SCOPE OF WORK

PROVISION OF GRASS CUTTING AND RESEEDING OF BARE AREAS AT RAND WATER VLAKFONTEIN RESERVOIR, BENONI

1.1. DESCRIPTION

Rand Water obtained approval for the construction of the Vlakfontein Reservoir in Benoni, which has since been successfully completed. While certain sections of the construction area were reinstated and rehabilitated, portions of the site remain outstanding where vegetation has not sufficiently established. The Rand Water Environmental Management Services (EMS) section is therefore required to rehabilitate these remaining areas through grass seeding and grass cutting.

Approximately ***10 219 m²*** requires rehabilitation across both the old Vlakfontein Reservoir and the newly constructed reservoir properties. This intervention is essential to ensure compliance with the Environmental Authorization conditions and the Environmental Management Plan (EMP).

The appointed contractor shall verify the exact size of the area requiring seeding and carry out the work as outlined in this Scope of Work.

1.1.1. OBJECTIVES OF THE REQUIRED WORK

The objective of the project is to restore the natural environment around the Vlakfontein Reservoir by:

Cutting overgrown grass and removing cuttings.

Reseeding bare patches to promote vegetation growth.

This rehabilitation will enhance the site's aesthetics, strengthen ecological balance, and prevent soil erosion. The work further ensures regulatory compliance while contributing to Rand Water's sustainability objectives by restoring the land to a stable, natural condition.

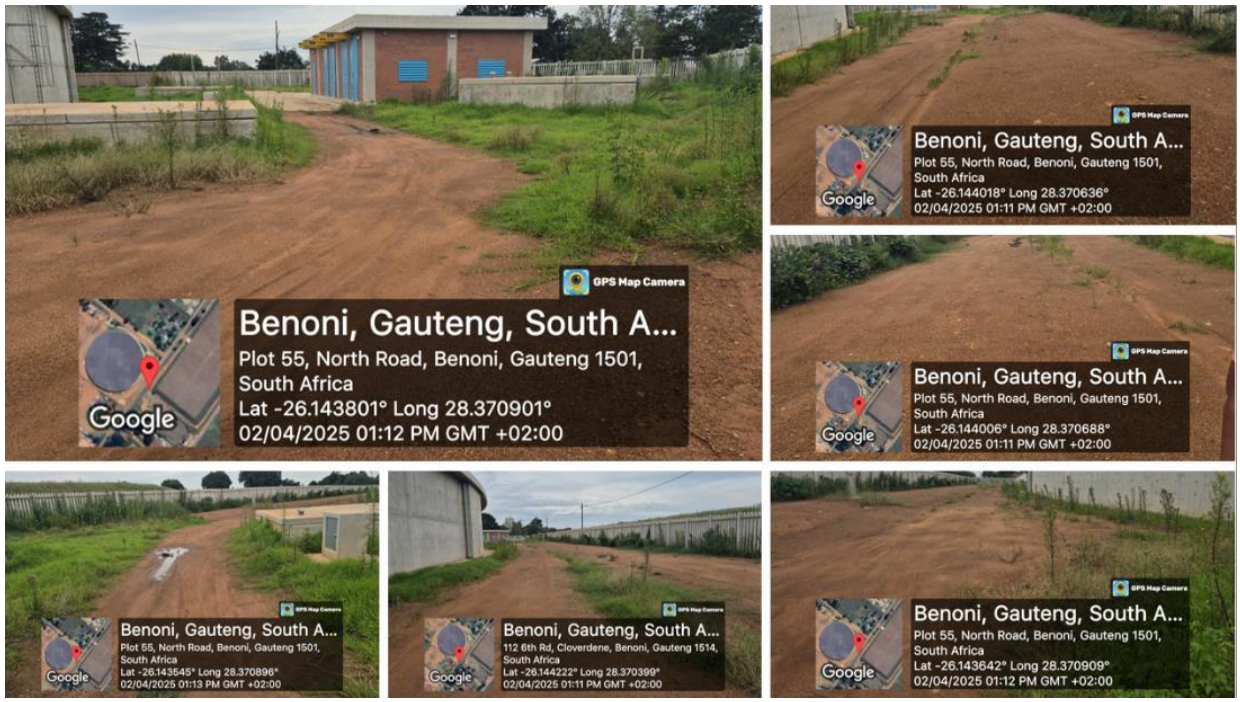
1.1.2. SCOPE OF WORK

The scope of work includes the following activities:

- Grass cutting and disposal of cuttings.
- Cultivation of compacted soil to promote vegetation growth.
- Reseeding of the specified bare areas.
- Application of fertilizer.
- Ongoing maintenance of the rehabilitated areas.
- Weeding of the site until handover.
- Watering/irrigation of seeded areas.

Area/Property Description	**Area affected**	**Proposed Rehabilitation Method**
Vlakfontein areas Existing Reservoir property	*1 800m²*	Grass Cutting, soil preparation, seeding, fertilizing, mulch, maintenance (watering, follow up fertilizing and weeding) of the area until grass germination and growth.
Vlakfontein Reservoir construction site	*6 300m²*	Grass Cutting, soil preparation, seeding, fertilizing, mulch, maintenance (watering, follow up fertilizing and weeding) of the area until grass germination and growth.
Total grass seeding area	***8 100m²***	
Lawned area adjacent to kerbs paving proximity of the reservoir.	*1 056m²*	Grass cutting of the identified area
Lawned area behind the	*659m²*	Grass cutting of the identified area

control room.		
Lawned area by the Entrance	*404m²*	Grass cutting of the identified area
Total grass cutting area	***2 119m²***	



The above pictures depict the bare areas within the reservoir that requires rehabilitation through grass seeding.

The above pictures depictes the lawned areas that requires cuttings and maintenance during the execution of the rehabilitation phase.

The above figure depicts the area within the existing old Vlakfontein Reservoir that requires seeding of the patches.

1.1.3. GRASS CUTTING

All grass within the identified areas or properties is to be cut to a height of 10cm or 15cm only when rubble or rocks are present, which makes it unsafe to cut to a height of 10cm. The contractor shall be expected to cut the existing identified area prior to executing the grass seeding activities and follow up cutting will be undertaken once the seeded areas have grown grass. All-inclusive price per square meter to include cutting of grass, weeds, any vegetation withing the properties or per the provisioned areas, litter picking and rubble etc. All grass to be cut within the demarcated area. If no areas are specified it is presumed the entire site will be cut. No grass to be left in the fence or against structures e.g. boreholes or within drains /channels or other objects found within this or the edges of that area. This will include rubble, buildings, structures or plants. There is no limit to types of equipment or methods to be used. Grass can be cut using brush cutters, tractor slasher mower etc. and can be raked manually or with a tractor mounted rake. There are trees identified on site that will require to be worked around, no trees should be cut or removed on site. The frequency of grass cutting is estimated to be 3 cuttings in different intervals depending on the need on site and as per Rand Water Environmentalist instruction.

1.1.4. GRASS SEEDING OF THE AFFECTED AREA

***Figure: Shows the areas that require grass cutting and seeding within the Old and New Vlakfontein Reservoir Properties with an* approximate area of 10 219m2.**

The entire scarred area to be seeded must be scarified either mechanically or manually to provide suitable conditions for grass germination and minimize water/wind disturbances. Soil is to be scarified to a minimum depth of not less than 60 mm and with a scarification spacing of not more than 200 mm apart. The final levels of the area to be prepared should tie in with existing hard landscape levels. The contractor shall ensure that areas that show signs of erosion are efficiently prepared to address the gully formation. All rubble, stones and other foreign objects must be removed and disposed of at the approved dumping site. Proof of dumping needs to be obtained and submitted to Rand Water.

1.1.4.1 SEEDING MIXTURE

Rand Water EMS Nursery has to date successfully used a seeding mixture of *Eragrostis teff*, *Digitaria smutsii, Chloris gayana, Melinis repens and Cynodon dactylon*. The mixture ensures adequate variety and blends in well with surrounding grass species. This mixture is recommended yet remains open to further species being added. Should the Contractor wish to recommend additional/replacement indigenous grass species, these must be specified in the tender/quotation together with the Contractors' recommended application rate. Preference will be given to improved seeding mixtures recommended by the Contractor. The mix must mirror the existing grass varieties; the final varieties are to be approved by EMS Manager Horticulture or Environmentalist: Rehabilitation.

1.1.4.2 SEEDING RATE

- *Eragrostis teff* *20 kg/ha*
- *Digitaria smutsii* *10 kg/ha*
- *Chloris Gayana* *10 kg/ha*
- *Cynodon dactylon* *20 kg/ha*
- *Melinis repens* *10kg/ha*

1.1.4.3 ANTICIPATED PERCENTAGE COVER

It is suggested that with the above-mentioned seeding mixture and at the given application rate a 95% (ninety-five percent) cover can be obtained. The Contractor shall ensure then that no single area 0.5 m^2 or larger be left uncovered with a total uncovered area not in excess of 5% (five percent) over the entire scarred area. Should these conditions not be acceptable to a Contractor, it must be stipulated in writing together with the quote for grass seeding and the Contractors' guaranteed percentage cover. The minimum height of the grass should be 20cm; the contractor must remain accountable until this standard is recognized. Keeping adequate barricading up, to prevent pedestrians and vehicles from damaging the newly germinated grass. The contractor should continuously monitor the site and correct when minimal damage occurs on the germinating grass.

1.1.5 Application of Fertilizers

It is a standard requirement of Rand Water that any contractor responsible for the application of fertilizers must submit proof of registration and certification as a Pest Control Operator (PCO) in terms of the *Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, No. 36 of 1947 (as amended)*. Proof of registration must accompany the quotation. Failure to comply will render the quotation invalid, as Rand Water would otherwise be considered to be contravening the law.

The Contractor shall supply a selection of fertilizers, deliver them to site, and apply them under the supervision of the Environmentalist: Rehabilitation.

1.1.5.1 Type of Fertilizer

- Superphosphates must be applied during seeding or planting.
- 2:3:2 fertilizer must be applied as follow-up to establish vegetation cover.
- If the site is already established, alternative fertilizers such as 3:2:1, 3:1:5, or 4:1:1 may be applied.
- Soil samples and fertilizer recommendations may be requested by the Environmentalist: Rehabilitation. Costs for such analysis will be borne by Rand Water.

1.1.5.2 Application Rate

- Superphosphate and 2:3:2 must be applied at a rate of 5 kg per 100 m^2 across the scarred area, at specified intervals.
- Where alternative fertilizers are supplied, application rates and intervals will be determined by the EMS representative.
- Chicken manure may also be applied where appropriate.

1.1.5.3 Fertilizer Intervals

- Superphosphate must be applied at the time of seeding.
- Follow-up fertilization shall be conducted at intervals specified by the EMS representative to ensure proper vegetation establishment.

FOUR WEEKS AFTER SEEDING

Θ A follow up fertilization with 2:3:2 must be applied, 5kg/100m2.
Θ Eight weeks thereafter (twelve weeks after seeding or planting) a second application of 2:3:2 must be applied.
Θ Any additional/alternative fertilizer requirements to ensure continued healthy plant growth must be done in
consultation with the Environmentalist Rehabilitation officer.

1.1.6 MULCHING OF SEEDED AREA

On completion of sowing the seed, the site may also be covered with a very light layer of veld grass as much as possible. This mulch layer shall be no thicker than 2-3mm deep.

1.1.7 WATERING OF GRASS

If the installation of temporary irrigation is not feasible, the contractor will be responsible for providing irrigation as required until the 95% cover as required. Watering of the site should be done twice a week for a period of 3 months.

1.1.9 WEEDING GRASSED AREAS

All grassed areas must be kept free of weeds, at all times until the site is handed over. Either by means of physical or chemical weeding. Where chemical weeding is used, the product to be used must first be discussed with the Environmentalist: Rehabilitation officer. Staff applying chemicals must be fully trained, competent and certified. The MSDS sheets of chemicals must be kept on site at all times. The appointed contractor will be requested to have the PCO License. Weeding should be inclusive of the invasive alien plant species.

1.1.10 MAINTENANCE

- The site will be maintained until the grass growth has reached 20cm in height or 95% grass cover.
- Keeping adequate barricading up, to prevent pedestrian traffic from damaging the newly germinated grass.
- The contractor should continuously monitor the site and correct when minimal damage occurs on the germinating
- grass.
- Adequate watering of the area to ensure optimum growth.
- Payment will be linked with the rate of application and growth percentage of seeding, germination and with the average height of 20cm or 95% grass cover.
- Seeding payment will be done in parts i.e. during germination and when growth is 20cm.

1.1.11 RESEEDING

The Contractor shall consistently monitor the germination and the growth of the seedlings. Should the identify bare or die back areas, the Contractor shall take immediate measures to have those areas reseeded or plant plugs at his cost within 14 days from the date of notification by the Environmentalist Rehabilitation.

1.2. THE CONTRACTOR MUST:

- Be fully conversant with the scope
- Be fully conversant with all environmental legislation and ensure compliance.
- Ensure that all the environmental and safety specifications contained within scope of work are adhered to on the
- site.
- Regularly liaise with the district superintendent and Manager Environmental Rehabilitation on matters relating to the
- environment.
- Confine activities to the demarcated construction site.
- That all requirements of the tender are adhered to and addressed.

1.3. STANDARDS THAT APPLY

- Returnable documents
- Agreements and contract data
- Pricing data

- Schedules
- General Authorization
- Approved Environmental Management plan

1.4. DELIVERABLES

- Grass seeded site to be 95% covered in grass as per specification and at a height of 20cm.
- The handover will be done after the required standard is met.
- Grass seeded and growing on the identified areas.
- Watering and maintenance of the grassed areas.
- Well germinating grass.
- Sites to be free of weeds.
- Area grassed and lawn growing.

1.5. TO BE SUPPLIED BY THE CONTRACTOR

- Staff who are fully trained and experienced comply with all standards set in document.
- Workers who comply with all the standards set in documents.
- All tools and materials
- Photographs are to be done in digital format accompanied with one print out
- Documents as requested in schedules.
- Fertilizers (organic and inorganic)
- Seeds
- Irrigation

1.5. LABOUR AND EQUIPMENT

The Contractor shall be liable for the provision of labour, including all related costs, the provision of all tools and equipment required, the maintenance and repair of all tools, equipment and vehicles. Competency certificates should be available for all contract staff working on site.

1.5.1. LABOUR

The Contractor is to supply a suitable human resource capacity responsible for project management, staff's physical safety, disciplinary and other requirements. Staff will have to undergo induction training via Rand Water SHEQ Officer. Medical certificates of fitness from an Occupational doctor should be available for all employees working on this site.

1.5.2. COMPLIANCE TO LEGISLATIVE REQUIREMENTS INCLUDES THE FOLLOWING.

- Safety, health and environmental compliance
- Compliance with Authorisation and Environmental management plan.
- Compile and submission of SHE
- Rand Water training induction
- Medical certificates of fitness
- Project Management and other contractual obligations.

1.5.3. Human resource capacity required as minimum:

- 1 Project Manager
- 1 Site supervisor
- 1 Safety representative
- 1 First Aider

- Minimum of 10 Staff

1.5.4. Equipment

The plant and equipment etc used shall satisfy the requirements of the OHS Act or any amendments thereof, also regulation as may be framed there under at any time up to and including the date of completion of the Work under this contract. All maintenance of tools and equipment will take place off site or undertaken on site in an environmentally acceptable manner in order to prevent oil/lubricant and diesel/petrol spillages on site. All equipment as specified in the tender document must be available and good working condition at all times.

The following are the minimum essential requirements for the work.

- Relevant tools (Rakes, shovels, spades, Ripper machine to mentioned few)
- 1 Water bowser truck – Watering/Irrigation
- 1x Gazebo
- 1 Table and 10 chairs
- Ablution facilities (Toilet)
- All other relevant tools and equipment that will enable the work execution.

1.5.5. Work Program

The tenderer shall submit the proposed start and completion dates. The work is expected to be completed within the period of 3 months excluding the maintenance of the site that should be approximately 3 months.

1.6. TO BE SUPPLIED BY RAND WATER

- Tender document and order for work
- Inspection of work and acceptance of receipt
- Payment
- Approved Environmental Management Plan