

PROPOSED EXPANSION AND UPGRADE OF THE KAMIESKROON OXIDATION PONDS KAMIESBERG LOCAL MUNICIPALITY, NAMAKWA DISTRICT MUNICIPALITY, NORTHERN CAPE



DRAFT BASIC ASSESSMENT REPORT

SEPTEMBER 2020

PROPOSED EXPANSION AND UPGRADE OF THE KAMIESKROON OXIDATION PONDS, KAMIESBERG LOCAL MUNICIPALITY, NAMAKWA DISTRICT MUNICIPALITY, NORTHERN CAPE

PREPARED FOR:

Kamiesberg Local Municipality

Private Bag X 200,

Garies,

8220

Tel: 027 652 8000

PREPARED BY:

EnviroAfrica

P.O. Box 5367

Helderberg

7135

Tel: 021 – 851 1616

Fax: 086 – 512 0154

EXECUTIVE SUMMARY

Introduction

It's proposed that the existing oxidation ponds in Kamieskroon be upgraded and expanded.

The proposed upgrade of the Kamieskroon Waste Water Treatment Works includes the following:

- The existing oxidation ponds should be upgraded to meet the specifications of the Department of Water and Sanitation and be used as anaerobic, primary and secondary ponds. New in- and outlet structures should be constructed and the ponds must be lined with 2mm HDPE – Lining. The lining will ensure that the ponds are sealed off.
- The size of the existing anaerobic ponds is sufficient, minor upgrades are required along with the lining of the ponds.
- The size of the existing primary ponds is sufficient; however, the ponds need to be lined.
- Two of the secondary ponds must be combined to provide one larger pond to provide sufficient capacity. These ponds must also be lined.
- The construction of four new evaporation ponds connecting to the existing system with in-andoutlet structures and lined with 2mm HDPE – linings and geomembranes will be required as part of the upgrade.
- The construction of security fences around the extension of the oxidation pond system and the evaporation ponds will be part of the work.

The site is located at the existing Kamieskroon Oxidation Ponds, located to the east of Kamieskroon, north of the N7. Site Coordinates: 30°12'38.00"S17°55'13.00"E

Environmental Requirements

The National Environmental Management Act (NEMA, Act 107 of 1998), as amended, makes provision for the identification and assessment of activities that are potentially detrimental to the environment and which require authorisation from the competent authority based on the findings of an Environmental Assessment. NEMA is a national act, which is enforced by the Department of Environmental Affairs (DEA). According to the regulations of Section 24(5) of NEMA, authorisation is required for the following:

Government Notice R327 (Listing Notice 1):

Activity 12: The development of;

- (i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres;
- (ii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs;
 - (a) within a watercourse;
 - (b) in front of a development setback; or
 - (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse;.

Activity 19: The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse;

- (a) will occur behind a development setback;
- (b) is for maintenance purposes undertaken in accordance with a maintenance management plan; or

(c) falls within the ambit of activity 21 in this Notice, in which case that activity applies.

Activity 27: The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for;

- (i) the undertaking of a linear activity; or
- (ii) maintenance purposes undertaken in accordance with a maintenance management plan.

Activity 48: The **expansion** of;

- (i) infrastructure or structures where the physical footprint is expanded by 100 square metres or more; or
 - (ii) dams or weirs, where the dam or weir, including infrastructure and water surface area, is expanded by 100 square metres or more;
- where such expansion occurs;
- (a) within a watercourse;
 - (b) in front of a development setback; or
 - (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse;

Government Notice R324 (Listing Notice 3):

Activity 12: The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.

Activity 14: The **development** of;

- (i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 10 square metres;
 - (ii) infrastructure or structures with a physical footprint of 10 square metres or more;
- where such development occurs;
- (a) within a watercourse;
 - (b) in front of a development setback; or
 - (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse;

Activity 23: The **expansion** of;

- (i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 10 square metres;
 - (ii) infrastructure or structures with a physical footprint of 10 square metres or more;
- where such expansion occurs;
- (a) within a watercourse;
 - (b) in front of a development setback; or
 - (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse;

Site Description

- Vegetation

The site would historically have been covered in Namaqualand Klipkoppe Shrubland (Least Threatened).

According to the Botanical Assessment (**Appendix D1**), the development is on municipal land which had already been degraded to some extent. It is also the most logical place in terms of existing infrastructure (next to the existing WWTW and the Municipal Landfill site). The remainder of the property is natural veld, grazed by livestock of the local herders.

No alien invasive species were observed within the footprint.

The site is located within a CBA identified on SANBI BGIS. The most significant botanical aspect of this site is the presence of a few species protected in terms of the Northern Cape Nature Conservation Act.

- Freshwater

Although not indicated on any desktop assessments, including the SANBI BGIS NFEPA overlay, there is a watercourse (ephemeral stream) adjacent to the site. According to the Freshwater Assessment (**Appendix D2**), this drainage line flows into the Haas River, a tributary of the Buffels River. The proposed Kamieskroon WWTW is located approximately 12.5km away from the confluence, and approximately 100m from the confluence of the Haas River and the adjacent ephemeral stream.

- Heritage

According to the Archaeological Impact Assessment (**Appendix D3**), one quartz chunk and one broken Middle Stone Age flake was recorded during the study. The very small number and isolated context, in which they were found, mean that the archaeological remains have been rated as having *low* (Grade IIIC) significance.

No graves, or typical grave features such as stone cairns were encountered during the study.

The field study identified no significant impacts to pre-colonial archaeological heritage that will need to be mitigated prior to proposed construction activities commencing.

According to the Palaeontological Impact Assessment (**Appendix D4**), the overall palaeontological impact significance of the proposed development in terms of palaeontological heritage is considered to be VERY LOW because the Precambrian metasedimentary and igneous basement rocks underlying this region at depth are entirely unfossiliferous; the overlying Late Caenozoic superficial deposits are generally of low palaeosensitivity; the project footprint is small, and is in part already highly disturbed by pre-existing sewerage infrastructure, tracks *etc*; and the small water course just outside the eastern edge of the project area is unlikely to be associated with substantial deposits of consolidated, potentially-fossiliferous older alluvium.

Need and Desirability

The increasing demand for proper housing in Kamieskroon has led to an increased demand for water and sanitation services. Many families living on farms are also moving to the town where services and other facilities are available.

The oxidation ponds are not water-proofed and do not comply with the Department of Water and Sanitation (DWS) specifications.

The ponds overflow in the winter season when evaporation is low and the walls are breaking at times causing effluent water to run into streams and eventually ending up in nearby river streams. The effluent water is thus contaminating the groundwater system of the area. Many farmers downstream of the river are dependent on boreholes and wells to provide them with drinking water as well as water for their livestock.

EnviroAfrica

The main objective of this project will be to construct a new oxidation pond system with HDPE Lining to stop any effluent water infiltrating into the groundwater system and to improve the health and hygiene conditions in the community.

The proposed development will also provide job opportunities for the community.

Botanical

The following mitigation actions should be implemented to ensure that the proposed development does not pose a significant threat to the environment:

- All construction must be done in accordance with an approved construction and operational phase Environmental Management Plan (EMP), which must include the recommendations made in this report.
- A suitably qualified Environmental Control Officer must be appointed to monitor the construction phase in terms of the EMP and any other conditions pertaining to specialist studies.
- Because of the on-going drought the species diversity at the time of the study was most probably compromised. As a result, it is considered imperative that a further botanical scan is done before construction commence in order to ensure that permits are obtained for all protected plants encountered.
- A permit application must be submitted with regards to protected plant species encountered.
- Before any work is done protected species must be search & rescued.
- Lay-down areas or construction sites must be located within the construction footprint.
- No clearing of any area outside of the construction footprint may be allowed.
- All waste that had been illegally dumped within the footprint must be removed to a Municipal approved waste disposal site.
- An integrated waste management approach must be implemented during construction.
- Construction related general and hazardous waste may only be disposed of at Municipal approved waste disposal sites.

Freshwater

The following mitigation measures are recommended in the Freshwater Report:

- Limit the footprint
- Level and landscape after construction
- Construct during the dry summer months
- Be mindful of the aquatic environment during construction and employ best practices
- Maintain infrastructure at works
- Timely planning for expansion of works prior to reaching design capacity
- Carry out proper hydraulic modelling

Heritage

With regard to the proposed upgrade of the Kammieskroon Oxidation Ponds on Rem Erf 2, the following recommendations are made:

- No archaeological mitigation is required prior to construction activities commencing.
- If any human burials, or ostrich eggshell caches, for example, are uncovered during construction activities then work in the immediate area should be halted. The find would need to be reported to the heritage authorities (Att Ms Natasha Higgitt 021 462 4502) and will require inspection by a professional archaeologist.
- The above recommendations must be included in the Environmental Management Plan (EMP) for the proposed development.
- Should any substantial fossil remains (e.g.vertebrate bones and teeth, shells) be encountered during development, however, these should be reported to SAHRA for possible mitigation by a palaeontological specialist.
- These mitigation recommendations should be incorporated into the Environmental Management Programme (EMPr) for the proposed development.

Conclusion

The overall environmental impact is expected to be Very Low (negative) to Insignificant, with the following mitigation measures proposed:

It is therefore recommended that this application be authorised with the necessary conditions of approval as described throughout this BAR.