



Consulting Engineers & Project Managers

Our reference : C19118G/AO/02

Your reference :

Date : 13 September 2025

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Attention: Ms Cathy Avierinos
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Madam,

SCM/2023/85/ENG: UPGRADING OF THE KWANOKUTHULA SEWER PIPELINE, BITOU MUNICIPALITY (WU44244) : METHOD STATEMENT:

Compiled by Upstream Consulting Reviewed and accepted by Lyners Consulting Engineers (implementing agent)

INTRODUCTION

This document provides measures that must (where practical and feasible) be implemented to ensure that any environmental degradation that may be associated with the development is avoided, or where such impacts cannot be avoided entirely, are minimised and mitigated appropriately. It is essential that this document be carefully studied, understood, implemented, and adhered to as far as reasonably possible, throughout all phases of the proposed development. The developer and any appointed contractors must make adequate financial provision to implement the measures specified in this document.

PROJECT DESCRIPTION

The proposed project focuses on the upgrade of the sewer network in Kwanokuthula, a residential township within the Bitou Municipal Area in Plettenberg Bay. The leaks are currently excessive, and raw sewage is currently flowing into the Roodefontein Dam (Plettenberg Bay's primary water supply).

The area is predominantly characterized by middle-to-low-income households. The existing sewer infrastructure is currently under significant stress, struggling to accommodate the current volume of sewerage and posing a major constraint to future growth. This is particularly evident in upstream sewer lines that are at or nearing full capacity.

This initiative is a direct response to the requirements outlined in the Bitou Municipality's Sewer Master Plan of June 2020. The project is designed to address multiple critical needs by building upon previous phases of work (funded by MIG allocations) that successfully upgraded downstream pipelines up to the Ganzevelei wastewater treatment works. The upgrades will provide the necessary capacity to support new developments in Kwanokuthula's western extension (Phases 4 and 5), which include low-cost housing, educational institutions, and commercial facilities.

Without this upgrade, the municipality will be unable to proceed with essential new developments. The project is therefore not just about infrastructure improvement, but about enabling social and economic development

within the community. The technical report provides a detailed analysis of the existing sewer network's capacity in relation to current sewerage generation, which forms the basis for the needs assessment of the proposed upgrades.

This document describes the measures that must be implemented in order to avoid, minimise, manage and monitor the potential environmental impacts of the development, during all phases of the project life cycle, namely:

- Planning and Design Phase
- Pre-construction Phase
- Construction Phase
- Post-Construction Rehabilitation

METHODS STATEMENT

SPECIFIC MEASURES:

- The edges of the pipeline construction servitude, as well as the development area, relative to the aquatic habitat must be clearly staked-out and demarcated prior to construction commencing.
- Removal of vegetation must only be when essential for the continuation of the project. Do not allow any disturbance to the adjoining natural vegetation cover or soils.
- Access to and from the development area should be either via existing roads or within the construction servitude. Any contractor found working within No-Go areas must be fined as per fining schedule/system setup for the project.
- Following construction, it is important to stabilise any steep, bare areas on the slope and river banks via geotextiles and/or revegetation.
- It is the contractor's responsibility to continuously monitor the area for newly established alien species during the contract and establishment period, which if present must be removed. Removal of these species shall be undertaken in a way which prevents any damage to the remaining indigenous species and inhibits the re-infestation of the cleaned areas.
- Sedimentation must be minimised with appropriate measures. Any construction causing bare slopes and surfaces to be exposed to the elements must include measures to protect against erosion using covers, silt fences, sandbags, earthen berms etc.
- All stockpiles must be protected and located in flat areas where run-off will be minimised and sediment recoverable.
- Construction must have contingency plans for high rainfall events during construction. Even in the operational phase, measures to contain impacts caused during high rainfall events must be planned for and available for use.
- Construction of the pipeline should preferably be done during the drier months when the water quality impacts from the construction activities may impact on the downslope watercourses. Measures to contain impacts caused during high rainfall events (such as substantial sedimentation and/or erosion) must be planned for and available for use.
- Before any work commences, sediment control/silt capture measures (e.g. bidim/silt curtains) must be installed downstream/downslope of the active working areas. Silt fences/curtains must be regularly checked and maintained (de-silted to ensure continued capacity to trap silt) and repaired where necessary. When de-silting takes place the silt must not be returned to the watercourse.
- Crossings must be constructed perpendicular to the natural direction of flow.
- Pipelines across watercourses should be buried at a sufficient depth below ground level such that the pipelines do not interfere with surface water movement or create obstructions where flows can cause erosion to initiate.

GENERAL MEASURES:

Site demarcation

The following areas must be clearly demarcated on site during the pre-construction or construction phases of the development, as appropriate.

Construction working area.

Prior to the commencement of any land-clearing or construction activities, the outer boundary of the development area must be surveyed and pegged. The demarcation boundary must be tight around the site, typically allowing a working area of no more than 2.5 m around the development footprint. This demarcation boundary is to ensure that land clearing, and construction activities are restricted to only that area strictly required for the proposed development, and to prevent unnecessary disturbance of soil surfaces and vegetation outside of the development footprint.

No-go areas

The proposed No-Go Areas are considered as any area outside of the necessary construction servitude.

Prior to the commencement of any construction activities, the extent of the construction servitude area must be demarcated and any land outside of this boundary must not be disturbed during the construction phase. Areas outside of the smallest possible construction footprint must be off-limits to all construction workers, vehicles and machinery during all phases. No vegetation may be cleared from within the no-go areas, and no dumping of any material (waste, topsoil, subsoil etc.) may occur in these areas. Construction workers must be informed of the no-go areas, and if necessary appropriate signage and/or temporary fencing (e.g., droppers with danger tape) can be used to enforce the no-go areas.

Site access:

Access onto the property is gained directly from existing roads or already transformed land.

Demarcation of the site camp

The area chosen for the site camp and associated facilities must be the minimum area reasonably required to accommodate the site camp facilities, and which will involve the least disturbance to the environment. It is recommended that easily accessible, transformed areas are used for the site camp. Site selection must be done in consultation with the ECO.

Waste Storage Area:

Sufficient bins for the temporary storage of construction related waste must be provided inside the site camp and/or at the working area.

Hazardous Substances Storage Area:

Fuels, chemicals, lubricants, and other hazardous substances must be stored in a demarcated, secured and clearly sign-posted area within the site camp away from water courses.

Ablution Facilities:

Chemical toilet facilities or other approved toilet facilities must be provided and located on the site in such a way that the toilets will not cause any form of pollution of the site. Toilets must be placed within the site camp and must be well outside any riparian zone. The toilets must be placed on a level surface and secured to prevent them from blowing over. The toilets must be serviced regularly and kept in an orderly state. The contractor must ensure that no spillage occurs when the toilets are cleaned, serviced, or moved. Performing ablutions outside of the provided toilet facilities is strictly prohibited.

Vehicle & Equipment Maintenance Yard:

Where possible, construction vehicles and equipment that require repair must be removed from site and taken to a workshop for servicing. If emergency repairs and/or basic maintenance of construction vehicles or equipment are necessary on site, such repair work must be undertaken within the designated maintenance yard area away from the riparian. Repairs must be conducted on an impermeable surface, and/or a tarpaulin and/or drip trays must be laid down prior to emergency repairs taking place, to prevent any fuel, oil, lubricant or other spillages from contaminating the environment.

Vegetation clearing

Where vegetation must be cleared the following measures must be implemented where applicable, reasonable, and practical:

- Where feasible vegetation must simply be trimmed to facilitate access/ construction, rather than being completely cleared or removed.
- Vegetation clearing/trimming must be cleared by hand (i.e., brush cut) and stockpiled for use as mulch/ brush-packing during rehabilitation of the site. Any alien vegetation that is cleared must be disposed of in consultation with the ECO, unless the cleared alien vegetation does not contain seeds in which case it may be retained for use in site rehabilitation.
- No bulldozing must be undertaken for the purpose of vegetation clearing.
- Only the areas required to accommodate the construction activities and access to the construction site must be cleared/trimmed of vegetation.
- Vegetation outside of the construction footprint and beyond any No-Go areas must not be cleared.
- As a duty of care measure, indigenous bulb species (if present) can be searched and rescued to be replanted.

Topsoil and subsoil management

It is recommended that topsoil be removed from any area where physical disturbance of the surface will occur, including within the pipeline construction footprint (working area) and possibly within the site camp, ablution area, etc.. Topsoil removal and stockpiling must be undertaken only after consultation with the ECO.

- Removed topsoil and subsoil must be stockpiled for the duration of the active construction period and utilised for the final landscaping and rehabilitation of disturbed areas on site.
- The removed topsoil must be stockpiled in a berm, in a demarcated area as agreed with the ECO.
- Removed subsoil must be stockpiled separately from topsoil.
- The topsoil & subsoil storage area must be located on a level area outside of any surface drainage channels and at a location where it can be protected from disturbance during construction and where it will not interfere with construction activities.
- Where applicable topsoil and subsoil stockpiles must be adequately protected from being blown away or eroded by storm water. If necessary, shade cloth or other suitable measures must be used to stabilise and protect the stockpile from wind/water erosion. Topsoil stockpiles must not be covered with tarpaulin, as this may smother and decrease the virility of topsoil.
- Handling of topsoil must be minimised as much as possible, and the location of the topsoil berm must be chosen carefully to avoid needing to relocate the topsoil berm at a later date. The ECO must be consulted with regards to the placement of the stockpiles, to ensure that the selected location is in compliance with this EMP and EA (once granted).
- Ideally, topsoil is to be handled twice only, once to strip and stockpile, and once to replace, level, shape and scarify.

- If soil stockpiles will be stored for an extended period of time, the stockpiles must be kept clear of weeds and alien vegetation growth by regular weeding, (or application of herbicides if agreed with the ECO).
- Spoil material that will not be re-utilised on site may be removed from site and taken to an appropriate site for re-use or disposal.
- Note that the topsoil must be the final layer applied to a rehabilitated/ re-landscaped site, after subsoil/ spoil material has been placed and shaped on the site.

Cement and concrete batching

Cement and concrete batching is permitted on site, but may only take place on designated impermeable, bunded surfaces, as agreed with the ECO.

- Cement/ concrete must not be mixed on bare ground.
- Cement/concrete must not be mixed within any drainage lines.
- The impermeable/ bunded area must be established in such a way that cement slurry, runoff and cement water will be contained and will not flow into the surrounding environment or contaminate the soil.
- Cement run-off and excess cement slurry must be collected in the designated impermeable area, allowed to dry and then disposed of at an appropriate facility. Alternately, the contaminated water can be collected in sealed tanks and transported to an appropriate disposal site for disposal.
- Empty cement bags are currently not recycled within the Garden Route and must be disposed of in the un-recyclables waste bins on site.

Erosion control and stormwater management

- Sedimentation must be minimised with appropriate measures. Any construction causing bare slopes and surfaces to be exposed to the elements must include measures to protect against erosion using covers, silt fences, sandbags, earthen berms etc.
- All stockpiles must be protected and located in flat areas where run-off will be minimised and sediment recoverable.
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Excavations and Earthworks

Any major earthworks with heavy machinery must be under constant supervision and operators are to be aware of all the environmental obligations, as there is always the potential to inflict damage to the sensitive areas. Any unnecessary or excessive heavy machinery movement must be kept to a minimum i.e., only what is absolutely necessary. Areas to be excavated must be clearly demarcated.

Site closure and rehabilitation

Upon completion of the construction phase, all disturbed areas, including the working area (disturbance corridor), temporary access roads, and all areas utilised for the site camp and associated site camp facilities will require rehabilitation as per rehabilitation plan and conditions of the WUL and aquatic specialist report.

We trust you will find the above in order.

Kind regards

A handwritten signature in black ink, appearing to read 'F. van Eck', is positioned above the printed name.

**Francois van Eck Pr Eng
for LYNERS**