ENVIRONMENTAL CONTROL COMPLETION REPORT

for

MOLEN CLOSE RIVER REHABILITATION

on

Remainder of Farm 464, George

In terms of the

National Environmental Management Act (Act No. 107 of 1998, as amended) & 2014 Environmental Impact Regulations

Prepared for Applicant:
George Municipality

Date: 12 December 2023

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Report Reference: GEO752/11
Department Reference: 16/3/3/1/D2/48/0027/22
Case Officer: Ms Shireen Pullen

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APPOINTED ENVIRONMENTAL ASSESSMENT PRACTITIONER:

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Candidate EAP: Ms Mariska Byleveld (MSc Geology [University of the Free State]) (Candidate EAPASA Registration Number: **2023/6593**) under supervision of the Primary EAP, Ms Louise-Mari van Zyl who is a registered with EAPASA (MA Geography & Environmental Science [US]).

Primary EAP: Director **Louise-Mari van Zyl** (MA Geography & Environmental Science [US]); Registered Environmental Assessment Practitioner with the Environmental Assessment Practitioners of South Africa, EAPSA, Registration Number **2019/1444**. Ms van Zyl has over twenty years' experience as an environmental practitioner.

PURPOSE OF THIS REPORT:
ECO Completion Report

APPLICANT:
George Municipality

CAPE EAPRAC REFERENCE NO:
GEO752/11

SUBMISSION DATE
12 December 2023

ENVIRONMENTAL CONTROL COMPLETION REPORT

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National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended &
Environmental Impact Regulations 2014

Molen Close River Rehabilitation

REMAINDER OF FARM 464, GEORGE

Submitted for:
Departmental Compliance

Report Issued by:
Cape Environmental Assessment Practitioners

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PO Box 2070
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1. INTRODUCTION

Cape Environmental Assessment Practitioners (*Cape EAPrac*) was appointed by George Municipality (Holder of the EA) to act as the **Environmental Control Officer** (ECO) to oversee the river rehabilitation works at Remainder of Farm 464, Rosemoor, George.

The **authorised project (DEA&DP Ref: 16/3/3/1/D2/48/0027/22)** involved the rehabilitation of a portion of an **eroded riverbank** of a perennial watercourse (Meul River) on Remainder of Farm 464 in Rosemoor suburb (Figure 1a & b) (Figure 2). The project area is located approximately 175m north of Grens Street (crossing of the Meul River), west of Molen Close Street Residential Node, where at least two private properties and a Municipal sewer line, were at risk due to erosion of the eastern embankment (Figure 3).

Figure 1:(a) Figure indicating two perennial watercourses (stippled blue lines) West and East of Rosemoor suburb (b) Zoomed in figure of the yellow rectangle displayed in (a) which provides the approximate locality of the properties along Molen Close Street (properties on the right-hand side of the watercourse) (CapeFarmMapper, 2022).

Figure 2: Eroded area next to erf 21150 in need of emergency rehabilitation.

As authorised, the contractor (Urhwebo e-Transand Civil & Building Contractors) installed reno mattresses and gabions inside the perennial watercourse along erven 21150 & 21151 to stabilize the embankment. The gabions were positioned in a curving manner to preserve the flow's characteristics and to prevent further erosion.

The following construction equipment were used:

- Excavator.
- Reno mattrasses.
- Gabion baskets.
- Stormwater pipes.
- Geofabrics.
- Rocks for filling the gabions.
- Compacting equipment.
- Formwork, reinforcing steel, and the necessary tools for assembly.
- Equipment for construction of foundations where required.
- Equipment for construction of inlet and outlet end wall.

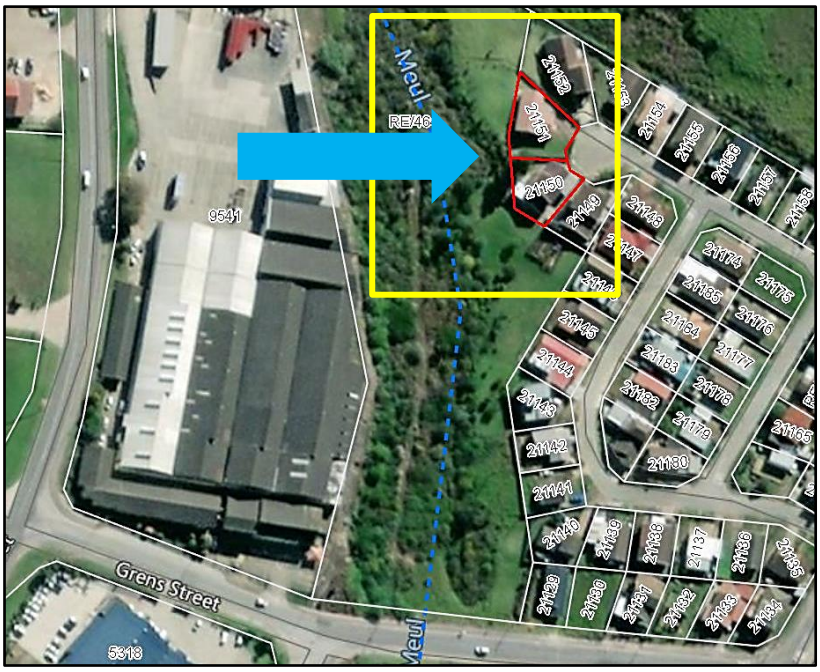

Figure 3: Locality of main area of concern which is along Erven 21150 & 21151 (red outlined properties) with the eroded area indicated with the BLUE arrow.

The following methodology was followed:

- The contractor constructed a short access path between erven 21150 and 21151 with landowner's consent (Figure 5).

- The contractor installed two (2) silt fences to control downstream silt (Figure 4).

- The embankment was divided into three (3) sections, working upstream to downstream. Each section was (1) channelled through temporary stormwater pipes and sandbags, (2) excavated and (3) the first-row gabions packed separately before moving on with the next section (Figure 5). No excavation was allowed during the rain.

- The site had one (1) toilet, one (1) container and waste bins. The site was demarcated prior to commencement of construction activities.

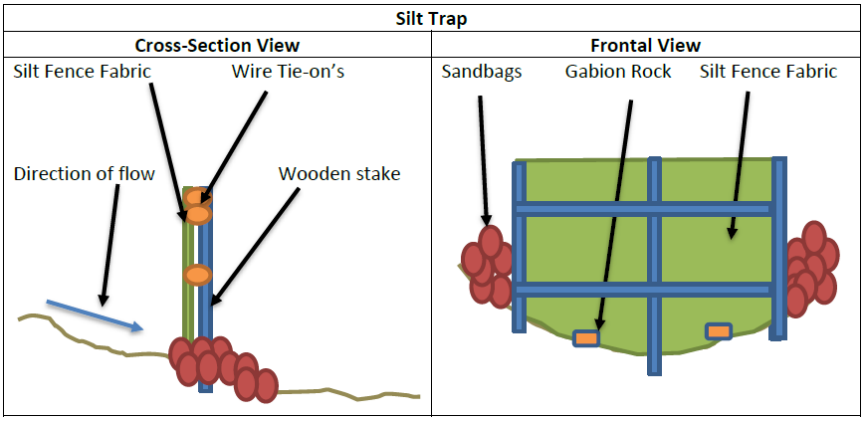

Figure 4: Silt trap detail as provided by the contractor.

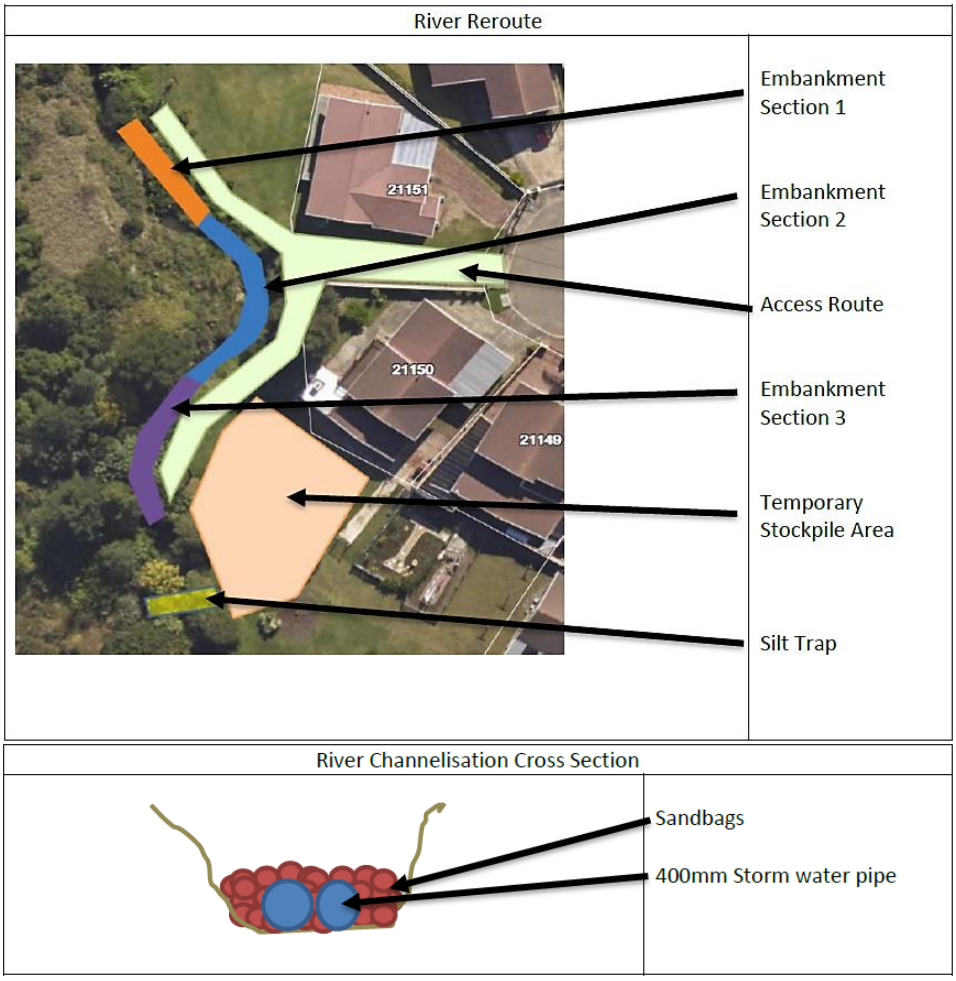

Figure 5: Methodology provided by the contractor.

- Two (2) environmental inductions were completed during the construction period. One for the contractor's team and one for the local workers of Rosemoor suburb.
- The TLB was refuelled far away from the watercourse and a drip tray was always present.
- All disturbed areas were rehabilitated with indigenous vegetation (trees & kweek grass).

2. ENVIRONMENTAL CONTROL COMPLETION STATEMENT

Final Site Inspection was on **17 October 2023**.

Environmental Observation / Action Required:		
Kindly refer to below table which lists the main environmental actions as per the Environmental Authorisation and ECO recommendations.		
Actions required	**Compliance**	**Comments**
Gabions must mimic the curved profile of the embankment.	✓	Compliant.
The river reach must be routinely monitored to ensure that any constrictions to flow (dumped waste, felled trees, stormwater debris) are removed from the channel.	✓	The contractor's team routinely removed plastic material from the channel as they progressed. On 18 July 2023 the contractor noted a diesel/oil spill in Meul River coming from somewhere upstream. Notified the Environmental Control Officer of George Municipality.
The most upstream and downstream ends of the gabions must align (or be flushed) with the existing stream bank.	✓	Both ends align with the streambank.
After long-term monitoring, determine if additional protection is necessary (opposite side of the bank).	Operational phase	In progress. The area must be monitored, especially after heavy rainfall.
Applicant must appoint an ECO to oversee construction.	✓	*Cape EAPrac* was the appointed ECO.
The stormwater outlet pipe, must be designed adequately to dissipate the energy.	✓	The stormwater outlet pipe was designed by *Nadeson Consulting.* Dr James Dabrowski (Aquatic Specialist from Confluent Environmental) recommended that they cut the stormwater outlet a little bit shorter so that stormwater will be directed into the underlying gabions and not the bed of the watercouse. This will mitigate the risk of further erosion from the stormwater outlet. The Contractor did cut the stormwater outlet shorter.
Clearly demarcate areas where instream construction activities will take place.	✓	The site development area was clearly demarcated.
Stockpiles of materials must be placed outside the channel of the watercourse (on as flat as possible) and protected (through use of sandbags and/or tarpaulins).	✓	The stockpile was on a flat surface and stable. Material was removed from site and transported to the Municipal dump.
Prevent uncontrolled access of vehiles into the watercourse.	✓	Access was controlled by the manager on-site. The only entrance to the site was closed during the night. The Applicant also hired night security to secure the area.
Construction activities must be timed to coincide with a dry period. Due to the emergency state of this project and George's unpredicted weather changes, it is advised that the holder of the EA first contact with the ECO & aquatic specialist to determine whether it is the right time to start construction (based on the most recent weather reports).	✓	No excavation took place in the rain. The ECO and Aquatic Specialist were consulted with to determine whether it is the right time to excavate/work within the watercourse.

A temporary check dam (using sandbags) should be established upstream of the construction to create dry working conditions should work not be undertaken during a dry period.	✓	A temporary check dam was created upstream. Two silt fences were installed downstream.
A flexible pipe should be used to transfer water from upstream.	✓	Although the pipes were not flexible, the contractor did use pipes with sandbags to create dry working conditions. It was sufficient.
Temporary straw-bales can be placed across the channel (downstream of the streambank) to trap high levels of sediment in the event of a high rainfall.	✓	The contractor installed two silt fences across the channel (downstream of the streambank) and secured it with sandbags and straw-bales.
Demarcate the area(s) chosen for the stockpiling of imported materials and put-up notices declaring what must be stockpiled where i.e., bank material vs riverbed material separately.	✓	The entire site was demarcated and closed-off to the public.
Development of a construction schedule.	✓	A construction programme was sent to DEA&DP.
Post-installation, stabilise exposed banks with indigenous vegetation.	✓	Disturbed and unstable areas were rehabilitated with kweek grass and indigenous trees. It was however noted that a small portion of the soil embankment next to the downstream gabion end can easily erode because the soil in that area is quite loose with no indigenous vegetation to stabilize it. The contractor stabilized this area with gabion rocks and indigenous vegetation. This area must be monitored, especially after heavy rainfall.
Gabions will be packed by manual labour.	✓	Gabions were packed by the contractor's team and local people from Rosemoor suburb.
No operating vehicles within 5m of the edge of the channel. The 5m setback line will be relaxed, where necessary, to accommodate for operating vehicles in consultation with the ECO.	✓	Compliant.
Oil and fuel leaks of excavators and all other machinery must be checked daily.	✓	No oil or fuel leaks were noted during the daily/weekly ECO Site inspections.
No fuel storage, refuelling, vehicle maintenance or vehicles depts to be allowed within the delineated area of the wetland.	✓	Compliant.
Bunds should be placed around refuelling, fuel storage and servicing areas. These areas must not be located within any natural drainage areas or preferential flow paths and must be located more than 20m away from the delineated area of each wetland.	✓	Refuelling and maintenance took place off-site.
Chemical toilets (1 toilet / 10 persons).	✓	One toilet was on-site and kept neat and clean throughout the construction phase.
Waste from chemical toilets must be disposed of regularly by a registered waste contractor.	✓	The toilet was always neat and clean.
No mixing of cement / concrete on bare ground or within the watercourse.	✓	No cement or concrete noted on site.
Instruct workers & contractors properly of the environment (environmental inductions).	✓	The ECO conducted two environmental inductions.
All waste generated on-site must be adequately managed.	✓	All waste material was put in drums on site. Housekeeping was good.

All gabions must be inspected on a routine basis. Any faults must be immediately asap to prevent unwanted environmental damages.	Operational phase	The Municipality to inspect gabions on a routine basis.
Scouring or undercutting caused by gabion weirs must be rehabilitated following the inputs of an aquatic ecologist.	Operational phase	The Municipality to consult with an aquatic ecologist.
Withdrawn lawns from the edge of the streambank and a 5m riparian buffer, consisting of appropriate indigenous plants must be re-established along the length of the eastern bank post-construction (recommended by Aquatic Specialist). It should be noted that a lot of factors including municipal budget and the property owners along this embankment might hinder this mitigation.	x	Considering cost implications, only the disturbed areas were rehabilitated with kweek grass and indigenous trees.
Any construction camp, storage, washing and maintenance equipment, storage of construction materials, or chemicals, as well as any sanitation and waste management facilities – (a) is located outside the 1 in 100-year flood line or riparian habitat of the river. (b) is removed within 30 days after the completion of any works.	✓	Compliant.
Construction must start upstream and proceed in a downstream direction.	✓	Compliant.
All excavated material from the banks of the watercourse must be stored and clearly demarcated until the works have been completed. The excavated material must be backfilled.	✓	Compliant.
Following completion and during annual inspection to determine the need for maintenance, ensure that all disturbed areas are – (a) cleared of construction debris and other blockages; (b) re-vegetated with indigenous vegetation suitable to the area	Operational phase	In progress.
Monitor water quality during construction. Water samples must be taken (both upstream & downstream) before, during and after construction to ensure that the water quality isn't affected.	✓	Monitored by the Aquatic Specialist (*Confluent Environmental*).
Gabions must be inspected regularly and after every large storm, to detect damages or abnormalities. Any vegetation growing out of the gabion boxes must be removed. Broken or damaged panels can be repaired on site. If several gabion baskets are broken advice should be sought from the Engineer and maintenance must be undertaken under supervision of an ECO.	Operational phase.	To be inspected.
Gabion baskets must be inspected for differential settlement caused by major storm events.	Operational phase.	To be inspected.
Best Practise		
Construction work must take place during normal work hours.	✓	Compliant.
Additional Actions		
Temporary access to the site changed from via Grens Street to via Molen Street through erf 21151 and a portion of erf 21150. Temporary access was approved on condition that (a) the landowners provide consent, (b) the temporary access must be rehabilitated, (c) the garden on erf 21150 must be re-instated and (d) the wall between erven 21151 and 21150 must be re-build.	✓	Compliant. Note: The landowner of erf 21151 asked if the contractor could leave the gravel of the temporary access on his property and not to re-plant the grass that was initially there. This was approved on condition that all areas outside the private erven boundaries of 21150 and 21151 be rehabilitated (photograph i - k).

Upon final site inspection, the ECO noted that an alien plant was planted in a disturbed area adjacent to the gabion structure. According to the Contractor, the landowner of erf 21150 has planted the alien plant. The ECO asked the Contractor to remove the plant as it is on Municipal ground. This has not been done.

3. PHOTOGRAPHIC EVIDENCE OF FINAL SITE INSPECTION

4. CONCLUSION

This office is overall satisfied that the contractor complied with the requirements under the Environmental Authorisation.

The final site inspection was completed on **17 October 2023**.

The following actions must still take place during the operational phase of the project:

1. Long-term monitoring to determine if additional protection is necessary (opposite side of the bank).
2. All gabions must be inspected on a routine basis. Any faults must be immediately fixed to prevent unwanted environmental damages (consult the Engineer).
3. Scouring or undercutting caused by gabion weirs must be rehabilitated following the inputs of an aquatic ecologist.
4. Following completion and during annual inspection to determine the need for maintenance, ensure that all disturbed areas are – (a) cleared of construction debris and other blockages; (b) re-vegetated with indigenous vegetation suitable to the area.
5. Gabions must be inspected regularly and after every large storm, to detect damages or abnormalities. Any vegetation growing out of the gabion boxes must be removed. Broken or damaged panels can be repaired on site. If several gabion baskets are broken advice should be sought from the Engineer and maintenance must be undertaken under supervision of an ECO.
6. Gabion baskets must be inspected for differential settlement caused by major storm events.
7. The **frequency of auditing of compliance** with the conditions of the environmental authorisation and of compliance with the EMMPr, must adhere to the following programme:
    - A final Environmental Audit Report must be submitted to the Competent Authority within three (3) months of the conclusion of the stabilization, rehabilitation and monitoring requirements thereof.
    - An audit report must also be submitted each time after maintenance activities are concluded.