

**Phase 1 Archaeological Impact Assessment of the
Wildekawer pivot extension on the farm River Bend
Estate 291, Barkly West, NC Province.**

Lloyd Rossouw
National Museum Bloemfontein
PO Box 266
9300
08 / 03 / 2017

Executive Summary

A Phase 1 Archaeological Impact Assessment was carried out on a section of farmland as part of an application by the Wildeklawer agricultural company to extend existing irrigation pivots onto a previously undisturbed section of land, located next to the Vaal River on the farm The River Bend Estate 291 near Barkly West, Northern Cape Province. The study area consists of about 75 ha of used farmland (irrigation pivots) and approximately 30 ha of relatively undisturbed veld flanking the Vaal River. The terrain has been extensively altered by previous and ongoing farming activities. Impact on potentially archaeological remains within the existing farming area (pivots and access roads) is considered to be negligible because of prior disturbances. Given the overall high archaeological significance of the Vaal's overbank sediments, there is a moderate to high probability that it may contain intact Stone Age lithics. According to the project manager, the new pivot areas will be leveled by infilling of topsoil transported from existing pivot areas. As a result of this capping, impact on potentially intact Stone Age archaeological remains underlying the superficial sandy deposits near the river is considered to be low. In this regard the terrain is regarded as of low archaeological significance and is assigned the rating of **Generally Protected C (GP.C)**. Should any excavations directly affect previously undisturbed (sub-surface) gravel/overbank deposits, it is recommended that scheduled archaeological monitoring of freshly exposed, *in situ* gravel deposits by a qualified specialist is included as part of the overall management plan for the project.

Table of Contents

Executive Summary.....	2
Introduction.....	4
Description of the Affected Area	4
Background	5
Field Assessment.....	6
Impact Statement.....	6
Recommendations	6
References.....	7
Tables and Figures.....	8

Introduction

A Phase 1 Archaeological Impact Assessment was carried out on a section of farmland as part of an application by the Wildeklawer agricultural company to extend existing irrigation pivots onto a previously undisturbed section of land, located next to the Vaal River on the farm The River Bend Estate 291 near Barkly West, Northern Cape Province (**Fig. 1**).

The study is required in terms of Section 38 of the National Heritage Resources Act 25 of 1999 as a prerequisite for any development which will change the character of a site exceeding 5 000 m² in extent. The task involved identification and mapping of possible archaeological heritage within the proposed project area, an assessment of their significance, related impact by the proposed development and recommendations for mitigation where relevant.

Terms of Reference

- Identify and map possible archaeological sites and occurrences using available resources.
- Determine and assess the potential impacts of the proposed development on potential archaeological resources;
- Recommend mitigation measures to minimize potential impacts associated with the proposed development.

Methodology

The archaeological significance of the affected area was carried out on the basis of existing field data, database information and published literature. This was followed by a field assessment by means of a pedestrian survey. A Garmin Etrex Vista GPS hand model (set to the WGS 84 map datum) and a digital camera were used for recording purposes. Relevant archaeological information, aerial photographs and site records were consulted and integrated with data acquired during the on-site inspection. The study area is rated according to field rating categories as prescribed by SAHRA (**Table 1**).

Description of the Affected Area

1 : 50 000 scale topographic map: 2824 DA Barkly West

Coordinates of area surveyed (**Fig. 2**):

A) 28°33'4.43"S 24°34'23.70"E

B) 28°32'52.71"S 24°34'54.26"E

C) 28°33'41.31"S 24°35'9.50"E

D) 28°33'38.88"S 24°34'33.79"E

The study area consists of about 75 ha of used farmland (irrigation pivots) and approximately 30 ha of relatively undisturbed veld flanking the Vaal River that is underlain in places by thick deposits of wind-blown sand (**Fig. 3**).

Background

The heritage footprint in the area is primarily represented by Stone Age sites and assemblages, either capped or occurring as surface occurrences, rock engraving sites, glacial pavements and structural remnants dating back to the Kimberley Diamond Rush of the 1870's when Barkly West was initially known as Klip Drift and then Parker, after Stafford Parker, who first informed the world of the existence of diamond mines in the area.

The early exploitation of the Vaal River Gravels by diamond diggers and the resulting development of infrastructure in the region exposed a wealth of archaeological and palaeontological sites that contributed to the development of prehistoric archaeology in southern Africa. As a result, Stone Age archaeological sites in the region are generally associated with, and mostly restricted to a variety of lacustrine contexts as well as the alluvial gravel terraces of the Vaal River (Beaumont and Morris 1990; Helgren 1978; Sohnge *et al.* 1937) (**Fig. 4**). Some important Vaal River sites located within 15 km of study area include

- Fossil remains in alluvial gravel packages at Longlands, Waldecks Plant and Gong Gong;
- an abundance of Fauresmith and Acheulian artifact assemblages found in an andesite cobble and worn exotics matrix capped by a thick layer of wind-blown sand at Nooitgedacht near The Bend on the Vaal;
- the famous Nooitgedacht Glacial Pavements situated near the banks of the Vaal River consisting of multiple glacial striations on Ventersdorp andesite. In addition to the glacial striations the site is also known for its rock engravings (**Fig. 5**);
- ESA and MSA stone tools uncovered during mining operations between 1930 and 1955 at Pniel (Powers Site) near Nooitgedacht (**Fig. 6**). Fossil material

includes proboscideans (*Elephas recki*), equids (*Equus capensis*), suids (*Metridiochoerus*, *Phacoechoerus*) and an assortment of bovids (Cooke 1949; Maglio and Cooke 1978);

- Canteen Koppie, which is the location of the first alluvial diamond diggings in South Africa that continued up until the 1920's (Forsman *et al.* 2010).. Proclaimed a National Monument in 1948, the alluvial gravels capping the underlying bedrock at the site has yielded a wealth of ESA stone tools while MSA lithics have been recovered from within the layer of red sands overlying the terrain.

Field Assessment

The terrain has been extensively altered by previous and current farming activities. There are no indications of rock engravings, prehistoric structures or historical buildings older than 60 years within the undisturbed area next to the river. Several isolated and uncapped stone tool flakes and chunks were recorded during the pedestrian survey, but no evidence was found of *in situ* Stone Age archaeological material, capped or distributed as surface scatters on the landscape (**Fig. 7**). A small farm cemetery is located near the eastern boundary of the study area (GPS coordinates 28°33'17.02"S 24°35'4.67"E) and will not be impacted by the proposed development (**Fig. 2 & 8**).

Impact Statement

Impact on potentially archaeological remains within the existing farming area (pivots and access roads) is considered to be negligible because of prior disturbances. Given the overall high archaeological significance of the overbank sediments of the Vaal River, there is a moderate to high probability that it may contain intact Stone Age lithics. According to the project manager, the new pivot areas will be leveled by infilling of topsoil transported from existing pivot areas. As a result of this capping, impact on potentially intact Stone Age archaeological remains underlying the superficial sandy deposits near the river is considered to be low. In this regard the terrain is regarded as of low archaeological significance and is assigned the rating of **Generally Protected C (GP.C)**.

Recommendations

There is no above-ground evidence of residential building structures or material of cultural and archaeological significance or intact archaeological sites within the

demarcated area. However, should any excavations directly affect previously undisturbed (sub-surface) gravel/overbank deposits, it is recommended that scheduled archaeological monitoring of freshly exposed, *in situ* gravel deposits by a qualified specialist is included as part of the overall management plan for the project.

References

Beaumont, P. and Morris, D. 1990. *Guide to archaeological sites in the Northern Cape*. Kimberley. McGregor Museum. Pp 1 – 174.

Cooke, H.B.S. 1949. Fossil mammals of the Vaal River deposits. *Geological Survey of South Africa Memoir* 35: 1 – 109.

Forssman, T.R. and Kuman, K., Leader, G.M. and Gibbon, R.J. 2010. A later Stone Age assemblage from Canteen Kopje, Northern Cape. *South African Archaeological Bulletin* 65(192): 204 – 214.

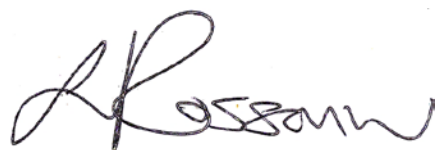
Helgren, D.M. 1978. Acheulian settlement along the lower Vaal River, South Africa. *Journal of Archaeological Science* 5: 39 – 60.

Maglio, V.J. & Cooke, H.B.S. 1978. *Evolution of African Mammals*. Cambridge, Mass. Harvard University Press.

Sohnge, P.G. *et al.* 1937. *The geology and archaeology of the Vaal River Basin*. Memoir no. 35. Department of Mines, Geological Survey.

DECLARATION OF INDEPENDENCE

I, Lloyd Rossouw, declare that I act as an independent specialist consultant. I do not have or will not have any financial interest in the undertaking of the activity other than remuneration for work as stipulated in the terms of reference. I have no interest in secondary or downstream developments as a result of the authorization of this project and have no conflicting interests in the undertaking of the activity.



08 / 03 / 2017

Tables and Figures

Table 1. Field rating categories as prescribed by SAHRA.

Field Rating	Grade	Significance	Mitigation
National Significance (NS)	Grade 1	-	Conservation; national site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; provincial site nomination
Local Significance (LS)	Grade 3A	High significance	Conservation; mitigation not advised
Local Significance (LS)	Grade 3B	High significance	Mitigation (part of site should be retained)
Generally Protected A (GP.A)	-	High/medium significance	Mitigation before destruction
Generally Protected B (GP.B)	-	Medium significance	Recording before destruction
Generally Protected C (GP.C)	-	Low significance	Destruction

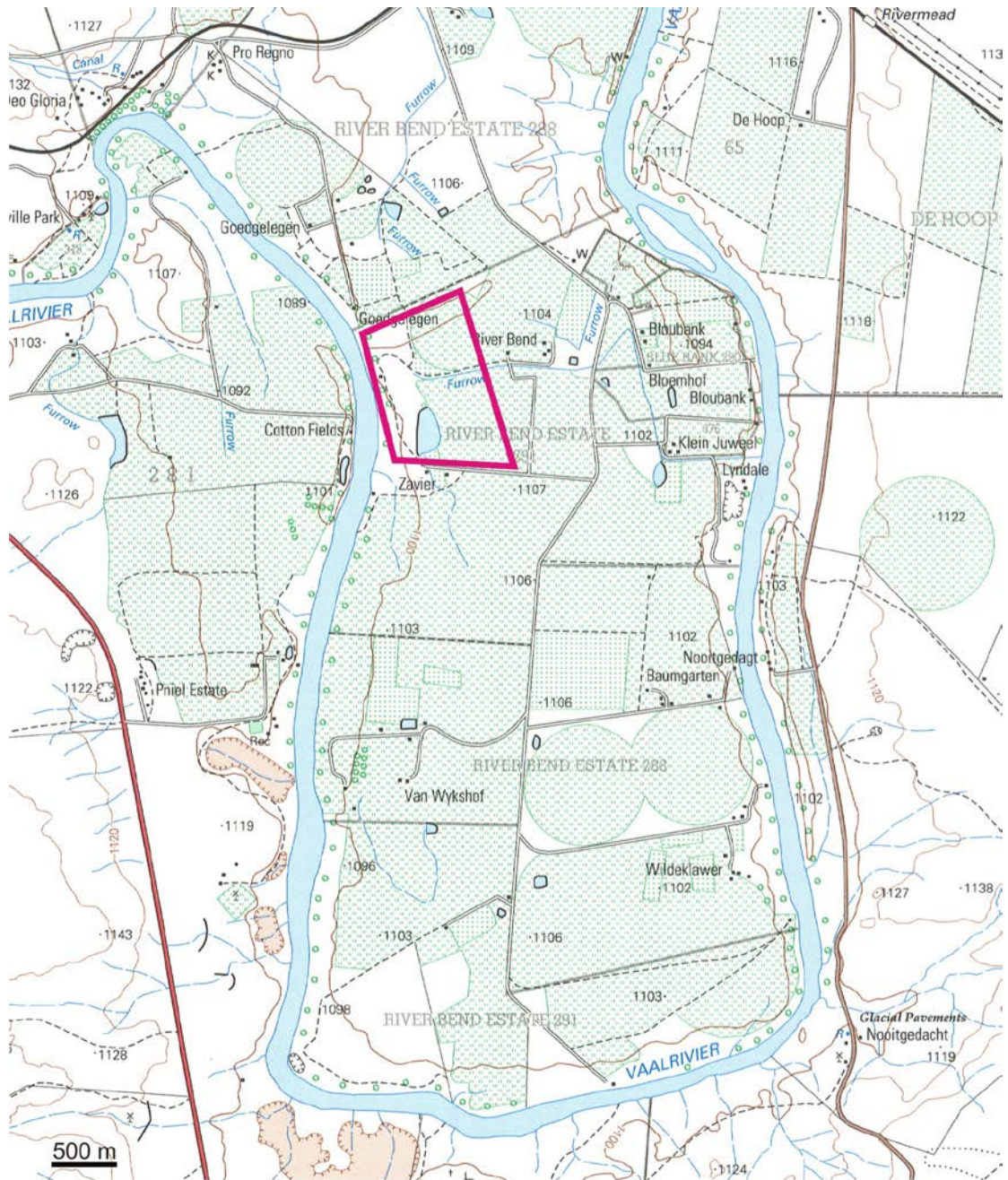


Figure 1. Map of the Wildeklawer study area on farm River Bend Estate 291 (portion of 1:50 000 scale topographic 2824 DA Barkly West).



Figure 2. Aerial view of the study area.

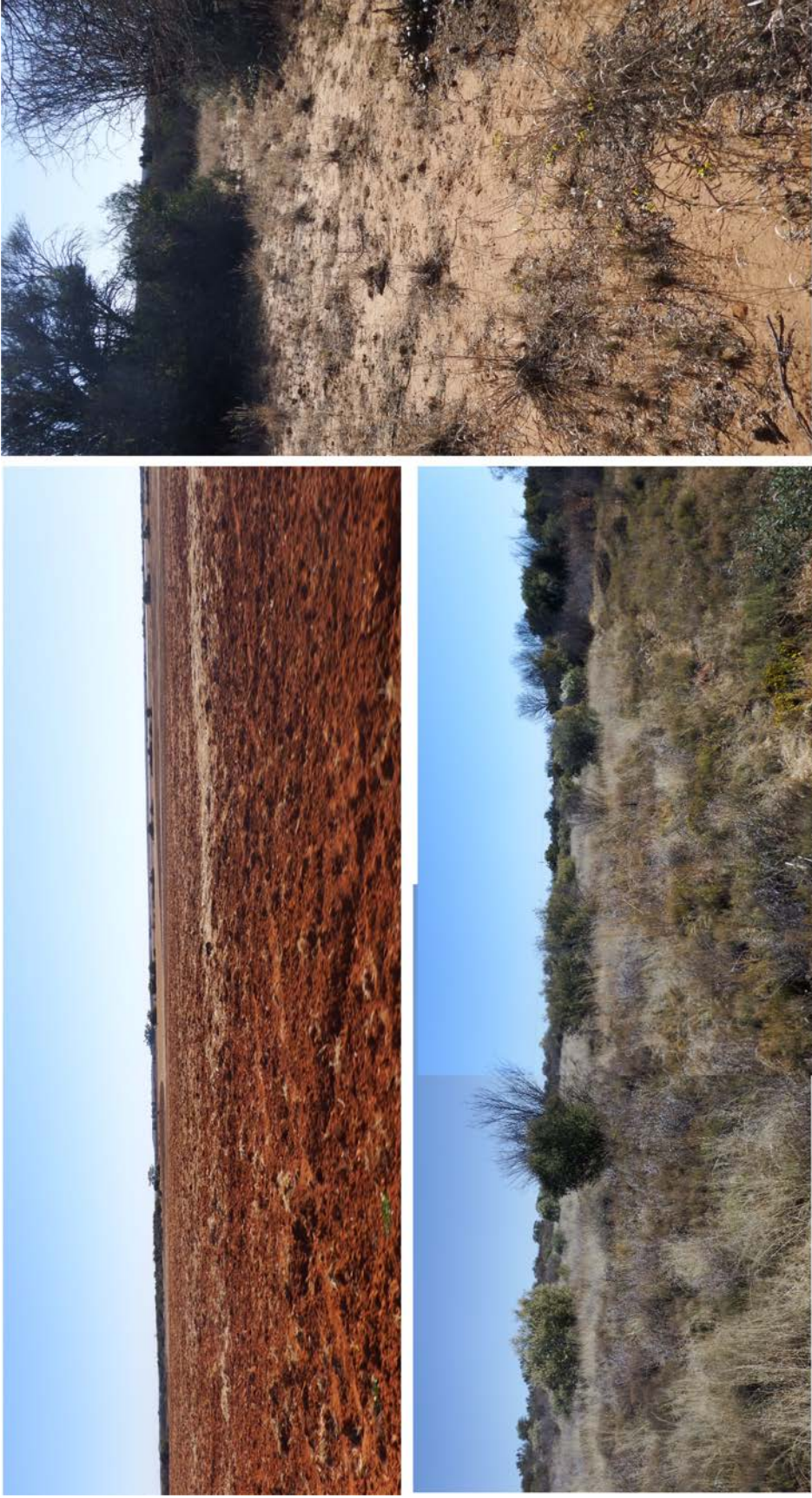


Figure 3. General view of the existing pivots, looking northwest (top) the narrow strip of undisturbed veld, looking west towards the river (below) and the loose sandy substrate in the area, looking north (right).



Figure 4. Map of important archaeological localities in the vicinity of the study area.

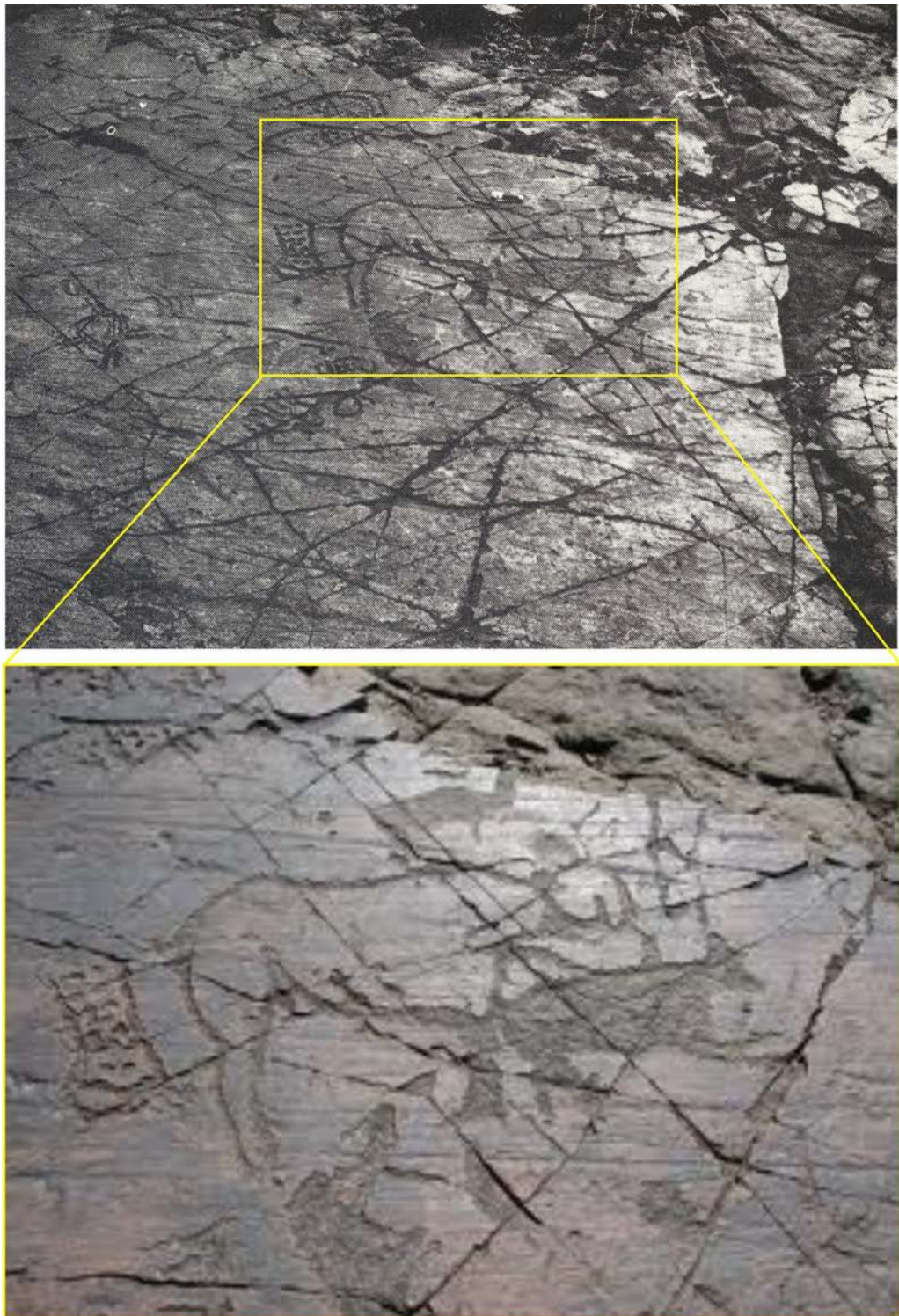


Figure 5. Example of rock engravings found on the glacial pavements at Nooitgedacht.

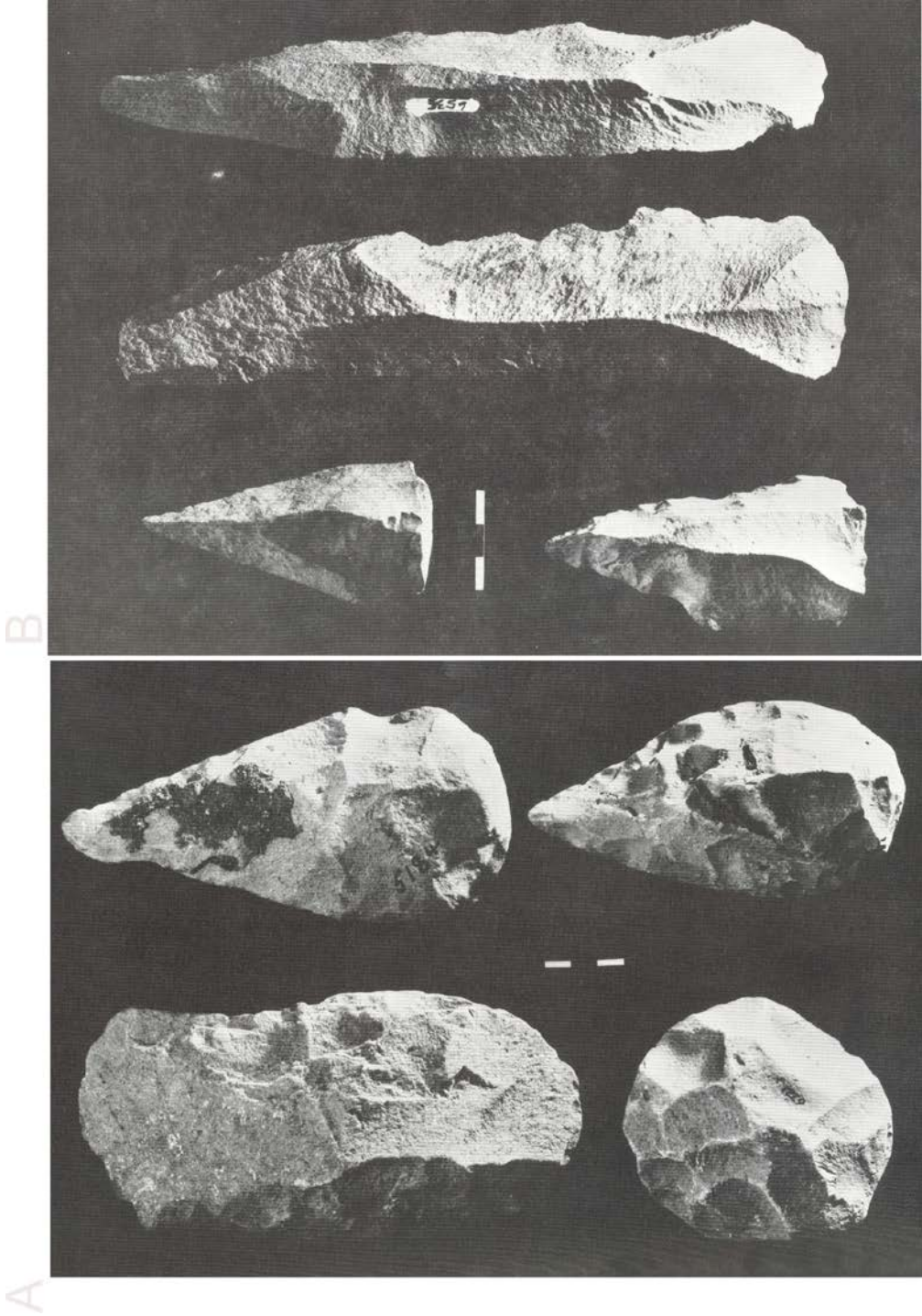


Figure 6. (A) Clockwise from left: a cleaver, 2 x handaxes and a prepared core; (B) Upper and lower left: convergent point; middle and right: parallel and convergent long blades. Raw material = andesite (after Beaumont & Morris 1990).



Figure 7. Uncapped LSA stone tools mainly represented by small flakes and chunks.
Scale 1 = 1 cm.



Figure 8. Farm cemetery, looking south.