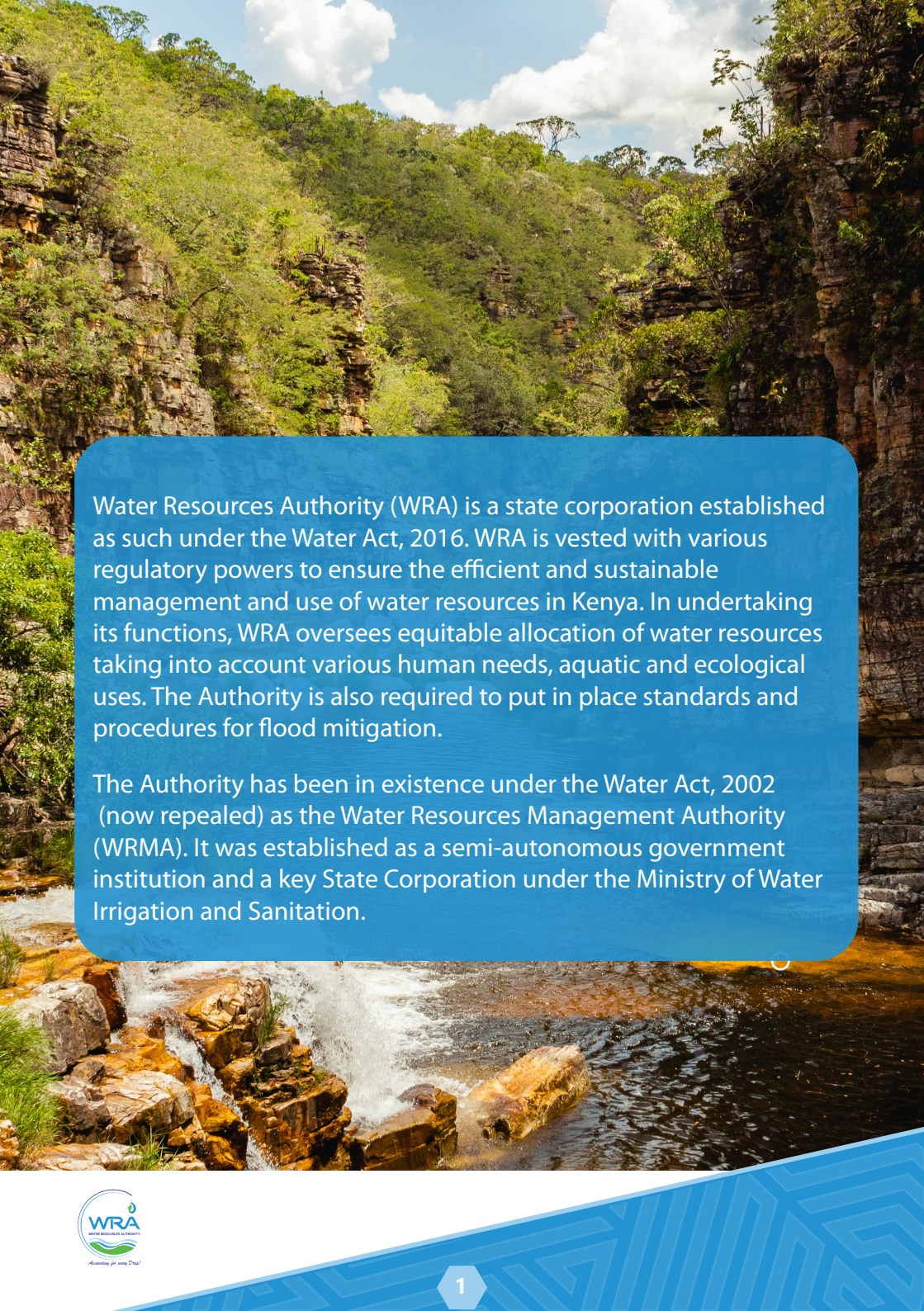


**FREQUENTLY
ASKED
QUESTIONS**
About Ground
Water.



Water Resources Authority (WRA) is a state corporation established as such under the Water Act, 2016. WRA is vested with various regulatory powers to ensure the efficient and sustainable management and use of water resources in Kenya. In undertaking its functions, WRA oversees equitable allocation of water resources taking into account various human needs, aquatic and ecological uses. The Authority is also required to put in place standards and procedures for flood mitigation.

The Authority has been in existence under the Water Act, 2002 (now repealed) as the Water Resources Management Authority (WRMA). It was established as a semi-autonomous government institution and a key State Corporation under the Ministry of Water Irrigation and Sanitation.

What are the functions of the Authority?

1. Formulate standards, procedures and regulations aimed at ensuring proper management and use of water resources.
2. Enforce Regulations formulated by WRA so as to ensure compliance through inspection, monitoring and enforcement.
3. Receive water permit applications for water abstraction, water use and recharge and determine, issue, vary water permits; and enforce the conditions of those permits. Permitting ensures WRA regulates water abstractions for different uses while ensuring equitable sharing. The process involves submitting an application, giving an authorization to construct abstraction works followed by issuance of water use permits. In the case of effluent, WRA evaluates Effluent Discharge Control Plans (EDCP) and then issues effluent discharge permits. The EDCPs advises the manner in which waste water should be treated before being discharged into the water resource. Permitting applies to surface, groundwater and effluent discharge.
4. Water use allocation
Water use allocation is a core function of the Authority covered under section 12 of the Water Act 2016. It involves the re-assessment of water resources in the six catchments, data collection and analysis, and development of water allocation plans for effective water demand management. It also involves clarity of obligations in permits as per regulations developed.
5. Collect water permit fees and water use charges
WRA collects water permit fees and water use charges for:
 - ▶ Assessment fees
 - ▶ Water Permit fees
 - ▶ Water use charges
 - ▶ Water Resources data sales
 - ▶ Effluent discharges fees
 - ▶ Inspection fees
 - ▶ Variation and amendment of permit
 - ▶ Water Permit fees
 - ▶ Laboratory fees
 - ▶ Easement fees
 - ▶ Sales of data and maps
 - ▶ Transfer fee

The collection of charges aid in the following;

- ▶ Enhancement of the permit database
 - ▶ Establishment online-billing system,
 - ▶ Water use charges
 - ▶ Development of a monitoring program for water charges
 - ▶ Surveillance of compliance by water users
 - ▶ Installation of smart measuring devices for Class C & D
6. Provide information and advice the Cabinet Secretary for formulation of policy on National Water Resource Management, water storage and flood control strategies.
 7. Coordinate with other regional, national and international bodies for the better regulation of the management and use of water resources WRA ensures that it uses participatory and consultative approaches and partnerships for better regulation of the management and use of water resources in Kenya.
 8. National Monitoring and Information System Water Act 2016 Section 21 requires WRA to ensure that there is in place a national monitoring and georeferenced information system on water resources.



What is Ground Water?

Groundwater' means the water of underground streams, channels, artesian basins, reservoirs, lakes and other bodies of water in the ground, and includes water in interstices below the water table (Water Act 2016).

1 Why is Ground Water essential?

In Kenya's water supply sector, groundwater is crucial. Considering that 34% of the population lives in Kenya's arid and semi-arid areas (ASAL), and about 50% of livestock. Water resources in Kenya are unevenly distributed in space and time. All of Kenya's major cities and towns, including Nairobi, Mombasa, Kisumu, Nakuru, ASAL districts, and rural water supplies rely heavily on groundwater for their water supply.

2 Is Ground Water found Everywhere?

Although groundwater exists almost everywhere, it is not always in quantities that make it possible to be extracted. For a borehole or a well to be sunk, you need to have found an aquifer.

3 What is a borehole/well?

A hole made in the ground to access groundwater.

4 Is permission required before drilling a borehole?

Yes, it is a legal requirement to get permission to drill a borehole. Every water resource is vested in and held by the national government in trust for the people of Kenya (Water Act 2016, sections 5 and 56).

5 Who is allowed to undertake drilling of boreholes?

Legislation requires that all water well drilling contractors operating in the country must be licensed by the ministry in charge of water affairs and the list is available in the ministry's website (water.go.ke).

6

What are the main steps involved in the borehole drilling process?

Step 1 – Establish groundwater availability in your property by engaging a Hydro-geologists to carry out a groundwater assessment and prepare a hydrogeological survey report.

Step 2 – Acquiring authorization to drill.

Subject to the availability of groundwater apply for authorization to construct works from Water Resources Authority office (WRA) by submitting the following documents:

- ▶ Personal/corporate identification documents
- ▶ Proof of land ownership documents
- ▶ Letter of consent if you are not the registered owner of the land
- ▶ Hydrogeological survey report
- ▶ Letter of no objection from the local water service provider where applicable
- ▶ Obtain recommendations from the local Water Resources Users Association (WRUAs)
- ▶ Pay the prescribed application assessment fee as guided at Water Resources Authority

Step 3- Apply and acquire the Environmental Impact Assessment license from NEMA as per the EMCA 1999, Amendment 2015

Step 4 - Engage a licensed drilling contractor

The licensed contractor will undertake the actual drilling, casing, gravel packing, cleaning the borehole and testing the quality and quantity of the water. Engage a hydrogeologist to supervise the works.

Step 5 - Apply for water abstraction permit by submitting the following documents:

- The borehole completion certificate form (WRMA 008)
- Borehole completion record (form WRMA 009A)
- Pay the prescribed fee

Step 6 - Pump installation

After the borehole is complete a pump is installed to lift the water to the point of discharge

7 How long does it take to get authorization to drill a borehole?

1-6months depending on the category of application determined by the location and volume of water applied for. Ref: WRA service charter.

8 Which is the role of borehole owner in the permitting and drilling process?

- ▶ Getting authorization to undertake borehole construction.
- ▶ Notification of commencement of drilling to the Sub Basin Office; stating who the contractor is and who the supervising hydrogeologist is.
- ▶ Getting a hydrogeologist to supervise the borehole construction.
- ▶ Ensuring the borehole completion report is duly filled and submitted to WRA.
- ▶ Obtaining permit for use of the borehole after it has been drilled
- ▶ Ensuring all the authorization conditions are followed.
- ▶ Keeping records and especially the borehole completion record of the borehole.

9 What is the responsibility of the driller in the drilling process?

- ▶ Getting registered and licensed as a drilling contractor by the Ministry of Water Sanitation and Irrigation.
- ▶ Ensuring any borehole being drilled by the contractor has an Authorisation to construct the boreholes from Water Resources Authority.

- ▶ Ensuring the borehole is constructed as per the best practice. The MoWSI and WRA have put in codes of practice for construction of boreholes and pumping test of boreholes.
- ▶ Notification of commencement of drilling to the Sub Basin Office; stating who the contractor is and who the supervising hydrogeologist is.
- ▶ Ensuring the borehole completion record is duly filled and signed off by the driller and supervising hydrogeologist.
- ▶ Submission of borehole completion record to WRA within one month of cessation of the works.

10

What is the role of the hydrogeologist in the drilling process?

- ▶ Ensuring he/she is registered and licensed as
- ▶ Compilation of a hydrogeological report that is credible
- ▶ Ensuring equipment is appropriate for the works and materials used are credible
- ▶ Ensuring the borehole is constructed as per best practice. The MoWSI and WRA have put in codes of practice for supervision of construction of boreholes and pumping test of boreholes
- ▶ Ensuring the borehole completion record is duly filled up by the supervising hydrogeologist and driller and gives accurate information

11

What of boreholes drilled without following the above processes?

The borehole owner should complete and submit all the documents as in step 2 and 5 to WRA

12 How much does it cost to drill a borehole?

The cost of a borehole is informed by:

- ▶ The depth and diameter
- ▶ The location
- ▶ Ensuring equipment is appropriate for the works and materials used are credible
- ▶ The drilling and construction materials
- ▶ The drilling method
- ▶ The geological formation (rocks)
- ▶ The professional fees
- ▶ The type and size of the pump

13 What information must be collected during the drilling process?

- ▶ Borehole log
- ▶ Water levels (struck, rest and dynamic)
- ▶ Water quantity and quality
- ▶ Borehole location

14 What is the importance of this information?

- ▶ To design how much water can be allocated and used
- ▶ To determine where to install the pump
- ▶ For borehole maintenance
- ▶ Management of groundwater resources
- ▶ Research purposes

15 Who takes this information or data?

- ▶ The drilling contractor during construction
- ▶ The owner of the borehole during operation

16 Who keeps this information?

- ▶ Water Resources Authority
- ▶ The Ministry in charge of water affairs
- ▶ The borehole owner



Setting a drilling rig on site



Installation of gravel pack into the borehole annular space.

For more information contact:

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