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LEGAL NOTICE NO.

THE WATER ACT
(No. 43 of 2016)

THE WATER HARVESTING AND STORAGE REGULATIONS, 2023

ARRANGEMENT OF REGULATIONS

SCHEDULES

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IN EXERCISE of the powers conferred by Section 142 of the Water Act 2016, the Cabinet Secretary for Water, Sanitation and Irrigation makes the following Regulations

THE WATER HARVESTING AND STORAGE REGULATIONS, 2023

PART I - PRELIMINARY	
Citation.	**1.** These Regulations may be cited as the Water Harvesting and Storage Regulations 2023.
Interpretation	**2.** In these Regulations, unless the context otherwise requires— "Act" means the Water Act 2016, No 43 of 2016 or as may be amended by Parliament from time to time; "Applicant" means any person making application to be licensed as an approved qualified Water Sector Professionals or dam contractor; "Authority" means the Water Resources Authority established by Section 11 of the Act; "Base Flood" means the flood having a one percent chance of being equaled or exceeded in any given year.

	"Cabinet Secretary" means the Cabinet Secretary responsible for matters relating to water resources. "Dam" includes any existing or proposed structure together with appurtenant works, which is capable of containing, storing or impounding water (including temporary impoundment or storage) above ground level, whether that water contains any substance or not; "Environmental Impact Assessment" means environmental assessment undertaken pursuant to the Environmental Coordination and Management Act, 2015 and the regulations made thereunder; "Flood flow" means flood flow as defined in the Water Resources Regulations 2023; "Levee" means a man-made structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water so as to provide protection from temporary flooding also known as "dike". "Maintenance" means all actions necessary for retaining water works as near as possible to its original condition, excluding rehabilitation or renewal; "Ministry" means the Ministry of Water, Sanitation and Irrigation; "Maintenance plan" means information, policies and procedures for the optimal maintenance of water works or group of water works; "Net freeboard" also referred to as "flood freeboard" means the vertical distance between the maximum water surface and the crest of the dam;

	"Permit" or "dam permit" means all approvals required under the Act and regulations made thereunder for the construction and operation of a dam; “Person” means natural or legal person and includes a corporate; “Professional body” means an organisation with individual members practicing a profession or occupation in which the organisation maintains an oversight of the knowledge, skills, conduct and practice of that profession or occupation. “Proponent” means the owner, developer or other person intending to construct or constructing a dam or other waterworks. “Qualified Water Sector Professional” means a person qualified and licensed as such pursuant to regulations made under the Act as a water sector professional; “Water harvesting system” means a system comprising entrapment, transportation, filtration, and storage of rainwater for reuse or recharge; “Regulated watercourse” means a watercourse on which the flow has been modified from its natural state by water storage or flood mitigation structures which provide a means of controlling or otherwise regulating the release of water into the natural channel; "Reservoir" means the body of water impounded by a dam or a dam with a safety risk; "Risk" means the measure of the probability and severity of an adverse effect to life, health, property, or the environment. “Spillway” is a structure used to provide the controlled release of flows from a dam or levee into a downstream area typically the riverbed of the dammed river itself;

	"Storage capacity" means the total volume of free water (excluding groundwater) that could be stored below the lowest unobstructed spillway crest level or free outlet level of a dam, or below the maximum operating level (established by the penstock inlet level or free decant level and as prescribed in the operation and maintenance manual or code of practice) in the case of any residue deposit including tailings dams; "Storm water" means run-off water that has been concentrated by means of a drain, surface channel, subsoil drain or formed surface; "Watercourse" means watercourse as defined in the Act; "Water storage" means a location or structure where water is stored or retained for future use; "Water Storage Authority" means the National Water Harvesting and Storage Authority established in Section 30 of the Act; "Waterworks" for purposes of these Regulations means any man made structure, apparatus, contrivance, device or thing for storing, impounding, or diverting water permanently or temporarily, regulating the flow of water or containing or managing and controlling flooding and includes a dam, reservoir, water pan, dyke, levee and such like structures and devices; "Waterworks Development Agency" means an entity of the national government established under section 65 of the Act.
Application of the Rules	**3.** (1) These Regulations shall apply to and govern the policies, plans, programmes, activities and discharge of the mandate of the national government, county governments as well as the Water Storage Authority each in the execution of its respective mandate under the Act.

	(2) These Regulations shall apply to public and private waterworks for water harvesting and storage; reservoirs for impounding surface run-off and for regulating stream flows to synchronize them with water demand patterns, and structures and devices for flood control and management. (3) These Regulations apply also to waterworks constructed before the commencement of the Act.
PART II- CLASSIFICATION OF STORAGE DAMS AND OTHER WATERWORKS	
Classification of Dams.	**4.** (1) Storage dams and other waterworks shall provisionally be classified by its owner or operator as Class SD1, SD2 or SD3 on the basis of criteria stipulated in Table 1 of the First Schedule and taking account of the risk factors in the Second Schedule. (2) For purposes of determining an application for a permit for the development, operation and management of a storage dam or other waterworks or otherwise in exercise of its regulatory mandate the Authority may affirm or vary the provisional classification of storage dam or other waterworks provisionally assigned to the storage dam or other waterworks by its owner or operator. (3) In classifying a storage dam or other waterworks the principle to be applied is that the criteria or risk factor that results in the higher class of storage dam or other waterworks shall prevail.
Minimum Net Freeboard.	**5.** (1) The net freeboard for Class SD1 dams shall not be less than 0.6m. (2) The net freeboard for Class SD2 and SD3 dams shall not be less than 1.0m or as may be otherwise specified by the Water Resources Authority on a case by case basis
Minimum Spillway Design Flood.	**6.** (1) The minimum acceptable return period for the design of a dam spillway shall be as provided in Table 5 in the Second Schedule of these Regulations.

	(2) The Authority may require a higher return period with respect to the conditions and risks associated with each site.
National Public Waterworks.	**7.** (1) National public waterworks which satisfy the criteria in sub rule (2) of this regulation shall be developed and managed by or under a contract with the Water Storage Authority; (2)The Waterworks – (a) comprises a dam, reservoir and or other artificial structure constructed to control the flow of the waters of a watercourse and designed and or operated primarily to regulate stream flows to synchronise them with water demand patterns implemented pursuant to subsection (2)(d) of section 8 of the Act; (b) is of strategic or national importance; (c) is financed using monies of the national government pursuant to Section 8 (1)(b) of the Act; and (d) meet the requirements for classification as a Class SD2 or Class SD3 storage dam. (3) National public waterworks whose primary purpose is water storage for bulk distribution and provision of water services implemented pursuant to Section 8(2)(b) of the Act may be developed and operated by or under a contract with a waterworks development agency or through the mechanisms stipulated by Section 69 of the Act. (4) Waterworks developed and managed by the Water Storage Authority for the storage of flood flows to enable downstream releases for the purposes of flow regulation may in addition to the impoundment and flow regulation structures associated with the storage and release of water from the reservoir comprise structures and facilities to enable multi-purpose use such as draw-off towers that facilitate direct abstraction from the reservoir. (5) Facilities associated with the treatment or bulk transfer of water even if forming part of a water resources storage dam

	meeting the criteria set out in subrule 2 of this regulation shall not be developed and or managed by or under a contract with the Water Storage Authority but, if financed by the national government as national public waterworks, be developed and managed by or under a contract with a waterworks development agency or through the mechanisms stipulated in Section 69 of the Act. (6) A private person may, under an agreement with the Water Storage Authority, and subject to compliance with the applicable law on public private partnerships develop, operate and maintain a dam to regulate stream flows by releasing the water stored into a natural watercourse as a public private partnership venture. (7) A County government may, with the permission of the Authority, develop, operate and maintain a dam for water harvesting and storage for use in bulk water provision, irrigation or other approved activities. (8) Where a water resource storage dam has been constructed to enable multi-purpose use a user may under a contract with the Water Storage Authority acquire rights of access to the water resources storage dam for purposes of abstraction of water directly from the dam or reservoir.
PART III- DEVELOPMENT OF WATERWORKS	
Prior Right to Water for Storage.	**8.** (1) On the basis of water allocation plans and guidelines and data available to or gathered by or submitted to it, the Authority shall, on behalf of the National Government, and following consultation with the Cabinet Secretary, formulate medium to long term water resources storage plans and programmes. (2) The water resources plans of the Authority shall be undertaken on the basis that the right to store water shall be subject to the prior right to its uninterrupted flow for so much as it is required for actual and beneficial use and to compliance with the Act. (3) The Authority may require a person applying for a permit to construct or develop a storage dam or facility to demonstrate that the proposed storage is in line with the National Government's medium

	and long-term plans for water resources and development as a condition to the grant of a water use permit.
Requirements for Construction of waterworks.	**9.** (1) Prior to constructing waterworks, the proponent shall apply for and obtain– (a) a water use permit issued by the Authority under the Act and the regulations made thereunder; and (b) an environmental impact assessment licence in accordance with the Environmental Management and Coordination Act; and (c) authorization from the mandated lead agency where the proposed water works is to be located inside a protected area or catchment area. (2) Sub regulation (1) does not apply – (a) to works constructed in emergency circumstances; (b) to temporary works in operation for a period of less than two years or; (c) if the works are a structure less than 2 metres water depth or 10,000m3 total storage unless directed to do so by the Authority in any particular case; (3) Within two years after the completion of the works contemplated in subrule (2)(a) of this regulation, the owner, developer or operator of the waterworks shall decide either to– (a) demolish the works and restore the site; or (b) retain the works for purposes of water resources storage and or flood control subject to compliance with subrule (1) of this regulation.
Feasibility Study.	**10.** (1) The proponent contemplating developing a storage dam or other waterworks falling into class SD 2 or SD 3 in Table 1 shall prior to commencing the construction of the waterworks undertake a feasibility study. (2) Prior to undertaking the feasibility study contemplated in

	subsection (1), the Terms of Reference for the feasibility study shall be submitted by the proponent to the Authority for review and approval and in each such case the Authority shall finalize action within three months from the date of receiving the terms of reference. (3) The feasibility study shall: (a) be planned and supervised by a qualified Water Sector Professionals falling into the appropriate category for that class of dam and selected on the basis of the categories in Table 3 of the Third Schedule; (b) identify and address the risk factors associated with the particular waterworks contemplated and the class of dam; (c) identify and address the main factors likely to affect the safe performance of the structures to be constructed. (4) The feasibility study shall be submitted to the Authority for review, and if found to be satisfactory, the Authority shall within three months provide approval for the proposal to proceed to full design. (5) Where the Authority is not satisfied with the feasibility study, the Authority may require the proponent to enhance the feasibility study before a final decision is made. (6) The Authority may, in any particular case, before determining an application for a permit for a storage dam or other waterworks not required under sub rule (1) of this regulation to undertake a feasibility study require the applicant to undertake and submit such feasibility study. (7) The Authority shall, in granting its approving under this regulation, undertake public participation through notification of the details concerning the dam followed by invitation of comments from the public and stakeholders, and holding of public consultation meetings where necessary.
Design by Qualified Water Sector Professional.	**11.** (1) Storage dams and other waterworks shall be designed and supervised by the appropriate category of Qualified Water Sector Professionals as set out in Table 3 in the Third Schedule of these Regulations.

	(2) Storage dams and other waterworks shall be constructed by the appropriate category of contractor as set out in Table 4 in the Third Schedule of these Regulations. (3) The contractor undertaking construction of waterworks shall require to be registered in accordance with the Section 15 of the National Construction Authority Act (*No*. 41 of 2011).
Dam Design Report.	**12.** (1) An application for a permit to construct a storage dam shall be accompanied by a Dam Design Report substantially as shown in the Third Schedule for approval by the Authority. (2) The level of detail required in the Dam Design Report will be based on the professional advice of the Qualified Water Sector Professionals preparing the Report taking account of the class of dam to be constructed and the risk category, provided that the Authority may, before determining the application, require the applicant to prepare and submit a more detailed Report. (3) If the circumstances require, the Authority may provisionally authorise the works on the basis of a preliminary Dam Design Report on condition that the applicant submits a complete design report acceptable to the Authority before commencement of construction of the works.
Dam Construction Progress Report.	**13.** A person authorized to construct a storage dam shall submit a dam construction progress report at such times and intervals as determined by the Authority.
Dam Completion Report and Dam Operation Report.	**14.** (1) On completion of construction, the applicant shall submit to the Authority together with the Dam Completion Certificate, a Dam Completion Report and a Dam Operation Report addressing the issues substantially shown in the Third Schedule. (2) Issuance of the permit is conditional upon approval of the Dam Completion Report and Dam Operation Report by the Authority.
Cessation or Resumption Plan.	**15.** (1) An owner or operator of waterworks shall prepare and submit to the Authority for approval a cessation or resumption plan if: (a) the owner or operator intends to cease, suspend, restrict or limit the operation of the dam for more than 365 consecutive

	days; or (b) the owner or operator intends to resume the operation of a dam the operation of which has ceased or been suspended, restricted or limited for more than 365 consecutive days; and (c) the dam falls within Risk Category SD2 or SD3.
PART IV- RELEASE OF WATER FROM STORAGE DAMS AND OTHER WATERWORKS	
Release and Use of Stored Water.	**16.** The water held in the storage dams of the Water Storage Authority: (a) shall not be diverted or abstracted for use for any purpose except with the prior written approval of the Authority on the basis of an application made to the Authority by the person desiring to divert or abstract the water stored directly from the storage dam supported by a "no objection" of the Water Storage Authority; and (b) shall be entirely released into a natural watercourse subject to reductions in volume arising from evaporation and seepage according to a water release programme detailed in its Dam Operation Report and approved by the Authority to augment and or regulate the stream flows of the natural watercourse.
Premiums for Use of Water from Storage Facilities.	**17.** (1) It shall be a condition of all water use permits granted by the Authority to abstract or divert water directly from a storage dam operated by the Water Storage Authority or from a regulated watercourse downstream of a storage dam operated by the Water Storage Authority that the permit holder shall pay, in addition to the water use charge payable under the Act and regulations made thereunder, a premium calculated by reference to the Fourth Schedule to these Regulations. (2) Such premium or premiums shall be payable directly to the Water Storage Authority or the private owner or operator of the storage dam on the basis of an invoice each month issued to the permit holder by the Water Storage Authority or private owner or operator of the dam (with a copy to the Water Resources Authority) to be used to offset a portion of the costs of operation and

	maintenance of the storage dam that is proportionate to the volume of the yield of the storage dam that is released into the regulated river and which the permit holder is entitled under his permit to abstract. (3) The water use permit entitling an abstractor from a regulated river shall in addition provide for the payment to the Water Storage Authority by the permit holder of 20% of the premium payable under subrule (2) of this regulation towards the Water Storage Authority's general overhead costs and any deficit in its revenue as against operation and maintenance costs. (4) A delay or failure to pay the premium shall attract interest at the rate of 2% for each month of such delay or failure. (5) The premium which is in arrears is recoverable by the Water Storage Authority or private owner or operator of the dam as a civil debt in a court of competent jurisdiction without prejudice to the power of the Authority to treat the failure of the permit holder to make payment as breach of the conditions of the permit and suspend or cancel the permit.
Outlets for Release of Stored Water.	**18.** A permit holder 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 Authority, provide, at a depth measured from the top of the dam or weir and to be specified by the Authority 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 such body of water or watercourse so that the normal flow, or other flow as required by the Authority, 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 of the flow of the water being effected no such outlet works need be constructed.
Authorisation for Release of Stored Water.	**19.** (1) A permit holder, not being the Water Storage Authority who is authorised to store or impound the water of any body of water or the operator, may release the water so stored into a natural watercourse only with the approval of the Authority and, subject to the water so

	stored being appurtenant to the land upon which it is to be utilized, and the conditions of his or her authorization or permit authorizing the diversion or abstraction herein afterwards mentioned may, at a point downstream of the point of storage, divert or abstract from the body of water into which the stored water is released the quantity of water so released. (2) Except in the case of the Water Storage Authority, a permit holder, who has a permit to store or impound water in any body of water, or the operator, before releasing water into a natural watercourse as aforesaid, shall give to the Authority 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 released into the body of water, the rate of discharge of the stored water and other matters as the Authority may, from time to time, require. Except with the prior written approval of the Authority, no permit holder, other than the permit holder who releases the stored water under subrule (1) of this regulation, or the operator shall divert or abstract any proportion of the flow of the body of water due to the water so released, nor shall any permit holder impound or store, except to such an extent as may be imposed upon him by the maximum capacity of his or her works for discharging the flow of the body of water through or around his or her works which abstract the flow of the water, any proportion of the flow of the body of water due to the water so released.
Notice Downstream.	**20.** (1) It is the responsibility of the operator of any dam to take adequate measures at his or her cost as detailed within the approved Dam Operation Report to notify the Authority and persons downstream likely to be affected in the event of any discharge from the dam whether caused by dam failure or intended releases from the dam that might result in damage downstream. (2) It is the responsibility of the operator of any dam to take adequate measures at his or her cost as detailed within the approved Dam Operation Report to protect persons, infrastructure and environments downstream likely to be affected in the event of any discharge from the dam whether caused by dam failure or intended releases from the dam that might result in damage downstream.

	(3) In the event of such a discharge or intended release, failure to follow the steps detailed in the approved Dam Operation Report shall constitute an offence punishable under these Regulations and the Act.
PART V- MAINTENANCE AND MANAGEMENT OF WATER WORKS	
Maintenance and Management of Works.	**21.** (1) An owner or operator of waterworks shall be primarily responsible for the safety of the storage dam and shall either directly or through an agent undertake the maintenance and management of the waterworks in accordance with the requirements of the maintenance and operation systems detailed in the Third Schedule**.** (2) Where an existing storage dam or waterworks appears not to have an owner, operator or other person or entity willing and or capable of discharging the responsibilities of an owner or operator under this Part the Water Storage Authority shall assume and discharge the responsibilities of an owner or operator pending a determination by the Cabinet Secretary of the person or entity upon whom the responsibility for the management and maintenance of the storage dam should be placed or its decommissioning as appropriate. (3) Before the Water Storage Authority can assume the responsibilities of an owner of a storage dam under subrule (2) of this Regulation, it shall publish notice in the Gazette of the intention to assume responsibility and upon the expiry of the notice period, if no person has come forward claiming ownership and or responsibility, the notice shall take effect. (4) For purposes of management and maintenance of the waterworks the owner and or operator of waterworks shall – (a) undertake all measures necessary to maintain and manage the works including – (i) routine inspections; (ii) treatment of cracks, slides, sloughing and settlement; (iii) concrete repair;

	(iv) inspection and repair of spillway conduits; (v) establishment and control of proper vegetation to prevent erosion of embankments and earth channel surfaces; (vi) controlling seepage in both velocity and quantity; (vii) rodent control; (viii) installation of trashracks on pipe spillways; (ix) inspection and repair of vegetated earth spillways; and (x) repair of mechanical equipment. (b) create a monitoring and evaluation system for optimal use of the works. (c) Implement any other measures necessary for the safe operation and management of the storage dam or water works. (d) Undertake an annual environmental audit on the compliance of the dam or water works with the environmental impact assessment licence and environmental management plan issued for the dam under the Environmental Management and Coordination Act, 2015.
Maintenance and Management Plans.	**22.** An owner and or operator shall prepare and obtain the approval of the Authority of the maintenance and management plans appropriate to the class and risk category of the storage dam which shall comprise – (a) a maintenance operational plan; (b) a maintenance budget;

	(c) maintenance systems; and (d) maintenance performance norms and standards.
Maintenance Operational Plan.	**23.** (1) An owner and or operator of water works shall implement a maintenance operation plan for the works appropriate to the class and risk category of the storage dam. (2) An owner and or operator of waterworks shall conduct a maintenance analysis for the works' infrastructure including – (a) Identification of all the works; (b) Identification of critical works based upon the risk of failure; and (c) Analysis of the maintenance options and determination of the preferred option.
Maintenance Outcomes.	**24.** An owner and or operator shall document maintenance outcomes which shall include – (a) Compliance with these Regulations; (b) Reliability of the infrastructure; and (c) Cost of maintenance.
Maintenance Requirements Analysis.	**25.** (1) An owner and or operator or waterworks shall identify maintenance requirements based on the risk of failure taking account, in the event of failure, of ed on– (a) The environmental impact (b) public health and safety impact (c) financial impact; and (d) service delivery impact

	(2) The impact with regard to each of the criteria shall be rated using a 5 point scale. (3) The individual ratings will be combined into a combined rating which will be used to identify the maintenance requirements of specific waterworks.
Infrastructure Maintenance Budget.	**26.** (1) For each storage dam or other waterworks operated and maintained by or under a contract with the Water Storage Authority costs associated with the maintenance activity shall be calculated by reference to costs approved by the Authority. (2) Where available maintenance budgets are inadequate, the criticality of the individual activities shall be used to prioritize the maintenance actions to be performed.
Waterworks Infrastructure Maintenance System.	**27.** (1) (1) An owner and or operator of waterworks shall maintain a Register of the water works which shall be used for the identification of all assets and which shall be updated periodically to reflect newly developed infrastructure including any alterations and material modifications. (2) Maintenance activities of the storage dam owner or operator will be scheduled and controlled using an appropriate Waterworks Infrastructure Maintenance System. (2) The Waterworks Infrastructure Maintenance System shall – (a) Record maintenance costs, time and other resources consumed against the works; (b) Include links to the financial management system to facilitate reconciliation of maintenance budgets; (c) Include built-in maintenance analysis tools or ability to export information to other applications to facilitate maintenance analyses; and (d) Analyze infrastructure performance to be used as an input to maintenance planning. (e) Include clear disaster management plans for ensuring safety in the event of an emergency.

	(3) The Water Storage Authority shall prepare and submit the first Waterworks Infrastructure Maintenance System to the Authority for approval within twelve months of the commencement of these Regulations and the Authority shall finalize approval within forty-five (45) days of submission or such extended period as may be notified by the Authority. (4) In every subsequent year following the period provided for in subrule (3) herein, the Water Storage Authority shall submit the Waterworks Infrastructure Maintenance System to the Authority and shall highlight any modifications made to the previous plan.
Flood control works.	**28.** (1) An owner and or operator of waterworks shall continuously maintain the structures and facilities for flood control in such a manner, and operated at such times and for such periods as may be necessary to obtain the maximum benefit. (2) A reserve supply of materials needed during a flood emergency shall be kept on hand at all times at the works. (3) No improvement shall be passed over, under, or through the walls, levees, improved channels or floodways, nor shall any excavation or construction be permitted within the limits of the structure right-of-way, nor shall any change be made in any feature of the flood control works without prior determination by the owner and or operator, which determination shall be documented, that such improvement excavation, construction, or alteration will not adversely affect the functioning of the flood control facilities. (4) Such improvements or alterations as may be found to be desirable and permissible under the determination in subrule (3) of this regulation shall be constructed in accordance with standard engineering practice.
Maintenance of Levees.	**29.** (1) Periodic maintenance shall be conducted to insure serviceability of the structures in times of floods. Measures shall be taken to- (a) promote the growth of sod; (b) exterminate burrowing animals, (c) provide for routine mowing of the grass and weeds, removal of wild growth and drift deposits, and repair of damage caused by erosion or other forces; and (d) where practicable, to retard bank erosion by planting suitable growth on areas riverward of the levees.

	(2) An owner and or operator shall undertake periodic inspections to ensure that the stipulated maintenance measures are being effectively carried out and, further, to be certain that: (a) No unusual settlement, sloughing, or material loss of grade or levee cross section has taken place; (b) No caving has occurred on either the land side or the river side of the levee which might affect the stability of the levee section; (c) No seepage, saturated areas, or sand boils are occurring; (d) Toe drainage systems and pressure relief wells are in good working condition, and that such facilities are not becoming clogged; (e) Drains through the levees and gates on drains are in good working condition; (f) No revetment work or riprap has been displaced, washed out, or removed; and (g) No action is being taken, such as burning grass and weeds during inappropriate seasons, which will retard or destroy the growth of sod. (3) During flood periods the levee shall be patrolled continuously to locate possible sand boils or unusual wetness of the landward slope and to be certain that: (a) There are no indications of slides or sloughs developing; (b) Wave wash or scouring action is not occurring; (c) No low reaches of leave exist which may be overtopped; and (d) No other conditions exist which might endanger the structure. (4) The owner and or operator shall take appropriate advance measures to ensure the availability of adequate labour and materials to meet all contingencies. (5) Immediate steps shall be taken to control any condition which

	endangers the levee and to repair the damaged section.
Maintenance of Flood Walls.	**30.** (1) Periodic inspections shall be made to ascertain that: (a) No seepage, saturated areas, or sand boils are occurring; (b) No undue settlement has occurred which affects the stability of the wall or its water tightness; (c) No trees exist, the roots of which might extend under the wall and offer accelerated seepage paths; (d) The concrete has not undergone cracking, chipping, or breaking to an extent which might affect the stability of the wall or its water tightness; (e) Care is being exercised to prevent accumulation of trash and debris adjacent to walls, and to insure that no fires are being built near them; (f) No bank caving conditions exist riverward of the wall which might endanger its stability; (g) Toe drainage systems and pressure relief wells are in good working condition, and that such facilities are not becoming clogged. (2) Inspections shall be made immediately prior to the beginning of the flood season, immediately following each major high water period, and otherwise at intervals not exceeding ninety (90) days. (3) Measures to eliminate encroachments and effect repairs found necessary by such inspections shall be undertaken immediately and all repairs shall be accomplished by methods acceptable in standard engineering practice.
Emergency Management Plans for dams affected	**31.** (1) The owner and or operator of a waterworks shall –

by floods.	(a) Set the requirements for dam safety emergency planning and audits of each works' response actions; and (b) in consultation with the county government, local communities and the relevant disaster management authorities, share information and engage in joint efforts to implement strategies to mitigate against the effect of disaster. (2) The owner and or operator of a dam shall prepare, and submit to the Authority for approval, emergency preparedness plans for all dams and works and these plans shall- (a) describe actions that the owner and or operator shall take to address safety problems at a dam with a safety risk; (b) contain appropriate procedures and information to assist the owner and or operator in issuing early warning notification messages to responsible disaster management authorities in the national and county governments, representatives of local county governments, representative bodies or of any communities potentially threatened by the condition of the dam and with whom arrangements have been made in connection with the issue of warnings; and (c) contain engineering drawings of the dam and inundation maps to show disaster management authorities critical areas for action in case of an emergency. (3) Prioritization of planning for dam emergencies shall be determined based on relevant information including – (a) The condition of the dam and the degree, if any, of dam safety deficiency; (b) Population at risk and community vulnerability; (c) Scale of flood risk costs;

	(d) Range of other consequences such as those on property, the environment or community value of the damage; (e) Stakeholder perceptions and expectations; and (f) State of knowledge and planning commitments for different scenarios. The owner and or operator shall engage with the county government, civil society, and other stakeholders in coordination with disaster management authorities to develop community awareness strategies.
Emergency Contact Information.	**32.** (1) A permit holder or operator of a dam shall review and update all emergency contact information contained in its emergency management plan: (a) at least once every twelve months; and (b) whenever the emergency management plan is updated. (2) When there is a change to emergency contact information in an emergency management plan, a permit holder or operator of a dam must, not later than fourteen (14) days after the change occurs: (a) submit the updated information in writing to the Authority and; (b) provide the update.
Inspection and Inspection Reports.	**33.** (1) Every dam owner shall be required to cause inspection of his or her dam according to the criteria given in Table 4 in the Second Schedule and an Inspection Report prepared and submitted to the Authority. (2) Inspection reports shall be submitted to the Authority within thirty (30) days of the completion of the dam inspection. (3) Compliance with dam inspection requirements shall be among the

	conditions to be considered by the Authority before permit renewal is processed where dams are involved.
Dam Damage or Failure Report.	**34.** (1) The permit holder or operator or the person having the control of any dam, in the event of serious damage or failure, shall submit an interim Dam Damage or Failure Report to the Authority within three (3) days, and a detailed Report substantially as shown in the Third Schedule within twenty-one (21) days of the event or such longer period as the Authority may on approve. (2) Failure to submit the Dam Damage or Failure Report shall constitute an offence punishable under the Act.
Insurance Policy.	**35.** (1) The permit holder or operator or the person having the control of any dam if required to do so by the Authority shall obtain and maintain an insurance policy to cover the risk of dam failure resulting in injury, damage to or loss of human life, health, property or the environment.. (2) The Authority shall, following consultations with industry stakeholders, set guidelines on the conditions in which it will be appropriate to obtain and maintain an insurance policy and the levels and the amount of insurance to be maintained by the permit holder or operator of the dam.
PART VI – STRATEGIC WATER EMERGENCY INTERVENTIONS	
Drought Response Plan.	**36.** (1) The Water Storage Authority shall develop and maintain a Drought Response Plan to be implemented in collaboration with the National Drought Management Authority. (2) Drought preparedness measures may include, where appropriate, designing and constructing storage dams with features and facilities enabling diversion of water from the storage dam into natural watercourses in emergency drought situations. (3) The Authority shall, following consultation with the Cabinet Secretary, approve the Drought Response Plan with or without conditions.
Water Supply and	**37.** The Water Storage Authority shall put in place measures enable it

Demand Management.	respond by activating its Drought Response Plan including making releases of water into watercourses designed to ameliorate the effects of drought, permitting diversion of water from a storage dam into other natural watercourses and direct abstraction by water service providers of water from the Water Storage Authority's storage dams where practicable.
Improved System Efficiency.	**38.** The Water Storage Authority may adopt measures to improve systems for efficient management of stored water in order to conserve water within its water resources storage facilities during drought.
PART VII – CLIMATE CHANGE AND FLOOD MITIGATION	
National Water Resources Storage and Flood Control Data.	**39.** (1) The Water Storage Authority shall monitor, collect, collate and maintain data of floods experienced in flood prone areas including: (a) information on the state of the works infrastructure; (b) climate reports; (c) base flood data; (d) data on flood prone areas; (e) information of flood inundation levels; (f) flood hazard maps; (g) flood early warning systems; (h) socio-economic impacts; and (i) any other data relevant to the management of the national public water works for water resources storage and flood control. (2) The data shall be made available on the Water Storage Authority's website provided that a person requiring an extract of the data certified to be true from the Water Storage Authority's database shall make an application for it in writing and pay such reasonable costs as the Water Storage Authority may require. (3) The request for data should be reasonable and relevant with respect to a specific activity and area. (4) Data provided by the Water Storage Authority shall not be transferable to a third party and the Water Storage Authority shall not be liable for any error or omissions in the data.

Climate Change Action Plan	**40.** The Cabinet Secretary shall, based on the information maintained pursuant to Rule 39(1) above, within twelve months of the coming into force of these Regulations and as required by the Climate Change Act 2016, formulate and publicly disseminate an action plan and strategies to guide how climate change considerations shall be integrated in the management of water resources, including mitigation and adaptation actions, and the prevention and management of floods and other impacts of climate change.
Flood Mitigation Activities	**41.** The Authority shall regulate implementation of Integrated Flood Management Plans in all the flood prone areas by relevant state organs in collaboration with stakeholder groups.
County Governments and Integrated Flood Management Plans	**42.** The Integrated Flood Management Plans shall be implemented through WRUAs and other stakeholders in collaboration with County Governments through guidelines issued by the Cabinet Secretary.
Check dams, green energy, projects, dykes etc.	**43.** The Authority may require the development of check dams, green energy projects and dykes for purposes of flood mitigation.
PART VIII- WATER HARVESTING	
Water Harvesting Policy and Strategy.	**44.** (1) The Cabinet Secretary shall, following public consultation, and on the basis of recommendations of the Water Storage Authority, gazette a water harvesting policy and strategy for water harvesting. (2) The Water Harvesting policy and strategy shall – (a) not be in conflict with the national water resource strategy; (b) set out the policy objectives, plans, guidelines and procedures and strategies for rainwater harvesting. (c) take into account any relevant national or regional plans prepared in terms of any other law; (d) outline mechanisms and procedures for collaborating with other institutions, both public and private, at national and county level to achieve the objectives of the policy and strategy; (e) put in place measures and incentives to enhance the adoption

	and implementation by the public of rainwater harvesting; (f) facilitate the provision of technical and capacity building support to public and private institutions at national and county level on rainwater harvesting techniques; and (g) be time bound. (3) All state organs at national and county level shall give effect to any water harvesting policy established under this Part when exercising any power or performing any duty in terms of these Regulations. (4) The construction of the water harvesting systems in all new institutional, commercial, public and open areas shall give effect to the water harvesting policy and be undertaken in accordance with the applicable County Government planning and building regulations and all other applicable rules and regulations
Roof-based Rainwater Harvesting.	**45.** (1) Any building constructed after the commencement of these Regulations which is to be used— (a) As an institutional facility, place of employment or otherwise; or (b) as a manufacturing or industrial establishment; or (c) commercial establishment or place for the service of customers, shall have its roof adequately guttered for catching rain water or may have a ground catchment for the purposes of catching rainwater pursuant to these Regulations. (2) Subject as provided in subrule (3) of this regulation the storage capacity of the tank or tanks or other storage facility provided in respect of any building referred to in subrule (1) of this rule shall be capable of storing water sufficient to meet the equivalent of 7 days average water demand of the building. (3) Where adequate reason is given to the county government in consultation with the Water Storage Authority to the effect that – (a) it is not practicable—

	(i) to gutter the roof of a building mentioned in subrule (1) for catching rain water; or (ii) to provide a ground catchment having the prescribed area; or (iii) to provide a tank or tanks having the prescribed capacity; and (b) the building can in the opinion of the county government or water services provider, be adequately supplied with drinking water from a main piped supply, the county government may, subject to such conditions and restrictions as it may think proper to impose, allow the owner or occupier of the building to dispense in part or in whole with compliance with subrule (1) or of subrule (2). (4) Roof based rainwater shall be harvested for use through a filter into a storage tank or, subject to compliance with the water resource quality standards prescribed by the Authority, for recharge of an open well or borehole. In case of a borehole in the building rainwater shall be harvested through artificial structures or pits, irrespective of the nature of subsoil conditions. (5) Rainwater from the roof of the buildings such as tiled or sloped roof and flat roofs may be collected using appropriate sized gutters or pipe lines respectively and stored either in a collection tank or storage structure of appropriate size placed over the ground or underground after proper filtering and disinfection. (6) An appropriate filter shall be used for filtering rain water and the water shall be used for non-potable purposes. (7) The rainwater collected to be used for potable purposes by the owner or occupier shall be treated before use according to the Drinking Water Guidelines established by the Water Services Regulatory Board. (8) Any surplus water available after filling a storage tank may be diverted to an open well through recharge structure or pits.
Land Based Rainwater	**46.** (1) A person may:

Harvesting	(a) Directly capture and store precipitation on a parcel of land owned or leased by the person in accordance with subrule (2) or (3); and (b) Place the water captured and stored as provided in subrule (1)(a) to beneficial use on the parcel on which the water is captured and stored. (2) Land based rain water harvesting shall be done using the appropriate ground water recharge structures or pits depending on the nature the sub-soil conditions.
Technical and Capacity Building Support.	**47.** (1) The Water Storage Authority shall establish a website on which a person may register to receive technical and capacity building support from the Water Storage Authority or its agents to enable the person comply with these Regulations. (2) To register, a person shall complete information required by the Water Storage Authority including the: (a) Name and address of the person capturing or storing precipitation; (b) Total capacity of all containers storing precipitation; and (c) Street address or other suitable description of the location where precipitation is to be captured and stored.
Rainwater Harvesting by Agricultural Establishments	**48.** (1) Every agricultural establishment using water resources for irrigation purposes shall implement water harvesting and storage measures capable of storing flood water sufficient to meet three months water demand. (2)An agricultural establishment using water resources for commercial irrigation shall submit to the Water Resources Authority a plan of water harvesting and storage strategies to be implemented. (3) The Water Resources Authority or its agent may conduct an inspection to verify compliance with the implementation report
Storm water run-off.	**49.** A County Governments shall put in place measures to ensure that provision is made for planning, managing, maintaining, financing, extending and improving drainage services and storm water run-off

	collection within its area of jurisdiction.
PART IX- LICENSING OF QUALIFIED PROFESSIONALS AND QUALIFIED CONTRACTORS IN RESPECT TO WATERWORKS	
Licencing of Qualified Water Sector Professional or Approved Dam Contractor.	**50.** A qualified Water Sector Professional or qualified dam contractor desiring to be the licensed as a qualified Water Sector Professional for storage dams or other waterworks or qualified dam contractor, if not already licensed under the applicable Water Resources Regulations for the appropriate class of storage dam, shall apply in writing to the Cabinet Secretary for licensing.
Application to be Qualified Water Sector Professional of Approved Dam Contractor.	**51.** (1) The application shall be accompanied by – (a) A description of the class of waterworks and risk categories of the waterworks which the Water Sector Professional or contractor wishes to be licensed in respect of; and (b) Particulars of his or her relevant qualifications, training and experience. (2) Before determining an application by a Water Sector Professional contemplated in subrule (1) above the Cabinet Secretary shall forward it for consideration to the Technical Advisory Committee established under the applicable Water Resources Regulations, except when the procedure provided for in subrule (5) is followed; (3) The Technical Advisory Committee may recommend an application contemplated in subrule (1) for approval by the Cabinet Secretary subject to conditions if only limited shortcomings in experience or exposure related to the specific field of storage dams or other waterworks construction, engineering, design or operation and management or other relevant skill or experience have been identified in the application or it may recommend rejection of the application if substantial weaknesses are evident. (4) The Cabinet Secretary shall take into account the recommendations Technical Advisory Committee before granting an approval of an application contemplated in subrule (1) or rejecting it. (5) The Cabinet Secretary may approve an application by a qualified Water Sector Professionals for any task with a safety risk, taking into

	account the recommendation by the Technical Advisory Committee, provided that – (a) The type of dam is the same, or can be logically associated with a similar category or combination of dam types, for which the applicant has been previously approved; (b) The maximum wall height of the dam as defined in these Regulations does not exceed that for which the applicant has been previously licensed by more than: (i) Three metres in the case of Class SD1 dams; (ii) Five meters in the case of Class SD2 dams; and (iii) Fifteen meters in the case of Class SD3 dam. (c) The Cabinet Secretary may also approve an application for any specific task if the task is, in the opinion of the Cabinet Secretary on the basis of the recommendation of the Technical Advisory Committee, no more complex than that for which the applicant has previously been approved as a qualified water sector professional. (6) In the case of tasks to be carried out for a Class SD3 dam, a qualified Water Sector Professional shall apply to the Cabinet Secretary for approval of members of the professional team and provide the names, qualifications, curriculum vitae, relevant professional experience and description of each component of the task entrusted to each team member. (7) The Water Sector Professional or qualified contractor must be informed in writing of any decision of the Cabinet Secretary in terms of this regulation. (8) A professional contemplated in subrule (1) above shall- (a) Inform the dam owner of the decision of the Cabinet Secretary whether the application has been approved, conditionally approved or not approved;

	(b) Apply to the Cabinet Secretary for approval of a person or group of persons to assist him or her in the specified field of dam engineering if the approval is subject to conditions requiring assistance; and (c) Immediately inform the Cabinet Secretary in writing if he or she has withdrawn from a task or if his or her appointment has been terminated by the dam owner (9) An application contemplated in subrule (9) (b) must include the name, qualifications, curriculum vitae, and relevant experience of the person or group of persons providing assistance. (10) The different class of qualified professionals may be established specifying the maximum wall height of the dam, type of dam wall, regional maximum flood, and or type of task that the approved professional person may undertake and conditions in accordance with Table 2 and Table 3 in the Second Schedule. (11) The requirements for admission to a class of approved Water Sector Professional on the register are the same as those for regulating the approval of a professional person as a qualified Water Sector Professionals for a specific task, with the additional requirement that a Water Sector Professional shall have successfully completed at least one task for a specific dam as the qualified Water Sector Professionals in accordance with these Regulations. (12) The Cabinet Secretary shall maintain two separate registers of qualified water sector professionals and qualified dam contractors in accordance with the applicable regulations. (13) The registers contemplated in subrule (13) shall be published once per annum in the *Gazette* and shall be made available within reasonable time to any person who has made a written request to the Cabinet Secretary for a copy of the register.

	(14) A qualified Water Sector Professional on the register may undertake tasks as provided for on the register without having to reapply. (15) A qualified Water Sector Professional on the register may only perform a task or tasks within the class or class for which he or she has been approved and shall – (a) follow the procedure outlined in Regulation 37 (6) for tasks related to Class SD3 dams if applicable; (b) Follow procedure outlined in Regulation 37 (3) in the case of conditional approval; and (c) Submit a copy of the licence issued by the Cabinet Secretary to the Water Resources Authority for its records and the dam owner confirming that he or she has been licenced to perform a specific task or tasks, within 7 days of the licence being issued.
PART X - GENERAL PROVISIONS	
Offences.	52. Any breach of the provisions of these Regulations shall – (a) Constitute a criminal offence punishable in accordance with the provisions of Section 147 of the Act; and (b) Constitute a reason for suspension and or cancellation of the permit or other authorisation held by the owner of operator of the storage dam or waterworks.
Other Offences	53. (1) No person may – Use any works otherwise than as permitted under the Act and/or under these Regulations and for the avoidance of doubt – (a) Fail to comply with any condition attached to the operation

	and maintenance of Waterworks for water resources storage and flood control under the Act and these Regulations; (b) Fail to comply with an order or directive issued under the Act and these Regulations and unlawfully and intentionally or negligently tamper or interfere with any works or any seal or measuring device attached to a waterworks for water resources storage and flood control; (c) Fail or refuse to give data or information, or give false or misleading data or information when required to give information under the Act; (d) Intentionally refuse to perform a duty, or obstruct any other person in the exercise of any power or performance of any of that person's duties in terms of the Act and these Regulations; (e) Unlawfully and intentionally or negligently commit any act or omission which detrimentally affects or is likely to effect a waterworks for water resources storage and flood control. (2) Any person who contravenes any provision of subrule (1) of this regulation is guilty of an offence and liable on conviction, to the penalties prescribed under Section 147 of the Act.
Complaints Mechanism.	54. (1) Any person with a complaint related to any matter falling within the mandate of the Water Storage Authority shall submit the complaint to the appropriate office of the Water Storage Authority providing the details as shown in the Fifth Schedule. (2) The Water Storage Authority shall reply to the complainant, with copies to all other relevant parties, within twenty-one days of receiving the complaint, stating what action is being taken, the position of the Water Storage Authority on the matter and or any recommendation to the complainant. (3) If the complainant is dissatisfied, he or she may forward the matter to the Chief Executive Officer of the Water Storage Authority. (4) The Chief Executive Officer shall reply to the complainant either upholding or overruling the action taken and or decision made by the agent or officer within twenty-one days of receiving the complaint and the chief executive officer shall furnish copies to all other relevant parties of the decision. (5) If the complainant is dissatisfied with the decision of the Chief

	Executive Officer or if the chief executive officer fails to communicate his decision to the person complaining within 21 days, the person may have recourse under Section 121 (2) of the Act and may forward the matter to the Water Tribunal for determination (6) Each complaint shall be given a Complaint Number by the Water Storage Authority which shall be used for purposes of monitoring the response and action taken to address the complaint.
Transitional Arrangements.	55. (1) Construction of works by the Water Storage Authority or its agent prior to the commencement of these Regulations or construction work in progress on that date shall within a period of twelve months following the commencement of the Regulations or such longer period as the Authority may permit take measures to bring the waterworks into compliance with these Regulations. (2) Where existing or ongoing waterworks are not authorised the owner and or operator shall within a period of twelve months following the commencement of the Regulations lodge an application with the Authority for a water use permit.

Dated the …… 2023

MR. ZACHARIA NJERU

Cabinet Secretary
Ministry of Water, Sanitation and Irrigation

FIRST SCHEDULE

(Rule 4,5,6,7)

CLASSIFICATION OF STORAGE DAMS

Table 1: Classification of Storage Dams

Class of Dam	**Maximum Depth of Water at NWL (m)**	**Impoundment at NWL (m^3)**	**Catchment Area (km^2)**
SD1	0 – 4.99	< 100,000	< 100
SD2	5.00 – 14.99	100,000 to 1,000,000	100 to 1,000
SD3	≥ 15.00	> 1,000,000	> 1,000

NWL = Normal Water Level

SECOND SCHEDULE

(Rule 4, 6, 10, 12, 15, 22, 23, 25, 31, 35, 37, 51)

RISK FACTORS OF STORAGE DAMS AND OTHER WATERWORKS

Table 2: Risk Factors

Classification	Population at Risk	Incremental Consequences of Failure		
		Loss of Life	**Environmental and cultural values**	**Infrastructure, economics and other property**
SD 1 (Low Risk)	**Temporary/ Permanent**	**Minimal numbers**	Limited presence of: a) important fisheries b) important wildlife habitats c) rare or endangered species, or d) unique landscapes e) sites of cultural significance and additionally Restoration or compensation in kind for losses and damage is possible.	Low economic losses affecting limited infrastructure and residential buildings, public transportation or services or commercial facilities; alternatively limited destruction or damage to locations used occasionally and irregularly for temporary purposes.
SD 2 (Medium Risk)	**Permanent**	**Significant numbers**	Significant presence: (a) critical fisheries; (b) critical wildlife habitats; (c) rare or endangered species, or (d) unique landscapes (e) sites of cultural significance and additionally Restoration or compensation in kind for losses and damage difficult.	Moderate economic losses affecting important infrastructure, public transportation or services or commercial facilities, or moderate destruction or severe damage to residential areas.

SD 3 (High Risk)	**Permanent**	**Large numbers**	Presence of : (a) critical fisheries; (b) critical wildlife habitats; (c) rare or endangered species, or (d) unique landscapes (e) sites of cultural significance and additionally Restoration or compensation in kind for losses and damages is impossible or impracticable.	High economic losses affecting critical infrastructure, public transportation or services or commercial facilities, or significant destruction or damage to residential areas.

Table 3: ***Design and Supervision of Dam***

Class of Dam	Category of Qualified Water Se Professional
SD1	Panel II C, Panel I C1& Panel I C2
SD2	Panel I C1 & Panel I C2
SD3	Panel I C2

Table 4*: Category of Dam Contractor*

Class of Dam	Category of Dam Contractor
SD1	C1, C2
SD2	C1, C2
SD3	C1

Table 5: Minimum Return Period for Spillway Design

Class of Dam	Minimum Return Period for Design of Spillway

SD1	1 in 50 years
SD2	1 in 100 years
SD3	1 in 500 years

Table 6: Dam Safety Inspection Schedule

Class of Dam	Frequency of inspection	Inspection by
SD1	Once in 3 years	Panel I C1, Panel I C2, Panel II C
SD2	Once in 2 years	Panel I C2, Panel I C1
SD3	Once a year	Panel I C2

THIRD SCHEDULE

(Rule 12, 13, 14, 17, 20, 33, 34)

CONTENT AND FORMAT OF TECHNICAL REPORTS

The following technical reports shall substantially provide the details required.

DAM DESIGN REPORT (FOR CLASS SD1, SD2AND SD3 DAMS)

Item	Contents
1.	Details of location
2.	Details of hydrological assessment
3.	Details of design flood and return period
4.	Details of embankment
5.	Details of reservoir
6.	Details of draw-off and compensation works

7.	Details of spillway(s)
8.	Details of ancillary structures
9.	Details of construction materials
10.	Details of construction schedule
11.	Details of operational rules
12.	Procedures to notify and protect downstream inhabitants, infrastructure and environments
13.	Schedule of inspection and maintenance
14.	Assessment of impacts and risks

DAM OPERATION REPORT

Item	Contents
1.	Basic summary of technical details
2.	Details of management structure for dam operations
3.	Details of operational and release rules
4.	Details of operation and maintenance systems
5.	Procedures to notify and protect downstream inhabitants, infrastructure and environments
6.	Schedule of inspection and maintenance

DAM COMPLETION REPORT

Item	Contents
1.	Changes and explanation for differences between as-constructed and design details
2.	As-constructed drawings
3.	Summary of as-constructed details

DAM INSPECTION REPORT

Item	Contents
1.	Current condition of dam with respect to approved design and "as-constructed" condition
2.	Any action required to restore the functional and structural integrity of the dam to the required state
3.	Any changes with regard to the risk of or impact in the event of dam failure
4.	Review appropriateness of the action plan in event of dam failure

DAM DAMAGE OR FAILURE REPORT

Item	Contents
1.	Details of location
2.	Date and time of dam failure or damage
3.	Preceding climate
4.	Preceding hydrology
5.	Cause of dam failure or damage
6.	Steps taken to notify downstream inhabitants
7.	Nature and extent of damage caused to the dam or caused by the dam failure

FOURTH SCHEDULE

(Rule 17)

PREMIUMS FOR USE OF WATER FROM A REGULATED WATERCOURSE ETC

In the case of a permit to abstract or divert water from a regulated river a premium shall be paid by the water user which shall calculated using the formula herein:

$$(O \wedge M) + 20\% x allocation individual water user \in MCM/year \square \frac{}{Annual Design Yield of Storage Dam \in MCM/year!} = Kshsperyear$$

:

Where:

1. (O&M) is the Water Storage Authority's operation and maintenance costs of the dam releasing the water into the natural watercourse from which the abstraction or diversion occurs.

2. The allocation to individual water user is the water allocated by the permit to the individual water user in cubic metres per year.

3. Annual design yield is the design yield of the storage dam releasing into the regulated river in cubic metres per year.

4. The formula provides the basis for deriving the amount payable by the water user as a premium.

FIFTH SCHEDULE
(Rule 54)

COMPLAINTS

INFORMATION TO BE GIVEN BY COMPLAINANT UNDER THESE RULES

Item	Information
(a)	Name of Complainant
(b)	Contact address, telephone number, email address (if any) of Complainant
(c)	Nature and location of the problem
(d)	Date that problem occurred
(e)	Name and, if available, the contact details of all parties to the dispute or complaint
(f)	Any other relevant details
(g)	Signature of the Complainant