Course Announcement

PROFESSIONAL BOREHOLE DRILLING SUPERVISION
23–27 APRIL 2018, BLOEMFONTEIN, SOUTH AFRICA

Introduction

Rural communities throughout SADC rely on groundwater for a potable water supply, while in urban areas, groundwater has become the principal source of water for many urban residents due to failure by municipalities to supply water to residents. As a result, groundwater development has increased and borehole drilling has grown exponentially in recent years, with the demand for, and the cost of boreholes escalating considerably.

The construction quality and the life-span of these newly developed boreholes appears to be declining dramatically. Therefore the improvement in drilling capability and borehole completion is of value across the entire region. However, challenges including poor service, poor borehole drilling practices, the use of cheap and inferior materials for pumps and down-hole components and lack of supervision all result in poorly drilled and improperly equipped boreholes. The end result is that these boreholes tend to have a very limited lifespan, often less than 5 years, before they fail entirely, either by collapsing, silting up or drying out. The costs of such failures, both human and financial, are enormous and unsustainable.

The root causes for the increasing numbers of these poor boreholes are numerous limitations at both individual and institutional levels in context of the growth in demand cited above. These inadequacies are to a large extent related to limited technical and vocational capacity;

- to effectively locate adequate groundwater resources "**short course 1"**
- to professionally supervise borehole drilling, casing, capacity testing, pump fitting and data collection to ensure that adequate quality boreholes are installed "**short course 2"**
- to appreciate hydrogeological factors and to understand catchment water balances and the concept of sustainable groundwater yield **"short course 3"**
- to drill, install, operate, and to maintain borehole hardware and equipment **"short course 4"**
- to source and purchase appropriate borehole components and materials **"short course 5"**

In light of the foregoing, the SADC-GMI, Africa Groundwater Network (AGW-NET), Institute for Groundwater Studies (IGS) and WaterNet "the Consortium of Organisers", will be offering **short course 2 entitled *"Professional Borehole Drilling"*** at the IGS, University of Free State, South Africa. The course is part of a five
module programme ***(Short Courses 1 to 5)*** to be offered by the Consortium of Organisers.

Training objectives

The broad objective of the course is to: Develop skills and knowledge of key professionals to supervise borehole drilling, properly document the process and solving onsite problems during the construction of boreholes.

Approach

The course comprises one day of classroom (theoretical work), followed by three days on site during a drilling operation and one classroom day to synthesize the knowledge.

Learning Outcomes:

By the end of the course participants will;

a. Understand the importance of effective supervision in borehole construction for sustainability
b. Understand the steps and detailed actions required in full time borehole supervision
c. Understand the steps and detailed actions required in part time milestone borehole supervision
d. Be able to quality assure and certify drilling records
e. Be in a position to undertake borehole supervision construction

Target group

The course will take a Training of Trainers (ToT) Model. The training targets the following categories of professionals:

- National, regional and district level managers/supervisors managing drilling projects
- Supervisors/Managers of private drilling companies
- Consultants who supervise borehole construction
- Recent Hydrogeology/Geology/Water Engineering Related Graduates who seek to acquire field experience
- Educators, Trainers and Lecturers who can incorporate borehole construction in their curriculum

Course Content

The following content will be covered during the course:

- Geology and Groundwater Occurrence
- Understanding basic aspects of groundwater
- Principles of Borehole Supervision
- **On-site Supervision – Drilling preparation-**Meetings with community, Drill rig set-up, site safety, inspection of material to be used for construction, depth monitoring, drill fluid, sampling, final depth determination, and supervisor's checklist
- **On site supervision – Drilling-**Lithology sampling/logging, penetration rates, Identification of water strikes and aquifer, Blow yields, Borehole design, casing and screen selection and installation, gravel packing and borehole development
- **On-site supervision –** Borehole development, sanitary seal, borehole completion, borehole disinfection and pad construction, Practical demonstration of pumping test and sample collection for water quality testing
- **Supervision**: Drilling documentation, check list, reporting and handing over

Organisation

The training is a collaborative effort between SADC-GMI, WATERNET, AGW-NET and IGS.

Facilitators

The training will be facilitated by;

- Professor Danie Vermeulen of the IGS
- Dr. Modreck Gomo of the IGS
- Dr. Richard Owen of the AGW-Net

Funding

Participants will be expected to self-fund their participation or be funded by their respective institutions. The registration fee for self-funding participants is USD450. Partial funding maybe available and will be reviewed on a case by case basis.

Applications

Applicants should send their curriculum vitae along with a completed application form to the organisers. Applications should be sent to training@sadc-gmi.org. The subject line of the email should be ***"Professional Borehole Drilling Supervision"*** . Click the link to access the application form.

The deadline for receiving applications is the 30th of March 2018. Successful applicants will be notified by the 6th of April 2018.