

**ARCHAEOLOGICAL IMPACT ASSESSMENT
PROPOSED UPGRADE AND EXPANSION OF THE
KAMMIESKROON SEWER OXIDATION PONDS,
RE ERF 2, KAMMIESKROON
NORTHERN CAPE**

Prepared for:

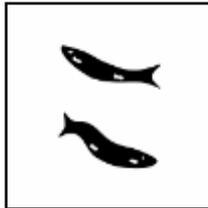
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**MAY
2020**

Executive summary

1. Introduction

ACRM was appointed by Enviroafrica, on behalf of the Kammiesberg Local Municipality to conduct an Archaeological Impact Assessment (AIA) for the proposed upgrade and expansion of the Kammieskroon sewerage treatment ponds on Re Erf 2 Kammieskroon in the Namakwaland region of the Northern Cape.

The project comprises the following components:

- Construction of oxidation ponds with evaporation ponds and construction of in-and outlet structures;
- Installation of HDPE-linings to waterproof the ponds;
- Reconstruction and waterproofing of the existing oxidation ponds;
- Construction of a short pipeline between the two pond sites;
- Construction of security fences and caretakers' building.

Enviroafrica is the appointed independent Environmental Assessment Practitioner (EAP) responsible for facilitating the Environmental Impact Assessment (EIA) process for Environmental Authorisation.

A desktop Paleontological Impact Assessment has been undertaken by Dr John Almond of Natura Viva.

2. Aim

The overall purpose of the study is to assess the sensitivity of archaeological resources that might be impacted by the proposed activities, to determine the potential impacts on such resources, and to avoid and/or minimise such impacts by means of management and/or mitigation measures.

3. Constraints and limitations

There were no constraints or limitations associated with the study. Access to the project area was easy and archaeological visibility was also very good.

4. Findings

A field assessment was undertaken on the 30th April 2020, in which the following observations were made.

- The study site, which is located alongside the Kammieskroon waste refuse facility, is severely degraded.

- One quartz chunk and one broken Middle Stone Age flake was recorded during the study.

Previous archaeological surveys undertaken in Kammieskroon, has noted the very low density of archaeological resources in the area.

4.1 Grading of archaeological resources

The very small number and isolated context in which they were found mean that the archaeological remains have been rated as having *LOW* (Grade 3C) significance.

4.2 Graves

No graves or typical grave features were encountered during the field assessment.

5. Anticipated impacts

The study has shown that no important archaeological resources will be impacted by proposed upgrade and expansion of the Kammieskroon Oxidation Ponds.

6. Conclusion

The overall impact significance of the proposed upgrade of the Kammieskroon Oxidation Ponds (Re Erf 2) on archaeological heritage is assessed as *LOW* and therefore there are no objections to the development proceeding.

7. Recommendations:

1. No archaeological mitigation is required.
2. 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.
3. The above recommendations must be included in the Environmental Management Plan (EMP) for the proposed development.

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1. INTRODUCTION

ACRM was appointed by Enviroafrica, on behalf of the Kammiesberg Local Municipality to conduct an Archaeological Impact Assessment (AIA) for the proposed upgrade and expansion of the Kammieskroon sewer oxidation ponds on Re Erf 2 in Kammieskroon in the Namaqualand region of the Northern Cape (Figures 1-3).

Kammieskroon is a small village located alongside the N7, about 550kms north of Cape Town.

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A Paleontological Impact Assessment (PIA) desktop study has been done by Dr John Almond of Natura Viva (2020).

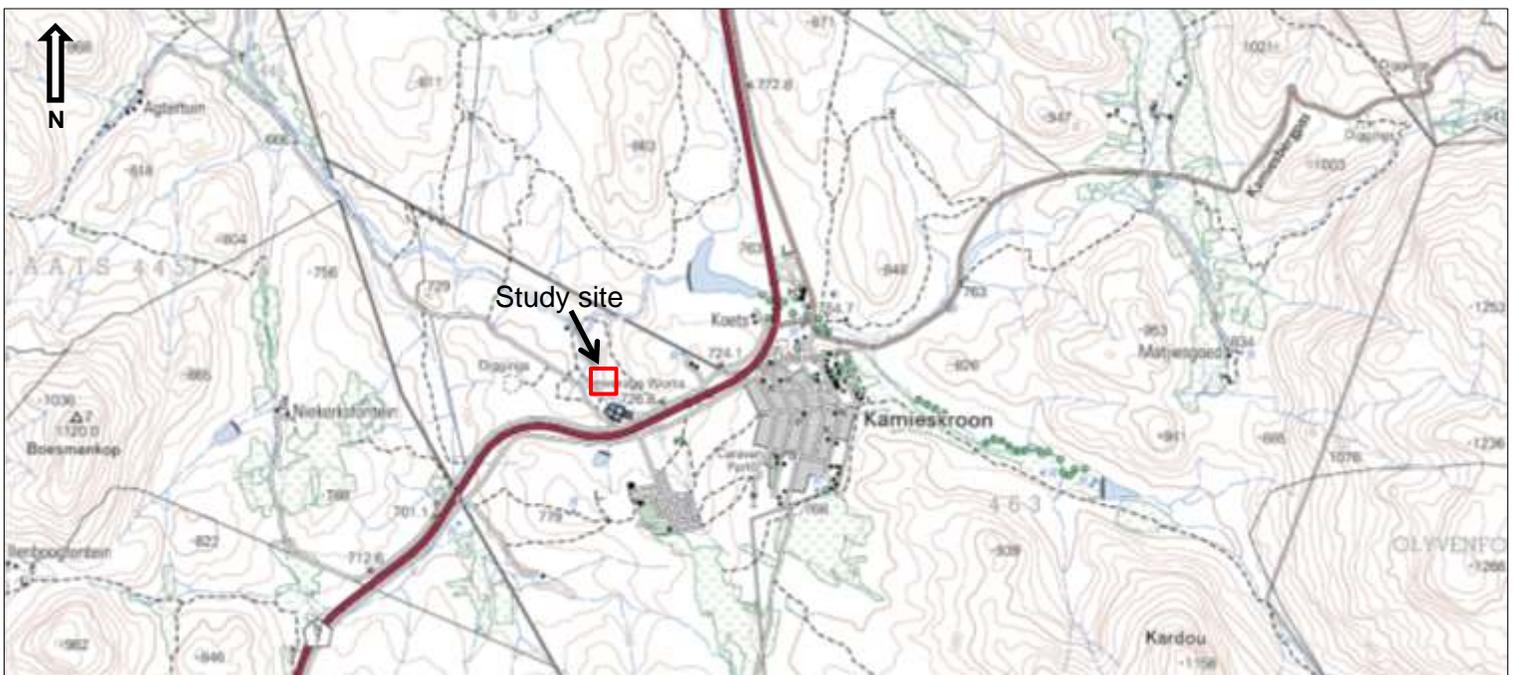


Figure 1. 50 000 Locality map (Map Sheet No. 3017BB Kammieskroon). Red polygon indicates the location of the study site alongside the existing Kammieskroon sewerage works.

Archaeological Impact Assessment, proposed upgrade and expansion of the Kammieskroon Oxidation Ponds



Figure 2. Google satellite map illustrating the location of the sewerage infrastructure project area (orange polygons) on the northern side of the N7



Figure 3. Google satellite image of the existing Kammieskroon sewer oxidation ponds and the proposed expansion area (orange polygon). The blue line is the proposed pipeline.

2. THE DEVELOPMENT PROPOSAL

The proposed project comprises the following components:

- Construction of oxidation ponds with evaporation ponds and construction of in-and outlet structures (Figure 4);
- Installation of HDPE-linings to waterproof the ponds;
- Reconstruction and waterproofing of the existing oxidation ponds;
- Construction of a short pipeline between the two pond sites;
- Construction of security fences and caretakers' building.

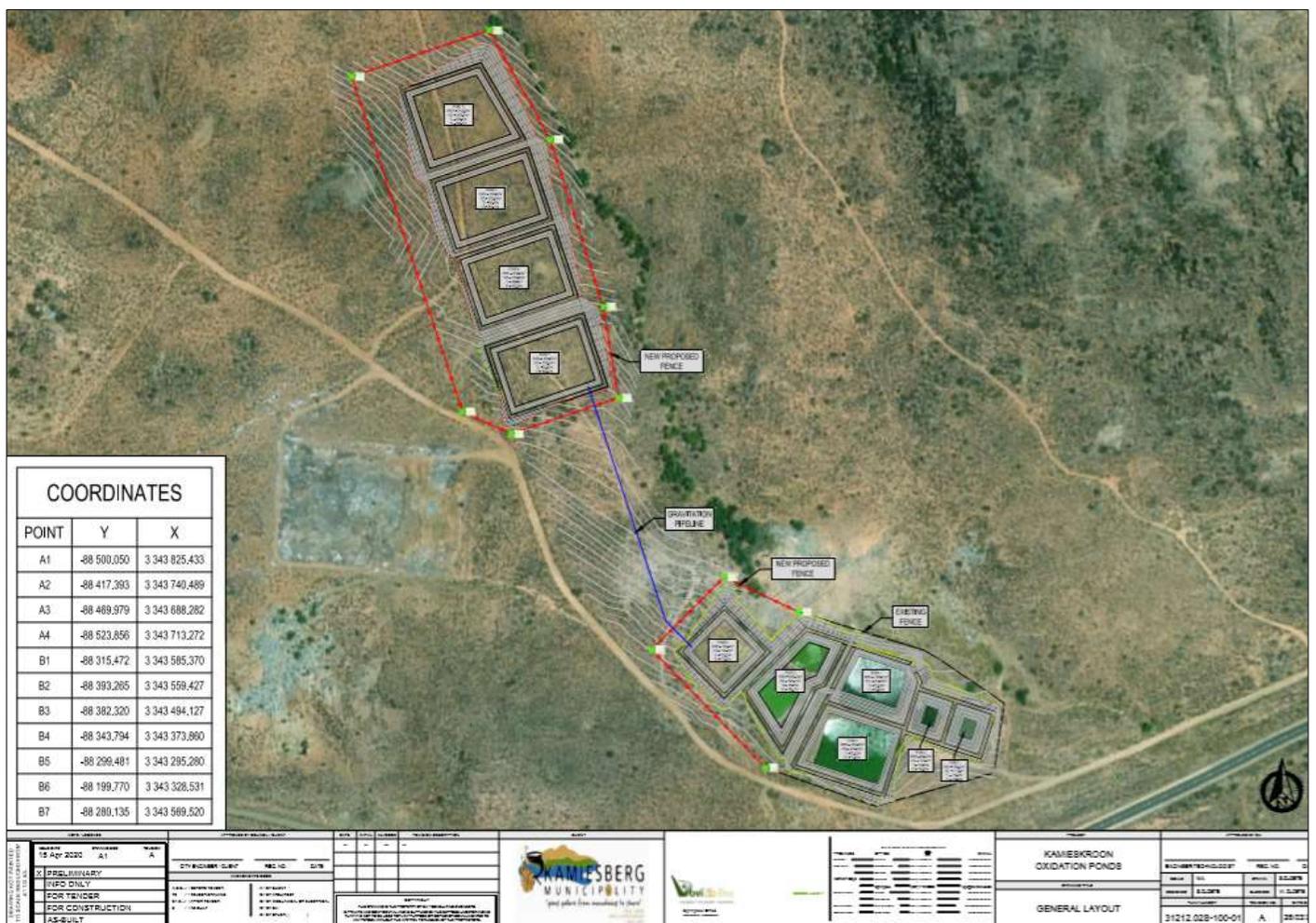


Figure 4. Proposed upgrade of the Kammieskroon Oxidation Ponds: Site Development Plan.

3. HERITAGE LEGISLATION

The National Heritage Resources Act (NHRA No. 25 of 1999) protects archaeological and palaeontological sites and materials, as well as graves/cemeteries, battlefield sites, public monuments and buildings, structures and features over 60 years old. The South African Heritage Resources Agency (SAHRA) administers this legislation nationally, with Heritage Resources Agencies acting at provincial level.

According to the Act (Sect. 35), it is an offence to destroy, damage, excavate, alter or remove from its original place, or collect, any archaeological, palaeontological and historical material or object, without a permit issued by the South African Heritage Resource Agency (SAHRA) or applicable Provincial Heritage Resources Agency.

Notification of SAHRA is required for proposed developments exceeding certain dimensions (Sect. 38), upon which they will decide whether or not the development must be assessed for heritage impacts (an HIA) that may include an assessment of archaeological (a AIA) or palaeontological heritage (a PIA).

4. TERMS OF REFERENCE

The terms of reference for the study were to:

- Identify and map archaeological resources that might be impacted by proposed development activities;
- Assess the sensitivity of archaeological within the proposed study area;
- Assess the significance of any impacts resulting from the proposed development, and
- Identify measures to protect any valuable archaeological resources that may exist within the study area.

5. DESCRIPTION OF THE RECEIVING ENVIRONMENT

The site for proposed upgrade of the Kammieskroon oxidation ponds is located to the east of Kamieskroon, north of the N7. The site is situated very close to the towns existing sewerage works. The portion immediately in front of the existing oxidation ponds has been quarried out and graded, with large boulders and rocks scattered about. The primary site for the new ponds is located immediately north and directly alongside the existing Kammieskroon waste refuse facility. Dumping of domestic/household and industrial/commercial waste is widespread, and piles of illegally dumped building rubble occur in places. Several gravel roads and goat tracks crisscross the site as well. Two small, abandoned earth dams were noted near the north eastern boundary of the site, alongside a small dry stream. Several eroded/excavated channels drain into the two empty dams. Outcroppings of rock occur in place, mostly in the northern portion. The area is also heavily overgrazed. Surrounding land use comprises the waste disposal site, gravel roads and grazing (goats). Overall, the site is severely disturbed and degraded (Figure 5-9).

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Figure 5. View facing north east. Note the existing oxidation ponds



Figure 6. View facing east. Note the existing oxidation ponds



Figure 7. View of the pipeline route facing north west



Figure 8. Primary footprint area of the proposed oxidation ponds. View facing West. Note the waste refuse facility to the left of the plate



Figure 9. View of the site facing north east. Kammieskroon can be seen in the Distance

6. STUDY APPROACH

6.1 Method

The purpose of the study is to assess the sensitivity of archaeological resources in the study area, to determine the potential impacts on such resources, and to avoid and/or minimize such impacts by means of management and/or mitigation measures.

The significance of archaeological remains was assessed in terms of their content and context. Attributes considered in determining significance include artefact and/or ecofact

types, rarity of finds, exceptional items, organic preservation, potential for future research, density of finds, and the context in which archaeological traces occur.

A foot survey was undertaken on the 30th April 2020. The position of identified archaeological resources, were plotted using a hand held GPS device set on the map datum wgs 84. A track path of the survey was also captured.

A desktop study was carried out to assess the heritage context surrounding the proposed site. The literature survey included unpublished commercial reports sourced from the South African Heritage Resources Information System (SAHRIS).

6.2 Constraints and limitations

There were no constraints or limitations associated with the study. Access to the site was easy and ground visibility was very good.

6.3 Identification of potential risks

The results of the field study indicate that the proposed upgrade and expansion of the Kammieskroon sewerage works will not impact on important archaeological resources.

6.4 Archaeological context

Very little archaeological work has taken place in Kammieskroon. Only two studies have previously been done, where extremely low numbers of archaeological resources were recorded inside the urban edge (Lavin & Kaplan 2018; Kaplan 2020). In more recent historic times, the interior of Namaqualand was occupied by the Little Namaqua, a Khoekhoen pastoralist group who herded sheep and cattle and lived in temporary encampments of mat houses. They are known to have moved seasonally with their livestock and historical reports indicate that they may have followed a transhumance cycle between the Kamiesberg in the summer months and the Sandveld in the winter months that may also have included the area around Kammieskroon (Webley 1992). Since the Little Namaqua had no clearly defined territorial boundaries, it was easy for the colonial Trekboers to settle in the area. The earliest loan farms were granted after 1750 and the Little Namaqua eventually retreated to so-called “reserves” such as Leliefontein (near Kammieskroon), Steinkopf and Concordia (Webley 1992).

7. RESULTS

Trackpaths and waypoints of archaeological resources recorded during the study are illustrated in Figure 10). A spreadsheet of waypoints and description of finds is indicated in Table 1.

A broken Middle Stone Age flake (Point 626) and a retouched quartz chunk (Point 430) was recorded during the field assessment (Figure 11).

7.1 Grading

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.

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Figure 10. Track paths (in blue) and waypoints of archaeological finds

GPS Point	Name of Farm	Lat/Long	Description of finds	Grading	Mitigation
626		S30° 12.445' E17° 55.050'	Broken MSA quartzite flake	Low IIIC	None required
430		S30° 12.493' E17° 55.040'	Quartz chunk (retouched)	Low IIIC	None required

Table 1. Spreadsheet of waypoints and description of archaeological finds



Figure 11. Stone tools recorded during the study
Scale is in cm

7.2 Graves

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

8. IMPACT STATEMENT

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

9. CONCLUSION

The survey has shown that the archaeological landscape around Kammieskroon is dominated by a few MSA and LSA tools of *LOW* (Grade IIIC) archaeological significance.

The overall impact significance of the proposed upgrade of the Kammieskroon Oxidation Ponds (Re Erf 2) on archaeological heritage is assessed as *LOW* and therefore there are no objections, to the proposed activities proceeding.

10. RECOMMENDATIONS

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

1. No archaeological mitigation is required is required prior to construction activities commencing.
2. 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.
3. The above recommendations must be included in the Environmental Management Plan (EMP) for the proposed development.

11. REFERENCES

Almond, J. 2020. Palaeontological heritage assessment: desktop study. Proposed upgrade and expansion of the Kammieskroon Sewer Oxidation Ponds, Kamiesberg Local Municipality, Namakwa District Municipality, Northern Cape. Report prepared for EnviroAfrica cc. Natura Viva cc, Cape Town.

CTS Heritage 2018a. Archaeological specialist study. Proposed Kammieskroon Bulk Water Supply, Kammiesberg Local Municipality, Northern Cape. Prepared for Enviroafrica cc. CTS Heritage, in Association with ACRM, Cape Town

Kaplan, J. 2020. Archaeological Impact Assessment, proposed Kammieskroon Bulk Water Supply, Kammiesberg Local Municipality, Northern Cape. Report prepared for Enviroafrica cc. ACRM, Cape Town

Webley, L. 1992. The history and archaeology of pastoralist and hunter-gatherer settlement in the north-western Cape, South Africa. Unpublished D.Phil. thesis: University of Cape Town.