

**Heritage impact assessment report for the
NKOMAZI WILDERNESS RIVER CROSSINGS,
CAROLINA MAGISTERIAL DISTRICT,
MPUMALANGA PROVINCE**

THE PROJECT:

Development of a number of river crossings.

THIS REPORT:

HERITAGE IMPACT ASSESSMENT REPORT FOR THE NKOMAZI WILDERNESS RIVER CROSSINGS, CAROLINA MAGISTERIAL DISTRICT, MPUMALANGA PROVINCE

Report No: 2008/JvS/063
Status: Final
Revision No: 0
Date: July 2008

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EXECUTIVE SUMMARY

HERITAGE IMPACT ASSESSMENT REPORT FOR THE NKOMAZI WILDERNESS RIVER CROSSINGS, CAROLINA MAGISTERIAL DISTRICT, MPUMALANGA PROVINCE

The aim of the review was to determine the possibility of sites, objects and structures of cultural significance located within the area in which it is proposed to develop a number of river crossings to facilitate management of the area as well as making it more accessible for tourists.

A variety of heritage resources occur in the larger geographical area. However, no sites, features or objects of cultural heritage significance were identified at any of the proposed crossings. Therefore, based on what was found and its evaluation, it is anticipated that the development can take place, on condition of acceptance of the management measures as set out in Section 7 of this report, the most important of which is that:

- If archaeological sites or graves are exposed during construction work, it should immediately be reported to a museum, preferably one at which an archaeologist is available, so that an investigation and evaluation of the finds can be made.

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GLOSSARY OF TERMS AND ABBREVIATIONS

STONE AGE

Early Stone Age	2 000 000 - 150 000 Before Present
Middle Stone Age	150 000 - 30 000 BP
Late Stone Age	30 000 - until c. AD 200

IRON AGE

Early Iron Age	AD 200 - AD 1000
Late Iron Age	AD 1000 - AD 1830

HISTORIC PERIOD

Since the arrival of the white settlers - c. AD 1840 in this part of the country

ADRC	Archaeological Data Recording Centre
ASAPA	Association of Southern African Professional Archaeologists
EIA	Early Iron Age
ESA	Early Stone Age
LIA	Late Iron Age
LSA	Late Stone Age
MSA	Middle Stone Age
NHRA	National Heritage Resources Act
PHRA	Provincial Heritage Resources Agency
SAHRA	South African Heritage Resources Agency

HERITAGE IMPACT ASSESSMENT REPORT FOR THE NKOMAZI WILDERNESS RIVER CROSSINGS, CAROLINA MAGISTERIAL DISTRICT, MPUMALANGA PROVINCE

1. INTRODUCTION

As part of their infra-structural development, the Nkomazi Wilderness nature reserve plans to develop a number of river crossings. Two types of crossings are envisaged: single lane vehicle crossings and pedestrian crossings. These crossings are planned in order to facilitate management of the area as well as making it more accessible for tourists. Six of these crossings involve the Komati River, and the other three the Seekoei Spruit, which is a tributary of the former river.

As riverbanks are, from an archaeological perspective, viewed as sensitive, an independent heritage consultant was appointed by Mantis Development to review the location of each of these crossings.

In all cases, the planned river crossings are located at existing crossings that would be upgraded, or new ones would be made by using existing internal roads that follows the river banks.

2. TERMS OF REFERENCE

The scope of work consisted of conducting a Phase 1 archaeological survey of the site in accordance with the requirements of Section 38(3) of the National Heritage Resources Act (Act 25 of 1999).

This include:

- Conducting a desk-top investigation of the area
- A visit to the proposed development site

The objectives were to

- Identify possible archaeological, cultural and historic sites within the proposed development areas;
- Evaluate the potential impacts of construction, operation and maintenance of the proposed development on archaeological, cultural and historical resources;
- Recommend mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural or historical importance.

3. DEFINITIONS AND ASSUMPTIONS

The following aspects have a direct bearing on the survey and the resulting report:

- *Cultural resources* are all non-physical and physical human-made occurrences, as well as natural occurrences that are associated with human activity. These include all

sites, structures and artefacts of importance, either individually or in groups, in the history, architecture and archaeology of human (cultural) development.

- The *significance* of the sites and artefacts are determined by means of their historical, social, aesthetic, technological and scientific value in relation to their uniqueness, condition of preservation and research potential. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.
- Sites regarded as having low significance have already been recorded in full and require no further mitigation. Sites with medium to high significance require further mitigation.
- The latitude and longitude of archaeological sites are to be treated as sensitive information by the developer and should not be disclosed to members of the public.

4. STUDY APPROACH AND METHODOLOGY

4.1 Extent of the Study

This survey and impact assessment covers the area as presented in Section 5 and as illustrated in Figure 1.

4.2 Methodology

4.1 Preliminary investigation

4.1.1 Survey of the literature

A survey of the relevant literature was conducted with the aim of reviewing the previous research done and determining the potential of the area. In this regard, various anthropological, archaeological and historical sources were consulted - see the list of references below.

4.1.2 Data bases

The *Heritage Sites Database* and the *Environmental Potential Atlas* was consulted.

4.1.3 Other sources

Aerial photographs and topocadastral and other maps were also studied - see the list of references below.

4.2 Field survey

The field survey was done according to generally accepted archaeological practices, and was aimed at locating all possible sites, objects and structures. The areas that had to be investigated was identified by Mantis Development during a site visit.

4.3 Documentation

All sites, objects and structures that are identified are documented according to the general minimum standards accepted by the archaeological profession. Coordinates of individual

localities are determined by means of the *Global Positioning System* (GPS)¹ and plotted on a map. This information is added to the description in order to facilitate the identification of each locality.

Map datum used: Hartebeeshoek 94 (WGS84).

4.3 Limitations

None at present.

5. DESCRIPTION OF THE AFFECTED ENVIRONMENT

5.1 Site location and description

The location and extent of the study area can be determined from the map in Figures 1 & 2. It include point on the following farms: Winkelhaak 723Jt, Kees Zyn Doorns 708JT, Vergelegen 728JT, Sterkspruit 709JT and Boekenhoutrand 722JT, all located in the Carolina magisterial district of Mpumalanga district.

Topographically, the area can be described as strongly undulating plains, with a number of rivers running through it, with the Komati River being the most important one. The geology is made up of gneiss and lava and the original vegetation is classified as North-eastern Mountain Grassland. Large sections of this have been changed due to crop farming.

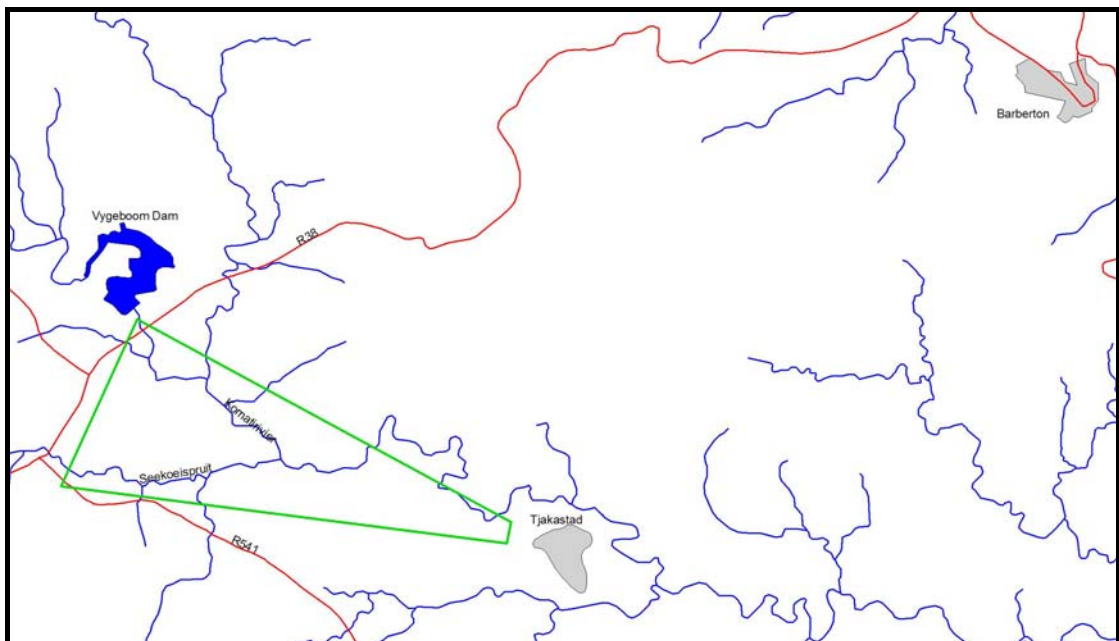


Fig. 1. Location of the study area (green line) in regional context.

¹ According to the manufacturer a certain deviation may be expected for each reading. Care was, however, taken to obtain as accurate a reading as possible, and then to correlate it with reference to the physical environment before plotting it on the map.

5.2 Regional overview

5.2.1 Stone Age

A number of very important sites dating to the Later Stone Age occur in the region. Some of the have been documented in detail by e.g. Korsman (1990). These sites are stratified sites found in rock shelters and in most cases also have rock paintings. Such sites usually occur in outcrops close to rivers. The closest know rock art site to the development area is located to the south on the farm Theeboom.

5.2.2 Iron Age

Sites dating to the Late Iron Age occur in large numbers in the region. These are stone walled sites, probably related to the Koni people and dating to the period 1650 onwards. These site usually occur in areas where ridges and outcrops occur as stone, used for building material can be found here. Some such sites are located on Sterkspruit and Vergelegen.

5.2.3 Historic period

The historic period started in the 1840s with farmers and traders entering the area. However, it was only after the discovery of gold in 1875 in the vicinity of Barberton that settlers entered the region in large numbers. A large number of old gold mines and prospecting activities resulted from these early mining activities, most of which would be older than 60 years (see Coetzee 1976). Other sites that might occur in the area would be old farmsteads and informal cemeteries.

5.3 Survey results

5.3.1 Stone Age

No sites, features or objects of cultural heritage significance dating to the Stone Age were identified in the study area.

5.3.2 Iron Age

No sites, features or objects of cultural heritage significance dating to the Iron Age were identified in the study area.

5.3.3 Historic period

No sites, features or objects of cultural heritage significance dating to the historic period were identified in the study area.

6. IDENTIFICATION OF RISK SOURCES

6.1 Statement of significance

Impact analysis of cultural resources under threat of the proposed development, are based on the present understanding of the development.

The **significance** of a heritage site and artefacts is determined by its historical, social, aesthetic, technological and scientific value in relation to the uniqueness, condition of preservation and research potential. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.

Sites regarded as having low significance are viewed as being recorded in full after identification and would require no further mitigation. Impact from the development would therefore be judged to be low. Sites with a medium to high significance would therefore require mitigation. Mitigation, in most cases the excavation of a site, is in essence destructive and therefore the impact can be viewed as high and as permanent.

6.2 Impact assessment

As no sites of cultural significance were identified in any of the nine river crossing areas, there would be no impact.

7. RECOMMENDED MANAGEMENT MEASURES

Heritage sites are fixed features in the environment, occurring within specific spatial confines. Any impact upon them is permanent and non-reversible. Those resources that cannot be avoided and that are directly impacted by the development can be excavated/recorded and a management plan can be developed for future action. Those sites that are not impacted on, can be written into the management plan, whence they can be avoided or cared for in the future.

7.1 Objectives

Protection of archaeological, historical and any other site or land considered being of cultural value within the project boundary against vandalism, destruction and theft.

The preservation and appropriate management of new discoveries in accordance with the National Heritage Resources Act (Act No. 25 of 1999), should these be discovered during construction.

7.2.1 Construction phase

General management objectives and commitments:

- To avoid disturbing sites of heritage importance; and
- To avoid disturbing burial sites.

The following shall apply:

- The contractors and workers should be notified that archaeological sites might be exposed during the construction work.

- Should any heritage artefacts be exposed during excavation, work on the area where the artefacts were discovered, shall cease immediately and the Environmental Control Officer shall be notified as soon as possible;
- All discoveries shall be reported immediately to a museum, preferably one at which an archaeologist is available, so that an investigation and evaluation of the finds can be made. Acting upon advice from these specialists, the Environmental Control Officer will advise the necessary actions to be taken;
- Under no circumstances shall any artefacts be removed, destroyed or interfered with by anyone on the site; and
- Contractors and workers shall be advised of the penalties associated with the unlawful removal of cultural, historical, archaeological or palaeontological artefacts, as set out in the National Heritage Resources Act (Act No. 25 of 1999), Section 51. (1).

8. RECOMMENDATIONS

The aim of the review was to determine the possibility of sites, objects and structures of cultural significance located within the area in which it is proposed to develop a number of river crossings to facilitate management of the area as well as making it more accessible for tourists.

A variety of heritage resources occur in the larger geographical area. However, no sites, features or objects of cultural heritage significance were identified at any of the proposed crossings. Therefore, based on what was found and its evaluation, it is anticipated that the development can take place, on condition of acceptance of the management measures as set out in Section 7 of this report, the most important of which is that:

- If archaeological sites or graves are exposed during construction work, it should immediately be reported to a museum, preferably one at which an archaeologist is available, so that an investigation and evaluation of the finds can be made.

9. REFERENCES

9.1 Data bases

Heritage Sites Database, Pretoria.

Environmental Potential Atlas, Department of Environmental Affairs and Tourism.

9.2 Literature

Acocks, J.P.H. 1975. *Veld Types of South Africa*. Memoirs of the Botanical Survey of South Africa, No. 40. Pretoria: Botanical Research Institute.

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Van Schalkwyk, J.A. 2002. *Archaeological survey of a section of the Secunda-Mozambique gas pipeline, Barberton district, Mpumalanga. No. 2*. Unpublished report 2002KH31. Pretoria: National Cultural History Museum.

Van Schalkwyk, J.A. 2002. *Archaeological survey of a section of the Secunda-Mozambique gas pipeline, Carolina district, Mpumalanga. No. 6*. Unpublished report 2002KH44. Pretoria: National Cultural History Museum.

Van Schalkwyk, J.A. 2003. *Archaeological survey of a section of the Secunda-Mozambique gas pipeline, Carolina district, Mpumalanga. No. 7*. Unpublished report 2003KH02. Pretoria: National Cultural History Museum.

9.3 Maps and Photographs

1: 50 000 Topocadastral maps – 2530DC, 2530DD

Google Earth

APPENDIX 1: CONVENTIONS USED TO ASSESS THE IMPACT OF PROJECTS ON HERITAGE RESOURCES

Significance

The *significance* of the sites and artefacts are determined by means of their historical, social, aesthetic, technological and scientific value in relation to their uniqueness, condition of preservation and research potential. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.

Matrix used for assessing the significance of each identified site/feature

1. Historic value			
Is it important in the community, or pattern of history			
Does it have strong or special association with the life or work of a person, group or organisation of importance in history			
Does it have significance relating to the history of slavery			
2. Aesthetic value			
It is important in exhibiting particular aesthetic characteristics valued by a community or cultural group			
3. Scientific value			
Does it have potential to yield information that will contribute to an understanding of natural or cultural heritage			
Is it important in demonstrating a high degree of creative or technical achievement at a particular period			
4. Social value			
Does it have strong or special association with a particular community or cultural group for social, cultural or spiritual reasons			
5. Rarity			
Does it possess uncommon, rare or endangered aspects of natural or cultural heritage			
6. Representivity			
Is it important in demonstrating the principal characteristics of a particular class of natural or cultural places or objects			
Importance in demonstrating the principal characteristics of a range of landscapes or environments, the attributes of which identify it as being characteristic of its class			
Importance in demonstrating the principal characteristics of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province, region or locality.			
7. Sphere of Significance			High
			Medium
			Low
International			
National			
Provincial			
Regional			
Local			
Specific community			
8. Significance rating of feature			
1.	Low		
2.	Medium		
3.	High		

Significance of impact:

- low where the impact will not have an influence on or require to be significantly accommodated in the project design
- medium where the impact could have an influence which will require modification of the project design or alternative mitigation
- high where it would have a “no-go” implication on the project regardless of any mitigation

Certainty of prediction:

- Definite: More than 90% sure of a particular fact. Substantial supportive data to verify assessment
- Probable: More than 70% sure of a particular fact, or of the likelihood of that impact occurring
- Possible: Only more than 40% sure of a particular fact, or of the likelihood of an impact occurring
- Unsure: Less than 40% sure of a particular fact, or the likelihood of an impact occurring

Recommended management action:

For each impact, the recommended practically attainable mitigation actions which would result in a measurable reduction of the impact, must be identified. This is expressed according to the following:

- 1 = no further investigation/action necessary
- 2 = controlled sampling and/or mapping of the site necessary
- 3 = preserve site if possible, otherwise extensive salvage excavation and/or mapping necessary
- 4 = preserve site at all costs

Legal requirements:

Identify and list the specific legislation and permit requirements which potentially could be infringed upon by the proposed project, if mitigation is necessary.

APPENDIX 2. RELEVANT LEGISLATION

All archaeological and palaeontological sites, and meteorites are protected by the National Heritage Resources Act (Act no 25 of 1999) as stated in Section 35:

(1) Subject to the provisions of section 8, the protection of archaeological and palaeontological sites and material and meteorites is the responsibility of a provincial heritage resources authority: Provided that the protection of any wreck in the territorial waters and the maritime cultural zone shall be the responsibility of SAHRA.

(2) Subject to the provisions of subsection (8)(a), all archaeological objects, palaeontological material and meteorites are the property of the State. The responsible heritage authority must, on behalf of the State, at its discretion ensure that such objects are lodged with a museum or other public institution that has a collection policy acceptable to the heritage resources authority and may in so doing establish such terms and conditions as it sees fit for the conservation of such objects.

(3) Any person who discovers archaeological or palaeontological objects or material or a meteorite in the course of development or agricultural activity must immediately report the find to the responsible heritage resources authority, or to the nearest local authority offices or museum, which must immediately notify such heritage resources authority.

(4) No person may, without a permit issued by the responsible heritage resources authority-

- (a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
- (b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
- (c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or
- (d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.

In terms of cemeteries and graves the following (Section 36):

(1) Where it is not the responsibility of any other authority, SAHRA must conserve and generally care for burial grounds and graves protected in terms of this section, and it may make such arrangements for their conservation as it sees fit.

(2) SAHRA must identify and record the graves of victims of conflict and any other graves which it deems to be of cultural significance and may erect memorials associated with the grave referred to in subsection (1), and must maintain such memorials.

(3) No person may, without a permit issued by SAHRA or a provincial heritage resources authority-

- (a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
- (b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- (c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.

(4) SAHRA or a provincial heritage resources authority may not issue a permit for the destruction or damage of any burial ground or grave referred to in subsection (3)(a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-interment of the contents of such graves, at the cost of the applicant and in accordance with any regulations made by the responsible heritage resources authority.

The National Heritage Resources Act (Act no 25 of 1999) stipulates the assessment criteria and grading of archaeological sites. The following categories are distinguished in Section 7 of the Act:

- **Grade I:** Heritage resources with qualities so exceptional that they are of special national significance;
- **Grade II:** Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region; and
- **Grade III:** Other heritage resources worthy of conservation, and which prescribes heritage resources assessment criteria, consistent with the criteria set out in section 3(3), which must be used by a heritage resources authority or a local authority to assess the intrinsic, comparative and contextual significance of a heritage resource and the relative benefits and costs of its protection, so that the appropriate level of grading of the resource and the consequent responsibility for its management may be allocated in terms of section 8.

Presenting archaeological sites as part of tourism attraction requires, in terms 44 of the Act, a Conservation Management Plan as well as a permit from SAHRA.

(1) Heritage resources authorities and local authorities must, wherever appropriate, co-ordinate and promote the presentation and use of places of cultural significance and heritage resources which form part of the national estate and for which they are responsible in terms of section 5 for public enjoyment, education, research and tourism, including-

- (a) the erection of explanatory plaques and interpretive facilities, including interpretive centres and visitor facilities;
- (b) the training and provision of guides;
- (c) the mounting of exhibitions;
- (d) the erection of memorials; and
- (e) any other means necessary for the effective presentation of the national estate.

(2) Where a heritage resource which is formally protected in terms of Part I of this Chapter is to be presented, the person wishing to undertake such presentation must, at least 60 days prior to the institution of interpretive measures or manufacture of associated material, consult with the heritage resources authority which is responsible for the protection of such heritage resource regarding the contents of interpretive material or programmes.

(3) A person may only erect a plaque or other permanent display or structure associated with such presentation in the vicinity of a place protected in terms of this Act in consultation with the heritage resources authority responsible for the protection of the place.

APPENDIX 3: SURVEY RESULTS

See Appendix 1 for an explanation of the conventions used in assessing the cultural remains.

Map datum used: Hartebeeshoek 94 (WGS84).

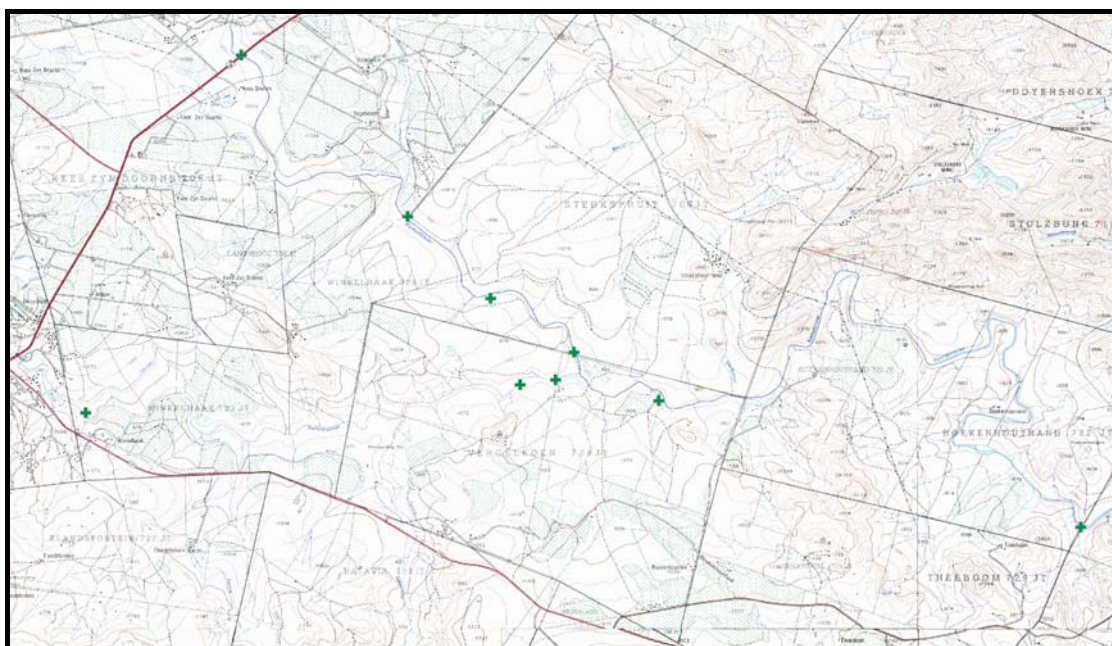


Fig. 2. Location of various river crossings (green crosses) that were investigated.

(Maps 2530DC, 2530DD: Chief Directorate Survey and Mapping..)

1	S25.89187 E30.62255
2	S25.93767 E30.66943
3	S25.95928 E30.59317
4	S25.98077 E30.78058
5	S25.92222 E30.65388
6	S25.95305 E30.68167
7	S25.95393 E30.67502
8	S25.94778 E30.68517
9	S25.95700 E30.70113

Location of the various river crossings

Sites identified: Nil

APPENDIX 4: ILLUSTRATIONS OF THE RIVER CROSSINGS









