

# HERITAGE IMPACT ASSESSMENT

submitted in terms of section 38(8) of the National Heritage Resources Act

prepared for

NADESON South Africa (Pty) Ltd

27 March 2013

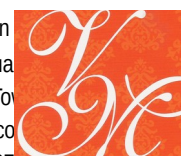
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DR 01145 Atlantis

Mamre - West Coast District Municipality, Western Cape

## Executive summary

Nadeson South Africa (Pty) Ltd appointed *vidamemoria* to conduct a heritage impact assessment for expansion of an existing borrow pit located along DR 01145 4.5km north of Mamre in the West Coast District Municipality, Western Cape. *vidamemoria* appointed Madelon Tusenius (Natura Viva CC) to conduct necessary archaeological specialist study (dated March 2013). Heritage impact assessment is submitted for comment in terms of Section 38(8) of the NHRAct as a component of an Environmental Management Programme (EMProg in terms of Mineral and Petroleum Resources Development Act 49 of 2008) to be submitted to the Department of Mineral Resources (DMR).

Low density scatter of archaeological remains in a secondary context within the eastern half of the borrow pit expropriation area indicates that the site is of low archaeological heritage significance. No further specialist archaeological studies or mitigation is recommended and expansion should be allowed to proceed.

## 1. Introduction

Nadeson South Africa (Pty) Ltd on behalf of the WCPA: Department of Transport and Public Works appointed Quahnita Samie (*vidamemoria*) to conduct a Notification of Intent to Develop (NID) application in terms of Section 38(1) of the National Heritage Resources Act (Act 25 of 1999) **to expand an existing borrow pit along DR 01145** near Mamre, West Coast District. NID dated 09 July 2012 was submitted to Heritage Western Cape (HWC) for consideration. Response dated 08 August 2012 (**case ref 120726TS42**) requested a *heritage impact assessment consisting of an archaeological study* (Refer Annexure A). *vidamemoria* appointed Madelon Tusenius (Natura Viva CC) to conduct the necessary archaeological specialist study (dated October 2012) as incorporated within this assessment.

The proposed action triggers Section 38(1) (c)(a) *activity that will change the character of a site exceeding 5 000 m<sup>2</sup>*. This assessment report is submitted for comment in terms of Section 38(8) of the NHRAct as a component of an Environmental Management Programme (EMProg) in terms of the Mineral and Petroleum Resources Development Act (49 of 2008) to be submitted to the Department of Mineral Resources (DMR). Notification as previously submitted to HWC (dated 31 May 2011) and response (dated 20 June 2011) confirmed the approach to be undertaken in submitting borrow pit notifications to HWC.

### Structure of assessment

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<i>Annexure B</i>	Mine plan	
<i>Annexure C</i>	Methodology for the preparation, operation and closure of borrow pit	
<i>Annexure D</i>	Archaeological specialist study conducted by Madelon Tusenius, Natura Viva CC (March 2013)	

## Site location and description

It is proposed to expand an existing borrow pit at DR01145/2.5/R/60 accessed from the R304 north of Mamre, West Coast District Municipality, Western Cape. The existing borrow pit has been excavated into the hillside just above the water level of a shallow valley. The area around the existing pit is cultivated land and pastures characterize the surrounding context. The site lies on the farm Waterkloof 1092 in private ownership of Mr O Kirstein and borrow pit coordinates are 33° 28' 21.04"S 18° 28' 13.81"E.

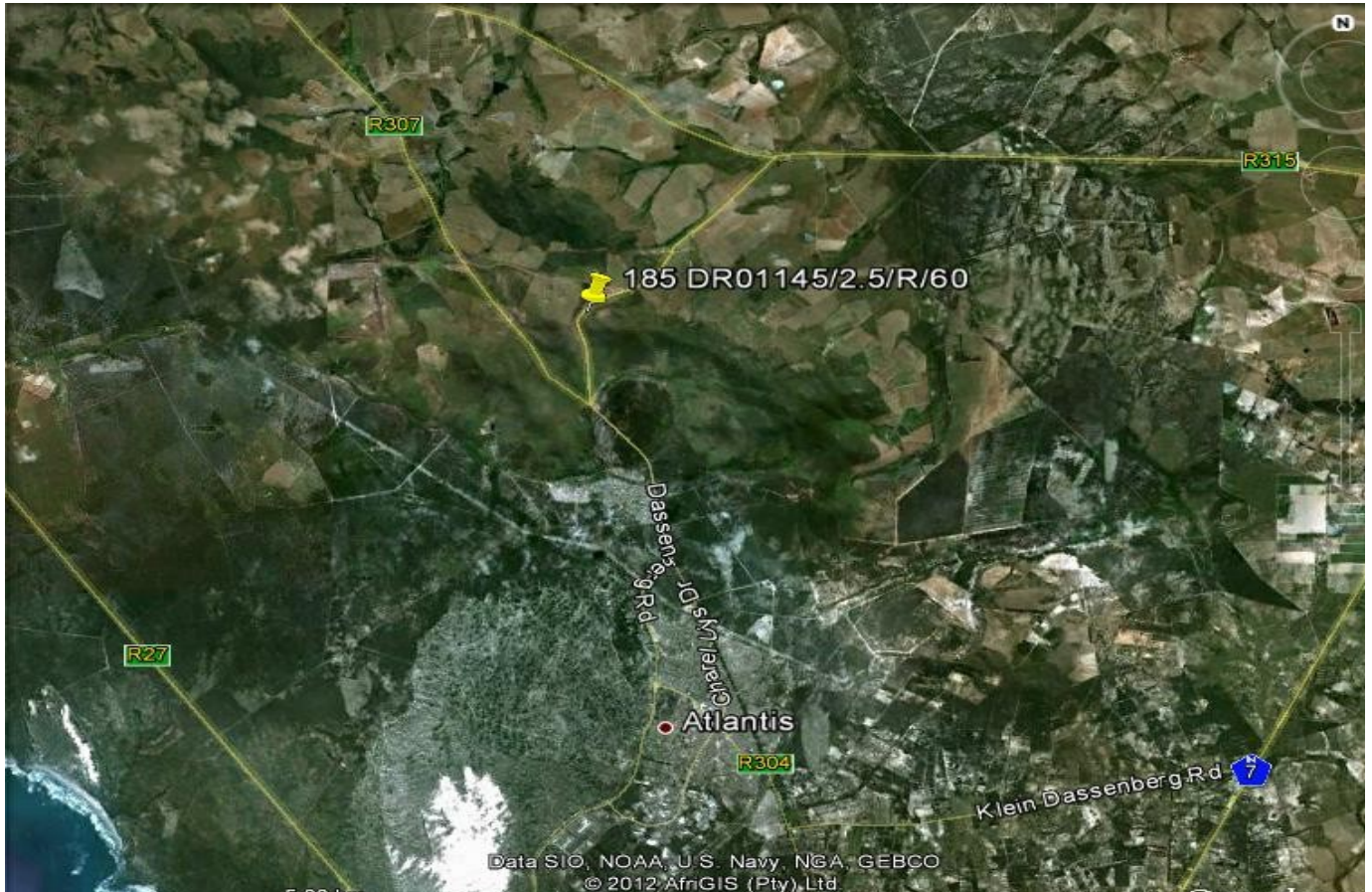


Figure 1: Locality plan





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Figure 4: Aerial view of existing borrow pit (Google earth image, October 2012)

## Description of proposals

In terms of the Minerals and Petroleum Resources Development Act, all mining activities including extraction of material from borrow pits and quarries requires authorisation from the Department of Mineral Resources (DMR). Where the WCPA: Dept Transport and Public Works is undertaking the maintenance and / or upgrading of roads under its control, no application needs to be submitted for a mining right or permit, however, as per provisions of Section 106(2) of the MPRDAct, they are required to prepare and submit an EMProg to DMR for their approval prior to the extraction of any material from a proposed borrow pit or quarry. According to the MPRDAct, mineral resources are in the custodianship of the State, where WCPA would temporarily acquire the right to mine the borrow pits, subject to approval by the DMR.

For a gravel road to be able to carry traffic safely and effectively an upper layer of gravel known as a wearing course, which meets specific technical requirements, has to be placed on the prepared roadbed. With time, the wearing course is eroded away by both traffic and the elements. This wearing course needs to be replaced in order to continue to deliver a safe and functional surface to road users. Implementation of regravelling activities requires extraction of suitable materials from identified material sources. During decommissioning, working areas are to be rehabilitated and revegetated. Material excavated from the borrow pits **at km 2.5 of DR 01145** will be used for the re-gravelling so as to benefit road users in terms of road safety and user economy as well as to minimize maintenance-related disruptions.

Summary of borrow pit	
Expropriation area	11 451 m <sup>2</sup>
Borrow pit area	11 451 m <sup>2</sup>
Maximum depth	2.3 m
Material description	granite of the Darling Granite Pluton of the Cape Granite Suite
Proposed usage after rehabilitation	Re-vegetation
Volume of material to be sourced	9 732 m <sup>3</sup>

Trial pit investigations and sampling were conducted by Nadeson at four proposed borrow pits considered as potential sources of material. Three were however excluded from consideration due to environmental concerns and / or unsuitability of material for purpose of regravelling.

Mine plans outlining extent of borrow pit and mining is attached as Annexure B. Methodology for the preparation, operation and closure of borrow pit is outlined in Annexure C.

West Coast District Municipality is to undertake work on behalf of the WCPA. Formal agreements are to be entered into between the landowner and the WCPA, with the municipality managing the site until decommissioning and closure. During decommissioning, the working area will be rehabilitated and revegetated as per the approach outlined in the mining plan. WCPA's liability for the site persists until such time as a Closure Certificate has been issued by the DMR.

## **Results of consultation**

DMR has outlined requirements for public participation in terms of the Minerals and Petroleum Resources Development Act (Act 28 of 2002) for exempted organs of state. This includes liaison with the landowner, notification of the immediate neighbours and either an on-site advertisement or advertisement in the local newspaper. The WCPA has indicated a commitment to developing and maintaining good relations with landowners and therefore landowners concerns are incorporated into the final agreement.

The public consultation process for this project has involved consultation with the landowners and neighbours, and the advertising of the proposed activity in the local newspaper. No heritage related comments and / or concerns were received.

### *Requests / concerns of owner:*

- None noted

## 2. Heritage resources

### Identification of heritage resources

Proposed site and context do not fall within conservation or protected heritage areas, and is not located near to or visible from any protected heritage sites. The site does not fall within a historical settlement or townscape and does not contribute towards rural or natural landscape of cultural significance. The site is therefore not considered as an integral component of the cultural landscape.

Dr John Almond conducted a desktop palaeontological field assessment (dated June 2012) and provided geological context, palaeontological heritage and palaeontological sensitivity. The borrow pit falls within Darling Granite of Late Precambrian / Cambrian age considered to be of no palaeontological significance. No further palaeontological assessment was recommended.

Dave Halkett conducted a desktop archaeological investigation outlining possibility for archaeological material to be affected. Madelon Tusenius conducted a field assessment. Fewer than 20 dispersed stone artefacts were observed in the eastern half of the site and consisted of Later Stone Age flakes (mostly silcrete) as well as a few artefacts of indeterminate age. The latter included two flaked quartzite pebbles. No other archaeological remains such as fragments of pre-colonial pottery which could indicate the presence of herders were noted. The stone artefacts appear to have been washed down the slope and are thus in a secondary context (Tusenius 2013: 2).

The site has no known historical, social, or spiritual significance. No built environment issues and / or cultural landscape issues have been identified. Archaeological significance has been identified as low and no further heritage resources were identified.

### Heritage significance

The low-density scatter of archaeological remains indicates that the site of the proposed extension is of low archaeological heritage significance. The stone artefacts appear to have been washed down the slope and are thus in a secondary context (Tusenius 2013: 2).

The context within which the site lies is identified as possessing low intrinsic heritage value. No heritage resources were identified and no sensitive landscapes were identified. Proposed expansion site is transformed and possesses no known historical, social or spiritual significance. The site is thus considered to possess a very low level of intrinsic heritage value.

### Heritage indicators

Heritage indicators identified aim to ensure that significance would not be adversely impacted on by the proposed development. Indicators concern impact on the cultural landscape, identified heritage resources and visual impact.

No sensitive landscapes, archaeological or palaeontological material of significance were identified. Landscaping and rehabilitation of the site should commence as soon as advancing face and sufficient working/loading area moves away from an area that has been mined out.

### 3. Assessment of impacts

An assessment of the potential development impacts on significance is undertaken using relevant assessment criteria as well as response to indicators. Assessment of impacts on palaeontological significance has been provided as well as consideration of the cultural landscape and assessment of cumulative impacts.

**Cultural landscape:** Expansion of existing borrow pit will not result in a negative impact on the cultural landscape. The landscape within which the site lies possesses low intrinsic heritage value and no heritage resources were identified within the immediate context. The site and its immediate context are considered as being of low heritage significance. No heritage resources will be impacted and the overall status of the impact is considered as low.

**Archaeological and palaeontological impact:** No impact would occur as a result of expansion. The site has been sufficiently recorded and requires no further recording before borrow pit activity occurs is required.

**Visual impact:** Low intensity visual impact is limited to the immediate surroundings and will be limited to operational phase.

**Cumulative impact:** The proposed moderate intensity intervention lies within a disturbed context with degraded conditions. No new roads would have to be constructed as the borrow pit is accessed directly off main / divisional roads or via existing access tracks. The borrow pit and access tracks would be fenced for the duration of the mining activities. There will be no site buildings located at the borrow pit site. No long-term traffic increase will be experienced. Low impact is associated with impact of increased personnel and cumulative impacts on borrow pit footprint and surroundings.

**Site rehabilitation:** Vegetation and clayey sand up to 0.5m thick should be cleared from the road reserve and stockpiled for later rehabilitation if necessary before excavation of the potential gravel road wearing course material. Area surrounding the proposed borrow pit must be smoothed out and clayey sand and vegetation returned to the area to ensure an aesthetic appearance is returned to the site.

**Impact relative to sustainable social and economic benefits:** The project will result in social and economic benefits for the local community in terms of service provision and employment opportunities.

Site is considered to possess a very low level of intrinsic heritage value and overall status of impact is considered as low.



## 4. Discussion

During the course of borrow pit excavations, operations should be planned in such a way that the amount of work that will be necessary for the finishing off of the borrow pit is reduced as far as possible. Indiscriminate excavation without due regard for the desired final shape of the borrow pit should not be permitted and should be rectified immediately. Timing of rehabilitation is important as rehabilitation of disturbed areas should ideally be programmed to occur as soon as practically possible following cessation of work in a specific area. The period between cessation of activities associated with mining of materials and the onset of rehabilitation for that area should ideally not exceed 1 month. Rehabilitation operations should ideally be conducted in parallel with extraction. Accordingly, progressive rehabilitation, in which depleted sections of a borrow pit are reclaimed while extraction is ongoing in other sections of the same pit is encouraged.

Site development, operation, mining and closure guidelines outlined with the Environmental Management Programme provides detailed guidance for the preparation, operation and decommissioning of the site. Measures outlined should be adhered to in order to minimise potential negative impacts. It is recommended within the EMProg that an environmental control officer or suitable experienced engineer monitors the preparation, operational and decommissioning of the borrow pit so as to ensure that mitigation and rehabilitation measures are adhered to.

Low-density scatter of archaeological remains in a secondary context in the eastern half of the site are indicates that the site is of low archaeological heritage significance. No further archaeological studies or mitigation are therefore recommended. (Tusenius 2013: 9).

No significant impact on archaeological resources is expected and no further archaeological studies or mitigation are recommended. If any human remains are found during the development of the proposed extension, work in that area must cease and the South African Heritage Resources Agency (SAHRA) must be notified immediately. (Tusenius 2013: 9).

### **Recommendations**

It is therefore recommended that:

1. expansion of exiting borrow pit be supported
2. comment be issued that proposed activity may proceed in terms of Section 38(8) of the NHRAct

References:

- ASAPA Aggregate and Sand Producers Association of Southern Africa (30 September 2009): *The issue of borrow pits being used in the aggregate and sand industry* accessed online
- Aurecon / Nadeson JV (July 2011): *Draft environmental management programme, summary report and mine plan*
- Galliers R M (26 August 2010): *Geotechnical investigations and geological strategic gravel pit summary report* for Aurecon South Africa
- Heritage Western Cape (August 2012): *Minimum Standards For Phase 1 Archaeological Impact Assessment (Aia) Reports*
- Tusenius M (March 2013): *Archaeological Impact Assessment*
- vidamemoria (July 2012): *Notification of Intent to Develop*