PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT REPORT ON A ~8 HA AREA ON THE REMAINING EXTENT OF FARM MOOIPLAATS 370, SITUATED ~45 KM EAST OF DANIËLSKUIL, BARKLY WEST MAGISTERIAL DISTRICT, NORTHERN CAPE PROVINCE.

Peter B Beaumont

Research Associate:

Archaeology Department

McGregor Museum

PO Box 316

8300 Kimberley

Tel 053 - 842 0986

Fax 053 - 842 1433

e-mail beaumontpb@gmail.com

CLIENT:

De Beers Group Services (Pty) Ltd

Group Exploration

Private Bag X01

2135 Southdale

Tel 011 – 374 7839

Fax 011 – 374 5137

e-mail gabisile.simelane2@debeersgroup.com

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EXECUTIVE SUMMARY

The purpose of this study was to determine if any archaeological or other heritage sites were present on a ~8 ha area on the Remaining Extent of farm Mooiplaats 370, situated ~45 km east of Daniëlskuil in the Barkly West Magisterial District of the Northern Cape Province. To that end I was taken to the terrain (Block F) by Abraham Ramadzivha of De Beers, and then spent part of Saturday 9 February 2013 walking over its full extent, which comprised flat ground surfaced by reddish-brown sand, with some loose calcrete clasts, centred on old prospecting pits.

A sparse random scatter of 6 stone artefacts was found, but nowhere were there any archaeological sites, palaeontological bones, man-made structures predating 1950, or graves of any age.

My conclusion is thus that proposed drilling within this terrain by De Beers, to determine if an underlying kimberlite body is economically viable, will have no impact on the heritage resources of the Northern Cape Province.

BACKGROUND INFORMATION

Introduction

The Ghaap Plateau, some 25 000 km^2 in extent, is comprised of carbonate sediments (mainly dolomite) that were laid down in a shallow inland sea at the onset of the Proterozoic ~2.5 billion years ago (MacRae 1999; Whitfield 2004). It is a region typified by a low annual rainfall of ~300 mm, largely by way of summer thunderstorms, and great extremes of temperature, which vary from a winter minimum of ~-5° C to a summer maximum of ~40° C (Humphreys 1979); Humphreys & Thackeray 1983). Despite ongoing rural depopulation, as shown by the number (ca. 30%) of abandoned farmhouses, the raising of sheep and cattle continues to be a dominant economic activity, with others being lime mining for cement making, as at Lime Acres, and (potentially) diamond recovery from the many kimberlites known in this region (e.g. Skinner &Truswell 2006).

Report context

De Beers has, over the years, identified a large number of kimberlite occurrences on the Ghaap Plateau, with a current re-assessment of these, based on improved geophysical resolution, leading them to decide to carry out further drilling at some of these sites. They were informed by M Galimberti of SAHRA on 18 January 2011 that this would require Heritage Impact Assessments for each such locality. However, their Preferred Providers failed to respond, which led Gabisile Simelane, the RSA Exploration Programme Manager, to contact me about undertaking the required fieldwork. This I agreed to do, in view of the financial support that the Anglo-American and De Beers Chairman's Fund had provided for my research over the years, particularly at Wonderwerk Cave.

Terms of reference

My terms of reference were to detail observations based on a field survey of the proposed drilling terrain, and to assess the significance of heritage impacts, should that work go ahead. The report was thus to include a description of the project area, an account of the survey methodology, full details of the identified heritage resources, their significance, and recommended mitigation measures.

Legislative requirements

My fieldwork was therefore directed at fulfilling the requirements of Sections 35 – 36 of the National Heritage Resources Act (no. 25 of 1999), which protects all archaeological and palaeontological sites, as also any structures or human remains older than 60 years.

ARCHAEOLOGICAL SETTING

The interior upland plains of South Africa, including the Ghaap Plateau, with an elevation of ~1 400 m, have been dominated by erosion throughout the Cenozoic (Cooke 1941; Helgren 1978), and, as a result, deposits of archaeological interest in such regions are limited. Contexts there that deserve further investigation are springs, and sinkholes such as Kathu Pan 1 (Beaumont 1990a), of which some small Ghaap Plateau 'pans' may be infilled examples. That possibility remains to be tested, and, up until now, archaeological studies have been mainly directed at the shelters and caves of the abutting Kuruman Hills and Ghaap Escarpment. Of those the closest to Mooiplaats 370 are Burchell's Shelter, Dikbosch 1 & 2, Limerock 1 & 2, and Wonderwerk Cave.

Burchell's Shelter, ~50 km south of Block F on farm Mooiplaats 370, was excavated in the early 1970's by A Humphreys (1975), who established that it contained up to ~0.5 m deep deposits spanning the past two centuries. Found with the retrieved lithic sample were some iron objects and potsherds, with or relevance being W Burchell's (1822) account of his meeting with a San group who still inhabited it in 1811, at which time their 'chief' wore a red-ochred karos, and played the gorah (a musical instrument) for him.

Excavations by A Humphreys and D Morris in 1973 at Dikbosch 1, on the Ghaap Escarpment ~40 km south of Block F on farm Mooiplaats 370, provided evidence of two occupation episodes in deposits a metre deep (Humphreys & Thackeray 1983). The earliest was an amorphous Later Stone Age lithic industry dating to ~13 kyr ago, overlying which was a broken sequence of typical Holocene cultural debris spanning the interval between 8 and <1.5 kyr BP. Finds of note in the latter timespan included a small tanged bifacial arrowhead, many ground bone points, one of which was decorated, whittled wood,

and string / cordage. A later study at Dikbosch 2, about 1 km away, indicated only sporadic and ephemeral shelter usage over the past millennium (op. cit.: 171).

Also on the Ghaap Escarpment, ~35 km south of Block F on farm Mooiplaats 370, are the closeby shelters Limerock 1 & 2, where investigations by A Humphreys in the mid-1970's revealed up to 0.6 m deep deposits with Later Stone Age postdating 1.5 kyr BP. Assemblages there had a high incidence of decorated ostrich eggshell fragments, and included eggshell and mussel pendants, decorated potsherds, and a fauna which indicated the likely presence of sheep (Humphreys & Thackeray 1983: 214).

Complementing those successions are findings from Wonderwerk Cave, ~60 km north-west of Block F on farm Mooiplaats 370, where the excavation of a ~6 m depth of deposits was carried out by the author between 1978 and 1993 (Beaumont 1990; Beaumont & Vogel 2006). The cultural sequence there comprised Later Stone Age from ~0.9 - 12.5 kyr ago, Middle Stone Age from ~78 - >220 kyr ago, Fauresmith from ~270 - ≥510 kyr ago, Acheulean back to ~1.7 Myr, and Oldowan? between ~1.7 and ca. 2.0 Myr BP. Behavioural data of particular significance in this, the longest cave occupation on earth, relate to the finding of grass bedding areas and of man-made fire in Acheulean levels dating to ≥0.7 and ~1.7 Myr ago respectively (Beaumont 2011).

From this present evidence, as a whole, three salient deductions can be made, namely that hominins have roamed the region since Oldowan times, that human numbers have increased markedly there over the last 13 millennia, and that all regional occupations are preponderantly confined to warm – wet interglacial intervals (Beaumont & Vogel 2006).

PROPERTY DESCRIPTION

The inspected ~8.03 ha area on the Remaining Extent of farm Mooiplaats 370, and at an elevation of ~1355 m, is situated ~45 km east of Daniëlskuil, in the Barkly West Magisterial District of the Northern Cape (Figs. 1 – 3). On 9 February 2013, after locating the midpoint of the terrain (Block F), marked by a row of prospecting pits, Abraham Ramadzivha used his laptop and GPS data to provide me with the following geographical coordinates for its corners (Fig. 3):

Point 0: 28° 09' 45.2" S, 23° 55' 13.7" E

Point 1: 28° 09’ 38.6” S, 23° 55’ 09.7” E
Point 2: 28° 09’ 44.1” S, 23° 54’ 58.9” E
Point 3: 28° 09’ 51.1” S, 23° 55’ 03.4” E

My search pattern then involved locating one of the Points with my Garmin, and then criss-crossing the entire terrain, establishing, in the process, the position of the other three corners. There was a focus, during the inspection, towards clast-covered areas (when present), given that many previous regional AIA’s had shown that Hutton Sand surfaces tended to be sterile (of lithics), except near drainage lines. A recent theft at my residence led to the loss of a number of household items, including the above-mentioned GPS and contents.

The entire area, flat, with a slight slope (~2 – 3°) to the south-east, was surfaced by reddish-brown Hutton Sands, with a sporadic and up to ~20 cm long calcrete clasts, except around a row of pits, flanked by piles of mainly granular weathered calcrete (Fig. 4). The western one was shallow (~0.8 m), the centre one slightly deeper (~1.2 m), while in the east was a 8 x 30 m trench (Fig. 5). Sections in that showed 0 – 20 cm of reddish sand, ~0.5 m of compact platey calcrete, followed down by a soft nodular form (>2.0 m thick). Just to the east of it lay ~70 m of old borehole cores, placed in the order they were removed. Fire has recently devastated this vicinity (together with vast areas to the north), and, although much of the grass had come up again, only some of the shrubs (mainly vaalbos, *Tarchonanthus camphoratus*) had commenced re-sprouting (Fig. 6).

SUPERFICIAL SEDIMENTS

My Ghaap Plateau observations show that bedrock there is almost invariably dolomite, sometimes with grey – black chert interlenses, belonging to the Campbell Rand Supergroup of the Ghaap Group (Eriksson et al 2006). Immediately overlying that bedrock are 0 - ~4 m deep calcretes, the upper reaches of which are compact and laminar, followed downwards by a softer nodular variety. That unit is, in turn, covered by a variable, usually thin (<5 cm) zone of small subangular – subrounded clasts, mainly of black chert, in a matrix of gritty sand. Occasional calcrete surfaces show adhering chert clasts, but how these chert clasts, ultimately derived from the dolomites, came to occur above the calcretes, remains unclear. And, finally, there is a modest depth (usually 0 – 30

cm thick) of orange – red superficial sand, taken to represent an aeolian accumulation from a Kalahari source during one (or more) glacial intervals (Bateman et al 2003; Beaumont & Vogel 2006). The modern surface, undergoing slow erosion, is considered to probably span the Holocene.

HERITAGE FINDINGS

My examination of Block F revealed no signs of archaeological sites, fossil bones, structures predating 1950, or graves of any age, which, given its lack of key resources (e.g. water), and shallow superficial sediments, is not unexpected. I did, however, find 6 randomly scattered stone artefacts, all based on black chert, of which 3 were fresh and the rest lightly smoothed (Fig. 7). This lithic sample comprised 3 irregular flake fragments and 3 irregular cores, none of which show platform faceting. These items are taken to reflect sporadic between – site use of local clasts over a timespan which, to judge from the soothed specimens, may range back to Middle Stone Age times. Given the extremely low lithic density, usually shallow bedrock, the lack of clear stratigraphy, and mixing due to bioturbation, such items are of very limited archaeological significance.

CONCLUSIONS

The inspected area produced no trace of significant heritage material and my conclusion is thus that the proposed drilling there by De Beers will have no impact on the heritage resources of the Northern Cape.

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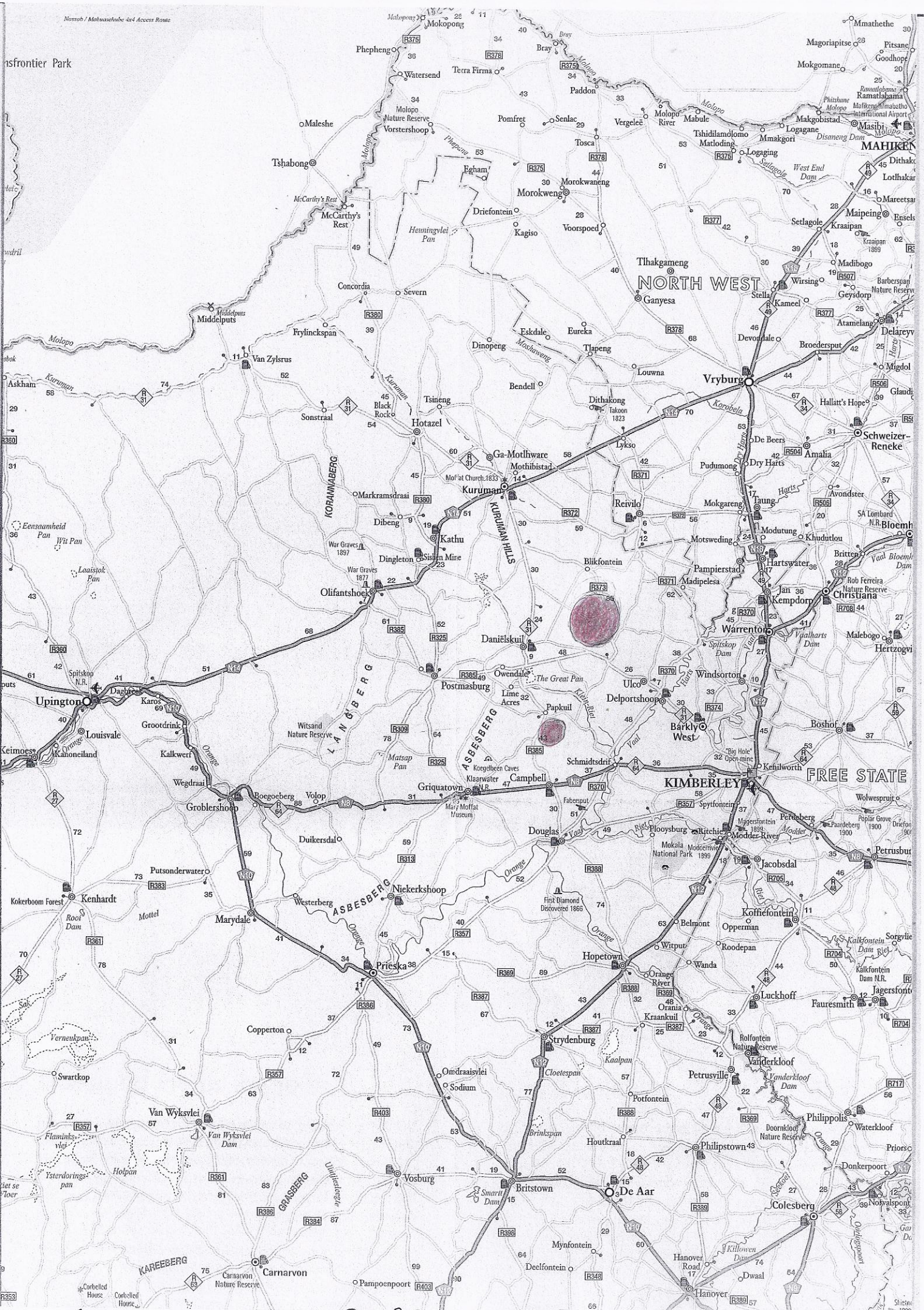

FIG 1. REGIONAL MAP SHOWING THE POSITION OF THE KIMBERLITE CLUSTERS NORTH OF CAMPBELL AND EAST OF DANIELSKUIL.

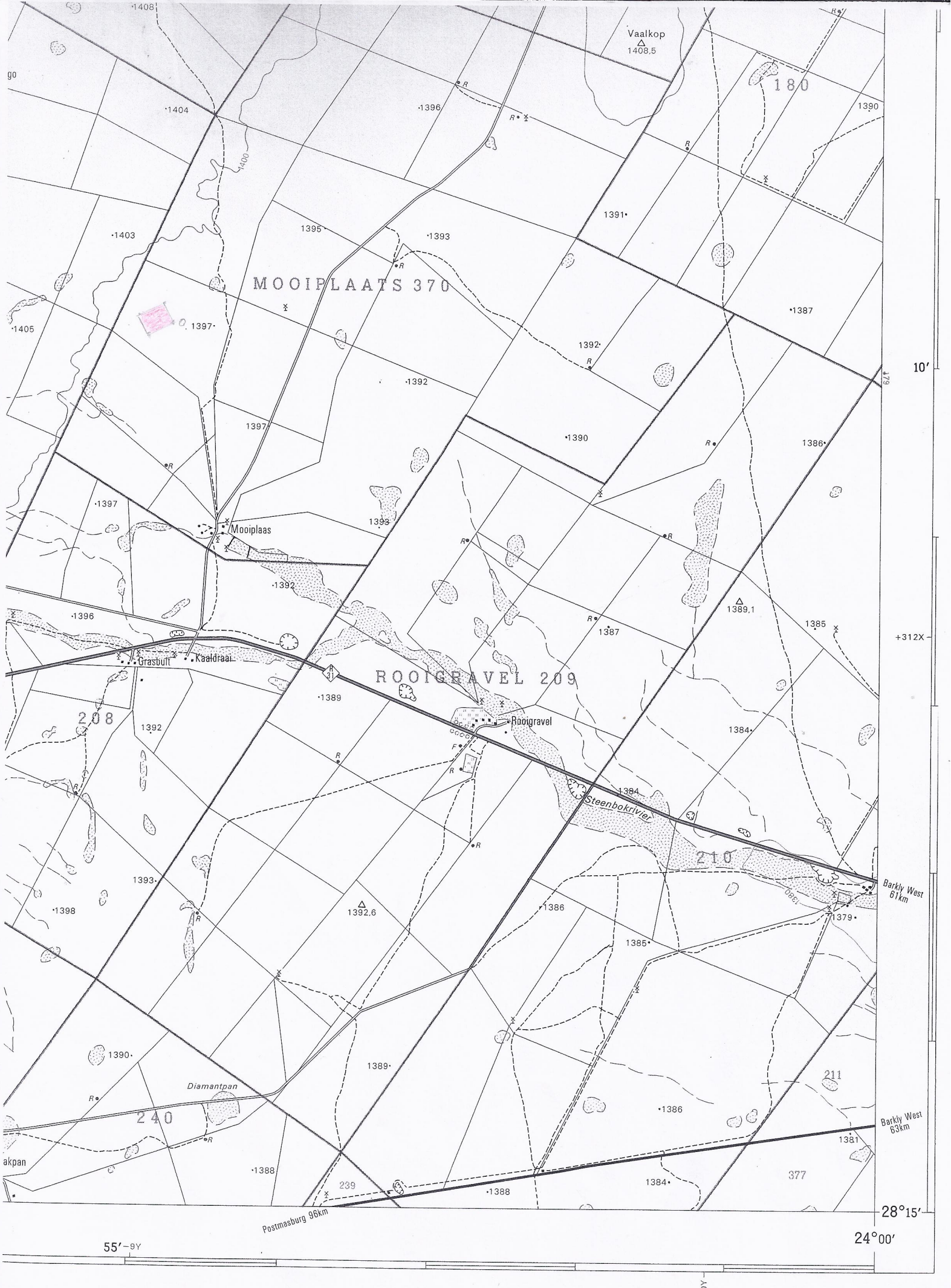

FIG 2. 1:50,000 2823 BB SWARTPUTS

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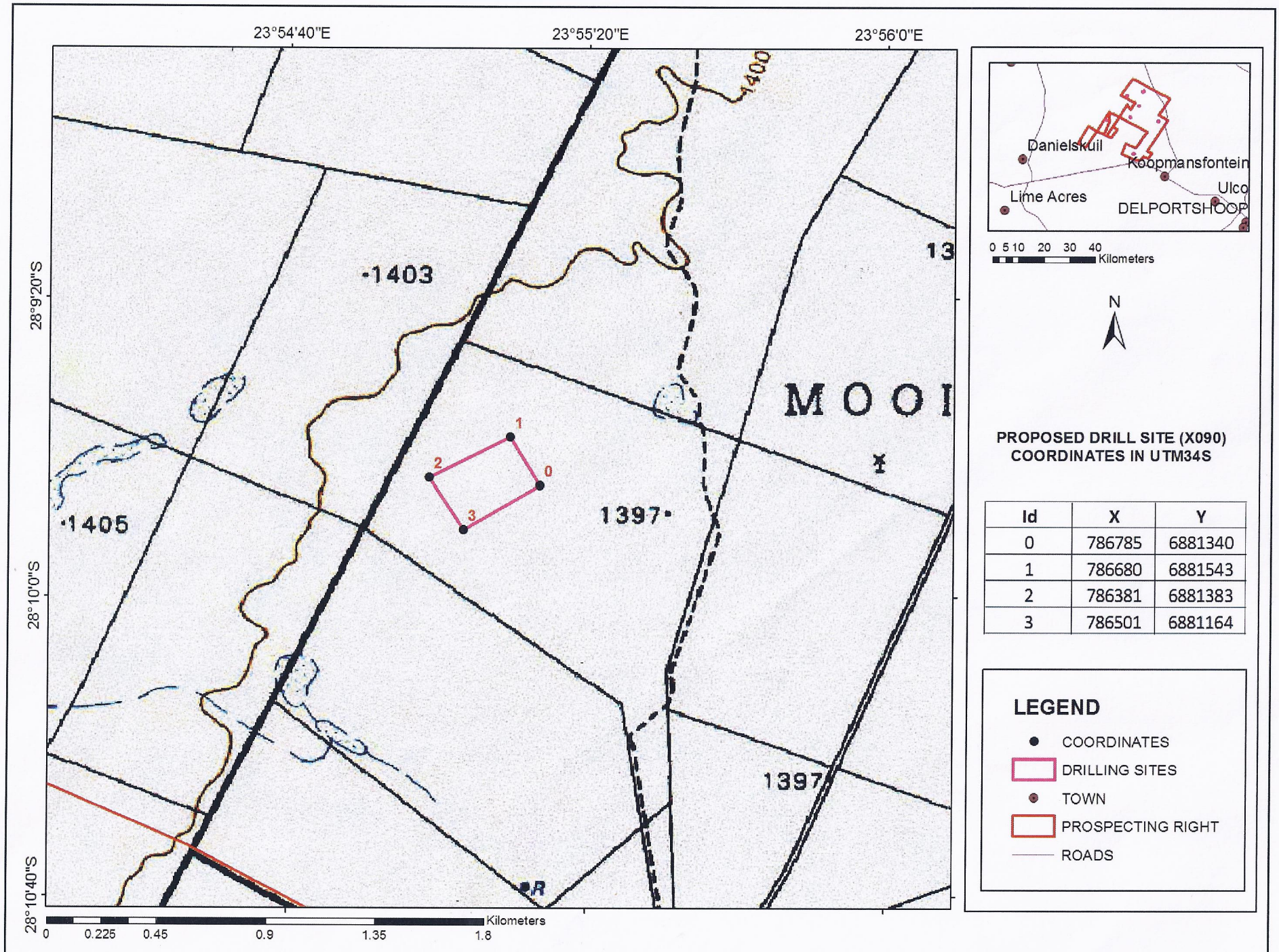

Id	X	Y
0	786785	6881340
1	786680	6881543
2	786381	6881383
3	786501	6881164

Figure 4. Vehicle approaching the background row of calcrete dumps.

Figure 5. The main trench, cut down into a lower soft nodular calcrete.

Figure 6. General view to the north of flat Hutton Sands and resprouting vegetation.

Figure 7. Lithic sample from Block F. Two smoothed specimens on left.