SCIENTIFIC SERVICES
postal Private Bag X6546, George, 6530
physical 4th Floor, York Park, Building,
York Street, George, 6530
website www.capenature.co.za
enquiries **Colin Fordham**
telephone +27 44 802 5329 **fax** +27 44 802 5313
email cfordham@capenature.co.za
reference **14/2/6/1/5/3_PA/178/32RE_2019/CF002**
date **15rd April 2019**

P.O. Box 5367
Helderberg Tel.: (021) 851 1616
7135 Fax: (086) 512 0154
admin@enviroafrica.co.za

Attention: Ms Inge Erasmas

COMMENT ON PRE-APPLICATION BASIC ASSESSMENT REPORT IN TERMS OF THE NEMA ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS FOR THE PROPOSED UPGRADE OF THE KLAARSTROOM OXIDATION POND WASTEWATER TREATMENT SYSTEM, FARM KLAARSTROOM No. 178 PORTION 32 REMAINDER, KLAARSTROOM, PRINCE ALBERT MUNICIPAL AREA.

DEA&DP reference #: 16/3/3/6/7/1/C2/3/0013/19

CapeNature, as custodian of biodiversity in the Western Cape[1], would like to thank you for the opportunity to review the Pre-application Basic Assessment Report (PreBAR) and wishes to make the following comments. Please note that our comments only pertain to the biodiversity related impacts and not to the overall desirability of the application.

The following extract was obtained from the supplied documentation and outlines the scope of works proposed (Figure 1):

"This application is for the proposed upgrade of the exiting Klaarstroom Waste Water Treatment Works on Remainder of Portion 32 of Farm Klaarstroom 178, Prince Albert, Western Cape to produce to increase the capacity and improve the quality of the Final Effluent. It is further proposed that the Final Effluent be used for irrigation of the sport fields in Klaarstroom village. It is proposed to construct a pipeline from the WWTP ponds which will terminate in a new galvanized dam at the sports field on Remainder of Portion 34 of Farm Klaarstroom 178, Prince Albert, Western Cape.

The following information was taken from the Bvi Technical Report from Appendix K.

[1] Section 9, Western Cape Nature Conservation Board Act 15 of 1998

The village of Klaarstroom is located south of the N12 National Road and the existing wastewater treatment plant is located north of the N12. All wastewater from the village is pumped to the wastewater treatment plant.

The village of Klaarstroom is fairly well serviced in terms of water, sewage, electricity and roads. The wastewater is collected at a central pump station in the village and then pumped through a 100mm diameter rising main over a distance of 800m to the wastewater treatment plant.
The current disposal of effluent takes place by means of overhead sprinklers discharging the treated effluent onto the veld north of the existing treatment plant. Any drainage from this area will eventually end up in the Groot River south of Klaarstroom.

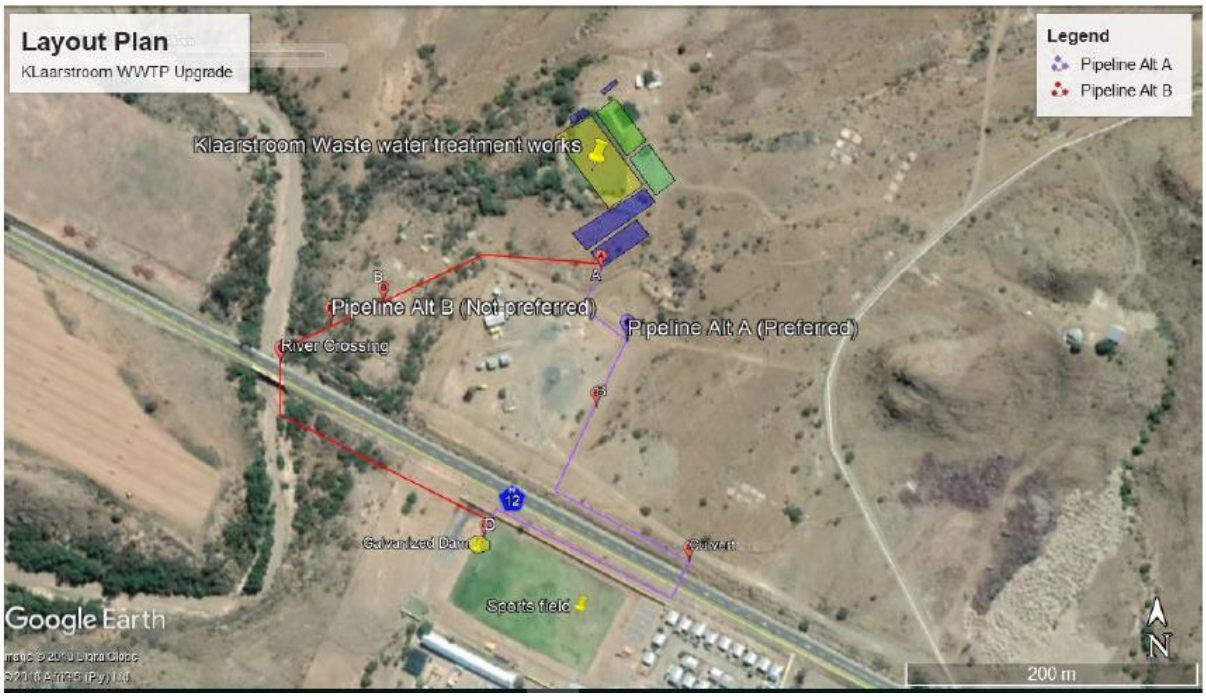

Figure 1: A map supplied by the consultant illustrating the extent of the proposed works.

According to Mucina and Rutherford[2] and the Western Cape Biodiversity Spatial Plan (WCBSP 2017)[3], the only vegetation unit impacted by the project will be the ***Least threatened*** Prince Albert Succulent Karoo (Poorly Protected) (Figure 2). Prince Albert Succulent Karoo unit is not listed as a threatened ecosystem in terms of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEM: BA). The conservation target for this vegetation unit is listed at 16% of its original extent.

[2] Mucina, L. & Rutherford, M. C. (EDS) 2006. The Vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19. South African National Biodiversity Institute, Pretoria. (revised 2012)
[3] Pence, G.Q.K. 2017. The Western Cape Biodiversity Spatial Plan: Technical Report. In Prep. Western Cape Nature Conservation Board (CapeNature), Cape Town.

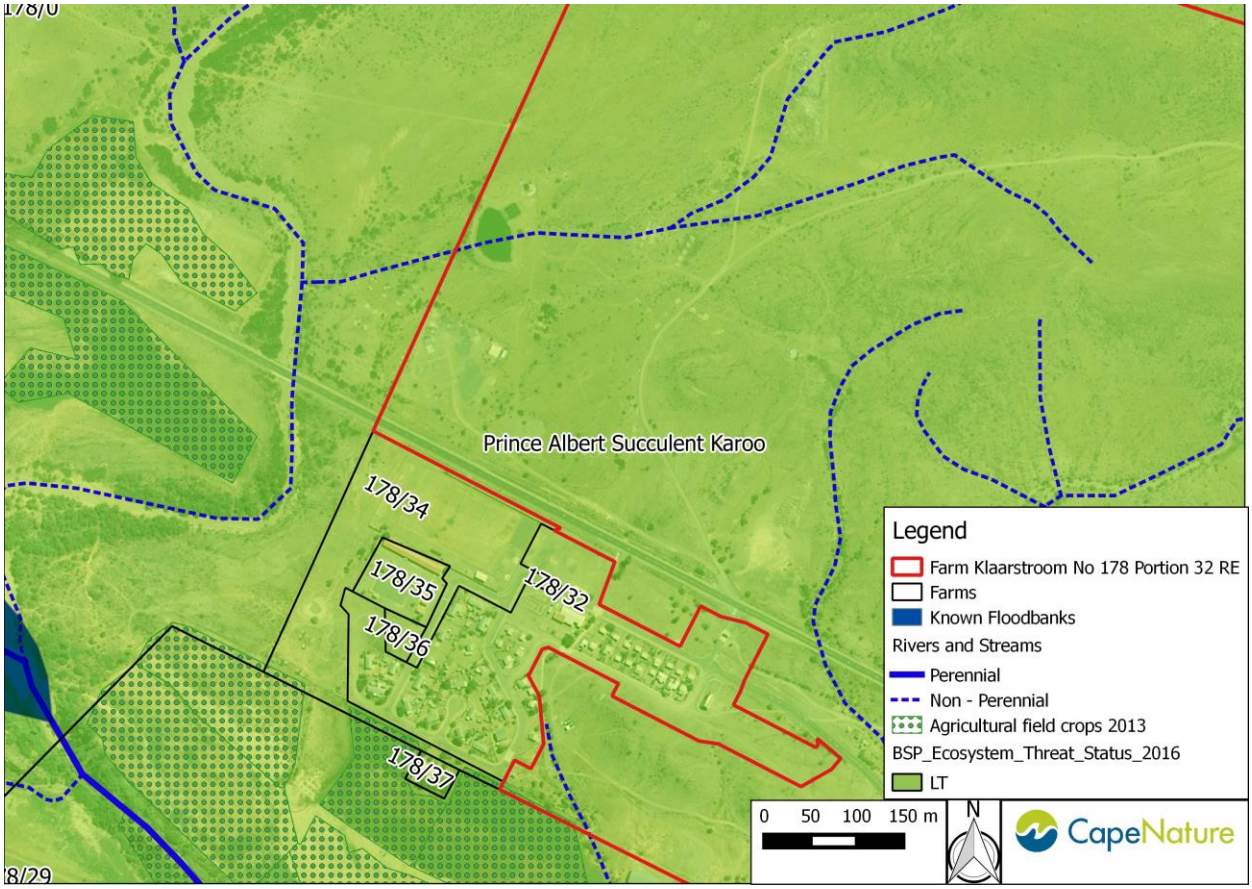

Figure 2: Map of the study area, showing the vegetation units (statuses shown on map), National Freshwater Priority Area data and locations of streams and rivers.

The Waste Water Treatment Works (WWTW) is currently located within the extent of a non-perennial stream, but there are Freshwater Ecosystem Priority Areas (FEPA)[4] on the site (Figure 2). The activities proposed will occurr within Critical Biodiversity Area (CBA) and Ecological Support Areas 2 (ESA 2) (WCBSP 2017) (Figure 3).

[4] Nel, J.L., Murray, K.M., Maherry, A.M., Petersen, C.P., Roux, D.J., Driver, A., Hill, L., Van Deventer, H., Funke, N., Swartz, E.R., Smith-Adao, L.B., Mbona, N., Downsborough, L. & Nienaber, S. (2011). Technical Report for the National Freshwater Ecosystem Priority Areas project. WRC Report No. K5/1801.

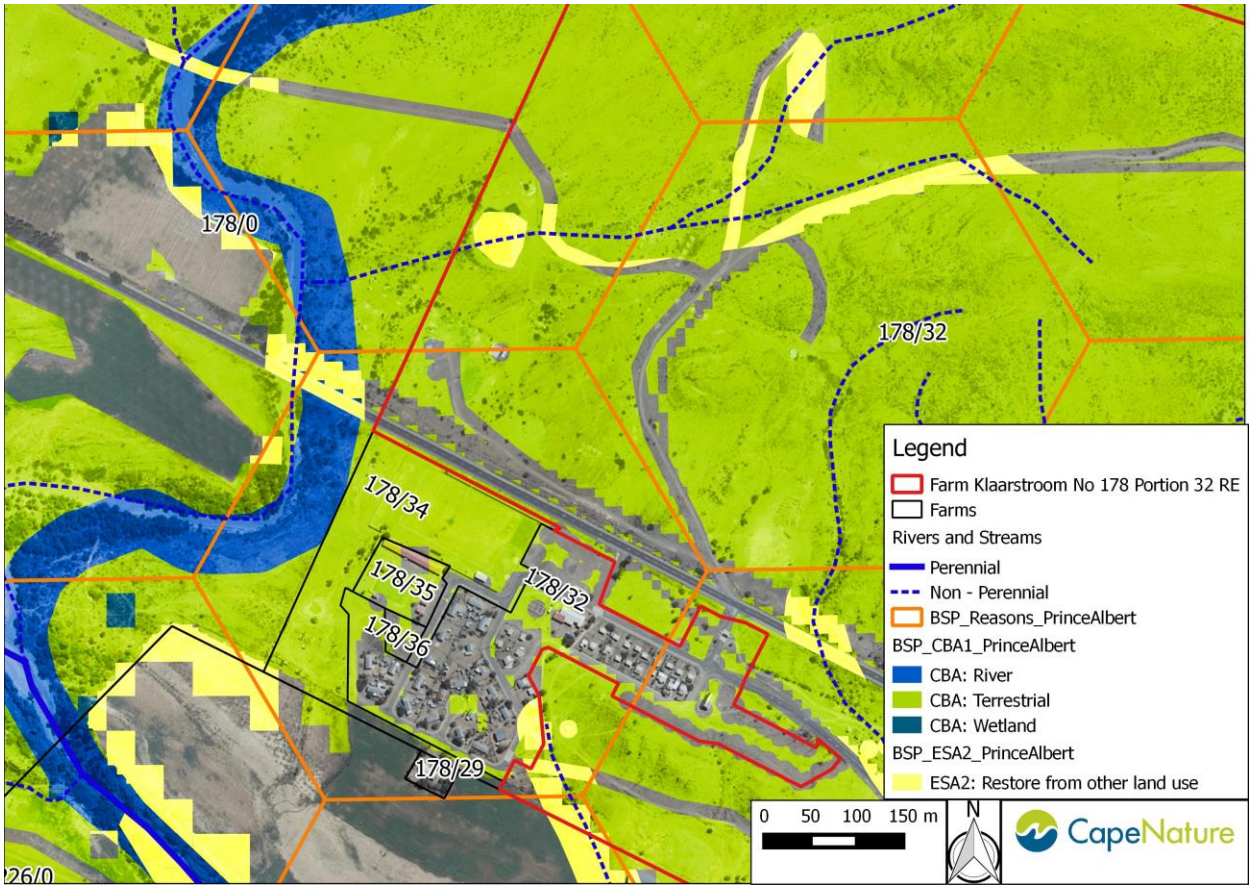

Figure 3: Map of the study area, showing the extent relative to WCBSP (2017).

CBA areas are defined as: *"Areas in a natural condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure.".* CBA objectives are: *"Degraded areas should be rehabilitated. Only low-impact, biodiversity-sensitive land uses are appropriate."*

ESA regions are defined as: *"Areas that are not essential for meeting biodiversity targets, but that play an important role in supporting the functioning of PAs or CBAs, and are often vital for delivering ecosystem services."* ESA 2 are degraded ESA.

ESA and ESA 2 objectives are: *"Maintain in a functional, near-natural state. Some habitat loss is acceptable, provided the underlying biodiversity objectives and ecological functioning are not compromised."*

Following a review of the PreBAR, and appendices, and given the above mentioned sensitivity of the site, CapeNature would like to make the following comments/recommendations:

1. Any indigenous vegetation that requires removal should be rescued and used for rehabilitation purposes. CapeNature would like to reiterate that all endangered species or protected species listed in Schedules 3 and 4 respectively, in terms of the Western Cape Nature Conservation Laws Amendment Act, 2000 (Act No. 3 of 2000) may not be picked or removed without the relevant permit, which must be obtained from CapeNature. This is also to ensure that rescued plant material is accounted for and used in the rehabilitation or

relocation process. To obtain such permits please contact the relevant Conservation Services Officials at the George CapeNature Regional Office or use the following website address http://www.capenature.co.za/permits-information/.

2. CapeNature would also like to remind the landowner that, in terms of the Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) ("CARA"), landowners must prevent the spread of alien invasive plants on the property. The level of alien infestation is therefore not be seen as reducing the sensitivity of a site, nor is the subsequent removal of alien vegetation from a property regarded as a mitigation measure due to this is being a legal requirement. Infestation by alien plants does not necessarily mean that an area is not important for biodiversity as some vegetation types are particularly prone to invasive alien infestation, but may recover when cleared of alien vegetation.

3. In addition to CARA, in terms of the Alien and Invasive Species Regulations, NEM: BA, 2014, specific alien plant species (e.g. *Opuntia ficus-indica*) are either prohibited or listed as requiring a permit; aside from restricted activities concerning, *inter alia*, their spread, and should be removed.

4. Given the location of the facility within a non-perennial drainage line it is unclear how the design would accommodate for potential flash flooding events (which Karoo is known for). It is recommended that an appropriate storm water management plan be compiled to ensure that the infrastructure is adequately protected and that the risk of contaminated spills entering the freshwater resources be minimised.

5. Will there be any run-off from the sports fields or is the evaporation rate significant enough to ensure that runoff will not contaminate the nearby watercourse?

6. Given the current volume of sludge that has accumulated in the system, it is recommended that this should be removed and disposed of at a suitably registered facility and not disposed of on-site like proposed.

7. Future proposed on site disposal should be located outside the extent of any areas that would be prone to flooding events. CapeNature understands the financial constraints of the applicant, and the small volume of sludge that may be generated on a monthly basis. It is recommended that a broad chemical description of what the sludge consists of and how this process breaks down sludge into its various components is required. CapeNature requires this information to understand how the onsite disposal of the sludge will not result in contamination of the property (and CBA), over the long term. It is however still preferable for the sludge to be disposed of at a registered facility.

8. It should be noted that CapeNature will not support the use of any invasive alien plant species within the proposed reed beds. Only the use of cosmopolitan or indigenous plant species can be supported. It is recommended that an Operational Environmental Management Plan be compiled detailing the sludge disposal and reed bed maintenance activities that are proposed for the facility.

9. The minister has not officially adopted WCBSP (2017), although it has been endorsed. Therefore the presence of CBA does not trigger NEMA Listing Notice Activities, however the

WCBSP (2017), needs to be referred to and referenced where required. The WCBSP (2017) data is of particular importance to biodiversity specialist reports.

10. CBA regions are areas delineated that are in a natural condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure. As stipulated in the Land Use Advice (LUA) Handbook (Pool-Stanvliet *et al.* 2017)[5] although the property selected may have undergone a level of disturbance, this cannot be used as motivation for establishing of development within CBA or ESA areas. It should be noted that it is the landowner's responsibility to ensure his property is suitably maintained at a level consistent with LUA guidelines. The loss of the CBA does compromise conservation targets and the loss of ESA would compromise the CBA. Could the EAP discuss this development in context with the CapeNature LUA guideline document? Particular reference should be made to the reasons GIS layer. Reference to this document was not found within the Pre-BAR.

11. Using specialist findings, a detailed No-Go Areas map should be compiled and appended to the Environmental Management Programme (EMPr). The aim of this map is to sensitise the contractor to the location of sensitive habitat relative to construction footprints. This will also empower the Environmental Control Officer (ECO) to ensure the strictest level of compliance regarding the protection of sensitive habitat.

To conclude, the upgrading of WWTW is essential for improving the water quality of our freshwater resources. CapeNature encourages all such systems to be rigorously monitored and compliance strictly enforced throughout the project lifecycle to ensure that such systems do not fall into a state of disrepair. Training of municipal staff regarding the operation of such facilities should already being in the construction phase of the project to ensure that all such personnel are fully skilled in terms of ensuring the facilities optimal use. CapeNature reserves the right to revise initial comments and request further information based on any additional information that may be received.

Yours sincerely

Colin Fordham
For: Manager (Scientific Services)

[5] Pool-Stanvliet, R., Duffell-Canham, A., Pence, G. & Smart, R. (2017). *The Western Cape Biodiversity Spatial Plan Handbook.* Stellenbosch: CapeNature.