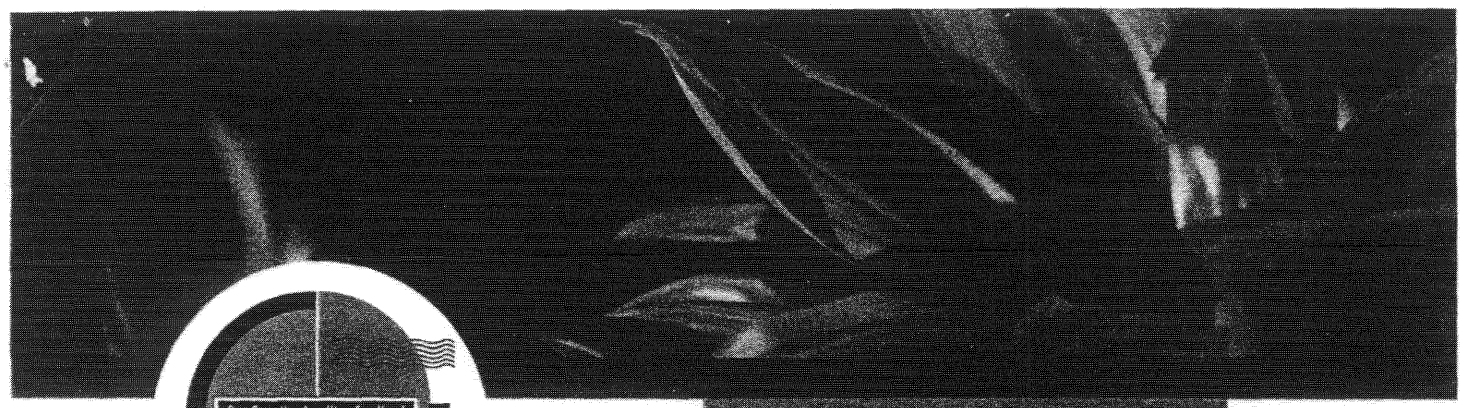

Bohlweki Environmental (Pty) Ltd

ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR THE PROPOSED CAPACITY EXPANSION OF THE EXISTING OPEN CYCLE GAS TURBINE (OCGT) PLANT AND ASSOCIATED INFRASTRUCTURE AT ATLANTIS, WESTERN CAPE PROVINCE

DRAFT REPORT FOR PUBLIC REVIEW

Western Cape Department of Environmental Affairs and Development Planning Reference Number:
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12. HERITAGE IMPACT ASSESSMENT

This study was undertaken by Tim Hart (MA: Archaeology), Jayson Orton (MA Archaeology) and Liesbet Schietecatte (MA, M.Sc: Archaeology of the Archaeology Contracts Office (ACO) of the University of Cape Town.

12.1. Introduction

The Archaeology Contracts Office (ACO) of the University of Cape Town was appointed by Bohlweki Environmental Pty (Ltd) to undertake a heritage study (as part of an EIA process) of a portion of land situated in the Atlantis Industrial Area, Cape Town. The land concerned (Figure 12.1 – 12.2) has been identified for the proposed expansion of the Atlantis Open Cycle Gas Turbine Power Station which is currently under construction. The proposed activity will require a further 20 hectares of land immediately east of the existing construction site. Much of this area was subject to field survey during heritage study for the 2005 EIA for the project.

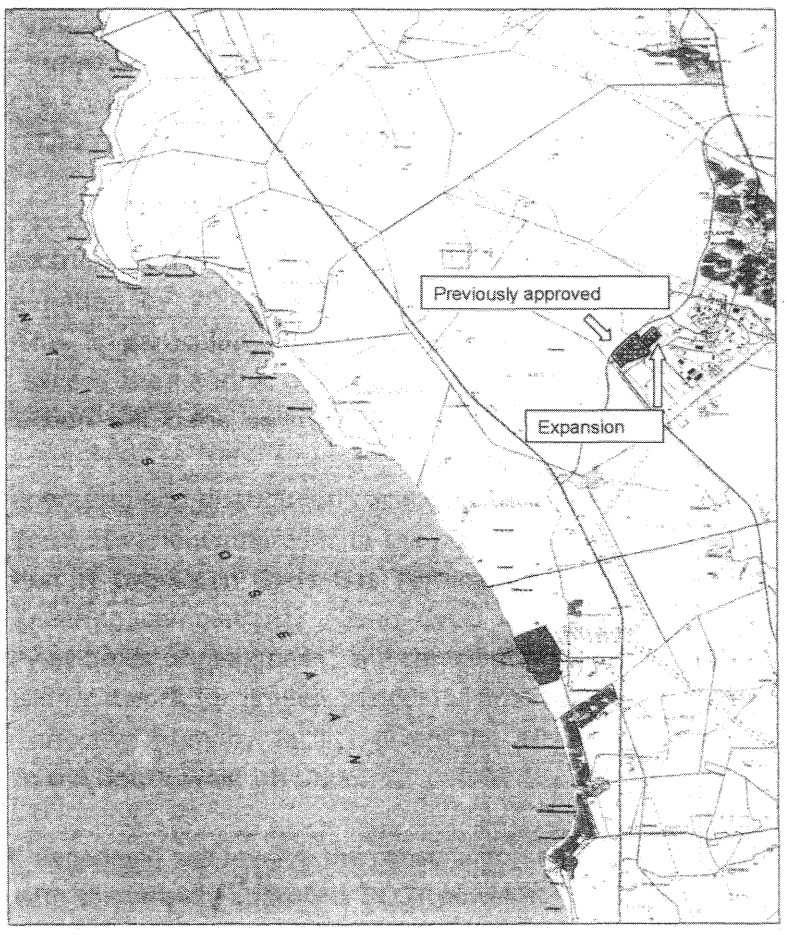

Figure 12.1: Study areas.(After 3318CB 1:50 000 Chief directorate surveys and mapping)

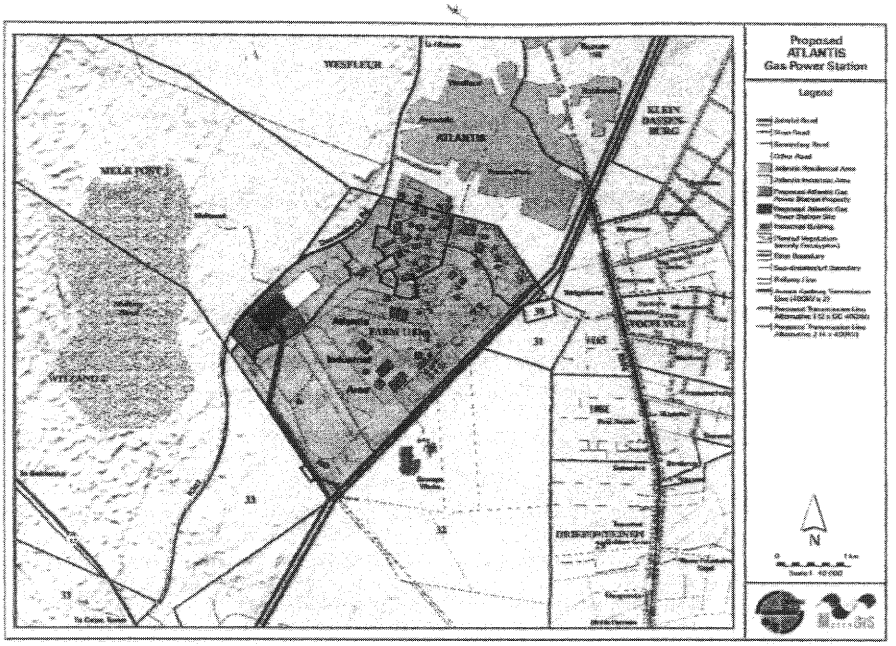

Figure 12.2: The existing power station is indicated by the red polygon while the proposed capacity expansion area is indicated in yellow (map supplied by Bohlweki and Eskom).

12.1.1. The Need for the Project

Studies completed by Eskom and their various consultants have forecast that the company's electricity generating capacity will be under pressure to meet the needs of the nation by 2007 considering the current rate of growth of the economy.. This is particularly so in the Western Cape Province where local growth rates exceed the national average. It is expected that the plant currently under construction will come online in time for the winter of 2007 (this year). Eskom is responding to this situation by taking measures to expand the company's generating and distribution capacity in a number of ways. Locally this will take the form of various upgrades to the power distribution system as well as the construction of two Open Cycle Gas Turbine power stations at Atlantis and Mossel Bay (nearing completion). Open Cycle Gas Turbines are designed to startup quickly at times of peak need, and contribute large amounts of power into the Transmission network for limited periods of time depending on need. Hence they are an effective standby facility given the electricity shortages recently experienced in the South Western Cape.

The proposed expansion will involve the construction of a further 5 open cycle gas turbines. As with the already approved OCGT power station immediately adjacent, there will also be transformers, switch gear and a substation which will take up much of the site. (The actual turbines will require 9 hectares and the infrastructure, 11 hectares).

12.1.2. The Receiving Environment

(Remainder of Farm 1183).

The site identified for the facility is presently undeveloped, however the area is serviced by a network of roads and railway lines which were put in place when the Atlantis area was initially developed as an industrial township (Figure. 12.2). Due to the general under utilisation of this industrial area, the road network is somewhat neglected. There is evidence of illegal dumping and use of more secluded areas for illegal drag racing (Figure 12.3) The undeveloped land is characterised by recent mobile dunes that are now fairly well vegetated by a mixture of alien and indigenous plant species (Figure 12.4). In general, the receiving environment tends to be fairly featureless, somewhat neglected and situated well away from any scenic routes, tourist destinations or any other places of cultural significance. The built environment of the area, although somewhat sparse due to slower than intentioned development, it is characterized by factories of varying sizes (Atlantis Diesel Engine Plant being the largest) interspersed with the road and rail network and undeveloped and neglected open land.

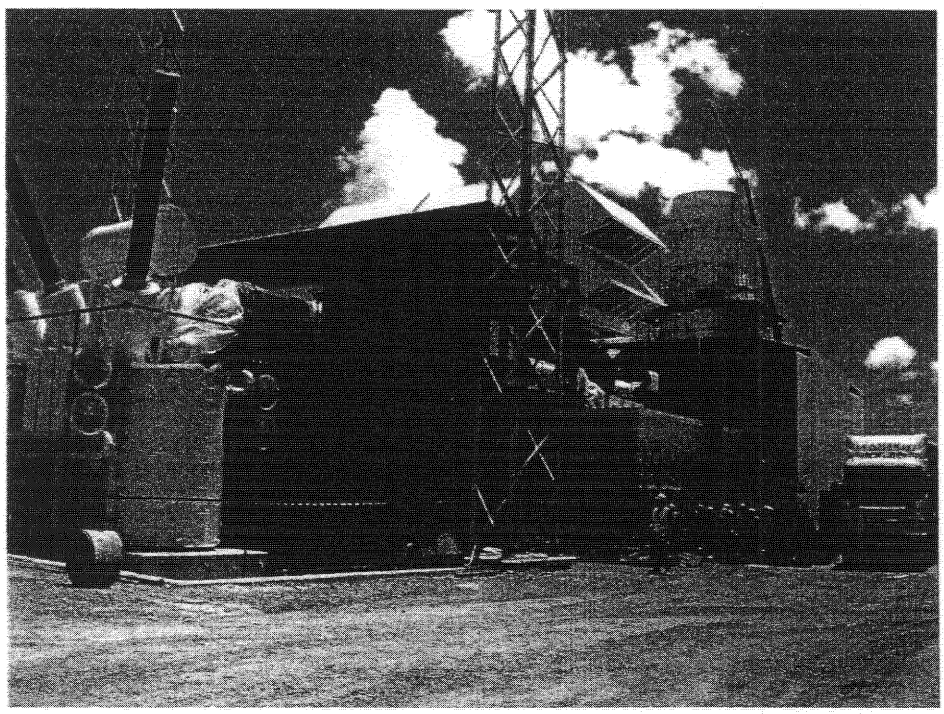

Figure 12.3: OCGT unit nearing completion on adjacent site. Those in the capacity expansion area will be similar.

Figure 12.4: Panorama over the study area (Alternative 1). Note recent vegetated dunes, deflation bays. Much of the area in the foreground is now the site of the approved OCGT power station

12.1.3. Methodology

The proposed power station sites (including the area for proposed expansion) were originally inspected by archaeologists Tim Hart (MA archaeology), Jayson Orton (MA archaeology) and Liesbet Schietecatte (MA, MSC Archaeology) (see Hart 2005). In addition a morning workshop and site visit to the proposed expansion area set up by Eskom and Bohlweki Environmental Consultants, was attended by Tim Hart.

Work carried out during the environmental management process has involved:

- inspection of proposed transmission line routes
- inspection of Alternative 2 (not utilized) to the south.
- site inspection by Tim Hart during the site preparation and construction phases of the work authorized so far.

Monitoring of the massive site clearing operation and dune leveling has revealed no evidence at all of any archaeological or paleontological material or any other generally protected material or structures confirming our initial assessment of the site and its immediate surrounds as being not sensitive in terms of heritage.

12.1.4. Limitations to the study

Ground surface visibility is not good in the proposed expansion area due to proliferation of exotic vegetation and accompanying leaf litter. In consideration of this restriction it is recommended that an archaeologist is appointed to walk the site at the start of the construction phase. This recommendation will be included in the EMP.

12.2. HERITAGE SENSITIVITY

12.2.1. Expansion area

Impacts are summarised in Table 12.1.

- **Palaeontology**

  Tiny fragments of calcified micro-fauna were observed. We believe that these are incidental and a measure of the background occurrences that are to be found on any land where soils are dominated by calcium carbonates. Monitoring of site clearing and dune leveling on the adjacent site has revealed no evidence of any palaeontological material. No calcretes were encountered – the dunes all being relatively recent windblown sands.

  Since the construction method does not involve deep excavation (the dunes will be levelled, the surface compacted and the turbines and infrastructure mounted on concrete beds and footings), impacts will be restricted to recently mobile surface sands.

- **Archaeology**

  No surface indications of archaeological material of any kind were located however, as a precaution a site inspection should be carried out during site preparation after vegetation has been removed and the underlying sands are rendered visible as ephemeral archaeological material was observed in Alternative 2 to the south.

- **Built environment**

  There are no structures of any kind on the site. No impacts are expected.

- **Landscape**

  As with the already approved site, the expansion site is situated well away from any places of known heritage significance, tourist areas or historical sites. The surrounding areas are either undeveloped or occupied by factories. An independent visual impact assessment made certain recommendations with respect to the approved site. A large berm has been built around the margin of the site which effectively screens off the bulk of the infrastructure for both aesthetic and security reasons.

Since the site is already zoned for industrial development and is situated in an industrial area adjacent to an already approved power station, the proposed activity is considered to be appropriate.

Table 12.1. Evaluation of impacts on general heritage significance for the proposed OCGT capacity expansion.

	Without Mitigation	**With Mitigation**
Extent	Local	Local
Magnitude	Very low	Very Low
Duration	Long term	Long term
Significance	Very low	Very low
Status	Very low	Very Low
Probability	Unlikely	Unlikely
Confidence	high	
Reversibility	Irreversible	

12.3. Conclusion

Initial indications are that impacts to generally protected heritage are considered to be very low. This judgment is derived from increased knowledge of the area since the first EIA was completed in 2005. However, it is acknowledged that in terms of archaeology, surface visibility is fairly poor which means that this conclusion should be verified after site clearing has taken place. In terms of the knowledge that we have, the site is considered suitable for the proposed activity.

12.4. Recommendations

We are confident that impacts to heritage will be of very low significance, however, we suggest that consideration should be made to incorporating the following provisions in a future EMP for the site.

- It is suggested that both archaeological and palaeontological field verification be deferred until such a time the site clearing begins given the low likelihood of impacts occurring.

- An archaeologist and palaeontologist should be appointed to inspect any preliminary geotechnical excavations that are carried out.

- An archaeologist/palaeontologist be appointed to monitor any bulk excavations that take place on site during the construction process.

- Bulk excavation for laying of pipelines (diesel, gas or water) are subject to field proofing by an archaeologist.