



HillLand Environmental

Environmental Assessment Practitioners

166 Mount View, Victoria Heights
P.O. Box 590, GEORGE, 6530
Western Cape, South Africa

Tel: +27(0)44 889 0229
Fax: +27 (0) 86 542 5248
Mobile: +27 (0) 82 5586 589
E-mail: info@hilland.co.za
www.hilland.co.za

THE CONSTRUCTION OF RESERVOIR AND ASSOCIATED INFRASTRUCTURE FOR MOSSEL BAY AREA ON THE FARM VAALE VALLEY 219, MOSSEL BAY

ENVIRONMENTAL MONITORING REPORT NO. 5

TDR 70/2020/2021 & TDR69/2020/2021



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HillLand Environmental

PO Box 590

George, 6530

Tel: 044 889 0229

Fax: 086 542 5248

E-mail: admin@hilland.co.za / environmental@hilland.co.zaWebsite: www.hilland.co.za

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<u>Report Submitted to</u>	Danie Wessels – V3 Consulting Engineers Klasie Lategan – Urhwebo E-Transand
<u>Copies to</u>	Eric Louw - Mossel Bay Municipality

ECO site visit dates:

19 May 2021	ECO visit, pegged pipeline route
9 June 2021	ECO site inspection of Pump station and Rising Main
17 June 2021	ECO site inspection of Pump station and Rising Main and Reservoir
23 June 2021	ECO site inspection of Pump station and Rising Main

INTRODUCTION

This report monitors compliance against the Environmental Management Plan (Ref: MOS20/472/25 – dated 15 December 2020) and it constitutes the **fifth** Environmental Monitoring Report which covers all work undertaken as part of the construction of the new **regional reservoir** as well as the **construction of the pump station and rising main** for Mossel Bay area.

SECTION A – REGIONAL RESERVOIR

1. Environmental Induction

Environmental induction was given to all staff members on-site before commencement of construction activity in January 2021. A follow-up environmental induction was given on 24th of March 2021 to all staff members on site. The contractor must notify the ECO when new staff is to start on site to arrange an environmental induction session.

2. Soil Management

Topsoil has been stripped and stockpiled away from the active construction area. Some subsoil is stockpiled away from the construction area and will be used for infilling and shaping during rehabilitation phase. The rest of the subsoil is being used by the landowner to fill and shape his agricultural fields.

- The landowner issued a letter of consent to permit the spoiling of subsoil on his property.

The contractor should note that the topsoil should be kept separate from any other material to prevent contamination.

3. Paleontological Impact Assessment

No further palaeontologist site inspections are necessary. The ECO will continue to monitor the site for any potential fossil material.

4. Access to site

The existing road leading to site was upgraded to provide better access for construction vehicles. Please be reminded that driving off the designated access roads is not permitted. Access to site is being controlled by the contractor to prevent any unauthorised access to the site – there is a guard at the farm gate.

All access to the construction site is diverted to avoid a clash with the construction of the pipeline along the existing access route up the hill.

5. No-Go Demarcation

No-Go demarcation is in place. It was noted that the current orange netting at the top excavation area is **not sturdy enough** to prevent the cattle from pushing it over. It was discussed during the previous site meeting that a stronger, more stable fence be installed to prevent the cattle from entering the excavation/construction area. The ECO monitors maintenance and adherence to the demarcation during site inspections.

It is recommended that the item for installation of the reservoir boundary fence must be prioritised to prevent the farm animals from entering the construction site.

	
2021.06.17 – The No-Go demarcation around the excavation area is removed during the day. The fence MUST be in place during inactive construction periods.	2021.06.17 – The orange netting must be maintained.

6. Construction Site

The site camp is fenced off correctly and set up in an area that is not within or adjacent to the sensitive natural area.



Adequate litter bins are provided at the site camp and littering issues should be covered in regular “toolbox” talks with all staff members. The contractor is now doing daily litter picking to keep the site neat and tidy.

Portable toilet facilities are available on site for male and female construction workers.

A bunded concrete mixing area, which is lined with a non-permeable layer, was created for small patchwork. The contractor should ensure that the contaminated runoff water is always contained and disposed of at an authorised disposal facility.

Major works will be done with Ready-mix concrete – **please note that the Ready-mix trucks are not allowed to rinse out anywhere on site.**

No construction activity (OR RUBBLE/WASTE) may occur in the natural vegetation area – this was not approved by the Department of Environmental Affairs.



7. Dust Management

No dust issues were reported to the ECO or noted by the ECO during this reporting period. The contractor is reminded that dust mitigation measure must be implemented, as and when required. This will include spraying of water on gravel roads or exposed areas that generate dust or covering haul roads / exposed areas with wood chip to reduce the generation of dust – where necessary. This includes the management of dust originating from any of the stockpiles.

CONCLUSION

The construction site is neat and tidy without any environmental damage. The contractor should ensure that the construction site (excavation area) is demarcated appropriately to prevent the farm animals from entering the site. It is recommended that the installation of the reservoir site boundary fence is prioritised to double as a no-go fence and to keep the farm animals out of the construction site.

SECTION B – PUMP STATION AND RISING MAIN

1. Environmental Induction

Environmental induction was given to all staff members on-site on the **9th of June 2021**. The contractor must notify the ECO when new staff is to start on site to arrange an environmental induction session.

2. Soil Management

Topsoil is stripped and stockpiled adjacent to the trench, where it will be placed back when installation is completed. The subsoil is stockpiled in a row next to the topsoil.

The contractor should note that the topsoil should be kept separate from any other material to prevent contamination.



2021.06.23 – The subsoil is stockpiled to the left of the trench and the topsoil is stockpiled further left, next to the subsoil stockpile.

3. Paleontological Impact Assessment

The palaeontologist (Dr John Almond) visited the site on the **19th of January 2021** and report the following:

"This is to confirm that we did not observe any fossil material within the reservoir and pipeline footprint, that there are no palaeontological heritage objections to further construction, and no further specialist palaeontological mitigation is considered to be necessary, pending the discovery of any change fossil finds."

No further palaeontologist site inspections are necessary. The ECO will continue to monitor the site for any potential fossil material.

4. Access to site

The rising main is located next to the existing access road on the property, thus no new access roads is necessary. The existing road leading to the reservoir site was upgraded to provide better access for construction vehicles.

Please be reminded that driving off the designated access roads is not permitted.

Access to site is being controlled by the contractor to prevent any unauthorised access to the site – there is a guard at the farm gate.



2021.06.23 – The access road on the right-hand side of the trench.

5. No-Go Demarcation

No-Go demarcation is in place. It was noted that the current orange netting at the Reservoir site is not sturdy enough to prevent the cattle from pushing it over. It was discussed during the previous site meeting that a stronger, more stable fence be installed to prevent the cattle from entering the excavation/construction area.

An incident occurred where three cows fell into the pipeline trench of which one died. The contractor was requested (on **18 June 2021**) to submit the contractor's incident report – it will be discussed in the next ECO report as we have not yet received the incident report.

I was told that it was an accident and was not due to the negligence of the contractor.

My suggestion going forward is to install the no-go netting (orange netting) on **both sides** of the trench. Currently, only one side is fence off – topsoil and subsoil are stored on the other side of the trench (see photo below). The demarcation netting must be maintained and managed very well to prevent this from happening again.

The natural indigenous vegetation area **MUST** be demarcated before construction start in this section (at the top of the hill and towards the reservoir).

The ECO monitors maintenance and adherence to the demarcation during site inspections.



2021.06.23 – The No-Go demarcation around the construction of the pump station.



2021.06.23 – The orange netting is installed along parts of the western side of the trench.



2021.06.09 – No-Go demarcation in place – it is recommended that both side of the trench must be demarcated to prevent the farm animals from entering the site.

6. Construction Site

The site camp is located at the top of the hill (same site camp as for the Reservoir construction) and is fenced off correctly and set up in an area that is not within or adjacent a sensitive natural area.



2021.06.17 – Site camp is kept neat and tidy

Adequate litter bins are provided at the site camp and littering should be covered in regular “toolbox” talks with all staff members.

Portable toilet facilities are available in the site camp for male and female construction workers. A portable toilet is available closer to the construction area (near the pump station).

No construction activity (OR RUBBLE/WASTE) may occur in the natural vegetation area – this was not approved by the Department of Environmental Affairs.



2021.06.09 – Litter bins are provided.



2021.06.17 – Ablution facilities located at the pump station construction area.



2021.06.17 – Ablution facilities available for pipeline staff.

7. Dust Management

No dust issues were reported to the ECO or noted by the ECO during this reporting period. The contractor is reminded that dust mitigation measure must be implemented, as and when required. This will include spraying of water on gravel roads or exposed areas that generate dust or covering haul roads / exposed areas with wood chip to reduce the generation of dust – where necessary. This includes the management of dust originating from any of the stockpiles.

CONCLUSION

The construction site is neat and tidy without any environmental damage. The contractor should ensure that the construction site (excavation area) is demarcated appropriately to prevent the farm animals from entering the site.

Section in EMPr		Reservoir – Section A TDR69/2020/2021	Pipeline – Section B TDR70/2020/2021
5.1	Pre-Construction phase		
5.1.1	All construction staff must be briefed by the ECO in an environmental education programme regarding the environmental status and requirements of the site, prior to any activities commencing on site.	Compliant – Environmental induction was done on the 24 th of March 2021 with all staff on site.	Compliant – Environmental induction was done on the 9 th of June 2021
5.1.2	Before the contractor(s) begins each construction activity the contractor and Site Agent must, prior to the commencement of such activity involving construction, maintenance, or rehabilitation, give the ECO a written plan setting out the method statement.	This was discussed during the site meeting.	This was discussed during the site meeting.
5.1.3	As topsoil is a valuable resource, it must be stripped from all construction areas <u>before work commences in that specific area</u> and stockpiled at an area approved by the ECO.	Compliant – see Section A number 2 above.	Compliant – Subsoil stockpiled in an area approved by ECO.
	Any surplus subsoil that needs to be stockpiled for cut and fill operations must be stockpiled in an approved stockpile area as agreed to by the ECO.	Compliant – landowner gave consent letter for dumping/storing on his farm.	
	No pollutants (e.g., Bedding sand, cement etc.) to be dumped on site	Compliant	Compliant
	Silt fencing needs to be installed before construction works commence (in the areas with a steep slope, or as instructed by the ECO) to ensure that there is limited movement of silt on site.	Not yet necessary	Not yet necessary
5.1.4	<u>Specific requirements in terms of the Paleontological Impact Assessment</u> Before construction starts , a professional palaeontologist must be commissioned to record and judiciously sample petrified wood and any other significant fossil material exposed during the construction phase of the project, while bedrock excavations for the reservoir are still unsealed.	Compliant – See section A number 3 above.	Compliant - see section B number 3 above.
	The Environmental Control Officer (ECO) responsible for the reservoir development must be aware of the possibility of important fossils (e.g., shells, petrified wood, plant remains, trace fossils, mammalian bones and teeth) being present or unearthed on site and must regularly monitor all substantial excavations into superficial sediments as well as fresh (i.e., unweathered) sedimentary bedrock for fossil remains	ECO to continually monitor during site inspections.	ECO to continually monitor during site inspections.
	Should it be suspected that an object or structure of heritage or paleontological value has been uncovered during earthworks or the clearing of vegetation (including but not limited to bones, burial sites, structures older than 50 years, stone tools, shell middens, pottery etc.), then all work is to immediately cease , and the ECO is to be contacted to inform Heritage Western Cape (HWC). Work shall not recommence until HWC have	ECO to continually monitor during site inspections.	ECO to continually monitor during site inspections.

	visited the site, inspected the object in question and advised on how to proceed. If the object requires removal by a trained archaeologist, this process will be at the expense of the developer. It is the contractor's responsibility to ensure all staff on site is aware of this procedure.		
5.2	General Construction Requirements		
5.2.1	The construction area must be demarcated to prevent any encroachment into agricultural or sensitive vegetation areas.	Partial compliant – a sturdy fence is required to prevent farm animals from accidental injury on site - see Section 5 above.	Compliant – a sturdy fence is required to prevent farm animals from accidental injury on site - see Section 5 above.
	All topsoil must be stripped from the area required and stockpiled in the site camp or area as approved by ECO, for later use in rehabilitation.	Compliant – see Section 2 above.	Compliant – topsoil stockpiled in approved area.
	All excess soils that will not be used must be disposed of at a licensed landfill site.		Noted
	Care must be taken when working with concrete, no concrete to be spilled or mix on the ground. This must be done on suitable trays.	Compliant	Compliant – concrete being mixed at the site camp and carted to the pump station.
5.2.3	<u>Access to the Site</u> No unauthorized access to the site permitted – gate to be kept closed at all times.	Compliant – see Section A number 4 above.	Compliant – see Section B number 4 above.
	Construction vehicles to use existing access routes or if not available can only use one route per site to minimize the potential environmental impact. These access routes must be confirmed prior to construction with the appointed ECO.		
	The access roads will be upgraded and repaired but not widened. The roads will either be surfaced with gravel, or a two-spool concrete track will be made.		
	Access to the area is to be monitored during construction		
5.2.4	<u>Site agent</u> The contractor must appoint a responsible agent to ensure that they comply with this EMPr and all its conditions.	Klasie Lategan	Klasie Lategan
5.2.6	<u>Demarcation of No-Go areas</u> No Go demarcation must be in place and maintained throughout the construction period.	See Section A number 5 below.	See Section B number 5 below.
	The No-Go areas must be kept clear of any construction material/vehicles as well as stock piling of vegetation matter and topsoil		
	All construction activities must be restricted to the demarcated areas to ensure that no further disturbance into the surrounding vegetation.		
	Access into the No-Go areas by personnel is strictly forbidden (i.e., Work breaks such as lunch are not permitted outside the defined work area - no entry		

	into the neighbouring properties or open space areas). A spot fine will be imposed against the contractor in the event of contravention of the no-go policy up to a maximum of R5 000 per incident).		
	<u>Construction site camp</u> The contractors' site camp, offices and storage facilities shall not be located within or adjacent to an environmentally sensitive area. Portable ablution facilities (chemical toilets) are to be provided at the camp site for use of the staff. A fenced off area must be created within the camp site for refuse and waste management. No open fires are to be permitted due to the risk of fire.	Compliant – see Section A number 6 above.	Compliant – see Section B number 6 above.
5.2.8	<u>Storage of construction material</u> The following must be adhered to (if not within the construction site camp): All stockpile sites to be approved by the ECO prior to the commencement of stockpiling. All stockpile sites to be properly demarcated with silt-fences and/or danger tape, where necessary. Silt protection measures around stockpile sites must be implemented, if required.	Compliant - Construction material to be stored in the construction site camp and topsoil & subsoil stockpiles at the approved areas. See Section A numbers 2 & 6.	Compliant - Construction material to be stored in the construction site camp and topsoil & subsoil stockpiles at the approved areas. See Section B numbers 2 & 6.
5.2.9	<u>Fire protection</u> No open fires or naked flames for heating or cooking shall be allowed on site. The contractor must ensure that all personnel are aware of the fire risk and the need to extinguish cigarettes before disposal. Cigarettes shall not be disposed of in the veld and must be disposed of properly in receptacles. No burning of waste on ANY PART of the site is permitted.	Contractor to take note of this.	Contractor to take note of this.
5.2.10	<u>Health and Safety</u> The H&S Officer is to copy the ECO in on his/her reports for record purposes.	Health and safety officer to monitor compliance	
5.2.11	<u>Waste management</u> Recycling must be encouraged on-site and recycling bins must be provided and clearly marked. Disposal of all waste materials must be done at suitable facilities. No dumping of any waste material on or off-site is permitted. The contractor shall ensure that the site is maintained in a neat and tidy condition and kept free of litter (including the adjacent open space area). At all places of work, the contractor shall provide litter bins, containers and refuse collection facilities for later disposal. Litter to be removed from the site daily (through daily litter picking before the site is closed for the day). Rubbish bins must be provided on-site and regularly	Compliant - ongoing monitoring to be done.	Compliant - ongoing monitoring to be done.

	cleaned / emptied. Solid waste (construction rubble etc.) is to be temporarily stored on-site in a designated area approved by the ECO prior to collection and disposal. Solid waste must be removed on a weekly basis to a licensed municipal waste site.		
5.2.12	<u>Ablution Facilities</u> Contractors must provide chemical ablution facilities for all construction personnel working on the site. The number of chemical toilets required must adhere to the H&S requirements applicable at the time of the contract.	Comply – see Section A number 6 above.	Comply – see Section B number 6 above.
5.2.13	<u>Concrete and Cement Works</u> The contractors will use ready-mix concrete for the reservoir but when any other concrete work take place on site then it must be mixed on trays and not directly on the soil. No concrete or cement contaminated water is allowed to be disposed of anywhere along the construction route or in the adjacent sensitive vegetation area (to the north). No ready-mix trucks are permitted to rinse their tanks on site or along the access roads to and from the site. Any spillage is to be immediately cleaned by the responsible contractor / supplier / owner.	Comply – see Section A number 6 above. Contractor must take note of this.	Comply Contractor must take note of this.
6.	<u>Rehabilitation Phase</u> <u>Rehabilitation of damaged areas will include, but is not limited to the following:</u>] All building rubble and waste must be completely removed and disposed of at an approved landfill site.] Compacted topsoil must be raked loose.] Agricultural areas to be reinstated as required by the landowner.] Existing farm tracks / roads used during construction to be left to the satisfaction of the landowner.] Contaminated soil must be disposed of at an approved landfill site.] Stockpiled topsoil to be placed back (on top) and NOT compacted.] Indigenous grass seed must be sown within the disturbed and affected areas (as indicated by the ECO);] Implementation of additional erosion control methods as required.] Planting of screening vegetation around the reservoirs can be considered and ECO will advise on suitable species.] Maintenance of storm water system until handed over to the local authority.	Not yet necessary, this will be done once the main construction phase is completed.	Not yet necessary, this will be done once the main construction phase is completed.