

# NATIONAL GROUNDWATER ARCHIVE (NGA)



The Department of Water and Sanitation is responsible for Groundwater Information in South Africa. This includes the collection and distribution of all groundwater related data and information products. Adequate groundwater information is paramount, particularly in a dry country such as the Republic of South Africa.

To be able to support strategic development objectives, it is important to report accurately on the status and trends observed about groundwater resources and it is vital to have all obtained groundwater related data captured and frequently updated in the centralised **NGA** database.

The prominent features of **NGA** are depicted in this pamphlet.

WATER IS LIFE - SANITATION IS DIGNITY

SOUTH AFRICA IS A WATER- SCARCE COUNTRY



**water & sanitation**

Department:  
Water and Sanitation  
REPUBLIC OF SOUTH AFRICA



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## What is the National Groundwater Archive (NGA)?

The **NGA** is the web enabled database system that allows capturing, viewing, modifying and extraction (dissemination) of groundwater related data.

## Why NGA?

The Department has a legal obligation to ensure that water resources (including groundwater) are protected, used, developed, conserved, managed and controlled in a sustainable and equitable manner.

The **National Water Act (NWA) (Act No 36 of 1998), Chapter 14 Part 2** requires the establishment of national monitoring and information systems because the availability of information about water resources is regarded as critical to the main purpose of the NWA. Section 139.2 (c) refers specifically to a national groundwater information system, which translates to the National Groundwater Information Systems (NGIS) Portfolio.



*Cleaning of old borehole, Vanrhynsdorp, Western Cape - Photo: Jana Brits*

Within the NGIS Portfolio, **NGA** is the largest system. The need for groundwater data and information continues to increase to assist in planning to provide water to people, monitoring, drought relief and climate change.

## **What is the philosophy behind NGA?**

- Based on the Standard Descriptors for Geosites (SDG)
- Web enabled and therefore gives immediate and direct access to clients 24 hours a day, 7 days a week
- User friendly, with minimum clicks and easy navigation
- Minimum business rules enable more accessibility to data owners

## **What are the benefits of NGA?**

- Data ownership is entrusted not only to Department but also to external stakeholders
- No license fees
- Accredited National Groundwater system of choice

## **What functionalities are currently available?**

- Users can register with various roles e.g. 'Inquirer', 'Data Capturer' etc.
- User registration includes spatial address navigation
- Users can search in versatile ways for existing records
- Extensive export capabilities
- Data owners control their own data
- Geosite Identification Allocator Tool (GIAT)
- Geosite Graphs: Water Levels

## What business modules are currently available?

Business Value	Module Name	Data
Efficient management of water source	Abstraction	Groundwater volumes extracted
	Discharge Rates	Rate at which groundwater is abstracted
	Downhole Geophysics	Data regarding the monitoring or non-monitoring type of permanent equipment installed in a Geosite*
	Equipment Installed	Data regarding the monitoring or non-monitoring type of permanent equipment installed in a Geosite*
	Geosites linked to Bulk Meter	Volumes from non-metered boreholes
	Lithology	Data regarding the Hydrogeological log - Lithology refers to the physical characteristics of rocks including colour, grain size, sorting, etc. ** Based on BGS with adaptation from **CGS.
	Operational Recommendations	Recommendation on use of Geosite
	Pumping Test Details	Interpretation and data analysis of Pumping Tests results
	Water Level Details	Depth of water table below surface and reduced water level time series data set transferred from HYDSTRA
	Water Strike	Depths and yield where groundwater was encountered
Yield Test	The Calibration Test, Constant Yield, Multi-Rate Test and Step Test details as well as the data analysis for the Geosite	

## What business modules are currently available? (continued)

Business Value	Module Name	Data
Identify quality of water resource	Field Measurements	Indicate general quality of groundwater
Origin of Geosite data	Geosite Information References	Primary data e.g. Geohydrological report containing original data
	Owners Information	Person/organisation who owns the Geosite
	Site Visit Information	Person who collected data
Construction & Development of Geosite	Casings / Linings	Depth and diameter of casing / linings
	Construction Completions	Administrative information regarding the construction of the Geosite, as well as the construction completion date for the Geosite
	Depth and Diameters	Data regarding the depth and diameter of a Geosite
	Fill Materials	Details of backfilling for borehole
	Geosite Development	Data regarding the development of a Geosite
	Openings and Screens	Perforations in the borehole casings
	Piezometer	Type of casing inserted in a Geosite in order to take measurements at different depths
Linking with other systems (avoid duplication)	Other Numbers	Any number linked to Geosite

\* Geosite include the types: Borehole, Drain, Dug Well, Lateral/Radial Arm Collector, Mine, Seepage Pond, Sinkhole, Spring, Tunnel, Well Point

\*\* BGS: British Geological Survey, CGS: Council for GeoScience.

## What future functionalities can be expected?

- Extended Geology Elements
- Visual (Spatial) map based search
- Enhanced System outputs
- Multi-media extension
- Extended Downhole Geophysics Elements



*Center pivot irrigation from production borehole, Vanrhynsdorp, Western Cape - Photo: Brian Dyason*



*Western Cape - Photo: Brian Dyason*

## How to get hold of us and register as a user?

### NGA Internet address:

<https://www.dws.gov.za/NGANet/Security/WebLoginForm.aspx>

**Enquiries:** [ngaur@dws.gov.za](mailto:ngaur@dws.gov.za)

## Other related links:

**SDG:** <https://www.dws.gov.za/Groundwater/documents/SDGMar04.pdf>

**Groundwater Website:** <https://www.dws.gov.za/Groundwater/Default.aspx>

**Content supplied by:** Hendrika (Driekie) Visagie, Olga de Beer, Ernst Bertram from Directorate: National Hydrological Services and Louise Swanepoel, Victor Boshoff from NGIS Development Team

*Front cover photo: Monitoring borehole, Vanrhynsdorp, Western Cape - Jana Brits*