PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT: PROPOSED EXPANSION AT ROMAN BAY SEA FARM (PORTION 2 OF THE FARM KLIPFONTEYN 711), GANSBAAI, OVERSTRAND MUNICIPALITY, WESTERN CAPE

Prepared for

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EXECUTIVE SUMMARY

The Archaeology Contracts Office of the University of Cape Town was appointed by Roman Bay Sea Farm Pty Ltd to undertake a Phase 1 Archaeological Impact Assessment of Portion 2 of the farm Klipfonteyn 711 Gansbaai (Overstrand Municipality). The development comprises Phases 2 and 3 of the expansion of an existing abalone facility. The AIA process was commissioned as a result of a Record of Decision made by Heritage Western Cape on 7 October 2008 on the Basic Assessment Report undertaken by Pierre Joubert Landscape Architect and Environmental Consultant (ROD attached).

The site visit found three large concentrations of shell on the coastal dune system, indicating pre-colonial occupation of the landscape dating within the last few thousand years. There are more ephemeral scatters of shell and stone inland of the coast and these scatters would appear to be less sensitive to development. The Danger Point area is also notorious for the many ships which wrecked off this section of the coast during historical times. Casualties of some of these shipwrecks were reportedly buried along the coast near the location of the wrecks.

Two of the large middens are located along the coastal zone and are already partially damaged by the coastal track. These sites are considered to be of *low to medium significance.* Midden 2 is located on the edge of the proposed Seaweed Culture Facility and will not be impacted. Midden 3 will be directly impacted by the Mariculture development and may be indirectly impacted by the Seawater Intake and Outlet system. Midden 1, on the top of the hill next to the existing sheds and offices of the abalone facility, is considered to be of *medium to high heritage significance.* It will be impacted by the relocation of the road and by the construction of two water storage sites on top of the hill.

It is recommended that:

- Where the access road cuts into the hill on which Midden 1 is situated, this is relocated slightly southward to avoid damaging the midden;
- That an archaeologist meet with the site engineer on site to determine placement of the water storage tanks which will have the least impact on Midden 1;
- That an archaeologist meets with the site engineer to determine the extent of the proposed mariculture development to avoid a significant impact on Midden 3;
- That an archaeologist advise the site engineer on the most appropriate place to dump excavated rock and shingle from the Seawater Intake and Outlet system to avoid dumping the material on top of Midden 3;
- When excavating below the soil surface for any of these developments, including the pipelines, work must stop immediately if any dense accumulations of shell middens or any graves are uncovered and SAHRA must be alerted immediately.

The development of the Seawater Intake and Outlet system will involve blasting wider a section of a gulley in the sea, below the high water mark. For this reason, this report has also been submitted to the Underwater Cultural Heritage Unit of SAHRA Western Cape for their comment.

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1. INTRODUCTION

The Archaeology Contracts Office was approached to undertake a Phase 1 Archaeological Impact Assessment on Portion 2 of the farm Klipfonteyn 711, Gansbaai in the Overberg Municipality of the Western Cape (Figure 1).

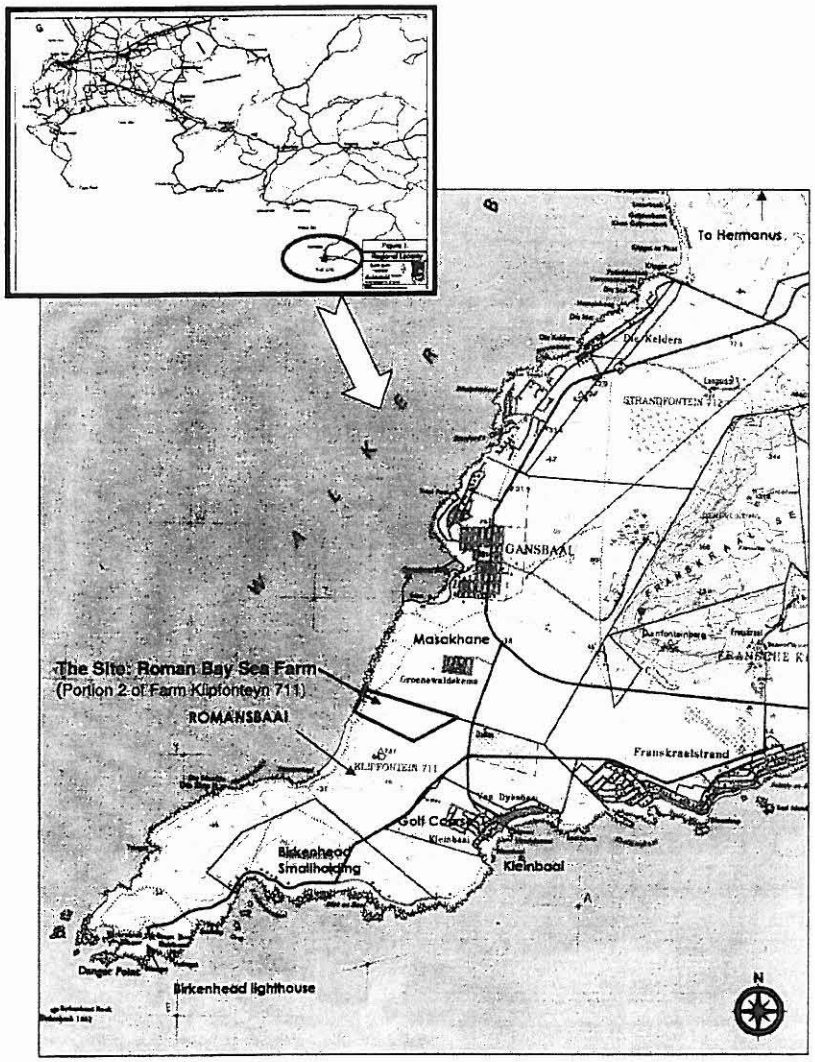


Figure 1: 3419 CB Gansbaai (Mapping information supplied by - Chief Directorate: Surveys and Mapping. Website: w3sli.wcape.gov.za)

Roman Bay Sea Farm submitted a Notice of Intent to the Western Cape Department of Environmental Affairs and Development Planning in September 2007 with regards their plans to expand the existing facility. They confirmed that in terms of NEMA guidelines a Basic Assessment Report would be sufficient. The public was notified of the development process and the draft Basic Assessment report was made available to I&APs in October 2007 to made comments on the contents.

The Department of Environmental Affairs and Development Planning, in rejecting the application and Basic Assessment Report in October 2008, noted that Heritage Western Cape, on receipt of the Basic Assessment Report, requested "a Phase 1 Archaeological Impact Assessment to be assessed by the APM (Archaeology, Palaeontology and Meteorites Committee) of HWC. This ROD is attached as Appendix 1.

This AIA therefore meets the requirements of Section 38 (1) of the National Heritage Resources Act, No 25 of 1999.

2. DEVELOPMENT PROPOSALS

The existing Roman Bay Sea Farm is indicated in the photograph below:

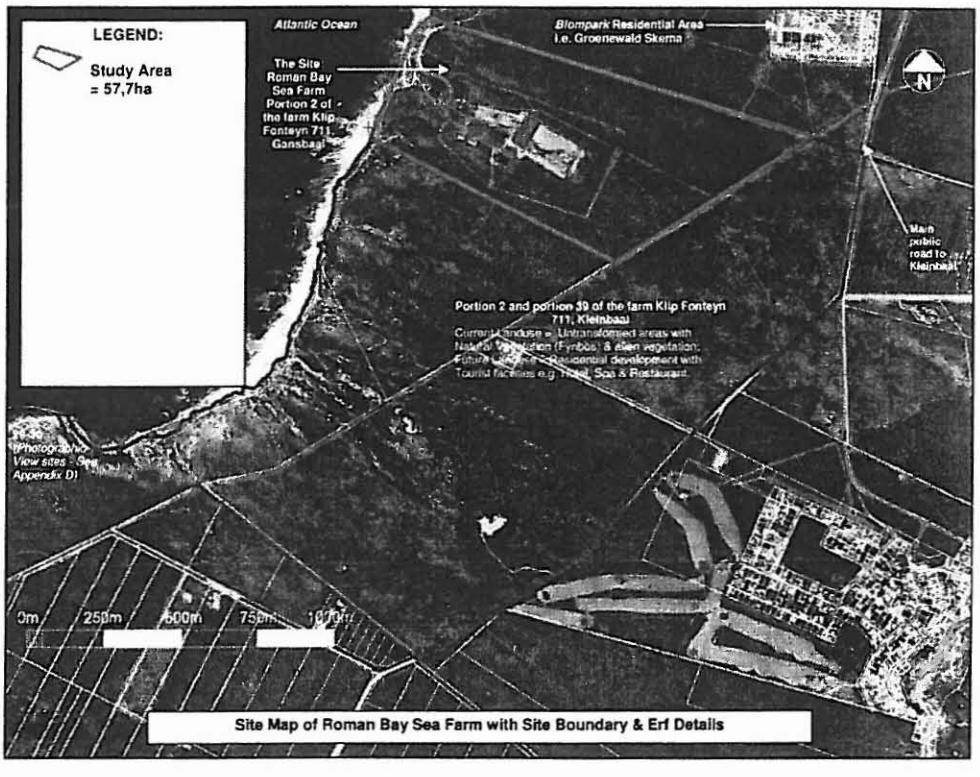


Figure 2: A site map of the existing Roman Bay Sea Farm with the site boundary and erf details indicated.

The development proposals for phases 2 and 3 of the Roman Bay Abalone Farm, as outlined in the Basic Assessment Report, include the following:

- Seawater Intake and Outlet System Option (Alternative1 is a Jetty with First and Second Stage Pumps while Alternative 2 – which is the preferred option - is a Gully with Single Stage Pump Station);
- Secondary Mariculture Production Facilities (Alternative 1 Initial Layout is not based on Botanical Mitigation Measures while Alternative – the preferred option - 2 takes this into consideration);
- New Access Road (i.e. the relocation of a portion of the existing access road) and this is the applicant's only option;
- Seaweed Culture Production Facilities (applicant's only option);
- Additional Abalone Production Facilities (Alternative 1 Initial Layout not based on Botanical Mitigation Measures while Alternative 2 takes this into consideration);
- No-expansion alternative.

The developments are indicated in Figure 3 which is attached at the end of this document. Each of these development components are assessed below in terms of their impact on the archaeological heritage of Portion 2 of the farm Klipfonteyn 711, Gansbaai.

3. TERMS OF REFERENCE

The ACO was requested to prepare a *Phase 1 Archaeological Impact Assessment* based on the reports of both the Department of Environmental Affairs and Development Planning (15 October 2008) and Heritage Western Cape (7 October 2008) in terms of the requirements of the National Heritage Resources Act, No 25 of 1999.

4. LEGISLATION

Section 38 (1) of the National Heritage Resources Act (No 25 of 1999) requires that when constructing a road or similar linear developments exceeding 300m in length or developing an area exceeding 5000 m² in extent, the developer must notify the responsible heritage authority (in this case Heritage Western Cape) of the proposed development and they in turn must indicate within 14 days whether an impact assessment is required. A *NID (Notice of Intent to Develop) is generally completed in terms of Section 38 (1) (e) of the Act prior to the commencement of development. In the case of the expansion of the Roman Bay Sea Farm, however, the development under discussion is the expansion of an existing facility and not a new development. Further, a record of decision (ROD) has already been issued by Heritage Western Cape (attached as Appendix 1).For this reason, a NID is not attached.*

In terms of Section 35 of the Act all archaeological objects, palaeontological material and meteorites are the property of the State. Any person who discovers any of these materials in the course of development must immediately inform the responsible heritage resources authority. No person may, without a permit issued by the responsible heritage authority destroy, damage, excavate, alter, deface or disturb any archaeological sites and material, palaeontological sites and meteorites.

Archaeological is defined as including: 'wrecks, being any vessel or aircraft....which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime cultural zone of the Republic.....which is older than 60 years". Section 35 (1) notes that while archaeological and palaeontological sites and material and meteorites are the responsibility of the provincial heritages resources agency (in this case Heritage Western Cape) *"provided that the protection of any wreck in the territorial waters and the maritime cultural zone shall be the responsibility of SAHRA".*

A very small section of the gulley, which is to be blasted for access to sea water for the pump station, will be below (or outside) of the high water mark. The Archaeological Impact Assessment for the expansion of the Roman Bay Sea Farm therefore has to be submitted to the Underwater Cultural Heritage Unit of SAHRA Western Cape for their comment. SAHRA Western Cape recommended that the report be submitted to both it and Heritage Western Cape simultaneously.

5. BACKGROUND INFORMATION

5.1 Coastal Stone Age Settlement

There have been a number of surveys along this stretch of the coast in the last few decades. Some of them were of a research nature but the majority were contract archaeological surveys initiated as a result of rapid coastal development. Avery (1974) undertook a systematic investigation of open station shell middens between Kleinmond and Cape Agulhas with the aim of examining "coastal living and exploitation patterns in space and through time". The density of distribution of these sites in the Danger Point area is indicated in Figure 4.

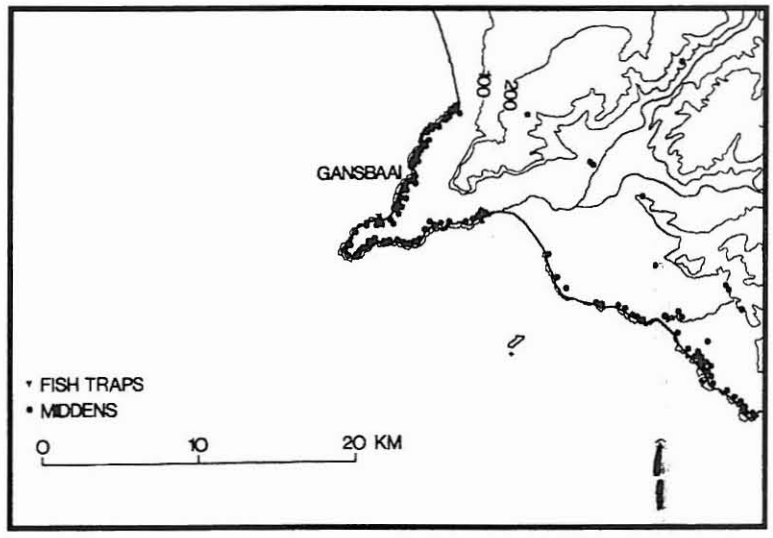


Figure 4: The distribution of shell middens and fish traps along the Danger Point coast (Avery 1975).

According to Avery, archaeological sites are found immediately behind the coastal dunes as far as 2 km inland. Kaplan (1993) in his overview of the state of knowledge

of coastal archaeological sites reported on 145 sites from the Gansbaai map sheet (3419 CB). Of the 145 sites, 144 are Later Stone Age and one is MSA/LSA. These sites include 19 cave sites, 134 open station shell middens and three fish-traps. *Only six of these sites have been excavated.* In a recent Master's thesis, Hine (2008) reported on stone-walled tidal fish traps at both Gansbaai and Danger Point. A survey by Hart (2006) of the adjoining property (Portions 2, 17 and 18 of the Farm Klipfonteyn 711) revealed a total of eight (8) Later Stone Age shell middens including a very large (30 m) midden on a dune crest overlooking the bay, with Cape Coastal pottery, with alikreukel, perlemoen and limpet remains. Some of the adjoining sites also contained quartz, quartzite and silcrete flakes.

To summarise the above evidence, excavations in the 1970's at Die Kelders near Gansbaai have provided early evidence (1600 years ago) for the introduction of pottery technology and domestic stock into the Cape as well as a MSA (Middle Stone Age) occupation over 40 000 years old.

The majority of open station shell middens (as opposed to those in caves such as Die Kelders) date to within the last 6000 years. They frequently comprise large heaps of shell relating to a prehistoric diet focussed on marine resources, supplemented by the hunting of small game. The bones of small mammals, birds and marine mammals may be recovered from these middens. Excavations of shell middens in the Pearly Beach area by Graham Avery (1974, 1976) showed that the remains of early domestic sheep were to be found in some of the coastal middens as well. Archaeologists are in broad agreement that a pastoralist lifestyle (the herding of sheep and cattle) was introduced into southern Africa around 2000 years ago. They are not sure whether this represents the arrival of a new group of people (the Khoekhoen) or the transformation of hunter-gatherer groups to a pastoralist lifestyle.

In 1984 archaeologists from the South African Museum and the University of Cape Town (Hall 1984) investigated the area just to the west of Struisbaai. This is an area similarly in morphology to the study area currently under investigation in this report in that it involved a shoreline, coastal dunes and flat coastal plains. Their research showed that the majority of archaeological sites were located directly on the shoreline, or on the edge of the inland dune field with large dunes or prominent high places overlook the coastal plain. The dunefield had been favoured for occupation over the last 6000 years by both earlier hunting and gathering people and possibly pastoralists later on. Further research undertaken in recent years has confirmed that prominent coastal dune systems overlooking sheltered bays were preferred settlement areas during the late Holocene (up to 6000 years ago). Recent work by various consulting archaeologists (ACO and ACRM) has resulted in more sites being recorded; however the basic settlement pattern appears to be consistent.

5.2 Historical shipwrecks

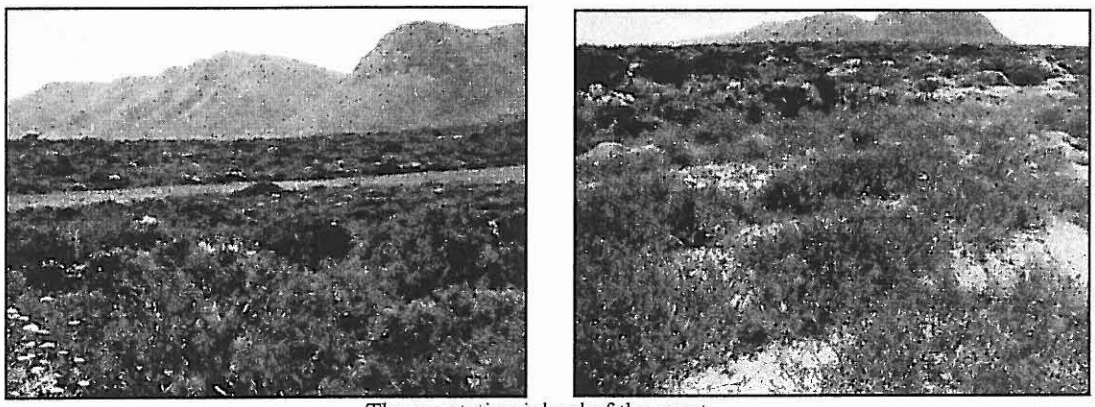
In addition to the observations on the pre-colonial heritage of the area (which can be gleaned from archaeological journals and reports), reference must also be made to historical shipwrecks which are reported from this area. There are many reports of shipwrecks off the Danger Point coast and at least 13 are listed on the SAHRA's national shipwreck database. Generally, the location information is very vague and there is no specific mention of any wrecks off the Roman Bay coast.

The most famous of shipwrecks is the British steamer "Birkenhead" which wrecked off Danger Point at a rocky outcrop now known as Birkenhead Rock. British soldiers sacrificed their lives to allow women and children to take to the boats first and be saved. For weeks after their bodies washed up on the beaches of Danger Point where they were buried. The historic records indicate that where there were fatalities during shipwrecks prior to the 1850s, bodies were often buried on the beach.

6. METHODOLOGY AND LIMITATIONS

Dr Webley visited the site on the 4th November and was taken around to the various development areas by the site manager, Mr Dion Botha. It is important to note that many of the construction areas will be linked by underground pipelines (Figure 3) which obviously has implications for the below ground archaeological heritage. For this reason it was not realistic to limit my survey to the footprint areas identified in the Basic Assessment Report and map.

Inland of the coastal dune (which extends for about 1.5 km) the vegetation is termed Overberg Dune Strandveld with small patches of Milkwood Forest. The vegetation is low growing (<1.2m). There is also a small section of Dune Fynbos on calcrete near the coast, and the vegetation on the coastal sands near the high water mark is termed Duneveld or Seashore Vegetation. This section has already been negatively impacted by roads and infrastructure.



The vegetation inland of the coast

A survey by foot was carried out over large portions of the property. Most of the farm, inland of the coastal dune, is covered by knee-height vegetation which is very thick. It is impossible to see the soil surface except in those areas which have been recently cleared by fire-breaks. These firebreaks run along the fences and are the most productive in terms of archaeological visibility.

One important comment which Dr Avery made during his coastal survey in the 1970s should be repeated here: Finding archaeological sites in the fynbos vegetated zone is more difficult because vegetation obscures the ground surface. Sites are sometimes found "where dune mole rat action brings shell and artefactual material to the surface or where vehicle tracks expose underlying archaeological occurrences" (Avery 1974:107). Similar issues of visibility were encountered during this survey.

7. RESULTS OF SURVEY

7.1 Seawater Intake and Outlet system with settling basin

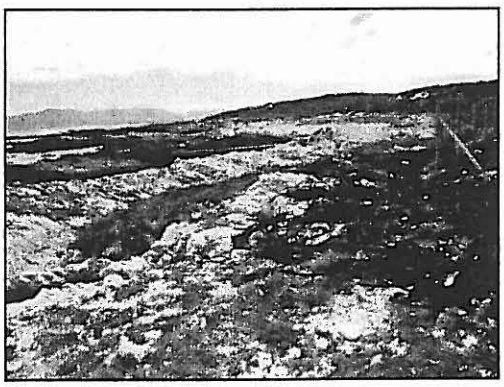
Sea water for the abalone plant is currently extracted via a submerged offshore intake pipe. The present intake facility is subjected to frequent blockages and the only solution is either taking the pipeline out to deeper water via a jetty (Alternative 1), or widening existing rock gullies (Alternative 2).

The Basic Environmental Assessment considered two options and the second was identified as the preferred option. In addition to widening the gulley to a depth of 4m, the seawater intake structure (11x5m) will be set in the rocks and there will also be a settling basin and debris removal/separation structure (22 x 7 m) cut into the rock, as well as the main pump station also cut into the rock (22m x 13m). There will be a workshop/generator room (20 x 10m), two additional seawater supply riser pipelines (377m in length) to transport fresh seawater to the water storage reservoir and one additional effluent channel. The effluent channel will be cut into the soil surface and run along the northern boundary of the property.

According to the report of the engineer, "The bulk of the works will be built outside the high water mark (read jurisdictional boundary) except where the gulley goes into the sea i.e. there is a small portion of the gulley that actually goes beyond the high water and into the sea (to get to sea water – the primary function of the pump station). Once built, the actual works will obviously be tidal i.e. the sea water will move into the gulley and sump as the tides move in and out".

The location of the gulley which will be blasted is:

S 34 36 02.9
E 19 19 59.2



The location of the seawater intake and outlet system (left) and gully which will be expanded (right).

There is no evidence for any tidal fish traps in this vicinity. Reports of shipwrecks along the Danger Point coast are too imprecise to locate the position of any wrecks. There is in any case, no mention of Roman Bay, and it is likely that the majority of ships would have wrecked further south, close to the Danger Point and Birkenhead Rock.

1) Immediately to the west of the proposed developments, on the opposite side of the road, is clear evidence for a substantial shell midden. The midden is quite densely stratified in areas, with evidence for Turbo sp and Patella sp. The midden extends up the side of the coastal dune, and as far as the southern entrance gate and fence. The fire break running along the southern fence shows clear evidence of this midden on both sides of the fence. This large midden has been identified as Midden 3.

This midden runs along the coast from:

S 34 36 03.0	to	S 34 36 04.2
E 19 20 02.0		E 19 20 59.8

And the same midden is found inland, further up the coastal dune, at:

S 34 36 05.5
E 19 20 02.0

Midden 3 visible in the road cutting.

7.2 Secondary Mariculture Production Facilities

Part of the planned expansion includes the growing polychaete worms in the abalone effluent water. The secondary culture of the worms would be for the angling market.

Two alternatives are discussed in the Basic Assessment Report but the two options are not clearly indicated in attached Figure 3. As a result of the recommendations of the Botanical report, Alternative 2 is the preferred option. According to the Basic Assessment Report, there would be a "buffer of natural vegetation around the highly sensitive limestone (calcrete) outcrop" which lies to the west of the planned development area. The area of anticipated development is 1 ha in size. This area is badly degraded with a large portion excavated into the coastal dune resulting in a bay filled with a pump station, filtration plant and pipelines.

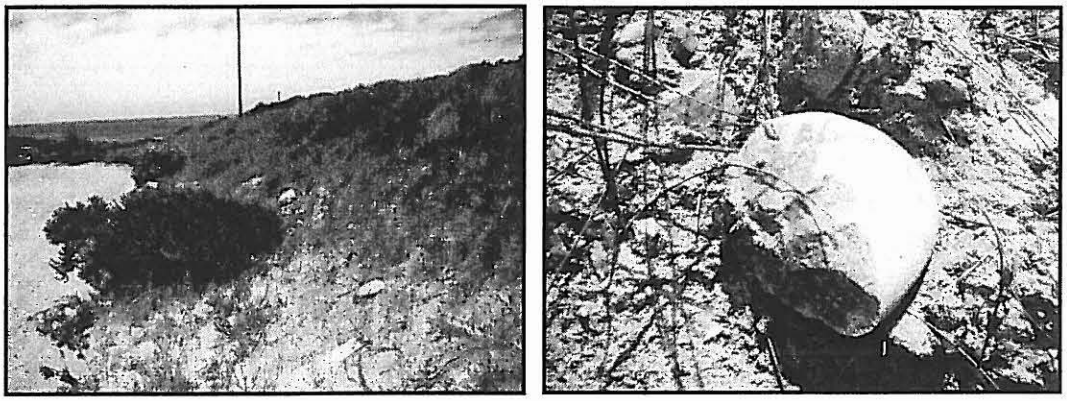
2) There is a diffuse scatter of midden material on the southern portion of the area identified for the mariculture production. This scatter extends from:

S 34 36 03.5	towards the fence at:	S 34 36 04.7
E 19 20 03.6		E 19 20 04.2

No shell midden material was observed on the calcrete surface to the west of the planned material. However, the botanical survey has recommended the conservation of this area, making development to the south more likely. Development to the south however, is likely to impact on Midden 3 and the development map seems to suggest that expansion in this direction is anticipated.

7.3 New Access Road

The development includes the construction of a new access road through the partial relocation of the existing road, the first section being 420m by 7m and the second section being 80m by 7m. The first section will run between Phase 1 and Phase 2 of the abalone production facilities, thereby crossing over site 5 (discussed below). The road will also be partially excavated into the edge of the hill with the planned water storage reservoirs, thereby impacting on Midden 1 on this hill (see site 8 below).



Existing road cutting, which will be widened, showing archaeological material slipping down slope.

7.4 Seaweed Culture Area

The construction of this facility is for food source for the Abalone. The area which has been identified for the seaweed culture development is located on the north-western portion of the site outside the existing gate and fence of the property although the land belongs to the Roman Bay Sea Farm. The fence will be moved to accommodate the development. The size of the development area is 2700 sqm.

This particular area, beyond the fence, has been badly degraded with rubbish dumped in the vicinity. A road has been cut through the coastal dune, to a depth of about 3 m, exposing a section through the dune. There is no obvious evidence of any depth of shell midden in the section, with only a few Haliotis sp shells visible, and these could relate to modern abalone poachers.

The disturbed area which has been identified for the Seaweed Culture Area.

3) The undisturbed surface on both sides of the road which cuts through the dune has some flaked quartzite cobbles and shell fragments indicating a deflated midden.

S 34 35 56.4
E 19 20 06.7

4) There is evidence for a shell midden eroding from the walls of the dune which verges on the coast immediately to the south of the existing gate. The midden includes several large flaked quartzite cobbles as well as one small silcrete flake. This site lies outside the development footprint. The midden stretches from:

S 34 35 57.3	to	S 34 35 59.1
E 19 20 03.9		E 19 20 03.8

7.5 Additional Abalone Production Facilities

The abalone is grown in tanks which are supplied with fresh water extracted from the sea 180m from the coast, through encased pipelines on the sea bed. The effluent water is returned to the sea via a pipeline.

The additional facilities will include the construction/extension: of existing hatchery building (1050sqm), water storage reservoir, platforms for grow-out tanks (7ha in total); sheds, service areas and blower rooms (1600sqm), effluent channels and staff housing (3 houses covering a total area of 427sqm).

The area identified for the abalone facilities is a fairly level area of land which is situated to the north of the existing abalone production facilities. A very diffuse scatter of shell was found on some mole hills in the fire break areas. These included fragments of Haliotis sp, Turbo sp and Patella sp. Some of these shell fragments, especially of those of Haliotis sp may represent modern shell fish gathering (i.e. modern poaching incidents) and do not necessarily represent prehistoric shellfish consumption.

5) There is a small scatter of shell in the firebreak next to the fence of the existing abalone production area with three rough quartzite flakes and one worked piece of silcrete. The shells are very fragmented and diffuse; there is no indication of a very dense accumulation of shell. The co-ordinates are:

S 34 36 05.8
E 19 20 19.9

This section of firebreak running parallel to the existing abalone facilities has been identified for the relocation of the road running through the property.

6) There is a second scatter of fragmented Turbo sp. in a road cutting – this scatter is also very diffuse and there is no associated stone.

S 34 36 06.0
E 19 20 30.3

7) Two quartzite flakes were found on molehills in the firebreak area next to the fence associated with a diffuse scatter of Patella shell.

S 34 36 01.6
E 19 20 25.8

7.5.1 Two water storage tanks

The two water storage tanks, which are listed as part of the abalone production facilities development, are indicated as being situated on the top of a hill near the existing workshops. Figure 3 also indicates that the access road will cut slightly into the side of this hill and that the "main sea water supply line" will also cut into the edge of the hill.

The top of this hill (which is an old vegetated dune) is covered by an extensive shell midden (Midden 1) which stretches up to 20 metres in all directions. The midden has collapsed down the side of the hill and there is a large broken grindstone lying close to the edge of the road. It is this same road which will be cut back for the access road.

8) There is a large grindstone, some complete Turbo sp shells and a large flaked cobble lying on the slope of the hill close to the road at the following co-ordinates:

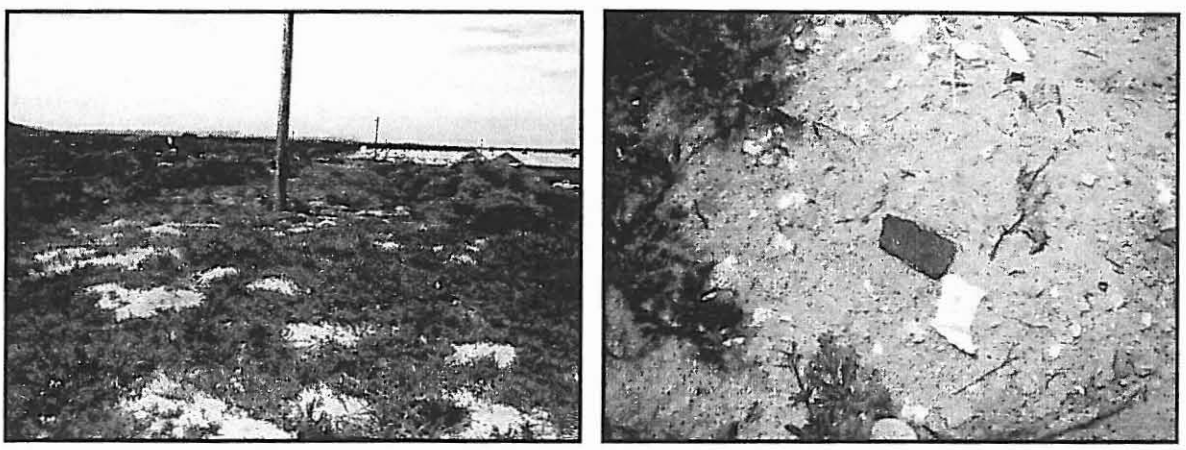
S 34 36 04.7
E 19 20 11.6

9) The midden is mainly concentrated around the electricity pole on the top of the hill, but extends at least 20 m in all directions. The midden is not densely packed, but rather a highly visible distribution of shell, stone and one fragment of pottery and of ostrich eggshell. The shell comprises Turbo sp, Haliotis sp and Patella sp.

S 34 36 03.5
E 19 20 11.1

This same site seems to continue down the slope of the hill toward the sea and only fades out at:

S 34 36 01.8
E 19 20 09.2



The large midden on top of the hill (left) and fragment of pottery (right).

10) There is another shell midden, or else this is a continuation of the same midden comprising many large Turbo sp shells, Patella sp and flaked quartzite cobbles at:

S 34 36 01.3
E 19 20 07.1

7.5.2 New Staff Housing

Three new staff houses are planned, two adjoining the present houses (Figures 2 and 3) while the third is located on the southern boundary line of the property. The dense vegetation covering the first two areas makes it difficult to determine whether archaeological sites are present or not. Some ephemeral scatters of shell were observed in the area identified for the third house.

8. SIGNIFICANCE OF ARCHAEOLOGICAL SITES AND IMPACT OF DEVELOPMENT

Archaeological sites, such as the cave site of Die Kelders near Gansbaai, can produce important information relating to the development of modern human behaviour while open station shell middens along the coast provide significant information on pre-colonial hunter-gatherer and herder lifestyles. In the background to this report it was pointed out that only 6 sites along this stretch of the coast have been archaeologically sampled. Rampant coastal development means that many archaeological sites have been destroyed in recent decades resulting in a diminishing number of archaeological sites which can potentially inform us about the prehistoric past. For this reason due care should be taken before permission is given to destroy an archaeological site.

There are at least 3 large shell midden complexes on Portion 2 of the farm Klipfonteyn 711 which lie directly or partially in the path of some of the development activities listed in the introduction to this report (Figure 5). Middens 2 and 3 are located along the coastal margin and have already been impacted by the construction of a service road along the coast. Portions of both middens still remain. These middens are of low to medium significance. Midden 3 appears relatively undisturbed and is located on a hill next to the existing abalone plant. It is of a substantial size although it is difficult to judge the actual depth of shell deposit. It is considered to be of medium to high significance.

8.1 Impact of Development on above-ground features

The **Seawater Intake and Outlet system with settling basin** will be built into the shingle and rock on the beach, above the high water mark, and no archaeological sites will be impacted. The pipelines however, will cut through the soil surface at several locations and there is likely to be an impact on the sub-surface archaeology of the area.

It is not clear to what extent these structures will impact on Midden 3, which appears according to the map to lie outside of the development (Figure 5). If, for example, there is blasting and excavation into the rock for the pump station and settling dam (as indicated above), then the rocks and shingle may be dumped on top of the midden. If large trucks and bulldozers have to be brought on site to undertake this excavation, then they too may impact negatively on the periphery of the midden.

There are apparently two alternatives for the location of the **Secondary Mariculture Production Facilities** but these are not clearly indicated on Figure 3. Nevertheless, the fact that the botanical survey recommended the conservation of the calcrete area to the west of the present filtration plant and pump, suggests that the mariculture production facilities will take place to the south (Figure 5). Developments to the south will however, impact on Midden 3 identified in the survey. This large midden is therefore, potentially, threatened by both of the above activies.

The **New Access Road** partially follows the existing road but there are two new sections. The relocation of the road to run along the fence of the existing abalone facilities means that it passes between phases 1 and 2 and will therefore cut across the ephemeral shell scatter described as site 5. This scatter is some distance from the coast and would appear to be of low significance. More significantly, it is intended to partially excavate the road into the edge of the hill with the planned water storage reservoirs (Figure 5). This top of the hill contains Midden 1 and artefactual material including a quartzite core and lower grindstone have slipped down the slope and are lying next to the existing road. Any attempts to cut into this hill will result in more slippage and could potentially damage the site.

The area, to the north of the existing fence and northern access gate has been identified for the **Seaweed Culture Area**. Much of this area is badly degraded and the development is unlikely to extend southward into Midden 2. There will therefore be limited impact on the above ground archaeological heritage. However, the construction of the effluent channel from Phases 2 and 3 of the new abalone facilities,

along the northern boundary fence of the property, to the sea may cut through a section of Midden 2 (Figure 5).

The **Additional Abalone Production Facilities** will be located on level land to the north of the existing plant. It is some distance from the sea. There are some ephemeral scatters of shell and stone in this area. They are likely to be destroyed by the development but are considered to be of low significance. However, the construction of **two water reservoirs** on top of the nearby hill, which is covered in Midden 1, is likely to impact negatively on the archaeology of the area. The construction of two out of the planned three staff houses is not likely to impact on any significant archaeological remains.

8.2 Impact of development on buried features

Many of the development areas listed above will be connected by pipelines which will be buried beneath the soil surface. It is quite possible that construction may uncover below ground features such as dense accumulations of shell. In addition to prehistoric burials (which are quite common in shell middens), it is also possible that graves relating to shipwreck causalities may be uncovered.

9. MITIGATION

Archaeological sites (including shipwrecks and tidal fish traps) are a non-renewable heritage resource which means that once destroyed, their information value is lost forever. They are also context sensitive, which means that their value is destroyed when the landscape in which they are situated is disturbed (Hart 2008). Conservation of the entire archaeological site is the ideal alternative but in practise this is often not feasible. Mitigation can be achieved through scientific recording, sampling or excavation of sites although this is also considered to be a destructive process. The process is time-consuming and expensive. There is also an increasing shortage of storage facilities for archaeological material in the Western Cape and this must seriously impact on decisions to sample archaeological sites. Archaeologists prefer to conserve where ever possible in the interests of sustainable heritage management and this is the approach taken in this report.

According to the Applicant, the No-Expansion Alternative is not an alternative for the following reasons:

- The no-go option will be a serious blow to the development of aquaculture in the country as Roman Bay Sea Farm is owned by the largest mariculture group in South Africa;
- This is not an option as the local communities are in serious need of job creation opportunities.

In view of the development proposals and their likely impact on both the above ground (visible) and potential below ground archaeological heritage of the coast, a number of issues need to be considered:

- Very few archaeological sites have been excavated from the Danger Point coastline and our knowledge of the prehistoric settlement of the area is fairly limited;
- Despite the apparent plethora of archaeological sites on Avery's map (Figure 4) many archaeological sites have been destroyed in the last few decades of coastal development;
- While only portions of three middens are under threat during this development, they can potentially inform us on the lifestyle of pre-colonial hunter-gatherer and pastoralists groups;
- The conservation of these sites would be the ideal solution.

The most cost effective way in which to prevent the negative impact of development on the three large middens described above is to ensure that certain aspects of the development are slightly re-aligned through discussion between an archaeologist and the site engineer. A site visit before development takes place can ensure that the impact of development will be minimal on the above-ground archaeological heritage.

However, it is always important to remember that additional buried features (such as further middens or graves) may be exposed during development. It is important that the contractor be suitably informed so that SAHRA is immediately alerted if any discoveries are made.

10. RECOMMENDATIONS

This report proposes that the site engineer meet with an archaeologist, on site, prior to development in order to that certain aspects of the development are slightly re-aligned to prevent a significant impact on the three middens identified above. The ideal solution would be to conserve these middens *in situ* and to avoid costly and time-consuming archaeological excavations aimed at mitigation. The contractor also needs to be briefed by an archaeologist about archaeological remains so that he is in the position to notify SAHRA immediately if any depth of archaeological shell midden material or graves is discovered below the soil surface.

It is recommended that:

- Where the access road cuts into the hill on which Midden 1 is situated, this is relocated slightly southward to avoid damaging the midden;
- That an archaeologist meet with the site engineer to determine an area for the water storage tanks which will have the least impact on Midden 1;
- That an archaeologist meet with the site engineer to determine the extent of the proposed mariculture development to avoid a significant impact on Midden 3;
- That the archaeologist advise the site engineer on the most appropriate place to dump excavated rock and shingle from the Seawater Intake and Outlet system to avoid dumping the material on top of Midden 3;
- That the contractor is alerted to the possibility of finding buried material including any dense accumulations of shell or graves and knows that he has to contact SAHRA should this occur.

It would appear unlikely that the blasting of the gulley (a portion of which lies below the high water mark) will impact on 'possible' shipwrecks in the area. A number of ships are reported to have foundered off Danger Point in the past, but the information on their exact location is extremely scanty and there is no indication that any ships sank off Romans Bay. There are also no tidal fish traps in this particular area. *Nevertheless, a copy of this report has been submitted to the Underwater Cultural Heritage Unit of SAHRA Western Cape for their comment.*

11. REFERENCES

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APPENDIX 1

iLifa leMveli
Erfenis
Heritage

Our Ref: HM/Gansbaai/Ptn 2of farm Klipfonteyn
Enquiries: Ronny Nyuka
Tel: 021 483 9691
Email: Rnyuka@pgwc.gov.za
Date: 07-10-2008

Record of Decision

Heritage Western Cape hereby notifies:

Mr Pierre Joubert, Landscape Architect,Po Box 1025 ,Hermanus 7200

Of its comments or recommendation in terms of
Section 38(8) of the National Heritage Resources Act (Act 25 of 1999)
And Regulation 3(3) (a) of PN 298 (29 August 2003)

For: Proposed extension to Fish Farming

Erf Farm Ptn 2 Klipfonteyn roman Bay Sea

Heritage Western Cape Recommendations:

- Heritage Western Cape committee requested aphase1 AIA to be assessed by the APM.

The following conditions apply: None

Yours sincerely

Ronny Nyuka (Mr.)
For Accounting Officer: Heritage Resources Management Service
p.p. Heritage Western Cape

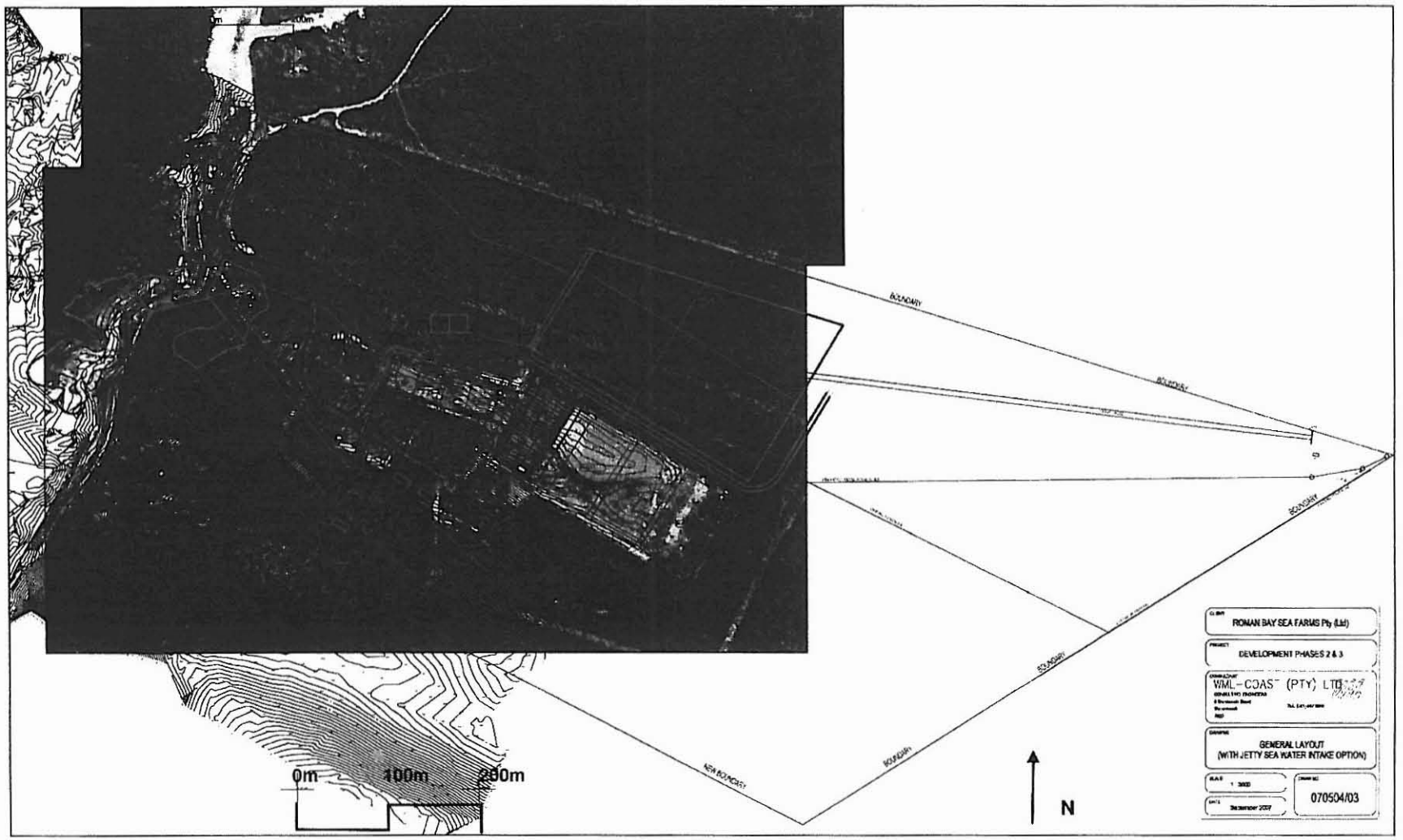

Figure 3: The proposed expansion of the Romans Bay Sea Farm.

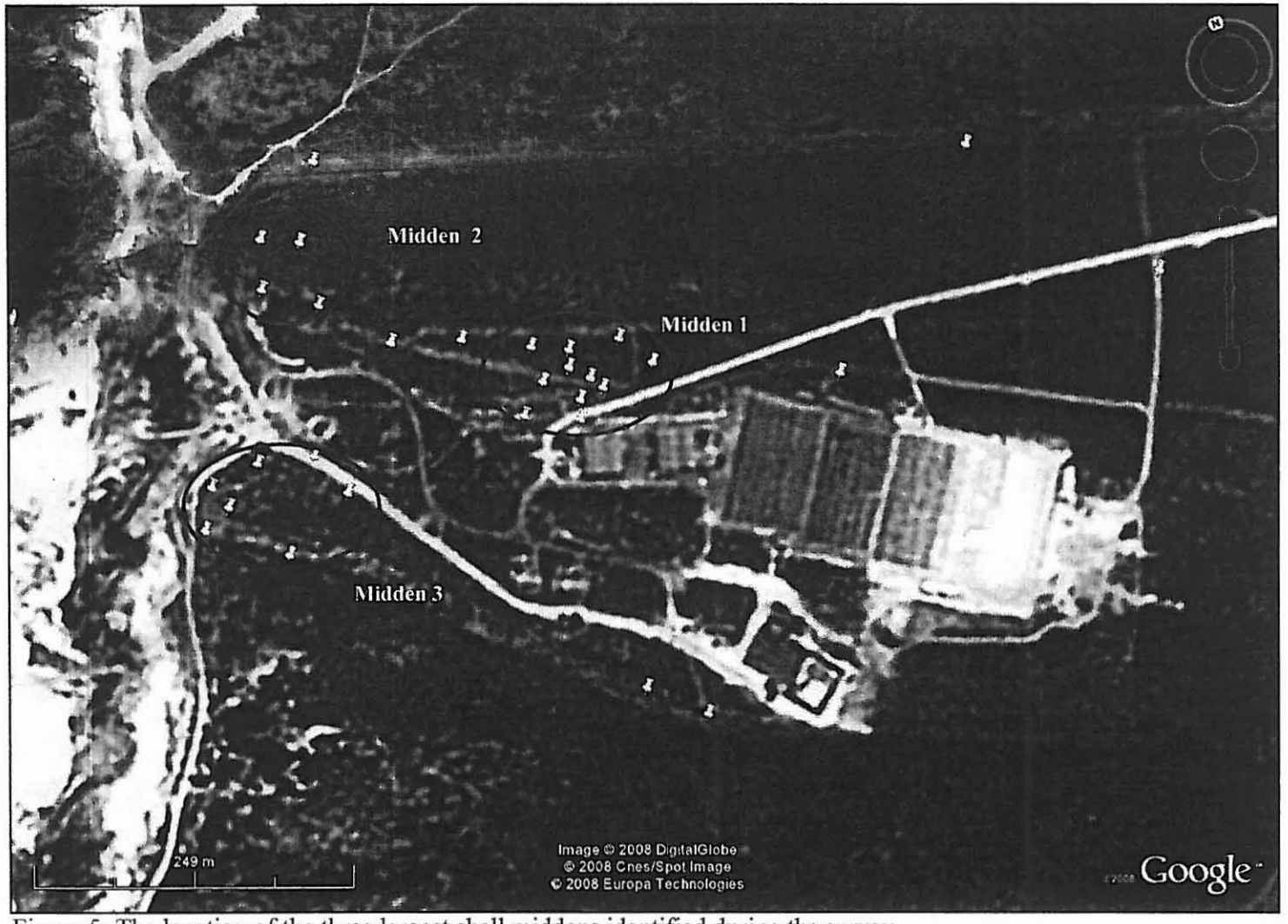

Figure 5: The location of the three largest shell middens identified during the survey.