the committee by a qualified engineer in terms of section 63 of the Act and the committee shall submit copies of such report to the Director of Irrigation and owners of land which may be affected thereby:

- (a) eight prints each of all necessary maps and design drawings. The true north direction shall be shown on all maps. Such maps shall contain all relevant information as to property boundaries and all areas affected by the scheme. The maps and plans submitted shall include:
  - (i) a key map showing the location of the scheme in relation to the district in general;
  - (ii) a contour plan of any storage work showing both the full supply level and the estimated high flood level;
  - (iii) the situation and extent of all cultivated or arable land, plantations and buildings, etc., included in any storage basin to be shown on this plan;
  - (iv) the capacity and surface area curves for any dam;
- (b) the main working drawings of any dam and ancillary works;
- (c) type drawings of the main canal and structures;
- (d) an estimate of the cost of the irrigation works as defined in the Act, together with a statement of what further investigation, if any, is required before final plans and estimates can be drawn up. Such cost shall include an estimate of any compensation payable;

- (e) a schedule showing in respect of each farm embraced by the combined scheme:
  - (i) the total area of land commanded by the canal;
  - (ii) area of arable land within the area commanded;
  - (iii) area of land it is proposed to declare as irrigable;
  - (iv) the proportionate share of the cost of the combined scheme;
  - (v) estimated cost of distributary furrow, the cost of which will be a personal liability on the individual owner as apart from his *pro rata* share of the cost of the combined scheme.

Form B - Submission of Report and Particulars of a Combined Irrigation Scheme - See Appendix VI, page 368.

**III - ZIMBABWE - Water (Combined Irrigation Schemes) Regulations, 1962**

17. The irrigation assessment roll prepared in accordance with section 81 of the Act shall be substantially in accordance with form 'C'.

Form C - Assessment Roll - See Appendix VI, page 371.

#### 4. WATER USERS' GROUPS

Water users' groups play a very significant role in the management of water resources at field level in many parts of the world, particularly insofar as the distribution and use of irrigation water is concerned. Users' groups function in a variety of capacities, ranging from advisory to managerial and from coordinating to quasi-judicial. In principle, water users' groups can be formed and function under general legislation governing the associations of individuals. However, in view of their importance as an adjunct to policies aimed at mobilizing users' initiative and devolving to them selected governmental responsibilities particularly in the field of irrigation water management, the formation and functioning of water users' groups in general and of irrigation water users' groups in particular tend to be governed by specific legislation. In particular, as in the examples below, subordinate legislation provides rules for the formation, membership structure and functioning of groups.

**I - KENYA - Irrigation (National Irrigation Schemes) Regulations, 1977**

3. (1) The Minister may appoint a committee for any scheme, such committee to be known as an irrigation committee, to be responsible for advising the manager on the general administration of the scheme in accordance with Government policy.

(2) Such committee may either be the District Agricultural Committee of the district in which the scheme is situated or may be composed of such members as the Minister may appoint.

**II - NEPAL - Irrigation Regulation, 1989**

**3.1 Formation of Water Users Group:**

3.1.1 In order to provide irrigation facilities and to manage the distribution system of water, the Irrigation Officer shall, on the basis of the physical setting and extent of irrigation facilities, divide the Irrigation Area into various blocks. A water users group consisting of persons selected among themselves by the Water Users, shall be constituted for each such block of the Irrigation Area.

3.1.2 In a Water Users Group there shall be five members including one representative from Irrigation Office. The person selected by the members from among themselves shall be the chief of the Water Users Group.



3.1.3 The working procedure of the Water Users Group shall be as determined by the members of the Water Users Group.

**3.2 Functions, Duties and Powers of Water Users Group:**

3.2.1 The functions, duties and powers of Water Users Group shall be as follows:

- 3.2.1.1 To construct, operate and maintain water-course, channel and field channel.
- 3.2.1.2 To assist in the distribution of water to the land according to the cropping pattern and to arrange water for Water Users.
- 3.2.1.3 To assist in the realization of water charges.
- 3.2.1.4 To recommend, if needed, to take out the non-irrigated land from the list of the irrigated land.
- 3.2.1.5 To inform the Irrigation Officer, Water Users Association Coordination Committee and the concerned Water Users Association of any obstruction caused by any body in the implementation of the Regulation or of any work done by an individual in contravention of this Regulation.
- 3.2.1.6 To solve the problem arising between the Water Users within its area concerning the distribution of water.
- 3.2.1.7 To assist the person interested to construct new channel for irrigation in procuring land for constructing field channel.

3.2.2 The Water Users Group may give necessary directions to the Water Users within its area on the utilization of water for irrigation purposes. It shall be the duty of each Water User to abide by such directions.

**3.3 Formation of Water Users Association:**

- 3.3.1 A Water Users Association may be formed in the area to be irrigated by every branch canal or in the absence of branch canal by the main canal, within the irrigation Area.
- 3.3.2 A Water Users Association consisting of a chairman, a secretary, at least two members selected from among themselves by the chiefs of all the Water Users Groups constituted within the area pursuant to sub-rule 3.3.1 and a representative of Irrigation Office, shall be formed.
- 3.3.3 The working procedure of the Water Users Association shall be as determined by the Association itself.
- 3.3.4 One or more Water Users Associations may be formed within an Irrigation Area depending on its physical setting and extension.

**3.4 Functions, Duties and Powers of Water Users Association:**

- 3.4.1 The functions, duties and powers of the Water Users Association shall be as follows:
  - 3.4.1.1 To coordinate different Water Users Groups within its Irrigation Area.
  - 3.4.1.2 To recommend the Irrigation Officer regarding the distribution of water available for irrigation.
  - 3.4.1.3 To do necessary repair and maintenance work of the tertiary or branch canal or sub-branch canal concerned with two or more than two Water Users Group and to mobilize people's participation for such work by making available the technical and other assistance from the Irrigation Office.
  - 3.4.1.4 To initiate necessary work in conjunction with Irrigation Office for the dependable and appropriate irrigation system within its area.
  - 3.4.1.5 To solve the problem arising between Water Users Groups within its area concerning the distribution of water.
  - 3.4.1.6 To cause the auditing of the accounts of the Water Users Group and review its income and expenditure.
- 3.4.2 The Water Users Association may give necessary direction and advice to the Water Users Groups within its area in connection with the use of water to be distributed for irrigation. It shall be the duty of the Water Users Groups to abide by such directions and advice.

**3.5 Formation of Water Users Association Coordination Committee and its Functions, Duties and Powers:**

- 3.5.1 In case where there are more than three Water Users Associations within an Irrigation Area, a Water Users Coordination Committee having the chairman of each Water Users Association as member of the Committee, shall be formed.

5. Perhaps the reference should be to sub-rule 3.1.1

- 3.5.2 One member, selected by the members of the Water Users Association Coordination Committee, to be formed pursuant to sub-rule 3.5.1, shall be the chairman and one other member so selected shall be the Member Secretary of the committee. One representative of the Irrigation Office shall also be included in the committee as its member.
- 3.5.3 In case where there are only up to three Water Users Associations within one Irrigation Area the Water Users Associations shall from among themselves designate one Association to work as the Water Users Associations Coordination Committee.
- 3.5.4 The working procedure of the Water Users Association Co-ordination Committee shall be as determined by the committee itself.
- 3.5.5 The Functions, Duties and Powers of the Water Users Association Co-ordination Committee shall be as follows:
  - 3.5.5.1 To co-ordinate between different Water Users Association.
  - 3.5.5.2 To advise the Irrigation Officer with respect to the distribution of Water for Irrigation to the Water Users.
  - 3.5.5.3 To solve the problem arising between Water Users Association relating to the distribution of water within the Irrigation Area.
- 3.5.6 The Water Users Association Co-ordination Committee may from time to time, give necessary directions to the Water Users Associations within its area and it shall be the duty of Water Users Association to abide by these directions.

### III - ZIMBABWE - Water (Combined Irrigation Schemes) Regulations, 1962

6. Whenever a combined scheme has been approved by the Water Court and the number of participants exceeds three, the Minister shall as soon as possible thereafter fix by notice in the Gazette, the number of persons to comprise the irrigation board.
7. The Civil Commissioner of the district shall prepare the first list of voters, showing the number of votes to which each is entitled, in terms of sections 70 and 71 of the Act, and notify the participants of the date and place fixed for the hearing of objections to and for the revision of such list. Objections to the list shall be heard on a date and at a place to be fixed by the Minister by notice in the Gazette, by the Civil Commissioner of the district.
8. The said list shall be revised annually by the Water Registrar, who shall advise all participants in the scheme of any proposed alteration to the list. Any objections to the said list shall be dealt with in the same manner as provided in section 7 of these regulations.
9. The election of members of the Board to fill vacancies arising in terms of subsection (2) of section 74 of the Act shall take place annually at a general meeting of voters of which written notice, giving the date, time and place of meeting, shall be sent to each voter and the Water Registrar at least fourteen days before the date fixed for election.
10. The date of the first meeting for the election of a Board shall be fixed by the Minister. The Civil Commissioner shall send out the required notices and shall preside at the meeting.
11. Every person nominated as a member of an Irrigation Board shall be proposed by some voter qualified for such area, and shall be seconded by some other qualified voter. If the number of persons so nominated be not greater than the number of members to be elected, then the persons so nominated shall then and there be declared to be duly elected.
12. In cases where the number of persons nominated shall exceed the number of members to be elected a secret ballot shall be held forthwith.
13. The secretary of the irrigation board or in the case of a first election the Civil Commissioner, shall enter on a list the names of every voter, the value of his vote and manner in which he votes, and shall sum up and calculate the number of votes received for each candidate and shall then announce the names of the successful candidates in order of the number of votes cast for them.
14. As soon as may be after an election, the secretary of the irrigation board or in the case of a first election, the Civil Commissioner, shall forward a list of the elected members to the Water Registrar who shall forthwith publish their names in the Gazette.
15. Immediately after the election of the first members of any irrigation board, the Civil Commissioner shall appoint a time and place for the first meeting of the Board, and shall notify each member thereof.
16. No business shall be transacted at any Board meeting unless at least one-third of the Board members be present if the Board consists of more than three members, and if the Board consists of three members only no business shall be transacted at any Board meeting unless two of the members be present throughout the proceedings.



## CHAPTER VII

### DRAINAGE OF LANDS AND BUILDINGS

See also:

**PREVENTION AND CONTROL OF WATER POLLUTION (CHAPTER II)**  
**PROVISION OF WATER SUPPLIES TO THE PUBLIC (CHAPTER V)**

#### **1. INTRODUCTION**

Drainage of lands in general, i.e., disposing of excess water on it, and drainage of the wastewater from buildings associated with human habitation or economic activity are the target of separate legislation designed to facilitate the disposal of such waters, and to prevent or minimize their harmfulness to human life, health and property. For reasons of subject-matter consistency, in this Chapter land drainage will be taken to mean defence against water<sup>1</sup>, including in particular, protection of the land against flooding.

#### **2. LAND DRAINAGE**

Preventing and mitigating the damage to human life and property wrought by poor land drainage and, in particular, by consequential flooding involves two kinds of measures, commonly referred to as "structural" - i.e., works designed to attenuate the damaging effects of the flood, such as levees and dykes along a watercourse; and works designed to improve land drainage in general - and "non-structural". Flood control works - including, in particular, multi-purpose dams featuring a flood control benefit alongside other benefits - are generally regulated by legislation on water works in general - see Chapter IV on **WATER RESOURCES DEVELOPMENT**. An adjunct to a structural approach to land drainage and flood control is the grant by legislation of certain powers to Government in relation to the construction and maintenance of works by, or with the financial participation of, concerned landowners. Relevant subsidiary legislation may law down requirements for the exercise of such powers (I), the methodology of calculation of charges to be levied on land suffering from inadequate drainage, to finance the costs of improving land drainage (II), and standard formats for the raising and collection of such charges (III).

**I - UNITED KINGDOM - Land Drainage Act, 1991**

**Schedule 4 - Schemes for Small Drainage Works.**

1. (1) Before making a scheme under section 18 of this Act, a local authority shall consult the NRA<sup>2</sup>.

<sup>1</sup> This is the definition of "drainage" given in s. 72 of the United Kingdom Land Drainage Act, 1991

<sup>2</sup> National River Authority

(2) Before making a scheme under section 18 of this Act, the NRA or a local authority shall give a notice under this paragraph:

- (a) to the owners and occupiers of land within the area to which the scheme relates; and
- (b) to any other persons appearing to the NRA or, as the case may be, that local authority to be affected by the scheme.

(3) A notice under this paragraph is a notice in the prescribed manner of:

- (a) the intention of making the scheme;
- (b) the place where a draft of it can be inspected, and
- (c) the period (which shall not be less than thirty days) within which objections to it may be made to the NRA or local authority.

2. (1) Where any objections to a scheme are duly made and are not withdrawn:

- (a) the NRA or local authority shall send a copy of the draft scheme, together with copies of the objections, to one of the Ministers; and
- (b) the scheme shall not be made unless the draft is confirmed, with or without modifications, by one of the Ministers.

(2) Before either of the Ministers confirms a scheme under this paragraph, he shall either:

- (a) cause a public local inquiry to be held; or
- (b) give to:
  - (i) the NRA or, as the case may be, the local authority; and
  - (ii) the persons by whom the objections are made,

an opportunity of appearing before and being heard by a person appointed by him for the purpose.

3. (1) Where a scheme is made by the NRA or a local authority under section 18 of this Act, the NRA or, as the case may be, that authority shall send copies of the scheme to the owners and occupiers of land in the area to which it relates.

(2) Where the NRA makes such a scheme it shall also notify the council of any county, district or London borough in which any of that land is situated.

#### II - UNITED KINGDOM - Drainage Charges Regulations, 1990

3. (1) For the purposes of ascertaining, under subsection (1) of section 49 of the principal Act, the amount per hectare of a general drainage charge for any time after 31st March 1990, the quotient referred to in paragraph (b) of that subsection shall cease to be calculated under paragraph (a) of that subsection but shall instead be calculated in accordance with the following provisions of this regulation.

(2) The said quotient shall be determined by the application of the following formula:

$$\frac{A \times D}{B \times E} = C$$

where:

- A means the aggregate amount demanded by the precepts issued by the Authority in respect of the district under section 46(3) of the principal Act in respect of the financial year beginning in 1989;
- B means the aggregate amount of the estimated penny rate products on the basis of which the amount A was apportioned in pursuance of section 46(1) of the principal Act in respect of that financial year;
- C means the amount ascertained by dividing the amount A by the number of the relevant population of the district for the financial year beginning in 1990;
- D means the aggregate amount of the levies issued by the Authority in respect of the district under the National Rivers Authority (Levies) Regulations 1990 for the financial year in respect of which the drainage charge is raised;
- E means the relevant population of the district for the financial year in respect of which the drainage charge is raised.

(3) For the purposes of this regulation, the relevant population of a district means the relevant population of each charging authority's area or (as the case may be) the part of that area which

falls within the district, and for a financial year

- (a) in relation to the area of an English charging authority, is the relevant population of the area for the year, calculated by the Secretary of State under paragraph 4 of Schedule 12A to the 1988 Act<sup>1</sup>;
- (b) in relation to the area of a Welsh charging authority, is the relevant population of the area for the year, calculated in accordance with the rules for the time being effective (as regards the year) under regulations made under paragraph 5(1) of the said Schedule 12A;
- (c) for part of the area of a charging authority, is the relevant population of that part for the year, calculated in accordance with the rules for the time being effective (as regards the year) under regulations made under paragraph 6(2) of the said Schedule 12A.

...

5. Arrears of any drainage charge raised in respect of any time after 31st March 1990 may be recovered by the Authority in the same manner in which arrears of a non-domestic rate may, under the 1988 Act, be recovered by a charging authority.

#### **III - UNITED KINGDOM - Drainage Charges (Forms) Regulations, 1990**

2. Every general drainage charge raised by the National Rivers Authority shall be in Form 1 set out in the Schedule to these Regulations or in a form substantially to the like effect.

3. Every demand for payment of a general drainage charge raised by the National Rivers Authority shall be in Form 2 set out in the Schedule to these Regulations or in a form substantially to the like effect.

**Form 1 - General Drainage Charge - See Appendix VII, page 375.**

**Form 2 - Demand for General Drainage Charge - See Appendix VII, page 375.**

"Non-structural" approaches to land drainage and flood control range from zoning floodplains so as to restrict human settlements to restricting in particular the cultivation of riverbeds, and from mandating flood insurance schemes to the setting up of special governmental bodies or committees to perform specific flood-related tasks.

In particular, the zoning of floodplains may be needed to curtail the permanent presence of man in the area likely to be affected by floods. Legislation can provide a mechanism for floodplain zoning, or vest zoning authority in a Government department or agency, or in a specially-constituted body of Government or elected officials. The designation by a properly empowered Government agent of floodplain areas for the application of zoning restrictions is a typical component of a floodplain zoning mechanism. Subsidiary legislation typically provides the procedural and substantive details of implementation of floodplain zoning mechanisms. It may also identify the Government body in which zoning authority is vested.

#### **PHILIPPINES - Water Rules and Regulations**

35. Whenever the Minister deems it necessary to declare flood control areas for the protection of flood plain lands, he shall publish the same in three (3) newspapers of general circulation setting forth the purpose of the declaration, the geographic limits of the declared control area, and the regulations necessary to achieve the objectives.

36. The Minister shall form an Inter-agency Flood Plain Management Committee for each flood plain declared as flood control area, the members of which shall include, but not limited to, representatives from the following:

...

<sup>1</sup> I.A., The Local Government Finance Act, 1988.

The functions of this Committee shall be:

- ...
- (b) To provide guidelines for local governments in the formulation of regulatory ordinances regarding flood plain use and occupancy;
- (c) To draft and recommend guidelines for flood plain management in a particular flood control area in order to achieve the goals and objectives thereof;

...

**Cultivation in riverbeds** may be subjected to regulatory restrictions, typically in the form of permit requirements. Subsidiary legislation may prescribe the procedural and substantive details of such requirements.

**PHILIPPINES - Water Rules and Regulations**

29. A permit/authority shall be secured from the minister of Public Works in the following instances:

- ... (b) Cultivation of river beds, sand bars and tidal flats;

...

30. Applications for permit/authority under the next preceding section may be filed with the Public Works District Engineer's Office in the province where the project is to be undertaken.

31. All applications shall be filed in a prescribed form sworn to by the applicant and supported by the following:

A. For Cultivation of River Beds, Sand Bars and Tidal Flats:

- 1) Location plan showing the river bed, delineation of the area to be cultivated, the adjoining areas and the corresponding lessees/permittees; and
- 2) Information showing the crops to be planted and the cropping period.

...

32. The public Works District Engineer shall investigate each application filed with this Office and, if necessary, conduct public hearings thereon. He shall transmit his report and recommendation to the Public Works Regional Director who, after proper review, shall transmit the application with its supporting documents and his recommendations to the Minister of Public Works, for appropriate action.

33. A permit to cultivate river beds, sand bars and tidal flats shall be non-transferable and shall not be construed as authorizing reclamation of the area covered by the permit, or as conferring upon the permittee a right of ownership thereof by acquisitive prescription.

### 3. WASTEWATER DRAINAGE FROM BUILDINGS

The drainage or disposal of wastewater from residential, commercial and industrial buildings in an urban context is nowadays typically effected by means of public sewer systems, owned and operated by the Government or by public -or private- sector concerns as a service to the public. In rural areas, and in urban and peri-urban areas not served by a public sewer system, individual systems for the disposal primarily of domestic drainage, or privately-owned and operated sewers and drains are the rule. This sub-chapter will focus on sewered wastewater disposal from urban and rural buildings, the composite subsidiary legislation on this subject being arranged under headings which seek to capture the more common concerns reflected in the legislation, namely, effecting the connection of one's premises to a public sewer system, construction of private drainage works in connection with a public sewer system, protection of such systems from interferences or abuse jeopardizing their effectiveness, charging for services provided and law enforcement. In addition, the exercise

of the profession of plumber in general or with specific regard to sewerage and drainage may be the target of legislative requirements designed to uphold certain standards of professionalism in that particular trade. Legislation on this particular aspect of sewerage and drainage is presented in Chapter V on **PROVISION OF WATER SUPPLIES TO THE PUBLIC**, sub-chapter 11.

### 3.1 Connecting premises to a public sewer system

When a publicly-owned and operated sewerage system becomes available, connecting one's premises to it is generally subject to the discretion of the concern operating the service (IV and V). However, connections may be prescribed by legislation as a matter of right (I) or of duty of certain consumers (II and III).

#### **I - BARBADOS - Sewerage Regulations, 1982**

3. Subject to the Act and these regulations the owner or occupier of any domestic premises or the owner of any private sanitary sewer within the defined district is entitled to have his sanitary sewer connected to a public sewer and to discharge sewage from a building sewer on the premises or from the private sanitary sewer.

#### **II - BARBADOS - Sewerage Regulations, 1982**

5. (1) The owner or occupier of any premises within a defined district shall connect all sources of waste water within the premises, excluding rain or surface water, to a public sewer, and the owner or occupier of the premises is liable to meet the costs of the connection.

(2) The Authority may by notice in writing require the owner or occupier of any premises referred to in paragraph (1) to connect the premises to the public sewer within such reasonable time not being less than ninety days as is specified in the notice.

(3) Where the notice referred to in paragraph (2) is not complied with, the Authority may carry out the necessary work and recover the expenses incurred from the person on whom the notice was served.

(4) In proceedings for the recovery of expenses mentioned in paragraph (3) the court may consider:

- (a) whether any requirement contained in a notice referred to in this regulation was reasonable, and
- (b) whether the expenses ought to be borne wholly or in part by some person other than the defendant to the proceedings, and the court may make such order concerning the expenses or their apportionment as seems to the court to be just.

(5) A court may not order expenses referred to in paragraph (4) or any part of the expenses to be borne by any person other than the defendant to the proceedings unless the court is satisfied that the other person had due notice of the proceedings and an opportunity to be heard.

#### **III - PHILIPPINES, Sewer Use Regulations, 1971**

1.02. The owner of any commercial or industrial establishment situated within the Manila Metropolitan Area and where a sanitary sewer is available shall install at his own expense suitable facilities for the conveying of all domestic waste water and industrial wastes from said establishment into the sewer in accordance with the rules and regulations set forth by NWSA<sup>1</sup>, unless authorized to discharge directly into a storm drain, natural watercourse, or water body, under a valid permit from the National Water and Air Pollution Control Commission (NWAPCC) specifically authorizing such discharge.

<sup>1</sup> National Waterworks and Sewerage Authority



**IV - CAYMAN ISLANDS - Water Authority Regulations, 1985**

35. (1) Subject to the service being available within the meaning of sub-section (1) of section 29 of the Law, and of any relevant provision in the Plumbing Code of the Cayman Islands, any person who wishes:

... (b) to connect his premises to the public sewerage system,

shall apply in writing to the Authority on the appropriate form issued by and obtainable from the Authority.

Provided that, if the connection to the public sewerage system for which an application is made is in relation to the discharge of trade effluent, the provisions of this regulation and of regulation 34 shall apply jointly, and one combined application for the connection to the public sewerage system in pursuance of this regulation and for a permit to discharge therein a trade effluent in pursuance of the regulation 34 shall be deemed to satisfy the purposes of both said regulations, and payment of the prescribed charges under the last preceding regulation shall exempt from payment of the prescribed charges under this regulation.

(2) An application made in pursuance of the last preceding sub-section shall be accompanied by:

- (a) the appropriate connection charge, which shall be promptly refunded by the Authority in full in the event that an application is rejected by them; and
- (b) the certificate of satisfactory completion of plumbing works released by the Authority in pursuance of regulation 33 of these regulations.

(3) Upon satisfying themselves that the requirements set out in subsection 35(2), and any additional requirements or specifications of the Plumbing Code of the Cayman Islands which may apply in relation to a building, are met, the Authority shall proceed to effect the requested connection to the meter referred to in section 36, the cost of connection past the meter shall be the responsibility of the person making application.

(4) If the public water supply and public sewerage service are not available within the meaning of sub-section (1) of section 29 of the Law, a person wishing to have his premises connected to the public water sewerage system may apply to the Authority for such connection and the Authority may grant the application if, in their opinion, the connection is feasible, and subject to the payment by the applicant of such connection charge as will have been agreed upon by the parties based on the cost of the works.

...

(7) The Authority shall keep, in such manner, as they think fit, a record of all applications received in pursuance of this regulation, of all connections effected thereunder, and of any action subsequently taken thereon.

**V - BOTSWANA - Draft Sewerage Regulations**

4. (1) A person must not:

... (b) connect or cause any sewer property service to be connected to a sewer or any other work belonging to a sewerage authority,

without first obtaining consent from the sewerage authority.

5. A person seeking a sewerage authority's consent must apply on the appropriate form prescribed by it.

### **3.2 Administrative and engineering requirements re: construction and maintenance of private works in connection with public sewerage systems**

The carrying out of private works for purposes of connecting the drainage of buildings to a public sewer system tends to be subject to restrictions generally aimed at enabling the Government to screen proposed works and to vet completed works (I), for compliance with prescribed specifications as to construction techniques and fixtures and materials employed (II and III).

**I - CAYMAN ISLANDS - Water Authority Regulations, 1985**

37. (1) In pursuance of sub-section (1) of section 34 of the Law, any person who wishes to connect a private sewer, or a storm water drain, to the public sewerage system shall apply to the Authority for permission to do so on the appropriate form issued by and obtainable from the Authority, and shall include such of the appropriate particulars as are material to the application.

Provided that, where the private sewer to be connected to the public sewerage system conveys, either permanently or occasionally a trade effluent an application under the provision of sub-section (1) of section 34 of the Law shall be made, and dealt with, in accordance with regulation 34 of these regulations<sup>1</sup>, and there shall be payable to the Authority only the sewerage charges therein prescribed.

(2) Subject to the proviso of the last preceding sub-section, the Authority shall not unreasonably withhold a permission under the last preceding sub-section, but they may grant it subject to such terms and conditions as they think fit.

15) The Authority shall keep, in such manner as they think fit, a record of all permissions granted in pursuance of this regulation, and of any action subsequently taken thereon.

**II - BARBADOS - Sewerage Regulations, 1982**

16. No person shall, without the consent of the General Manager, install, alter or remove any building sewer, water closet, urinal, slop sink, toilet, lavatory, bath, cistern or any other sanitary fixture necessary for the conveyance of sewage, house slops, or waste water from any premises to a public sewer.

18. (1) Any person, hereinafter referred to as "the applicant" who, being the owner or occupier of premises, wishes to execute at the premises any building sewer work, or to extend or alter old or new work, excluding the repair of leaks, connected with a public sewer shall apply to the General Manager for permission to execute the work.

(2) An application made pursuant to paragraph (1)

(a) must be in accordance with form A or B, as the case may be, in the First Schedule.

(b) must be accompanied by plans in quadruplicate showing the connections, locations and fixtures from the junction of the public sewer to the termination above the roof of the building, and

(c) must be accompanied by any incidental information the General Manager requires.

19. (1) No person shall commence work on a building sewer mentioned in regulation 18 until the plans mentioned in that regulation have been approved by the General manager and one copy of the plan is returned to the applicant.

(2) The plans mentioned in paragraph (1):

(a) must be signed by the applicant, and

(b) must be certified accurate and signed by the person who prepared them.

20. (1) Plans mentioned in regulation 19 must comply with the requirements of the Authority, and must have indicated thereon:

(a) the site plan of all buildings within the premises, the boundaries of the applicant's land and the names of adjoining properties and of the proprietors thereof, and any adjoining roads,

(b) the position and dimensions of:

(i) latrines, kitchens, bathrooms, rainwater channels or pipes, whether existing or proposed to be constructed;

(ii) building sewers, sinks, gullies, inspection chambers, manholes, and other appurtenances;

that the applicant proposes to construct; and

(c) the location and dimensions of any structure already existing on the premises.

(2) The nature of pavements and exposed surfaces and any other information that in the opinion of the General Manager is necessary for the purposes of these regulations must be noted on the plans mentioned in paragraph (1).

(3) The diameter and gradient of pipes and junctions proposed to be constructed and the levels of any points that might be required for the determination of the gradients must be clearly marked on the plans mentioned in paragraph (1).

<sup>1</sup> See sub-chapter 3.3 below, example VI

(4) The paper or cloth on which plans are drawn or printed must, where practicable, conform with one of the sizes specified by the General Manager.

21. (1) The General Manager

- (a) shall examine and verify plans referred to in regulation 20; and
- (b) shall make such alterations or corrections, if any, as he considers necessary;

(2) Where the General Manager examines any plans and, after visiting the premises to which the plans relate, finds the plans inaccurate, a fee of ten dollars is payable by the applicant to the Authority if so demanded for every subsequent visit the General Manager makes to the premises for the purpose of correcting the plans or ascertaining their correctness.

22. Where the General Manager approves plans under regulation 18 he shall:

- (a) send one copy of the plans to the applicant;
- (b) send one to the Ministry of Health;
- (c) retain the other copies for the purposes of the Authority.

23. (1) Plans approved by the General Manager, shall be strictly adhered to in the execution of the work.

(2) No deviation from the approved plans may be made, except with the consent in writing of the General Manager, and any deviation sanctioned by him shall be clearly marked on the plan and initialled by the General Manager.

24. Where necessary, levels inscribed on plans mentioned in these regulations shall be referred to the datumplane adopted by the Authority, and the Authority shall furnish on request the elevations of relevant available bench marks.

25. (1) The approximate level and position of the point of junction of proposed work with a public sewer shall be furnished by the General Manager on application in writing being made to him.

(2) The exact level mentioned in paragraph (1) shall be determined by opening the ground if necessary and exposing the pipe; and building sewers shall be so designed as to connect properly with the point of junction.

26. (1) Where building sewer plans are approved by the General Manager and returned to an applicant, the applicant shall, by notice in writing inform the General Manager of the date on which the applicant intends to begin the work.

(2) After pipes and other appurtenances have been laid, but before pipe-trenches have been filled in or before the pipes and other appurtenances have been covered or concealed in any manner, the applicant or his accredited agent shall give notice in writing to the General Manager that the work is ready for inspection.

(3) The General Manager shall within two working days of the receipt of the notice referred to in paragraph (2), inspect and test the work and if he approves the work he shall issue to the applicant a certificate of approval and the applicant shall cover the work.

(4) Where before the expiration of the two working days mentioned in paragraph (3) any work has been covered before it has been inspected and approved, the applicant shall, at his own cost, upon the request of the General Manager, immediately uncover the work.

27. (1) Any defects discovered by the General Manager in any work executed pursuant to these regulations shall be made good to his satisfaction before the ground is filled in or the pipes covered or otherwise concealed.

(2) Where defects mentioned in paragraph (1) have been made good, the applicant or his accredited agent shall give notice to the General Manager that the work is ready for inspection.

(3) Where the General Manager approves work referred to in paragraph (2) he shall immediately issue to the applicant a certificate of approval and the applicant shall cover the work.

(4) The General Manager may, after issuing a certificate of approval inspect and test the work in respect of which the certificate was issued and any defect discovered by him shall be made good to his satisfaction at the cost of the applicant.

28. After work has been completed and finally inspected, and approved by the General Manager, he shall issue to the applicant a final certificate to that effect.

32. The Second Schedule has effect respecting the standards and specifications for construction and maintenance of sewers, sewerage works and fixtures to which these regulations apply.

Form A - Application for Premises to be Connected to Public Sewer - See Appendix VII, page 376

Form B - Application for Extension, Alteration or Repair of Building Sewer - See Appendix VII, page 377

IR - CAYMAN ISLANDS - Water Authority Regulations, 1985

33. (See Chapter V - PROVISION OF WATER SUPPLIES TO THE PUBLIC, sub-chapter 4)

### 3.3 Protection of public sewerage system facilities

Protection of the facilities of a public sewerage system is achieved essentially by restraining or enjoining acts which may jeopardize the physical integrity of system works and the continuity and dependability of the service. Acts singled out for attention by subordinate legislation in particular are the building of structures which have or may have the effect of obstructing or otherwise interfering with the normal functioning of pipes and with the delivery of the service. The sewerage system operator's prior consent to these acts is generally required (I). In addition, the disposal of certain drainages into the public sewerage system may also be subjected to prior consent and other companion requirements. The drainage of industrial factories and of buildings where commercial activities like the servicing of cars or laundering are carried out may, because of its composition, be harmful to the physical integrity of the sewer system serving such factories or buildings. In addition, the drainage of infectious wastewater from buildings where health care is administered may have public health implications. Furthermore, stormwater runoff may, if disposed of into the public sewers, jeopardize the system's waste-carrying capacity. In view of these factors impinging on a sewerage system's effectiveness, subordinate legislation may (a) forbid under all circumstances (II); (b) allow subject to the system operator's prior consent (IV to VII) and/or subject to standard terms and conditions (III), the disposal of certain drainages - notably from industrial, commercial or health care facilities, and stormwater runoff - into public sewerage systems. Prior consent procedures can bear in complexity comparable waste discharge permit procedures reviewed at Chapter II on PREVENTION AND CONTROL OF WATER POLLUTION (VIII). Complementary requirements may concern treatment of the waste, adoption of special waste-control devices and techniques, and monitoring and reporting by the discharger (IX and X).

#### I - BOTSWANA - Draft Sewerage Regulations

31. (1) A person must not, without a sewerage authority's consent, cause or allow:

- (a) any structure to be built or any filling to be placed on land in which the sewerage authority has a proprietary interest of any type whatsoever;
  - (b) any structure to be built or any filling to be placed within 4 metres of any works of a sewerage authority;
  - (c) any soil, rock or other matter that supports, projects or covers any works of a sewerage authority to be removed.
- {Penalty clause} (omitted)

(2) An application for a sewerage authority's consent must be made in the manner prescribed by it and must be accompanied by any plans and other information that the sewerage authority prescribes.

- (3) A sewerage authority may:
- (a) refuse its consent; or
  - (b) consent; or

(c) consent subject to any terms it thinks fit.

(4) A person who, with the consent of a sewerage authority, causes or allows anything referred to in sub-section (1) to be done must make sure that the thing is done in accordance with any conditions on which the sewerage authority gave its consent.

(Penalty clause) omitted!

(5) If a structure has been built or any filling placed on land contrary to this section a sewerage authority may, by notice in writing to the owner or occupier of the land, require the owner or occupier to alter, remove or relocate such structure or filling, whether or not the structure was built or the filling placed by or on behalf of the owner or occupier.

(6) Consent given by a sewerage authority under sub-section 31(3) is binding upon the applicant, his heirs, successors and assignees and the owner or occupier for the time being of the land, whether or not that person has notice of the consent or the conditions thereof.

(7) A person must not contravene or fail to comply with or cause or allow any person to contravene or fail to comply with:

(a) any terms attached to a sewerage authority's consent;

(b) any requirement of a notice served on that person under sub-section 31(5).

(Penalty clause) omitted!

## II - BARBADOS - Sewerage Regulations, 1982

8. Subject to these regulations, no person shall throw or deposit in, or cause or permit to be thrown or deposited in any vessel or receptacle connected to a public sewer, any matter except sewage or industrial waste.

9. (1) No person shall throw, empty or turn, or suffer or permit to be thrown or emptied or to pass, into any public sewer, or into any sewer communicating with a public sewer

(a) any matter likely to damage the sewer, to interfere with the free flow of its contents, or to adversely affect the treatment and disposal of its contents;

(b) any chemical refuse or waste steam, or any liquid of a temperature higher than forty-four degrees celsius being refuse or steam that, or a liquid that when heated is, either along with or in combination with the contents of the sewer or drain, dangerous, the cause of a nuisance, or injurious to health; or

(c) any petroleum spirit, or carbide of calcium.

(2) In this regulation the expression "petroleum spirit" means

(a) any crude petroleum;

(b) any oil made from petroleum, or from coal, shale, peat or other bituminous substances; and

(c) any product of petroleum or any mixture containing petroleum that when tested in an appropriate manner gives off an inflammable vapour at a temperature lower than twenty-three degrees celsius.

...

(5) No person shall discharge grease or any other noxious substance into any public sewer.

...

## III - BARBADOS - Sewerage Regulations, 1982

9. ... (3) No one shall discharge the substances specified in paragraph (4) into a public sewer unless their concentration:

(a) is reduced by treatment at the source to a point that satisfy the requirements of these regulation; or

(b) does not adversely affect sludge digestion or any other bio chemical, biological or other sewage treatment process.

(4) The substances referred to in paragraph (3) are:

(a) steam or hot liquids with temperatures above forty-four degrees celsius;

(b) water or waste of pH less than 5.5 or greater than 9.0;

(c) industrial waste containing

(i) alcohol

(ii) antibiotics,

(iii) arsenic,

(iv) bromine, iodine, chlorine, fluorine,

(v) copper,

(vi) creosol or creosotes,

(vii) cadmium.

- (viii) cyanides,
- (ix) formaldehydes,
- (x) lead,
- (xi) mercury,
- (xii) phenols and their derivatives,
- (xiii) sulphonamides,
- (xiv) zinc compounds,
- (xv) strong oxidizing agents such as chromates, dichromates, permanganates and peroxides,
- (xvi) chemical compounds producing toxic, inflammable or explosive gases, either upon acidification, alkalization, oxidation, or reduction,
- (xvii) strong reducing agents such as nitrites, sulphides, sulphites and thiosulphates,
- (d) highly coloured matters and those creating excessively offensive odours, and
- (e) waste of whatever kind that cannot be satisfactorily purified by the normal processes of sewage treatment

...  
(6) Where a sink at a hotel, restaurant, boarding house, laundry or other place where grease or any other noxious substance is used is connected to the public sewer, the hotel, restaurant, boarding house, laundry or place shall be provided with a grease trap of a design approved by the General Manager.

(7) Industrial waste from garages, motor vehicle service stations or places where mechanical vehicles or other machines are washed shall, before being discharged over a trapped gully basin, be drained through a properly constructed grease trap of a design approved by the General Manager.

(8) A grease trap shall be cleaned as often as may be necessary to maintain it in a sanitary condition.

#### **IV - BARBADOS - Sewerage Regulations, 1982**

4. (1) Subject to the Act and these regulations the Authority shall permit commercial and industrial institutions in the defined district to carry liquids from their manufacturing processes into public sewers: but industrial waste shall not be discharged into a public sewer without the permission in writing, of the General Manager.

(2) The permission of the General Manager given under paragraph (1) is subject to such terms and conditions as he may specify in each particular case.

...  
10. Waste matter from commercial and domestic food-grinders and similar appliances may only be discharged into a public sewer with the permission of the Authority and under such conditions as the General Manager determines.

11. Waste water from swimming pools may only be discharged into the public sewer under such conditions and at such rate of flow as the General Manager authorises in each particular case.

#### **V - PHILIPPINES - Sewer Use Regulations, 1971**

1.03. No person shall discharge wastes, except normal waste water as defined in Section 1.01, Item 25, from any commercial or industrial establishment into the sanitary sewer without a permit from the General Manager. Any person wishing to discharge wastes into sanitary sewers shall file an application for a connection permit with the General Manager. The application shall contain the following information: the name, address and telephone number of applicant and name of the officer of the company making the application; the type of products handled or manufactured; the quantity of wastes including seasonal, weekly, daily or hourly variations; and the chemical, physical and other characteristic of the wastes and any other pertinent and necessary information - all as required on forms provided by the General Manager for this purpose.

On the basis of the application and provided that the characteristics of the proposed discharge are such that they are allowable under the provision of these Regulations, the General Manager shall issue a permit allowing the discharge of such wastes into sanitary sewers.

If the characteristics of the wastes are such that they are not allowable under these Regulations, the application shall be denied by the General Manager and the applicant shall be advised by the General Manager of steps to be taken before said permit can be granted.

Such permit may be revoked for cause at any time upon giving the holder thirty (30) days written notice stating therein the reasons for revocation, including non-payment of charges and surcharges for public sewer use.

**VI - CAYMAN ISLANDS - Water Authority Regulations, 1985**

34 (1) In pursuance of sub-section (2) of section 31 of the Law, any person who wishes to discharge, directly or via a private sewer or drain, trade effluent into the public sewerage system shall apply to the Authority for the grant of a permit on the form issued by and obtainable from the Authority, stating all the particulars of the proposed discharge.

(2) Upon satisfying themselves that the effluent is, or subject to appropriate treatment as prescribed in the permit, will be of no harm to the public sewerage system the Authority shall grant a provisional permit enabling the holder thereof to begin discharge operations. A provisional permit under this sub-section shall have such a duration as is necessary in the opinion of the Authority, to begin and to test on at least two consecutive occasions the discharge operations authorized in the permit, and shall be subject to such terms and conditions as the Authority think fit, including conditions as to the quality of the effluent which it is proposed to discharge.

(3) Upon successful testing on at least two consecutive occasions of the discharge operations authorized in a provisional permit granted in pursuance of the sub-section 34(2), the Authority shall grant to the holder of a provisional permit a final permit enabling him to discharge trade effluent into the public sewerage system, subject to such terms and conditions, including conditions as to the quality of the effluent discharged, which the Authority think fit.

(4) A final permit shall be valid for one year, or for such lesser period as the Authority may determine, and, if no material change in the circumstances of fact under which a final permit was first granted has occurred in the intervening time, and upon payment by the holder of the permit of the appropriate charge prescribed in sub-section (6) of this regulation, a permit to discharge trade effluent into the public sewerage shall be renewed by the Authority, provided a request to that effect is made at least one month prior to the expiration date indicated in the permit. Failure of the permit holder to file for the renewal of his permit within the prescribed deadline may result in the termination of the permit.

(5) The Authority may, by written notice to the holder of the permit, suspend, vary, or revoke a final permit to discharge trade effluent into the public sewerage system:

- (a) at the request of the holder of the permit; or
- (b) for any material false statement in the permit application; or
- (c) for breach of any condition subject to which the permit was granted; or
- (d) for refusal to allow inspection and testing of works and effluent; or
- (e) for failure to pay the prescribed sewerage charges.

Provided that:

- (a) prior to revoking a permit, where a default under sub-paragraphs (b), (c), or (e) of this sub-section is one capable of being remedied, the Authority shall first serve on the holder notice in writing specifying the default and requiring the holder to remedy the same within such time as may be specified in the notice, and if the default is so remedied the Authority shall not revoke the permit; and
- (b) prior to acceding to a request of the holder of a permit to terminate the permit, the Authority shall, in consultation with the Chief Environmental Health Officer, satisfy themselves that alternative means of disposing of the effluent in an adequate and lawful manner are available to the holder of a permit. If the Authority deem that the conditions set out in this sub-paragraph are not met they shall reject the request to terminate a permit under this sub-section.

(6) Upon the filing of an application for a permit under this regulation, and annually thereafter so long as such permit continues in force, there shall be payable to the Authority a sewerage charge, which shall be in the amount to be prescribed by the Authority.

(7) The Authority shall keep, in such manner as they think fit, a record of all permits granted in pursuance of this regulation, and of any action taken by them, in relation to such permits following the grant thereof.

**VII - CAYMAN ISLANDS - Water Authority Regulations, 1985**

38. (1) In pursuance of sub-paragraph (c) of sub-section (1) of section 38 of the Law, any person who wishes to dispose of surface water run-off into the public sewerage system shall apply to the Authority on the appropriate form issued by and obtainable from the Authority, for a permanent permission to dispose of the said surface water run-off into the public sewerage system whenever it occurs and no alternative means of disposal are readily available, and shall include such of the appropriate particulars as are material to the application.

(2) An application made to the Authority in pursuance of sub-section 38(1) shall be accompanied by the appropriate charge to be prescribed by the Authority, and shall be dealt with in, or substantially in, accordance with sub-sections 35(2)<sup>1</sup>, 35(3)<sup>1</sup> and 35(5)<sup>2</sup>.

**VIII - IRELAND - Local Government (Water Pollution) Regulations, 1978**

**16. In this Part:**

- "applicant" means an applicant for a licence under section 16;
- "existing discharge" means an existing discharge as defined in section 18(4);
- "licence" means a licence under section 16;
- "licence application" means an application to a sanitary authority for a licence under section 16;
- "register" means the register required to be established and kept under section 9(3);
- "review" means review under section 17.

**17. (1) A licence application shall be accompanied by:**

- (a) such plans, in duplicate, and such other particulars as are necessary to describe the premises, drainage system and any works, apparatus or plant from which the effluent or other matter is to be discharged and to identify the point of discharge to the sewer;
- (b) particulars of the nature, composition, anticipated temperature, volume and rate of discharge of, and the proposed method of any treatment of, the effluent or other matter and the period or periods during which the effluent or other matter is to be discharged; and
- (c) in the case of a trade effluent, a general description of the process or activity giving rise to the discharge.

(2) A licence application for an existing discharge shall be accompanied by a statement that it is such a discharge in addition to the information specified in sub-article (1).

(3) An applicant for a licence, other than a licence for an existing discharge, shall also furnish such other particulars, including the results of such investigations, as the sanitary authority may reasonably require for consideration of the application.

**18.** Where an applicant fails or refuses to comply with any requirement of a sanitary authority under article 17(3) in relation to the furnishing of results of any investigation within three months of such requirement, the sanitary authority may carry out, or arrange to have carried out, such investigation and may require the applicant to defray or contribute towards the cost of any such investigation.

**19.** A sanitary authority may grant or refuse a licence notwithstanding that plans or other particulars required under article 17 have not been furnished.

**20.** As soon as may be after the grant or refusal of a licence the sanitary authority shall, in the case of the grant of a licence, transmit the licence to, or, in the case of the refusal of a licence, give notice of such refusal to, the applicant and shall inform him that an appeal under section 20 may be made to the Board and that any such appeal must be accompanied by a deposit of £10.

**21.** Form No. 2 in the Second Schedule, or a form substantially to the like effect, shall be the form of every licence granted by a sanitary authority, including a licence revised under section 17.

**22. (1) Where a sanitary authority intends to review a licence it shall give notice of such intention to the person making, causing or permitting the discharge to which the licence relates.**

(2) Every notice under sub-article (1) shall specify:

- (a) the reference number relating to the licence in the register,
- (b) the reasons for the review if less than three years has elapsed since the date of the licence or the last review of the licence, and
- (c) that representations relating to the review may be made in writing to the sanitary authority within one month of the date of the notice.

**23. (1) Where a sanitary authority gives notice under article 22 such notice may also require the person making, causing or permitting the discharge to which the licence relates to submit such plans or other particulars as it considers necessary for the purpose of the review.**

<sup>1</sup> See sub chapter 3.1 above, example IV.

<sup>2</sup> Covering payment of service charges and meter rental fees.



(2) Where a person fails or refuses to comply with any requirement of a sanitary authority under sub-article (1) within three months the sanitary authority may complete the review.

24. (1) On completion of a review of a licence a sanitary authority shall give notice of its decision to the person making, causing or permitting the discharge to which the licence relates.

(2) A notice by a sanitary authority under sub-article (1) shall include a statement that an appeal under section 20 may be made to the Board and that any such appeal must be accompanied by a deposit of £10 and shall specify:

- (a) whether any condition of the licence the subject of the review has been deleted,
- (b) whether and in what way any condition of the licence the subject of the review has been amended, and
- (c) any new conditions attached to the licence.

36 . . 131 The register required to be established and kept by a sanitary authority under section 91(3) shall be in the form of and contain the particulars specified in Form No. 5 in the Second Schedule.

Form 2 - Licence to Discharge Trade Effluent or Other Matter to a Sewer - See Appendix VII, page 378.

Form 5 - Register of Licences Under section 16 for the Discharge of Trade Effluent or Other Matter to a Sewer - See Appendix VII, page 379.

#### **IX PHILIPPINES - Sewer Use Regulations, 1971**

1.12. When deemed necessary by the General Manager, the owner of any property served by a building sewer carrying commercial or industrial wastes other than normal wastewater shall be required to install and shall maintain at his own expense, a suitable control structure in the building sewer to facilitate observation, sampling and measurement of the wastes. Such structure shall be easily accessible and safely located and shall be constructed in accordance with plans previously approved by the General Manager, and shall be located so as to permit the gauging of flow and the collection of samples truly representing the wastes leaving the property. If deemed necessary by the General Manager, automatic gauging and sampling equipment shall be installed.

1.13. The owner of any establishment discharging commercial and industrial wastes to the sanitary sewers shall submit to the General Manager at such intervals as he may prescribe a regular report accurately describing the character and quantity of all such wastes other than domestic waste water discharged to the sewers during the period covered by the report. In order to insure compliance with these Regulations, the General Manager may at any time take such measurements, collect such samples, and run such laboratory analyses on representative samples of any wastes as may be deemed necessary.

All tests performed by the owner or by the General Manager shall be in accordance with standard laboratory methods.

#### **X - WESTERN AUSTRALIA - Metropolitan Water Supply, Sewerage and Drainage By-laws**

129. Wastes from the following fixtures and areas shall first discharge into an approved apparatus for retaining objectionable matter, that is to say:

- (a) Every fixture or area from which petrol, benzine or other inflammable or explosive substance, or grease, oil or greasy or oily matter, is likely to be discharged, or conveyed into waste, combined waste, or soil pipes or into drains;
- (b) Every sink in all food packing houses, butchers' shops, lard rendering establishments, hotels, motels, restaurants, boarding houses, and such other places as the Board may direct; and
- (c) Such other fixtures, areas or apparatus as the Board may direct.

130. (1) Grease traps shall be fixed outside buildings or outbuildings whenever practicable.

(2) External grease traps shall be constructed of approved materials.

(3) Internal grease traps shall be constructed of copper or other approved material, and, if directed fixed upon a tray.

(4) The outlet from any grease trap shall be connected to a disconnector trap.

131. Every internal and external grease trap shall have approved independent provision made for inlet and outlet ventilation as provided for waste pipes in by-law 153 of these by-laws<sup>1</sup>.
132. (1) The dimensions of any grease trap to be provided shall be such as to ensure the retention of all grease entering such trap.
- (2) The height from the top of the outlet of grease trap to the vent take off shall not be less than four inches.
- (3) The difference in level between invert of inlet and invert of outlet shall be not less than one inch.
- (4) The capacity of a sink shall be measured to the overflow level, or, in the event of there being no overflow, to the top of the sink.
- (5) where hot water is being fed intermittently or continuously to a dishwasher the capacity of the dishwasher shall be taken as the amount of maximum hourly discharge.
133. The outlet pipe from any grease trap shall be at least one size larger than the size of the pipe which has a cross sectional area equivalent to the total area of incoming waste pipes and except by special permission no outlet pipe shall be less than 2.1/2 inches in diameter.
134. (1) Petrol and oil traps shall be constructed in accordance with the Board's type drawings.
- (2) Every such trap shall be connected to a disconnector trap and shall be provided with independent ventilation.
135. Construction of these traps shall be in accordance with the Board's Standard Drawings and be sized to the requirements of the Industrial Waste Inspector.

### 3.4 Charging for public sewerage services

The service of carrying away the drainage of buildings and premises in general via a sewerage system is generally charged for. Subsidiary legislation may spell out criteria for the calculation and levying of charges, payment procedures and procedures for the collection of arrears and other costs (I and II). In addition, payment of a security deposit may be prescribed in advance of effecting a connection to a public sewer (III), and works executed by the service operator for a customer are generally to be paid for by the latter (IV).

#### I - PHILIPPINES - Sewer Use Regulations, 1971

1.05. Any person using sanitary sewers shall pay a normal sewer service charge based on the total volume of wastewater discharge to said sewers. This charge per cubic meter shall be based on the appropriate sewer service charge of NWSA. When the suspended solids (NFR) content or the BOD<sub>5</sub> of waste exceeds the maximum concentration of these components in normal wastewater, a surcharge in addition to the normal sewer service charge, shall be levied as established by each of the formulae hereinafter set forth. The surcharges on BOD<sub>5</sub> and suspended solids herein provided for shall be collected only when wastewater treatment shall have been provided. The daily surcharge per excess metric ton of suspended solids shall be P 5n for wastes discharge to sewers tributary to a wastewater treatment plant.

The formulae for calculating the rate of the daily surcharge for excessive pollution are:

$$E_s = WX (B-A) XP,$$

$$E_n = WX (N-A) XP,$$

Where:

- $E_s$  = daily charge to industry in Pesos for excess BOD<sub>5</sub>  
 $E_n$  = daily charge to industry in Pesos for excess NFR  
 $W$  = average wastewater flow in m<sup>3</sup>/day  
 $B$  = daily weighted average BOD<sub>5</sub> concentration in mg/l of wastewater  
 $N$  = daily weighted average NFR concentration in mg/l of wastewater

<sup>1</sup> Omitted.

- A<sub>1</sub> - allowable maximum BOD<sub>5</sub> concentration in mg/l (500 mg/l)
- A<sub>2</sub> - allowable maximum NFR concentration in mg/l (500 mg/l)
- P<sub>1</sub> - average daily cost to remove a metric ton of BOD<sub>5</sub>
- P<sub>2</sub> - average daily cost to remove a metric ton of NFR

...

#### II - BOTSWANA - Draft Sewerage Regulations

27. (1) Charges for sewerage services provided by a sewerage authority shall be as prescribed by it from time to time.

(2) Sewerage charges become due and payable on the first day of every month.

(3) whenever the owner of land connected with a sewer is not in occupation or sole occupation of the land, the owner and occupier may agree which of them is to pay sewerage charges in respect of the land and in what proportion.

(4) whenever an owner and occupier have not agreed that the occupier is to pay all sewerage charges in respect of land connected with a sewer and the owner fails to pay any sewerage charge for which he is liable, the occupier may pay any amount which the owner has failed to pay and may:

(a) deduct the amount with interest at the rate of 10 per centum per annum until repayment is made, out of any rent from time to time becoming due from him to the owner; or

(b) recover the amount in a summary way from the owner

28. Where any sewerage charge is outstanding for a period in excess of 30 days from the day on which it became due, the person liable to pay the sewerage charge is also liable to pay to the sewerage authority a penalty equal to 10 per cent of the outstanding amount.

29. Wherever a cheque proffered in payment of any sums due to the sewerage authority is not honoured by the paying bank, the sewerage authority may recover from either the drawer or from the owner or occupier of the land in respect of which the cheque was proffered such sum as the sewerage authority may prescribe to cover bank charges and administrative costs incurred by the sewerage authority.

#### III - BOTSWANA - Draft Sewerage Regulations

8. (1) Before land is connected to any sewer, the owner of the land must pay to the sewerage authority such deposit as it prescribes as security for regular payment of sewerage charges.

(2) Every person whose land is connected to a sewer at the commencement of these regulations must pay to the sewerage authority upon demand such deposit as it prescribes as security for the regular payment of sewerage charges.

#### IV - BOTSWANA - Draft Sewerage Regulations

7. (1) Where work is to be undertaken by a sewerage authority under sub regulation 6(2), it must not commence the work until the applicant has paid the cost of executing the work as estimated by the sewerage authority.

(2) If the actual cost of doing the work exceeds the estimated cost paid to the sewerage authority under this regulation, when the work is complete the applicant must pay the balance of the actual cost of the work, as determined by it, to the sewerage authority

(3) If the actual cost of doing the work is less than the estimated cost paid to the sewerage authority, the difference must be credited to the applicant's account with the sewerage authority.

### 3.5 Ensuring compliance with the law

Penalties consisting of fines and imprisonment terms back up the regulatory prescriptions of subordinate legislation on sewerage and drainage. Penalties can be generically aimed at any violation of regulatory precepts and may include discontinuance of the public sewerage service (I). Subsidiary legislation may, in addition, confer law enforcement powers on law enforcement officials - typically, to enter and inspect someone's property (II), and to take remedial or preventative action, also in lieu of a recalcitrant individual (III and IV)

**I - PHILIPPINES - Sewer Use Regulations, 1971**

1.15. Owners of property, including but not limited to commercial or industrial establishments, found to be violating any provision of these Regulations shall be notified in writing by the General Manager, stating the nature of the violation and providing a reasonable time limit for the correction thereof. Said owners shall stop all violations within the period of time stated in the notice, and shall certify to the General Manager that the corrections thereto have been accomplished.

The owner of any Property found to be violating any provision of these Regulations who shall continue such violation beyond the time limit provided for in the above paragraph, shall be liable to the penalty prescribed in Section 19 of NWSA Resolution No. 202, Series 1968; namely, a fine of not more than five hundred pesos (P500.00) or by imprisonment for not more than six (6) months, or both such fine and imprisonment in the discretion of the court.

In cases of repeated violations the General Manager moreover may revoke the permit for the discharge of wastes into the sewerage system and effect the discontinuation of water or sewer services, or both.

**II - PHILIPPINES - Sewer Use Regulations, 1971**

1.14 Any duly authorized representative of the General Manager possessing proper credentials and identification shall be permitted to enter at reasonable hours the property concerned for the purpose of inspecting, observing, measuring, sampling and testing, in accordance with the provisions of these Regulations.

**III - BARBADOS - Sewerage Regulations, 1982**

5. ... (3) Where the notice referred to in paragraph (2)<sup>1</sup> is not complied with, the Authority may carry out the necessary work and recover the expenses incurred from the person on whom the notice was served.

...

**IV - WESTERN AUSTRALIA - Country Areas Water Supply By-laws**

67 (2) The Minister may cause any building, structure, material, or thing erected, placed, maintained, or kept over any such pipe, sewer, drain or fitting in contravention of this by-law to be altered, pulled down, removed, or otherwise dealt with as he shall think fit.

<sup>1</sup> See subchapter 3.1 above, example II



## CHAPTER VIII

### CHARGING FOR WATER

#### See also:

**ALLOCATING WATER FOR USE: WATER RIGHTS AND PERMITS (CHAPTER I)**  
**PROVISION OF WATER SUPPLIES TO THE PUBLIC (CHAPTER V)**  
**IRRIGATION WATER DEVELOPMENT AND USE (CHAPTER VI)**

#### **1. INTRODUCTION**

Charging for water has the dual connotation of charging for the use of the raw resource, i.e., paying for the privilege of diverting or storing or abstracting the natural resource for use; and charging for water being supplied to the public through a reticulation system to satisfy a variety of needs associated with habitation and economic activity. In view of its characterization as a reward for a service rendered, charging for water supplied via a public reticulation system has been reviewed in Chapter V on **PROVISION OF WATER SUPPLIES TO THE PUBLIC**, sub-chapter 8. For similar reasons, charging in connection with the use of water of Government-funded irrigation schemes has also been separately presented in Chapter VI on **IRRIGATION WATER DEVELOPMENT AND USE**, sub-chapter 2.4. This Chapter will focus on mechanisms and procedures for charging for the use of the natural resource water in connection with an abstraction, diversion or storage.

Paying for the privilege of abstracting, diverting or impounding water for use has policy overtones which are addressed to in principal legislation and are reflected in basic provisions typically empowering the Government to establish and administer a system of charges for water utilized under a permit. Subsidiary legislation provides the procedural and substantive details of implementation. These typically concern (a) the rates of charges and criteria for their calculation; (b) procedures for the payment and collection of charges, including collection of arrears of payment; (c) waivers of charges. The material of this Chapter is arranged under corresponding headings.

#### **2. RATES OF WATER CHARGES**

Water charges are calculated based on the rates and the criteria fixed by the legislation. Flat rates based on block quantities of water nominally permitted to be abstracted under a permit may be used in view of the ease of administration of such a charging system (I). In the alternative, unit rates may be employed so as to calculate charges on the basis of the quantities of water allowed to be abstracted or the power allowed to be developed under a permit, or of water actually abstracted or power actually developed (II). The unit of measurement can be a given volume of water or the surface of land where water is applied. Moreover, rates can be structured in such a way that those who are allowed to abstract more water pay proportionately more per unit of water permitted to be abstracted than those who are allowed to abstract less (III).

**I - MALAWI - Water Regulations, 1989**

10. The fees and rents payable in respect of grants, easements, etc shall be as are specified in the Second Schedule hereto:

...

**Second Schedule - Rents - See Appendix VIII, page 383.**

**II - BRITISH COLUMBIA - Regulation and Tariff of Fees, Rentals, and Charges under the Water Act**

5.07 Rentals are payable annually to the Crown in respect of every licence and permit by the licensee whether he exercises the rights granted under the licence or not, and except as specifically provided otherwise, the amount of the rental should be based upon the rates as set out in Schedule A<sup>1</sup>.

5.11 Where the amount of any rental under this tariff is based on the quantity of water diverted or used or the amount of power produced, the rental may for any year be computed on the quantity of water diverted or used or the amount of power produced in the next preceding calendar year.

5.14 Every improvement district, development district, and municipality shall pay rental at the rate fixed in Schedule A in respect of the total quantity of water diverted by it, without reference to the particular licence or licences authorizing the diversion of the water.

5.15 The annual rental payable in respect of any licence for power purpose shall be computed at the rates set out in Schedule A and shall be based on:

- (a) the estimated, proposed, or installed capacity of the power development, which may include the amount of undeveloped power that the Comptroller estimates could be developed at the power-site from the flow of water in the stream affected; and
- (b) the estimated output of the power development for the year. In estimating the output of any development for any year the Comptroller may use the licensee's records of operation and any other data available to him, and may estimate it at the amount of the actual output for the next preceding year or at such fraction of the maximum possible output as in his opinion would constitute a reasonable use of the water available.

**III - PHILIPPINES - Water Rules and Regulations**

7. Except when the appropriation is for family domestic purpose or when the quantity of water appropriated for agricultural use is not more than 5 litres per second, all appropriators shall pay to the Council in the manner provided under Section 6 thereof<sup>2</sup>, an annual water charge in accordance with the following Schedule:

A. For the use of water when diverted/extracted from the natural source:

Rate of Withdrawal (litres/second)	Charge per litre/sec.
1) Not more than 30	P 0.50
2) More than 30 but not exceeding 50	0.75
3) More than 50	1.00

B. For the use of surface water at its natural location for fish culture:

- 1) For a surface area not to exceed 15 hectares - P20.00/ha.
- 2) For a surface area of more than 15 hectares - P300 plus P30/ha. of the excess over 15 hectares.

For this purpose a fraction of a hectare shall be considered as one hectare.

The Council may revise the above water charges or impose special water rates from time to time as the need arises taking into consideration, among others, the following:

- (a) Intended use of water;
- (b) quantity/rate of water withdrawal vis-a-vis other users taking into account the water bearing potential of the source;
- (c) Environmental effects;
- (d) Extent to which water withdrawal will affect the source; and
- (e) Development cost of bringing water from the source.

<sup>1</sup> Unred.

<sup>2</sup> i.e., in postal money order through the Office where the application is filed.

### 3. PAYMENT AND COLLECTION OF CHARGES

Detailed provisions may regulate the manner and frequency of payment of charges, as in the example below.

**BRITISH COLUMBIA - Regulation and Tariff of Fees, Rentals, and Charges under the Water Act**  
5.09 the first rental amounting to ten dollars or more shall be paid at the same time as the application fee, and shall cover a period of twelve months from the issue of the licence. The second rental shall be due on the first anniversary of the issue of the licence, and the amount shall be adjusted by the Comptroller to complete the payment of the rental for the current calendar year. All subsequent rentals shall be for the succeeding calendar years. The like provisions apply to permits to occupy Crown land.  
5.10 Except as set out in section 5.09 hereof, the first rental shall be an amount equal to that of a twelve month period, and shall be for the current calendar year or any remainder thereof. The first rental shall be paid at the time of application fee. All subsequent rentals shall be for the succeeding calendar years.  
5.12 Every rental except the first and second, becomes due on the first day of the year for which it is chargeable.

### 4. WAIVERS

Water charges can be waived or remitted under special circumstances, as determined also by subsidiary legislation. Such circumstances typically have regard to particular water user groups - e.g., the Government - or the termination of a permit, as in the example below.

**BRITISH COLUMBIA - Regulation and Tariff of Fees, Rentals, and Charges under the Water Act**  
5.18 No rental shall be payable under this tariff in respect of any licence for any purpose which authorizes the use of water upon land reserved for Indians, provided that the land is not leased to or occupied or used by any person who is not an Indian.  
5.20 No rental shall be payable in respect of any licence that authorizes the use of water in and about any fish hatchery maintained and operated by the Government of Canada or the Government of British Columbia.  
5.21 No fees, rentals, or other charges shall be payable in respect of any licence or permit where the Minister of Lands and Forests is the applicant or the holder of a licence or permit.  
5.22 When a licence is cancelled or abandoned, the Comptroller may remit any outstanding rentals due in respect thereof.





**APPENDIX J**

**FORMS UNDER**

**CHAPTER I**

**ALLOCATING WATER FOR USE: WATER RIGHTS AND PERMITS**



2. THE GRANTING OF PERMITS FOR THE USE OF WATER

Step One - Filing of an application

1 - TANZANIA - Water Utilization (General) Regulations, 1975

Form A  
Application for Water Right  
(To be completed in quintuplicate)

- 1. Name of applicant.
- 2. Postal Address.
- 3. Particulars of land in respect of which application is made:

- (a) District: Region
- (b) Location or Village
- (c) Name
- (d) Land Office No.: Ian
- (e) Hectarage
- (f) \* Freehold, leasehold, right of Occupancy for ..... years, (other interest):
- (g) Title of applicant:
- (h) Name and address of owner of reversion, if any, other than the President (if none, state none):
- (i) Details of other sources of water used on the land:

4. Particulars of Water Right for which application is made:

- (1) \*\* Body of water.
- (2) Whether application made to \* divert/dam/store/abstract.
- (3) Purpose.

Type of Use ***	Details	Amount of water to be abstracted/returned
(a) Domestic:	No. of persons.	
(b) Stock:	No. of Stock.	
(c) Irrigation:	No. of hectares and crops.	
(d) Fish farming:	Hectarage of Ponds.	
(e) Industrial:		
(i) Mechanical:	Fall available: ft.	
	Height of water to be lifted: ft.	
(g) Power:	Fall available: ft.	
	Horsepower to be developed.	
	Type of power plant proposed.	
(h) Mining:	Description of plant in use.	
	Type of ore to be crushed or treated.	
(i) Public Supply:	Total quantities of water:	

- (4) Point of Intake.
- (5) Point of Return.

- 5. (a) Particulars of possible pollution.
- (b) Measures to be taken to avoid pollution.
- 6. Particulars of works.
- (a) Constructed.
- (b) to be constructed.
- 7. (a) Is application made for the grant to be made appurtenant to the land specified in paragraph 3?
- (b) If the applicant is not the owner of the land, has the owner been informed that application is made for such declaration?

\* Strike out whichever does not apply.

\*\* A separate application must be made in respect of each body of water.

B. The name and address of other users who may be affected by the grant of the water right for which application is made.

Date \_\_\_\_\_ Signature of Applicant \_\_\_\_\_

If the applicant does not own the whole interest in the land, attach to this application the consent of the owner to the application that the grant be made appurtenant to the land

Use space below for a SKETCH MAP which must contain the following particulars:

- (a) The plan of the property and the adjoining properties.
- (b) The body of water referred to.
- (c) The point on the body of water where it is desired to abstract water or construct works and the line of furrow; and
- (d) the true North.

If possible use a tracing from the plan attached to your title deeds

**NOTE:** The applicant is requested to give the distances and simple description of the road to the property from the turn-off on a main road, or any well-known landmark, to facilitate inspection

II - UNITED KINGDOM - Water Resources (Licences) Regulations, 1965

Model Form 1  
Application for a Licence (Other than a Licence of Right)  
to Abstract Water from an Inland Water

APPLICANT

1. Name of applicant (in BLOCK LETTERS) .....
2. Address of applicant to which communications about this application are to be sent .....
3. Name and address of professional adviser or agent (if any) to whom communications about this application are to be sent .....

INLAND WATER TO WHICH THIS APPLICATION RELATES

4. Give the name of, or sufficient description to identify, the inland water (see note (a)) from which you propose the licence should authorise the abstraction (see note (b)) of water .....

POINTS OF ABSTRACTION TO WHICH THIS APPLICATION RELATES AND CLAIM TO BE ENTITLED TO MAKE THE APPLICATION (see note (c))

5. In Table I below:
  - (a) in column (1), enter the reference number, as shown on the map (see note (d)) accompanying this application, of each of the points at which you propose the licence should authorise abstraction from the inland water referred to in paragraph 4 above;
  - (b) to show how you claim to be entitled (see note (e)) to make this application for a licence to abstract water at each point referred to in column (1):
    - (i) in column (2), opposite the reference number at that point, enter:
      - "occupier" - if you are the occupier of land contiguous (see note (f)) to the inland water at that point; or
      - "potential occupier" - if you have entered into negotiations to acquire an interest which will entitle you to occupy such land; or
      - "potential right of access" - if you expect to have a right of access to such land; and
    - (ii) in column (3), specify the land (by reference to the map accompanying this application) (see note (g)); and
    - (iii) in column (4), opposite each entry in column (3) which is "potential occupier" or "potential right of access", specify the date upon which you expect to acquire the interest in, or the right of access to, the land.

TABLE I

Map ref. no. of point (1)	Occupation or access (2)	Contiguous land (3)	Expected date of acquisition of interest or right of access (4)

PROPOSED MEANS OF ABSTRACTION AND METHODS OF MEASURING

6. In Table II below:
  - (a) in column (1), enter the map reference number of each point of abstraction referred to in Table I above;
  - (b) in column (2), specify the works (if any), and in columns (3) and (4) specify the type and capacity of the machinery or apparatus, by means of which you propose the licence should authorise abstraction at each point referred to in column (1);
  - (c) in column (5), specify the way in which you propose the licence should require the quantities of water abstracted at each point referred to in column (1) to be measured or assessed.

TABLE II

Map ref. no of point (1)	Means of abstraction			Method of Measuring or assessing quantities abstracted (5)
	Work (2)	Machinery or apparatus		
		Type (3)	Capacity (in thousand gallons per hour) (4)	

**WATER REQUIRED AND LAND ON WHICH AND PURPOSES FOR WHICH IT IS TO BE USED**

**NOTE:** If so desired, map reference numbers may be bracketed together in column (1) of Table (I) below for the purpose of specifying in column (2) an aggregate quantity in respect of a group of points of abstraction (see note (ii)).

7. In Table III below:

- (a) in column (1), enter the map reference number of each point of abstraction referred to in Table I above;
- (b) in the remaining columns specify under the appropriate headings the quantities of water you propose the licence should authorise to be abstracted at each point referred to in column (1) in the various periods, and the land (see note (iii)) on which, and the purposes (see note (j)) for which, you propose the licence should authorise water abstracted at each point to be used, showing which quantity relates to which period, purpose and land, etc. (see note (k)).

TABLE III

Map. ref. no. of point (1)	Maximum quantity (in thousand gallons)			Period (e.g. Nov.-Feb., any period of ... consecutive days in March-May, etc.) (5)	Purpose (6)	Land (7)
	per year or other period specified in col. 5 (2)	per day (3)	per hour (4)			

**SPRAY IRRIGATION**

8. If the purposes specified in column (6) of Table III above consist of or include spray irrigation-

(a) in Table IV below:

- (i) in column (1), specify each crop you propose to irrigate;
- (ii) if you propose to irrigate any crop during a particular period or periods of the year, specify the period(s) in column (2);
- (iii) in column (3), specify the acreage of each crop;
- (iv) in column (4), specify the maximum number of inches of water you propose to apply to an acre of that crop annually or, if any period is specified in column (2), in that period; and
- (b) specify the maximum number of acres you propose to irrigate daily .....

TABLE IV

Crop (1)	Period (e.g. April-June, any period of . . . consecutive days in March-May, etc.) (2)	Acreage (3)	Maximum no. of inches to be applied per acre per year or period (4)

DISCHARGE OF WATER AFTER USE (see note (l))

9. In Table V below:

- (a) if you propose to discharge water after it has been used for any purpose specified in column (1) of Table III above, specify that purpose in column (1);
- (b) in column (2), enter the approximate proportion of any quantity of water used for that purpose is likely to be discharged after use;
- (c) in column (3), opposite each entry in column (2), specify the point of discharge, e.g., where the water will enter an inland water (giving the name of, or sufficient description to identify, the inland water), where it will enter a public sewer (giving the name of the sewerage authority), where a soakaway will discharge, etc.

TABLE V

Purpose (1)	Approximate proportion (2)	Point of discharge (3)

POINTS OF ABSTRACTION TO BE USED IN CONJUNCTION

NOTE: You need not make any entries in Table VI below unless you wish to use any of the points of abstraction referred to in Table I above in conjunction with points of abstraction not referred to in that Table.

10. In Table VI below:

- (a) in column (1), describe (if practicable, by reference either to the map accompanying this application or to the relevant licence under the Act or to the relevant application for a licence) the location of each point of abstraction which you wish to use in conjunction with the points of abstraction referred to in Table I above (whether simultaneously or as an alternative or otherwise);
- (b) in column (2), give the name of, or sufficient description to identify, the inland water or underground strata (see note (m) e.g. Chalk, Lower Greensand, etc.), from which you are abstracting or propose to abstract water at that point;
- (c) in column (3), specify the serial number of the licence under the Act (if any) which authorises the abstraction of water at that point or the date of your application (if any) for such a licence.

TABLE VI

Point of abstraction (1)	Inland water or underground strata (2)	Serial no. of licence or date of application (3)



**OTHER MATTERS**

- 11. Have you asked any water undertaker for a supply of water for any of the purposes specified in column (6) of Table III above (see note (h))? . . . . .
- If so, state when, which purposes, and with what result . . . . .
- 12. Is the licence required only for a limited period? . . . . If so, for how long? . . . . .
- 13. Give details of any other matters which you wish the River Authority to take into account in considering this application (e.g. the facilities which will be available on your land for storing water abstracted under the licence, how the maximum use is made of existing supplies, the extent to which the water abstracted under the licence will be re-used, matters to which you have had regard in formulating your proposals in this application, the reasons for your proposals as to quantities, etc.) . . . . .

**FORMAL APPLICATION**

I hereby apply to the . . . . . River Authority for a licence under the Water Resources Act 1983 to abstract water in accordance with the proposals indicated above, and I declare that to the best of my knowledge the statements made above are true.

I enclose with this application copies of the newspaper(s) dated . . . . . and . . . . . in which the notice in the form prescribed by the Water Resources (Licences) Regulations 1965 was published. I declare that the notice was also published in the London Gazette dated . . . . . and that a copy of the notice was served on . . . . . on the following authorities in accordance with section 28(1)(b) of the above-mentioned Act (see notes (d) and (e)). . . . .

I also enclose the map required by the above mentioned Regulations of 1965.  
I also enclose (can produce) the following evidence for the purpose of satisfying the River Authority that I am entitled to apply for a licence to abstract at the points of abstraction to which this application relates:  
. . . . .

Signed . . . . .  
\*(Authorised on behalf of . . . . .)  
Date . . . . .

\* Delete where inappropriate

It is an offence to make a false statement in applying for a licence. (See section 115 (1) of the Act.)

**NOTES**

- (a) For the meaning of "inland water", see section 135(1) of the Act. (Section 2 is also relevant).
- (b) For the meaning of "abstraction", see section 135(1) of the Act.
- (c) The British Waterways Board applying for a licence in respect of abstraction from an inland water to which section 131 of the Act applies need not make any entries in column (2), (3) and (4) of Table I, or make the declaration in the FORMAL APPLICATION about sewers.
- (d) The Water Resources (Licences) Regulations 1965 require the application to be accompanied by an Ordnance map showing certain particulars.
- (e) See section 27 of the Act and the above mentioned Regulations of 1965.
- (f) For the meaning of "contiguous", see section 135(7) of the Act.
- (g) E.g. "the land coloured blue on the map"
- (h) If so desired, entries in columns (3) and (4) of Table III may be omitted. Attention is, however, drawn to sections 29(8)(a) and 30 of the Act under which it will be open to the River Authority to specify a quantity in respect of each point of abstraction and to lay down maximum quantities for any specified period (e.g. weekly, daily, hourly) if they see fit to do so.
- (i) E.g. "the land hatched black on the map"
- (j) Purposes should be described as follows:  
water undertaking  
spray irrigation  
cooling purposes  
use in a process of manufacture (other than for cooling purposes)  
use as means of conveying any material as a slurry or otherwise  
other uses (briefly described), e.g. agriculture or horticulture, other than spray irrigation
- (k) Water undertakers applying for a licence to abstract water for the purposes of their water undertaking should enter "water undertaking" in column (6) but need not make any entries in column (7) of Table III.
- (l) Water undertakers applying for a licence to abstract water for the purposes of their water undertaking need not make any entries in Table V.
- (m) For the meaning of "underground strata", see section 135 (1) of the Act.
- (n) Water undertakers applying for a licence to abstract water for purposes of their water undertaking need not answer this question.
- (o) Certain of the authorities mentioned in section 28(1)(b) of the Act are defined in section 135(1).

(M - MALAWI) - Water Regulations, 1969

Form WRB.1  
Application for a Grant of Water Right/Certificate of  
Existing Water Rights\*  
(Surface Water Only)

This form is to be submitted in triplicate, to The Chairman of the Water Resources Board.

**NOTES**

1. This form is applicable only for applications involving the diversion, extraction or use of surface water and is not applicable to groundwater - application for which should be made on form WRB.2<sup>1</sup>.
2. Parts I, II and III are to be completed by all applicants. Schedules A, B, C, D, E, and F to be completed as appropriate.
3. All applications must be accompanied by Maps/Plans (see section 18).
4. Instructions for completing this form are given on page 439.
5. Only Part I should be completed in respect of applications for renewals of an existing grant under identical conditions.

\* Delete as appropriate.

PART I

(1) Full name/s of applicant/s	
(2) Address - Residential - Postal (3) *Give details of existing right, (if space is not sufficient please give details on a separate sheet attached to the application.) NOTE: This paragraph is only applicable to applications to record an existing right under the Act	
(4) State whether: (a) Owner (b) Manager (c) Agent If (b) or (c) give name and address of owner.	
(5) Name and location of farm, estate or holding for which water is required.	
(6) Particulars of land: (a) State freehold or leasehold (b) If leasehold give date of expiry of lease (c) Registered No. and date of registration (d) Acreage	

<sup>1</sup> Form WRB 2 is reproduced in Appendix III, page 310

<p>(7) Name or description and type of body of water from which the water required is to be diverted, stored or used.</p>	
<p>(8) Is the body of water described above situated in, or does it abut to, or flow in or out of Customary Land. State which.</p>	
<p>(9) Describe:                  (a) The point of abstraction or diversion and/or                  (b) The point of storage and                  (c) The point of use</p>	
<p>(10) State maximum amounts of water required under the various headings (Fuller details should appear in Schedules A, B, C, D and E as appropriate).                  (a) Domestic purposes                  (b) Public purposes                  (c) Industrial purposes                  (d) Power purposes (including drive water for ram)                  (e) Irrigation                  (f) Other (give details)                   TOTAL</p>	<p style="text-align: center;">QUANTITY OF WATER                  REQUIRED                  GALLONS PER DAY</p> <p style="text-align: center;">.....                  .....                  .....                  .....                  .....                  .....                  .....</p> <p style="text-align: center;">_____</p> <p style="text-align: center;">_____</p>

**PART II**  
**METHOD OF DIVERSION/EXTRACTION**

<p>11. DIVERSION BY GRAVITATION (by means of a canal and/or pipe)</p> <p>(a) Details of canal</p> <p>(b) Details of pipe</p> <p>(c) Details of any other structures such as siphons, flumes, tunnels, etc.</p>	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 80%;"></th> <th style="width: 10%; text-align: center;">Feet</th> <th style="width: 10%; text-align: center;">Inches</th> </tr> </thead> <tbody> <tr> <td>Width at bottom</td> <td style="text-align: center;">.....</td> <td style="text-align: center;">.....</td> </tr> <tr> <td>Width at full supply level</td> <td style="text-align: center;">.....</td> <td style="text-align: center;">.....</td> </tr> <tr> <td>Depth of water at full supply level</td> <td style="text-align: center;">.....</td> <td style="text-align: center;">.....</td> </tr> <tr> <td>Length .....</td> <td colspan="2" style="text-align: center;">miles/feet</td> </tr> <tr> <td>Gradient, fall in 100ft. ....</td> <td colspan="2" style="text-align: center;">feet</td> </tr> <tr> <td>Average velocity in feet per second....</td> <td colspan="2"></td> </tr> <tr> <td>Estimated discharge at full supply depth .....</td> <td colspan="2"></td> </tr> <tr> <td>Materials of which canal is constructed .....</td> <td colspan="2"></td> </tr> <tr> <td>Internal diameter .....</td> <td colspan="2" style="text-align: center;">inches</td> </tr> <tr> <td>Length .....</td> <td colspan="2" style="text-align: center;">miles/feet</td> </tr> <tr> <td>Hydraulic gradient, fall in 100 feet .....</td> <td colspan="2" style="text-align: center;">feet</td> </tr> <tr> <td>Description of material of pipe and thickness thereof .....</td> <td colspan="2"></td> </tr> </tbody> </table>		Feet	Inches	Width at bottom	.....	.....	Width at full supply level	.....	.....	Depth of water at full supply level	.....	.....	Length .....	miles/feet		Gradient, fall in 100ft. ....	feet		Average velocity in feet per second....			Estimated discharge at full supply depth .....			Materials of which canal is constructed .....			Internal diameter .....	inches		Length .....	miles/feet		Hydraulic gradient, fall in 100 feet .....	feet		Description of material of pipe and thickness thereof .....		
	Feet	Inches																																						
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Description of material of pipe and thickness thereof .....																																								

<p>(d) (i) Will any of the above canals, pipes and/or structures be situated on holdings of other landowners? (ii) If the answer to (i) is yes give details of all land or lands affected</p>	<p align="center">Yes/No</p>
<p>12. DIVERSION BY PUMPING (including by means of a ram*) Fill in particulars</p> <p>*In the case of a ram omit (b), (c) and (e). Questions (f), (g) and (h) refer to the drive pump. Also complete Schedule E.</p> <p>(n) (i) Will the pump and its accessories be situated on holding of other landowners. (ii) If the answer to (i) is yes give details of all other lands affected.</p>	<p>(a) Type of pump .....</p> <p>(b) Type of driving machine ..... and fuel used .....</p> <p>(c) Brake horse power of (b) ..... B. H. P.</p> <p>(d) Approximate elevation of pump above sea-level ..... feet.</p> <p>(e) How pump is connected to driving machine .....</p> <p>(f) Internal diameter of suction main ..... inches</p> <p>(g) Height of suction ..... feet (maximum)</p> <p>(h) Length of suction pipe .... feet</p> <p>(i) Height to which water is to be lifted above pump ..... feet</p> <p>(j) Internal diameter of delivery pipe ..... inches</p> <p>(k) Length of delivery pipe ... feet</p> <p>(l) Pumping hours per day .... hours</p> <p>(m) Quantity of water to be pumped when plant is working ..... gals. per hour.</p> <p align="center">Yes/No</p>

PART III

<p>13. POLLUTION</p> <p>Would the water now applied for be used for any purpose or in any process that will increase its burden of silt, gravel or boulders or cause it to be injurious directly or indirectly to public health, to stock, to fish, or to crops or gardens irrigated with such water?</p> <p>If the answer to the above is "Yes" describe fully what steps are proposed to render the effluent and the residue of its innocuous and pure before returning it to the stream.</p>	<p align="center">Yes/No</p>
<p>14. State the numbers and details of any other Grants of Water Rights held in respect of the land described in para. 18). If nil state "Nil".</p>	

15. State the estimated period of construction of the works <p style="text-align: right;">..... Months</p>	
16. State the period after the completion of the works when it is estimated that all the water now applied for will be beneficially used.	
17. State the period for which the Grant is required.	
18. The following Map Nos. .... and Plan Nos. .... are sent herewith in triplicate and are hereby declared to form part of the application.	
19. The address(es) of the owner(s) of the land(s) which may be affected by the proposed works and whose name(s) and holding(s) is/are shown on the map referred to in paragraph (18) above is/are given in the schedule attached hereto. If no lands are affected, state 'Nil' here:	
20. The following reports and/or documents are sent herewith in support of my application .....	
21. I agree to supply any further information which may be required by the Water Resources Board.	
22. *I enclose herewith crossed cheque/Postal Order/Money Order No. .... for E10s-0d to cover the prescribed fee for this application and undertake to pay the Malawi Government on demand the cost of insertion in the Government Gazette and in at least one newspaper circulating in Malawi of a notice requiring any person objecting to the issue of a Grant of Water Rights to lodge such a complaint with the Chairman of the Water Resources Board.	<b>NOTE:</b> This paragraph is not applicable to applications to record an existing right under the Act
..... Signature of applicant or duly authorized agent	
Date .. .. .	
Copies of the following Schedules are attached*	
A Domestic purposes	
B Public purposes	
C Industrial purposes	
D Irrigation	
E Use of Water to generate power	
F Construction of a Dam	
* Delete as appropriate	

SCHEDULE A - DOMESTIC PURPOSES

State whether water is required for.	QUANTITY OF WATER REQUIRED GALLONS PER DAY
(a) Household and sanitary use:	
(i) No. of low density houses .....	.....
(ii) No. of occupants of medium density house .....	.....
(iii) No. of occupants of high density houses .....	.....
(b) Watering stock:	
(i) No. of large stock .....	.....
(ii) Type of large stock .....	.....
(iii) No. of small stock .....	.....
(iv) Type of small stock .....	.....
(c) Cattle and sheep:	
(i) No. of dips .....	.....
(d) Other essential requirements of farming operations which are not of an industrial nature. State users to which water will be put .....	.....
<b>TOTAL</b>	.....

SCHEDULE B - PUBLIC PURPOSES

Fill in appropriate space if water is required for:	QUANTITY OF WATER REQUIRED GALLONS PER DAY
(a) Municipal, township and community use or supply of water to persons other than the operator in consideration of payment thereof.	PRESENT * .....
(b) Any other use other than (a) above or covered by another schedule	.....
(c) TOTAL water required for public purposes.	.....
<p>* Fill in the number of years hence upon which your estimate is based. If applying now for a Grant covering a greater quantity of water than is at present required, the estimate of number of years should correlate to the quantity of water applied for.</p>	
(d) When water is required under (a) above the following information should be supplied as far as possible:	
(i) Estimated population at present	Low Density      Medium Density      High Density
(ii) Estimated population 5 years hence	No. of Houses      No. of Occupants      No. of Occupants
(iii) Estimated population 10 years hence	.....      .....      .....
(iv) Estimated population 20 years hence	.....      .....      .....
(e) When water is required under (b) above give details of use to which water is to be put.	
(f) State whether water is to be supplied to any person, other than the applicant, in consideration of payment thereof. State 'Yes' or 'No'.	

SCHEDULE C - INDUSTRIAL PURPOSES

State the quantity required in the appropriate space	QUANTITY OF WATER REQUIRED GALLONS PER DAY	THE NORMAL AND MAXIMUM NUMBER OF HOURS PER DAY FACTORY WILL BE WORKING		PERIODS DURING THE YEAR WHEN WATER WILL BE REQUIRED
PURPOSE  (a) Steam raising, cooling and condensing water (b) Manufacture (i) Process water (ii) Dilution of effluent (c) Coffee pulping and washing (d) Other purposes		NOR MAL	MAXI MUM	
(e) TOTAL water required for industrial purposes  (f) If water is required for (b) or (d) above give details of use to which water is to be put.				

SCHEDULE D - IRRIGATION PURPOSES

State the following:  (a) Crops to be irrigated and area of each crop          (b) Quantity of water required	<table border="0" style="width: 100%;"> <tr> <td style="text-align: center;">CROP</td> <td style="text-align: center;">AREA (ACRES)</td> <td style="text-align: center;">GROWING SEASON</td> </tr> <tr> <td>(1) .....</td> <td>/ .....</td> <td>/ ..... to .....</td> </tr> <tr> <td>(2) .....</td> <td>/ .....</td> <td>/ ..... to .....</td> </tr> <tr> <td>(3) .....</td> <td>/ .....</td> <td>/ ..... to .....</td> </tr> <tr> <td>(4) .....</td> <td>/ .....</td> <td>/ ..... to .....</td> </tr> </table> <table border="0" style="width: 100%;"> <tr> <td colspan="3" style="text-align: center;">QUANTITY OF WATER REQUIRED GALLONS PER DAY DURING</td> </tr> <tr> <td>January .....</td> <td>May .....</td> <td>September .....</td> </tr> <tr> <td>February .....</td> <td>June .....</td> <td>October .....</td> </tr> <tr> <td>March .....</td> <td>July .....</td> <td>November .....</td> </tr> <tr> <td>April .....</td> <td>August .....</td> <td>December .....</td> </tr> </table>	CROP	AREA (ACRES)	GROWING SEASON	(1) .....	/ .....	/ ..... to .....	(2) .....	/ .....	/ ..... to .....	(3) .....	/ .....	/ ..... to .....	(4) .....	/ .....	/ ..... to .....	QUANTITY OF WATER REQUIRED GALLONS PER DAY DURING			January .....	May .....	September .....	February .....	June .....	October .....	March .....	July .....	November .....	April .....	August .....	December .....
CROP	AREA (ACRES)	GROWING SEASON																													
(1) .....	/ .....	/ ..... to .....																													
(2) .....	/ .....	/ ..... to .....																													
(3) .....	/ .....	/ ..... to .....																													
(4) .....	/ .....	/ ..... to .....																													
QUANTITY OF WATER REQUIRED GALLONS PER DAY DURING																															
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February .....	June .....	October .....																													
March .....	July .....	November .....																													
April .....	August .....	December .....																													

<p>(c) Describe class of soil to be irrigated</p> <p>(d) Describe nature of sub-soil with particular reference to its drainage possibilities.</p> <p>(e) Describe in detail any works to be constructed to drain the irrigated lands.</p> <p>(f) Where is the residue of the unused water to be disposed of? State name of body of water to which it is to be returned.</p>	
---	--

**SCHEDULE E - USE OF WATER FOR POWER GENERATION**  
(including use of water for driving rams)

<p>State the following:</p> <p>(a) Purpose for which power is required.</p> <p>(b) Brake horse power which is to be developed.</p> <p>    (i) Maximum</p> <p>    (ii) Minimum</p> <p>(c) The gross fall or head available for power production at the following river stages</p> <p>    (i) At low stage</p> <p>    (ii) At normal stage</p> <p>    (iii) At high stage</p> <p><small>NOTE - (c) (i) and (c) (ii) need only be answered when the power to be developed is in excess of 100 B.H.P.</small></p> <p>(d) The net fall or head to be used in (b) above.</p> <p>(e) The water required to develop (b) above.</p> <p>(f) Description and number of machines to be installed.</p> <p>(g) How water is to be returned to the river after utilization.</p> <p>State length of return channel if any</p>	<p>..... B.H.P.</p> <p>..... B.H.P.</p> <p>..... feet</p> <p>..... feet</p> <p>..... feet</p> <p>..... feet</p> <p>..... gals. per day</p> <p>..... feet</p>
---	--

**SCHEDULE F**  
**Construction of dam<sup>1</sup>**

**INSTRUCTIONS FOR FILLING IN THE FORM**

Please write distinctly.

**PARTS I, II, III**

Part 1. State the names of all persons having an interest in the application. In the case of an association, company, corporation, municipality, etc. the name of the association, company, corporation, municipality, etc. as the case may be should be stated

<sup>1</sup> The bearing of this Form is reproduced in Appendix IV, page 245.



- Para. 2 If a company state the registered office of the company in Malawi
- Para. 3 Give details of grounds on which existing right is claimed. In the case of a water licence issued before 1st April, 1987, give licence number
- Para. 5 If questions not applicable, e.g. in the case of  
and 6 mine claims, etc. give appropriate information
- Para. 7 Give a sufficient description of the spring, river, lake, etc. so that it may be identified. If unnamed give the name of the body of water (if any) to which it is tributary. The names should, if possible, correspond with those on the 1:50,000 Survey maps
- Para. 9 Describe as accurately as you can the various points mentioned, for example, 9 (a) "At a point on the left bank of the river, 300 feet upstream of the confluence of Tucha and Khonjwa River" or "At a point on the right bank of the river, 250 feet downstream of the point where the boundary of the farm intersects the Likabuta River"
- Para. 11. If the canal or pipeline has any change of cross-section or gradient the details are to be given of each such change on a separate sheet of paper if not shown on the plans accompanying the application. If any structure is proposed under section 1a plans must be sent with the application.
- Para. 12 The type of pump should be stated as centrifugal, ram, etc. with the maker's name thus for example "Brazner 6 stage centrifugal".  
The type of driving machine should be similarly stated, for example "Lister Diesel Engine Type S.R.1". The connexion between pump and driving machine should be stated as "Vee belts" or "Direct coupled" etc., as the case may be.
- Para. 17 Grants of Water Rights are not normally issued for periods in excess of five years.
- Para. 18 The map referred to should be to a scale of 1:50,000 obtainable from the Map Sales Office of the Survey Department. Blankover and three copies are to be attached to the application. The following details should be shown where applicable:  
(a) The boundaries of the estate, farm, etc. for which the application is made.  
    (i) The point of abstraction  
    (ii) The areas to be irrigated (if applicable).  
    (iii) The site of the dam and area of the reservoir as formed  
    (iv) The names of other holdings which might be affected by abstraction.  
(b) Any other detail which may be relevant to the application. Plans or drawings should be attached showing details required in para. (11), (12) and wherever the answers to any of the questions can be better given in the form of a drawing

#### SCHEDULE A

The normal qualities are as follows:

Low density houses	..	300 gals. per day per house
Medium density house	..	50 gals. per day per occupant
High density houses	..	10 gals. per day per occupant
Large stock	..	10 gals. per head per day
Small stock	..	2 gals. per head per day

#### SCHEDULE B

The population estimates should apply only to those members of the population to whom it is considered that water will be supplied.

#### SCHEDULE D

The growing season of crops is intended for crops with specific growing seasons, e.g. maize, rice, etc., not for crops such as coffee, tea, etc.



- Position of point of return .....
- Delivery head ..... feet
- Length of delivery line ..... feet; diameter ..... inches
- Size of ram recommended .....
- e) Power schemes (cost £ .....)
- Size and type of plant .....
- Flow required ..... cusecs. Working head ..... feet.
- Position of point of return .....
- Proposed use of power .....
- Length of transmission line ..... H.P. Developed ..... B.H.P.
- Period of year to be used ..... Daily working period .....
- 6 Total cost of Scheme £ ..... (see paragraph 5 above).
- Interest and redemption ..... %£ ..... Over ..... years.
- Maintenance £ ..... Running expenses £ .....
- Yearly total £ .....
- Capital ..... on ..... acres
- Cost per acre
- Annual .....
- 7. Where applicable, name servitudes required: .....
- 8. SITE PLAN. The following details where applicable must be shown on plan below:
  - la) The true North.
  - lb) Name of public stream and direction of flow.
  - lc) Name of adjoining properties.
  - ld) Location on site plan of point of abstraction.
  - le) Distance of point of abstraction from upper or lower boundary along river.
  - lll) Situation of irrigable area.
- 9. GENERAL COMMENTS AND RECOMMENDATIONS: .....
- 10 Description of route to property: .....

NOTE: Where space provided is insufficient annex signed further particulars

Date ..... 19 .. .

Signed .....

Reporting Officer.

.....

Office held.

Form "W.R. 2"

Hydrological Report on Application for Water Rights

- Application No. .... River zone .....
- 1. Name of applicant ..... I.C.A. ....
- Property ..... District .....
- 2. Name of public stream .....
- 3. General description of application .....
- 4. Date of priority .....
- 5. (a) Area affected .....
- (b) Is primary use in Tribal Trust Land substantially affected?
- 6. Record of flows .....
- 7. Existing rights in area affected (a) upstream .....
- (b) downstream .....
- 8. Existing rights on property .....
- 9. Applications pending in area affected (a) upstream .....
- (b) downstream .....
- 10. Objectors to application .....
- 11. General remarks .....

Date ..... 19 .. .

Signed .....

Reporting Officer.

.....

Office held.





<b>C. Full Code:</b>							
<b>D. Suitability for Irrigation:</b>							
S Suitable							
M Marginal							
SA Restricted suitability							
US Unsuitable							
<b>2. General remarks (pH if abnormal; salinity; presence of free lime; inferences from natural vegetation or the behaviour of roots) .....</b>							
<b>Date .....</b> 19 .....				<b>Signed .....</b>			
				<b>Reporting Officer.</b>			
				.....			
				<b>Office held.</b>			

Form "W.R. 6"  
Report by Government Mining Engineer

1. (a) Name of holder/tributor .....
- (b) Name of Mine ..... comprising Blocks Reg. Nos. .... in the mining district of .....
- (c) Name of public stream .....
2. Quantity of water applied for is ..... gallons per 24 hours.
3. Detail of underground supplies and suitability for use .....
4. Recommended requirements are ..... gallons per 24 hours.
  - A. STAMP MILL AND LEACHING
    - i) Milling only ..... gals. for ..... tons at ..... gals per ton
    - ii) Milling and leaching ..... gals. for ..... tons at ..... gals per ton
    - iii) Milling, table concentration and leaching ..... gals. for ..... tons at ..... gals per ton
    - iv) Leaching only, sands or slimes ..... gals. for ..... tons at ..... gals per ton
    - v) Leaching only, sands and slimes ..... gals. for ..... tons at ..... gals per ton
  - B. ALL SLIMING
    - ii) Decantation plant ..... gals. for ..... tons at ..... gals per ton
    - iii) Filter plant-residues pumped ..... gals. for ..... tons at ..... gals per ton
    - iiii) Filter plant-residues trucked ..... gals. for ..... tons at ..... gals per ton
  - C. FLOTATION ..... gals. for ..... tons at ..... gals per ton
  - D. DOMESTIC PURPOSES .. gals. (Labour force . Europeans .. Others)
  - E. OTHER PURPOSES
 

.....gals .....

.....gals .....
- Total .....
- Less underground water available .....
- Total for 24 hours .....
5. Where water can be returned to public stream state:
  - (a) Quantity .....
  - (b) Position of point of return .....
  - (c) Where pollution possible state nature thereof .....
  - (d) Recommend remedial measures .....
6. The following works will be necessary for obtaining the use of the water required: .....
7. Capacity of pumps (in gallons per 24 hours) installed .....
- Capacity of pumps (in gallons per 24 hours) to be installed .....
8. Applicant's proposed and/or existing plant is capable of treating the following daily quantities of ore and residues:
 

Proposed plant .....

Existing plant .....
9. Comments on economic value of proposed undertaking .....
10. Other remarks .....

Signed .....  
Government Mining Engineer.

Date ..... 19 .....

Step Three - Review of applications

V - UNITED KINGDOM - Water Resources (Licences) Regulations

Form N1  
Notice of Application for Licence to Abstract Water

Notice is hereby given that an application is being made to the (a) .....  
River Authority by (b) .....  
.....  
for a licence to abstract the following quantities of water from (c) .....  
.....  
at the following point(s) of abstraction:

- (d) ..... gallons per (e) ..... at (f) ..... ]
- \*[(d) ..... gallons per (e) ..... at (f) ..... ]
- \*[(d) ..... gallons per (e) ..... at (f) ..... ]
- \*[(d) ..... gallons per (e) ..... at any point between (g) ..... and ..... ]
- \*[Further details of the application are;
- (h) ..... ]

A copy of the application and of any map, plan or other document submitted with it may be inspected free  
of charge at (i) .....  
.....  
at all reasonable hours during the period beginning on (j) .....  
.....  
and ending on (k) .....

Any person who wishes to make representations about the application should do so in writing to the Clerk  
of the (a) .....  
River Authority at (i) ..... before the end of the said period.

Signed .....  
\* On behalf of .....  
Date .....

\* Delete where inappropriate

- (a) Insert name of River Authority.
- (b) Insert name and address of applicant.
- (c) Insert name of, or sufficient description to identify, the inland water or underground strata.
- (d) Insert number of gallons.
- (e) Insert period.
- (f) Specify (by reference to identifiable geographical features or to Ordnance Survey national grid map co-ordinates, followed by names of civil parish and district) the point of abstraction.
- (g) Specify (by reference as mentioned in note (f) above) any points between which it is proposed to abstract by mobile means of abstraction.
- (h) Give further brief details, if desired.
- (i) Insert an address within the locality of the point(s) of abstraction.
- (j) Insert a date which is not earlier than the date on which the notice is first published in a newspaper other than the London Gazette.
- (k) Insert a date which is not less than 28 days from the date on which the period begins and not less than 25 days from the date on which the notice is published in the London Gazette.
- (l) Insert address of office of River Authority to which the application is transmitted.



Form N2  
Notice of Application for Licence to Obstruct or Impede the Flow  
of an Inland Water by Means of Impounding Works

Notice is hereby given that an application is being made to the (a) .....  
River Authority by (b) .....  
.....  
for a licence to obstruct or impede the flow of (c) .....  
.....  
by means of (d) .....  
.....  
at (e) .....  
\* [The object of impounding water by means of the works is (f) .....  
..... ]  
\* [The capacity of the reservoir at overflow level will be (g) ..... gallons ]  
\* [Further details of the application are:  
(h) .....  
..... ]

A copy of the application and of any map, plan or other document submitted with it may be inspected free  
of charge at (i) .....  
.....  
at all reasonable hours during the period beginning on (j) .....  
and ending on (k) .....

Any person who wishes to make representations about the application should do so in writing to the Clerk  
of the (a) .....  
River Authority at (ii) ..... before the end of the said period.

Signed .....  
\* On behalf of .....  
Date .. ..

\* Delete where inappropriate

- (a) Insert name of River Authority.
- (b) Insert name and address of applicant.
- (c) Insert name of, or sufficient description to identify, the inland water.
- (d) Insert brief description of works it is proposed to construct or alter.
- (e) Specify (by reference to identifiable geographical features or to Ordnance Survey National grid map co-ordinates, followed by names of civil parish and district) the point at which the flow of the inland water will be obstructed or impeded by means of the works.
- (f) Specify object, if the works are for impounding water.
- (g) Insert number of gallons, if the works are for impounding water.
- (h) Give further brief details, if desired.
- (i) Insert an address within the locality of the works.
- (j) Insert a date which is not earlier than the date on which the notice is first published in a newspaper other than the London Gazette.
- (k) Insert a date which is not less than 28 days from the date on which the period begins and not less than 25 days from the date on which the notice is published in the London Gazette.
- (ii) Insert address of office of River Authority to which the application is transmitted.

Form N3  
Notice of Application for a Combined Licence to Obstruct or  
Impede the Flow of an Inland Water by Means of  
Impounding Works and to Abstract Water

Notice is hereby given that an application is being made to the (a) .....  
River Authority by (b) .....  
.....  
for a combined licence to obstruct or impede the flow of (c) .....  
by means of (d) .....  
at (e) .....  
and to abstract (f) ..... gallons of water per (g) .....  
from the said inland water at or near that point.  
The capacity of the reservoir at overflow level will be (h) .....  
gallons.

\* [Further details of the application are;

(i) .....  
..... ]

A copy of the application and of any map, plan or other document submitted with it may be inspected free  
of charge at (j) .....  
.....  
at all reasonable hours during the period beginning on (k) .....  
and ending on (l) .....

Any person who wishes to make representations about the application should do so in writing to the Clerk  
of the (a) .....  
River Authority at (m) .....  
before the end of the said period.

Signed .....  
\* On behalf of .....  
Date .....

\* Delete where inappropriate

- (a) Insert name of River Authority.
- (b) Insert name and address of applicant.
- (c) Insert name of, or sufficient description to identify, the inland water.
- (d) Insert brief description of works it is proposed to construct or alter.
- (e) Specify (by reference to denotable geographical features or to Ordnance Survey national grid map co-ordinates, followed by names of civil parish and district) the point at which the flow of the inland water will be obstructed or impeded by means of the works.
- (f) Insert number of gallons.
- (g) Insert period.
- (h) Insert number of gallons.
- (i) Give further brief details, if desired.
- (j) Insert an address within the locality of the works.
- (k) Insert a date which is not earlier than the date on which the notice is first published in a newspaper other than the London Gazette.
- (l) Insert a date which is not less than 28 days from the date on which the period begins and not less than 25 days from the date on which the notice is published in the London Gazette.
- (m) Insert address of office of River Authority to which the application is transmitted.

Step Four - Deciding on applications

VI - ZIMBABWE - Water (Water Court) Regulations

Form "W 11" - AFFIDAVIT  
Application for Extension of Time

I, ..... hereby make oath and say that:

1. A provisional grant No. .... was issued in respect of the property ..... subject to the fulfilment of certain terms and conditions by the ..... 19 ..
2. The following conditions have been fulfilled .....
3. The following conditions have not been fulfilled .....
4. I beg to apply for an extension of time until .....

Signed: .....

Sworn at ..... this ..... day of ....., 19..

Before me

Signed: .....  
Commissioner of Oaths/Justice of the Peace

This application is subject to a fee of £3.3 Od. but shall, subject to the direction of the senior judge, not be payable where the officer appointed has not provided the required information.

Form "W.R 7"  
Report for Issue of Final Grant

1. Provisional Grant No. .... Date of visit .....
- Property ..... Public stream .....
- I.C.A. ....
2. (Delete A, B or C, if not applicable)

"A"

I hereby certify that the conditions of the above Grant have been fulfilled in accordance with the requirements of the Water Court.

"B"

I hereby certify that the conditions of the above Grant have been partially fulfilled to permit partial user for .....

"C"

I am unable to certify that the conditions of the above Grant have been completed for the purposes of section "A" or "B" hereof as:

1. the following works are still required .....
2. recommendations for fulfilment of conditions .....

Signed: .....  
Reporting Officer  
.....  
Office held.

Date: ....., 19..

Step Five - Formatting of permits

1 - TANZANIA - Water Utilization (General) Regulations, 1975

Form E  
Provisional/Final Grant of Water Right

No.:                      Zone:                      Region:

1. Name of holder:
2. Address:
3. Particulars of Water Right:
4. This right is/is not appurtenant to:
5. Works
6. Whether grant subject to construction of works specified in paragraph 5 and date by which works to be completed:
7. This water right is granted subject to the provisions of the Water Utilization (Control and Regulation) Act, 1974 and the special terms and conditions specified overleaf.

Date

Water Officer

II - MALAWI - Water Regulations, 1969

Form WRB.3  
Grant/Certificate\* of Water Right

No. .... of 19 ....

THIS GRANT made/CERTIFICATE given\* the .... day of 19 .... BETWEEN THE MINISTER OF THE MALAWI GOVERNMENT RESPONSIBLE FOR WATER RESOURCES (hereinafter called "the Minister") of the one part and (hereinafter called "the Grantee") of the other part

WITNESSETH as follows:

1. IN CONSIDERATION of the covenants and subject to the conditions hereinafter contained or implied the Minister hereby grants/confirms\* unto the Grantee subject to the provisions of the Water Resources Act and of the Regulations thereunder now in force or which may come into force during the continuance of this Grant/Certificate\* or any renewal thereof for the term of ..... years from ..... the right and liberty but not exclusively to take water from the ..... river/stream hereinafter called "the said river/stream" in accordance with the schedule hereto at an annual rent of £ to be paid in advance on the first day of April in every year

2. THE Grantee hereby covenants with the Minister as follows:

- (i) to perform, observe and comply with the covenants and conditions implied by the Regulations made by the Minister under the Water Resources Act, 1969 and with any amendments or additions thereto which may from time to time be made by the Minister;
- (ii) to abstract water from the point marked on Survey Department Sketch Plan No. annexed hereto; and
- (iii) to take water from the said river/stream only for the purposes and at the rates specified in the schedule hereto.

SCHEDULE

	MAXIMUM QUANTITY FOR ABSTRACTION	
	galls. per minute	galls. per day
(a) Domestic (b) Public (c) Irrigation (d) Industrial (e) Power (f) Other		
TOTAL .....		

Dated this ..... day of ..... 19 .....

In witness whereof the Minister/Chairman has signed in the presence of:

Name .....  
Address .....  
Occupation .....

.....  
Minister of Natural Resources/  
Chairman, Water Resources Board

Name .....  
Address .....  
Occupation .....

\* Delete as appropriate

III - AUSTRALIA - NORTHERN TERRITORY - Control of Waters Regulations

Second Schedule

LICENCE No .....

I, ....., the Administrator of the Northern Territory of Australia, in pursuance of the powers conferred on me by the *Control of Waters Ordinance 1938-1981* do hereby issue to ..... of ..... in the Northern Territory of Australia, a licence to construct the work detailed on Plan No. W....., a copy of which is attached, and to divert/take and use the water from the ..... known as .. for ..... purposes subject to such special conditions and provisions as are hereunder specified for a period of ..... from the date hereof.

SPECIAL CONDITIONS AND PROVISIONS

- 1. Location of the work to be in accordance with the plan on the back hereof, and to the detail shown on the plan W..... attached.
- 2. Maximum area to be irrigated ..... acres.
- 3. Maximum quantity of water to be taken
  - weekly ..... gallons
  - annually ..... gallons

Dated at Darwin this ..... day of ..... 19 .. .

Administrator

IV - SOUTH AUSTRALIA - Control of Waters Regulations, 1971

Form F  
Irrigation Licence - Metered

Location of Property Licensed ..... Expiry date, 30th June, 19\_\_

Licence No. .... Type ..... Meter Number(s) .....

Rent ..... Cubic Metres Licensed .....

The holder of this licence may divert the quantity of water stated hereon from the River Murray for irrigation purposes upon the property described, subject to the provisions of the Control of Waters Act, 1919-1925, the regulations thereto and the terms and conditions printed on the back hereof.

Date .....

Director and Engineer-in-Chief

*This Licence shall not be valid unless a Cash Register Impint for the amount of Meter Rent appears thereon.*

DO NOT DETACH

Name .....

Account No. .... Amount ... Debit Order ..... \$ .....

*Control of Waters Act - River Murray Diversions*

CONDITIONS SUBJECT TO WHICH THIS LICENCE IS ISSUED

1. All water diverted under this licence must pass through the meter and shall be used on the land in respect of which this licence is issued and on no other land.
2. This licence may be revoked, suspended, or modified at any time in the circumstances and in the manner prescribed by Section 18 of the Control of Waters Act, 1919-1925, and the regulations thereto.
3. The holder of this licence shall not divert (take) water for any purpose or purposes other than those stated in this licence except for his own stock and domestic purposes, and shall not permit or suffer any water diverted (taken) to be wasted.
4. If the ownership of the occupier of the land for which this licence is issued, changes, the licence is automatically cancelled. The Licensee shall advise the Minister of Works within thirty days of the transfer of land and shall supply the full name and address of the person or persons to whom the transfer is made. The new property owner or occupier shall make application on the prescribed form for the issue of a licence for an equivalent amount of the plantings in existence at the time of property transfer.
5. This licence shall only be valid for the period prescribed in the licence and provided the annual meter rental as required by regulation has been paid in advance.
6. The holder of this licence shall furnish returns of the quantity of water diverted as required by regulation.

Form G  
Irrigation Licence - Unmetered

Location of Property Licensed ..... Expiry date, 30th June, 19\_\_

Licence No. .... Type .....

Type of Crop ..... Maximum Area ..... Millimetres per Hectare .....

The holder of this licence may divert the quantity of water stated hereon from the River Murray for irrigation purposes upon the property described, subject to the provisions of the Control of Waters Act, 1919-1925, the regulations thereto and the terms and conditions printed on the back hereof.

Date .....

Director and Engineer-in-Chief

NO FEE PAYABLE

*Control of Waters Act - River Murray Diversions*

CONDITIONS SUBJECT TO WHICH THIS LICENCE IS ISSUED

1. All water diverted under this licence must pass through the meter and shall be used on the land in respect of which this licence is issued and on no other land.
2. This licence may be revoked, suspended, or modified at any time in the circumstances and in the manner prescribed by Section 18 of the Control of Waters Act, 1919-1925, and the regulations thereto.
3. The holder of this licence shall not divert (take) water for any purpose or purposes other than those stated in this licence except for his own stock and domestic purposes, and shall not permit or suffer any water diverted (taken) to be wasted.

4. If the ownership of the occupier of the land for which this licence is issued, changes, the licence is automatically cancelled. The Licensee shall advise the Minister of Works within thirty days of the transfer of land and shall supply the full name and address of the person or persons to whom the transfer is made. The new property owner or occupier shall make application on the prescribed form for the issue of a licence for an equivalent amount of the plantings in existence at the time of property transfer.
5. This licence shall only be valid for the period prescribed in the licence and provided the annual meter rental as required by regulation has been paid in advance.
6. The holder of this licence shall furnish returns of the quantity of water diverted as required by regulation.

Form H  
Industrial Licence

Location of Property Licensed .....

Licence No. .... Type ..... Motor Number(s) ..... \$ Rent .....  
 Cubic Metres Licensed ..... Expiry date, 30th June, 19\_\_ .  
 The holder of this licence may divert the quantity of water stated hereon from the River Murray for industrial purposes upon the property described, subject to the provisions of the Control of Waters Act, 1919-1925, the regulations thereto and the terms and conditions printed on the back hereof.  
 Date .....  
Director and Engineer-in-Chief

*This Licence shall not be valid unless a Cash Register Impint for the amount of Meter Rent appears thereon.*

DO NOT DETACH

Name ..... Account No. ....  
 Amount \$ ..... Debit Order .....  
*Control of Waters Act - River Murray Diversions*

CONDITIONS SUBJECT TO WHICH THIS LICENCE IS ISSUED

1. All water diverted under this licence must pass through the meter and shall be used on the land in respect of which this licence is issued and on no other land
2. This licence may be revoked, suspended, or modified at any time in the circumstances and in the manner prescribed by Section 18 of the Control of Waters Act, 1919-1925, and the regulations thereto.
3. The holder of this licence shall not divert (take) water for any purpose or purposes other than those stated in this licence except for his own stock and domestic purposes, and shall not permit or suffer any water diverted (taken) to be wasted.
4. If the ownership or the occupier of the land for which this licence is issued, changes, the licence is automatically cancelled. The Licensee shall advise the Minister of Works within thirty days of the transfer of land and shall supply the full name and address of the person or persons to whom the transfer is made. The new property owner or occupier shall make application on the prescribed form for the issue of a licence for an equivalent amount of the plantings in existence at the time of property transfer.
5. This licence shall only be valid for the period prescribed in the licence and provided the annual meter rental as required by regulation has been paid in advance.
6. The holder of this licence shall furnish returns of the quantity of water diverted as required by regulation.

Form J  
Stock and Domestic Licence

Expiry date, 30th June, 19\_\_ .

Licence No. .... Type ..... Cubic Metres Licensed .....  
 The holder of this licence may divert the quantity of water stated hereon from the River Murray for stock and domestic purposes upon the property described, subject to the provisions of the Control of Waters Act, 1919-1925, the regulations thereto and the terms and conditions printed on the back hereof.  
 Date .....  
Director and Engineer-in-Chief



NO FEE PAYABLE

*Control of Waters Act - River Murray Diversions*

CONDITIONS SUBJECT TO WHICH THIS LICENCE IS ISSUED

1. All water diverted under this licence must pass through the meter and shall be used on the land in respect of which this licence is issued and on no other land.
2. This licence may be revoked, suspended, or modified at any time in the circumstances and in the manner prescribed by Section 18 of the Control of Waters Act, 1918-1925, and the regulations thereto.
3. The holder of this licence shall not divert (take) water for any purpose or purposes other than those stated in this licence except for his own stock and domestic purposes, and shall not permit or suffer any water diverted (taken) to be wasted.
4. If the ownership or the occupier of the land for which this licence is issued, changes, the licence is automatically cancelled. The Licensee shall advise the Minister of Works within thirty days of the transfer of land and shall supply the full name and address of the person or persons to whom the transfer is made. The new property owner or occupier shall make application on the prescribed form for the issue of a licence for an equivalent amount of the plantings in existence at the time of property transfer.
5. This licence shall only be valid for the period prescribed in the licence and provided the annual meter rental as required by regulation has been paid in advance.
6. The holder of this licence shall furnish returns of the quantity of water diverted as required by regulation.

V - KENYA - Water (General) Rules

Form WAB.16  
Authorization to Construct Works for the Diversion,  
Abstraction, Storage or Use of Water

File No. ....

No. ....

Date .....

Name of body of water .....

Drainage area .....

Number permit will bear if or when issued .....

Number of authorization ..... (full name)  
of .....

having filed the necessary application, map and plans, and having complied with the provisions of the Water Act and the Rules thereunder relating to the applications for water permits, is (are) hereby authorized to construct, subject to the acquisition of the necessary rights of way or easements therefor, if any, the works shown by the said application, map and plans in accordance with the provisions of the Water Act, the Rules thereunder and the following conditions:

1. The construction of the works hereby authorized shall commence within a period of .... days/ months/years, and shall be completed within a period of .... months/years, from the date of this authorization.

2. (a) Any person who erects or constructs temporary works shall be entitled to divert, abstract, impound, abstract, store or use water to such extent only as may be necessary for the construction or erection of the works, and, whenever it is necessary to divert, abstract or impound water during the erection or construction of the works authorized, such diversion, abstraction, obstruction, impounding or use of water shall be made at such time and in such manner that the works of other operators are interfered with as little as possible and that no damage is caused to property of another landholder; but if any damage is caused it shall, failing agreement between the parties concerned, be settled by arbitration under the Arbitration Act.

(b) Unless empowered thereto by the Water Apportionment Board in writing, all temporary works shall be removed within a period of three months from the date of completion of the works authorized or from the date of determination of the authorization (whichever be the earlier), and where any temporary works exist, such as quarries, borrow-pits, excavation, cuttings, tunnels or things of a like nature, which cannot be economically removed efficient precautions to the satisfaction of the Water Apportionment Board shall be taken, by the person named in the authorization, to render and to maintain all such temporary works safe in the interest of life and property.

The Water Apportionment Board reserves the right to inspect the works authorized by this authorization, and attention is drawn to section 81 of the Act.

Special Conditions: (if none, say "Nil")

.....  
.....

.....  
Chairman of the Water Apportionment Board



Form L  
Quarterly Return of Diversions - Unmetered Supply

Location of property licensed

Licence No. .... Type .....

Record of water diverted for quarter ending ... ..

Description and size of Pump, Suction and Siphon	DwP No. *	Month .....		Month .....		Month .....	
		Hours Worked	Usage	Hours Worked	Usage	Hours Worked	Usage
1.							
2.							
3.							
4.							
5.							
6.							
Total Usage							

\* Discharge rate in litres per second to be shown. These rates multiplied by the number of hours or minutes (converted to seconds) respectively worked will provide the figure of total usage for each month.

I hereby certify that the information contained in this return is true and correct.

Date .....

Signature .....

The time for which the pump, etc. was worked in each month must be recorded on this form on the last day of each month and be made available on demand to any inspector appointed under the Act.

Completed form must be sent within 14 days after the end of the quarter to:

Irrigation and Drainage Branch,  
Engineering and Water Supply Department

FOR OFFICE USE ONLY

Inspections		Checked and Recorded by	Balance Allocation
Date	Inspector		

4. MANAGEMENT OF PERMITS

( - SOUTH AUSTRALIA - Control of Waters Regulations, 1971

Form B  
Application for Renewal of Water Diversion Licence

IRRIGATION - METERED

Application must be made, and meter rent paid by the 31st May 19..

Date of expiry of current licence 30th June 19..

Location of Property Metered .....

..... \$ AMOUNT DUE AND PAYABLE WITH THIS APPLICATION

App. No. .... Type ..... Meter Number(s) ..... Rent .....

The following information must be supplied with each annual application for a licence to divert and use water from the River Murray for irrigation purposes:

A. Area to be Irrigated:

- |                     |          |                       |          |
|---------------------|----------|-----------------------|----------|
| 1. Vegetables ..... | hectares | 4. Stone Fruits ..... | hectares |
| 2. Fodder .....     | hectares | 5. Citrus .....       | hectares |
| 3. Vines .....      | hectares |                       |          |

Total ..... hectares

B. Method of Irrigation:

Spray ..... hectares. Furrow ..... hectares. Flood ..... hectares.

C. State any alterations to address, sections, hundreds, or other information printed hereon ..

DECLARATION BY APPLICANT

I hereby certify that the above information is correct and apply for the renewal of the licence to divert water under the Control of Waters Act, 1919-1925, and the regulations thereto.

Date ..... Signature .....

Your Remittance for Meter Rent Must Accompany this Application

FOR OFFICE USE ONLY

Licence No. .... Date of Issue ..... Allocation ..... Cubic Metres

Form C  
Application for Renewal of Water Diversion Licence

IRRIGATION - UNMETERED

Application must be made, and meter rent paid by the 31st May 19..

Date of expiry of current licence 30th June 19..

Location of Property Licensed .....

App. No. .... Type .....

The following information must be supplied with each annual application for a licence to divert and use water from the River Murray for irrigation purposes:

A. Area to be Irrigated:

- |                     |          |                       |          |
|---------------------|----------|-----------------------|----------|
| 1. Vegetables ..... | hectares | 4. Stone Fruits ..... | hectares |
| 2. Fodder .....     | hectares | 5. Citrus .....       | hectares |
| 3. Vines .....      | hectares |                       |          |

Total ..... hectares

B. Method of Irrigation:

Spray ..... hectares. Furrow ..... hectares. Flood ..... hectares.

C. State any alterations to address, sections, hundreds, or other information printed hereon ..

DECLARATION BY APPLICANT

I hereby certify that the above information is correct and apply for the renewal of the licence to divert water under the Control of Waters Act, 1919-1925, and the regulations thereto.

Date ..... Signature .....

FOR OFFICE USE ONLY

Licence No. .... Date of Issue .....  
Area authorized ..... hectares Rate per hectare ..... millimetres

Form D  
Application for Renewal of Water Diversion Licence

INDUSTRIAL

Application must be made, and meter rent paid by the 31st MAY 19..

Date of expiry of current licence 30th JUNE 19..

Location of Property Metered .....

..... \$ AMOUNT DUE AND PAYABLE WITH THIS APPLICATION

App. No. .... Type .... Meter Number(s) .... Rent .....

The following information must be supplied with each annual application for a licence to divert and use water from the River Murray for industrial purposes:

Type of Industry .....

Estimated Usage ..... Cubic Metres.

DECLARATION BY APPLICANT

I hereby certify that the above information is correct and apply for the renewal of the licence to divert water under the Control of Waters Act, 1919-1925, and the regulations thereto.

Date ..... Signature .....

Your Remittance for Meter Rent Must Accompany this Application

FOR OFFICE USE ONLY

Licence No. .... Date of Issue ..... Allocation ..... Cubic Metres

Form E  
Application for Renewal of Water Diversion Licence

STOCK AND DOMESTIC

Application must be made, and meter rent paid by the 31st MAY 19..

Date of expiry of current licence 30th JUNE 19..

Location of Property .....

Licence No. .... Type .....

The following information must be supplied with each annual application for a licence to divert and use water from the River Murray for stock and domestic purposes:

Number and type of Stock .....

Estimated Usage ..... Cubic Metres.

DECLARATION BY APPLICANT

I hereby certify that the above information is correct and apply for the renewal of the licence to divert water under the Control of Waters Act, 1919-1925, and the regulations thereto.

Date ..... Signature .....

FOR OFFICE USE ONLY

Licence No. .... Date of Issue ..... Allocation ..... Cubic Metres

VII - UNITED KINGDOM - Water Resources (Licences) Regulations, 1965

Form N4

Notice of Application to Vary <sup>\*</sup>(a Licence to Abstract Water)(a Licence to Obstruct or Impede the Flow of an Inland Water by Means of Impounding Works)(a Combined Licence to Obstruct or Impede the Flow of an Inland Water by Means of Impounding Works and to Abstract Water)(an "Alternative Statutory Provision" Authorising the Obstructing or Impeding of the Flow of an Inland Water by Means of Impounding Works)

Notice is hereby given that an application is being made to the (a) ..... River Authority by (b) ..... to vary <sup>\*</sup>(the [combined] licence (serial number (c) ..... (to abstract water from (d) ..... at (e) ..... [any point between (f) ..... and ..... ] (to obstruct or impede the flow of (g) ..... by means of impounding works at (h) ..... ; (and to abstract water from the said inland water at or near that point) [the "alternative statutory provision" contained in (i) ..... authorising the obstruction or impeding of the flow of (j) ..... by means of impounding works at (k) ..... ]

The variation applied for is:

(l) .....

A copy of the application and of any map, plan or other document submitted with it may be inspected free of charge at (m) ..... at all reasonable hours during (the period beginning on (n) ..... and ending on (o) .....

Any person who wishes to make representations about the application should do so in writing to the Clerk of the (a) ..... River Authority at (p) ..... before the end of the said period.

Signed .....  
\* On behalf of ..  
Date .....

\* Delete where inappropriate

- (a) Insert name of River Authority
- (b) Insert name and address of applicant.
- (c) Insert serial number of licence.
- (d) Insert name of, or sufficient description to identify, the inland water or underground strata to which the licence relates.
- (e) Specify (by reference to identifiable geographical features or to Ordnance Survey national grid map co-ordinates, followed by names of civil parish and district) the points of abstraction to which the licence relates.
- (f) Specify (by reference as mentioned in note (e) above) any points between which the licence authorises abstraction by mobile means.
- (g) Insert name of, or sufficient description to identify, the inland water to which the licence relates.
- (h) Specify (by reference as mentioned in note (e) above) the point at which the licence authorises the obstruction or impeding of the flow.
- (i) Insert appropriate references (e.g. title of Act or Order and number of relevant sections or paragraphs) to identify the "alternative statutory provision".
- (j) Insert name of, or sufficient description to identify, the inland water to which the "alternative statutory provision" relates.
- (k) Specify (by reference as mentioned in note (e) above) the point at which the "alternative statutory provision" authorises the obstruction or impeding of the flow.
- (l) Insert brief summary of variation.
- (m) Insert an address within the locality of the point of abstraction to which the licence relates or, as the case may be, within the locality of the works to which the licence (or the "alternative statutory provision") relates.
- (n) Insert a date which is not earlier than the date on which the notice is first published in a newspaper other than the London Gazette.
- (o) Insert a date which is not less than 28 days from the date on which the period begins and not less than 25 days from the date on which the notice is published in the London Gazette.
- (p) Insert address of office of River Authority to which the application is transmitted.

Form N5

**Notice of Proposals for \*(Revoking) (Varying) (a Licence to Abstract Water) (a Licence to Obstruct or Impede the Flow of an Inland Water by Means of Impounding Works) (a Combined Licence to Obstruct or Impede the Flow of an Inland Water by Means of Impounding Works and to Abstract Water) (an "Alternative Statutory Provision" Authorising the Obstruction or Impeding of the Flow of an Inland Water by Means of Impounding Works)**

Notice is hereby given that the (a) ..... River Authority, in pursuance of section 43 \*(and section 48) of the above Act, have formulated proposals for \*(revoking) (varying) (the (combined) licence (serial number (b) ..... ) to abstract water from (c) ..... at (d) ..... (any point between (e) ..... and ..... ) (to abstract or impede the flow of (f) by means of impounding works at (g) (and to abstract water from the said inland water at or near that point)) (the "alternative statutory provision" contained in (h) ..... authorising the obstruction or impeding of the flow of (i) ..... by means of impounding works at (j) ..... )

\* The proposed variation is:

(k) .....

A copy of the application and of any map, plan or other document submitted with it may be inspected free of charge at (l) ..... at all reasonable hours during the period beginning on (m) ..... and ending on (n) .....

\* (If you, being the holder of the licence, wish to object to the proposals you (Any person who wishes to make representations about the proposals should do so in writing to the Clerk of the (a) River Authority at (o) ..... before the end of the said period.

Signed .....

\*Clerk of the ..... River Authority

Date .....

\* Delete where inappropriate

- (a) Insert name of River Authority.
- (b) Insert serial number of licence.
- (c) Insert name of, or sufficient description to identify, the inland water or underground strata to which the licence relates.
- (d) Specify (by reference to identifiable geographical features or to Ordnance Survey national grid map co-ordinates, followed by names of civil parish and district) the points of abstraction to which the licence relates.
- (e) Specify (by reference as mentioned in note (d) above) any points between which the licence authorises abstraction by mobile means.
- (f) Insert name of, or sufficient description to identify, the inland water to which the licence relates.
- (g) Specify (by reference as mentioned in note (d) above) the point at which the licence authorises the obstruction or impeding of the flow.
- (h) Insert appropriate references (e.g. title of Act or Order and numbers of relevant sections or paragraphs) to identify the "alternative statutory provision".
- (i) Insert name of, or sufficient description to identify, the inland water to which the "alternative statutory provision" relates.
- (j) Specify (by reference as mentioned in note (d) above) the point at which the "alternative statutory provision" authorises the obstruction or impeding of the flow.
- (k) Insert brief summary of variation, if the proposals are for varying the licence.
- (l) Insert an address within the locality of the place or places where the licence authorises water to be abstracted and/or impounded or, as the case may be, within the locality of the works to which the "alternative statutory provision" relates.
- (m) Insert a date which is not earlier than the date on which the notice is first published in a newspaper other than the London Gazette.
- (n) Insert a date which is not less than 28 days from the date on which the period begins and not less than 26 days from the date on which the notice is published in the London Gazette.
- (o) Insert address of River Authority.



Form N6  
Notice of Application by Owner of Fishing Rights for \*(Revocation) (Variation) of a  
Licence to abstract water

Notice is hereby given that (a) .....  
being the owner of fishing rights in respect of (b) .....  
\*(between (c) ..... and  
.....) has applied to the Minister of Housing and Local  
Government under section 47 of the above Act for the \*(revocation) (variation) of the licence (serial number  
(d) ..... ) to abstract water from the said inland water on the grounds  
that, in his capacity as the owner of those rights, he has sustained loss or damage which is directly  
attributable to the abstraction of water in pursuance of the said licence, and (e) .....

The loss or damage sustained comprises:

(f) .....

\*(The variation applied for is:

(g) .....

You are entitled \*(as the holder of the said a licence) (as the River Authority concerned) to make  
representations in writing to the Minister of Housing and Local Government about the application at any time  
before the end of the period of 28 days beginning with the date of service of this notice.

\* Delete where inappropriate

- 
- (a) Insert name and address of applicant
  - (b) Insert name of, or sufficient description to identify, the inland water in respect of which the fishing rights are owned.
  - (c) Specify (by reference to identifiable geographical features or to Ordnance Survey national grid map co-ordinates, followed by names of civil parish and district) the points between which the fishing rights are exercisable, if those rights are owned in respect of a part only of the inland water.
  - (d) Insert serial number of licence
  - (e) Insert the grounds mentioned in paragraph (a) or in paragraph (f) in section 47(2) of the Act, whichever of those grounds are relied on.
  - (f) Insert details of loss or damage sustained.
  - (g) Insert particulars of variation if the application is for the variation of the licence

VIII - ZIMBABWE - Water (Water Court) Regulations, 1966

Form "W. 9"

Application for Revision of Water Right No. ....

Date of receipt .....  
I (insert full name) .....  
hereby apply, in terms of the Water Act (Chapter 268), for the revision of Water Right No. ....  
as follows:-

*DESCRIPTION OF LAND*

1. (a) Registered name of property .....
  - (b) Area of property (in acres) .....
  - (c) State whether owner, tenant or occupier .....
- NOTE: If you are not the owner you must include the consent or refusal of the owner of this application and forward it with this form
- (d) Name of public stream .....
  - (e) District .....
  - (f) I.C.A. ....

2. I desire that the above Water Right be revised in the following manner:  
.....

3. I consider the following additional works will be necessary if this application is granted. (Here give information regarding height and type of diversion weir, length of furrow, height, and capacity of storage works, capacity of pump, etc.)  
.....  
.....

4. Below is a sketch plan showing the following particulars:
- (a) Plan of the property showing subdivisions (drawn to scale if possible)
  - (b) the public stream to which the Water Right relates with direction of flow and any other streams on the property
  - (c) Existing dams, furrows, etc.
  - (d) Proposed dams, furrows, etc.
  - (e) The true North.

5. Description of route to property .....

Signature of Applicant .....

Address: .....

Date ....., 19..

NOTE. This Form must be submitted in triplicate together with the necessary fee of (5 \$) On. Where the space provided is insufficient annex signed letter with further particulars.

Form "W. 13"

Water Right No. ....

**AFFIDAVIT**  
**Application for Reduction of a Final Grant**

- I, ....., hereby make oath and say that:
1. I am the registered owner of the property ..... in the district of .....
  2. A final grant authorizing the use of public water in respect of the above property was issued on the ..... day of ....., 19..
  3. This Grant is not being used to its full extent and I hereby apply for its reduction to one for .....
- .....
- .....

Signed .....

Sworn at ..... this ..... day of ..... 19..

Before me

Signed .....  
*Commissioner of Oaths/Justice of the Peace*

XIII - ZIMBABWE - Water (Water Court) Regulations, 1966

Form "W. 12"

Water Right No. ....

**AFFIDAVIT**  
**Application for Cancellation of a Final Grant**

I, ..... hereby make oath and say that:

1. I am the registered owner of the property ..... in the district of ..... and in the ..... I.C.A.
2. A Final Grant authorizing the use of public water in respect of the above property was issued on, 19..
3. This Grant is no longer required, and I hereby apply for the cancellation thereof.

Signed .....

Sworn at ..... this ..... day of .. ..... 19..

Before me

Signed .....  
*Commissioner of Oaths/Justice of the Peace*

5. SUCCESSION TO PERMITS

III - ZIMBABWE - Water (Water Court) Regulations, 1966

Form "W. 7"

Application for Apportionment or Allocation of Water Right on Subdivision of Land

Date of receipt ..... [Not to be used by applicant]

I (insert full name) ..... hereby apply, in terms of the Water Act (Chapter 268), for the apportionment or allocation of Water Right No. .... issued in respect of the under-mentioned land in the district of ..... and in the ..... I.C.A.

1. (a) Registered name of original property (before subdivision) .....

(b) Area of property (in acres) .....

(c) State whether owner, tenant or occupier .....

(d) Name of public stream .....

2. I desire Water Right No. .... in respect of the above-mentioned property to be apportioned or allocated in the following manner:

(All subdivisions must be shown)

(a) (i) Remainder of .....

(ii) Area of remainder (in acres) .....

(iii) Proposed Water Right .....

(b) (i) Name of subdivision .....

(ii) Area of subdivision (in acres) .....

(iii) Proposed Water Right .....

(c) (i) Name of subdivision .....

(ii) Area of subdivision (in acres) .....

(iii) Proposed Water Right .....

3. I consider the following works necessary to give effect to the proposals. (Here give information such as height and type of diversion weir and length of furrows, height and capacity of storage works, capacity of pump, etc.)

4. Below is a sketch plan showing the following particulars:

(a) The boundaries of the property and the adjoining properties embraced in the scheme (drawn to scale if possible)

(b) The public stream referred to and direction of flow.

(c) Situation of revised scheme and distance along the public stream from the nearest boundary.

(d) The true North.

5. Description of route to property .....

Signature of Applicant

Address .....

Date ....., 19..

NOTE: This Form must be submitted in triplicate together with the necessary fee of £6 6s. 0d. Where the space provided is insufficient annex signed letter with further particulars.

THIS SPACE MUST NOT BE USED BY APPLICANT

1. Affected Area (if applicable) .....

2. Zone .....

Chief Hydrological Engineer

Form "W. B"  
Application for Apportionment or Allocation of Scheduled  
Irrigable Area on Sub-division of Land

Date of receipt .....

I (insert full name) .....

hereby apply, in terms of the Water Act (Chapter 26B), for the apportionment or allocation of the scheduled  
irrigable area authorized in respect of the under-mentioned land within the .....  
..... Combined Irrigation Scheme.

1. I desire the scheduled irrigable area in respect of the above-mentioned property to be apportioned or  
allocated in the following manner:

(All subdivisions must be shown)

- (a) (i) Remainder of .....
- (ii) Area of remainder (in acres) .....
- (iii) Proposed irrigable area .....
- (b) (i) Name of subdivision .....
- (ii) Area of subdivision (in acres) .....
- (iii) Proposed irrigable area .....
- (c) (i) Name of subdivision .....
- (ii) Area of subdivision (in acres) .....
- (iii) Proposed irrigable area .....

2. I consider the following works necessary to give effect to the proposals. (Here give information such as  
length of additional furrow necessary, location of divides, gates and night storage dams, etc.)  
.....  
.....

3. Below is a sketch plan showing the following particulars:

- (a) Plan of the property showing subdivision (drawn to scale if possible).
- (b) Existing furrows with direction of flow and proposed furrows.
- (c) Location of existing divides, gates, night storage dams, etc.
- (d) Location of proposed divides, gates, night storage dams, etc.
- (e) The true North.

4. Description of route to property .....

Signature of Applicant

Address .....

Date ....., 19..

NOTE. This application must be submitted in triplicate together with the necessary fee of E5 5s 0d.  
Where the space provided is insufficient annex signed letter with further particulars.

Form "W.R. 5"  
Report on Application for Apportionment or Allocation of Water Right on Subdivision

Part "A"

1. Water Right No. .... Date of visit .....
2. Name of public stream .....
3. Name of Irrigation Board, if applicable .....
4. (a) Registered name of property before subdivision .....
- (b) Name of all subdivisions .....
5. Proposed apportionment or allocation of grant to:
  - (a) remainder .....
  - (b) subdivisions .....
  - (i) .....
  - (ii) .....
  - (iii) .....
  - (iv) .....
6. Revised description of scheme under 5(a) including any servitudes required:
  - (a) Total irrigable area .....
  - (b) Suitability of area .....
  - (c) Recommendation as to:
    - (i) protection works necessary .....
    - (ii) drainage works required .....
    - (iii) and special conditions .....
    - (iv) specify depth of water for each crop .....
7. Revised description of scheme under 5(b) including any servitudes required:
  - (a) Total irrigable area .....
  - (b) Suitability of area .....
  - (c) Recommendation as to:
    - (i) protection works necessary .....
    - (ii) drainage works required .....
    - (iii) and special conditions .....
    - (iv) specify depth of water for each crop .....
8. Sketch plan showing situation of irrigable areas, canals, public stream and direction of flow, true North and sites of test piles, if any:

N.B. (1) Where space provided is insufficient annex further signed particulars.  
(2) Where adverse report on any subdivisions under this Part complete form Part "B"

Date ..... 19 ..

Signed .....  
Reporting Officer  
.....  
Office held.





D. Suitability for irrigation S - Suitable							
M - Marginal							
SR - Restricted suitability							
US - Unsuitable							

2. General remarks (pH if abnormal; salinity; presence of free lime; inferences from natural vegetation or the behaviour of roots) .....
3. General farming systems on subdivision .....
4. Purposes of schemes (cash sales, e.g. vegetables, fruit, lucerne, feed production for dairy stock, rotations, etc.) .....
5. Are the irrigable areas of the subdivisions economic agriculturally? .....

N.B. Where the space provided is insufficient annex signed further particulars.

Date ..... 19 ..

Signed .....  
*Reporting Officer*  
 .....  
*Office held.*

IV - TANZANIA - Water Utilization (General) Regulations, 1975

Form B  
Notice of Apportionment of Water Right on Subdivision of Land

To: The Water Officer

1. Name of person acquiring right .....
2. Address .....
3. Particulars of land subdivided and the owners thereof before subdivision .....
4. Particulars of subdivision and the owner of the parcels .....
5. Particulars of Water Right .....
6. Particulars of declaration of appurtenancy of water right specified in paragraph 5 to land specified in paragraph 3 .....
7. Particulars of apportionment of water right .....
8. Particulars of works in respect of apportionment .....

Date .....

Signature of Grantor .....

Date .....

Signature of Grantee .....

This form must be accompanied by a plan showing full details of the subdivision, apportionment and works.

7. DEALING WITH "EXISTING" USES OF WATER

1 - UNITED KINGDOM - Water Resources (Licences) Regulations, 1965

Model Form 4

This application must be submitted to the River Authority before 1st July 1965

Application for a Licence of Right Made under Section 33  
in Reliance on a Statutory Provision

PART A - General

APPLICANT

- 1. Name of applicant (in BLOCK LETTERS) .....
- 2. Address of applicant to which communications about this application are to be sent .....
- 3. Name and address of professional adviser or agent (if any) to whom communications about this application are to be sent .....

RELEVANT STATUTORY PROVISION

- 4. Identify (see note (a)) the statutory provision (see note (b)) in force on 1st April 1965 by virtue of which you claim to be entitled to abstract (see note (c)) water from the source of supply (see note (d)) to which this application relates .....

SOURCE OF SUPPLY TO WHICH APPLICATION RELATES

- 5. (a) If you claim to be entitled to a licence of right to abstract water from an inland water (see note (e)), give the name of, or sufficient description to identify, that water .....
- (b) If you claim to be entitled to a licence of right to abstract water from underground strata (see note (f)), in Table I below:
  - (i) in column (1), enter the reference number, as shown on the map (see note (g)) accompanying this application, of each of the points at which you propose the licence should authorise the abstraction of water;
  - (ii) in column (2), give the description (e.g. Chalk, Lower Greensand, etc.) or such particulars as you are able to obtain for the purposes of this application, of the underground strata from which you propose the licence should authorise abstraction at each point referred to in column (1).

TABLE I

Map ref. no. of point (1)	Underground strata (2)

PART B - PROPOSALS AS TO MATTERS TO BE SPECIFIED IN THE LICENCE (see note (h))  
POINTS AND MEANS OF ABSTRACTION AND METHODS OF MEASURING

- 6. In Table II below:
  - (a) in column (1), enter the reference number, as shown on the map accompanying this application, of each of the points at which you propose the licence should authorise the abstraction of water from the source of supply to which this application relates;

- (b) in column (7), specify the work (if any) (e.g. well, borehole, catchpit, etc.) by means of which you propose the licence should authorise abstraction at each point referred to in column (1);
- (c) if the source of supply to which this application relates is underground strata:
- (i) specify in columns (3) and (4) the depth and diameter of each work specified in column (2); and
  - (ii) describe in column (5) how, if at all, the work is or will be lined.

Map ref. no. of point (1)	Work			
	Description (2)	Depth (3)	Diameter (4)	Lining (5)

7. Indicate which underground work (if any) specified in column (2) of Table II above is artesian, and describe how overflow and leakage will be prevented .....

8. Indicate which underground work (if any) specified in column (2) of Table II above includes headings or adits, and specify the point of communication, length, diameter and orientation of each heading or adit .....

9. In Table III below:

- (a) in column (1), enter the map reference number of each point of abstraction referred to in Table II;
- (b) in column (2), specify the machinery or apparatus by means of which you propose the licence should authorise abstraction at each point referred to in column (1);
- (c) in column (3), describe the way in which you propose the licence should require the quantities of water abstracted at each point referred to in column (1) to be measured or assessed.

TABLE III

Map ref. no. of point (1)	Machinery or apparatus (2)	Method of measuring or assessing quantities of water abstracted (3)

QUANTITIES OF WATER AND LAND ON WHICH AND PURPOSES FOR WHICH IT IS TO BE USED

10. In Table IV below:

- (a) in column (1), enter the map reference number of each point of abstraction referred to in Table II above,
- (b) in the remaining columns, specify under the appropriate headings the quantities of water you propose the licence should authorise to be abstracted at each point referred to in column (1) in the various periods, and the land (see note (i)) on which, and the purposes (see note (j)) for which, you propose the licence should authorise water abstracted at each point to be used, showing which quantity relates to which period, purpose and land, etc. (see note (k)).

TABLE IV

Map ref. no. of point (1)	Maximum quantity (in thousand gallons)			Period (e.g. Nov.-Feb., any period of consecutive days in March-May, etc.) (5)	Purpose (6)	Land (7)
	per year or other period specified in col. (5) (2)	per day (3)	per hour (4)			

**PART C - MATTERS AFFECTING THE QUANTITIES OF WATER TO BE SPECIFIED IN THE LICENCE (SEE NOTE (h))**

**Note:** Part C does not apply if the relevant statutory provision specifies or otherwise limits the quantity of water authorised to be abstracted.

**QUANTITIES OF WATER ABSTRACTED IN RELEVANT PERIOD AND PERIODS OF ABSTRACTION.**

- 11. (a) On or about what date within the period of 5 years ending with 1st April 1965 did you begin to abstract water by virtue of the relevant statutory provision from the source of supply to which this application relates? .....
- (b) On or about what date within that period did your predecessors begin to abstract water by virtue of the relevant statutory provision from that source of supply? .....
- (c) In Table V below, in respect of each year referred to in column (1) during which you or your predecessors abstracted water by virtue of the relevant statutory provision from that source of supply:
  - (i) specify in column (2) the total quantity, and in columns (3) and (4) the maximum daily and hourly quantities, abstracted (otherwise than on special occasions when, by reason of accident or other emergency, there was a temporary deficiency of water from other sources of supply) in that year by virtue of the relevant statutory provision (see note (m));
  - (ii) if abstraction in that year was seasonal, specify in column (5) the period(s) during which water was abstracted;
  - (iii) if water was abstracted in that year on special occasions as aforesaid, specify in column (6) the total quantity, and in columns (7) and (8) the maximum daily and hourly quantities, so abstracted (see note (m)).

TABLE V

NOTE: Prefix any estimated quantity by the letter "E" (see note (a))

Year ending with 1st April (1)	Quantity abstracted (in thousand gallons)			Periods (5)	Quantity abstracted (in thousand gallons) on special occasions		
	Total in year (2)	Max. per day (3)	Max. per hour (4)		Total in year (6)	Max. per day (7)	Max. per hour (8)
1961							
1962							
1963							
1964							
1965							

ABSTRACTIONS INTENDED ON SPECIAL OCCASIONS (see note (a))

12. If at any point of abstraction referred to in Table II above you intend to abstract water on special occasions when, by reason of accident or other emergency, there may be temporary deficiency of water from other sources of supply:

- (a) in column (1) in Table VI below, enter the map reference number of that point;
- (b) in columns (2), (3) and (4), specify the maximum annual, daily and hourly quantities you anticipate will be so abstracted at that point.

TABLE VI

Map ref. no. of point (1)	Maximum quantity (in thousand gallons)		
	per year (2)	per day (3)	per hour (4)

WORKS ETC. PROVIDED IN ANTICIPATION OF FUTURE REQUIREMENTS

13. If you wish to claim that any work, machinery or apparatus authorised by the relevant statutory provision and specified in Table II or III above was provided by you or your predecessors in anticipation of future requirements, explain the extent to which it was so provided

CAPACITY OF WORKS ETC. PROVIDED OR BEING PROVIDED, OR AUTHORISED

14. Give particulars of the works, machinery or apparatus falling within section 34(5) of the Act (see note (p)) and of the quantity of water you claim is capable of being abstracted by means of them

PART D - OTHER MATTERS

15. State any other matters which you wish the River Authority to take into account in considering this application

PART E - FORMAL APPLICATION

I hereby apply to the River Authority for a licence of right under the Water Resources Act 1963 to abstract water in accordance with the proposals indicated above, being a licence to which I claim to be entitled by virtue of section 33(1)(a) of the Act, and I declare that to the best of my knowledge the statements made above are true.

I enclose the map required by the Water Resources (Licences) Regulations 1965.

\* (I also enclose (a true copy of) the licence under section 14 of the Water Act 1945 (a copy of the statutory provision) on which I rely.)

\* (For the following reasons, I cannot enclose the licence (or a copy) under section 14 of the Water Act 1945 on which I rely:

Accordingly, I enclose the following evidence of the grant of that licence and of its terms:

I also enclose the following evidence, as required by the above-mentioned regulations of 1965, for the purpose of satisfying the River Authority as respects the matters referred to in Part C above

(The name(s) and address(es) of my predecessor(s) who abstracted water during the relevant period (is) (are) as follows (see note (q))

Signed

\*(Authorised on behalf of

Date

\* Delete where inappropriate.

It is an offence to make a false statement in applying for a licence. (See section 115(1) of the Act.)

NOTES

- (a) Give the appropriate references, e.g. date and serial number of licence under section 14 of the Water Act 1945, title of Act or Order and numbers of relevant sections or paragraphs, etc.
- (b) For the meaning of "statutory provision", see section 135(1) of the Act
- (c) For the meaning of "abstract", see section 135(1) of the Act.
- (d) For the meaning of "source of supply", see section 2 of the Act
- (e) For the meaning of "inland water" see section 135(1) of that Act. (Section 2 is also relevant.)
- (f) For the meaning of "underground strata", see section 135(1) of the Act.
- (g) The Water Resources (Licences) Regulations 1965 require the application to be accompanied by an Ordnance map showing certain particulars.
- (h) The provisions of the licence proposed in Part B of the form should correspond as nearly as may be to the provisions of the relevant statutory provision (and may be expressed by reference to that statutory provision) so far as those provisions relate to the subject-matter of the proposals. If the relevant statutory provision does not specify or otherwise limit the quantity of water authorised to be abstracted, the proposals as to quantity should be formulated having regard to the particulars given in Part C. (See section 34 of the Act.) If so desired, and if not inconsistent with the relevant statutory provision, map reference numbers may be bracketed together in column (1) of Table IV for the purpose of specifying in column (2) an aggregate quantity in respect of a group of points of abstraction, and entries in columns (3) and (4) may be omitted.
- (i) E.g. "the land coloured blue on the map"
- (j) Purposes should be described as follows:
  - water underfelling
  - spray irrigation
  - cooling purposes
  - use in a process of manufacture (other than for cooling purposes)
  - use as a means of conveying any material as a slurry or otherwise

other uses (briefly described), e.g. agriculture or horticulture, other than spray irrigation.

- (k) Water undertakers applying for a licence to abstract for the purposes of their water undertaking should enter "water undertaking" in column (8) but need not make any entries in column (7) of Table IV.
- (l) Part C of the form relates to the matters which must be proved to the reasonable satisfaction of the River Authority if they are to be taken into account by the Authority in determining the quantities of water to be specified in the licence in a case where the relevant statutory provision does not specify or otherwise limit the quantity of water authorised to be abstracted. (See section 34 of the Act.)
- (m) In specifying the quantities abstracted in Table V, no account should be taken of any water abstracted in contravention of section 14(5) of the Water Act 1945 (which restricts the abstraction of underground water in certain areas).
- (n) In the absence of reliable evidence of the quantities in fact abstracted, estimated quantities should be specified in Table V. Any estimated quantity so specified must be prefixed by the letter "E" and the evidence tendered to the River Authority for the purpose of proving matters referred to in Part C (see note (l) above) should include a statement of how the estimate was made.
- (o) If so desired, map reference numbers may be bracketed together in column (1) of Table VI for the purpose of specifying in column (2) an aggregate quantity in respect of a group of points of abstraction, and entries in columns (3) and (4) may be omitted.
- (p) The works, etc., in question are:
  - (i) works, machinery or apparatus which were constructed or installed before 1st April 1965, or were in the course of being constructed or installed on that day, and
  - (ii) other works, machinery or apparatus the construction or installation of which was authorised by the relevant statutory provision, not being (in either case) works, machinery or apparatus provided or authorised to be provided for use only in the event of an accident or other emergency involving a total or partial failure of other works, machinery or apparatus.
- (q) Delete this paragraph if there were no predecessors who abstracted in the relevant period.

**Model Form 5**

This application must be submitted to the River Authority before 1st July 1965

**Application for a Licence of Right Made Under Section 33  
in Relation to Abstraction within the Period of 5 Years Ending with 1st April 1965**

**PART A - General**

**APPLICANT**

- 1. Name of applicant (in BLOCK LETTERS) .....
- 2. Address of applicant to which communications about this application are to be sent .....
- 3. Name and address of professional adviser or agent (if any) to whom communications about this application are to be sent .....

**SOURCE OF SUPPLY TO WHICH APPLICATION RELATES (see note (a))**

- 4. (a) If you claim to be entitled to a licence of right to abstract (see note (b)) water from an inland water (see note (c)), give the name of, or sufficient description to identify, that water .....
- (b) If you claim to be entitled to a licence of right to abstract water from underground strata (see note (d)), in Table I below:
  - (i) in column (1), enter the reference number, as shown on the map (see note (e)) accompanying this application, of each of the points at which you propose the licence should authorise the abstraction of water;
  - (ii) in column (2), give the description (e.g. Chalk, Lower Greensand, etc.), or such particulars as you are able to obtain for the purposes of this application, of the underground strata from which you propose the licence should authorise abstraction at each point referred to in column.



TABLE I

Map ref. no. of point (1)	Underground strata (2)

**PART B - PROPOSALS AS TO MATTERS TO BE SPECIFIED IN THE LICENCE  
POINTS AND MEANS OF ABSTRACTION AND METHODS OF MEASURING**

5. In Table II below:

- (a) in column (1), enter the reference number, as shown on the map accompanying this application, of each of the points at which you propose the licence should authorise the abstraction of water from the source of supply to which this application relates;
- (b) in column (2), specify the work (if any) (e.g. well, borehole, catchpit, etc.) by means of which you propose the licence should authorise abstraction at each point referred to in column (1);
- (c) if the source of supply to which this application relates is underground strata:
  - (i) specify in columns (3) and (4) the depth and diameter of each work specified in column (2); and
  - (ii) describe in column (5) how, if at all, the work is or will be lined.

TABLE II

Map ref. no. of point (1)	Work			
	Description (2)	Depth (3)	Diameter (4)	Lining (5)

6. Indicate which underground work (if any) specified in column (2) of Table II above is extensive, and describe how overflow and leakage will be prevented .....
7. Indicate which underground work (if any) specified in column (2) of Table II above includes headings or edits, and specify the point of communication, length, diameter and orientation of each heading or edit .....
8. In Table III below:
- (a) in column (1), enter the map reference number of each point of abstraction referred to in Table II;
  - (b) in column (2), specify the machinery or apparatus by means of which you propose the licence should authorise abstraction at each point referred to in column (1);
  - (c) in column (3), describe the way in which you propose the licence should require the quantities of water abstracted at each point referred to in column (1) to be measured or assessed.

TABLE III

Map ref. no. of point (1)	Machinery or apparatus (2)	Method of measuring or assessing quantities of water abstracted (3)

QUANTITIES OF WATER AND LAND ON WHICH AND PURPOSES FOR WHICH IT IS TO BE USED (see note III)

9. In Table IV below:
- (a) in column (1), enter the map reference number of each point of abstraction referred to in Table II above;
  - (b) in the remaining columns, specify under the appropriate headings the quantities of water you propose the licence should authorise to be abstracted at each point referred to in column (1) in the various periods, and the land (see note (g)) on which, and the purposes (see note (h)) for which, you propose the licence should authorise water abstracted at each point to be used, showing which quantity relates to which period, purpose and land, etc. (see note (i)).

TABLE IV

Map ref- no of point (1)	Maximum quantity (in thousand gallons)			Period (e.g. Nov.-Feb., any period of consecutive days in March-May, etc.) (5)	Purpose (6)	Land (7)
	per year or other period specified in col. (2) (2)	per day (3)	per hour (4)			

**PART C - MATTERS AFFECTING THE QUANTITIES OF WATER TO BE SPECIFIED IN THE LICENCE**

(See note (g))

**QUANTITIES OF WATER ABSTRACTED IN RELEVANT PERIOD, PERIODS OF ABSTRACTION AND LAND ON WHICH AND PURPOSES FOR WHICH IT WAS USED.**

10. (a) On or about what date within the period of 5 years ending with 1st April 1965 did you begin to abstract water by virtue of the relevant statutory provision from the source of supply to which this application relates? .....
- (b) On or about what date within that period did your predecessors begin to abstract water by virtue of the relevant statutory provision from that source of supply? .....
- (c) In Table V below, in respect of each year referred to in column (1) during which you or your predecessor in title abstracted water from that source of supply:
- (i) in column (2) specify the purposes (see note (h)) for which water abstracted in that year was used, excluding any purposes not specified in Table IV above (see note (k)),
  - (ii) specify in column (3) the total quantity, and in columns (4) and (5) the maximum daily and hourly quantities, abstracted (otherwise than on special occasions when, by reason of accident or other emergency, there was a temporary deficiency of water from other sources of supply) in that year for use for each purpose specified in column (2) on the land specified in column (6) (see note (l));
  - (iii) in column (8) specify (by reference to the map accompanying this application) (see note (g)) the land on which water abstracted in that year for use for each purpose specified in column (2) was used, excluding any land not specified in Table IV above (see note (k));
  - (iv) if abstraction in that year was seasonal, specify in column (7) the period(s) during which water was abstracted;
  - (v) if water was abstracted in that year on special occasions as aforesaid, specify in column (8) the total quantity, and in columns (9) and (10) the maximum daily and hourly quantities, so abstracted (see note (l)).

**TABLE V**

*NOTE: Prefix any estimated quantity by the letter "E" (see note (m))*

Year ending with 1st April (1)	The abstract (2)	Quantity abstracted (in thousand gallons)			11 12 13	The total (14)	Quantity abstracted in thousand gallons on special occasions		
		Total 12 13	Max. daily 14	Max. hourly 15			For year (16)	Max. per day (17)	Max. per hour (18)
1961									
1962									
1963									
1964									
1965									

**SPRAY IRRIGATION (see note (ii))**

11. (a) Was water abstracted by you or your predecessor in title from the source of supply to which this application relates before 31st July 1963 for the purpose of spray irrigation? .....

(b) If the answer to (a) is "No", did you or your predecessor in title begin to construct a reservoir before 31st July 1963 for the storage of water to be abstracted from that source of supply and used for spray irrigation? .....

(c) If the answer to (b) is "Yes", was that reservoir completed and brought into use for the purpose of spray irrigation before 1st April 1965? .....

**ABSTRACTIONS INTENDED ON SPECIAL OCCASIONS (see note (ii))**

12. If at any point of abstraction referred to in Table II above you intend to abstract water on special occasions when, by reason of accident or other emergency, there may be temporary deficiency of water from other sources of supply:

(a) in column (1) in Table VI below, enter the map reference number of that point;

(b) in columns (2), (3) and (4), specify the maximum annual, daily and hourly quantities you anticipate will be so abstracted at that point.

TABLE VI

Map ref. no. of part (1)	Maximum quantity (in thousand gallons)		
	per year (2)	per day (3)	per hour (4)

**WORKS ETC PROVIDED IN ANTICIPATION OF FUTURE REQUIREMENTS**

13. If you wish to claim that any work, machinery or apparatus authorised by the relevant statutory provision and specified in Table II or III above was provided by you or your predecessors in anticipation of future requirements, explain the extent to which it was so provided

**CAPACITY OF WORKS ETC PROVIDED OR BEING PROVIDED, OR AUTHORISED**

14. Give particulars of the works, machinery or apparatus falling within section 35(4) of the Act (see note (p)) and of the quantity of water you claim is capable of being abstracted by means of them

**PART D - OTHER MATTERS**

15. State any other matters which you wish the River Authority to take into account in considering this application

**PART E - FORMAL APPLICATION**

I hereby apply to the ..... River Authority for a licence of right under the Water Resources Act 1963 to abstract water in accordance with the proposals indicated above, being a licence to which I claim to be entitled by virtue of section 33(1)(b) of the Act, and I declare that to the best of my knowledge the statements made above are true.

I enclose the map required by the Water Resources (Licences) Regulations 1965.

I also enclose the following evidence, as required by the above-mentioned Regulations of 1965, for the purpose of satisfying the River Authority as respects the matters referred to in Part C above:

(The name and address of my predecessor in title who abstracted water during the relevant period is as follows (see note (q))

Signed .....

\*(Authorised on behalf of .....

Date .....

\* Delete where inappropriate.

It is an offence to make a false statement in applying for a licence. (See section 115(1) of the Act.)

### NOTES

- (a) For the meaning of "source of supply", see section 2 of the Act.
- (b) For the meaning of "abstract", see section 135(1) of the Act.
- (c) For the meaning of "inland water", see section 136(1) of the Act (Section 2 is also relevant.)
- (d) For the meaning of "underground strata", see section 136(1) of the Act.
- (e) The Water Resources (Licence) Regulations 1965 require the application to be accompanied by an Ordnance map showing certain particulars.
- (f) The proposals as to quantities should be formulated having regard to the particulars given in Part C of the form. (See section 35 of the Act.) If so desired, map reference numbers may be bracketed together in column (1) of Table IV for the purpose of specifying in column (2) an aggregate quantity in respect of a group of points of abstraction, and entries in columns (3) and (6) may be omitted. The purposes specified in column (6) of Table IV and the land specified in column (7) should not include any purposes other than those for which, or any land other than land on which, water abstracted in the period of 5 years ending with 1st April 1965 was used. (See section 35(2) of the Act.)
- (g) E.g. "the land coloured blue on the map"
- (h) Purposes should be described as follows:
  - water undertaking
  - spray irrigation
  - cooling purposes
  - use in a process of manufacture (other than for cooling purposes)
  - use as a means of conveying any material as a slurry or otherwise
  - other uses (briefly described), e.g. agriculture or horticulture, other than spray irrigation
- (i) Water undertakers applying for a licence to abstract for the purposes of their water undertaking should enter "water undertaking" in column (6) but need not make any entries in column (7) of Table IV.
- (j) Part C of the form relates to the matters which must be proved to the reasonable satisfaction of the River Authority if they are to be taken into account by the Authority in determining the quantities of water to be specified in the licence. (See section 36 of the Act.)
- (k) Water undertakers who abstracted for the purposes of their water undertaking should enter "water undertaking" in column (2) but need not make any entries in column (6) of Table V.
- (l) In specifying the quantities abstracted in Table V, no account should be taken of any water abstracted in contravention of section 14(5) of the Water Act 1945 (which restricts the abstraction of underground water in certain strata).
- (m) In the absence of reliable evidence of the quantities in fact abstracted, estimated quantities should be specified in Table V. Any estimated quantity so specified must be prefixed by the letter "E" and the evidence tendered to the River Authority for the purpose of proving matters referred to in Part C (see note (j) above) should include a statement of how the estimate was made.
- (n) The attention of applicants is drawn to section 36(6) of the Act under which, where the purposes specified in the licence as the purposes for which water abstracted is to be used consist of or include spray irrigation, subsection (7) of that section (which provides that the quantities specified in the licence as the quantities authorised to be abstracted shall be determined by reference to the quantities abstracted during the relevant period) is not to apply unless certain matters are proved to the reasonable satisfaction of the River Authority. In cases where the answer to question (a) in paragraph 11 of the form is "No" and the answer to question (b) or to question (c) is also "No", section 35(2) will thus not apply, but in such cases applicants are recommended to provide any information they can in Table V to enable the River Authority to assess the merits of the proposals in Part B of the form.
- (o) If so desired, map reference numbers may be bracketed together in column (1) of Table VI for the purpose of specifying in column (2) an aggregate quantity in respect of a group of points of abstraction, and entries in columns (3) and (4) may be omitted.
- (p) The works, etc., in question are works, machinery or apparatus which were constructed or installed before 1st April 1965, or were in the course of being constructed or installed on that day not being works, machinery or apparatus provided for use only in the event of an accident or other emergency involving a total or partial failure of other works, machinery or apparatus.
- (q) Delete this paragraph if there were no predecessors who abstracted in the relevant period.

8. MECHANISMS COMPLEMENTARY TO THE GRANT OF PERMITS

1 - ZIMBABWE - Water (Water Court) Regulations, 1966

Form "W. 10"  
Application for Servitude

I (insert full name) ..... hereby apply, in terms of the Water Act (Chapter 268), to have my claim for a servitude of ..... referred to a Water Court for decision.

1. I desire the servitude to permit the exercise of Water Right No. .... which authorizes the use of water on the property:

- (a) Registered name of property .....
- (b) Form of title (state whether owner, tenant or occupier) .....
- (c) Name of public stream .....

2. The servitude is desired over the property:

- (a) Registered name of property .....
- (b) Full name of owner .....
- (c) Address of owner .....
- \* (d) Full name of mortgagee (if any) .....
- \* (e) Address of mortgagee .....
- \* (f) Full name of lessee (if any) .....
- \* (g) Address of lessee .....

\* Delete where inapplicable.

3. The following are the particulars of the servitude which is claimed:

- (a) The line of passage along which the water is to be conducted or diverted .....
- (b) The locality on which the water is to be stored .....
- (c) Address of owner .....
- (d) The period of the servitude .....
- (e) The quantity and nature of the material required from the said land for the purpose of constructing irrigation works .....
- (f) The nature and locality of any works which it is proposed to construct .....

4. This claim was served on the owner on the ..... day of ....., 19.... and he did not agree to it.

5. A copy of this application has been served on the owner and on the \*mortgagee and \*lessee.

\* Delete where inapplicable.

6. Below is a sketch plan showing the following particulars:

- (a) Plan of properties (drawn to scale if possible).
- (b) The line of the furrow or canal where applicable.
- (c) The site of the dam, weir or other works.
- (d) The outline of the servitude area.
- (e) The public stream and direction of flow.
- (f) The true North.

Note: 1. This servitude, if granted will be registered against the title deed of the applicant tenement

2. Where a diagram is submitted in evidence it must be prepared by a land surveyor or a Government Water Engineer and certified by the Registrar of Deeds as being suitable for the purpose of registration.

3. Delete paragraph 6 above if inapplicable and replace with such particulars as the Water Registrar may require

7. Description of route to property .....

.....  
Signature of Applicant

Address .....

Date .....

N.B. This application must be submitted in triplicate together with the necessary fee of E10 10s. 0d. Where the space provided is insufficient annex signed letter with further particulars.

II - TANZANIA - Water Utilization (General) Regulations, 1975

Form C

Application for an Easement  
(To be completed in quintuplicate)

To: The Water Officer

1. Name of application
2. Postal Address
3. Particulars of Water Right
4. Particulars of land in respect of which right was granted
5. Is the water right appurtenant to the land?
6. Particulars of land over which easement is sought, and of all person having an interest therein
7. Particulars of easement sought.
8. Particulars of existing and proposed works.
9. Particulars of compensation proposed.
10. Particulars of attempts to obtain an easement by agreement.

Date .....

Signature of Applicant .....

(This form must be accompanied by a plan showing full details of the easement sought)

Form D

Certificate of the Creation of an Easement

No.: .....

I hereby certify that in exercise of the powers vested in me by section 27 of the Water Ordinance (Cap. 410)

I have this day created the following easement:

- Particulars of Easement
- Particulars of dominant tenement and owner
- Particulars of Water Right
- Particulars of Servient tenement

On the following terms and conditions.

This easement is appurtenant to the said dominant tenement

Date .....

Water Officer .....

Signed and delivered by the said ..... (Water Officer) who is known to me personally, in my presence this ..... day of ..... 19....

(Signature)

(Postal Address)

(Qualification)

(To be completed by an authorized witness under r. 11 of the Land Registration Rules)



IV - MALAWI - Water Regulations, 1969

Form WRB.5  
Application for an Easement

This form is to be submitted in triplicate

NOTE: All applications must be accompanied by maps/plans to a scale of 1:50,000 (See Section 14)

To: The Chairman of the Water Resources Board

1. Full name of applicant(s) .....
  2. Address: (a) Residential .....
  - (b) Postal .....
  3. State whether:
    - (a) Owner .....
    - (b) Manager .....
    - (c) Agent .....
 If (b) or (c), give name and address of owner.
  4. Name and location of land over which easement is required .....
  5. (a) Names and addresses of all persons known to be interested in land over which easement is required .....
  - (b) Registered numbers under which such persons hold title to the land .....
  6. Particulars of land over which easement is required .....
  7. Name or description and type of body of water from which the water required is to be diverted, stored or used. ....
  8. State reason why easement is required. ....
  9. Description of easement (e.g. right of way, aqueduct, storage) .....
  10. Description of works, if any, to be constructed. ....
  11. Which of the persons detailed in 5 have refused to grant an easement? Copies of relevant correspondence to be enclosed .....
  12. Details of Grants of Water Rights held or applied for by the applicant relating to the land in favour of which easement is required. ....
  13. Period for which easement is required. ....
  14. The number of the maps and/or plans accompanying this application. ....
  15. Description of reports and/or documents sent in support of this application .....
  16. Further information relevant to this application. ....
  17. I enclose herewith crossed cheque/Postal Order/Money Order No. .... for E1-0s-0d to cover the prescribed fee for this application.
- Signature of applicant or duly authorized agent .....
- Date this ..... day of ..... 19...

Form WRB.6  
Certificate of Easement

No. ....

The easement described in the First Schedule hereto over or in respect of the land described in the Second Schedule hereto is hereby granted to ..... of ..... subject to the provisions of the Water Resources Act and of the Regulations thereunder now in force or which may come into force during the continuance of this easement.

1. FIRST SCHEDULE
2. SECOND SCHEDULE

Dated this ..... day of ..... 19...

In witness whereof the Minister/Chairman has signed in the presence of:

Name ..... *Minister of Natural Resources/  
Chairman, Water Resources Board*  
Address .....  
Occupation .....

Name .....  
Address .....  
Occupation .....

**APPENDIX II**

**FORMS, TABLES AND SCHEDULES UNDER**

**CHAPTER II**

**PREVENTION AND CONTROL OF WATER POLLUTION**



**3. CONTROLLING POLLUTION THROUGH WASTE DISCHARGE OR OTHER PERMITS OF COMPARABLE SCOPE**

**3.1 The granting of waste discharge permits**

**Step Two - Filing of applications**

**1 - MALAWI - Water Resources (Water Pollution Control) Regulations, 1978**

Form WRB.7  
**Application for Minister's Consent to Discharge Waste or Effluent into Public Water**

This form is to be submitted in duplicate to the Chairman of the Water Resources Board.

- NOTES:**
1. This form is not to be used for applications involving discharge of waste and effluent water to a public sewer.
  2. All applications must be accompanied by maps or layout maps, plans to a scale of at least 1:50,000, drawn or copied on good quality drawing or copying paper.
  3. A copy of any technical or engineering report relating to and explaining the proposals should be submitted as an addendum to the application for the information of the Water Resources Board.

**PART A**

I / We hereby apply for consent to discharge waste or effluent as described in this application and shown on the attached drawings.

I / We hereby agree to supply further information which may be required by the Water Resources Board.

I / We enclose herewith crossed Cheque/Postal order/Money Order No(s) \_\_\_\_\_ or K \_\_\_\_\_ to cover the prescribed fee for this application and undertake to pay the Board on demand the cost of publication in the Government Gazette and in at least two issues of a newspaper circulating in Malawi of a notice in terms of Regulation 6.

Date \_\_\_\_\_

\_\_\_\_\_  
Signature of applicant or his  
authorized agent

FOR OFFICIAL USE

Applicant's File N°	
N.G.R.	
Nature	
Max Discharge	
Board N°	
Consent N°	

**PART B**  
(To be completed in all cases)

1. Applicant's full name and address	Tel. N°
2. Agent, if any: Name and profession and address	

3. Details of existing and/or proposed works. (Give location, address and/or map number and six figure Grid reference on 1:50,000 Malawi series). Attach drawings as necessary.		
4. Period for which works will be required (if temporary, state period)		Permanent/Temporary
5. Nature of the discharge	(a) Sewage effluent	Yes/No
	(b) Storm tank effluent or overflow from a foul sewer	Yes/No
	(c) Surface water sewer/drain	Yes/No
	(d) Trade effluent	Yes/No
	(e) Other discharge (give details)	
6. Treatment prior to discharge, if any (give details)		
<b>PART C</b> (To be completed for discharge of biologically treated sewage effluent)		
1. Volume of discharge in dry weather	m <sup>3</sup> /d	gal/day
2. Maximum rate of discharge	l/s	gal/hr.
3. Average daily volume of trade effluent, if any, received at the works	m <sup>3</sup>	gal
4. Population to be served by the works and date this will be reached		
5. Method of measurement of flows from the works		
<b>PART D</b> (To be completed for discharge of storm tank effluents and foul sewer overflows)		
1. Dry weather flow in associated sewer(s)	m <sup>3</sup> /d	gal/day
2. Rate of flow in associated sewers at which overflow will commence	l/s	gal/hr.
3. Rate of rainfall if known at which overflow will commence	mm/h	in/hr.
4. If the overflow is situated at a pumping station state what standby equipment is to be provided		
<b>PART E</b> (To be completed for discharge from surface water sewer/drains)		
1. Is any oil to be stored or used in the area served by the sewer/drain? If so what precautions are to be taken to prevent discharge of oil (e.g. by bunding of tanks, provision of interceptors, etc.)?		
2. Are any poisonous, noxious or polluting substances to be stored or used on the premises served in such a manner that they could contaminate surface water (give brief details)?		

PART F	
(To be completed for discharge of trade effluent or for any other effluent)	
1. Trade or process from which discharges will arise	
2. Daily volume of discharge - (a) average (b) maximum	m <sup>3</sup> /d      gal/day m <sup>3</sup> /d      gal/day
3. Maximum rate of discharge	
4. Method of measurement of discharge	
5. Maximum temperature of the discharge	
6. maximum concentration of any contaminants known to be present in the discharge	
COMMENTS (IF ANY BY THE WATER RESOURCES BOARD):	
_____	
_____	
_____	

II - QUEENSLAND - Clean Waters Regulations, 1973

Form 1  
Application for Licence to Discharge Wastes

I, \_\_\_\_\_, hereby apply for a licence to discharge wastes from premises situated at \_\_\_\_\_, into waters described as \_\_\_\_\_ at the location shown on the plan attached to this application.

The occupier of the premises for the purpose of the Act is/will be\* \_\_\_\_\_.

The address for correspondence will be \_\_\_\_\_.

The premises are being/will be\* used for \_\_\_\_\_, and I attach herewith written evidence from the Local Authority of the Area in which the premises are situated verifying that the use of such premises for the above mentioned purposes will not contravene any town-planning scheme, Order in Council, Ordinance or By-law made by such Local Authority respecting the use or development of land.

The nature of the wastes is/will be \_\_\_\_\_ as fully described in the report attached to this application in Form 1A.

The proposed method of treatment and disposal of the wastes is \_\_\_\_\_ and is more fully described in the said report attached to this application.

Written evidence is enclosed from the Local Authority of the Area in which the premises are situated verifying that the Local Authority will not permit the discharge of the wastes into its sewerage.

The prescribed fee of \$ \_\_\_\_\_ is enclosed.

I declare that the statements made in this application are true.

Signed: \_\_\_\_\_

Position: \_\_\_\_\_

Date: \_\_\_\_\_

\* Delete whichever is inapplicable

Form 1A  
Report Attached to Application for Licence to Discharge Wastes

Complete information is required regarding:

- (a) The quantities, the times and the rates of discharge and the physical, chemical, biological and radioactive components and characteristics of the wastes to which it is desired that the licence apply;
- (b) The control equipment provided or proposed to be provided in relation to such discharge;
- (c) The location or proposed location of such discharge;
- (d) Any investigations into the effects of the discharge of such wastes on such location.  
If insufficient space, attach further sheets!

Signed: \_\_\_\_\_

Position: \_\_\_\_\_

Date: \_\_\_\_\_

Form 2

Application for Licence to Transport Wastes

I, \_\_\_\_\_, hereby apply for a licence to transport elsewhere wastes from premises situated at \_\_\_\_\_, for disposal at the location shown on the plan attached to this application.

The occupier of the premises for the purpose of the Act is/will be\* \_\_\_\_\_

The address for correspondence will be \_\_\_\_\_

The premises - are being/will be\* used for \_\_\_\_\_, and I attach herewith written evidence from the Local Authority of the Area in which the premises and the location aforesaid are situated verifying that the use of such premises or location for the abovementioned purposes will not contravene any town-planning scheme, Order in Council, Ordinance or By-law made by such Local Authority respecting the use or development of land.

The nature of the wastes is/will be\* \_\_\_\_\_ as fully described in the report attached to this application in Form 2A.

The proposed method of treatment and disposal of the wastes is by \_\_\_\_\_ and is more fully described in the said report attached to this application.

Written evidence is attached from the Local Authority of the Area in which the premises are situated verifying that the Local Authority will not undertake the transport and disposal of the wastes elsewhere.

The prescribed fee of \$ \_\_\_\_\_ is enclosed.

I declare that the statements made in this application are true.

Signed: \_\_\_\_\_

Position: \_\_\_\_\_

Date: \_\_\_\_\_

\* Delete whichever is inapplicable

Form 2A

Report Attached to Application for Licence to Transport Wastes

Complete information is required regarding:

- (a) The quantities, the times and the rates of transport and the physical, chemical, biological and radioactive components and characteristics of the wastes to which it is desired that the licence apply;
- (b) The control equipment provided or proposed to be provided in relation to such disposal;
- (c) The method of operation of such disposal;
- (d) The location or proposed location of such disposal;
- (e) Any investigations into the effects on any water of the disposal of such wastes on such location;
- (f) The names and addresses of the persons responsible for the transport and disposal of such wastes if not performed by the occupier.

(If insufficient space, attach further sheets)

Signed: \_\_\_\_\_

Position: \_\_\_\_\_

Date: \_\_\_\_\_



18 - NEW SOUTH WALES - Clean Waters Regulations, 1972

Form 2

Application for Approval to Install, Construct or Modify Apparatus, Equipment or Works

Name of Applicant and address for correspondence:

.....  
..... Postcode .....

Name and address of premises concerned: .....

.....  
..... Postcode .....

FOR OFFICIAL USE ONLY Fee: Date: Approved: Notified: Date: Checked:
--

I hereby make application, in respect of the abovenamed premises situated at the above address, for the approval of the Under Secretary, Department of Health, in accordance with section 19(1) of the Clean Waters Act, 1970:

- \* to install or construct apparatus, equipment or works for the discharge of pollutants into waters.
- \* to modify existing apparatus, equipment or works for the discharge of pollutants into waters.

I am the \*owner/occupier of or licensee of the drain on the premises concerned (Licence No. ....).

A detailed description of the nature and extent of the proposed work in relation to the discharge of pollutants is submitted with this application.

The estimated total cost of the proposed installation, construction or modification is \$ .....

I enclose the prescribed fee of \$ .....

Signature .....

Official Position .....

Authorized on behalf of .....

Date .....

NOTE: This form when completed, together with any relevant plans, specifications and other data, and such additional technical reports as may be required or requested by the Under Secretary, comprises the application.

\* Delete where not appropriate

To: The Under Secretary,  
Department of Health

Step Five - Formatting of waste discharge permits

I - NEW SOUTH WALES - Clean Waters Regulations, 1972

Form 3  
To Install, Construct or Modify Apparatus, Equipment or Works

Number .....  
Date of Issue .....

Approval is hereby given to:  
.....  
under the provisions of section 19 of the Clean Waters Act, 1970, to install, construct or modify apparatus,  
equipment or works at: .....  
.....  
on the basis of the information supplied in the application dated \_\_\_\_\_ for such approval, subject to the  
following conditions, viz.:

Under Secretary

NOTE: This approval may be suspended or revoked or the aforesaid conditions changed or additional conditions attached by the Under Secretary at any time if the circumstances warrant it.

Form 5  
Licence

Number .....  
Date of Issue .....

Name of Licensee .....  
Address of Premises concerned .....  
Location of authorised point of discharge .....  
The above person is hereby licensed for a period of one year from the abovementioned date of issue of this licence under the provisions of the Clean Waters Act, 1970, on the basis of the information supplied by him in his application of ..... and subject to the following conditions, viz.:

Under Secretary

NOTE: The abovementioned conditions apply only to the period of tenure of this licence, which is one year. The licence will require to be renewed at the end of this period unless revoked or suspended or the licence conditions are changed. In any renewal of the licence the conditions may be changed by the Under Secretary or additional conditions attached by him. Such changing of conditions or attaching of additional conditions or revocation or suspension of the licence may be carried out by the Under Secretary at any time during the currency of the licence if the circumstances warrant it.

II - QUEENSLAND - Clean Waters Regulations, 1973

Form 5  
Licence No.

Pursuant to the provisions of the Clean Waters Act 1971 this licence is issued to .....  
of....., in respect of ..... from premises situated at .....  
..... of which premises the said ..... is the occupier.

This licence is granted and is in all respects subject to the said Act and Regulations made thereunder and shall  
take effect from the ..... day of ..... 19.., and shall expire on the thirtieth day of June, 19 ..  
unless sooner suspended or cancelled.

This licence is subject to the conditions set out in the Schedule hereunder and applies only to the waters  
described in such Schedule.

\_\_\_\_\_  
SCHEDULE

Signed .....

For and on behalf of

The Water Quality Council of Queensland

Date .....

IV - CAYMAN ISLANDS - Water Authority Regulations, 1985

Discharge Permit

1. Permit No.:
2. Permit Holder:
3. Address:
4. Nature of Discharge:
5. Location of Discharge:  
    (a) Parcel No.:
- (b) Block No.:
6. Type of Treatment Works:
7. Type of Disposal Works:
8. Maximum Daily Effluent Flow:
9. Effluent Consent Condition:
10. Date of Expiration
11. Fee:                      Paid:

This permit is granted subject to the provisions of the Water Authority Law, 1982, and the special conditions specified. Failure to comply with the provisions of the Law, or with the terms and conditions of this permit may result in the penalties specified in Section 5(1)(1) and (3) of the Law, and the modification or revocation of this permit.

Date \_\_\_\_\_

Signature and seal of Authority

V - IRELAND - Local Government (Water Pollution) Regulations, 1978

Form 1  
Licence to Discharge Trade or Sewage Effluent to Waters

Local Authority: <sup>1</sup> \_\_\_\_\_

Reference N<sup>o</sup>  
in register: \_\_\_\_\_

To \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

The ( )<sup>1</sup>, in exercise of the powers conferred on it by the Local Government (Water Pollution) Act, 1977 hereby grants a licence <sup>2</sup>/a revised licence in substitution for licence dated \_\_\_\_\_ reference N<sup>o</sup> \_\_\_\_\_<sup>3</sup> / to discharge ( )<sup>4</sup> effluent from ( )<sup>5</sup> located at ( )<sup>6</sup> to ( )<sup>7</sup> at ( )<sup>8</sup>/subject to the following conditions<sup>9</sup>:

Dated this \_\_\_\_\_ day of \_\_\_\_ 19\_\_ .

\_\_\_\_\_  
City/County Manager

Order No. \_\_\_\_\_

Directions for completing this form

<sup>1</sup> Insert name of local authority.

<sup>2</sup> Delete words which do not apply.

<sup>3</sup> Insert "trade", "sewage" or "trade and sewage".

<sup>4</sup> Insert description of premises, works, apparatus, plant or drainage pipe.

<sup>5</sup> Insert location of premises, works, apparatus, plant or drainage pipe.

<sup>6</sup> Insert description of the waters.

<sup>7</sup> Insert description of point(s) of discharge.

<sup>8</sup> Delete if not subject to conditions.

<sup>9</sup> Delete if not subject to conditions.

VII - MALAWI - Water Resources (Water Pollution Control) Regulations, 1978

Form WRB.9

Minister's Consent to Discharge Waste or Effluent into Public Water

Applicant's File N° \_\_\_\_\_  
Consent N° \_\_\_\_\_  
Plot N° \_\_\_\_\_

N.G.R. \_\_\_\_\_ is hereby authorized to discharge  
of \_\_\_\_\_ waste or effluent into \_\_\_\_\_ for a period of \_\_\_\_\_  
with effect from the \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_ at a rate  
not exceeding \_\_\_\_\_ gallons per day nor \_\_\_\_\_ gallons per hour  
and at the rent of K \_\_\_\_\_ per \_\_\_\_\_, paid in advance by the \_\_\_\_\_ day  
of \_\_\_\_\_, 19\_\_

This consent is granted subject to the conditions stated hereunder.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_

\_\_\_\_\_  
Minister of Agriculture and Natural Resources

CONDITIONS

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

RENEWALS

Step Six - Appealing from adverse decisions

1 - QUEENSLAND - Clean Waters Regulations, 1973

Form 9  
Application for Review

I, \_\_\_\_\_, of \_\_\_\_\_, hereby declare that:

- \*a licence.
- 1 \* (a) I am an applicant for \*the renewal of licence N° \_\_\_\_\_.
- \*the transfer of licence N° \_\_\_\_\_.

On the \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_, notice was given to me by the Water Quality Council of Queensland that my application was refused.

or

\* (b) I am the holder of Licence No. \_\_\_\_\_ under the above-mentioned Act.

On the \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_, notice was given to me by the Water Quality Council of Queensland under section 24 of the said Act

- \*revoked a condition attached to the said licence
- whereby the Council \*varied a condition attached to the said licence
- \*attached new conditions to the said licence.

or

\* (c) I am not the holder of a licence under the abovementioned Act.

On the \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_, a notice was served upon me by the Water Quality Council of Queensland under section 25 of the said Act authorizing me to discharge or transport wastes on the conditions specified in such notice.

- 2. \* (a) I consider that the alternative conditions set out in the Schedule hereto would be as effective, for the purpose of the abovementioned Act, as the conditions set out in or determined by the Council in respect of such \_\_\_\_\_ licence.
- \*notice.

For use in conjunction with paragraphs 1(b) or 1(c).

or

\* (b) I consider that the observance of the conditions set out in the Schedule below would permit compliance with the requirements of the Act.

For use in conjunction with paragraph 1(a).

- 3. I seek a review by the Council of such \_\_\_\_\_
- \*conditions.
- \*refusal.
- \*revocation.

4. Full details of the technical information, including technical information prepared by a qualified engineer or a scientist, which I desire the Council to consider in relation to this application for review, are attached.

5. The prescribed fee of \$ \_\_\_\_\_ is enclosed.

6. I declare that the statements made in this application are true.

SCHEDULE

(if not sufficient room, attach on separate sheets)

Date:

Signed:

Position:

\* Delete whichever is not applicable

**N - NEW SOUTH WALES - Clean Waters Regulations, 1972**

**Form 8  
Appeal Under Section 25 of the Clean Waters Act, 1970**

Insert name and address of \*Applicant or \*Licensee:

.....  
.....

..... Postcode .....

Name and address of premises and description of drain, if any:

.....  
.....  
.....

\*Date of application for Licence: .....

\*Licence Number: ..... Date of Expiry: .....

I, ..... appeal against

\*the refusal to grant a licence (section 20(2)(b))

\*the refusal to transfer a licence (section 20(2)(a))

\*revocation of a licence (section 20(4)(a))

\*suspension of a licence (section 20(4)(a))

\*revocation of any conditions attached to a licence (section 20(4)(b))

\*variation of any conditions attached to a licence (section 20(4)(b))

\*attaching new conditions to a licence (section 20(4)(c))

\*a decision of the Under Secretary in relation to an application to install, construct or modify any apparatus, equipment or works for the discharging of wastes into any waters (section 19(1))

\*a direction to eliminate/reduce pollution (section 16, subsection (4))

The date of the letter/direction\* to me on this matter was ..... reference number .....

My grounds for the appeal are as follows:

Signature .....  
Official Position .....  
Authorised on behalf of .....  
Date .....

\* Delete if not appropriate



Step Seven - Recording of decisions and permits

III - IRELAND - Local Government (Water Pollution) Regulations, 1978

Form 3

Register of Licences Under Section 4 for the Discharge of Trade and Sewage Effluents to Waters

Local Authority .....

1. Reference number of the licence .....
2. Name and address of applicant .....
3. Location of the premises, works, apparatus, plant or drainage pipe from which the effluent is discharged:  
.....
4. Description of waters to which discharge is made .....
5. Location of point(s) of discharge .....
6. Description of effluent .....
7. Date of grant of licence .....
8. Conditions attached to licence .....
9. If licence is a revised licence - reference number of previous licence .....
10. Notification by An Bord Pleanála of appeal  
Date .....  
Board's reference .....
11. Result of appeal .....

3.3 Management of waste discharge permits

II - NEW SOUTH WALES - Clean Waters Regulations, 1972

Form 7  
Application for Transfer of a Licence

Name and address of Applicant:

.....  
..... Postcode .....  
Location and description of drain/activity\* .....  
.....  
.....  
Current Licence No.: .....  
\*Date of occupation of premises by applicant: .....

FOR OFFICIAL USE ONLY

Fee:  
Date:  
Approved:  
Checked:

I hereby apply to the Under Secretary, Department of Health, pursuant to section 20, subsection (B) of the Clean Waters Act, 1970, for the transfer of the above-mentioned licence

from .....  
of .....  
to .....  
of .....

I enclose the appropriate prescribed fee of \$ .....

I accept the conditions attached to the licence.

Signature .....

Position .....

Authorised on behalf of .....

Date .....

I, ....., the holder of the abovementioned licence, hereby consent to the transfer of such licence in accordance with this application.

Signed .....

\* Delete where not appropriate.

NOTE The current licence for the above drain may have conditions attached which, unless specifically varied by the Under Secretary, shall also apply to the licence when transferred. Should the applicant for the transfer of the existing licence wish to make any alteration to the manufacturing or trade process which may affect the quality of the receiving waters, or vary the volume of wastes discharged, or change the quality of the wastes discharged, then it will be necessary for an application to be made for a new licence

To: The Under Secretary  
Department of Health

3.4 Charging for discharging waste under a permit

IV - MALAYSIA - Environmental Quality (Sewage and Industrial Effluents) Regulations, 1979

Seventh Schedule  
Method of Computing Effluent-related Licence Fee

1. The amount of effluent-related licence fee shall be subject to:
  - (1) the total amount of organic loading determined as the total biochemical oxygen demand (BODs at 20°C) of the effluent expressed in metric ton (tonne);
  - (2) the total amount of toxicity determined as the total amount of contaminants, listed as parameters (vi) to (xvi) in the Third Schedule<sup>1</sup> and parameters (xii) to (xviii) listed in the Fifth Schedule<sup>1</sup>, present in the effluent expressed in kilogrammes (kg); and
  - (3) the total amount of other toxicity determined as the total amount of contaminants, listed as parameters (xvii) to (xxii) in the Third Schedule<sup>1</sup> and any other parameters the Director-General thinks fit present in the effluent expressed in kilograms (kg).
2. the licence fee shall be computed in accordance with paragraph 1 of this schedule as follows:

FEE

<i>Inland Waters into which effluent is discharged</i>	<i>per tonne of BOD load specified in sub-paragraph 1(1)</i>	<i>per kg of contaminants specified in sub-paragraph 1(2)</i>	<i>per kg of contaminants specified in sub-paragraph 1(3)</i>
(a) Inland waters specified in regulation 81(1)(a)	\$ 100.00	\$ 500.00	\$ 100.00
(b) Any other inland waters	\$ 10.00	\$ 50.00	\$ 10.00

<sup>1</sup> Omitted.

3.5 Dealing with "existing" discharges or processes

IV - UNITED KINGDOM - Environmental Protection (Prescribed Processes and Substances) Regulations, 1991

Table  
Application to be Made

<i>Any process falling within a description set out in</i>	<i>Not earlier than</i>	<i>Not later than</i>
Paragraph 1a) of Section 1.3	1st April 1991	30th April 1991
Any other paragraph of Chapter 1	1st April 1992	30th June 1992
Section 2.1 or 2.3	1st January 1995	31st March 1995
Section 2.2	1st May 1995	31st July 1995
Chapter 3	1st December 1992	28th February 1993
Section 4.1, 4.2, 4.7 or 4.8	1st May 1993	31st July 1993
Section 4.3, 4.4, 4.6 or 4.9	1st November 1993	31st January 1994
Section 4.5	1st May 1994	31st July 1994
Chapter 5	1st August 1992	31st October 1992
Chapter 6	1st November 1995	31st January 1996

**5. CONTROLLING WATER POLLUTION THROUGH ZONING**

**III - UNITED KINGDOM - Nitrate Sensitive Areas (Designation) Order, 1990**

**Schedule 4  
Rates of Payment**

Basic Scheme - The payment for any land not used for the permanent housing of pigs or poultry in the nitrate sensitive area named in Column 1 below which is the subject of a basic scheme agreement shall be at the rate per annum specified in Column 2 below opposite that name for each hectare of the land.

(1) <i>Name of nitrate sensitive area</i>	(2) <i>£/ha/annum</i>
Ogbourne St. George NSA	55
Kilham NSA	55
Egford NSA	55
Old Chalford NSA	55
Wellings NSA	65
Tom Hill NSA	70
Wildmoor NSA	70
Boughton NSA	75
Sleaford NSA	85
Branston Booths NSA	95

**Payments for producers of pigs or poultry which are permanently housed**

1. Subject to paragraph 3 the payment per pig place for a producer whose pigs are permanently housed and who, in order to comply with an agreement, installed storage facilities for slurry produced by the pigs shall be £0.70 per annum for each month of storage capacity available for that slurry in excess of 4 months of storage capacity.

2. Subject to paragraph 3 the payment per pig place or per 10 poultry places for a producer whose pigs or poultry are permanently housed, where pig or poultry manure has to be conveyed further from the housing for the pigs or poultry than hitherto, in order to comply with an agreement in relation to the storage, spreading or disposal of such manure, shall be at the rate per annum set out below for every additional mile from that housing that the manure has to be conveyed:

Pig place                    £ 1.15  
10 poultry places        £ 0.28

3. Payments under paragraphs 1 and 2 shall be made in respect of the number of pig places or poultry places on the land:

- (a) on 3rd April 1990; or
- (b) if a lower number, the number on 1st August 1990 where the farmer entered into an agreement in 1990, or 1st June 1991 where he entered into an agreement in 1991; or
- (c) if between 3rd April 1990 and 1st August 1990 or between 3rd April 1990 and 1st June 1991 as appropriate an average of less than 85 per cent of the pig places or poultry places were occupied by pigs or poultry, the average number of pig places or poultry places occupied by pigs or poultry during that period.

**APPENDIX III**

**FORMS UNDER**

**CHAPTER III**

**GROUNDWATER DEVELOPMENT AND CONSERVATION**



2. PRIOR NOTIFICATION OF BOREHOLE DIGGING OR WELL DRILLING OPERATIONS

KENYA - Water (General) Rules

Form W.A.B. 26  
Notice of Intention to Construct a Well/Borehole

In accordance with section 51(1) of the Water Act, I hereby give notice of my intention to construct a well (borehole) as detailed below:

1. Name .....
2. Postal address .....
3. Land Reference No. of plot or farm ..... Acreage .....
4. Purpose for which water will be used .....
5. Proposed borehole contractor (if known) .....
6. Proposed date of commencement (if known) .....
7. Distance well will be from nearest existing well/borehole .....
8. Quantity of water to be taken from well daily .....

.....  
Signature of Applicant or duly Authorized Agent

Date .....

NOTES

1. This form is to be used only if the well or borehole is to be situated
  - (a) outside a conservation area notified under section 74 of the Water Act, and
  - (b) more than 100 yards from any body of surface water.
2. If the conditions under Note 1 are fulfilled, no authorization is needed to proceed with the work, but it will be necessary to notify the Water Apportionment Board when construction commences and, unless otherwise exempted, to submit the drilling record in form No. W.A.B. 28<sup>1</sup> on completion of the work, whether the well or borehole is a success or not.
3. If the well or borehole is to be situated less than one-half mile from the nearest existing well or borehole, the written authority of the Water Apportionment Board is required under section 50(2) of the Act before the construction or extension of a well or borehole is commenced. Except that written authority is not required where the total quantity of water to be extracted in any one day will not exceed 5,000 gallons (or such other quantity as the Water Apportionment Board may approve) and the well or borehole is to be not nearer than 250 yards from any other well or borehole.
4. This form is to be submitted not less than one month before construction of the well or borehole is due to commence, and must be accompanied by a sketch map or Land Office plan, in duplicate, on a scale of not less than one inch to the mile, on which must be shown the boundaries of the land on which it is proposed to construct the well or borehole, the approximate position of the proposed well or borehole and, if possible, the position of the nearest body of surface water and of the nearest existing well or borehole.

FOR USE OF THE WATER APPORTIONMENT BOARD ONLY

Acknowledgment issued on .....

W.A.B. Well No. allocated .....

Written authority of the W.A.B. under Note 3<sup>1</sup> issued on .....

<sup>1</sup> Omitted.



3. PERMITS TO DIG OR DRILL BOREHOLES AND TO CONSTRUCT WELLS

3.1 The granting of permits

Step One - Filing of an application

1 - WESTERN AUSTRALIA - Rights in Water and Irrigation (Construction and Alteration of Wells) Regulations, 1963

Form 1  
Artesian Well - Application for a License under Section 20

Name, address and occupation of applicant	_____
Description, location and approximate height above sea level of proposed new well or of existing well proposed to be enlarged, deepened or altered or drawn upon	Description _____ Municipal District of the _____ Lot, Location, or Lease No. _____ Approximate height above sea level _____
Nature of proposed work *	_____ _____ _____ _____
Statement of the purposes for which it is proposed to utilise the water (Regulation 511)(c)	_____ _____ _____
The several casings proposed to be used with the names of the makers, and whether of soft, wrought iron, or mild steel	_____ _____ _____
Particulars regarding depth and volume of flow from each artesian well within a radius of 10 miles from the site of the well	Depth _____ Volume _____ _____
Whether the water will be distributed by natural or artificial drains or by both	_____ _____

Approximate estimate of the length of each drain, the total aggregate length of drains and their respective routes	_____ _____ _____
Period for which licence is required	_____
Remarks or further explanations	_____ _____

I/WE ..... of ..... in the State of Western Australia, hereby apply for a licence under the Rights in Water and Irrigation Act, 1914 (as amended), for a new well (or to enlarge or deepen or alter or draw water from a now existing well) on land situated at ....., in the Municipal District of the ....., such land being shown on accompanying plan marked "A" and shaded pink, and upon which land I/we desire to construct a new well (or to enlarge, or deepen, or alter or draw water from a now existing well) as described above.

Dated at ..... this ..... day of ..... in the year 19\_\_.

.....  
Signature of Applicant

To the Minister for Works and Water supplies.

Note: Plans and specifications must accompany this application in accordance with Regulation No. 5

Heading marked \* should state whether the proposed work is for a new well or for enlarging, deepening, or altering, or drawing water from a now existing well, or as the case may be

Form 2  
Non-Artesian Well - Application for a Licence under Section 20

Name, address and occupation of applicant _____	
Description, location and approximate height above sea level of proposed new well or of existing well proposed to be enlarged, deepened or altered or drawn upon	Description _____
	Municipal District of the _____ Lot, Location, or Lease No. _____ Approximate height above sea level _____
Nature of proposed work *	_____ _____ _____
Statement of the purposes for which it is proposed to utilise the water (Regulation 5(1)(c))	_____ _____
Period for which licence is required	_____
Remarks or further explanations	_____ _____

I/We \_\_\_\_\_ of \_\_\_\_\_ in the State of Western Australia, hereby apply for a licence under the Rights in Water and Irrigation Act, 1914 (as amended), for a new well (or to enlarge or deepen or alter or draw water from a now existing well on land situated at \_\_\_\_\_ in the Municipal District of the \_\_\_\_\_, such land being shown on accompanying plan marked "A" and shaded pink, and upon which land I/we desire to construct a new well (or to enlarge, or deepen, or alter or draw water from a now existing well) as described above.

Dated at \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_ in the year 19\_\_.

\_\_\_\_\_  
Signature of Applicant

To the Minister for Works and Water supplies.

Note: Plans and specifications must accompany this application in accordance with Regulation No. 5.

\* Heading marked \* should state whether the proposed work is for a new well or for enlarging, deepening, or altering, or drawing water from a now existing well, or as the case may be.

**(I) - JAMAICA - Underground Water Control (Licensing) Regulations 1961**

**Schedule 1**

**Application for a Licence to Construct Works or Abstract Water in a Critical Area**

1. Name and address of applicant .....
2. Location of proposed work, or of existing work which is proposed to be extended .....
3. Purpose for which the licence is desired .....
4. Purpose for which the water is to be used .....
5. Technical details:
  - (i) Estimated depth of the borehole or well \_\_\_\_\_ feet
  - (ii) Diameter of the borehole or well \_\_\_\_\_ inches
  - (iii) In the case of artesian supplies, the method proposed for controlling the flow from the borehole and for preventing leakage around the borehole lining .....
  - (iv) Type of apparatus proposed for measuring and recording the rate of abstraction .....
  - (v) Other technical information .....
6. (i) Maximum daily quantity of water to be abstracted in imperial gallons .....
- (ii) Proposed hours of pumping .....
7. Geological strata from which water is to be drawn e.g. limestone, gravel, etc. ....
8. Whether any request for a supply has been made to the Parish Council and, if so, with what result ..
9. Any further matters which the Authority is desired to take into account in considering the application .....

I hereby apply for a licence in accordance with the provisions of the Underground Water Control Act and the regulations made thereunder for the purpose set out above, and declare that to the best of my knowledge the above particulars are true.

Signed \_\_\_\_\_

Authorized on behalf of

Date: \_\_\_\_\_ 19\_\_

\_\_\_\_\_

III - MALAWI - Water Regulations, 1969

Form WRB.2

Application for a Grant of Water Right/Certificate of Existing Rights\* - (Ground Water)

This form to be submitted in triplicate.

To: The Chairman of the Water Resources Board

1. Full name of applicant .....
- Postal address .....
- Occupation .....
2. Details of land on which borehole .....
- \* will be/has been sunk .....
- Give Registered No. ....
3. Give details of land where .....
- water will be used if .....
- different from (2) above .....
4. Acreage .....
5. Description of borehole/well .....
- Diameter, Depth, etc. ....
6. Details of pump (where hand- (a) Type of pump .....
- operated pump is used answer (b) Type of driving .....
- only (a) and (b) machine and fuel used .....
- (c) Brake horse power of (b) .....
- (d) Approximate elevation of pump above sea-level .....
- \_\_\_\_\_ feet
- (e) How pump is connected to driving machine .....
- (f) Internal diameter of suction main ..... inches
- (g) height of suction (maximum) ..... feet
- (h) Height to which water is to be lifted above pump ..... feet
- (i) Internal diameter of delivery pipe ..... inches
- (j) Length of delivery pipe ..... feet
- (k) Pumping hours per day ..... hours
- (l) Quantity of water to be pumped when plant is .....
- working ..... gals. per hour

(7) Purposes for which water is required.

	Gallons per day
Domestic .....	_____
Public .....	_____
Industrial .....	_____
Irrigation .....	_____
Any other purpose (to be stated) .....	_____
Total quantity of water per day .....	_____

(8) Alternative source of water available to the applicant (if any).

(9) The following are the existing boreholes within one-half mile of the site to which this application refers:

Borehole No. (if known)	Name of Farm (Reg. No.)	Distance from site
_____	_____	_____

(10) \*\*\* I enclose herewith crossed cheque/Postal Order/Money Order No. \_\_\_\_\_ for E1 0s 0d to cover the prescribed fee for this application and undertake to pay the Malawi Government on demand the cost of insertion in the Government Gazette and in at least one newspaper circulating in Malawi of a Notice requiring any person objecting to the issue of a Grant of Water Rights to lodge such a complaint with the Chairman of the Water Resources Board.

Date: \_\_\_\_\_ Signature of applicant or duly authorized agent

NOTE: This form is to be accompanied by a sketch map in duplicate on a scale of not less than one inch to one mile, on which must be shown the farm or holding boundaries, the approximate position of the proposed borehole and existing boreholes within one-half mile radius, and the position of any body of surface water.

\* Delete as appropriate

\*\* This paragraph is not applicable to applications to record an existing right under the Act

IV - BOTSWANA - Draft Groundwater Regulations

First Schedule  
Application to Construct or Deepen a Private Water Borehole

1. Where do you want the borehole to be?  
(District)  
(Locality)  
(Nearest settlement)  
- Please attach:
  - . a clearly drawn map of the location of the borehole.
  - . a copy of the Certificate of Grant or Title Deed for the land where the borehole will be.
  - . a copy of the lease and a letter from the landlord, agreeing with the application, if the land is held under a lease
2. Are you applying to ~~deepen~~ or to use an existing borehole?  
If so, do you know if there is already a water right issued for the borehole? If there is, give details of that right, or preferably, attach a copy if you can.
3. Are you applying to extend a drilling permit which has already been granted but is more than 2 years old?  
If so, give the number and date of the earlier permit, and answer only items 8, 8, 9 and 10 below.  
Number: \_\_\_\_\_ Date: \_\_\_\_\_
4. What do you want to use the borehole for?  
(Fill in the blank spaces)
  - . Domestic purposes for ... houses.
  - . Agriculture
    - to irrigate crops on ..... hectares.
    - for horticulture on ..... hectares.
    - for a woodlot of ..... hectares.
  - . Livestock  
How many animals will use the borehole?
    - donkeys or horses .....
    - cattle ...
    - smaller animals .....
    - game .....
  - . Commercial or Industrial purposes  
What exactly will you be using the water for?  
  
How much water would you like to take?  
..... litres/cubic metres per day.  
  
Will you be using the borehole to dispose of water or waste?
7. What drilling company will do the job? (if you know)
8. Are you applying on behalf of a syndicate?
  - . If so, who are the members?
  - . How will they arrange to maintain the borehole?
9. What is your name and address?  
(Last name) (First names)  
(Address)
10. Sign your name here .....
11. Date .....

**IMPORTANT: IT IS AGAINST THE LAW FOR WORK TO START UNTIL YOU KNOW THAT A PERMIT HAS BEEN GRANTED. BOTH YOU AND THE DRILLER COULD BE PROSECUTED!**

When you have filled in this form, you should lodge it with the Secretary of your local Land Board.  
You will have to pay a fee when you do. This is to cover the cost of processing it and advertising it to people who might be harmed if your application is granted.  
You will be told the result of your application as soon as possible.  
Have you attached the documents requested in question 1?

(Reverse side of form)  
**(FOR OFFICE USE ONLY)**

1. **District Officer, Lands**  
Approval recommended/not recommended.  
Reasons, if not recommended . . . . .  
  
Signature: ..... Date: .....  
Stamp:
  
2. **Land Board or Director, Surveys and Lands**  
Application approved/not approved.  
Reasons, if not approved . . . . .  
Signature: ..... Date: .....  
Stamp:
  
3. **Director, Water Affairs**  
Application approved/not approved  
Reasons, if not approved . . . . .  
Signature: ..... Date: .....  
Stamp:
  
4. **Director, Geological Survey**  
Application approved/not approved.  
Reasons, if not approved . . . . .  
Signature: ..... Date: .....  
Stamp:
  
5. **Water Resources Council**  
Application approved/not approved.  
Reasons, if not approved . . . . .  
Signature: ..... Date: .....  
Stamp:

Second Schedule  
Application to Construct or Deepen a Government Water Borehole

1. Where do you want the borehole to be?  
(District)  
(Locality)  
(Nearest settlement)  
- Please attach:
  - . a clear map of the location of the borehole.
  - . a copy of the Certificate of Grant or Title Deed for the land where the borehole will be
  - . a copy of the lease and a letter from the landlord, agreeing with the application, if the land is held under a lease.
  
2. Are you applying to deepen or to use an existing borehole?  
If so, do you know if there is already a water right issued for the borehole? If there is, give details of that right, or preferably, attach a copy if you can.
  
3. Are you applying to extend a drilling permit which has already been granted but is more than 2 years old?  
If so, give the number and date of the earlier permit, and answer only items 6, 8, 9 and 10 below.  
Number: \_\_\_\_\_ Date: \_\_\_\_\_
  
4. What do you want to use the borehole for?  
(Fill in the blank spaces)  
Domestic purposes for . . . houses,  
Agriculture
  - to irrigate crops on ..... hectares.
  - for horticulture on . . . hectares.
  - for a woodlot of . . . hectares.  
Livestock  
How many animals will use the borehole?
  - donkeys or horses . . . .
  - cattle . . . .
  - smaller animals . . . .
  - game . . . .
  - trek route . . . .  
Construction or other purposes  
What exactly will the water be used for?  
  
How much water will be used?  
.... . litres/cubic metres per day.  
  
Will the borehole be used to dispose of water or waste?
  
5. Which drilling company will do the job? (If you know)
  
6. For which Ministry, Department or Public authority should the permit be issued?  
(Name)  
(Address)
  
7. Your signature .....
- Your position .....

**IMPORTANT: ALL PUBLIC AUTHORITIES OTHER THAN THE DIRECTOR OF GEOLOGICAL SURVEY AND THE DIRECTOR OF WATER AFFAIRS ARE REQUIRED TO OBTAIN A PERMIT BEFORE A BOREHOLE IS CONSTRUCTED. IT IS AGAINST THE LAW FOR WORK TO START UNTIL YOU KNOW THAT A PERMIT HAS BEEN GRANTED. BOTH YOU AND THE DRILLER COULD BE PROSECUTED!**

When you have filled in this form, you should lodge it with the Secretary of the Land Board for the area where it is proposed to construct the borehole.  
You will have to pay a fee when you do. This is to cover the cost of processing it and advertising it to people who might be harmed if the application is granted.



You will be told the result of your application as soon as possible.  
Have you attached the documents requested in question 1?

(Reverse side of form)  
**(FOR OFFICE USE ONLY)**

1. **District Officer, Lands**  
Approval recommended/not recommended.  
Reasons, if not recommended .....  
Signature: ..... Date: .....  
Stamp:
  
2. **Land Board or Director, Surveys and Lands**  
Application approved/not approved.  
Reasons, if not approved .....  
Signature: ..... Date: .....  
Stamp:
  
3. **Director, Water Affairs**  
Application approved/not approved.  
Reasons, if not approved .....  
Signature: ..... Date: .....  
Stamp:
  
4. **Director, Geological Survey**  
Application approved/not approved  
Reasons, if not approved .....  
Signature: ..... Date: .....  
Stamp:
  
5. **Water Resources Council**  
Application approved/not approved.  
Reasons, if not approved .....  
Signature: ..... Date: .....  
Stamp:

Step Two - Review of applications

III - CAYMAN ISLANDS - Water Authority Regulations, 1985

Schedule 1

Notice of Application for a Licence to Abstract Groundwater

In accordance with the Water Authority Law, I *(Name)* hereby give notice of my intention to ... *abstract groundwater for other than domestic use ...* on Block No. ... ; Parcel No. ... : being in the district of *(district)*. Plans for this proposal can be viewed free of charge at the Water Authority office at any reasonable hour. Any person wishing to make objections should do so in writing to the Water Authority within 14 days of the date of publication of this notice.

3.2 Format of permits

1 SOUTH AUSTRALIA - Underground Waters Preservation Regulations, 1970

Schedule 5  
Permit

Permit No. ....

Well No. .... (where applicable)

Subject to full compliance with all the procedures, specifications and limitations contained, or referred to, in the conditions set out below, permission is hereby granted to:

.....  
of .....

to ..... in accordance with sound water well drilling practices to the satisfaction of the Minister, at the location specified on the attached plan, within:

Allotment No. .... Section ..... Hundred of .....

Certificate of title vol. .... folio ..... L.T.O. plan No. ....

or Block No. .... Lease No. ....

CONDITIONS

Issued for and on behalf of the Minister of Mines,

Date:

.....

*Director of Mines*

*and*

*Secretary to the Minister of Mines*

II - WESTERN AUSTRALIA - Rights in Water and Irrigation (Construction and Alteration of Wells) Regulations, 1963

Form 3  
License under Section 20

No. of License .....

Name and address and occupation of licensee .....  
Location of well ..... Municipal district of the .....  
Latit. Location or Lease No. ....  
Position .....

Thing which may be done pursuant to this License, i.e., .....  
commence construct enlarge, deepen, alter, or draw .....  
water from a well .....

Purpose for which the licensee may utilise the water .....

Period for which the license is issued .....

Special terms, limitation and conditions (if any) upon .....  
which the license is issued .....

This license is issued upon the conditions:

- (i) that the information required under regulations 9 and 10 is forwarded as required;
- (ii) that the quantity of water drawn from this well and the rate of draw does not exceed the figure which the Minister may from time to time determine under section 21 of the Act.

The work described hereon, and referred to in the application and plans and descriptions and statement of the purpose for which it is proposed to utilise the water deposited by or on behalf of the abovenamed ..... as finally approved by me, is hereby declared to be a licensed work under the Rights in Water and Irrigation Act, 1914 (as amended).

This license is issued subject to and in accordance with the regulations relating to artesian and non-artesian wells, made under the Act.

Given under my hand at Perth this ..... day of ..... 19..

.....  
Minister for Works and Water Supplies

NOTE: No alteration shall be made in connection with the well, nor shall the water from the well be used for purposes other than those authorised by this license. See regulation 11.

On expiry of term for which license is issued, application for renewal may be made on Form No. 1<sup>1</sup>.

<sup>1</sup> Omitted.

III - JAMAICA - Underground Water Control (Licensing) Regulations, 1981

Form A  
Licence to Drill

Permission is hereby granted subject to the general provisions of the Act and any regulations which may be in force to ..... of ..... to drill or have drilled a well at the location described in application No. .... This well shall have maximum diameter of ..... inches and shall be drilled to a depth of not more than ..... feet.

Included in this licence is permission subject to the general provisions of the Act and any regulations which may be in force to abstract water from the well at a rate not exceeding ..... imperial gallons per minute

The following provisions are attached to the grant of this licence .....

Signed .....  
Secretary, Underground Water Authority

IV - KENYA - Water (General) Rules

Form WAB 30  
Authorization to Sink a Well or Borehole

No. .... Date .....

Well/Borehole W.A.B. No. ....

Land Registration No. of Farm .....

No. permit will bear when issued .....

.....(full name) of .....

having filed the necessary application for a permit to extract groundwater and having complied with the provisions of the Water Ordinance and the Rules thereunder relating to groundwater, is authorized to construct a well/borehole subject to the following conditions:

1. Notice must be given when construction commences.
2. Within one month of completion of the work, a Borehole Record in form No. W.A.B. 28<sup>1</sup> and borehole samples must be submitted to the Water Apportionment Board.

.....  
*Chairman of the Water Apportionment Board*

<sup>1</sup> Omitted.

VI - MALAWI - Water Regulations, 1969

Form WRB.4

Grant of Water Right/Certificate of Existing Rights\* in Respect of Ground Water

Borehole/well W.R.B. No. ....

Date .....

Registered No. of Land .....

..... of .....

is authorized \*to construct the above borehole/well\* and to abstract water from the above borehole/well\* for the term of ..... years from the ..... at a rate not exceeding ... .. gallons per day for ..... purpose/s, paying therefor the annual rent of £ ..... in advance on the first day of April in each year. This Grant-Certificate\* is issued subject to the provisions of the Water Resources Act and of the Regulations thereunder now in force, or which may come into force during the continuance of this Grant/Certificate\* or any renewal thereof.

Dated this ..... day of .....19..

.....

*Minister of Natural Resources/Chairman, Water Resources Board*

\* Delete as appropriate

IX - CAYMAN ISLANDS - Water Authority Regulations, 1985

Schedule 1  
Groundwater Abstraction Licence

1. Licence No.
2. Licence holder;
3. Address:
4. Location of well: Parcel No.                      Block No.
5. Type of well:
6. Works authorized:
7. Date by which works to be completed:
8. Maximum daily abstraction quantity:
9. Maximum abstraction rate.
10. Purpose of use;
11. Date of expiration;
12. Fee:    Paid:

This licence is granted subject to the provisions of the Water Authority Law No. 18 of 1982, and the special conditions specified.

Failure to comply with the provisions of the Law, or with the terms and conditions of this licence may result in the penalties specified in section 5(11) and (13) of the Law, and the modification or revocation of this licence.

Date:

Signature and seal of Authority:



**XI - BOTSWANA - Draft Groundwater Regulations**

**Fourth Schedule  
Permit to Construct or Deepen a Private Water Borehole**

(Name and address of person  
to whom permit is being granted)

Permit No. .... Date: .....

1. You, or the syndicate for whom you applied, in your application dated .... have been granted a permit to construct or deepen the following borehole:  
District: .....  
Locality: .....  
Nearest village/settlement: .....
2. You will only be able to use water from the borehole, if a water right is granted, for the following purpose:
3. The pumping rate must not exceed ..... cubic metres/day.
4. If the borehole is not completed within 2 years of the date of this permit, you must lodge another application so that an extension can be granted.

**IMPORTANT. THIS PERMIT IS NOT A RIGHT TO TAKE WATER FROM THE BOREHOLE. BEFORE YOU CAN USE THE BOREHOLE, YOU WILL NEED TO COMPLETE THE DRILLING REPORT AND APPLICATION FOR A WATER RIGHT ENCLOSED WITH THIS PERMIT, AND RETURN IT TO THE DIRECTOR OF WATER AFFAIRS. THE WATER RESOURCES BOARD WILL NORMALLY GRANT YOU A WATER RIGHT SOON AFTER YOU RETURN THESE DOCUMENTS.**

5. You must give the driller a copy of this permit before he commences drilling. It is against the law for him to start drilling without having a copy.

**There are conditions on the back of this page which your driller must observe. Please read them, and see that he follows them.**

..... Stamp:  
Secretary, Water Resources Council  
(Reverse side of form)

**The driller must do the following things:**

1. You must obtain a copy of this permit. It is against the law to drill a borehole without a permit.
2. You must keep the copy with you while the borehole is being drilled, and produce it to any public official who asks to see it.
3. You must make a log of the borehole, which records measurements of the strata encountered; the levels at which water is found; and the level at which water ultimately rests.
4. You must also keep samples of strata encountered at intervals of not more than 3 metres, and label them properly.
5. You must record the results of any pumping tests which you undertake, and keep a properly labelled sample of the water.
6. The Director of Geological Survey will give you forms on which to record the information required by paragraphs 3 and 5 and containers for the samples required by paragraphs 4 and 5.
7. You must make sure that the completed forms and samples taken reach the Director of Geological Survey within one month of when you complete or abandon the borehole.
8. If unsuitable or insufficient water is found at the location specified in this permit, other boreholes may be drilled within a radius of 1 kilometre of that location. If you drill more than one bore, you must still comply with conditions 2, 3, 4, 5 and 7 for every borehole, even if one or more is abandoned.

**IF YOU FAIL TO DO ANY OF THESE THINGS, OR DELIBERATELY**

**PROVIDE THE DIRECTOR OF GEOLOGICAL SURVEY WITH FALSE**

**INFORMATION, YOU MAY BE PROSECUTED.**

Fifth Schedule  
Permit to Construct or Deepen a Government Water Borehole

(Name and address of Ministry, Department or  
Public Authority to which permit is being granted)

Permit No. .... Date: .....

1. The Ministry, Department or Public Authority set out above, for which an application was made on ..... has been granted a permit to construct or deepen the following borehole:  
District: .....  
Locality: .....  
Nearest village/settlement: .....
2. Water will only be able to be used from the borehole, if a water right is granted, for the following purpose:
3. The pumping rate must not exceed ..... cubic metres/day.
4. If the borehole is not completed within 2 years of the date of this permit, you must lodge another application so that an extension can be granted.

**IMPORTANT: THIS PERMIT IS NOT A RIGHT TO TAKE WATER FROM THE BOREHOLE. BEFORE YOU CAN USE THE BOREHOLE, YOU WILL NEED TO COMPLETE THE DRILLING REPORT AND APPLICATION FOR A WATER RIGHT ENCLOSED WITH THIS PERMIT, AND RETURN IT TO THE DIRECTOR OF WATER AFFAIRS. THE WATER RESOURCES BOARD WILL NORMALLY GRANT YOU A WATER RIGHT SOON AFTER YOU RETURN THESE DOCUMENTS.**

5. You must give the driller a copy of this permit before he commences drilling. It is against the law for him to start drilling without having a copy.

There are conditions on the back of this page which your driller must observe. Please read them, and see that he follows them.

..... Stamp:

Secretary, Water Resources Council

(Reverse side of form)

The driller must do the following things:

1. You must obtain a copy of this permit. It is against the law to drill a borehole without a permit.
2. You must keep the copy with you while the borehole is being drilled, and produce it to any public official who asks to see it.
3. You must make a log of the borehole, which records measurements of the strata encountered; the levels at which water is found, and the level at which water ultimately rests.
4. You must also keep samples of strata encountered at intervals of not more than 3 metres, and label them properly.
5. You must record the results of any pumping tests which you undertake, and keep a properly labelled sample of the water.
6. The Director of Geological Survey will give you forms on which to record the information required by paragraphs 3 and 5 and containers for the samples required by paragraphs 4 and 5.
7. You must make sure that the completed forms and samples taken reach the Director of Geological Survey within one month of when you complete or abandon the borehole.
8. If unsuitable or insufficient water is found at the location specified in this permit, other boreholes may be drilled within a radius of 1 kilometre of that location. If you drill more than one bore, you must still comply with conditions 2, 3, 4, 5 and 7 for every borehole, even if one or more is abandoned.

**IF YOU FAIL TO DO ANY OF THESE THINGS, OR DELIBERATELY**

**PROVIDE THE DIRECTOR OF GEOLOGICAL SURVEY WITH FALSE**

**INFORMATION, YOU MAY BE PROSECUTED.**

3.3 General obligations of permit holders

1 - SOUTH AUSTRALIA - Underground Waters Preservation Regulations, 1970

Schedule Six  
Permit Completion Advice

To: The Minister of Mines  
c/o Department of Mines

Well No.  
Permanent:.....  
Temporary:.....

In accordance with section 19 of the above Act, I hereby advise particulars of:

- \* (a) The Completion
- \* (b) The Abandonment

of the work specified in PERMIT No. ....

\* Strike out line not applicable

Name of permit holder (BLOCK letters).....  
 Postal address.....  
 Property on which the work was carried out:  
 Allotment No. .... Section No. .... Hundred of .....

Name of driller .....  
 Drilling commenced .....  
 Drilling completed .....

If abandoned before completion of permitted work, state reason .....

DETAILS OF WELL

If new well:

Final depth ..... ft.

Details of casing(s) left in well:

Length ..... ft ..... in. Diameter ..... in.  
 Length ..... ft ..... in. Diameter ..... in.

Particulars of sand screen .....  
 or slotted casing or liner .....

Particulars of cementing .....

If work on existing well:

Original depth ..... ft.

Final depth ..... ft.

Details of casing(s) in well:

Before commencement of work:

Length ..... ft ..... in. Diameter ..... in.  
 Length ..... ft ..... in. Diameter ..... in.

After completion of work:

Length ..... ft ..... in. Diameter ..... in.  
 Length ..... ft ..... in. Diameter ..... in.

Particulars of sand screen .....  
 or slotted casing or liner .....

Particulars of cementing .....

DETAILS OF PUMP

Particulars of pump installed by .....

(1) Type ..... (2) Depth installed .....ft.

(3) Powered by (electric, diesel, etc.) .....

(4) H.P. or watts.....

(5) Nature of discharge, (dam, trenches, sprinklers, etc.) .....

NOTE If no pump is installed within 30 days of completion of work the "Completion Advice" must be forwarded without this information which must be supplied immediately the pump is installed.

R                    E                    M                    A                    R                    K                    S

Date: .....

Signature of Permit Holder

Schedule Seven  
Weekly Record of Daily Drilling

WEEKLY RECORD OF DAILY DRILLING FOR PERMIT NO. ....

Permit holder.....

Address .....

The following information is supplied in accordance with the provisions of Regulation 10 under the above Act I certify that I have:

- (1) Taken and retained a sample of not less than 28 fl. oz. weight of each water cut; and
- (2) Taken and retained a sample of not less than 1/2 lb. weight at each change of strata encountered or at intervals not exceeding every 10ft

Water Struck: Usable or Saline?

(1) .....ft. ....

(2) .....ft. ....

(3) .....ft. ....

(4) .....ft. ....

(5) .....ft. ....

Level of water cut at ..... ft. below ground surface:

- (1) Before development ..... ft.
- (2) Before pump/bailer test ..... ft.
- (3) After pump/bailer test ..... ft.

Estimated quantity ..... g.p.h. Pump/bailer test ..... hours

Depth of bore ..... ft. Diameter of hole ..... in.

Casings left in bore.

Length ..... ft. Diameter ..... in.

Length ..... ft. Diameter ..... in.

Pressure cemented? (yes or no) ..... }  
 ..... } Quantity of cement used ..... bags.

or Casing Shoe cemented? ..... }

Depth screen set below ground surface ..... ft.

Details of screen (or slotted casing):

Length ..... ft. Diameter ..... ft. Opening .....

Office Use ONLY

WATER CUT as set out in following Table:

Depth in Ft. Below Ground Surface	Water Level Below Ground Surface	Galls. per hour	How Tested e.g. Bailer or pump	p.H.	Total Salts p.p.m.	Analysis No.

WEEK ENDING SATURDAY / /19

Date	Distance drilled			Depth to which casing set and diameter of casing	Depth at which change occurs		Description of Strata passed through	Drilling Conditions e.g. hard, soft, casing, hanging etc
	Feet	From Feet	To Feet		From Feet	To Feet		

Date drilling commenced / / 19

Date drilling completed / / 19 (Required for final week only)

Date / / 19

Signature of Driller: .....

**II - WESTERN AUSTRALIA - Rights in Waters and Irrigation (Construction and Alteration of Wells) Regulations, 1963**

**Form 4  
Monthly or Final Statement in Respect of Artesian Wells being  
Constructed, Enlarged, Deepened, or Altered under License**

---

Name and address of licensee \_\_\_\_\_

---

Location of well, stating Municipal District and lot or location No. \_\_\_\_\_

---

The several casings used, with the names of the makers and the weight per running foot of each size, and whether of soft wrought iron or of mild steel. \_\_\_\_\_

---

Diameter and length of casings inserted, and whether whole or perforated. \_\_\_\_\_

---

If perforated, the sizes and lengths, with the position of each perforated length in the bore. \_\_\_\_\_

---

The depth reached in the well \_\_\_\_\_

---

The depth from the surface, with the thickness and character of each of the different beds of strata pierced. \_\_\_\_\_

---

Particulars of water struck (if any), whether salt, brackish or fresh, and the depths from the surface at which each water-bearing bed was struck \_\_\_\_\_

---

Also, the height above ground level to which the water will rise in the casing. \_\_\_\_\_

---

The approximate daily volume of the flow of artesian water from each artesian water-bearing bed tapped, and the final or total daily volume from the well on its completion. The day to consist of twenty-four hours. \_\_\_\_\_

---

I ..... of ..... in the State of Western Australia, being the holder of a licence for the construction, enlargement, deepening, or alteration of an artesian well situated at ..... in the Municipal District of the ..... hereby forward statement (for the month of) ..... 19...., in respect of the abovementioned work.  
Date: .....

.....  
Signature of Licensee

To the Minister for Works and Water Supplies.

**NOTE:** If work suspended, or fishing operations only carried on, state that fact.  
The head driller of a bore may make out the monthly statements, also the final statements, but the correctness of any of such statements must be verified as far as practicable by the licensee or his local representative and forwarded by him to the Minister for Works and Water Supplies.  
If work completed this statement must be marked FINAL.

III - WESTERN AUSTRALIA - Rights in Waters and Irrigation (Construction and Alteration of Wells) Regulations, 1963

Form 5  
Final Statement in Respect of Non-artesian Wells being Constructed,  
Enlarged, Deepened, or Altered under License

---

Name and address of licensee \_\_\_\_\_

---

Location of well, stating Municipal District and lot or location No. \_\_\_\_\_  
\_\_\_\_\_

---

Diameter and length of casings inserted, and whether whole or perforated. \_\_\_\_\_  
\_\_\_\_\_

---

If perforated, the sizes and lengths, with the position of each perforated length in the bore. \_\_\_\_\_  
\_\_\_\_\_

---

The depth reached in the well. \_\_\_\_\_

---

The depth from the surface, with the thickness and character of each of the different beds of strata pierced. \_\_\_\_\_  
\_\_\_\_\_

---

Particulars of water struck (if any), whether salt, brackish or fresh, and the depths from the surface at which each water-bearing bed was struck. \_\_\_\_\_  
\_\_\_\_\_

---

Also, the height above ground level to which the water will rise in the casing. \_\_\_\_\_  
\_\_\_\_\_

I, \_\_\_\_\_ of \_\_\_\_\_, in the State of Western Australia, being the holder of a licence for the construction, enlargement, deepening, or alteration of a non-artesian well situated at \_\_\_\_\_ in the Municipal District of the \_\_\_\_\_ hereby forward the statement under regulation No. 10 in respect of the above-mentioned work.  
Date: \_\_\_\_\_

Signature of Licensee

To the Minister for Works and Water supplies.

**NOTE** If work suspended, or fishing operations only carried on, state that fact.  
The head driller of a bore may make out the final statements, but the correctness of such statements must be verified as far as practicable by the Licensee or his local representative and forwarded by him to the Minister for Works and Water Supplies.



IV - JAMAICA - Underground Water Control (Abstractions) Regulations, 1961

First Schedule  
Annual Return

Geological Survey Ref.  
No. ....

Full address of premises in which underground work (well,  
borehole, adit or other work) is situated .....  
Name of well, borehole, adit or other work for which this  
return is made .....  
Name of person making the return, and address if different  
from that quoted above .....

I certify that, according to the records kept by the abovenamed person:

- (1) The total quantity of water abstracted during the year ended 31st March, 19... from the underground work described above was ..... imperial gallons.
- (2) The rest level of the water therein on the ..... March, 19.... was (..... feet) (unascertainable) below ..... which is .. feet above/below ground level measured by .....
- (3) The pumping level of water therein on the ..... March, 19...., when water was being abstracted at the rate of ..... imperial gallons per minute, was ..... feet below/above the ground level.

(Date) .....

(Signature) .....

3.4 Management of permits

II - JAMAICA - Underground Water Control (Licensing) Regulations, 1961

Second Schedule - Form B  
Licence to Increase Rate of Abstraction of Underground Water

Permission is hereby granted subject to the general provisions of the Act and any regulations which may be in force to ..... of ..... to increase the rate of abstraction of water from the well in ..... known as ..... from ..... imperial gallons per minute to ..... imperial gallons per minute.

The following provisions are attached to the grant of this licence.....  
.....

Signed: .....  
Secretary, Underground Water Authority

4. DEALING WITH "EXISTING" WELLS

II - SOUTH AUSTRALIA - Underground Waters Preservation Regulations, 1970

Schedule Three  
Notification of an Existing Well or Bore

To: The Minister of Mines,  
c/o Department of Mines

In accordance with section 7 of the above Act, I hereby advise particulars of the undermentioned well or bore on the property owned or occupied by me within a DEFINED AREA as prescribed pursuant to section 61(a) of the above Act.

NOTE: 1. A separate advice is required for each well or bore on the property.  
2. Irrespective of whether the construction of the well or bore is complete or not an advice must be forwarded.

Name of owner (BLOCK letters) .....  
Postal address .....  
Name of occupier (BLOCK letters) .....  
Postal address .....  
Property on which bore is located:  
Allotment No. .... Section No. .... Hundred .....  
If freehold: L.T.O. plan No. .... Certificate of Title Vol. .... Fol. ....  
If Crown lease: Block No. .... Type of lease and No. ....  
What is area of property? ..... acres .....roods.  
Does this notification refer to a well, a bore, or a combined well and bore?  
I state which: .....  
Is the construction of the well or bore complete or incomplete? .....  
How many other wells or bores are on the property? .....

DETAILS OF WELL OR BORE

Depth of well or bore ..... ft.  
Depth at which water stands below ground surface ..... ft.  
Details of casing(s) or lining(s): Length ..... ft. Diam ..... ft.  
Length ..... ft. Diam ..... ft.  
Materials used as casing(s) or lining(s) .....  
Type of screen installed (if any) ..... Length .....ft. Diam ..... in.  
If used for Water Supply, is it for:  
(a) Domestic purposes? .....  
(b) Stock watering? .....  
(c) Irrigation? .....  
or  
(d) Industrial purposes? .....  
If used for Irrigation, state acreage of usual crops irrigated annually:  
..... acres  
..... acres  
..... acres  
..... acres  
State salinity of water, if known:  
(a) ..... grains per gallon  
or  
(b) ..... parts per million  
If used for Drainage, what is type?:  
(a) Domestic sullage .....  
(b) Septic tank effluent .....  
or  
(c) Industrial wastes .....  
If used for Industrial Waste, what is:  
(a) Nature of waste? .....  
and  
(b) Quantity drained? ..... gall per day.  
If waste contains poisonous or toxic substances give details .....

DETAILS OF DRILLING OF WELL OR BORE (IF KNOWN)

Name of person or company who drilled the well or bore .....  
.....  
Year in which well or bore was drilled .....  
Any information you may have concerning the nature and thickness of soils, rocks, etc., penetrated by bore should be attached. If complete log of bore is available, please attach copy.

DETAILS OF PUMPING FROM WELL OR BORE

State average number of hours per week well or bore is pumped ..... hours

State average number of weeks per year well or bore is pumped ..... weeks

State rate of pumping in gallons per hour:

(a) Normal ..... gall.

(b) Maximum ..... gall.

State:

(a) Type of pump used ..... Depth pump set ..... ft.

(b) Diameter of bowls ..... No. of stages .....

State:

(a) Type of power used on pump (electric, diesel, petrol, windmill, etc.) .....

(b) Horsepower or watts of engine .....

State nature of discharge (dam, trenches, sprinklers, etc.) .....

North  
==

Draw sketch showing position of this well or bore  
in relation to property boundaries.

Date: .....

Signature of Owner or Occupier: .....

**5. LICENSING OF WELL DRILLERS**

**5.1 Granting of licences or registering as a well driller**

**Step One - Applying to be Registered as a Driller or for a Driller's Licence**

**1 - AUSTRALIA - NORTHERN TERRITORY - Control of Waters Regulations**

**Third Schedule  
Application to be Registered as a Driller**

To: The Administrator,  
Darwin, Northern Territory of Australia

In pursuance of section sixteen H of the Control of Waters Ordinance, 1938-1961, I hereby make application to be registered as a driller, and supply the following particulars for that purpose.

1. Full name: .....
  2. Full postal address to which certificate and other notifications are to be sent: .....
- .....  
Make and model of drilling rig used at present: .....

Signature: .....  
Date: .....

II - SOUTH AUSTRALIA - Underground Waters Preservation Regulations, 1970

Schedule Eight  
Application for Well Driller's Licence

OFFICE USE ONLY

Appln. No. ....

Date of Receipt

of Fee: .....

To: The Minister of Mines,  
c/o Department of Mines

I, ..... (Full name)  
of ..... (Postal Address)  
born ..... 19, at ..... in .....  
(Date of Birth) (Town) (Country)

resident in Australia since 19, hereby apply for a WELL DRILLER'S LICENCE in the State of South Australia.  
I enclose the prescribed fee of \$10 and submit hereunder statements setting out my practical experience.  
(Details to be filled out by the applicant personally).

RECORD OF EXPERIENCE OF WATER WELL DRILLING

(1) Number of years of drilling experience:

(a) As assistant to driller ..... years.

Employer: .....

Address: .....

(b) As driller:

(i) employed ..... years.

Employer: .....

Address: .....

(ii) on own account ..... years.

(2) Approximate number of wells drilled in past five years .....

(3) In what districts has drilling been carried out? (See map overleaf<sup>1</sup> and state zone numbers) .....

(4) (a) Maximum depth drilled by you ..... ft.

Where? .....

Client .....

Address .....

(b) Approximate water supply obtained from this well ..... g.p.h.

(5) Have you personally:

(a) Installed sand screens? .....

(b) Set packers? .....

(c) Pressure cemented casing? .....

(d) Cemented casing by dump bailing methods? .....

(e) Installed pumps? .....

(f) Conducted pump tests .....

(g) Set several casing sizes in one hole? .....

(h) Straightened holes? .....

(i) Plugged wells? .....

Particulars of the above together with names and address of clients must be produced at interview or examination.

<sup>1</sup> Omitted

DESCRIPTION OF EQUIPMENT USED

(8) State types of rigs and engines used.

	1	2	3
Type of rig			
Capacity of rig			
Type and h.p. of engine			

GENERAL INFORMATION

(7) Do you hold, or have you held, a Driller's Licence for another State or Country? If so:

- (a) What State or Country? .....
- (b) What type of Licence? .....
- (c) How long held? .....
- (d) If no longer held state why cancelled .....

All the information contained in this application has been filled out by me and carefully checked and is correct in every particular: AND I make this solemn declaration conscientiously believing the same to be true, and by virtue of the provisions of the Oaths Act, 1936.

Signature of Applicant .....

Declared and subscribed at ..... in the State of South Australia,  
 this ..... day of ..... on thousand nine hundred and .....

Before me:

10 cents stamp duty

.....  
*A Justice of the Peace in and for the State of South Australia*

III - KENYA - Water (General) Rules

Form WAB 32  
Application for Borehole Contractor's Licence

To: The Chairman,  
Water Apportionment Board

1. Name (in full) .....  
Address .....
2. Nature of business .....
3. Particulars of contracts carried out (not less than three):
  - (a) (i) Description .....
  - (ii) Value .....
  - (iii) Place .....
  - (iv) For whom carried out .....
  - (v) Date works carried out .....
  - (b) (i) .....
  - (ii) .....
  - (iii) .....
  - (iv) .....
  - (v) .....
  - (c) (i) .....
  - (ii) .....
  - (iii) .....
  - (iv) .....
  - (v) .....
4. References; names and addresses of not less than two:
  - (a) .....
  - (b) .....
5. State maximum depth to which you can drill:
  - (a) 6" lined borehole in soft formation .....feet.
  - (b) 8" lined borehole in soft formation .....feet.
  - (c) 6" unlined borehole in hard formation .....feet.
  - (d) 8" unlined borehole in hard formation .....feet.
  - (e) 10" borehole in hard formation .....feet.
  - (f) 4" lined borehole in soft formation .....feet.
  - (g) 4" unlined boreholes in hard formation .....feet.
6. State the maximum pumping rates you can carry out for any 6" borehole drilled:
  - (a) Up to 100 feet depth .....gallons per hour.
  - (b) Up to 200 feet depth .....gallons per hour.
  - (c) Up to 300 feet depth .....gallons per hour.
  - (d) Up to 400 feet depth .....gallons per hour.
  - (e) Up to 500 feet depth .....gallons per hour.
  - (f) Up to 600 feet depth .....gallons per hour.
7. State details of any special facilities you have for testing large yields from boreholes, such as air lift, etc.
8. State whether your equipment includes pumping apparatus for cementation works under pressure including a test plug for 6" boreholes.  

yes/no
9. State type of drills available (percussion, rotary, diamond, etc.), and the size of boreholes you can drill with the various types.

I agree to supply any further information which may be required by the Water Apportionment Board.

Date: .....

.....  
Signature of Applicant



Step Three - Formatting of licences

II - SOUTH AUSTRALIA - Underground Waters Preservation Regulations, 1970

Schedule Nine  
Well Driller's Licence 69/.....

Surname .....  
Christian Names .....  
Address .....  
Date of Birth .....  
Signature of Licensee .....

S.A. DEPARTMENT OF MINES  
Underground Waters Preservation Act, 1969  
No. 69/.....

.....  
is hereby licensed, for a period of three years from the date hereof, as a water well driller on, or in connection with, the construction of wells of such types, operating such drilling equipment, in such localities within the State of South Australia where a licence is, or may be, required, as specified hereunder.

Types of Wells .....  
Drilling Equipment .....  
Localities (see map herein)'  
Dated at Adelaide this .....day of ....., 19..

.....  
*Minister of Mines*

LICENCE RENEWAL

Licence No. .... is hereby renewed for a period of three years from the date hereof subject to the following conditions:

Types of Wells .....  
Drilling Equipment .....  
Localities (see map herein)'  
Dated at Adelaide this .....day of ....., 19..

.....  
*Minister of Mines*

LICENCE RENEWAL

Licence No. .... is hereby renewed for a period of three years from the date hereof subject to the following conditions:

Types of Wells .....  
Drilling Equipment .....  
Localities (see map herein)'  
Dated at Adelaide this .....day of ....., 19..

.....  
*Minister of Mines*

LICENCE RENEWAL

Licence No. .... is hereby renewed for a period of three years from the date hereof subject to the following conditions:

Types of Wells .....  
Drilling Equipment .....  
Localities (see map herein)'  
Dated at Adelaide this .....day of ....., 19..

.....  
*Minister of Mines*

This Licence shall not be valid unless it is signed by the Minister of Mines and bears the seal and has been countersigned by the Licensee

This Licence is issued pursuant to the provisions of the Underground Waters Preservation Act, 1969 and the Regulations made thereunder.

10 cents stamp duty

.....  
*A Justice of the Peace in and for the State of South Australia*

1 Dated . . . . .

III - CAYMAN ISLANDS - Water Authority Regulations, 1985

Schedule 1  
Well Driller's Licence

1. Licence No.
2. Licence Holder:
3. Address:
4. Date of expiration:
5. Fee:

Paid:

This licence is granted subject to the provisions of the Water Authority Law No. 18 of 1982, and the special conditions specified.

Failure to comply with the provisions of the Law, or with the terms and conditions of this licence may result in the penalties specified in section 5(1) and (3) of the Law, and the modification or revocation of this licence.

Date:

Signature and Seal of Authority:



**APPENDIX IV**

**FORMS UNDER**

**CHAPTER IV**

**WATER RESOURCES DEVELOPMENT**



2. GOVERNMENT CONTROL OF WATER DEVELOPMENT WORKS AND STRUCTURES

1. MALAWI - Water Regulations, 1969

Form WRB.1  
Application for a Grant of Water Rights/  
Certificate of Existing Water Rights\*

Schedule F  
Construction of Dam

<p>State the following:</p> <p>1. (a) Nature of stream bed at site, e.g. "sound rock", "fractured rock", "soil", "sand", etc.</p> <p>(b) Nature of walls of river at site, e.g. "sand", "soil", etc.</p> <p>(c) Will dam be founded on sound rock? State "Yes" or "No"</p> <p>(d) Will dam be founded on any material which may be eroded by underflow? State "Yes" or "No"</p> <p>(e) Description of type of dam, e.g. "earth", "earth with core wall" (stating kind, "concrete", "masonry", etc.</p> <p>(f) Length of crest of dam .....</p> <p>    Thickness at crest .....</p> <p>    Thickness at base .....</p> <p>    Greatest height of dam .....</p> <p>(g) Estimated area of reservoir at spillway level. .... acres</p>	
--	--

\* Delete as appropriate

<p>(h) Whether the submerged area at high flood level will be wholly within applicant's holding(s). If not, state names of owners of land etc. affected.</p> <p>(i) Whether one or both banks of the stream at the site of the dam are on the applicant's holding(s). If not, state names of owners of land etc. affected</p> <p>(j) Will any other works including weirs, already constructed or being constructed be affected by the head and/or tail water level of the proposed works? State "Yes" or "No". If "Yes" give full details of works affected.</p>	
<p>12) The following information is required if the dam exceeds 50 acre feet in capacity (14 million gallons approx ) or 15 feet in height:</p>	
<p>Catchment area:</p>	
<p>(a) Area of surface catchment</p>	<p>..... acres</p>
<p>(b) Maximum length of catchment</p>	<p>..... miles/yards/feet</p>
<p>(c) Average breadth of catchment</p>	<p>..... miles/yards/feet</p>
<p>(d) Ruling slope of catchment</p>	<p>..... in degrees or expressed as 1 ft.in</p>
<p>(e) Nature of ground of catchment (e.g. "rocky", "stony soil", "clay soil", etc.)</p>	<p>..... feet</p>
<p>(f) Vegetation of catchment (e.g. "forest", "shrub", "pasture", "crops", etc.)</p>	
<p>13) State if flood water is to be disposed of by means of:</p>	
<p>(a) The dam acting as a weir</p>	
<p>(b) By-pass(es) or waste weir(s) on one or both flanks</p>	
<p>(c) State width and depth of by-pass(es) below crest level of dam</p>	<p>..... wide ..... deep below crest level</p>
<p>(d) If by-pass(es) or waste weir(s) to be constructed state nature of material in which they will be excavated.</p>	
<p>(e) State whether such by pass(es) or waste weir(s) are to be lined. If so state material to be used.</p>	
<p>(f) Gradient of waste weir</p>	<p>..... feet</p>
<p>(g) State other type of method of disposal of flood water. Give details.</p>	

**(II) - UNITED KINGDOM - Water Resources (Licences) Regulations, 1965**

**Model Form 3**

**Application for a Licence under Section 36 to Obstruct or Impede  
the Flow of an Inland Water by Means of Impounding Works**

**APPLICANT**

- 1. Name of applicant in BLOCK LETTERS: .....
- 2. Address of applicant to which communications about this application are to be sent .....
- 3. Name and address of professional adviser or agent (if any) to whom communications about this application are to be sent .....

**INLAND WATER TO WHICH THIS APPLICATION RELATES**

- 4. Give the name of, or sufficient description to identify, the inland water (see note (a)) the flow of which will be obstructed or impeded by means of the impounding works you propose to construct or alter .....

**EXISTING LICENCE**

- 5. If a licence under section 36 of the Act is in force, authorising impounding works at the point at which you propose to construct works or at which the works you propose to alter are situated, give the serial number of that licence .....

**IMPOUNDING WORKS TO BE CONSTRUCTED OR ALTERED**

- 6. Give a brief description (with plans and sections) of the impounding works (see note (b)) you propose to construct or, if you propose to alter existing impounding works, give a brief description (with plans and sections) of the existing works and of the proposed alterations, sufficient to show the manner in which the works, when constructed or altered in accordance with your proposals, will obstruct or impede the flow of the inland water .....

**WORKS FOR IMPOUNDING WATER**

- 7. If you propose to construct or alter a dam, weir or other works whereby water may be impounded:
  - (a) state the object(s) of impounding water by means of the works (e.g. the provision of a reservoir as a source of supply, the provision of a reservoir as an ornamental lake, the provision of a reservoir for regulating the flow of the inland water referred to in paragraph 4 above or of some other inland water, giving the name of, or sufficient description to identify, that other inland water) .....
  - (b) state, by reference to height above Ordnance Datum (Newlyn), what the overflow level of the reservoir will be if the works are constructed or altered in the manner you propose .....
  - (c) state what capacity the reservoir will have at overflow level if the works are constructed or altered in the manner you propose .....
  - (d) if the reservoir will be used as a source of supply, specify the maximum quantity of water which will be required to be abstracted per year .....
  - (e) if water will be discharged from the reservoir downstream, or into the other inland water (if any) referred to in sub paragraph (a) above, whether to supplement the flow for the purposes of river regulation or to provide compensation water, and if the water will be so discharged with a view to maintaining a specified minimum flow or flows at a specified control point or points:
    - (i) specify (by reference to the map accompanying this application) (see note (c)) the point(s) at which the water will be discharged into the inland water .....
    - (ii) specify (by reference to the map accompanying this application) the control point(s) at which the flow(s) will be required to be maintained .....
    - (iii) specify the flow which will be required to be maintained at each control point .....
    - (iv) specify the method which will be used for measuring the flow at each control point .....
    - (v) state how you estimate that, if the works are constructed or altered in the manner you propose, the reservoir will be capable of yielding not only the quantities of water required to be discharged to maintain the specified minimum flow(s) at the specified control point(s) but also (where the reservoir will be used as a source of supply) the maximum quantity you have specified in sub-paragraph (d) above (see note (d)) .....



**WORKS FOR DIVERTING THE FLOW**

8. If you propose to construct or alter works for diverting the flow of the inland water in connection with the construction or alteration of a dam, weir or other works whereby water may be impounded, state how you estimate that the works, if constructed or altered in the manner you propose, will be capable of diverting the flow to the required extent .....

**FORMAL APPLICATION (see note (e))**

I hereby apply to the ..... River Authority for a licence under the Water Resources Act 1983 to obstruct or impede the flow of the inland water referred to in paragraph 4 above by means of impounding works, and I declare that to the best of my knowledge the statements made above are true.

I enclose with this application copies of the newspaper(s) dated ..... and ..... in which the notice in the form prescribed by the Water Resources (Licences) Regulations 1965 was published. I declare that the notice was also published in the London Gazette dated ..... and that a copy of the notice was served on ..... on the following authorities in accordance with section 28(1)(b) of the above-mentioned Act (see note (f)) .....

I also enclose the map required by the above-mentioned Regulations of 1965

Signed .....

\* [Authorised on behalf of .....]

Date .....

\*Delete where inappropriate

**It is an offence to make a false statement in applying for a licence. (See section 115 (1) of the Act.)**

**NOTES**

- (a) For the meaning of "inland water", see section 136(1) of the Act. (Section 2 is also relevant)
- (b) For the meaning of "impounding works", see section 36(1) of the Act.
- (c) The Water Resources (Licences) Regulations 1965 require the application to be accompanied by an Ordnance map showing certain particulars
- (d) All relevant statistics should be given, including gaugings and rainfall figures.
- (e) In the case of an application for a combined licence to obstruct or impede the flow of an inland water and to abstract, the FORMAL APPLICATION should be adapted as necessary, and should include such additional statements as to documents or evidence required or to be produced as are appropriate to an application for a separate licence to abstract and relevant to the case
- (f) Certain of the authorities mentioned in section 28(1)(b) of the Act are defined in section 135(1).

Application for a Permit to Construct a Dam or Dams on Watercourse  
having no Normal Flow

TO THE CHAIRMAN OF THE WATER APPORTIONMENT BOARD

1. Full name of applicant(s) (in block letters)	.....
2. Residence  Postal address	..... .....
3. (a) Land Reference No.(s) and district of applicant's holding(s)  (b) Land Reference No. of farm on which dam is to be constructed	..... .....
4. (a) Name of watercourse  (b) Is the watercourse situated in or does it abut upon or enter into a reserved area?	..... .....
5. (a) Estimated discharge of flood water  (b) How many months in the year is the river dry?	..... cusecs. ..... months.
6. Particulars of dam:  (a) Nature of stream bed at site, e.g. "soil", "rock", "sand", etc.  (b) Nature of walls of river channel at site, e.g. "soil", "rock", etc.  (c) Will dam be founded on sound rock? ("Yes" or "No")  (d) Will dam be founded on any material which may be eroded by any underflow?  (e) Description of dam, such as earth with core wall (stating kind), concrete, masonry, etc.	..... ..... ..... ..... .....



<p>7. Disposal of Excess Water Past dam; state if excess water is to be disposed of by means of:</p> <p>(a) The dam acting as a weir</p> <p>(b) By-pass(es) or waste weir(s) on one or both flanks</p> <p>(c) State width and depth of by-pass(es) below crest level of dam</p> <p>(d) If by-pass(es) or waste weir is to be constructed, state nature of material in which the waste weir channel will be excavated</p> <p>(e) Gradient of waste weir channel</p>	<p>(a) .....</p> <p>(b) .....</p> <p>(c) ..... width, ..... depth.</p> <p>(d) .....</p> <p>(e) .....</p>
<p>8. State the estimated period of construction of the works</p>	<p>.....</p>

9. The General Map No. .... and the following Plan Nos. .... which have been prepared in accordance with the Water Act and the Rules thereunder, and which are sent herewith, are hereby declared to be part of this application.

10. I attach hereto verification of the names of the registered owners of the land mentioned in paragraphs 3 and 6 above.

11. I agree to supply any further information which may be required by the Water Apportionment Board.

12. I enclose herewith ..... for Shillings ..... cents ..... to cover the prescribed fees for the permit applied for.

Date .....

.....

*Signature of Applicant or duly Authorized Agent*

3. DRAINAGE AND RECLAMATION OF SWAMPS AND MARSHLANDS

II - KENYA - Water (General) Rules

Form W.A.B. 5

Application for a Water Permit for the Drainage and Reclamation of a Swamp

To the Chairman of the Water Apportionment Board

1. Full name of applicant (in block letters)	.....
2. Residence Postal address	..... .....
3. Occupation	.....
4. Number(s) and locality of applicant's holding(s) <i>Or</i> Area of mining location or mining lease <i>Or</i> Other description of the applicant's holding	
5. (a) Description of land to be drained (b) Area of land to be drained (c) Description of land to be reclaimed (d) Area of land to be reclaimed	(a) ..... (b) ..... (c) ..... (d) .....
6. Name or description of body of water to be drained	.....
7. Does the body of water and/or swamp to be drained abut upon or extend into any Reserved Area?	
8. Describe clearly: (a) the point (if any) at which the water entering the swamp will be diverted (b) the point of storage (if any) (c) if the swamp is to be drained by the sinking of wells into a pervious stratum, state approximately the number of wells and show the positions thereof on the map	(a) ..... (b) .....  (c) .....

<p>9. Flow of body of water to be drained (this information is required to determine the water losses in the swamp); state as accurately as possible either:</p>			
<p>(a) Flow at entrance of swamp:</p>	<p>a. At entrance to swamp</p>	<p>b. At end of swamp</p>	<p>c. At any other point</p>
<p>(i) Breadth of water surface in feet</p>			
<p>(ii) Average depth of water in feet</p>			
<p>(iii) Surface velocity in feet per second</p>			
<p>(iv) Estimated discharge</p>			
<p>Or (b) If stream has been gauged by other method:</p>			
<p>(i) Discharge in cusecs</p>			
<p>(ii) Method of gauging</p>			
<p>State distance  Main points a, b, c, above on plan</p>	<p>a to b ..... feet/miles a to c ..... b to c .....</p>		
<p>10. State purpose for which drainage is required</p>			
<p>11. Whether it is proposed to use any or all of the water estimated to be saved by the drainage of the swamp (state "Yes" or "No") ..... If the answer above is in the affirmative, an application on form No. W.A.B. 13 must accompany this application.</p>			



13. DRAINAGE OF PUMPING:

- |  |                               |
|--|-------------------------------|
| (a) Type of pump   | (a) .....                     |
| (b) Type of driving machine  | (b) .....                     |
| (c) Brake horse-power (at sea level) of (b) above  | (c) .....                     |
| (d) Approximate elevation of pumping site above sea level                                    | (d) ..... feet.               |
| (e) How is pump driven from driving machine?   | (e) .....                     |
| (f) Internal diameter of suction pipe  | (f) ..... inches.             |
| (g) Height of suction  | (g) ..... feet.               |
| (h) Length of suction  | (h) ..... feet.               |
| (i) Height to which water is to be lifted above pump   | (i) ..... feet.               |
| (j) Internal diameter of delivery pipe   | (j) ..... inches.             |
| (k) Quantity of water to be pumped when plant is working at full working load                | (k) ..... gallons per minute. |
| (l) Will the pump and/or its accessories be situated on the holding of any other landholder? | (l) Yes/No                    |
| (m) If so, state L.R. Nos. or other details of holdings affected.                            | (m) .....                     |



<p>14. IF A DAM IS REQUIRED</p> <p>State whether a dam is necessary ("Yes" or "No")</p> <p>If a dam is necessary, state:</p> <p>(a) Nature of stream bed at site, e.g. "sound rock", "fissured rock", "soil", "sand", etc.</p> <p>(b) Nature of walls of river channel at site, e.g. "soil", "rock", etc.</p> <p>(c) Will dam be founded on sound rock? ("Yes" or "No")</p> <p>(d) Will dam be founded on any material which may be eroded by any underflow? ("Yes" or "No")</p> <p>(e) Description of dam, such as earth, earth with core wall (stating kind: concrete, masonry, etc.)</p> <p>(f) Fill in dimensions in space opposite</p> <p>(g) Estimated area of reservoir at spillway level</p> <p>(h) Whether the submerged area at high flood level will be wholly within applicant's holding(s). If not, state L.R. Nos. and names of owners of the land affected</p> <p>(i) Whether one or both banks of the stream at the proposed site of the dam are on applicant's holding. If not, state L.R. Nos. and names of owners of land, etc., affected</p> <p>(j) Will any other works including weirs, already constructed or being constructed, be affected by the head and/or tail water levels of the proposed works? Answer "Yes" or "No". If "Yes", give full details of works affected.</p>	<p>(a) .....</p> <p>(b) .....</p> <p>(c) .....</p> <p>(d) .....</p> <p>(e) .....</p> <p>(f) .....</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 80%;"></th> <th style="text-align: right; border-bottom: 1px solid black;">Feet</th> <th style="text-align: right; border-bottom: 1px solid black;">Inches</th> </tr> </thead> <tbody> <tr> <td>(f) Length of dam</td> <td>.....</td> <td>.....</td> </tr> <tr> <td>Thickness at crest</td> <td>.....</td> <td>.....</td> </tr> <tr> <td>Thickness at base</td> <td>.....</td> <td>.....</td> </tr> <tr> <td>Greatest height of dam</td> <td>.....</td> <td>.....</td> </tr> </tbody> </table> <p>(g) ..... acres.</p> <p>(h) .....</p> <p>(i) .....</p> <p>(j) .....</p>		Feet	Inches	(f) Length of dam	.....	.....	Thickness at crest	.....	.....	Thickness at base	.....	.....	Greatest height of dam	.....	.....
	Feet	Inches														
(f) Length of dam	.....	.....														
Thickness at crest	.....	.....														
Thickness at base	.....	.....														
Greatest height of dam	.....	.....														
<p>15. DISPOSAL OF FLOOD WATER PAST DAM</p> <p>State if flood water is to be disposed of by means of:</p> <p>(a) The dam acting as a weir</p> <p>(b) By-pass(es) or waste weir(s) on one or both flanks</p> <p>(c) State width and depth of by-pass(es) below crest level of dam</p> <p>(d) If by-pass(es) or waste weir is to be constructed, state nature of material in which the waste weir channel will be excavated</p> <p>(e) Gradient of waste weir channel</p>	<p>(a) .....</p> <p>(b) .....</p> <p>(c) ..... width.</p> <p>(d) .....</p> <p>(e) ..... fall in 100 feet.</p>															

GENERAL

16. State the licence, sanction or permit appurtenant to the land described in para. 5(a) which has already been granted. (If nil, state "Nil")	
17. State the estimated period of construction of the works	..... months.

18. The General Map No. .... and the following plans Nos. .... which have been prepared in accordance with the Water Act, and the Rules thereunder, and which are sent herewith, are hereby declared to be a part of this application.

19. State the period for which the water permit is required	
---	--

20. The address(es) of the owner(s) of the land(s), mining claims or mining leases which may be affected by the proposed works and whose name(s) and holding(s) is/are shown on the General Map referred to in paragraph 18 above is/are given in the schedule attached hereto. (If no lands are affected, state "Nil" on schedule referred to.)

21. The following report and/or documents are sent herewith in support of my application: (Here give Titles or Reference Nos.) .....

22. I attach hereto verification of the names of the registered owners of the lands mentioned in paragraphs 4 and 20 above.

23. I agree to supply any further information which may be required by the Water Apportionment Board.

24. I enclose herewith ..... for Shillings .. Cents ..... to cover the prescribed fee for the water permit applied for, and I understand that the balance, if any, between the above amount and the prescribed fee will be returned to me.

.....  
*Signature of Applicant or duly Authorized Agent*

Date .....

SCHEDULE REFERRED TO IN PARAGRAPH No. 20

<i>Landholder</i>	<i>Address</i>

INSTRUCTIONS FOR FILLING IN THE FORM

*(Please write distinctly)*

PARA. 1 State the names of all persons having an interest in the application. In the case of an association or a company, corporation, municipality, etc., the name of the association, company, corporation, municipality, etc., as the case may be, should be stated.

PARA. 2 If a company, state the registered office of the company in Kenya.

PARA. 4 Give an accurate description, the land registration number and the area of the land on each holding or farm where the water is to be used.

PARA. 6 The name or, if unnamed, a sufficient description of the spring, river or other body of water to identify it, and state the name of the body of water (if any) to which it is tributary.

PARA. 8 Describe as accurately as you can the various points mentioned, for example (9a): "At a point on the left bank of the river, 250 feet down-stream of the point where the south-west boundary of farm L.H. 21987 intersects the left bank of the Simba River."

PARA. 9 In order to gauge roughly the flow of stream select in the vicinity of the proposed point of diversion a length of the stream where the flow is steady and not turbulent. About the middle of this length select a site and measure the breadth of the surface of the stream at right angles to the direction of flow, say this is "a" feet. Then measure the depth of the water in feet at regular intervals (such as 3 inches, 6 inches or 1 foot, etc., depending on the size of the stream) across the line where the breadth was measured. Add up all the depths and divide by the number of times the depth has been measured: the result will be the average depth, say "b" feet. Mark a point 50 feet (or some other convenient distance) down-stream of the point where the breadth was measured and mark a similar point 50 feet up-stream from the point where the breadth was measured. Throw some object which will float into the centre of the stream and note the time in seconds it takes to cover the total distance between the two marks set out as above. The distance in feet divided by the time in seconds gives the central surface velocity say "c" feet per second.

Then the discharge of the stream in cusecs equals "a" x "b" x "c" x 0.7 approximately.

One cusec equals one cubic foot per second, equals 374 Imperial gallons per minute, equals 538,453 Imperial gallons per 24 hours.

In the case of a small spring or stream, the time noted to fill a vessel of known capacity should be observed, e.g. a 4 gallon petrol tin filled in 20 seconds; therefore discharge of spring equals  $4:20 \times 60$ , equals 12 gallons per minute, equals 12.374, or 0.032 cusecs approximately.

**APPENDIX V**

**FORMS UNDER**

**CHAPTER V**

**PROVISION OF WATER SUPPLIES TO THE PUBLIC**

3. SERVICE CONNECTIONS

1- SAINT CHRISTOPHER NEVIS AND ANGUILLA - Watercourses and Waterworks Regulations, 1973

Form 1  
Application for Water to be Supplied to Premises where the  
Applicant is the Owner

No.

Date Received

District

In accordance with the Watercourses and Waterworks Ordinance, Chapter 185 and the regulations made thereunder, I hereby apply for the premises described hereunder of which I am the owner to be connected to and supplied with water from the Waterworks.

I agree to pay all charges and costs payable under the Watercourses and Waterworks Ordinance or the regulations made thereunder.

- 1. Full name of Applicant .....  
(Block Capitals)
- 2. Postal address of Applicant .....
- 3. Description and number (if any) of premises concerned .....
- 4. Purpose for which the water is required .....  
(whether domestic or non-domestic)

Signature of Applicant .....

Date .....

Space below for office use only.

APPROVED:

Signature .....

Date ..... 19 ....

CONFIRMED .....		Account Rendered	
CONNECTION MADE .....	Meter Size .....	\$	cent.
SIZE OF CONNECTION .....	Meter No. ....		
SIZE OF MAIN .....			

Form 2  
Application for Water to be Supplied to Premises where the  
Applicant is not the Owner

No.

Date Received

District

In accordance with the Watercourses and Waterworks Ordinance, Chapter 185 and the regulations made thereunder, I hereby make application for the premises described hereunder of which I am not the owner to be connected to and supplied with water from the Waterworks.

I agree to pay all charges and costs payable under the Watercourses and Waterworks Ordinance or the regulations made thereunder.

- 1. Full name of Applicant .....  
(Block Capitals)
- 2. Postal address of Applicant .....
- 3. Description and number *(if any)* of premises concerned .....
- 4. Purpose for which the water is required .....  
(whether domestic or non-domestic)

Signature of Applicant .....

Date .....

The following Certificate must be signed by the owner of the premises concerned.

CERTIFICATE

I certify that I am the owner of the premises referred to in the above mentioned application and agree that the premises should be supplied with water from the Waterworks as from .....

Signature of Owner .....

Address .....

Space below for office use only.

APPROVED:

Signature .....

Date ..... 19....

CONFIRMED ..... WATER SUPPLIED FROM ..... .....	Meter Size ..... Meter No. ....	Account Rendered	
		\$	cent.





**APPENDIX VI**

**FORMS UNDER**

**CHAPTER VI**

**IRRIGATION WATER DEVELOPMENT AND USERS' GROUPS**



2.1 Occupation of Irrigated Land

VI - KENYA - Irrigation (National Irrigation Schemes) Regulations, 1977

Licence No. ....

..... National Irrigation Scheme

LICENCE TO OCCUPY HOLDING

..... son  
of .....  
of the ..... District of  
the ..... Province, is hereby authorized to occupy holding No. ....  
of the ..... National Irrigation Scheme for  
the period from the ..... day of ..... 19..  
to the ..... day of ..... 19.., and from year to year thereafter unless sooner  
terminated in accordance with the provisions of the above regulations and to keep thereon not more than  
the following number of stock:

- ..... bovines,
- ..... goats,
- ..... sheep,
- ..... mules,
- ..... donkeys,
- ..... other stock,

subject to the conditions prescribed by the above Regulations.

Dated this ..... day of ..... 19..

.....  
Manager

In accordance with regulation 6 of the above Regulations, I have caused the Regulations to be read and  
explained to the above-named licensee in the ..... language, which he understands

.....  
Manager

3. PRIVATE IRRIGATION WATER DEVELOPMENT AND USE

1 - ZIMBABWE - Water (Combined Irrigation Schemes) Regulations, 1962

Form A  
Petition for Combined Irrigation Scheme

To the Minister of .....

The petition of the undersigned sheweth;

1. That your petitioners are proprietors of land irrigable under the proposed scheme and situated in the Native District of .....
2. That your petitioners are of the opinion that it is expedient that there should be a combined scheme of irrigation for the area (approximately ..... acres in extent) comprising all the land bounded as follows:
  - On the east by .....
  - On the north by .....
  - On the west by .....
  - On the south by .....
3. That the petitioners consider the following works to be necessary to give effect to the proposed scheme.
  - .....
  - .....
  - .....
4. That your petitioners propose to irrigate a total of ..... acres in the said area under the scheme, of which they own not less than one-tenth.

Wherefore your petitioners pray that a combined irrigation scheme be authorised for the said area, and that the undermentioned owners of land in the area aforesaid be nominated a committee in terms of section 59 of the Act for the purpose of section 61 of the Act.

Name	Farm
1. ....	.....
2. ....	.....
3. ....	.....

Signatures of Petitioners	Farm
.....	.....
.....	.....
.....	.....

II - ZIMBABWE - Water (Combined Irrigation Schemes) Regulations, 1982

Form 8  
Submission of Report and Particulars of a Combined Irrigation Scheme

To the Minister of .....

The committee appointed on the ..... day of ..... for the purposes of section 61 of the Act in respect of the ..... combined irrigation scheme, hereby submit the consent or otherwise of interested owners embraced by the proposed scheme and declare as follows:

1. The scheme has been investigated by a qualified engineer and his report attached hereto with full particulars was submitted to all owners of land comprised within the area defined in our original petition.
2. Not less than two-thirds of the said owners have already consented to or do not oppose such scheme.
3. (a) The following owners have notified their consent to participate in the scheme in respect of the following irrigable areas:

<i>Name of owner</i>	<i>Farm</i>	<i>Irrigable area consented to</i>	<i>Irrigable area under Scheme</i>
.....	.....	.....	.....
.....	.....	.....	.....
.....	.....	.....	.....

(b) The following owners have stated that they do not oppose the scheme:

<i>Name of owner</i>	<i>Farm</i>	<i>Irrigable area under Scheme</i>
.....	.....	.....
.....	.....	.....
.....	.....	.....

(c) The following owners have stated that they are unwilling to participate in the scheme:

<i>Name of owner</i>	<i>Farm</i>	<i>Irrigable area under Scheme</i>
.....	.....	.....
.....	.....	.....
.....	.....	.....

(d) The following owners have not yet indicated whether or not they consent to participate in the scheme:

<i>Name of owner</i>	<i>Farm</i>	<i>Irrigable area under Scheme</i>
.....	.....	.....
.....	.....	.....
.....	.....	.....

4. The approximate cost of the scheme is £ ..... for the irrigation of ..... acres.  
Note: This includes the estimated compensation for land, etc.
5. The supply of water is to be derived from the ..... river.
  - (a) by storage ..... acre-feet;
  - (b) by direct abstraction from normal flow ..... cusecs.

**Names and signatures of Committee Members:**

.....  
.....  
.....

**Address:**

.....  
.....  
.....

**Date:**

....., 19...

IN - ZIMBABWE - Water (Combined Irrigation Schemes) Regulations, 1962

Form C  
Assessment Roll

Name of person liable to pay rates	Property in respect of which rate is levied	No. of acres scheduled as arriable	Rates assessed per acre	Any other rates or charges due	Amount due £ s. d.	Remarks





**APPENDIX VII**

**FORMS UNDER**

**CHAPTER VII**

**DRAINAGE OF LANDS AND BUILDINGS**



**2. LAND DRAINAGE**

**III - UNITED KINGDOM - Drainage Charges (Forms) Regulations, 1990**

**Form 1  
General Drainage Charge**

The National Rivers Authority, in exercise of the powers conferred on them by section 48 of the Land Drainage Act 1976, following the recommendation of the ..... Regional Flood Defence Committee, hereby raise for the year ending on 31st March 19 .. a general drainage charge of ..... per hectare of chargeable land in the Local Flood Defence District.

The Common Seal of the National Rivers Authority is hereunto affixed on . ..... . 19.. pursuant to a resolution of the Authority dated ..... 19.. .

**Form 2  
Demand for General Drainage Charge**

To ..... (a)  
Address .....

The National Rivers Authority have raised a general drainage charge of ..... per hectare in respect of the local Flood Defence District for the year ending on 31st March 19... Payment of this charge and of the arrears (if any) of former charges as shown below is now due from you.

Assessment No.	Description of chargeable land	Area in hectares of commercial woodlands	Assessable area in hectares of commercial woodlands	Assessable area in hectares of other chargeable land	Total assessable area in hectares	Amount of charge
						£      p.
Arrears (if any) of former charges						
Total amount now due						

The amount due should be paid .....(b). Cheques, money orders and postal orders should be made payable to the National Rivers Authority ..... Region and crossed. They should not be made payable to any individual officer.

By order of the Authority  
Finance Manager

**NOTES:**

- (a) Where the name of the occupier is not known to the National Rivers Authority, insert "The occupier"
- (b) Insert instructions as to place, time and method of payment.

**3. WASTEWATER DRAINAGE FROM BUILDINGS**

3.2 Administrative and engineering requirements re: construction and maintenance of private works in connection with public sewerage systems

**II - BARBADOS - Sewerage Regulations, 1982**

Form A  
**Application for Premises to be Connected to Public Sewer**

1. Situation of premises .....  
Name and Number on Street .....

2. Name and address of owner .....

3. Name of Tenant and .....  
Nature of tenancy .....

4. Description of premises and .....  
whether dwelling, store, etc., .....  
state if there is an open yard .....  
in connection with the street .....  
or lane .....

5. Number of persons residing .....  
or employed on the premises .....

6. Nature and extent of .....  
proposed sanitary arrangements .....

7. Description of water closet .....  
and flush tank to be used .....

8. Name and address of Sanitary .....  
Constructor by whom the work .....  
is to be executed .....

9. General remarks: .....  
.....  
.....

(Signature of Applicant) .....  
(Address) .....

(Date)  
The General Manager

**NOTE:** Plans in quadruplicate showing (clearing the location of all proposed building sewers, water closets, waste pipes, gully traps, grades and depths of sewers, etc.) must accompany this application and no work must be commenced until the plans have been approved

Form B  
Application for Extension, Alteration or Repair of Building Sewer

- 1. Situation of premises .....  
Name and Number on Street .....
- 2. Name and address of owner .....
- 3. Name of tenant and  
nature of tenancy .....
- 4. Nature and extent of  
proposed extensions,  
alterations or repairs to  
closet, drain or sanitary  
appliances or fittings .....
- 5. Description of water closet  
and flush tank to be used .....
- 6. Name of Sanitary Constructor  
by whom the work is to be  
executed .....
- 7. General remarks:  
.....  
.....  
.....
  
- {Signature of Applicant} .....
- {Address} .....
  
- {Date}

NOTE: Plans in quadruplicate showing the location of existing sewers etc. and indicating the proposed alterations, or extensions, must accompany this application and no work must be commenced until such plans have been approved.

3.3 Protection of public sewerage systems facilities

VIII - IRELAND - Local Government (Water Pollution) Regulations, 1978

Form 2  
Licence to Discharge Trade Effluent or Other Matter to a Sewer

Reference number in register:
----------------------------------

Sanitary Authority <sup>1</sup>: .....

To .....

.....

The { ..... }<sup>2</sup>, in exercise of the powers conferred on it by the Local Government (Water Pollution) Act, 1977 hereby grants a licence<sup>3</sup>/a revised licence in substitution for licence dated ..... reference number .....<sup>2</sup> to discharge trade effluent<sup>3</sup> from { ..... }<sup>4</sup> located at { ..... }<sup>4</sup> to { ..... }<sup>5</sup> at { ..... }<sup>5</sup>/subject to the following conditions<sup>6</sup>:

Dated this ..... day of ..... 19..

.....  
City/County Manager

Order No. ....

*Directions for completing this form*

- <sup>1</sup> Insert name of sanitary authority.
- <sup>2</sup> Delete words which do not apply.
- <sup>3</sup> If licence relates to matter other than trade effluent delete and insert description of the other matter.
- <sup>4</sup> Insert description of premises, works, apparatus, plant or drainage pipe.
- <sup>5</sup> Insert location of premises, works, apparatus, plant or drainage pipe.
- <sup>6</sup> Insert description of point(s)
- <sup>7</sup> Insert description of point(s) of discharge.
- <sup>8</sup> Delete if not subject to conditions.

Form 5  
Register of Licences under Section 16 for the Discharge  
of Trade Effluent or Other Matter to a Sewer

Sanitary Authority .....

1. Reference number of the licence .....
2. Name and address of applicant .....
3. Location of premises, works, apparatus, plant or drainage pipe from which the effluent is discharged .....
4. Description of the sewer to which discharge is made .....
5. Location of point(s) of discharge .....
6. Description of trade effluent or other matter .....
7. Date of grant of licence .....
8. Conditions attached to licence .....
9. If licence is a revised licence - reference number of previous licence .....
10. Notification by An Bord Pleanála of appeal  
Date .....  
Board's reference .....
11. Result of appeal .....





**APPENDIX VIII**

**SCHEDULE UNDER**

**CHAPTER VIII**

**CHARGING FOR WATER**



2. RATES OF WATER CHARGES

1 - MALAWI - Water Regulations, 1959

Second Schedule

...

RENTS:

(1)	Grant of Water Right - up to 20,000 gallons per day	£ 2 0 0 per annum
(2)	Grant of Water Right - over 20,000 gallons and not exceeding 1/4 million gallons per day	£10 0 0 per annum
(3)	Grant of Water Right - over 1/4 million gallons per day	£20 0 0 per annum



## **APPENDIX IX**

### **LIST OF LEGISLATIVE TEXTS**

(listed in alphabetical order by country, and in chronological order)



## AUSTRALIA

### New South Wales

Clean Waters Regulations, 1972 (in **New South Wales Government Gazette** No.117 of 3 November 1972, p.4348)

### Northern Territory

Control of Waters Regulations, Regulations 1962, No.12

### Queensland

Clean Waters Regulations 1973 (in **Queensland Government Gazette** No.31 of 24 February 1973, p.759)

Regulations Providing for the Licensing of Works of Water Supply, Irrigation and Drainage, made under the Water Acts, 1926-1973 (separate publication)

### South Australia

Underground Waters Preservation Regulations, 1970 (in **South Australian Government Gazette** No.2 of 15 January 1970, p.129)

Control of Waters Regulations, 1971 (in **South Australian Government Gazette** No.27 of 17 June 1971, p.3019)

Waterworks Regulations, 1974 (in **South Australian Government Gazette** No.37 of 4 July 1974, p.33)

### Western Australia

Health Act (Sewerage, Drainage and Underground Water Supply) Regulations, 1959 (in **Government Gazette of Western Australia** No.11 of 2 February 1965, p.409).

Rights in Water and Irrigation (Construction and Alteration of Wells) Regulations, 1963 (in **Government Gazette of Western Australia** No.35 of 15 May 1963, p.1297)

Country Areas Water Supply By-laws (in **Government Gazette of Western Australia** No.36 of 1 May 1968, p.1220)

Metropolitan Water Supply, Sewerage and Drainage Board By-laws (in **Government Gazette of Western Australia** No.8 of 28 January 1970, p.1)

## BARBADOS

Water Services Regulations, 1982, S.I. 1983 No.150.

Sewerage Regulations, 1982, S.I. 1983 No.151.

## BOTSWANA

Draft Groundwater Regulations, in **Botswana National Water Master Plan Study - Final Report** (Volume 11 - Water Legislation), Appendix D (January 1991) (reproduced with permission of the Government of Botswana)

Draft Water Supply Regulations, in **Botswana National Water Master Plan Study - Final Report** (Volume 11 - Water Legislation), Appendix E (January 1991) (reproduced with permission of the Government of Botswana).

Possible Sewerage Regulations, in **Botswana National Water Master Plan Study - Final Report** (Volume 11 - Water Legislation), Appendix G (January 1991) (reproduced with permission of the Government of Botswana).

## CANADA

### British Columbia

Regulation and Tariff of Fees, Rentals, and Charges Under the Water Act, made by Order in Council No. 2771, approved 5 December 1960 (and amended by Orders in Council No. 277/62 and 2649/63).

## CAYMAN ISLANDS

Water Authority Regulations, 1985 (in Supplement No. 1 published with **Extraordinary Gazette** of 11 March 1985).

## IRELAND

Local Government (Water Pollution) Regulations, 1978, S.I. No. 108 of 1978.

## JAMAICA

Underground Water Control (Abstractions) Regulations, 1961 (in **Laws of Jamaica, Subsidiary Legislation** Vol. IX (1974 Edition)).

Underground Water Control (Licensing) Regulations, 1961 (in **Laws of Jamaica, Subsidiary Legislation** Vol. IX (1974 Edition)).



## **KENYA**

**Water (General) Rules (in The Laws of Kenya, CAP 372 (1964 revision)).**

**Irrigation (National Irrigation Schemes) Regulations, 1977 (in Kenya Gazette No.13 of 25 March 1977, Supplement No.15, p.95).**

## **LESOTHO**

**Water Resources Regulations 1980 (in Supplement No.2 to Gazette No.31 of 5 September 1980, p.261).**

## **MALAWI**

**Water Regulations, 1969 (in Malawi Government Gazette No.52 of 31 October 1969, Supplement (No.46A), p.425).**

**Water Resources (Water Pollution Control) Regulations, 1978 (in Malawi Government Gazette No.18 of 17 March 1978, Supplement (No.11A), p.89).**

## **MALAYSIA**

**Environmental Quality (Sewage and Industrial Effluents) Regulations 1979 (in His Majesty's Government Gazette No.3 of 1 February 1979, p.56).**

## **NEPAL**

**Irrigation Regulation (1989) (unofficial translation).**

## **NEW ZEALAND**

**Waters Pollution Regulations 1963, No.30 of 1963.**

## **NIGERIA**

**The National Environmental Protection (Effluent Limitation) Regulations 1991, S.I. 8 of 1991 (in Supplement to Official Gazette Extraordinary, 20 August, 1991, Vol. 78, No. 42, Part B, p. B-15).**



FAO TECHNICAL PAPERS

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1	Wildlife and national park legislation in Asia, 1971 (E*)	33	Legislation on productivity in agriculture: a comparative outline, 1985 (E F S)
2	Wildlife and national park legislation in Latin America, 1971 (E* S*)	34	Systematic index of international water resources treaties, declarations, acts and cases by basin - Vol II, 1984 (E/F/S)
3	Vicuña conservator legislation, 1971 (E* S*)	35	Regional compendium of fisheries legislation (Western Pacific Region) - Vols I and II, 1984 (E)
4	Legal systems for environment protection, Japan, Sweden, United States, 1972 (E*)	36	Legislation controlling the international beef and veal trade, 1985 (E F S)
5	Agrarian law and judicial systems, 1975 (E F S*)	37	La législation forestière au Cap-Vert, en Éthiopie, en Gambie, au Mali et en Mauritanie, au Niger, au Rwanda et au Sénégal, 1985 (F)
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10	Water law in selected European countries (Belgium, England and Wales, France, Israel, Italy, Spain, Turkey) - Vol. I, 1975 (E F S)	42	Regional compendium of fisheries legislation (Indian Ocean Region) - Vols I and II, 1987 (E)
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12	International food standards and national laws, 1976 (E/F*)	44	La réforme du droit de la terre dans certains pays d'Afrique francophone, 1987 (F)
13	Derecho agrario y desarrollo agrícola: estado actual y perspectivas en América Latina, 1976 (S)	45	Legal aspects of international joint ventures in agriculture, 1990 (S)
14	Legal and institutional responses to growing water demand, 1977 (E F S)	46	The freshwater-maritime interface: legal and institutional aspects, 1990 (E)
15	Systematic index of international water resources treaties, declarations, acts and cases by basin - Vol I, 1978 (E/F/S)	47	The regulation of distant fishing on the high seas: legal issues, 1991 (E F)
16	Seed legislation, 1980 (E F S)	48	Les périmètres irrigués en droit comparé africain (Madagascar, Maroc, Niger, Sénégal, Tunisie), 1992 (F)
17	Water law in selected African countries, 1973 (E F S)	49	Analyse préliminaire de certains textes législatifs régissant l'aquaculture, 1993 (F S)
18	Reforma agraria y desarrollo rural integrado, 1979 (S)	50	Treaties concerning the non-navigational uses of international watercourses - Europe, 1993 (E/F/S)
19	Water legislation in South American countries, 1983 (E F S)	51	Legislation sur l'homologation des pesticides, 1994 (F)
20	Legislation on wildlife, hunting and protected areas in some European countries, 1980 (E F S)	52	Preparing national regulations for water resources management, 1994 (E)
21 Rev 1	Coastal state requirements for foreign fishing, 1983 (E F S)		
21 Rev 2	Coastal state requirements for foreign fishing, 1985 (E S)		
21 Rev 3	Coastal state requirements for foreign fishing, 1986 (E F S)		
21 Rev 4	Coastal state requirements for foreign fishing, 1993 (E)		
22	Agricultural insurance legislation, 1981 (E S)		
23	The law of international water resources, 1980 (E F S)		
24	Irrigation users' organizations in the legislation and administration of certain Latin American countries, 1983 (E S)		
25	Legislation on wildlife and protected areas in Africa, 1984 (E F)		
26	The UN Convention on the Law of the Sea: impacts on tuna regulation, 1982 (E F)		
27	Regional compendium of fisheries legislation - West Africa (CECAF Region), 1983 (E/F*)		
28	Plant protection legislation, 1984 (E F S)		
29	Legislation on foods for infants and small children, 1983 (E*)		
30	Water law in selected European countries (Cyprus, Finland, the Netherlands, Union of Soviet Socialist Republics, Yugoslavia) - Vol II, 1983 (E)		
31	The role of legislation in land use planning for developing countries, 1985 (E)		
32	Agricultural census legislation, 1984 (E)		

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