ECO CHECKLIST FOR THE CONSTRUCTION OF THE PACKAGE SEWAGE PLANT AND HOUSES ON THE PREEKSTOEL BEACH ESTATE, STILL BAY EAST, WESTERN CAPE

AUBREY WITHERS ENVIRONMENTAL CONSULTANT

File 1012 : Construction ECO Checklist No.: 7

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PROJECT DETAILS

ECO Checklist the Construction of the Sewage Package Plant and Housing on the Preekstoel Beach Estate, Still Bay East, Western Cape

REPORT	Construction ECO Checklist
AWEC FILE NO.	1012
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ECO CHECKLIST # 7

PREEKSTOEL BEACH ESTATE, STILL BAY EAST, WESTERN CAPE

PREPARED FOR: Vivren Properties (Pty) Ltd.

Date of Site Inductions	6 December 2023 17 January 2024 18 January 2024 1 August 2024	DIG Gp Fencing SouthShore Devco FLUIDCO Africa Tretsom Builders	 Riaan Booysen Kevi Levin Richard Marks
Date of ECO Site Visit:	24 October 2024	Date of Issue	19 November 2024
Site Visit Undertaken by (ECO):	Aubrey Withers.		
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INTRODUCTION

This document provides a Table (ECO Checklist) of the mitigation measures as described in the approved Environmental Management Programme (EMPr) for the Construction Phase of the **Preekstoel Beach Lifestyle Estate, Still Bay East,** as prepared by Aubrey Withers Environmental Consultant. The ECO Checklist describes the mitigation actions that should be implemented during the construction of the Package Sewage Plant and the Houses on the Estate, as well as the persons/ parties responsible for implementing the actions. The ECO checklist should be read together with the EMPr.

The EMPr headings provided in the left-hand side column of the ECO Table are as per the EMPr for ease of reference. The two columns on the right-hand side of the table should be completed by the ECO during his site inspections. Compliance is measured as Non-Compliant (NC), Partially Compliant (PC), Compliant (C), or Compliant plus added value/ effort (C+). The observations made and corrective actions required are documented in the "comment" column. *Where no comments are included in the "comment" column, the specific measure is either not applicable at this stage of the project or will be addressed during ensuing ECO visits.*

Key to Compliance Indicators:

NC	PC	C	C+
Non-Compliant	**Partially Compliant**	**Compliant**	**Compliant plus added value/effort**

The Construction Supervisor (**CS**), Developer's Site Agent (**SA**) and the Environmental Control Officer (**ECO**) will use this document when monitoring construction activities on site. This document can also be used for compliance monitoring during the operational phase of the development. The roles and responsibilities of the CS, SA and ECO are described in Sections A and E of the EMPr.

ECO Objectives and Compliance Inspection Scope:

The objectives of the ECO site inspections are to monitor ongoing construction activities being undertaken on site, against the requirements of the approved EMPr (Construction Phase).

Compliance Inspection Methodology:

The EMPr states that an ECO must be appointed by the developer to oversee the construction phase of the project. The ECO will then need to undertake periodic site visits[1] to assess whether any environmental degradation is resulting from the construction phase of the project and to check (monitor and report on) compliance with the EMPr. The daily on-site activities will be controlled by the Construction Supervisor and the Site Agent.

The ECO is to complete an ECO Checklist after each site visit and circulate this checklist amongst the contractor/s, developer and Authorities (DEADP and Hessequa Municipality) to serve as a record of proceedings. The ECO Checklist must be circulated as soon as possible after each site visit. The ECO Checklist will also be used for the recording of general site instructions as they relate to the environmental scope of works on site. The site instruction file will, however, also be used for issuing "stop work" orders for the purposes of immediately stopping any particular activities of the contract due to the environmental risk or when any significant environmental impacts occur.

[1] Monthly ECO site visits should be undertaken for the construction of the Package Sewage Plant, whilst less frequent site visits will be necessary for the construction of houses, given that the earthworks for the house construction sites have already been undertaken for the first phase of the development. As such, the erven for the houses are not environmentally sensitive and only site husbandry needs to be assessed. Such assessment can, therefore, be undertaken by the Developer's Site Agent.

Tracking of Compliance Status:

Date of ECO Checklist Conducted	NC	PC	C	C+
14 February 2024			**32**	
13 March 2024		**1**	**31**	
22 April 2024	**1**	**1**	**30**	
22 May 2024	**2**		**30**	
27 June 2024		**2**	**30**	
1 August 2024			**32**	
24 October 2024			**33**	

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(Headings as per the EMP and EA for ease of reference)

LIST OF ACRONYMS AND ABBREVIATIONS

ARC	Architect
AWEC	Aubrey Withers Environmental
BC	Body Corporate
CM	Construction Manager
DEADP	Department of Environmental Affairs and Development Planning
ECO	Environmental Control Officer
EMPr	Environmental Management Programme
EAP	Environmental Assessment Practitioner
HOA	Home Owners Association
RESP	Responsibility
SHE	Safety, Health & Environmental Officer
SA	Site Agent
RE	Resident Engineer

APPENDICES

SECTION E: CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

E.1 GENERAL CONSTRUCTION MANAGEMENT PROGRAMMES

ENVIRONMENTAL ASPECTS (PROJECT ACTIVITY)	REQUIRED ACTIONS	TARGET AND RESPONSIBILITY	COMPLIANCE	ECO COMMENTS
Establish appropriate partnerships and good relationships with local authorities, local community, and contractors	1. Ensure appropriate communication with all local authorities, CapeNature, and contractors.	To be undertaken by professional team and ECO, Construction Supervisor and Site Agent as ongoing process.	**C**	The ECO Checklists will be distributed by the ECO to authorities, CapeNature and contractor on a regular basis.
	2. Contractors to be fully informed by the ECO as to their environmental contractual obligations. Induction of staff must take place.	ECO is to undertake the induction of construction staff who have been appointed to undertake any construction activities on the development site and to monitor environmental contractual obligations of contractors on ongoing basis for the duration of the various projects (fencing, package sewage works, houses, gate house, etc.	**C**	A site hand over meeting was held with OIG Fencing on 6 December 2023; Southshore Devco (house on Stand 33/Erf 2457) on 17 January 2024 and FluidCo Africa (package sewage plant) on 18 January 2024, during which the contractors were made aware of their environmental obligations. Site handover to Southshore Devco (house on Stand 44/Erf 2382) on 13 May 2024. Tretsom Builders were inducted on 1 August 2024 for the house being constructed on Stand 113/Erf 2421.
	3. Appropriate signage indicating the main contractor, Consulting Civil Engineers, Electrical Engineers, Landscape Architect, Environmental Assessment Practitioner and ECO (with contact details) must be erected on site.	The contractor's Notice Board is to be placed near the entrance to the development site. The Notice Board is to have the ECO's telephone No. on it.	**C**	The Main Contactor's Notice Board is placed near the entrance to the development's construction site and the telephone No. of the ECO is on the notice board. The FluidCo's construction notice board for the Package Sewage Plant's site complies with the necessary site safety regulations. The Tretsom notice board is on the shade cloth fence.
	4. Access across the site for the general public must remain open during the day. Signs warning visitors to the Nature Reserve about the movement of heavy construction vehicles must be placed on site.	The general public have access to the contractors temporary access over the site off the Preekstoel tar road.	**C**	Appropriate signage is on site.
Storage of construction materials, concrete mixing areas, rubble storage and litter management on	1. Construction material (precast concrete components of the package sewage plant, concrete and mortar raw materials) must be stored in	Area for construction material has been designated by the Site Agent and to be in secured area out of the way of access routes. ECO to monitor compliance.	**C**	The storage areas have been vetted by the Site Agent and ECO and are out of the way. These storage areas are in a neat and tidy state (**Photo 1**).

ENVIRONMENTAL ASPECTS (PROJECT ACTIVITY)	REQUIRED ACTIONS	TARGET AND RESPONSIBILITY	COMPLIANCE	ECO COMMENTS
building sites **Storage of construction materials, concrete mixing areas, rubble storage and litter management on building sites** (continued.)	designated areas in a neat and orderly manner.			
	2. Contractor to store building rubble in a suitable designated area, with rubble removed from site on a weekly basis.	The area for any building rubble storage to be designated by the Site Agent. Contractor to remove any builder's rubble on weekly basis. ECO to monitor compliance.	**C**	Building rubble is being generated on two of the houses being built on Erven 2382 and 2421. Such waste is removed from site weekly in a skip. Building waste from the two erven building sites is stored in a skip which is covered with shade netting (**Photo 1**). The house on Erf 2457 has been completed and is occupied (**Photo 2**). The first floor deck of the house on Erf 2421 was being prepared for casting the concrete (**Photo 3**).
	3. The building contractor must indicate the dumping area for all spoil from the site. Trucks removing spoil must remain on designated access roads.	Site Agent to assess spoil dumping area, and to monitor condition of access roads.	**C**	Waste skips are being used by the building contractors.
	4. All other solid waste and litter to be kept in appropriate containers with lids and removed from the site on a weekly basis to a licensed waste disposal facility. The burning of solid waste and paper on site will not be allowed. Recyclable waste (e.g. paper, glass, tin, plastic) should be recycled if possible.	Contractor to remove solid waste on a weekly basis. Site Agent and ECO to monitor compliance. Waste skips are to be used where necessary on building sites.	**C**	Litter, such as plastic wrapping on brick pallets, used cement bags and general domestic litter (plastic bags, lunch paper, cooldrink bottles) are collected on a daily basis and placed in a skip with a shade netting over it. The contractors are thanked for the use of skips for the temporary storage of builder's rubble and general litter (plastic covering of brick packs, cardboard, bottles etc.).
	5. Concrete mixing must be restricted to a designated area on site and cement residues to be removed from site as soon as possible. At least one wastewater catch pits must be constructed for the capture of concrete residues from cleaning of the cement mixer. Residues are to be removed from site from time to time.	Site Agent and ECO to monitor compliance. Contractor to remove cement residues from each logical phase of construction. No concrete is currently being mixed on site and ready-mix concrete is being used.	**C**	OIG Fencing mixed concrete for their fencing poles on an area designated for a road, i.e. non-sensitive designated area. Ready-mixed concrete is being used during the current phase of works on Erf 2421 for casting. Mortar is being mixed on site on shutter boards for building walls and retaining walls.

ENVIRONMENTAL ASPECTS (PROJECT ACTIVITY)	REQUIRED ACTIONS	TARGET AND RESPONSIBILITY	COMPLIANCE	ECO COMMENTS
Prevent possible **negative impacts of construction personnel** on the environment	1. Contractors will be responsible for the conduct of their personnel on site, as it pertains to trespassing, littering, and unacceptable social behaviour.	Contractors will be responsible for social management on site. Site Agent to monitor for duration of contracts.	**C**	All staff were observed within the construction areas. No littering on site was noted and no incidents of trespassing and bad social behaviour have been reported by the Site Agent.
	2. ECO has informed construction personnel of environmental rules to apply during construction period.	The Site Agent is to continuously monitor that environmental rules are being applied. The Construction Supervisors of the various contracting companies on site is to have regular tool box talks with staff.	**C**	The ECO has inducted the construction staff of the contactors currently on site about littering and that no fires are allowed on site for heating of food or the burning of plastic wrapping, litter etc.
	3. Maintain strict supervision over all construction activities.	Construction supervisors and the Site Agent are to monitor construction activities and if any adverse impacts occur, they take the necessary action to rectify matters.	**C**	Any such incidents must be reported by the Site Agent to the ECO, who will conduct regular inspections and take up any transgressions with the construction supervisors. No incidents have been reported.
	4. All construction workers must stay within the development area demarcation and no personnel will be allowed beyond the demarcated area.	The Site Agent is to monitor for duration of contract. Any transactions must be discussed with the construction supervisors.	**C**	All staff were observed within the construction area and no incidents have been recorded.
	5. Chemical toilets must be used on site and must be emptied and sanitized regularly. There must be 1 toilet per 15 staff.	Construction supervisors are responsible for the provision of chemical toilets, the provision of toilet paper, soap and water	**C**	Each construction site has its own toilet on site (refer to **Photos 1 and 3**). Toilets are serviced each week.

E.2 BIOPHYSICAL MANAGEMENT PROGRAMMES

ENVIRONMENTAL ASPECTS (PROJECT ACTIVITY)	REQUIRED ACTIONS	TARGET AND RESPONSIBILITY	COMPLIANCE	ECO COMMENTS
E.2.1 Fauna and Flora				
There is no to little indigenous vegetation on site.	1. Mass earthworks were undertaken on site, where the nearly 100% of vegetation comprised rooikrans which was removed and stable building platforms have been constructed.	There should not be any issues with the removal of indigenous vegetation from building sites, as all sites were cleared of all vegetation to create stable building platforms.	**C**	No incidents of the removal of indigenous vegetation have occurred on the current building sites.
Alien plant management	1. Alien vegetation seedlings must be removed from the current building sites. Follow-up weeding will be required.	The Site Agent is to monitor the growth of rooikrans seedlings and take the appropriate measures to remove such seedlings from the building platforms	**C**	A number of rooikrans seedlings have already been noted on the site. Alien vegetation seedlings are currently being removed from the building platforms by a dedicated gardener

ENVIRONMENTAL ASPECTS (PROJECT ACTIVITY)	REQUIRED ACTIONS	TARGET AND RESPONSIBILITY	COMPLIANCE	ECO COMMENTS
		(e.g. foliar spraying with an appropriate herbicide).		for the developer (refer to **Photos 4 and 5**).
Minimise disturbance to fauna	1. Contractors must not harm or disturb any wildlife, especially snakes, tortoises, buck, hares and birds.	Construction Supervisor and Site Agent to monitor. The contractors must report all incidents of harm to any fauna to the site agent who will report such incidents to the authorities.	**C**	No incidences of wildlife were noted on site**.**
E.2.2 Water				
Institute **measures to minimise ground water pollution** during construction phases of project.	1. No pollution of surface or ground water may occur due to any activity on the property. The relevant requirements of the National Water Act, 1998 (Act No. 36 of 1998) must be complied with at all times	The Construction Supervisor and Site Agent must monitor the use of oils, diesel and other hydrocarbons on site.	**C**	No incidents of any hydrocarbon spills have been noted or reported.
Institute measures for **stormwater management to prevent erosion**, damage to property and pollution of the environment.	1. Stormwater installation has been completed for the first phase of the development.	Construction Supervisor and Site Agent to monitor adequate storage of stormwater after moderate rainstorms and during the wet winter period (Construction Phase). Deep ponding of stormwater on site must be prevented and measures to keep the stormwater on the site must be undertaken by the Site Agent. Stormwater pipes have been connected to the small stormwater detention pond to the west of the site and the larger detention pond in the centre of the site.	**C**	No stormwater issues have been recorded on the construction sites.

ENVIRONMENTAL ASPECTS (PROJECT ACTIVITY)	REQUIRED ACTIONS	TARGET AND RESPONSIBILITY	COMPLIANCE	ECO COMMENTS
E.2.3 Soil				
Rehabilitate all areas where **soil erosion** has taken place	1. Institute soil protection and soil rehabilitation measures on site where erosion has taken place with the use of wood chips. Shade netting could be used in areas where windblown open sandy areas are located.	To be planned and facilitated by the Site Agent and Construction Supervisor where necessary.	**C**	No significant erosion of the development site has been noted.
	2. Eroded areas will need to be backfilled and compacted	Contractor to ensure that the backfilled material is compacted sufficiently so as to not erode in the future. Wood chips and/or shade netting can also be used to prevent wind erosion of sand.	**C**	No significant erosion has been noticed on site.
	3. Plant locally indigenous Strandveld plants over the private open space areas to stabilize exposed sandy areas. The above planting should only take place after the first good rains of the winter season.	Landscape Architect and ECO to monitor and advise accordingly.	**C**	The right hand side of the entrance road has been planted with locally indigenous Blombos Strandveld species. An irrigation system has been put along the entrance road.
Prevent **pollution**/ contamination **of soil**	1. Prevent cement powder spills and clear such accidental spills as soon as possible as cement powder has a high alkalinity pH rating that can contaminate and affect both soil and water pH dramatically. All hydrocarbon spills are to be addressed immediately to prevent seeping into the ground.	Site Agent and Construction Supervisor to monitor for duration of contract. Contractor to inform Site Agent of such spills. Special measures are to be implemented for any hydrocarbon fuel spills. An Oil Spill kit must be kept on site in case of a hydrocarbon spill.	**C**	No cement powder spills were noted on site. The large crane used to lift the pre-cast concrete components of the package sewage plant into position did not require refueling. The last of the pre-cast concrete panels were delivered to site on 13 March 2024. These panels were placed by the crane on the package sewage plant on Thursday and Friday 14 and 15 March. The final lids were placed onto the package sewage plant during October once the required pipework had been installed (**Photo 6**).
	2. All fuels, oils and hydrocarbon products kept in tins and drums must be stored in a suitably bunded area to prevent pollution in case of spills or leakages.	Site Agent to monitor compliance for duration of contract.	**C**	No incidents of spills have been noted.

ENVIRONMENTAL ASPECTS (PROJECT ACTIVITY)	REQUIRED ACTIONS	TARGET AND RESPONSIBILITY	COMPLIANCE	ECO COMMENTS
Prevention of dust	1. De-grubbing took place first with the removal of all alien vegetation using mechanical means. All brushwood was chipped and stored in mounts over the site. Any areas that create dust must be wetted down with water or the area is to be covered with wood chips.	The Site Agent is to monitor and advise on dust prevention during construction work.	**C**	All areas causing dust must be wetted down with water and or bare sandy surfaces must be covered with wood-chip mulch. No incidents of dust have been recorded.
E.2.4 Energy Management				
Use electricity sparingly during construction	1. The contractors must be informed of the efficient use of energy (generators) during construction. Generators to have drip trays when in operation.	Site Agent to monitor for the duration of the contract period.	**C**	No generators are currently in use on site. ECO to monitor compliance.

E.3 SOCIO-ENVIRONMENTAL MANAGEMENT PROGRAMMES

ENVIRONMENTAL ASPECTS (PROJECT ACTIVITY)	REQUIRED ACTIONS	TARGET AND RESPONSIBILITY	COMPLIANCE	ECO COMMENTS
E.3.1 Archaeological and Heritage Resources				
Conserve all archaeological settings and artefacts	1. Any excavations behind the dune on the site of the package sewage plant should not encounter any archaeological artefacts dune to the young age of the back dune area. Given the mass earthworks undertaken for the creation of the stable building platforms, no archaeological artefacts will be unearthed when excavating foundations.	Contractor to be on the lookout for any shell middens during excavations for the sewage package plant and to stop all excavations until the ECO and or archaeologist has assessed any finds.	**C**	No archaeological material was noted in the excavations.
	2. Any burial sites must be reported to the ECO who must investigate the site(s) and inform HWC and SAHRA.	HWC and south African Heritage Resources (SAHRA) must assess sites.	**C**	*Features like burials can occur in unexpected locations, and should any excavations uncover human remains; the ECO and HWC are to be notified immediately.* No burial sites have been reported.

ENVIRONMENTAL ASPECTS (PROJECT ACTIVITY)	REQUIRED ACTIONS	TARGET AND RESPONSIBILITY	COMPLIANCE	ECO COMMENTS
E.3.2 Socio-Economic Benefits and Dangers of the Development				
Job opportunities should be afforded to the local community where possible	1. Where possible, the construction job opportunities should be allocated to local companies and persons from Still Bay and surrounds.	The Developers appointed OIG Fencing (Cochrane Fencing) from George; Southshore Devco (house on Erf 2457) from Mossel Bay; and FluidCo Africa (package sewage plant) from George.	**C**	Some local construction staff were appointed from Riversdale to assist with the construction of the package sewage plant.
To **prevent injury to public using the gravel access road**, construction staff, and delivery of materials	1. Signboards are to be in place at the entrance to the development site and on the site itself to assist the public with safe access over the site.	Site Agent and ECO to check on compliance during the various phases of the development of the site.	**C**	The applicable notice boards are placed on the site.
To **prevent injury to construction staff** (and the public).	2. Deep excavations into the sand for the construction of the package sewage plant and the construction of basements, should be careful that the sides do not collapse. Shoring scaffolding should be used in unstable sand situations.	Construction supervisors and the Site Agent need to check on compliance of deep excavations.	**C**	Shutter boards were installed when deep foundations were necessary. No instability incidents were recorded on site.
E.3.3 Security				
Minimise security risk during the construction phase	1. The contractor(s) will be responsible for the security of their construction sites and the conduct of their personnel for the duration of the building contracts.	The contractors will need to monitor security issues on site. The Site Agent can provide advice if necessary.	**C**	No breaches of security issues have been noted on site.
Ensure **outdoor advertising** associated with the project is not visually obtrusive	1. All outdoor advertising associated with this project, whether on or off the site, must comply with the south African Manual for Outdoor Advertising Control (SAMOAC).	The Site Agent is to monitor compliance by developers and contractors. The Municipality is to advise accordingly.	**C**	No issues have been brought to the ECO's attention.

APPENDIX 1 – PHOTO SHEET

Photo 1: A waste skip is being used for the temporary storage of builder's rubble and general waste on Stand Erf 2382. The toilet was still on site for the small building team that were in the throws of completing the house.

Photo 2: The construction of the house on Erf 2457 has been completed and some landscaping has been undertaken. The house was occupied.

Photo 3: The first floor deck of the house being built on Erf 2421 has been prepared for casting the concrete. The site has a toilet and a skip on site for builder's rubble. The chemical toilet is also visible on site. The site was in a neat and tidy condition.

Photo 4: The exotic, invasive rooikrans (*Acacia cyclops*) has been removed from erven 2460 to 2467. Some locally indigenous Blombos Srandveld species have germinated on site, including a sedge species and various grasses.

Photo 5: A dedicated team of gardeners has been employed to physically remove the rooikrans and manatoka seedlings that are proliferating on the erven 2423 to 2727 within the development area. Seedlings of Blombos Strandveld species have grown on site.

Photo 6: The final lids have been placed onto the various tanks of the package sewage plant.