TERMS OF REFERENCE FOR A DIRECTED WRC PROJECT

KEY STRATEGIC AREA	**Water Resource Management and Ecosystems**
THRUST	
PROGRAMME	
TITLE	**Guidance document on Groundwater Scheme Development (identified as Installing groundwater schemes).**
TOR ID	**1009864**

General Objectives:

The Strategic Water Sector Cooperation (SSC) between Denmark and South Africa (DWS) is a long-term bilateral cooperation, which amongst others are contributing to the South African water sector by sharing practical experience and providing expert input into the gaps in the South African groundwater guideline municipal sphere in order to add long term value to the South African work on optimizing the utilization of groundwater. A Table of Contents (ToC) for 5 guidance documents has been developed, with special focus on the optimal use of groundwater in the current water supply mix as outlined below:

1. Conjunctive Use (identified as Integrated water use management)
2. Groundwater Scheme Development (identified as Installing groundwater schemes)
3. Management of Groundwater Schemes
4. Data collection
5. Protection Zones (Delineation and Protection)

One key aspect is to develop a South African groundwater management (SAGM), based on the detailed Danish methodology, international knowledge and South African specialized knowledge of the South African hydrogeology. The SAGM will be developed in an iterative approach, initially based on existing experience of both countries (and international experiences, where relevant), and afterwards further expanded and developed, based on experience from a number of case studies.

Specific Aims:

The purpose of this guideline is to facilitate the development of groundwater schemes at municipal level. This intervention will consider:

1. To give an overview of the resource development life cycle for ground water scheme development at municipal

level;
2. Develop a groundwater mapping methodology;
3. Conducting a preliminary feasibility study, which includes geological and hydrogeological descriptions that resembles the mapping done in Denmark, including a conceptual model of the area;
4. To assess the requirements of the groundwater scheme design in relation to how large a resource is needed to have enough water (conjunctive use) and to have a secure water supply (reserve water);
5. How to setup a monitoring network in order to monitor how the groundwater levels and quality develops through the years. Also in order to timely be able to mitigate any deterioration in quality or unwanted changed in water levels.
6. Develop a framework approach on how to do the final design, which includes aspects of wellfield/borehole development, bulk infrastructure, management plan + Training;
7. Stakeholder engagement workshop to look at what option analysis is available in terms of groundwater scheme development and assessing the (geophysical methods to be used, production drilling methods, sampling and pumping tests);
8. Handing over of operating rules should include cost estimations;
9. Conduct at least one workshop.

Rationale:

Note:

Deliverables:

1. Feasibility report
2. Report on planning phase, resource development, design and costing, implementation and O&M;
3. Framework approach on the final design;
4. Stakeholder report
5. Guidance document on groundwater scheme development as print-ready final report

Expected Outputs

Lighthouse:

Knowledge Tree

Time Frame: 9 Months

Total Funds Available: (VAT Inclusive)

Year 2021/2022 R300 000,00