

EASTERN CAPE GROUNDWATER RESOURCE INFORMATION PROJECT (GRIP)

Communities residing in the rural areas of the Eastern Cape Province rely predominately on groundwater for their domestic water supply, many of which use groundwater as a sole source of drinking water. Increasing numbers of water supply projects are in progress to develop groundwater sources and consequently the demand and focus placed on groundwater is also increasing. Recurring outbreaks of cholera in certain areas in the province has further emphasised the necessity for proper groundwater management. Specific and accurate borehole information is vital in order to ensure that groundwater resources are managed effectively, to ensure protection from over abstraction and pollution. Most important it is necessary to collect the necessary information on groundwater availability and use to ensure that in future groundwater resources are developed in a cost effective, efficient and sustainable manner.

The Eastern Cape Water Resources Institutions Directorate of the Department of Water Affairs and Forestry (DWAF) is currently responsible for the operational use and management of the provincial groundwater database as part of the national groundwater database (Open-NGDB). Information collected is processed for quality control, assessments on the data are performed and it is then entered into the database. The Open-NGDB is accessed throughout the Department for planning and assessment of groundwater resources both nationally and regionally. However, the usefulness and effectiveness of this database is dependent on the level and quality of data that is entered into it. Where groundwater data is comprehensive, planning and decision making is enabled through ready access to the necessary information. Where data is sparse, decisions are made with higher risk of problems and delays are caused while the essential information is collected through lengthy field studies. It is also recognised that a significant amount of information is contained in diverse reports as the product of numerous studies that have been carried out over the past 10 years. This information is not readily accessible in current form and is a time consuming exercise to locate and interpret. As a result, ongoing projects often commission repeat studies on the area in question rather than attempting to locate the information which may be lodged in scattered sources. This entails duplicated time and expense and would be unnecessary if the information was centrally located.

The effectiveness of the database requires the groundwater information to be as comprehensive as possible, collated and contained in a centrally located system, the Open-NGDB. This project seeks to assemble all appropriate groundwater data, investigate it for accuracy and suitability and subjecting it to certain quality control procedures. Once deemed acceptable, the data will be entered into the Open-NGDB and in this way become accessible throughout the Department for immediate use.

The project further aims to conduct field verification and investigations of the groundwater data, to confirm information where available and to obtain essential information in areas where there is none available. This will entail significant field work in later phases, once the initial desk study has been completed to identify and verify each borehole in the Province. The field investigations will also define hydrogeological conditions at each borehole or relevant groundwater discharge point for example a spring.

The groundwater database is essential for effective planning and management of current projects, proposed new projects and will also be the basis for the proper

functioning of new institutions created to manage water resources at catchment level, namely the Catchment Management Agencies (CMAs).

The quality and quantity of borehole data is evidently the main entity that will need to be addressed to ensure effective groundwater resource development and management in the Eastern Cape Province.

AIMS AND OBJECTIVES

The primary objective of this project is to access, verify and collate information on groundwater resources within the Eastern Cape Province for use in groundwater resources planning, development and management.

This project aims to set up the data collection systems and procedures, data verification processes, data capturing and quality control methods for the Eastern Cape GRIP. The project is intended to build the framework for future studies which will systematically cover the entire Province with the goal of completing a fully populated information base that is readily accessible for groundwater resources development and management purposes throughout the Eastern Cape Province.

The first phase is limited in extent to establishing the systems and procedures for conducting the GRIP. The desk study will collate information and the limited field component will verify data in key areas with an existing groundwater problem

[Note: this project will **not** develop a new database. It will simply make use of the existing Open-NGDB – National Groundwater Data Base].

The following specific aims have been identified

- *Identifying key target areas for pilot implementation of field verification of groundwater information: one area in the OR Tambo DM and one area in the Cacadu DM;*
- *Collecting all available groundwater information contained in various reports and studies for various purposes as conducted over the past 10 years;*
- *Carrying out quality control and assessment on groundwater information;*
- *Examining and verifying groundwater information and entering it into the Open-NGDB as appropriate;*
- *Collecting and processing all available information on boreholes throughout the Eastern Cape Province and preparing it for entering into the Open-NGDB;*
- *Collecting and processing decision-making information on groundwater use and impacts;*
- *Delivering real-time geohydrological scientific information according to the minimum standards as laid down by the Department;*
- *Supporting the full implementation of the regional- and national groundwater databases and other data capturing initiatives.*

- *Involving local academic institutions for information supply as well as capacity building through the involvement of students in data capturing and processing stages;*
- *Capacity building and affirmative action in developing PDI consultants, in both technical and managerial functions.*

The longer term objectives of the project will be as follows:

- *Maintenance and improvement of groundwater data residing in the existing Open-NGDB and other provincial databases;*
- *Support the development of the existing groundwater resources division into a client-service oriented unit in preparation for the establishment of Catchment Management Agencies (CMAs);*
- *Support the development of services to stakeholders within the Water Management Area (WMA) including communication of groundwater information through various mechanisms as appropriate to the needs of the stakeholder;*

The GRIP data can be accessed and downloaded on the following Internet address:

www.gripec.co.za