

ENVIRONMENTAL MANAGEMENT & MAINTENANCE MANAGEMENT

Temporary Method Statement

February 2024

For the works already undertaken as part of the erosion repairs at the stormwater outlet at the Outeniqua Waste Water Treatment Works (WWTW), George



Compiled by	Hilland Environmental
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Date	February 2024
Client	George Municipality

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Issued to: Diana Mouton, DEADP for review
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Declaration of Independence:

I, **Cathy Avierinos**, as the appointed environmental assessment practitioner ("EAP") hereby declare that:

- in terms of the general requirement to be independent:
 - other than fair remuneration for work performed/to be performed in terms of this application, have no business, financial, personal or other interest in the activity or application and that there are no circumstances that may compromise my objectivity;
 - Work performed for this study was done in an objective manner irrespective of how such findings may be favourable or not to the client;
 - I do not have any influence over the decision-making process undertaken by the governing authorities;
 - I declare that there are no circumstances that may compromise my objectivity in undertaking this study or producing this report;
 - All facts and findings will be presented in an objective manner in accordance with my professional and scientific experience and the data derived from the study;
 - I have the necessary qualifications and experience to undertake the study;
 - All particulars furnished in this report are true and correct.

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Glossary¹

Activity means an activity identified in any notice published by the Minister or MEC in terms of section 24D(1)(a) of the Act as a listed activity or specified activity. Activity in this document refers to the activities as listed in Listing Notice 1, 2 and 3 of the Environmental Impact Assessment Regulations, 2014 (as amended).

“Bush Encroachment” means stands of plants of the kinds specified in column 1 of Table 4 of the Conservation of Agricultural Resources Act (Act No. 43 of 1983) where individual plants are closer to each other than three times the mean crown diameter.

“Diverting” as defined in the General Authorisation, in terms of section 39 of the National Water Act, 1998 (Act no 36 of 1998) for Water Uses as defined in Section 21(c) and 21(i) (GN. 509 of 26 August 2016), means to, in any manner, cause the instream flow of water to be rerouted temporarily or permanently.

Environmental Control Officer (ECO): a suitably qualified person contracted by the land owner / developer / proponent tasked with monitoring the environmental performance and compliance of contractors involved in the development / rehabilitation

“Ecological Infrastructure” refers to naturally functioning ecosystems that deliver valuable services to people, such as water and climate regulation, soil formation and disaster risk reduction.

Ecological succession: refers to more or less predictable and orderly changes in the composition or structure of an ecological community. Succession that begins in areas where no soil is initially present is called primary succession, whereas succession that begins in areas where soil is already present is called secondary succession.

“Estuary” has the meaning assigned to it in the National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008)

“Flood event” is the event where land is inundated by the overflowing of water from a river channel and where this event causes significant damage to infrastructure or results in watercourse erosion and/or sediment deposition.

NOTE that flooding can be a natural phenomenon in many river or wetland systems which, due to encroachment and human modification of the form and function of the affected system, may have evolved into a potential hazard to life or property.

“Flow-altering” as defined in the General Authorisation, in terms of section 39 of the National Water Act, 1998 (Act no 36 of 1998) for Water Uses as defined in Section 21(c) and 21(i) (GN. 509 of 26 August 2016), means to, in any manner, alter the instream flow route, speed or quantity of water temporarily or permanently.

“General Authorisation” in this document refers to the General Authorisation in terms of section 39 of the National Water Act, 1998 (Act no 36 of 1998) for Water Uses as defined in Section 21(c) or Section 21(i) (GN. 509 of 26 August 2016).

Habitat: An ecological or environmental area that is inhabited by a particular animal and plant species. It is the natural environment in which an organism lives, or the physical environment that surrounds a species population.

“Impeding” as defined in the General Authorisation, in terms of section 39 of the National Water Act, 1998 (Act no 36 of 1998) for Water Uses as defined in Section 21(c) and 21(i) (GN. 509 of 26 August 2016), means

¹ Adapted from DEADP information document for MMP

to, in any manner, hinder or obstruct the instream flow of water temporarily or permanently, but excludes the damming of flow so as to cause storage of water.

“Indigenous vegetation” refers to vegetation consisting of indigenous plant species occurring naturally in an area, regardless of the level of alien infestation and where the topsoil has not been lawfully disturbed during the preceding ten years.

“Maintenance” means actions performed to keep a structure or system functioning or in service on the same location, capacity and footprint.

“Maintenance Management Plan” means a management plan for maintenance purposes defined or adopted by the competent authority.

“River Management Plans” as defined in the General Authorisation, in terms of section 39 of the National Water Act, 1998 (Act no 36 of 1998) for Water Uses as defined in Section 21(c) and 21(i) (GN. 509 of 26 August 2016), any river management plan developed for the purposes of river or storm water management in any municipal/metropolitan area or described river section, river reach, entire river or sub quaternary catchment that considers the river in a catchment context.

“River reach”, a length of river characterised by a particular channel pattern and channel morphology, resulting from a uniform set of local constraints on channel form. A river reach is typically hundreds of meters in length.

“Stretch” a section of watercourse, delineated between two or more mapped coordinates, within which proposed maintenance activities are to take place as guided by an MMP.

“Thalweg” refers to the line of lowest elevation within a valley or watercourse.

“Watercourse” means:

- (a) a river or spring;
- (b) a natural channel in which water flows regularly or intermittently;
- (c) a wetland, lake or dam into which, or from which, water flows; and

any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse as defined in the National Water Act, 1998 (Act No. 36 of 1998); and

a reference to a watercourse includes, where relevant, its bed and banks.

“Wetland” means, land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil.

ACRONYMS

BGCMA	Breede Gouritz Catchment Management Agency
CBA	Critical Biodiversity Area
DEADP	Department of Environmental Affairs & Development Planning
DWS	Department of Water & Sanitation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
GA	General Authorisation, in terms of the National Water Act, 1998 (Act No. 36 of 1998)

GN	Government Notice
IB	Irrigation Board
MEC	Member of Executive Council
MMP	Maintenance Management Plan
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
NFEPA	National Freshwater Ecosystem Priority Areas
NWA	National Water Act, 1998 (Act No. 36 of 1998)
PES	Present Ecological State
SANParks	South African National Parks Authority
SWSAs	Strategic Water Source Area
WUA	Water Users Association
WULA	Water Use Licence Application

INTRODUCTION

HillLand Environmental have been appointed as the Environmental Assessment Practitioners (EAPs) by the applicant, **George Municipality** represented by the Engineers, **Zutari**, to ensure compliance with the regulations contained in the National Environmental management Act (NEMA Act No. 107 of 1998, as amended) and the Environmental Impact Assessment Regulations (2014, as amended) for the works undertaken and proposed works at the stormwater infrastructure at the Outeniqua Waste Water Treatment Works (WWTW), Municipal erf, Remainder of Erf 325, George.

In light of the works already undertaken for the erosion repairs and activities commenced without NEMA Environmental Authorisation, DEADP has requested an interim Method Statement for immediate rehabilitation works while the S24G application process continues for the final works required to complete the project.

Method Statement

The following works are proposed and indicated graphically over an aerial drone photograph taken by Zutari 2nd February 2024. This aerial photograph shows the current status of the site and highlights the risk areas that are exposed and need to be protected.



Blue marking indicates the areas where excess material needs to be removed, topsoil spread and the slopes seeded with locally indigenous grasses as specified below.

Yellow markings indicate areas where temporary sandbags need to be placed to prevent excessive rainwater surface runoff and erosion damage as a result.

Red markings indicate areas where long terms silt fences need to be placed to protect the slopes until the vegetation is established and there is no longer any sign of erosion.



Zoom in showing the erosion occurring at the temporary storm water outlet structure. Colour references are as indicated above.

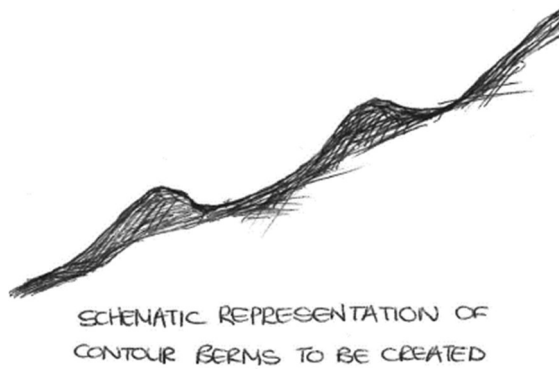
Notes for the contractor

Excess material is to be removed (especially the spill down towards the river along the temporary access road), the area must be left **shaped** to follow the natural slope / topography. It is important to ensure that the excavator teeth marks do not lead down the slope (as this will result in erosion between the subsoil and the topsoil in future). Where the exposed substrate is currently compact it needs to be loosened in order to allow for root penetration between the topsoil and the subsoil. Any ridges left must run as contours across the slope.

A small berm must be created along the river side (down slope) of the temporary access road to be used to close the road when final construction is authorised and completed.

Topsoil must be spread over the remaining disturbed areas.

Include shallow topsoil **contour berms across the slope** to slow water down and encourage infiltration and reduce runoff.

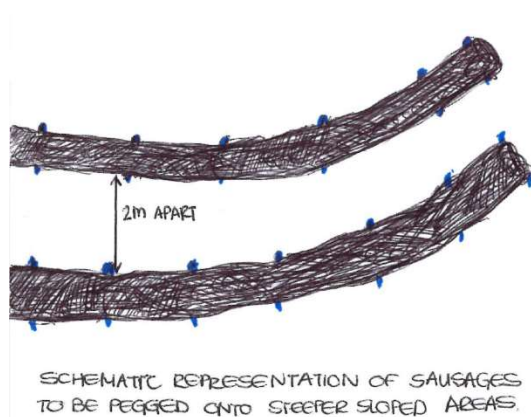


Seed all disturbed areas of the site with a mix of *Eragrostis tef* (teff grass), *Eragrostis capensis* (cape love grass), *Cynodon dactylon* (scutch grass), *Paspalum* sp. (paspalum gra. Add to the grass mix a clover or lucerne which will ensure added nitrogen for the longer-term growth. Premix and apply at a rate of 0.4g per m².

Lightly rake the seed into the slopes or hydroseed.

Cover with a layer of woodchip or mulch or geojute to keep the moisture in the soil while the seeds germinate.

Peg mulch filled bags or sausages onto the steeper sections of the slope (two (2) meters apart) to prevent runoff while waiting for the seeds to germinate and cover the slopes.



It may be necessary to install a geo-jute fabric over the steeper slopes.



Photograph showing sausages with geojute fabric (source: Aussie Environmental 2023)

Cover the whole area with cut brushwood to reduce the impact of wind and to keep all livestock off the slope while the grass seeds are germinating.

Collect seed from surrounding fynbos areas on a monthly basis and spread randomly onto the slope. *Helichrysum* sp, *Euryops*, *Chrysanthemoides moniliferum*, *Felicia* sp – are all seeding now and will

assist in bringing back some natural diversity to the slopes. The ECO can guide the seed collection and spreading as this is key to the success of the rehabilitation to the same state as the site was prior to any clearing taking place (restore the vegetation to the same state as the surrounding vegetation with the exception of alien species which will need to be continually monitored and removed).

The rehabilitation will only be signed off when deemed sufficient by the ECO. This will be based on level of ground cover and diversity of cover achieved.

Ongoing alien seedling removal from the entire rehabilitation area will be necessary.

An Environmental Control Officer (ECO) **must** be appointed to oversee the completion of the installation of the stormwater infrastructure and rehabilitation of the site.

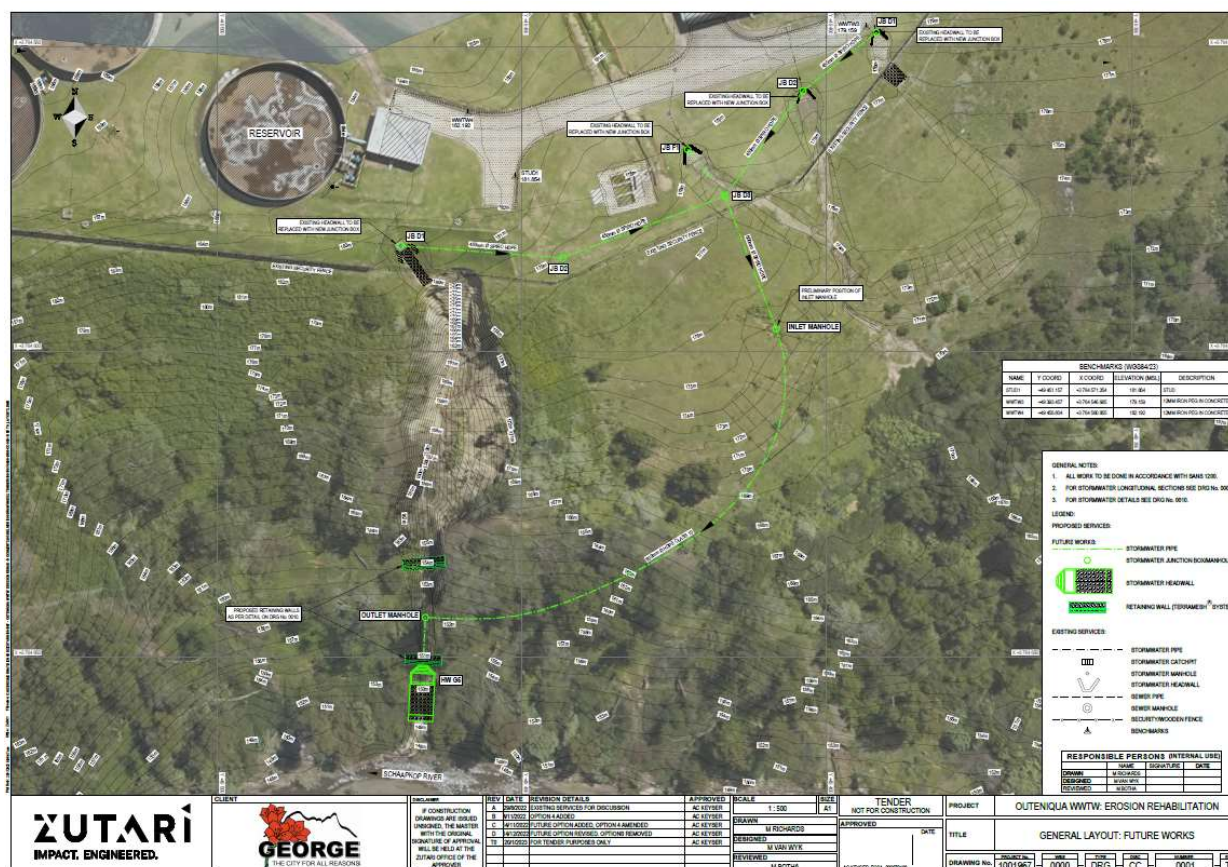
- An **induction** meeting with the ECO and the contractor to ensure that they are aware of the requirements of this plan before the commencement of any activities on site. Induction registers to be kept for all contractors on site.
- The ECO is to do a site inspection **once a week** during the rehabilitation phase.
- Rehabilitation will be deemed complete when there is adequate vegetative cover and no visible erosion. ECO to monitor monthly until satisfied.

Future construction

The final construction is NOT covered by this method statement.

Future construction of the final storm water pipeline and storm water outlet may only make use of the areas indicated below and may only take place once the s24G process has been concluded and an EA issued for the works.

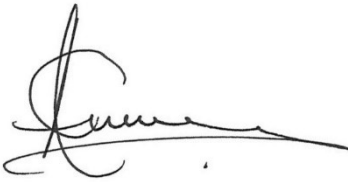
It is essential that the pipeline route is surveyed and pegged during the rehabilitation phase (now) so that the rehabilitated areas do not need to be disturbed when the final works are installed and completed.



The berm retained along the temporary access road is to be pulled back over the temporary road to recreate the natural topography (no road remaining) once the pipeline has been installed and works at the outlet are complete.

We trust that you will find this in order.

Kind regards,

A handwritten signature in black ink, appearing to read 'Cathy Avierinos', with a long horizontal flourish extending to the right.

Cathy Avierinos

For HillLand Environmental