HWC CASE 23102009

HERITAGE IMPACT ASSESSMENT

PROPOSED EXPANSION OF THE ROMANSBAAI ABALONE FARM ON RE PORTION 2 OF THE FARM KLIP FONTEYN NO. 711, GANSBAAI, OVERSTRAND LOCAL MUNICIPALITY, HERMANUS MAGISTERIAL DISTRICT, WESTERN CAPE

Assessment conducted under Section 38 (3) of the National Heritage Resource Act (No. 25 of 1999)

Prepared for

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Applicant

AQUNION (PTY) LTD

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APRIL 2024

Executive summary

1. Name of site

Proposed expansion of the Romansbaai Aqunion Abalone Farm on Re Portion 2 of Farm Klip Fonteyn No. 711, Gansbaai, Overstrand Local Municipality (Figures 1 & 2).

2. Site location

The Romansbaai Abalone Farm is located on the Danger Point Peninsula, south of Gansbaai along the road to Van Dykesbaai.

3. GPS Co-ordinates

34°36'7.90"S 19°20'18.71"E

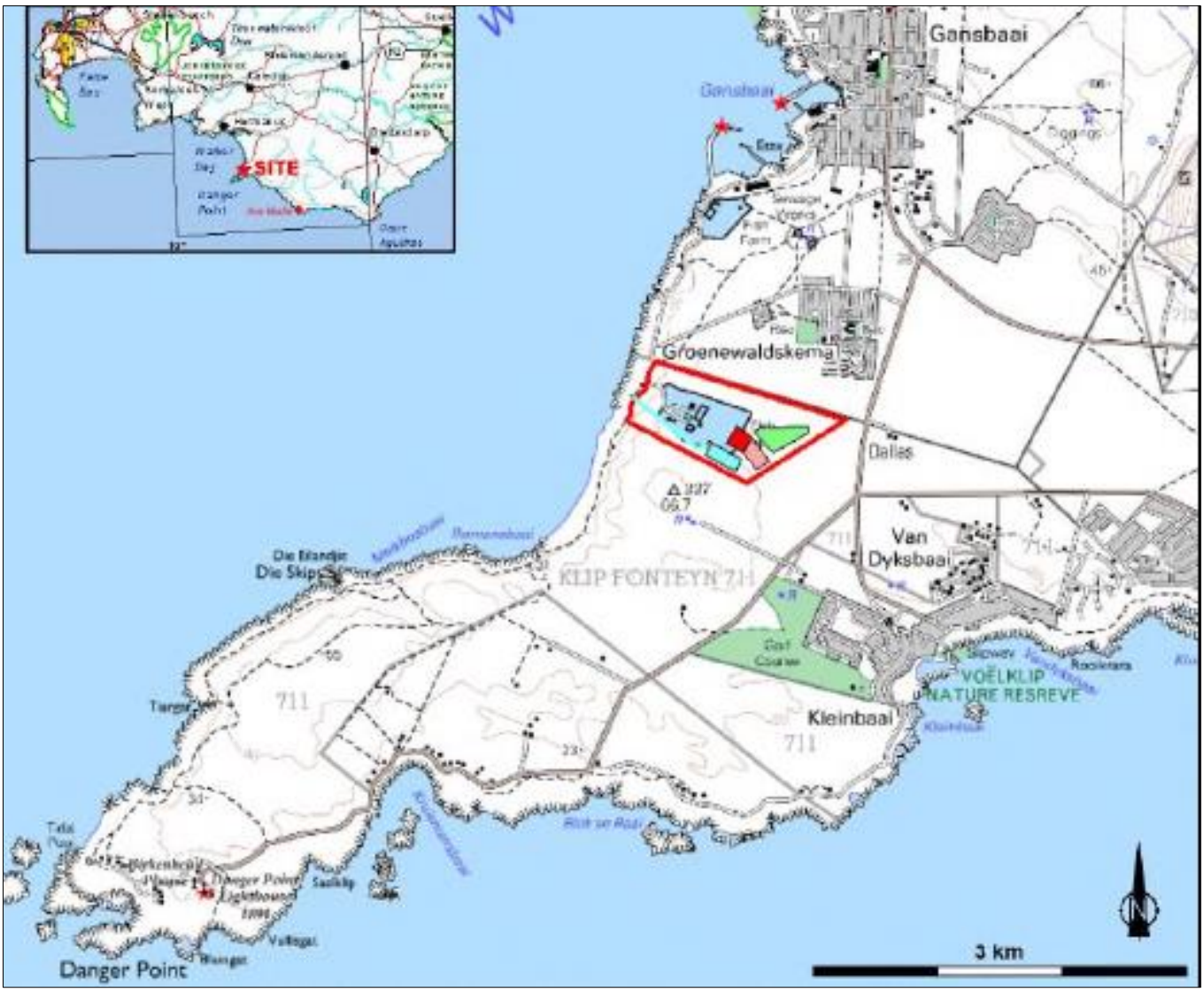

Figure 1. 1:50 000 locality map (3419CB Gansbaai). Red polygon shows the location of the Romansbaai Aqunion Abalone Farm in Gansbaai in the Overberg region of southern Cape.

Figure 2. Google Earth satellite map indicating the location of the Romansbaai Abalone Farm (yellow pin), south of Gansbaai.

3. The development proposal

The Romansbaai Aqunion Abalone Farm expansion proposal entails the following components:

- Grow out tanks to increase production by 150 tons per annum (Phase 1).
- Grow out tanks to increase production by 150 tons per annum (Phase 2).

The combined footprint area of Phase 1 and Phase 2 is 3.5ha.

- Construction of a lined dam/reservoir for containment of sea water (± 2ha).
- Development of a 4MW solar package plant (± 4ha) .
- Expanded pumphouse capability and 4 additional pipelines to be laid alongside the existing pipeline.

Combined, the total expansion will comprise ± 9.7ha with an increased production output by 300 tons wet weight per annum.

A Site Layout Plan is illustrated in Figure 3.

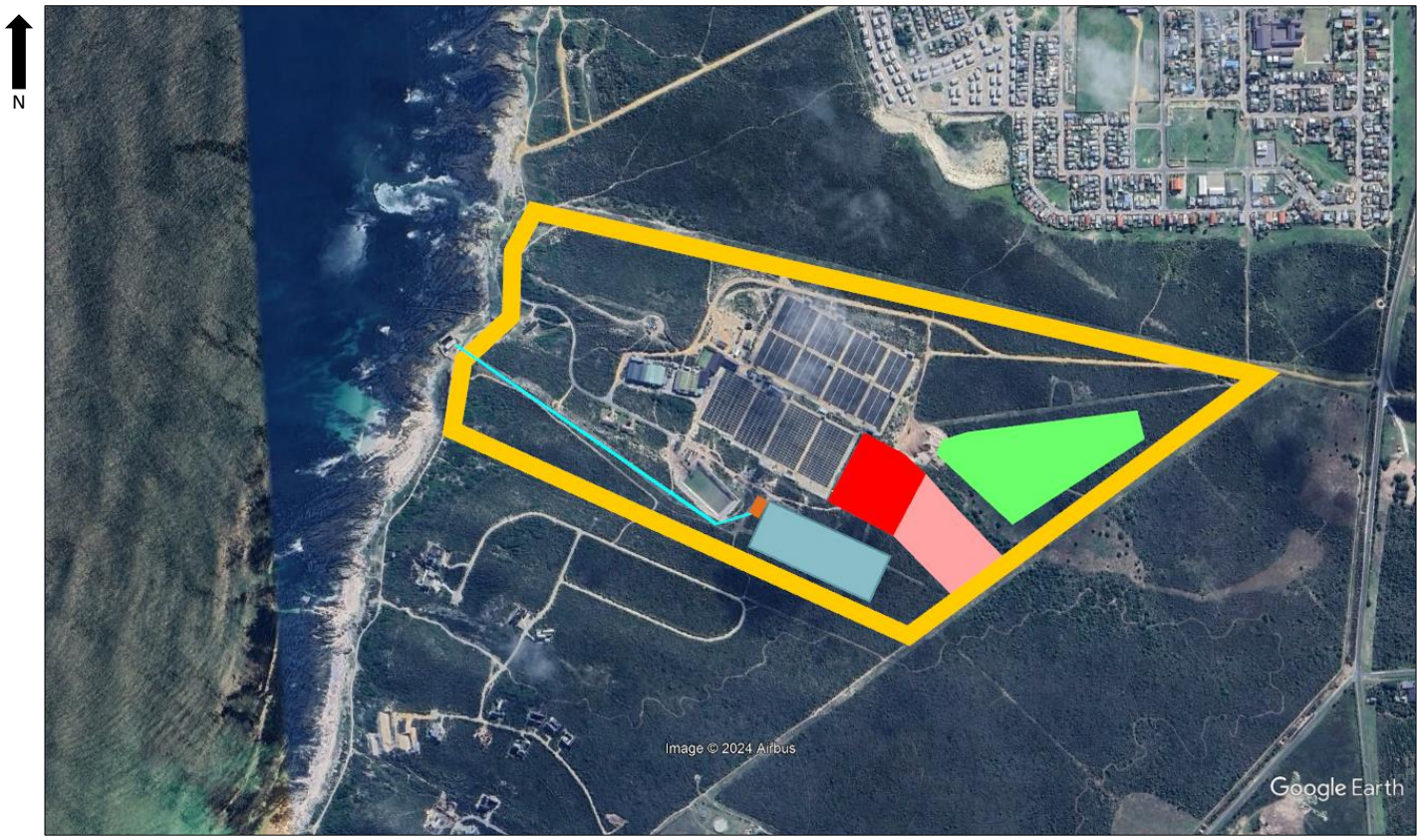

Figure 3. Proposed Site Layout Plan. The green polygon is the proposed solar plant, the red polygon (Phase 1) and the pink polygon (Phase 2) are the proposed new grow out tanks. The blue polygon is the proposed dam & the light blue line is the proposed new pipeline. The yellow line is the boundary of the abalone farm.

A Heritage Impact Assessment (HIA) comprising an Archaeological Impact Assessment (AIA), a Palaeontological Impact Assessment (PIA), and a Visual Impact Assessment on the Cultural Landscape was requested by Heritage Western Cape (HWC), following the submission of a Notice of Intent to Develop (NID).

HWC also requested that South Africa Heritage Resources Agency (SAHRA), Marine Underwater Cultural Heritage (MUCH) unit comment on the project since the proposed upgrading of the pump station will be located below the marine Low Water Mark (LWM).

ACRM was subsequently appointed by the applicant (Aqunion (Pty) Ltd) to conduct the AIA and to write up the integrated HIA report, which also includes comments from the Overstrand Local Municipality, registered conservation bodies and Interested and Affected Parties (I&APs).

Consulting palaeontologist John Pether was appointed to conduct the PIA. The palaeontological assessment is to inform about the palaeontological sensitivities of the Project Area and the probability of fossils being uncovered in the subsurface and being disturbed or destroyed during the Construction Phase of the proposed development.

The Visual Impact Assessment (VIA) has been conducted by Sarien Lategan.

Lornay Environmental Consulting is the independent environmental assessment practitioner (EAP) responsible for facilitating environmental authorisation for the project.

An environmental Basic Assessment (BA) process will be followed in this application.

4. Aim of the study

The overall purpose of the study is to assess the sensitivity of archaeological and palaeontological heritage resources in the proposed development site and to determine the potential impacts (of the development) on such resources.

The impact of the proposed expansion of the abalone farm on the Cultural Heritage Landscape has also been assessed.

5. Constraints and limitations

Apart from the proposed pipeline route which will be constructed in an existing servitude, almost the entire footprint area of the proposed development site (i. e. grow out tanks, storage dam & solar package plant) is covered in dense, almost impenetrable, indigenous vegetation, resulting in poor archaeological visibility.

6. Results

6.1 Archaeology

A field assessment was conducted by ACRM on 31 January 2024, in which the following observations were made:

A few thin, dispersed scatters of fragmented marine shellfish (mostly *Turbo sarmaticus*/alikreukel, some limpet & *Haliotis*/perlemoen), and a few quartz and quartzite chunks and flakes were recorded in the route of the proposed seawater intake pipeline (an existing servitude). The resources occur in a severely degraded context. No grindstones, formal tools, pottery, ostrich eggshell or any other organic remains were found along the ± 400m long proposed pipeline.

No archaeological resources were encountered in the footprint area of the proposed solar plant, the proposed grow out tanks, and the proposed seawater storage dam, which is set back about 400m from the rocky shoreline.

6.1.1 Grading of archaeological resources

The archaeological resources in the proposed pipeline route have been graded as having *Low* (Grade 3C) archaeological significance.

6.2 Palaeontology

According to Pether (2024), the project area is mantled by unconsolidated pale coversands, labelled as the **Qg coversands**, which have a topography of dune ridges orientated NW-SE as part of a typical stabilized headland bypass dunefield. Underlying the stabilized dunefield are the aeolianites of the Waenhuiskrans Formation which is comprised of partly cemented older dunes and sandsheets and is typically capped by calcrete.

6.3 Visual impact on the Cultural Landscape

According to Lategan (2024), the expansion of the Romansbaai Aquinion Abalone Farm will not have an impact of great significance on the Cultural Heritage Landscape. The topography of the area with its steep coastal edge and hills to the west, creates an area with a high visual absorption level. The abalone farm is furthermore situated in a depression which screens the facility from the surrounding area. `The overall visual impact is thus low, and the heritage landscape will not be altered through the expansion of the facility' (Lategan 2024).

6.4. Built Environment

No buildings, structures or features will be impacted by the proposed expansion of the Romansbaai Abalone Farm.

6.5. Graves

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

7. Comments

Comments from the Overstrand Local Municipality, SAHRA Maritime Underwater Cultural Heritage (MUCH), registered conservation bodies and Interested and Affected Parties will be included in the Final integrated HIA report to be submitted to Heritage Western Cape.

8. Anticipated impacts

8.1 Archaeology

Potentially important shell midden deposits (in the proposed intake pipeline), and Later Stone Age campsites (in the proposed solar plant, grow out tanks & storage dam) may be uncovered during vegetation clearing operations, and construction phase excavations, including cut and fill, landscaping, and shaping of the dune profile.

Unmarked Khoisan burials may also be uncovered during construction phase excavations.

8.2 Palaeontology

The installation of a Solar Energy Facility involves shallow excavations for cabling. It is assumed that the depths of earthworks entailed in creating level areas for the aquaculture tanks and dam would be up to 2-3m. Earthworks will mainly affect the Qg dune coversands, but may intersect the underlying, older Waenhuiskrans Fm. aeolianites where the coversands are thin. Fossil bones are overall sparse in the Qg coversands and those which may be discovered are expected to be of latest Quaternary age and mainly to be species of extant fauna.

The fossil bones that may occur in the Waenhuiskrans Fm. are, like the later coversands, also mainly comprised of representatives of extant fauna, but unexpected species of a different fauna are more likely to occur, as a result of phases of different ecological and palaeoclimatic conditions in the past, as well as the bones of some species which became extinct in the geologically recent past.

8.3 Impact on the Cultural Landscape

According to Lategan (2024), `the overall visual impact of the proposed abalone farm expansion is low and not of such a nature that it will result in a deterioration of the cultural landscape. No mitigation measures are therefore deemed necessary'.

9. Conclusion

Indications are that the proposed expansion of the Romansbaai Aquinion Abalone Farm on Portion 2 of Farm No. 711 near Gansbaai does not pose a significant threat to local Stone Age archaeological and palaeontological heritage resources.

According to Lategan (2024), although most, of the identified receptors[1] are sensitive to visual change of the experiential landscape, the overall impacts are low due to the high absorption level of the landscape and the low vertical extend of the infrastructure. Solar arrays have the potential to create a glare effect which can amplify the visual impact, but due to the screening of the ridge to the north, the glare is effectively screened from the receptors.

10. Recommendations

1. No archaeological mitigation is required prior to construction phase excavations commencing.

2. Vegetation clearing and construction phase excavations must be monitored by a professional archaeologist.

3. If any human remains are uncovered or exposed during excavations, work must stop, and the finds reported to the Environmental Control Officer and the contracted archaeologist (Jonathan Kaplan 082 321 0172). Human remains must not be removed or disturbed until inspected by the archaeologist.

4. A protocol for finds of buried fossil bones, the Fossil Finds Procedure (FFP), must be included in the Environmental Management Plan (EMP) for the proposed development. The Fossil Finds Procedure provides guidelines to be followed in the event of fossil bone finds in the excavations.

5. Regarding the Cultural and Heritage Landscape, `no mitigation measures are deemed necessary' (Lategan 2024).

11. Authors notes

Kaplan, J. 2024. Heritage Impact Assessment, Proposed expansion of the Romansbaai Abalone Farm on Portion 2 of Farm 711 Gansbaai, Overstrand Local Municipality, Western Cape. Report prepared for Lornay Environmental Consulting. ACRM, Cape Town

Pether, J. 2024. Palaeontological Impact Assessment, Proposed expansion of Romansbaai Abalone Farm, Farm Klip Fonteyn Re/2/711, Van Dyk Road, Overstrand Municipality, Hermanus Magisterial District, Western Cape. Report prepared for ACRM, John Pether Geological & Palaeontological Consultant, Kommetjie.

Lategan, S. 2024. Visual Assessment for expansion of the Romansbaai Abalone Farm on Portion 2 of Farm 711, Overstrand Municipality. Report prepared for Aqunion (Pty) Ltd. Sarien Lategan, Baardskeerdersbos.

[1] Key receptors being Romansbaai Estate & Blompark Housing Project located on either side of the abalone farm.

Table of Contents

1. INTRODUCTION

ACRM was instructed by Lornay Environmental Consulting on behalf of Aqunion (Pty) Ltd to conduct a Heritage Impact Assessment (HIA) for the proposed expansion of the Romansbaai Abalone Farm on Portion 2 of Farm Kleyn Fonteyn No. 711, Gansbaai, Overstand Local Municipality, in the Western Cape (Figures 1 & 2).

A HIA comprising an Archaeological Impact Assessment (AIA) a Palaeontological Impact Assessment (PIA) and a Visual Impact on the Cultural Landscape was requested by Heritage Western Cape (HWC) following the submission of a Notice of Intent to Develop (NID). HWC also requested that South Africa Heritage Resources Agency (SAHRA), Marine Underwater Cultural Heritage (MUCH) unit comment on the project since upgrading of the existing pumpstation will be located below the marine Low Water Mark (LWM).

ACRM was subsequently appointed by the Aqunion (Pty) Ltd to conduct the AIA and to write up the integrated HIA report, which includes comments from the Gansbaai Local Municipality, registered conservation bodies and Interested and Affected Parties (I&APs). Consulting palaeontologist John Pether was appointed to conduct the PIA. The palaeontological Assessment is to inform about the palaeontological sensitivities of the Project Area and the probability of fossils being uncovered in the subsurface and being disturbed or destroyed during the Construction Phase of the proposed development.

The Visual Impact Assessment (VIA) has been conducted by Sarien Lategan.

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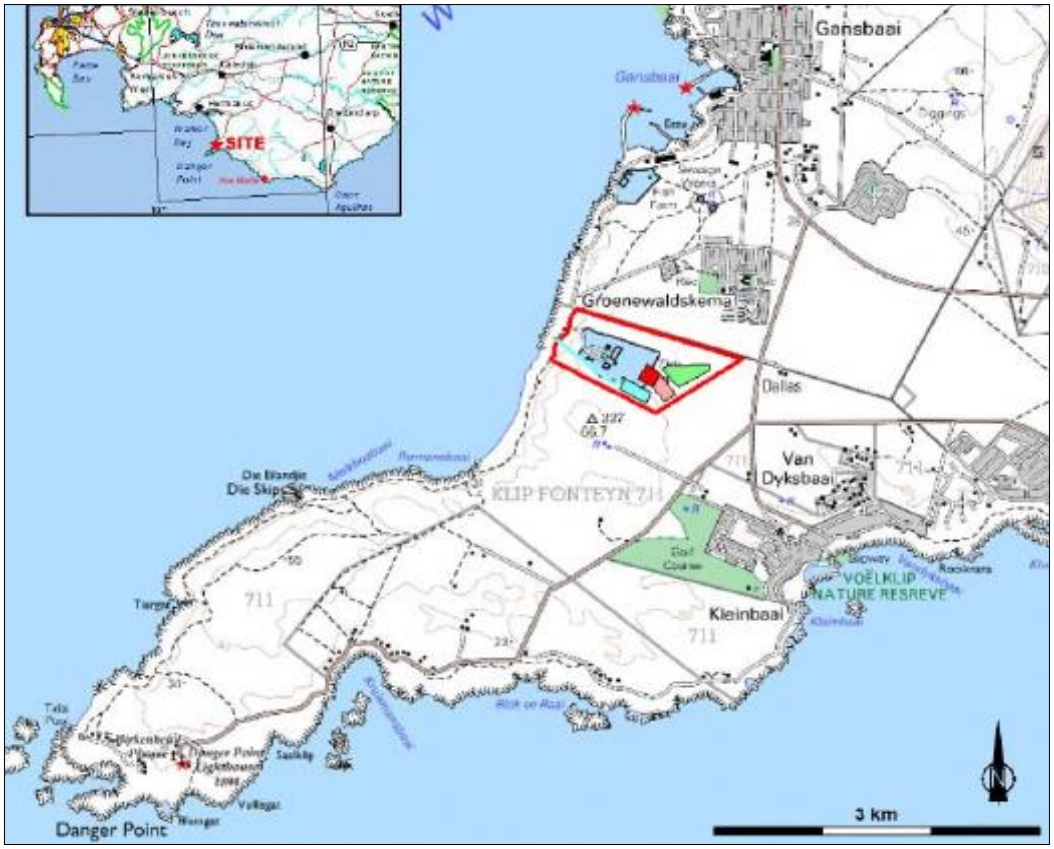

Figure 1. Locality Map. Red polygon shows the location of the Romansbaai Abalone Farm in Gansbaai

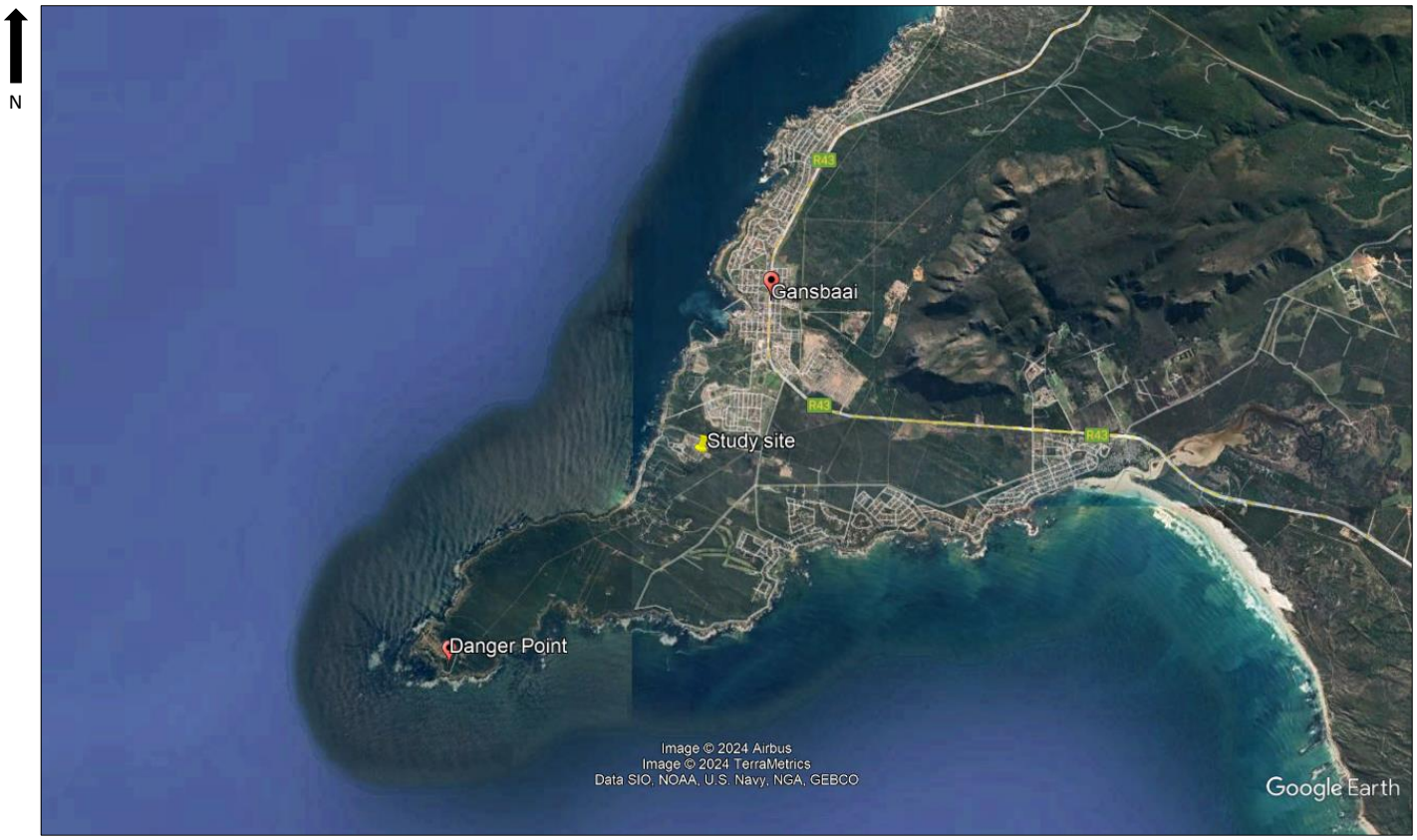

Figure 1. Google Earth satellite map indicating the location of the study site(yellow pin) in Gansbaai.

2. THE DEVELOPMENT PROPOSAL

The Romansbaai Aqunion Abalone Farm expansion proposal includes the following components:

- Grow out tanks to increase production by 150 tons per annum (Phase 1)
- Grow out tanks to increase production by 150 tons per annum (Phase 2)

The combined footprint area of Phase 1 and Phase 2 is 3.5ha

- Construction of a lined dam/reservoir for containment of sea water (± 2ha)
- Development of a 4MW solar package plant (± 4ha)
- Additional pipelines to new production area to join into the existing network – x 4 lines delivering 1600m³ / hour – to be located alongside an existing water pipeline.
- Increase the footprint area of the existing pumphouse by 40m².

Combined, the total expansion will comprise ± 9.5ha with an increased production output by 300 tons wet weight per annum.

A Site Layout Plan is illustrated in Figure 3.

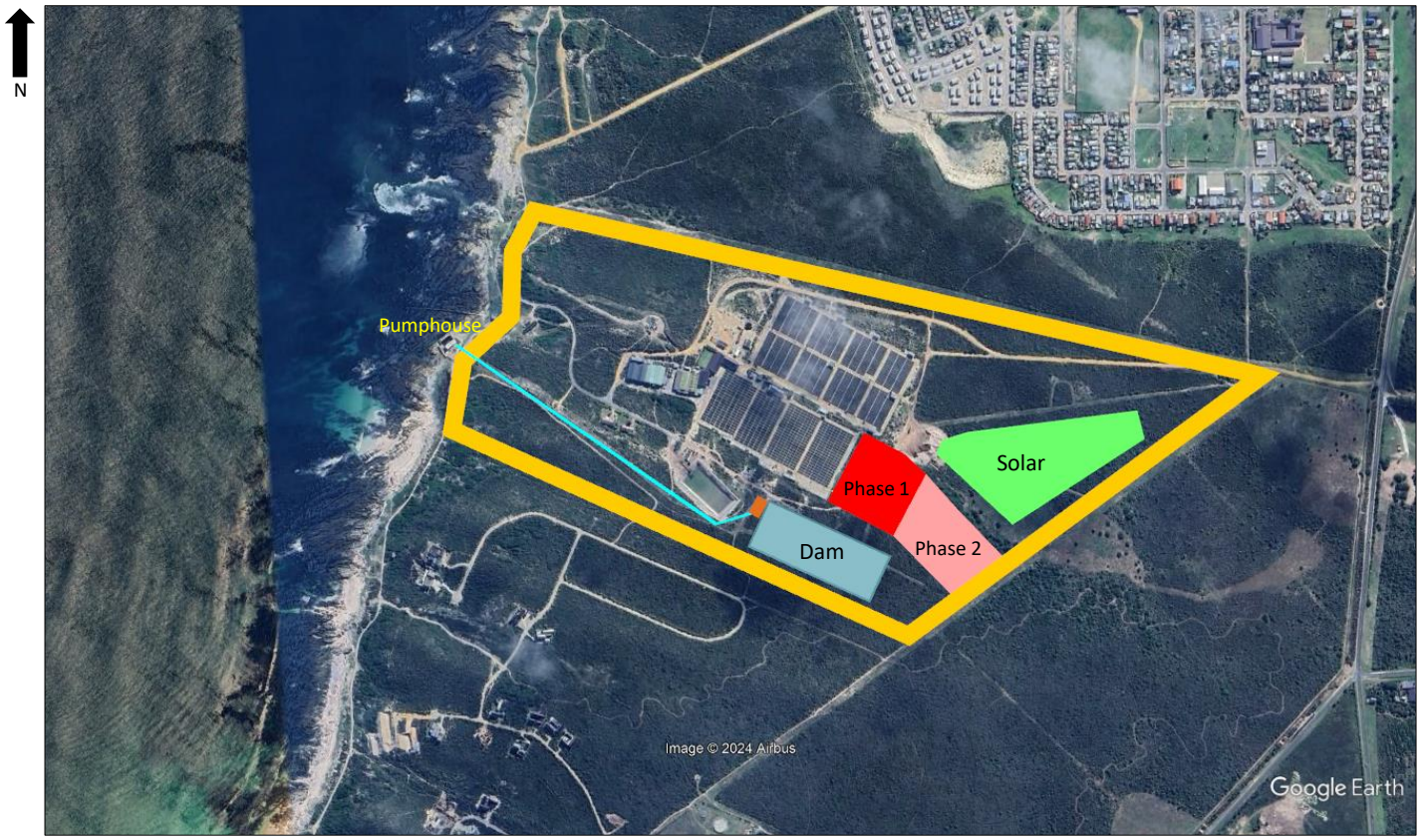

Figure 3. Proposed Site Layout Plan. The green polygon is the proposed solar plant, the red polygon (Phase 1) and the pink polygon (Phase 2) are the proposed new grow out tanks. The blue polygon is the proposed seawater dam & the light blue line is the proposed seawater intake pipeline. The yellow line is the boundary of the abalone farm.

3. APPLICABLE LEGISLATION

The National Heritage Resources Act (Act No. 25 of 1999) makes provision for a compulsory Heritage Impact Assessment (HIA) when an area exceeding 5000 m² is being developed. This is to determine if the area contains heritage sites and to take the necessary steps to ensure that they are not damaged or destroyed during development.

The NHRA provides protection for the following categories of heritage resources:

- Landscapes, cultural or natural (Section 3 (3))
- Buildings or structures older than 60 years (Section 34).
- Archaeological sites, palaeontological material, and meteorites (Section 35).
- Burial grounds and graves (Section 36).
- Public monuments and memorials (Section 37).
- Living heritage (defined in the Act, as including cultural tradition, oral history, performance, ritual, popular memory, skills and techniques, Indigenous knowledge systems and the holistic approach to nature, society, and social relationships) (Section 2 (d) (xxi)).

Section 38 (1) (a) of the Act stipulates that any person constructing a powerline, pipeline or road, or similar linear development or barrier exceeding 300m in length is required to notify the responsible heritage resources authority, who will in turn advise whether an impact assessment report is needed before development can take place.

4. THE STUDY SITE

The Romansbaai Abalone Farm (Figure 4) is located on the Danger Point Peninsula about 3kms southeast of the town centre of Gansbaai. The farm is accessed via Van Dyk Street, off the R43. The property is set back about 400m from the shoreline, which dominates the rocky coastal zone and headland in this area. The actual proposed development is situated in a depression and is well screened from the surrounding area. The existing pump station is located at the coast, where the intention is to increase the footprint area by about 40m² (Figure 5). Blompark residential area is located directly to the north of the abalone farm, where many of the residents have found employment at the facility. Romansbaai Estate is located directly adjacent the abalone farm on the eastern boundary. The route for the proposed new seawater intake pipeline is located within an existing pipeline servitude alongside a sandy twee spoor track (Figures 6-8), while the footprint area for the proposed new seawater intake dam (Figure 9), the proposed new grow out tanks (Phase 1 & Phase 2) (Figure 10), and the proposed solar package plant (Figures 11 & 12) is located in a shallow depression that is covered in dense, almost impenetrable indigenous vegetation on soft sandy substrate. There are no rocky outcrops, surface bedrock (calcrete), or any significant landscape features occurring across the proposed site.

Figure 4. Google Satellite map of the Romasbaai Aqunion Abalone Farm in Gansbaai, and the surrounding landuse

Figure 5. Footprint area for the proposed pumphouse expansion. View facing southeast. The existing pumphouse, below the High Water Mark is in the background of the plate.

Figure 6. Pipeline servitude to the pumpstation. View facing south.

Figure 7. Pipeline servitude. View facing south.

Figure 8. Pipeline servitude. View facing south.

Figure 9. footprint area for proposed seawater intake dam. View facing northeast.

Figure 10. Footprint area of proposed grow out tanks (Phase 1 & Phase 2) facing northeast.

Figure 11. View of grow out tanks (Phase 1 & Phase 2) facing northeast. Note the extremely dense vegetation cover.

Figure 12. View of the grow out tanks (Phase 1 & Phase 2), facing south toward the existing grow out tanks.

Figure 13. Footprint area for the solar package plant. View facing south.

Figure 14. Footprint area for the proposed solar package plant. View facing south.

5. STUDY APPROACH

5.1 Method

A field assessment was conducted by ACRM on 31 January 2024. Identified heritage resources were recorded using a hand-held GPS unit set on the map datum WGS 84. A desk top study was also undertaken to describe the heritage context of the surrounding area.

5.2 Constraints and limitations

Apart from the proposed intake pipeline (an existing pipeline servitude), almost the entire footprint area of the proposed site (i. e. grow out tanks, storage dam & solar plant) is covered in dense, vegetation, resulting in poor archaeological visibility.

5.3 Identification of potential risks

Potentially important shell midden deposits (in the proposed seawater intake pipeline), and Later Stone Age campsites (in the proposed solar plant, grow out tanks & storage dam) may be uncovered during construction phase excavations. Unmarked Khoisan burials may also be intercepted during construction phase excavations.

Any fossil heritage will likely be encountered in an archaeological context (Pether 2024).

6. ARCHAEOLOGICAL CONTEXT

Large numbers of archaeological resources have been recorded in Gansbaai and the surrounding coastal region (Avery 1976; Kaplan 1993; Rudner 1968). The rocky shoreline in the area attracted Later Stone Age (LSA) people, as it offered opportunities for the exploitation of marine foods, particularly shellfish. The most famous site in the area is the De Kelders cave in the Walker Bay Nature Reserve, which not only produced Middle Stone Age (MSA) remains older than 40 000 years, but also has the earliest dated evidence in South Africa for domesticated sheep, about 1600 years ago (Schweitzer 1979; Sealy & Yates 1994).

Since the early 1990's, many commercial archaeological surveys have been conducted around the Gansbaai area, at Danger Point (Kaplan 2020, 2013, 2007, 2006a, b, 2005, 2003, 2004, 2000, 1996), Kleinbaai, Romansbaai, and Die Kelders. (Hart 2006, 2003; Nilssen 2004, 2008; Orton & Hart 2005; Van Pletzen-Vos & Rust 2015, 2012, 2011), where large numbers of sites have been recorded. A survey by Webley (2008) on Farm 711/2 recorded a series of large LSA shell middens on top of the hill next to the existing sheds and offices on the abalone farm, while several middens were encountered in the coastal track alongside the shoreline. On Webley's (2008) recommendations the middens in front of shed and offices have been declared a permanent `No-Go` area. A survey by Hart (2006) of the adjoining property (i. e. Ptns 2, 17 & 18 of Farm 711) recorded eight LSA shell middens including a large midden on a dune crest overlooking the bay, with Cape Coastal pottery, alikreukel, perlemoen and limpet remains. Exploratory test excavations were later conducted by Nilssen (2008), but few cultural resources were encountered.

6.1 Graves

Unmarked Khoisan remains were uncovered during excavations for a residential home at Romansbaai Estate Development. Nine graves from the wreck of the HMS Birkenhead (1852) were also accidentally uncovered during early construction work at the Irvin & Jhonson (I&J) Danger Point Abalone Farm (Van Pletzen-Vos & Rust 2011). The wreck of the British troopship is located about 1km offshore of the farm at Danger Point at a water depth of 28m. The remains of the soldiers (deemed to be war graves) have been reinterred in the Simon's Town military

cemetery, as per the requirements of an international agreement between South Africa and the United Kingdom.

7. RESULTS

7.1 Archaeology

Track paths and waypoints of archaeological resources are presented in Figure 15.

A spreadsheet of waypoints and description of finds is presented in Table 1.

Several thin, dispersed, scatters of fragmented marine shellfish (mostly *Turbo sarmaticus*/alikreukel, & some limpet & *Haliotis*/perlemoen), and a few quartz and quartzite chunks and crude flakes were recorded in the route of the proposed seawater intake pipeline (an existing servitude). The remains occur in a severely degraded context (Figure 16-18). No grindstones, formal tools, pottery, ostrich eggshell or any other organic remains were found along the ± 400m long proposed pipeline.

No archaeological resources were recorded in the footprint area of the proposed solar plant, the proposed grow out tanks, and the proposed new storage dam, which is set back in a shallow depression about 400m inland from the shoreline

7.1.1 Grading of archaeological resources

The very small numbers of stone pieces and the highly disturbed context in which they were found, means that the archaeological remains have been graded as Low (3C) local significance.

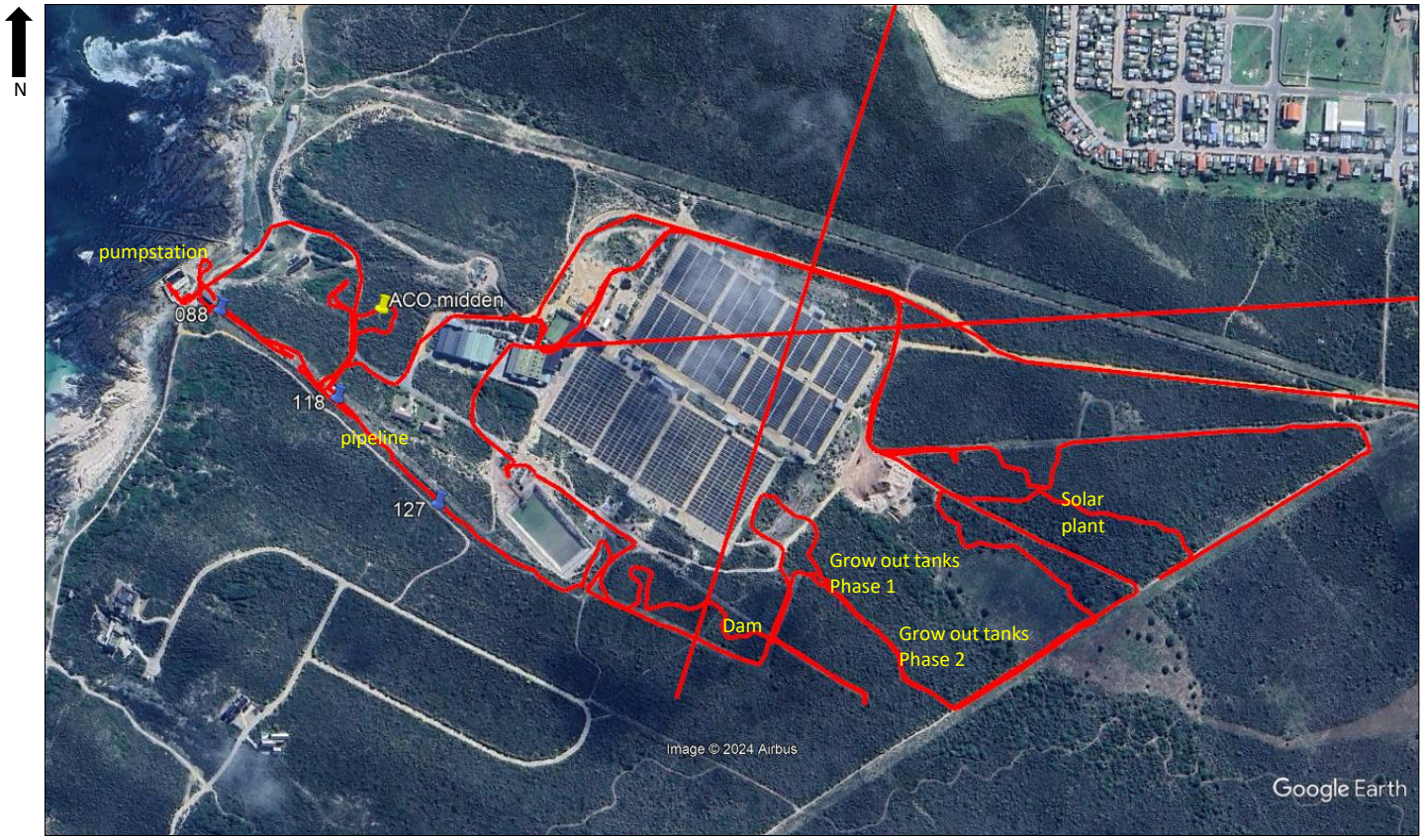

Figure 15. Track path in red and waypoints of archaeological find. Note the location of the ACO midden (yellow pin) which is in a clearly demarcated and protected `No Go' area.

PS Point	Name of Farm	Lat/long	Description of finds	Grading	Mitigation
	Farm 711/2				
088		S34° 36.074' E19° 20.014'	Thin, dispersed scatter of weathered marine shell fragments in existing pipeline servitude, inc. *T sarmaticus*, limpet, *Operculum* & *Haliotis* (perlemoen). A few crude, unmodified quartzite stone flakes & chunks, including 1 quartz core. No pottery or ostrich eggshell.	Low (3C)	None required
118		S34° 36.127' E19° 20.104'	A few fragments of marine shellfish on soft sand in the existing pipeline servitude. No stone flakes, pottery or ostrich eggshell	Low (3C)	None required
127		S34° 36.190' E19° 20.177'	A few small fragments of marine shellfish on soft sand in the existing pipeline servitude. No stone flakes pottery or ostrich eggshell	Low (3C)	None required

Table 1. Spreadsheet of waypoints and description of archaeological finds

Figure 16. Site 088. The pumphouse is the building in the background of the plate.

Figure 17. Site 088 facing upslope. Note the scatters of shell in the pipeline servitude.

Figure 18. Collection of chunks & crude stone flakes from Site 088. Ruler scale is in cm.

7.2 Palaeontology

According to Pether (2024), The Project Area is underlain by the Waenhuiskrans Fm. (Figure 19) which typically has a capping pedogenic calcrete (Figure 19). Where the calcrete is only thinly covered by sandy soil the vegetation is Agulhas Limestone Fynbos. The Project Area lacks patches of exposed calcrete and instead is mantled by grey regic coversands supporting Overberg Dune Strandveld. The terrain may also have been mapped as the Qg pale coversands or as Qg/Qw, but due to the ubiquitous presence of coversands the geological maps would be rather blank and uninformative if the coversands were depicted and therefore the thinner coversands are “transparent” in order to depict the extent of the underlying formations such as the Waenhuiskrans Fm. aeolianites.

The topography of the Project Area indicates that the Qg coversands include relict, degraded dune ridges orientated NW-SE as part of a typical stabilized headland bypass dunefield, with dunes migrating towards Van Dykesbaai driven by north-westerly winter winds. A dune ridge is intersected in a road cutting just south of the entrance to Aqunion and shows that the “fossil” dunefield coversands consist of at least two unconsolidated units, *viz*. upper white sands on a palaeosurface underlain by yellow sands

At the seashore the raised beaches of the Klein Brak Fm. are intersected by the seawater intake and disposal pipelines.

The affected formations are primarily the aeolian coversands (Qg) which, like “alluvium”, do not have a specific formation name and the underlying Waenhuiskrans Fm. aeolianites

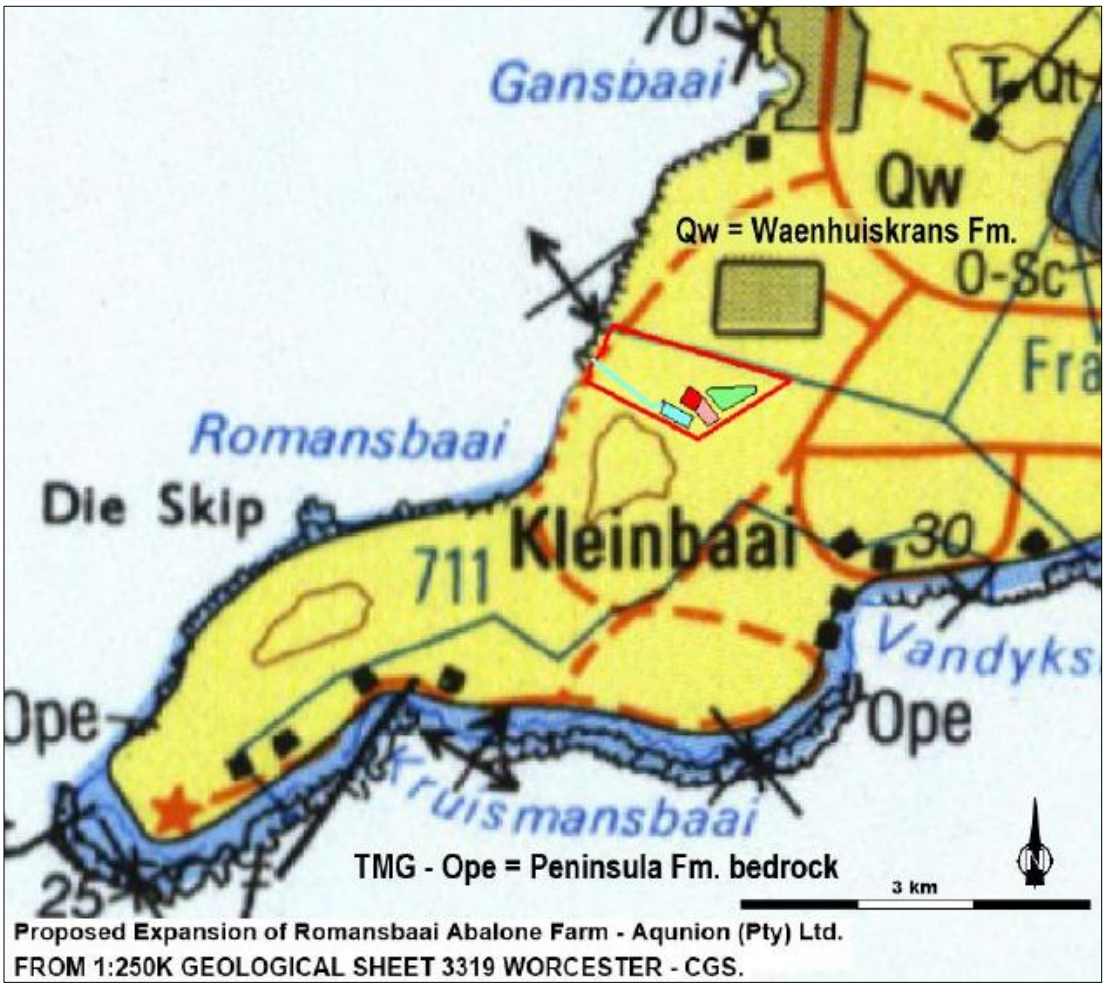

Figure 19. Geological context of Romansbaai Abalone Farm (Pether 2024)

7.3 Visual Impact on the Cultural Landscape

According to Lategan (2024), the proposed expansion of the Romansbaai Aquinion Abalone Farm will not have an impact of great significance on the Cultural and Heritage Landscape. The topography of the area with its steep coastal edge and hills to the west, creates an area with a high visual absorption level. The Romansbaai Abalone farm is furthermore situated in a depression which screens the facility from the surrounding area.

According to Lategan (2024), although most, of the identified receptors[2] (key receptors being Romansbaai Estate & Blompark Housing Project) are sensitive to visual change of the experiential landscape, the overall impacts are low due to the high absorption level of the landscape and the low vertical extend of the infrastructure. Solar arrays have the potential to create a glare effect which can amplify the visual impact but due to the screening of the ridge to the north, the glare is effectively screened from the receptors.

`The overall visual impact is thus low, and the heritage landscape will not be altered through the expansion of the facility' (Lategan 2024).

7.4 Built environment

No buildings, structures or features older than 60 years will be impacted by the proposed expansion of the Romansbaai Abalone Farm.

7.5 Graves

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

8. COMMENTS

Comments from the Overstrand Local Municipality, SAHRA Maritime Underwater Cultural Heritage (MUCH), registered conservation bodies and Interested and Affected Parties will be included in the Final integrated HIA report to be submitted to Heritage Western Cape.

9 ANTICIPATED IMPACTS

9.1 Archaeology

Potentially important shell midden deposits (in the proposed seawater intake pipeline), and Later Stone Age campsites (in the proposed solar plant, grow out tanks & storage dam) may be uncovered vegetation clearing operations, and construction phase excavations, including cut and fill, landscaping, and shaping of the dune profile.

Unmarked Khoisan burials may also be uncovered during construction phase excavations.

[2] Visual receptors are those positions from where the development is potentially visible and that are sensitive to a change in the visual environment.

9.2 Palaeontology

According to Pether (2024), the palaeontological sensitivity of the Cenozoic coastal formations is generally rated high, and this particularly applies to the potential for the scientifically valuable fossil bones of terrestrial animals to occur. According to SAHRIS the Waenhuiskrans Formation is rated Very High (Figure 20), due to previous fossil bone finds in coastal developments. The Very High rating requires “field assessment and protocol for finds”. However, a field survey is precluded by the formation being beneath the coversands and fossils may only be exposed during the Construction Phase earthworks

While the thicknesses of the Qg coversands are uncertain, it is assumed that the thickness varies from about 0.5 m to 2-3 m. It is further assumed that the depths of earthworks entailed in creating level areas for the aquaculture tanks and dam would be about the same, *i.e*. up to 2-3 m and that the earthworks will mainly affect the Qg coversands, but may intersect the underlying, older Waenhuiskrans Fm. aeolianites where the coversands are thin.

The installation of a Solar Energy Facility involves shallow excavations for cabling. Typically, the main excavations are the shallow trenches for connecting cabling, while the solar panel arrays are supported on driven posts or concrete sleepers and the transformers/inverters, and a Battery Energy Storage System are located on shallowly embedded concrete slabs. It is assumed that the depths of earthworks entailed in creating level areas for the aquaculture tanks and dam would be up to 2-3m. Earthworks will mainly affect the Qg dune coversands, but may intersect the underlying, older Waenhuiskrans Fm. aeolianites where the coversands are thin. Fossil bones are overall sparse in the Qg coversands and those which may be discovered are expected to be of latest Quaternary age and mainly to be species of extant fauna.

The fossil bones that may occur in the Waenhuiskrans Fm. are, like the later coversands, also mainly comprised of representatives of extant fauna, but unexpected species of a different fauna are more likely to occur, as a result of phases of different ecological and palaeoclimatic conditions in the past, as well as the bones of some species which became extinct in the geologically recent past.

The overall, default palaeontological sensitivity of unconsolidated coversand deposits is classified as LOW/Blue by the SAHRIS Palaeo-Sensitivity map.

The Klein Brak Fm. is not rated on the SAHRIS palaeontological sensitivity map but is assigned CLEAR/Unclassified. Due to the open coast setting of the seashore of the Project Area only extant species are expected and a LOW sensitivity may be assigned to the raised beach deposits. Furthermore, the additional pipelines will be installed along an already disturbed route through the beach deposits. An impact on the fossil heritage of the Klein Brak Fm. is not expected.

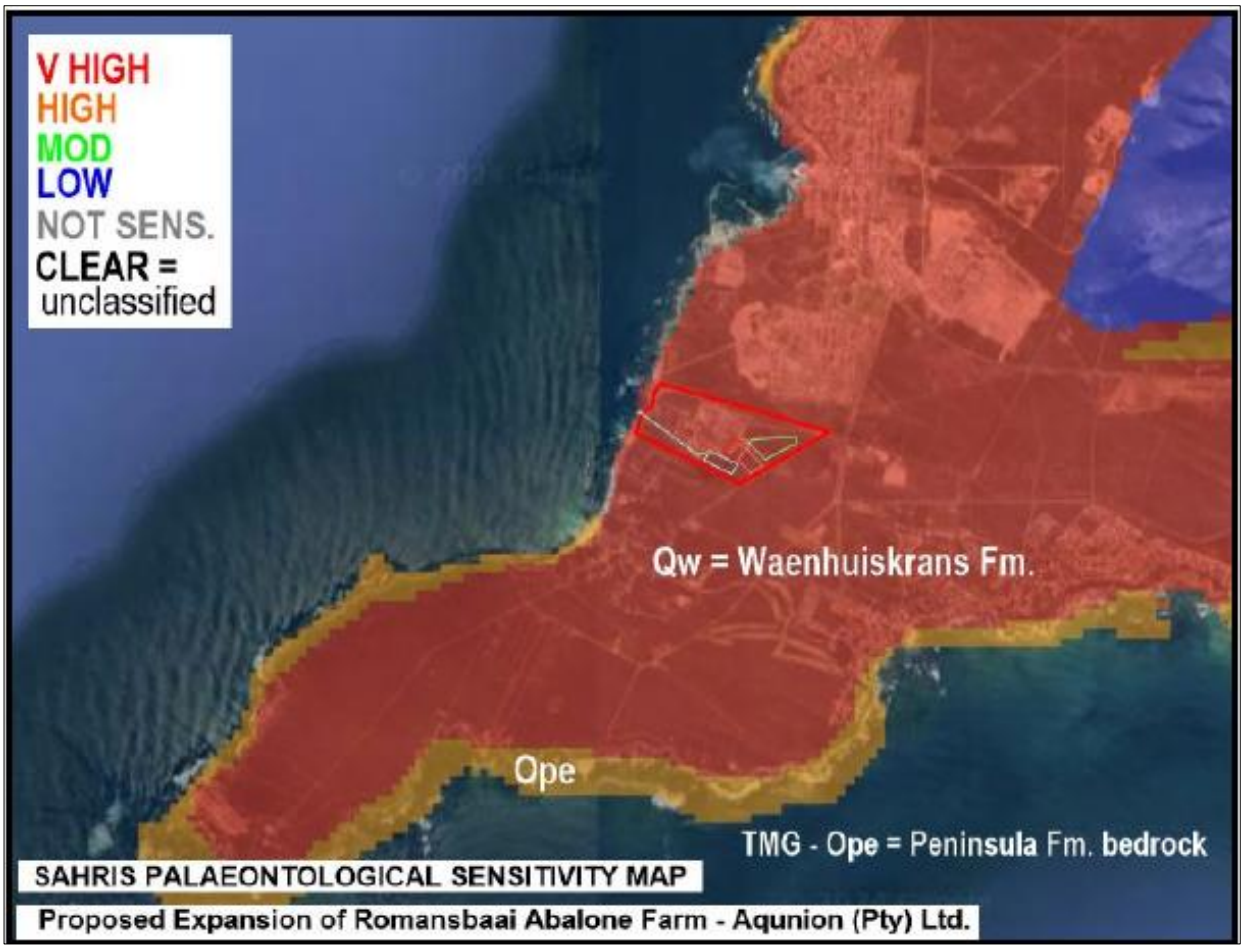

Figure 20. Palaeontological sensitivities of formations in the Gansbaai area (Pether 2024)

9.3 Visual Impact on the Cultural Landscape

According to Lategan (2024), `the overall visual impact of the proposed abalone farm expansion is low, and the heritage landscape will not be altered through the expansion of the facility. No mitigation measures are therefore deemed necessary.

10. CONCLUSION

Indications are that the proposed expansion of the Romansbaai Aquinion Abalone Farm on Portion 2 of Farm No. 711 near Gansbaai does not pose a significant threat to local Stone Age archaeological heritage resources. Shell midden deposits, and unmarked Khoisan burials, may however, be uncovered or exposed during construction phase excavations.

According to Pether (2024), any fossils heritage is likely to be encountered in an archaeological context and could be of high archaeological significance.

According to Lategan (2024:38), although most, of the identified receptors are sensitive to visual change of the experiential landscape, the overall impacts are low due to the high absorption level of the landscape and the low vertical extend of the infrastructure. Solar arrays have the potential to create a glare effect which can amplify the visual impact, but due to the screening of the ridge to the north, the glare is effectively screened from the receptors.

Therefore, overall, there are no objections to the development proceeding.

11. RECOMMENDATIONS

Regarding the proposed expansion of the Romansbaai Aqunion Abalone Farm on Re Portion 2 of the Farm Klip Fonteyn No. 711, Gansbaai, the following recommendations are made

1. No archaeological mitigation is required prior to construction phase excavations commencing.

2. Vegetation clearing and Construction Phase excavations must be monitored by a professional archaeologist.

3. If any human remains are uncovered or exposed during excavations, work must stop, and the finds reported to the Environmental Control Officer and the contracted archaeologist (Jonathan Kaplan 082 321 0172). Human remains must not be removed or disturbed until inspected by the archaeologist.

4. A protocol for finds of buried fossil bones, the Fossil Finds Procedure (FFP), must be included in the Environmental Management Plan (EMP) for the proposed development. The Fossil Finds Procedure provides guidelines to be followed in the event of fossil bone finds in the excavations.

5. Regarding the Cultural and Heritage Landscape, `no mitigation measures are deemed necessary' (Lategan 2024).

The above recommendations must be incorporated into the EMP for the proposed development.

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Appendix A

Palaeontological Impact Assessment

Appendix B

Visual Impact Assessment