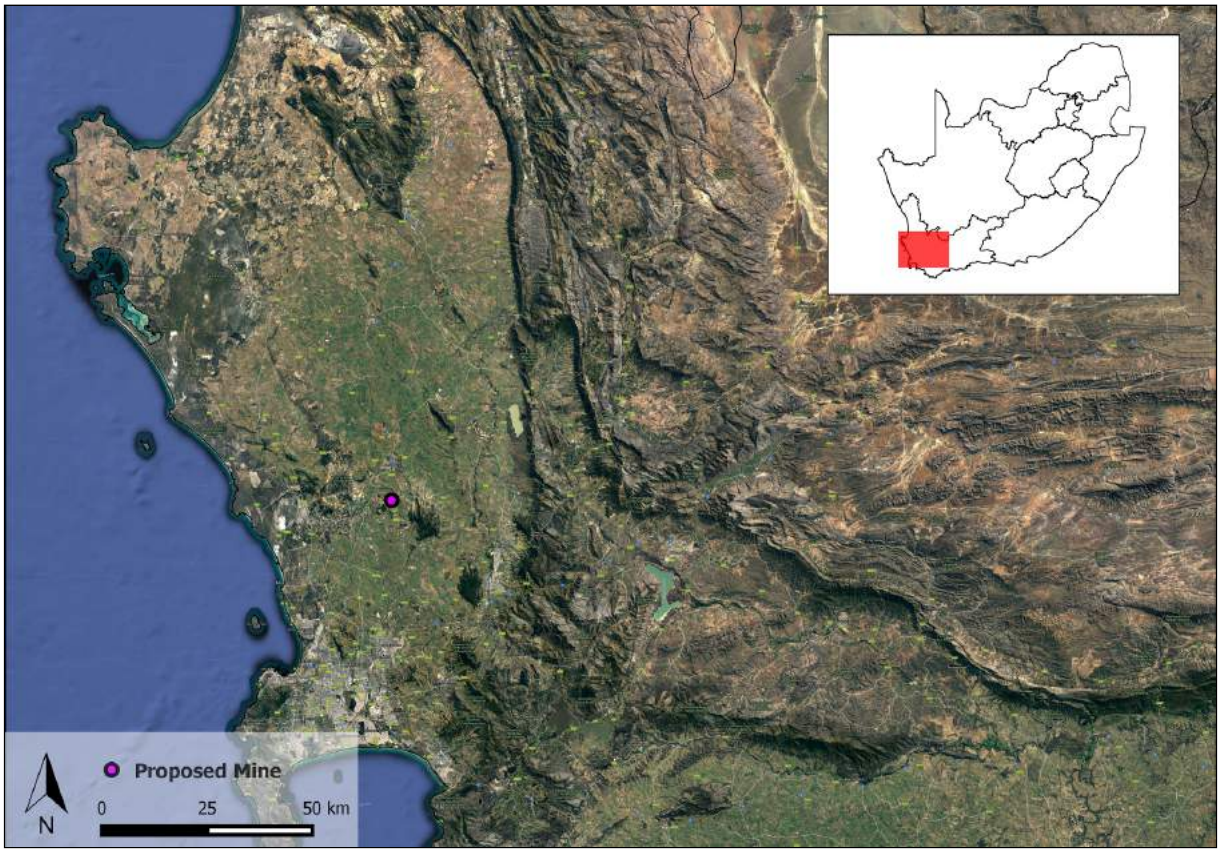
SPECIALIST ARCHAEOLOGICAL ASSESSMENT

In terms of Section 38(8) of the NHRA for the

PROPOSED EXTENSION OF AN EXISTING GRANITE QUARRY

Portion 1 of Farm 814 and Remainder Farm 830, Malmesbury

HWC Ref: 16072706AS0823E



Prepared by CTS Heritage

CEDAR TOWER SERVICES

for

CK Rumboll

November 2016

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EXECUTIVE SUMMARY

Application is made for a granite quarry on a portion of Farm 814/1 and a portion of remainder Farm 830. There is an existing quarry (currently not in use) on a portion of remainder farm 830 that has very low botanical conservation value due to the high level of transformation. This quarry will form part of the proposed mining area.

The area proposed for mining is located on the boundary of two farms located along the R302, hidden from the road by a series of low-lying hills, situated approximately 8 km south of Malmesbury. As with the surrounding farms, the farms in question were historically used for grain cultivation and as such, have been much transformed (Cape Farm Mapper). Predominant land use in the immediate vicinity includes grain and wine cultivation, natural conservation areas, urban development and some mining.

The area proposed for development was visited by two archaeologists on Friday 18 November 2016. Visibility on site was excellent as the crops had just been harvested. Despite this excellent visibility, no archaeological sites were identified during the foot survey. However five silcrete Earlier and Middle Stone Age artefacts were identified. These artefacts were located on the surface and all were out of context. Each artefact was photographed and its GPS location recorded. All the artefacts identified were graded Not Conservation Worthy. The foot survey conducted provided a good characterisation of the heritage resources in the area and our findings were consistent with that of other studies in the immediate vicinity (Table 2).

Granite will be accessed at the quarry face by drilling and blasting at an incline of 10 degree holes using a down hole hydraulic drill rig. The holes will be drilled in three single rows with an 89mm diameter and extended to 1 meter below the quarry floor. The holes are then filled with explosives. The quarry sides will be benched to allow for ease of access and stability. The benches will be rehabilitated with the overburden removed prior to the quarrying.

Five archaeological artefacts were identified during the foot survey of the proposed development area. These artefacts were clearly out of context as a result of the extensive cultivation of the proposed development area. Due to their lack of context, the artefacts identified are recommended as being Not Conservation Worthy.

The proposed development will not negatively impact on any significant archaeological resources.

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1. INTRODUCTION

1.1 Background Information on Project

Application is made for a granite quarry on a portion of Farm 814/1 and a portion of remainder Farm 830. There is an existing quarry (currently not in use) on a portion of remainder farm 830 that has very low botanical conservation value due to the high level of transformation. This quarry will form part of the proposed mining area. An application in terms of the Mineral and Petroleum Development Act, Act 28 of 2002, will also be submitted to obtain the necessary approvals for a mining license and to address environmental issues. CK Rumboll is the Environmental Assessment Practitioner managing the process for this project.

The intent is to re-use the topsoil on the quarry benches to create a cultivatable surface area of ±2.85 ha of productive land. Velvet Mountain Aggregates (VMA) want to start quarrying from 2017 once all approvals are in place. The life of the mine is 30 years at various depths depending on the surface contours. Economies of scale and prevailing commodity prices will determine the final depth of the opencast operations. VMA has budget to extract approximately 280 000 tons in 2018 that could further be increased to 380 000 tons a year, subject to market demand. The opportunity exists in the concrete market where there is a shortage of 19mm stone. When using granite stone in concrete, it improves the Mpa strength dramatically, hence the market demand for granite. Velvet Mountain Aggregates will also sell 6.7mm, 9.5mm and 13.2mm into the market.

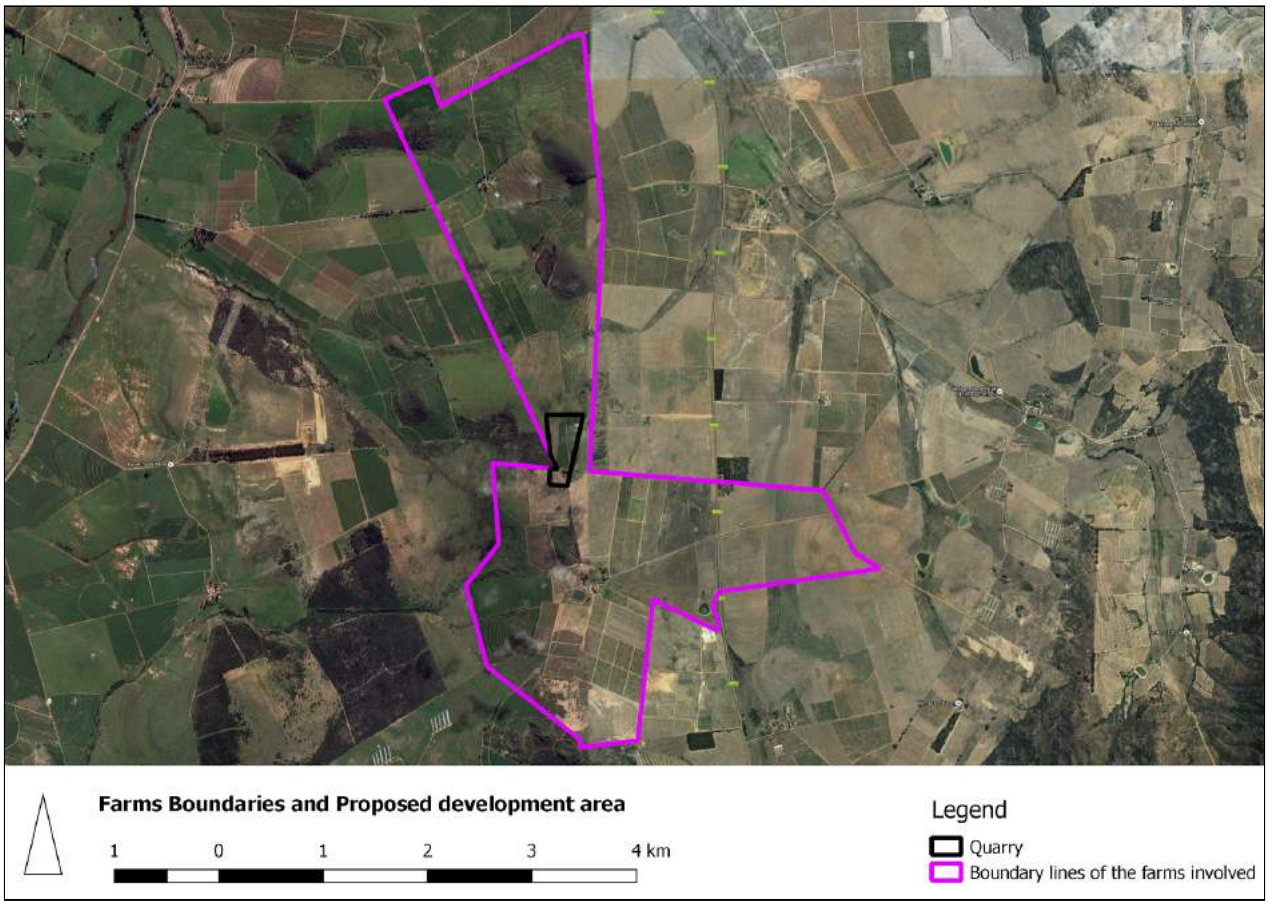

Figure 1: A portion of Farm 814/1 and a portion of remainder Farm 830 with the proposed development indicated

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1.2 Description of Property and affected Environment

The area proposed for mining is located on the boundary of two farms located along the R302, hidden from the road by a series of low-lying hills, situated approximately 8 km south of Malmesbury. As with the surrounding farms, the farms in question were historically used for grain cultivation and as such, have been much transformed (Cape Farm Mapper). Predominant land use in the immediate vicinity includes grain and wine cultivation, natural conservation areas, urban development and some mining.

2. METHODOLOGY

2.1 Scope of Work

The purpose of this Heritage Impact Assessment (HIA) is to satisfy the requirements of section 38(8), and therefore section 38(3) of the National Heritage Resources Act (Act 25 of 1999). This HIA is drafted in response to the "Response to NID" letter received from HWC dated 5 September 2016. HWC requires that an HIA be submitted with specific reference to impacts on archaeological heritage resources.

2.2 Summary of steps followed

- The landowners were contacted for access to the property
- The site was visited on Friday 18 November 2016 by two archaeologists
- The proposed quarry area was traversed on foot in transects and any identified archaeological resources were recorded using a digital camera and a Garmin GPS
- The farm werfs were visited and photographed

3. HISTORY AND EVOLUTION OF THE SITE AND CONTEXT

3.1 Definition of the property

The purpose of this application is for the Rezoning of a portion of Farm 814/1 (±14.1ha) and a Portion of farm RE/830 (±4.5ha) from Agricultural Zone 1 to Industrial Zone 4, in order to operate a granite quarry on a ±18.6ha site. The proposed development will entail the clearance of existing vegetation to execute excavations of granite (15.7 Ha) through opencast dip-mining for 30 years (production period).

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Figure 2: Aerial Image of proposed quarry area

3.2 Archaeological and Historical Background

The area has been extensively cultivated and the existing quarry on Doornkraal 830 had already been in use in 2004. A total of 13 Archaeological Impact Assessments (AIAs) have been conducted within 10km of the area proposed for development, the earliest having been done in 1995, giving a relatively reliable characterisation of the area. As has been discussed in these reports, it is common to find Stone Age artefactual material across the landscape, as well as historical heritage resources such as buildings and farmsteads. The total number of previously recorded heritage resources located within the inclusion zone of 10km is 11, the majority being Grade II Provincial Heritage Sites in the town of Malmesbury.

Two Archaeological Impact Assessments (AIA) have previously been undertaken in the area immediately surrounding the proposed development area. In Deacon's (2007, NID 3926) assessment, he noted that the area in general has been extensively disturbed through agricultural activities. In particular, the area assessed by Deacon (2007) had been disturbed by sand mining, however this had provided good exposures of the subsurface. No archaeological materials were observed in sections through undisturbed ground or in the piles of disturbed ground. Deacon (2007) concluded that the proposed development will have minimal impact on archaeological

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resources. In 2006, Kaplan (NID 4422) identified several low density Later Stone Age scatters (SID 34056 and 34057) on a neighbouring property, including several pieces of pottery. These resources were determined to have "medium-low significance" and have as such been graded IIIc. Kaplan (2006) also identified Earlier Stone Age artefacts on the same property of low local significance. No previous Palaeontological Impact Assessments (PIA) have been done in this area. However according to the SAHRIS Palaeosensitivity Map (Figure 3), the area is underlain by formations of low to no fossil sensitivity. It is therefore unlikely that the proposed development will impact on significant palaeontological heritage.

Table 1: Sites previously identified within the vicinity of the proposed mine (Figure 5)

Site ID	Site no	Full Site Name	Site Type	Grading
34056	OHK1	Olyvenhoek 1	Artefacts	Grade IIIc
34057	OHK2	Olyvenhoek 2	Artefacts	Grade IIIc

Table 2: HIA's previously conducted in the vicinity of the proposed mine (Figure 5)

Nid	Report Type	Author/s	Date	Title
3926	AIA	Hilary Deacon	13/07/2007	Archaeological Impact Assessment: St Dicks Aeroport.
4414	AIA	Jonathan Kaplan	03/12/2001	Contract No. C683: Poverty Alleviation Project P04-009-00/1: Kalbaskraal and Chatsworth/Riverlands Access Roads
4422	AIA	Jonathan Kaplan	01/08/2006	Phase 1 Archaeological Impact Assessment Proposed Sand Mining on a Part of the Farm Olyvenhoek 818, Remainder Malmesbury, Western Cape Province

Figure 5: Panoramic of the area for the proposed granite quarry

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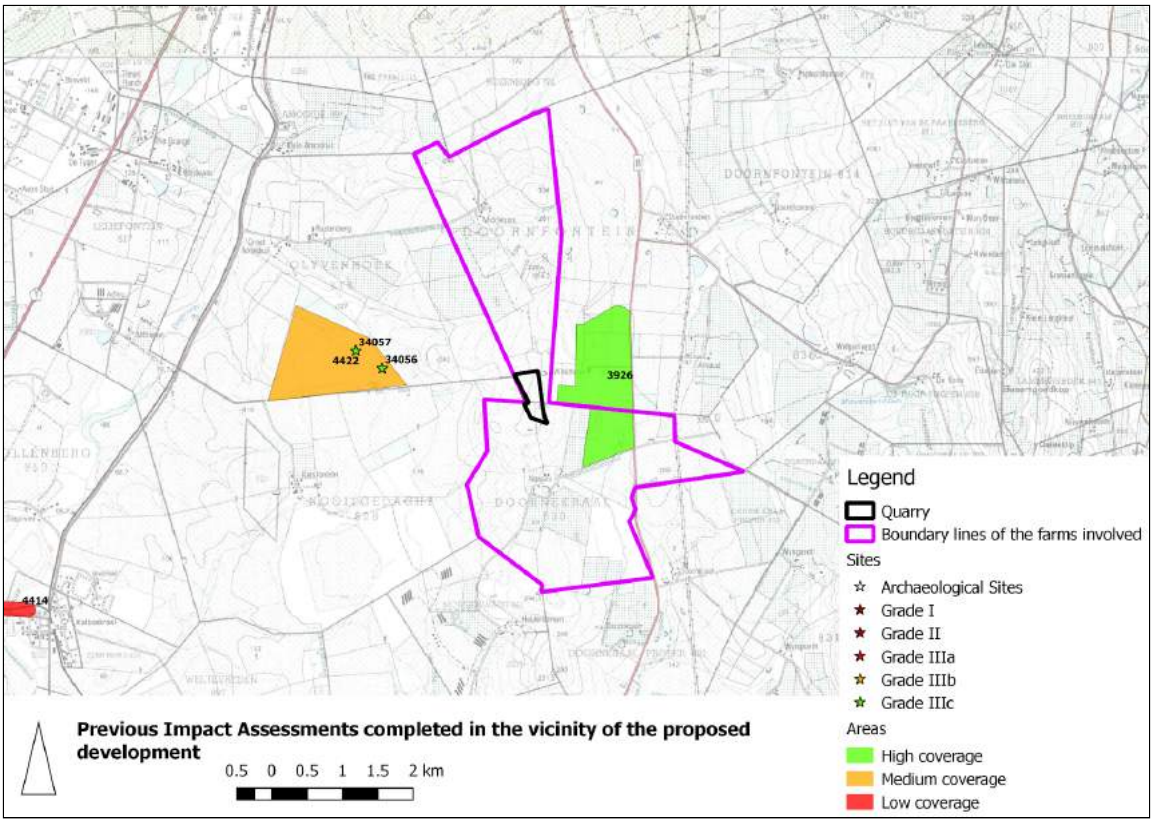

Figure 6: Spatialisation of known heritage resources in the vicinity of the proposed mine

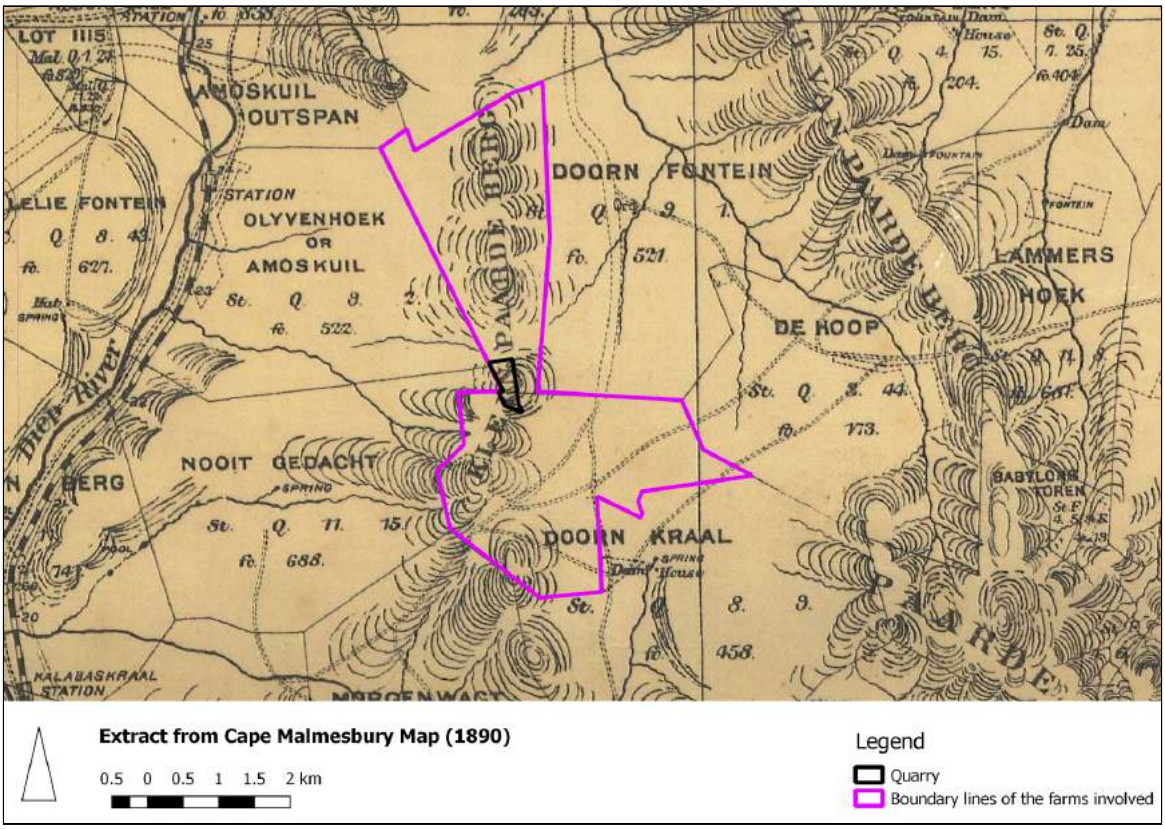

Figure 7: Extract from Cape Malmesbury Map indicating the proposed mine area (1890 - 1900)

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4. DESCRIPTION OF HERITAGE RESOURCES

4.1 Details of Sites

The area proposed for development was visited by two archaeologists on Friday 18 November 2016. Visibility on site was excellent as the crops had just been harvested. Despite this excellent visibility, no archaeological sites were identified during the foot survey. However five silcrete Earlier and Middle Stone Age artefacts were identified. These artefacts were located on the surface and all were out of context. Each artefact was photographed and its GPS location recorded. All the artefacts identified were graded Not Conservation Worthy. The foot survey conducted provided a good characterisation of the heritage resources in the area and our findings were consistent with that of other studies in the immediate vicinity (Table 2).

Table 3: Artefacts identified during the foot survey

SAHRIS Site ID	Artefact Number	Description	Latitude	Longitude	Grading
99108	NAS001	Silcrete Flake	33.54581	18.72106	NCW
99109	NAS002	Silcrete Flake	33.54550	18.72054	NCW
99110	NAS003	Silcrete Flaked Piece	33.54573	18.72048	NCW
99111	NAS004	Silcrete Flaked Piece	33.54507	18.71912	NCW
99112	NAS005	Silcrete Flaked Piece	33.54319	18.72182	NCW

4.2 Photographic Record

Figure 8: View from old quarry looking south

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Figure 9: View from old quarry looking south-west

Figure 10: Context of find NAS001

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Figure 11: Profile of drainage trench indicating granite pebbles, but no archaeological sediments

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Figure 12: View from quarry looking east

Figure 13: Piles of granite cobbles, likely originating from the old quarry. No archaeological material was found here

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Figures 14 and 15: NAS001 and NAS001 in its original location


Figures 16 and 17: NAS002 and NAS003

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Figures 18 and 19: NAS004, both sides

Figures 20 and 21: NAS005, both sides

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Figure 22: View of the location of the proposed quarry looking towards Malmesbury

4.3 Mapping and spatialisation of heritage resources

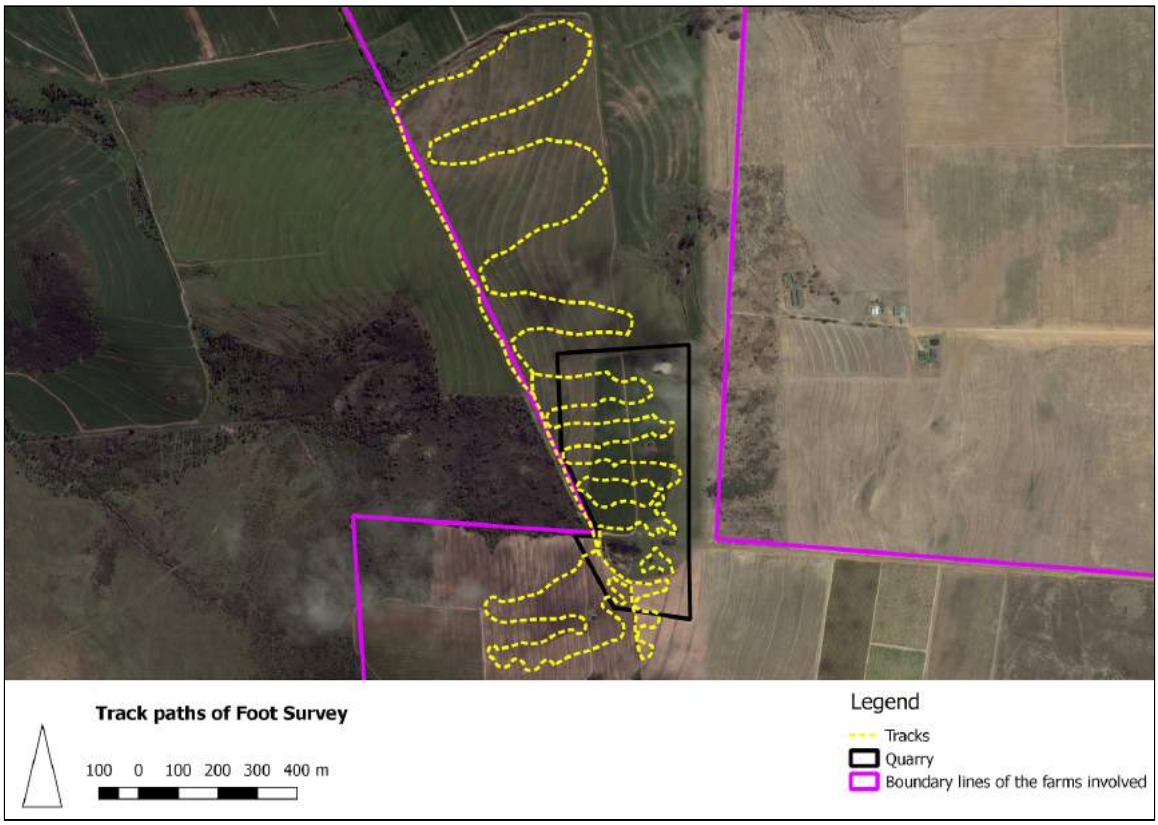

Figure 23: Track paths of foot survey

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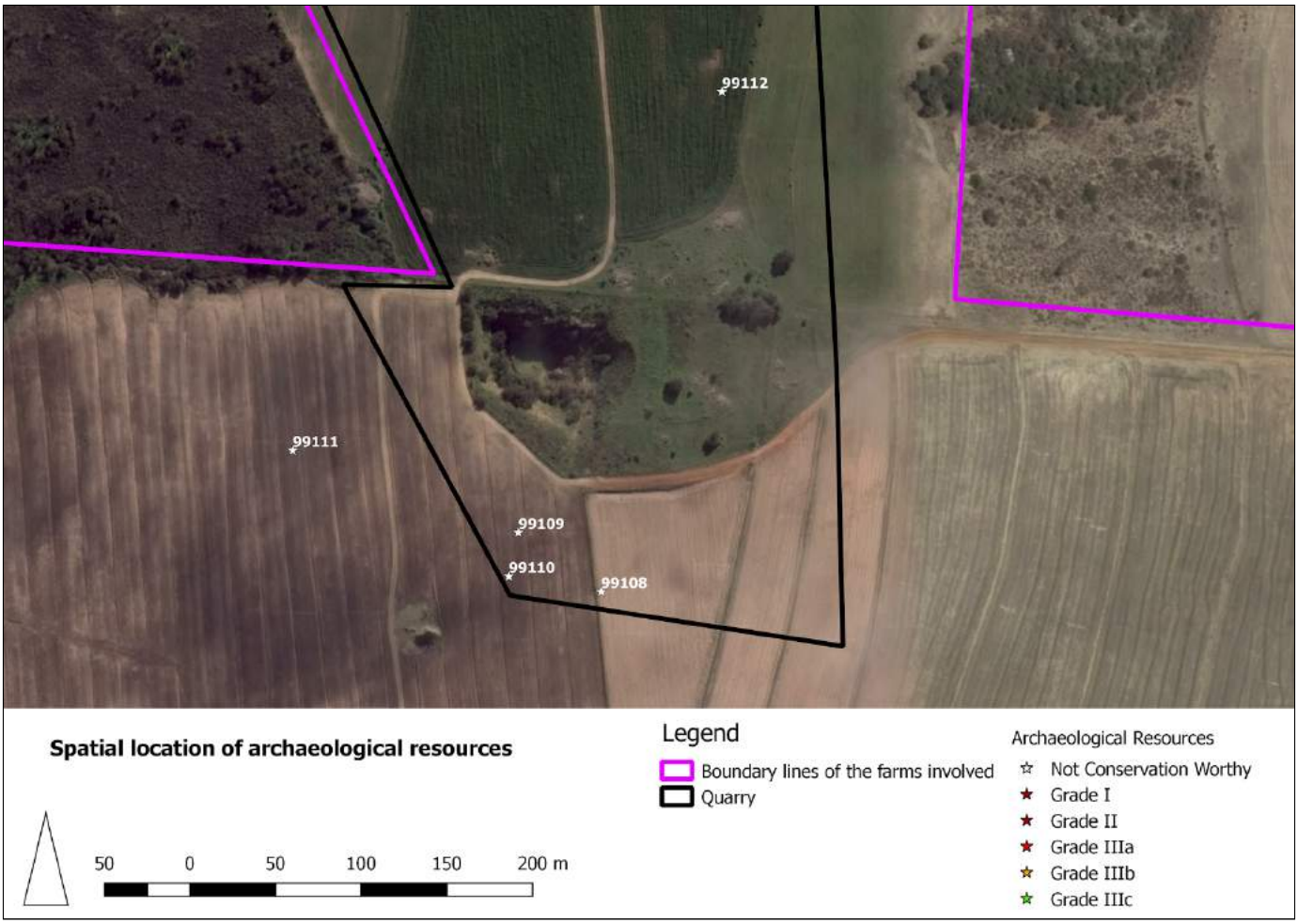

Figure 24: Spatial location of identified artefacts in relation to the proposed quarry

5. ASSESSMENT OF THE IMPACTS OF THE DEVELOPMENT

Granite will be accessed at the quarry face by drilling and blasting at an incline of 10 degree holes using a down hole hydraulic drill rig. The holes will be drilled in three single rows with an 89mm diameter and extended to 1 meter below the quarry floor. The holes are then filled with explosives. The quarry sides will be benched to allow for ease of access and stability. The benches will be rehabilitated with the overburden removed prior to the quarrying.

As no heritage resources of significance have been identified within the proposed development footprint, no direct impacts to heritage resources are anticipated.

6. DISCUSSION OF SIGNIFICANCE

Five archaeological artefacts were identified during the foot survey of the proposed development area. These artefacts were clearly out of context as a result of the extensive cultivation of the proposed development area. Due to their lack of context, the artefacts identified are recommended as being Not Conservation Worthy.

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The proposed development will not negatively impact on any significant archaeological resources.

7. CONCLUSION AND RECOMMENDATIONS

The proposed development of a granite quarry on portion 1 of Farm 814 and Remainder of Farm 830 will have no direct impact on significant heritage resources. No archaeological resources were identified within the proposed development footprint.

As the proposed quarry is not visible from the R302, nor from either Farm werf on the property, the following recommendations are made:

1. There is no heritage objection to the proposed development

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8. REFERENCES

Impact Assessment References				
Nid	**Report Type**	**Author/s**	**Date**	**Title**
3926	AIA	Hilary Deacon	13/07/2007	Archaeological Impact Assessment: St Dicks Aeroport.
4405	AIA	Jonathan Kaplan	01/12/2006	Phase 1 Archaeological Impact Assessment: Proposed Development Schoonspruit Country Estate Portion of Erf 317, Portion of Erf 7455 & Erf 882, Malmesbury, Western Cape Province
4407	AIA	Jonathan Kaplan	15/06/2007	Phase 1 Archaeological Impact Assessment: Proposed Development Precinct 2, 3, 4, 5 & 6 Malmesbury, Western Cape Province: Portion of Erf 317, a Portion of Erf 7455, a Portion of Farm Oranje Fontein 1113, Portion of Farm 771 Rozenburg, Portion of Portion 1
4414	AIA	Jonathan Kaplan	03/12/2001	Contract No. C683: Poverty Alleviation Project P04-009-00/1: Kalbaskraal and Chatsworth/Riverlands Access Roads
4416	AIA	Jonathan Kaplan	11/02/2005	Phase 1 Proposed Development of a Portion of Farm 688 Malmesbury Western Cape Province
4421	AIA	Sarah Wurz	01/01/2006	Heritage Impact Assessment: Scoping Study for Dudleyvale Farm No 876, Malmesbury, Western Cape
4422	AIA	Jonathan Kaplan	01/08/2006	Phase 1 Archaeological Impact Assessment Proposed Sand Mining on a Part of the Farm Olyvenhoek 818, Remainder Malmesbury, Western Cape Province
6499	AIA	Dave Halkett	01/03/1995	Report on the Phase One Archaeological Investigation of Aspects of the Site Known as Die Bron in Malmesbury
6770	AIA	Jonathan Kaplan	01/01/2007	Phase 1 Archaeological Impact Assessment for a Proposed Housing Development on Portion 2 of Farm 690 and Remainder of the Farm Klipfontein 688 (Glen Lily) Malmesbury, Western Cape Province
7276	AIA	Hilary Deacon	17/12/2008	Archaeological and Heritage Impact Assessment: Diep and Platteklip River Clearing Project (Malmesbury)
7403	AIA	Hilary Deacon	17/12/2008	Archaeological and Heritage Impact Assessment: No Go River Clearing Project (Moorreesberg)
8109	AIA	Jonathan Kaplan	01/10/2008	Phase 1 Archaeological Impact Assessment the Proposed Swartland Shopping Mall Remainder Farm Tweefontein No. 696, Erf 2654 (Portion of Erf 327), Erf 9215 (Portion of Erf 2654) & Portion of Erf 327 Malmesbury

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