

Report on Phase 1 Archaeological Impact Assessment on Portions 1, 3, 5
and 16 of the farm Tipperary 135 JU, Portion 4 of Portion 5 of the farm
Duma 201 JU and Portion 3 of the farm Langgewacht 202 JU near Karino,
Mpumalanga Province.

Compiled by



For
Enpact Environmental Consultants CC
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1 September, 2012

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Executive summary

Site name and location: Tekwane Extension 2, Portion 7 of the Farm Tekwane 573 JU. Approximately 90 hectares in extent.

Purpose of the study: An Archaeological Impact Assessment was conducted in order to locate remains of heritage significance in respect of a proposed township development.

1:50 000 Topographical Map: 2531 AC

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Description and findings:

An Archaeological Impact Assessment was conducted by Kudzala Antiquity CC for Enpact Environmental Consultants on Portions 1, 3, 5 and 16 of the farm Tipperary 135 JU, Portion 4 of Portion 5 of the farm Duma 201 JU and Portion 3 of the farm Langgewacht 202 JU near Karino, Mpumalanga Province. This forms part of legislative requirements as appears in section 38 of the National Heritage Resources act (25 of 1999).

The survey was conducted on foot and with the aid of a motor vehicle in an effort to locate archaeological remains and historic features. The area is situated north of the N4 highway along the Crocodile River, opposite the Tekwane South Township area.

Fourteen sites were documented. Some of them (sites KH 1-KH 4) serve as orientation points along the proposed route of the canal. The existing furrow and its associated infrastructure are of historic significance as it dates to circa 1914. Sites KH 5 and KH 6 are located at the start and end point of the historic (1914) furrow where it was 15 feet wide. Site KH 7 is the location of the historic turbine and the building in which it is

housed. Site KH 8 is the point where the historic furrow continues from the turbine further eastwards and from here it is its original 5 feet width. Sites KH 9-KH 14 are locations on the existing historic 5 foot furrow where observations were made about its current condition and reference for its location. This section of the furrow was also indicated on the map (Appendix C) with the aid of the GPS tracklog. Both the 13 foot and 5 foot furrows are regarded as being of high significance. Alteration or demolition of these furrows and its associated infrastructure will have to be accompanied by a valid permit obtainable from SAHRA (South African Heritage Resources Agency) in terms of section 34 of the NHRA, 25 of 1999. Prior to the issue of such a permit a detailed mapping and recording of the historic furrows will have to be conducted by an architectural historian or archaeologist as requirement for permit application.

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- The results of the project;
- The technology described in any report
- Recommendations delivered to the Client.

1. Introduction

Kudzala Antiquity CC was commissioned to conduct an Archaeological Impact Assessment (AIA) on Portion 7 of the Farm Tekwane 573 JU, Tekwane Extension 2, Mpumalanga Province. The affected area, approximately 90 hectares in extent, is located within the boundaries of the Mbombela Local Municipal area.

The National Heritage Resources Act (Act 25, 1999, section 38) and the NEMA (National Environmental Management Act No. 107 of 1998) requires of individuals (engineers, farmers, mines and industry) or institutions to have specialist heritage impact assessment studies undertaken whenever any development activities are planned. This is to ensure that heritage features or sites that qualify as part of the national estate are properly managed and not damaged or destroyed.

Heritage resources considered to be part of the national estate include those that are of Cultural, historical significance or have other special value to the present community or future generations.

The national estate may include:

- places, buildings, structures and equipment of cultural significance;
- places to which oral traditions are attached or which are associated with living heritage;
- historical settlements and townscapes;
- landscapes and natural features of cultural significance;
- geological sites of scientific or cultural importance;
- archaeological and palaeontological sites;
- graves and burial grounds including:
 - (i) ancestral graves;
 - (ii) royal graves and graves of traditional leaders;
 - (iii) graves of victims of conflict;
 - (iv) graves of individuals designated by the Minister by notice in the *Gazette*;
 - (v) historical graves and cemeteries; and

other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);

- sites of significance relating to slavery in South Africa;
- movable objects including:
 - (i) objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
 - (ii) objects to which oral traditions are attached or which are associated with living heritage;
 - (iii) ethnographic art and objects;
 - (iv) military objects
 - (v) objects of decorative or fine art;
 - (vi) objects of scientific or technological interest; and

books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1 of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).

Cultural resources are unique and non-renewable physical phenomena (of natural occurrence or made by humans) that can be associated with human (cultural) activities (Van Vollenhoven, 1995:3).

These would be any man-made structure, tool, object of art or waste that was left behind on or beneath the soil surface by historic or pre-historic communities. These remains, when studied in their original context by archaeologists, are interpreted in an attempt to understand, identify and reconstruct the activities and lifestyles of past communities. When these items are disturbed from their original context, any meaningful information they possess is lost, therefore it is important to locate and identify such remains before construction or development activities commence.

An AIA consists of three phases, this document deals with the first phase. This (phase 1) investigation is aimed at getting an overview of cultural resources in a given area, thereby assessing the possible impact a proposed development may have on these resources.

When the archaeologist encounters a situation where the planned project will lead to the destruction or alteration of an archaeological site, a second phase in the survey is

normally recommended. During a phase two investigation, the impact assessment of development activities on identified cultural resources is intensified and detailed investigation into the nature and origin of the cultural material is undertaken. Often at this stage, archaeological excavation is carried out in order to document and preserve the cultural heritage.

Phase three consists of the compiling of a management plan for the safeguarding, conservation, interpretation and utilization of cultural resources (Van Vollenhoven, 2002).

Continuous communication between the developer and surveyor after the initial report has been compiled may result in the modification of a planned route or development to incorporate or protect existing archaeological sites.

2. Description of surveyed area

The study area falls within the Mbombela Municipality, Mpumalanga Province. The survey was carried out on Portions of the farms Tipperary 135 JU, Duma 201 JU and Langgewacht 202 JU. The area is situated north of the N4 highway along the Crocodile River, opposite the Tekwane South Township area. (see map, Appendix C).

Veld type: The area is located within the Pretoriuskop Sour Bushveld and Malelane Mountain Bushveld veld types. These are characterized by uplands and open tree savanna and few low shrubs. Also open to dense short mountain bushveld on rocky outcrops and lower lying areas. The grassy layer is dense and dominated by sour grasses.

Geology: Most of the area is underlain by granite and gneiss of the Nelspruit Suite. Hills with large boulder, soil is shallow sandy loam and also coarse sandy lithosols (Mucina and Rutherford, 2009).

The survey was conducted on foot and with the use of a motor vehicle in an effort to locate cultural remains.

3. Methodology

The methodological approach for this study should meet the requirements of relevant heritage legislation. A desktop archival study followed by a physical survey of the

impacted areas was conducted. This was done to assess whether graves or features of historical or archaeological value exist on the property.

SAHRA (South African Heritage Resources Agency) and the relevant legislation (Act 25 of 1999, National Heritage Resources Act) require that the following components be included in an Archaeological impact assessment:

- Archaeology
- Shipwrecks
- Battlefields
- Graves
- Structures older than 60 years
- Living heritage
- Historical settlements
- Landscapes
- Geological sites
- Palaeontological sites and objects

All the above-mentioned heritage components are addressed in this report, except shipwrecks, geological sites and palaeontological sites and objects as these are not within the expertise of the surveyor.

The purpose of the archaeological study is to establish the whereabouts and nature of cultural heritage sites should they occur on the surveyed area. This includes settlements, structures and artifacts which have value for an individual or group of people in terms of historical, archaeological, architectural (Built environment) and human (cultural) development.

It is the aim of this study to locate and identify such objects or places in order to assess whether they are of significance and warrant further investigation or protection. This is done by means of foot surveys, a desktop archival study as well as a study of the results of previous archaeological work in the area.

3.1. Desktop study

The purpose of the desktop study is to compile as much information as possible on the heritage resources of the area. This helps to provide an historical context for located sites. Sources used for this study included published and unpublished documents, archival material and maps. Material obtained from the following institutions or individuals were consulted:

- Lydenburg Museum, Lydenburg
- Published and unpublished archaeological reports and articles
- Published and unpublished historical reports and articles
- Documents and images from the National Archives in Pretoria

3.1.1. Previous Archaeological studies in the area

The SAHRA database was used to gather information on previous Archaeological Impact Assessments conducted in the area. Reports by Celliers (2005 and 2006) entitled: *“Report on Archaeological Survey of the Central Waste Disposal Site – Tekwane, Mbombela Municipality on Portion 5 of the farm Tekwane 573 JU”* and *“Archaeological Survey for the Karino Urban Development on Portions 7,15,16,18,19 20, 26, 44 and 73 of the farm Goedehoop 128 JU and Portion 23 of the farm Broedershoek 129 JU, Mbombela”* respectively were consulted. The report compiled during 2005 states that no archaeological or any heritage remains were located. The 2006 report indicates 19 located sites of which 12 are grave sites and 6 buildings or structures and one is of an archaeological site with Late Iron Age remains.

3.2. Significance of sites

The South African Heritage Resources Agency (SAHRA) formulated guidelines for the conservation of all cultural resources and therefore also divided such sites into three main categories. These categories might be seen as guidelines that suggest the extent of protection a given site might receive. They include sites or features of local (Grade 3) provincial (Grade 2) and national (Grade 1) significance.

For practical purposes the surveyor uses his own classification for sites or features and

divides them into three groups, those of low or no significance, those of medium significance, those of high significance.

Regarding the establishment of the significance of a site or feature certain classifications of significance is allocated to a site or feature.

These include:

- **Types of significance**

The site's scientific, aesthetic and historic significance or a combination of these is established.

- **Degrees of significance**

The archaeological or historic site's rarity and representative value is considered. The condition of the site is also an important consideration.

- **Spheres of significance**

Sites are categorized as being significant in the international, national, provincial, regional or local context. Significance of a site for a specific community is also taken into consideration.

To arrive at a specific allocation of significance of a site or feature, the archaeologist considers the following:

- Historic context
- Archaeological context or scientific value
- Social value
- Aesthetic value

More specific criteria used by the specialist in order to allocate value or significance to a site include:

- The unique nature of a site
- The integrity of the archaeological deposit
- The wider historic, archaeological and geographic context of the site
- The location of the site in relation to other similar sites or features
- The depth of the archaeological deposit (when it can be determined or is known)
- The preservation condition of the site

- Quality of the archaeological or historic material of the site
- Quantity of sites and site features

In short, archaeological and historic sites containing data which may significantly enhance the knowledge that archaeologists currently have about our cultural heritage should be considered highly valuable. In all instances these sites should be preserved and not damaged during construction activities. When development activities do however jeopardize the future of such a site, a second and third phase in the Cultural Resource Management (CRM) process is normally advised which entails the excavation or rescue excavation of cultural material along with a management plan to be drafted for the preservation of the site or sites.

Graves are considered very sensitive sites and should never under any circumstances be jeopardized by development activities. Graves are incorporated in the National Heritage Resources Act under section 36 and in all instances where graves are found by the surveyor, the recommendation would be to steer clear of these areas. If this is not possible or if construction activities have for some reason damaged graves, specialized consultants are normally contacted to aid in the process of exhumation and reinterment of the human remains.

4. History and Archaeology

4.1. Historic period

4.1.1. Early History

The first inhabitants of the eastern Lowveld were probably the San or Bushmen. They were a nomadic people who lived together in small family groups and relied on hunting and gathering of food for survival. Evidence of their existence is to be found in numerous rock shelters throughout the Lowveld where some of their rock paintings are still visible. A number of these shelters have been documented in the Nelspruit area (Bornman, 1995; Schoonraad in Barnard, 1975). It has been argued that the red ochre source for these paintings is to be found at Dumaneni, near Malelane (Bornman, 1995).

Two Late-Holocene (Later Stone Age) sites near Hazyview in the Kruger National Park date to the last 2500 years and are associated with pottery and microlith stone tools (Bergh, 1998: 95). This is contemporary to typical hunter-gatherer lifestyle and may also have been sites frequented by San.

It was only later that Bantu-speaking tribes moved into this area from the northern parts of Southern Africa and settled here. This period is referred to as the Early Iron Age (AD 200-1500 approx.). These were presumably Sotho-Tswana herder groups.

Various historians and ethnographers describe that the Lowveld was frequented by Swazi and Sotho-Tswana groups during historic times i.e. Late Iron Age times during the period AD 1500-1800. (Barnard, 1975; Bergh, 1998; Bornman, 2002; Herbst, 1985; Myburgh, 1949).

Old trade routes were well established before the period of Colonial expansion and these routes mainly existed as a direct consequence of metallurgy and mining for iron, tin, copper and some gold to make weapons, agricultural equipment and ornaments (Bergh, 1998:103). The earliest signs of iron mining and working in the old Transvaal dates to approximately 300 AD and copper mining and working in Southern Africa may have been practiced as early as 620 AD (Bergh, 1998:103).

These people were responsible for the establishment of large centrums like Monomtapa the Zimbabwe Complex and also the famed Mapungubwe in the Limpopo valley. At around 900 AD Arab merchants established a trade post at Sofala (Beira). Since the start of the 11th century, these Arabs had trade relations with the people of Zimbabwe. Textiles, porcelain and glass beads were traded for gold, ivory and other minerals.

An ancient trade route passed close-by the current Nelspruit and started from Delagoabay in a westward direction through the Lowveld towards the gold fields of Lydenburg, by passing through Malalapoort, the Nkhomati and Crocodile Rivers to Skipberg in the current Kruger National Park close-by the place where Pretoriuskop Rest Camp is located. From here onwards there were two possible routes up the mountains to reach the goldfields. The first one passed by Spitskop (Sabie) and from there on to Lydenburg. The second passed south of the “Devils Knuckles” to Lydenburg. The Voortrekkers used this route in 1845 when making the wagon route between Ohrigstad and Delagoabay (Berg, 1998: 104). There were also several linking routes to existing main routes, one of which started from Sabie or Lydenburg to the route which linked Delagoabay to the Soutpansberg via Pilgrim’s Rest. It is also believed that a footpath existed at the foothills of the (Transvaal) Drakensberg which led around the mountain to link again with a major route alongside the Olifants River (Bergh, 1998:104).

In 1721 Dutch sailors reached Delagoa Bay and settled there for nine years, during this time they launched a number of expeditions inland. During August 1723 lieutenant Jan Steffler and 17 men launched the first of these expeditions but they were ambushed by natives shortly after crossing the Lebombo Mountains. Exactly where they crossed the mountains is uncertain but it is possible that they were actually in northern Swaziland when they were attacked. Steffler succumbed as a result of this ambush and his followers returned to Delagoa Bay (Bergh, 1998:116).

A second attempt to create an inland route took place two years later in June 1725 when Francois de Cuiper and 34 men departed from Delagoa Bay and travelled in a north-western direction. They reached Gomondwano in the current Kruger National Park where they were also attacked by a local tribe. This resulted in them also having to return to

Delagoa Bay. Although this attempt was also not successful, it is seen as the first European intrusion into this northern area (Bergh, 1998:116).

In the (Eastern Transvaal) Lowveld a sub-group of the Northern Sotho, known as the eastern Sotho, were present nearby the eastern escarpment. They are known as the Pulana, Pai (emaMbayi) and Kutswe, these people moved from northern Swaziland further northwards when Swazi expanded into this area during the *mfecane* (Bergh, 1998:107-108). One of the recorded events relates to the attack of the Ndwande under Zwide on the Pedi in 1825 (Bergh, 1998:114-115). This seems to have started from the Lowveld in the region of the Pretoriuskop area towards Steelpoort.

During the nineteenth century the Lowveld area of Mpumalanga was extensively settled by both Bantu and European groups that migrated into this area. Bantu migration was mainly as a result of political upheaval during the *mfecane* (“the crushing” in Nguni). This was a period of bloody tribal and faction struggles in present-day KwaZulu Natal and on the Highveld area, which occurred around the early 1820’s until the late 1830’s (Bergh, 1998). It came about in response to heightened competition for land and trade, and caused population groups like gun-carrying Griquas and Shaka’s Zulus to attack other tribes (Giliomee, 2003). During this period, a movement of Swazi people took place to the areas north and northwest of Swaziland. As a result reports indicate that the Swazi were living in the Lowveld area by the 1840’s (Bergh, 1998).

Before the *mfecane* period (1820’s) small farmer groups including the Pai and Pulana resided in the mountainous area surrounding Barberton and Nelspruit. The conflict during the *mfecane*, when the Swazi under Mswati II raided these smaller groups, resulted in scattered settlement of those who managed to escape the Swazi onslaught. Evidence of these scattered settlements are sometimes found in the form of small stone walled enclosures in and around Barberton, Nelspruit and onwards to the Schoemanskloof.

According to Bornman:

“Mswati continued his attacks on the emaMbayi (Sotho) tribes living south of the Ngwenya (Crocodile) and the Mlambongwane (Kaap) Rivers, who fled into the present

day Kruger National Park and into the mountainous area of Mphakeni (Crocodile Gorge) and the Three Sisters Mountains. But as soon as the Swazi army had retreated, the emaMbayi returned to their old haunts and reoccupied them.

Again the Swazi regiments drove the emaMbayi from this area. The battle, which took place near the creek, today known as Low's Creek, west of the Three Sisters Mountain, was so fierce that the creek ran red with the blood of the slain. After the battle the Swazi named the creek: the red (or blood) river (Mantibovu) and the Three Sisters they named Mbayiyane, meaning the 'mountain of the emaMbayi'.

Mswati proceeded systematically to settle this area with members of his own family and trusted commoners after they killed Tsibeni and evicted the remnants of his people who fled to an area near Legogote, where they are still living today" (Bornman, 1995).

Archaeological evidence recorded in *Prehistory of the Transvaal: a record of human activity* does however refer to the presence of terraced settlement and a set of "unusual group of walls" that most likely indicates the presence of a small Iron Age agricultural village in the vicinity of the area in which the farm is located in Mpumalanga (Mason, 1962). Information cited in the *Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies* confirms the presence of Late Iron Age settlements in the area between ca 1000 and 1800 (Bergh, 1998).

4.1.2. The Voortrekkers

The Groot Trek of the Voortrekkers started with the Tregardt- van Rensburg trek in 1835. The two men met where Tregardt and his followers crossed the Orange River at Buffelsvlei (Aliwal North). Here van Rensburg joined the trek northwards. On August 23, 1837 the Tregardt trek left for Delagoabay from the Soutpansberg. They travelled eastwards alongside the Olifants River to the eastern foothills of the Drakensberg. From here they travelled through the Lowveld and the current Kruger National Park where they eventually crossed the Lebombo mountains in March 1838. They reached the Fortification at Lourenço Marques on 13 April 1838 (Bergh, 1998:124-125).

Permanent European (Voortrekker) settlement of the eastern areas of Mpumalanga can first be traced back to a commission under the leadership of A.H. (Hendrik) Potgieter who negotiated with the Portuguese Governor at Delagoabaai in 1844 for land. It was agreed that these settlers could settle in an area that was four days journey from the east coast of Africa between the 10° and 26° south latitudes. Voortrekkers started migrating into the area in 1845. Andries-Ohrigstad was the first town established in this area in July 1845 after the Voortrekkers successfully negotiated for land with the Pedi Chief Sekwati. Farms were given out as far west as the Olifants River. The western boundary was not officially defined but at a Volksraad meeting in 1849 it was decided that the Elands River would be the boundary between the districts of Potchefstroom and Lydenburg as this eastern portion of the Transvaal was then known (Bergh, 1998).

Due to internal strife and differences between the various Voortrekker groups that settled in the broader Transvaal region, the settlers in the Ohrigstad area now governed from the town of Lydenburg decided to secede from the Transvaal Republic in 1856. The Republic of Lydenburg laid claim to a large area that included not only the land originally obtained from the Pedi Chief Sekwati in 1849 but also other areas of land negotiated for from the Swazis. The Republic of Lydenburg was a vast area and stretched from the northern Strydpoort mountains to Wakkerstroom in the south and Bronkhortsspruit in the west to the Swazi border and the Lebombo mountains east.

As can be expected, the migration of Europeans into the north would have a significant impact on the indigenous people who populated the land. This was also the case in Mpumalanga. In 1839 Mswati succeeded Sobhuza (also known as Somhlomo) as king of the Swazi. Threatened by the ambitions of his half brothers, including Malambule, who had support from the Zulu king Mpande, he turned to the Ohrigstad Boers for protection. He claimed that the land that the Boers had settled on was Swazi property. The Commandant General of the Ohrigstad settlement, Andries Hendrik Potgieter, responded that the land was ceded to him by the Pedi leader Sekwati, in return for protection of the Pedi from Swazi attacks (Giliomee, 2003).

However, in reaction to the increasingly authoritarian way in which Potgieter conducted affairs at Ohrigstad, the Volksraad of Ohrigstad saw Mswati's offer as a means to obtain more respectable title deeds for the property (Bonner, 1978). According to a sales contract set up between the Afrikaners and the Swazi people on 25 July 1846, the former were the rightful owners of the land that had its southern border at the Crocodile River, which stretched out in a westerly direction up to Elandspruit; of which the eastern border was where the Crocodile and Komati rivers joined and then extended up to Delagoa bay in the north (Van Rooyen, 1951). The Europeans bought the land for a 100 heads of cattle (Huyser).

4.2. Archaeology

4.2.1. Stone Age

The Later phases of the Stone Age began at around 20 000 years BP (Before Present). This period was marked by numerous technological innovations and social transformations within these early hunter-gatherer societies. Hunting tools now included the bow and arrow. More particularly, the link-shaft arrow which comprises a poisoned bone tip loosely linked to a shaft which fell away when an animal was shot and left the arrow tip embedded in the prey animal. Other innovations included bored stones used as digging –stick weights to help with uprooting of tubers and roots, small stone tools, normally less than 25mm long, which was used for cutting meat and scraping hides. There were also polished bone needles, twine made from plant fibers, tortoiseshell bowls, fishing equipment including bone hooks and stone sinkers, ostrich eggshell beads and other decorative artwork (Delius, 2007).

These people may be regarded as the first modern inhabitants of Mpumalanga, known as the San or Bushmen. They were a nomadic people who lived together in small family groups and relied on hunting and gathering of food for survival. Evidence of their existence is to be found in numerous rock shelters throughout the Eastern Mpumalanga where some of their rock paintings are still visible. A number of these shelters have been documented throughout the Province (Bornman, 1995; Schoonraad in Barnard, 1975; Delius, 2007). These include areas such as Witbank, Ermelo, Barberton, Nelspruit, White River, Lydenburg and Ohrigstad.

Two Late-Holocene (Later Stone Age) sites near Hazyview in the Kruger National Park date to the last 2500 years and are associated with pottery and microlith stone tools (Bergh, 1998: 95). This is contemporary to typical hunter-gatherer lifestyle and may also have been sites frequented by San.

San paintings in Mpumalanga are characterized by representations of animals and human figures and are normally fine-lined paintings which are produced by using brushes made of plant material, sticks and quills. The colours are usually red and black or sometimes

white. It has been argued that the red ochre source for some of these paintings is to be found at Dumaneni, near Malelane (Bornman, 1995).

At Honingklip near Badplaas in the Carolina District, two LSA rock shelters with four panels of rock art was discovered and archaeologically investigated. The site was used between 4870 BP and as recently as 200 BP. Stone walls at both sites date to the last 250 years of hunter-gatherer occupation and they may have served as protection against intruders and predators. Pieces of clay ceramic and iron beads found at the site indicates that there was early social interaction between the hunter-gatherer (San) communities and the first farmers who moved into this area at around 500 AD. Evidence from Welgelegen Shelter on the banks of the Vaal River near Ermelo suggests that the early farming (Bantu) and hunter-gatherer (San) communities coexisted (Delius, 2007; Bergh, 1998).

The farmers who used metal tools, occupied the shelter while an independent hunter-gatherer group who made typical LSA (Late Stone Age) stone tools and used pottery, occupied the overhang area of the shelter. Similar “symbiotic” relationships existed between the Batwa San from the Lake Chrissie area and the Swazi well into the 20th century (Delius, 2007).

4.2.2. Early Iron Age

The period referred to as the Early Iron Age (AD 200-1500 approx.) started when presumably Karanga (north-east African) herder groups moved into the north eastern parts of South Africa. It is believed that these people may have been responsible for making of the famous Lydenburg Heads, ceramic masks dating to approximately 600AD.

Ludwig von Bezing was a boy of more or less 10 years of age when he first saw pieces of the now famous Lydenburg heads in 1957 while playing in the veld on his father’s farm near Lydenburg. Five years later von Bezing developed an interest in archaeology and went back to where he first saw the shards. Between 1962 and 1966 he frequently visited the Sterkspruit valley to collect pieces of the seven clay heads. Von Bezing joined the archaeological club of the University of Cape Town when he studied medicine at this institution. He took his finds to the university at the insistence of the club. He had not only found the heads, but potsherds, iron beads, copper beads, ostrich eggshell beads,

pieces of bones and millstones. Archaeologists of the University of Cape Town and WITS Prof. Ray Innskeep and Dr Mike Evers excavated the site where von Bezing found the remains. This site and in particular its unique finds (heads, clay masks) instantly became internationally famous and was henceforth known as the Lydenburg Heads site.

Two of the clay masks are large enough to probably fit over the head of a child, the other five are approximately half that size. The masks have both human and animal features, a characteristic that may explain that they had symbolic use during initiation- and other religious ceremonies. Carbon dating proved that the heads date to approximately 600 AD and were made by Early Iron Age people. These people were Bantu herders and agriculturists and probably populated Southern Africa from areas north-east of the Limpopo river. Similar ceramics were later found in the Gustav Klingbiel Nature Reserve and researchers believe that they are related to the ceramic wares (pottery) of the Lydenburg Heads site in form, function and decorative motive. This sequence of pottery is formally known as the Klingbiel type pottery. No clay masks were found in similar context to this pottery sequence.

Two larger heads and five smaller ones make up the Lydenburg find. The heads are made of the same clay used in making household pottery. It is also made with the same technique used in the manufacture of household pottery. The smaller heads display the modeling of a curved forehead and the back neck as it curves into the skull. Around the neck of each of the heads, two or three rings are engraved horizontally and are filled in with hatching marks to form a pattern. A ridge of clay over the forehead and above the ears indicates the hairline. On the two larger heads a few rows of small clay balls indicate hair decorations. The mouth consists of lips – the smaller heads also have teeth. The seventh head has the snout of an animal and is the only head that represents an animal.

Some archaeological research was done during the 1970's at sites belonging to the EIA (Early Iron Age), location Plaston, a settlement close to White River (Evers, 1977). This site is located on a spur between the White River and a small tributary. It is situated on holding 119 at Plaston.

The site was discovered during house building operations when a collection of pottery

shards was excavated. The finds consisted of pottery shards both on the surface and excavated.

Some of the pottery vessels were decorated with a red ochre wash. Two major decoration motifs occurred on the pots:

- Punctuation, using a single stylus and
- Broadline incision, the more common motif

A number of Early Iron Age pottery collections from Mpumalanga and Limpopo may be compared to the Plaston sample. They include Silver Leaves, Eiland, Matola, Klingbiel and the Lydenburg Heads site. The Plaston sample is distinguished from samples of these sites in terms of rim morphology, the majority of rims from Plaston are rounded and very few beveled. Rims from the other sites show more beveled rims (Evers, 1977:176).

Early Iron Age pottery was also excavated by archaeologist, Prof. Tom Huffman during 1997 on location where the Riverside Government complex is currently situated (Huffman, 1998). This site known as the Riverside site is situated a few kilometers north of Nelspruit next to the confluence of the Nelspruit and Crocodile River. It was discovered during the course of an environmental impact assessment for the new Mpumalanga Government complex/ offices. A bulldozer cutting exposed storage pits, cattle byres, a burial and midden on the crest of a gentle slope. Salvage excavations conducted during December 1997 and March 1998 recovered the burial and contents of several pits.

One of the pits contained among other items, pottery dating to the eleventh century (AD 1070 ± 40 BP) this relates the pottery to the Mzonjani and Broederstroom phases. The early assemblage belongs to the Kwale branch of the Urewe tradition.

During the early 1970's Dr Mike Evers of the University of the Witwatersrand conducted fieldwork and excavations in the Eastern Transvaal. Two areas were studied, the Letaba area south of the Groot Letaba River, west of the Lebombo Mountains, east of the great escarpment and north of the Olifants River. The second area was the Eastern Transvaal escarpment area between Lydenburg and Machadodorp.

These two areas are referred to as the Lowveld and escarpment respectively. The earliest work on Iron Age archaeology was conducted by Trevor and Hall in 1912. This revealed prehistoric copper-, gold- and iron mines. Schwelinus (1937) reported smelting furnaces, a salt factory and terraces near Phalaborwa. In the same year D.S. van der Merwe located ruins, graves, furnaces, terraces and soapstone objects in the Letaba area.

Mason (1964, 1965, 1967, 1968) started the first scientific excavation in the Lowveld which was followed by N.J. van der Merwe and Scully. M. Klapwijk (1973, 1974) also excavated an Early Iron Age (EIA) site at Silverleaves and Evers and van den Berg (1974) excavated at Harmony and Eiland, both EIA sites.

Recent research by the National Cultural History Museum resulted in the excavation of an Early Iron Age site in Sekhukuneland, known as Mototolong (Van Schalkwyk, 2007). The site is characterized by four large cattle kraals containing ceramics which may be attributed to the Mzonjani and Doornkop occupational phases.

4.2.3. Late Iron Age

The later phases of the Iron Age (AD 1600-1800's) is represented by various tribes including Ndebele, Swazi, BaKoni and Pedi which is characterized by extensive stonewalled settlements found throughout the escarpment and particularly around Lydenburg, Badfontein, Sekhukuneland, Roosenekal and Steelpoort. Smaller tribes such as the Pai (Mbayi) and Pulana residing in the Lowveld, were attacked by and made to flee from the aggressive Swazi, especially during the *mfecane* (difaqane). They (Swazi) were particularly active in the Lowveld during the difaqane period (1820's) and it is well-known that they frequently attacked and ousted smaller herder groups like the Pai and Pulana, especially in the area today known as Low's Creek. They were however prevented from settling in the low-lying areas due to the presence of the tsetse fly and malaria. Consequently there is little evidence of large scale settlement in the Crocodile River valley until the time of colonial settlement (1890's) and later. Small, isolated dry-packed stone-walled enclosures found near Nelspruit and surrounding areas may be attributed to these smaller groups who hid away from the Swazi onslaught. The sites were probably not used for extended periods as they were frequently on the move as a result of

the onslaught and therefore small, indistinct and with little associated cultural material. As mentioned previously, it is known that the Mbayi (Pai) resides near Legogote in modern times (Bornman, 1995).

4.2.4. History of the water furrow on the farms Langgewacht, Duma and Tipperary in the Barberton district

On 6 March 1928 judgment was given by the Water Court regarding the application of W.H. Snijman of the farm Duma no.321 and J. Askew of Greenwoods (Portion A of Langgewacht no.314, in the District of Barberton for servitudes of aqueduct and abutment from the Crocodile River over the farm Tipperary no. 271, the property of L.J. Raubenheimer (TAB, WAT, 168/28).

The court documents include the condition of the arrangement made by the owners of the farms as to when they will be allowed to obtain water from the furrow. From the documents in the file the following information could be obtained regarding the construction of the weir and furrow.

In 1913 W.H. Snijman and one J.J. Fourie obtained permission for a grant from the Lands Department of the Transvaal Province for the farm Langgewacht of which the farms Duma and Greenwoods are sub-divisions. At this time the farm Tipperary still belonged to the Lands Department. Immediately after permission was granted to Snijman and Joubert to take possession of Langgewacht they made application to the Department of Lands to build a weir in the Crocodile River abutting on the farm Tipperary and also applied for the right to construct a furrow five feet wide and two feet deep across Tipperary to lead water to the farm Langgewacht. This application was granted to the applicants by the Lands Department. The construction of the weir and furrow was completed in 1914 (TAB, WAT, 168/28).

Soon after the completion of the weir and furrow the Department of Lands issues a grant to D. Cloran for the farm Tipperary. In 1919 the three owners of the various farms decided to increase the size of the furrow from five feet to 13 feet as Cloran wanted to establish a water turbine and pump for the purpose of irrigating land on Tipperary. Although, the furrow was widened Cloran never built the turbine and pump. He also did

not register the servitudes of abutment and aqueduct against the farm Tipperary as was part of the agreement between the three men. Cloran soon after this arrangement was made relinquished his rights to Tipperary (TAB, WAT, 168/28).

Somewhere before 1926 Snijman and Fourie made an arrangement with the Lands Department to register the portion known as Duma of the farm Langgewacht officially as a separate farm now called Duma no. 321. Snijman was now the registered owner of Duma and Fourie the owner of the remainder of Langgewacht. Fourie disposed of a portion of Langgewacht called Greenwoods in favour of J. Askew. In 1926 L.J. Raubenheimer became the registered owner of Tipperary. Although Raubenheimer was aware of the existence of the furrow and weir on his property and the agreements made by Snijman and Fourie with the Departments of Land a disagreement arose between the various parties about the use of water from the furrow (TAB, WAT, 168/28).

In May 1926 Raubenheimer informed Snijman and Fourie that he was going to cut off water supply from the furrow four days a week as he intended to clean and repair the furrow and also that he intended to erect a turbine and pump. After the turbine and pump was erected Raubenheimer repudiated all claims of the neighbouring farmers to any rights to water from the furrow. Thus the matter was taken to the Water Court and judgement was given in 1928 after the various owners came to an agreement as to when each affected party should be entitled to draw water from the weir and furrow. From subsequent documents it would seem that the matter was again a point of contention in the early 1940s but no specific details regarding this issue could be traced in the file other than the South African Police at Nelspruit requesting a copy of the judgement as handed down in 1928 by the Water Court (TAB, WAT, 168/28).

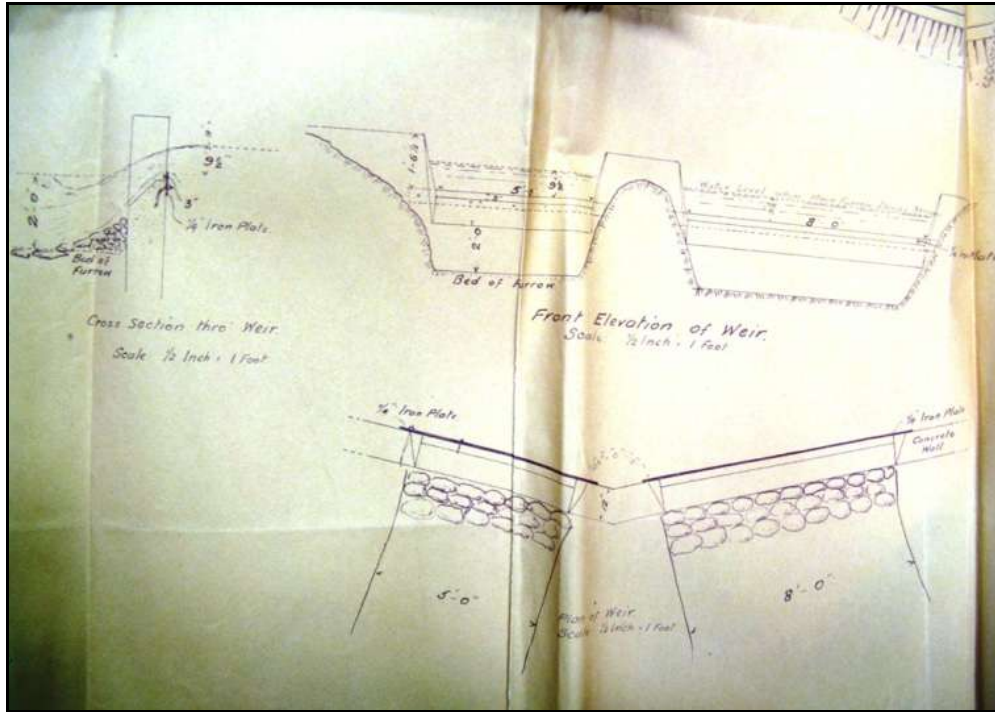


Fig. 4.1. The sketch plans (above and below, dating to c. 1914) were submitted as evidence by the various parties in the court case.

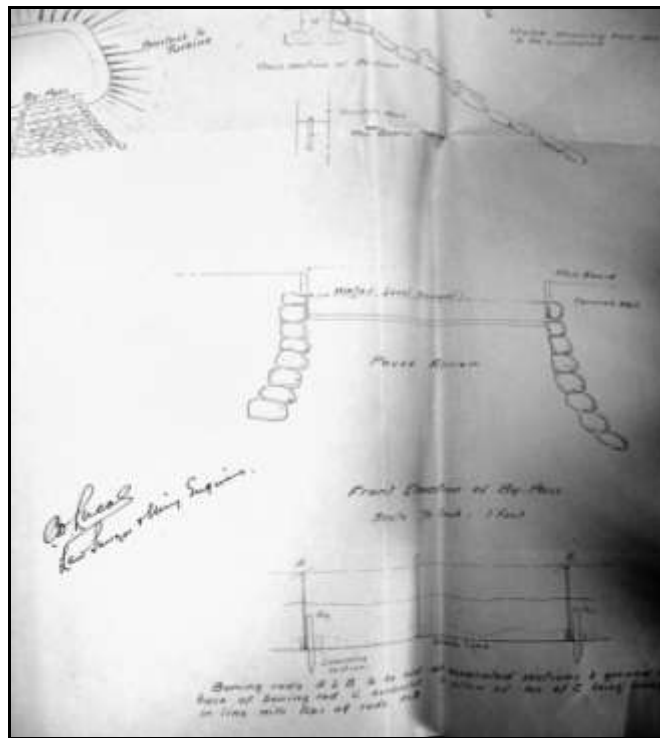


Fig. 4.2.

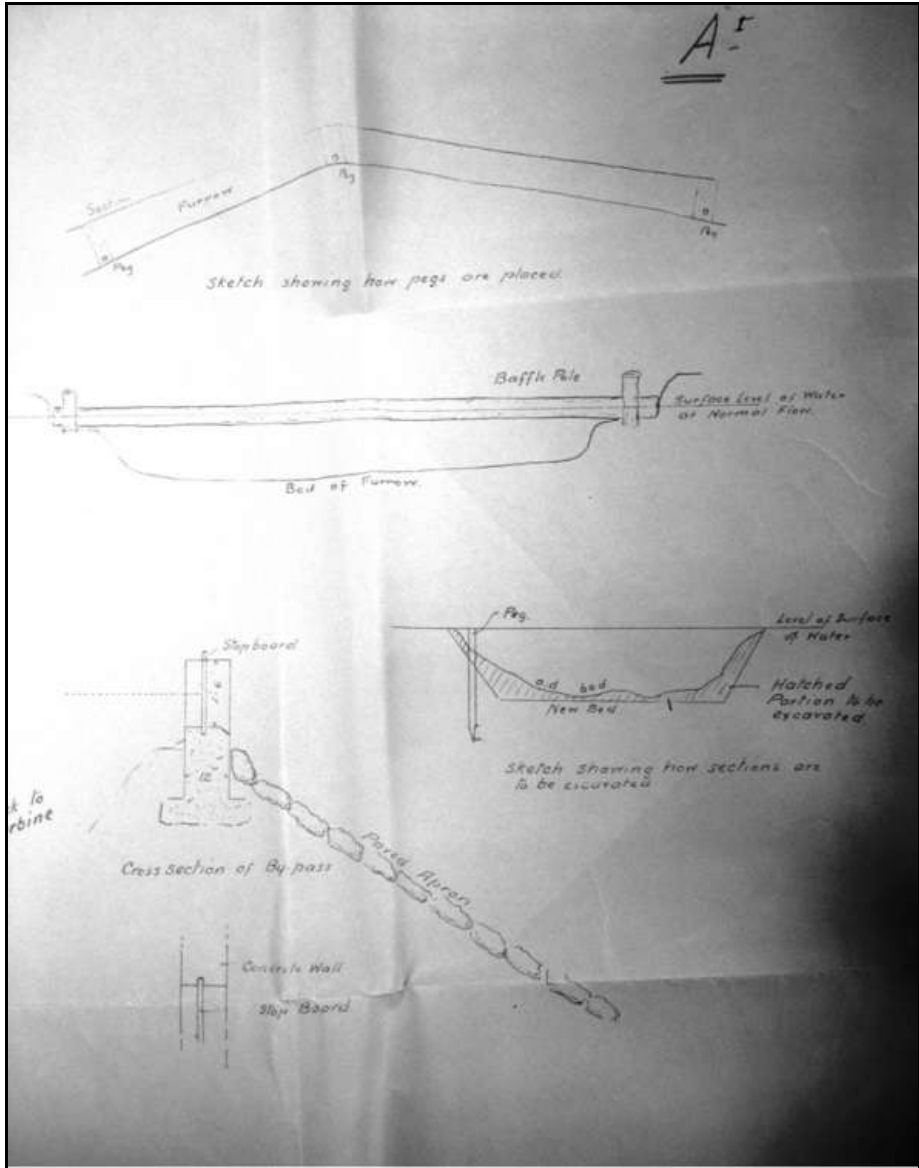


Fig. 4.3.

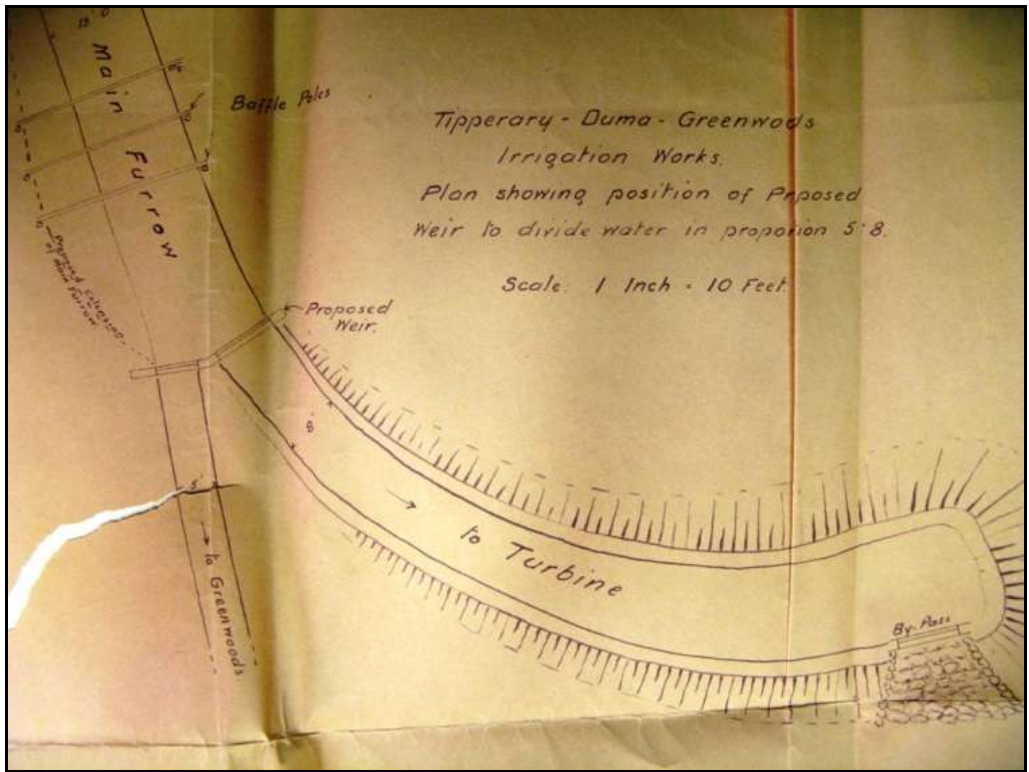


Fig.4.4.

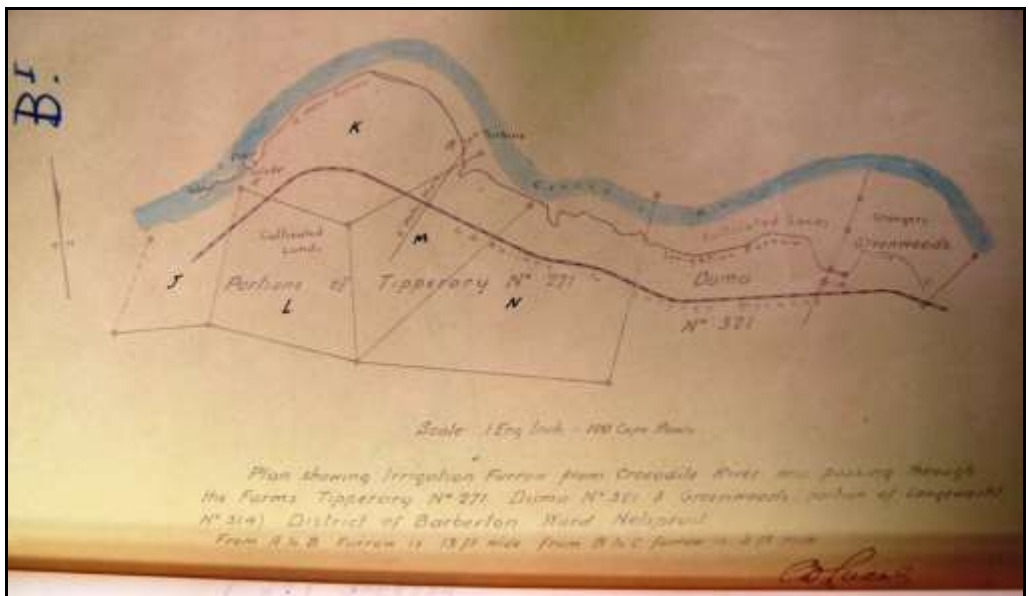


Fig.4.5.

From the information in the court documents it would seem that the water furrow on the farms Tipperary, Langewacht and Duma was constructed in 1914.

5. Located sites, description and suggested mitigation

Fourteen site locations were documented which consist of some orientation points (KH 1-4) along the proposed route of the canal. Two (KH5 & KH6) are the locations of the start and end of the 13 foot wide historic furrow. Sites KH7 and KH8 are at the location of the historic turbine and associated buildings and the remainder of the sites (KH9-14) are various locations along the historic 5 foot wide furrow.

5.2. Description of located sites

5.2.1. Site KH 1.

Location: See Appendix B and D.

Description:

Orientation point No.1. Located in close proximity to the point where the proposed canal will enter the Crocodile River at its easternmost point. Currently the location is in a previously cultivated field.

Impact of the proposed development/ activity:

The site will probably be impacted upon by development activity.

Mitigation:

None recommended.

5.2.2. Site KH 2.

Location: See Appendix B and D.

Description:

Orientation point no. 2. Here the proposed canal will follow a western direction through a wetland.

Impact of the proposed development/ activity:

The site will probably be impacted upon by development activity.

Mitigation:

None recommended.

5.2.3. Site KH 3.

Location: See Appendix B and D.

Description:

Orientation point no. 3. The section where the proposed canal will pass through an existing orchard.

Impact of the proposed development/ activity:

The site will probably be impacted upon by development activity. A social impact is envisaged

Mitigation:

None recommended.

5.2.4. Site KH 4.

Location: See Appendix B and D.

Description:

Orientation point no. 4. A point near the river where existing water pump is located, the proposed canal will pass to the south of here.

Impact of the proposed development/ activity:

The site will probably be impacted upon by development activity. A social impact is envisaged

Mitigation:

None recommended.

5.2.5. Site KH 5.

Location: See Appendix B and D.

Description:

The starting point of the historic furrow where it is 15 feet wide.

Impact of the proposed development/ activity:

The site will probably be impacted upon by development activity.

Mitigation:

Alteration or demolition of the furrow and its associated infrastructure will have to be accompanied by a valid permit obtainable from SAHRA (South African Heritage Resources Agency) in terms of section 34 of the NHRA, 25 of 1999. Prior to the issue of such a permit a detailed mapping and recording of the historic furrows will have to be conducted by an architectural historian or archaeologist as requirement for permit application.

5.2.6. Site KH 6.

Location: See Appendix B and D.

Description:

Located here is the end of the historic furrow where it is 15 feet wide. This is also where the current turbine is located.

Impact of the proposed development/ activity:

The site will probably be impacted upon by development activity.

Mitigation:

Alteration or demolition of the furrow and its associated infrastructure will have to be accompanied by a valid permit obtainable from SAHRA (South African Heritage Resources Agency) in terms of section 34 of the NHRA, 25 of 1999. Prior to the issue of such a permit a detailed mapping and recording of the historic furrows will have to be conducted by an architectural historian or archaeologist as requirement for permit application.

5.2.7. Site KH 7.

Location: See Appendix B and D.

Description:

This is the location of the historic (current) turbine and the building which houses it.

Impact of the proposed development/ activity:

The site will probably be impacted upon by development activity.

Mitigation:

Alteration or demolition of the furrow and its associated infrastructure will have to be accompanied by a valid permit obtainable from SAHRA (South African Heritage Resources Agency) in terms of section 34 of the NHRA, 25 of 1999. Prior to the issue of such a permit a detailed mapping and recording of the historic furrows will have to be conducted by an architectural historian or archaeologist as requirement for permit application.

5.2.8. Site KH 8.

Location: See Appendix B and D.

Description:

This is the location of a point of the historic 5 foot wide furrow near its origin at the turbine.

Impact of the proposed development/ activity:

At this point where the furrow is still visible and is impacted upon by development activity, the mitigation recommendation below applies.

Mitigation:

Alteration or demolition of the furrow and its associated infrastructure will have to be accompanied by a valid permit obtainable from SAHRA (South African Heritage Resources Agency) in terms of section 34 of the NHRA, 25 of 1999. Prior to the issue of such a permit a detailed mapping and recording of the historic furrows will have to be conducted by an architectural historian or archaeologist as requirement for permit application.

5.2.9. Site KH 9.

Location: See Appendix B and D.

Description:

This is a location on the historic 5 foot wide furrow where it is damaged. See photo fig. 14, Appendix D.

Impact of the proposed development/ activity:

The site will probably be impacted upon by development activity.

Mitigation:

Alteration or demolition of the furrow and its associated infrastructure will have to be accompanied by a valid permit obtainable from SAHRA (South African Heritage Resources Agency) in terms of section 34 of the NHRA, 25 of 1999. Prior to the issue of such a permit a detailed mapping and recording of the historic furrows will have to be conducted by an architectural historian or archaeologist as requirement for permit application.

5.2.10. Site KH 10.

Location: See Appendix B and D.

Description:

This is a location on the historic 5 foot wide furrow where it is blocked by boulders.

Impact of the proposed development/ activity:

The site will probably be impacted upon by development activity.

Mitigation:

Alteration or demolition of the furrow and its associated infrastructure will have to be accompanied by a valid permit obtainable from SAHRA (South African Heritage Resources Agency) in terms of section 34 of the NHRA, 25 of 1999. Prior to the issue of such a permit a detailed mapping and recording of the historic furrows will have to be conducted by an architectural historian or archaeologist as requirement for permit application.

5.2.11. Site KH 11.

Location: See Appendix B and D.

Description:

This is a location on the historic 5 foot wide furrow where it continues further eastwards.

Impact of the proposed development/ activity:

The site will probably be impacted upon by development activity.

Mitigation:

Alteration or demolition of the furrow and its associated infrastructure will have to be accompanied by a valid permit obtainable from SAHRA (South African Heritage Resources Agency) in terms of section 34 of the NHRA, 25 of 1999. Prior to the issue of such a permit a detailed mapping and recording of the historic furrows will have to be

conducted by an architectural historian or archaeologist as requirement for permit application.

5.2.12. Site KH 12.

Location: See Appendix B and D.

Description:

This is a location on the historic 5 foot wide furrow where it is damaged. See photos fig. 15, Appendix D.

Impact of the proposed development/ activity:

The site will probably be impacted upon by development activity.

Mitigation:

Alteration or demolition of the furrow and its associated infrastructure will have to be accompanied by a valid permit obtainable from SAHRA (South African Heritage Resources Agency) in terms of section 34 of the NHRA, 25 of 1999. Prior to the issue of such a permit a detailed mapping and recording of the historic furrows will have to be conducted by an architectural historian or archaeologist as requirement for permit application.

5.2.13. Site KH 13.

Location: See Appendix B and D.

Description:

This is a location on the historic 5foot wide furrow where it is interrupted and not visible, only to continue a few meters further eastward.

Impact of the proposed development/ activity:

The site will probably be impacted upon by development activity.

Mitigation:

Alteration or demolition of the furrow and its associated infrastructure will have to be accompanied by a valid permit obtainable from SAHRA (South African Heritage Resources Agency) in terms of section 34 of the NHRA, 25 of 1999. Prior to the issue of such a permit a detailed mapping and recording of the historic furrows will have to be conducted by an architectural historian or archaeologist as requirement for permit application.

5.2.14. Site KH 14.

Location: See Appendix B and D.

Description:

This is a location where the furrow ends and is not visible any further. Fig. 16, Appendix D.

Impact of the proposed development/ activity:

The site will probably be impacted upon by development activity.

Mitigation:

Alteration or demolition of the furrow and its associated infrastructure will have to be accompanied by a valid permit obtainable from SAHRA (South African Heritage Resources Agency) in terms of section 34 of the NHRA, 25 of 1999. Prior to the issue of such a permit a detailed mapping and recording of the historic furrows will have to be conducted by an architectural historian or archaeologist as requirement for permit application.

TABLE 5.1. General Significance of located sites.

Site No.	Description	Type of significance	Degree of significance	Sphere of significance
KH 1	Orientation Point	N/A	Archaeological: None Historic: None	Karino farming area
KH 2	Orientation Point	N/A	Archaeological: None Historic: None	Karino farming area
KH 3	Orientation Point	N/A	Archaeological: None Historic: None	Karino farming area
KH 4	Orientation Point	N/A	Archaeological: None Historic: None	Karino farming area
KH 5	Beginning of historic furrow, 13 foot section	Historical	Archaeological: None Historic: High	Karino farming area
KH 6	End of historic furrow, 13 foot section	Historical	Archaeological: None Historic: High	Karino farming area
KH 7	Historic turbine and building	Historical	Archaeological: None Historic: High	Karino farming area
KH 8	Near beginning of historical furrow 5 foot section	Historical	Archaeological: None Historic: High	Karino farming area
KH 9	Feature on the historic furrow	Historical	Archaeological: None Historic: High	Karino farming area
KH 10	Feature on the historic furrow	Historical	Archaeological: None Historic: High	Karino farming area
KH 11	Feature on the historic furrow	Historical	Archaeological: None Historic: High	Karino farming area

KH 12	Feature on the historic furrow	Historical	Archaeological: None Historic: High	Karino farming area
KH 13	Feature on the historic furrow	Historical	Archaeological: None Historic: High	Karino farming area
KH 14	End of historic furrow, 5 foot section	Historical	Archaeological: None Historic: High	Karino farming area

TABLE 5.2. Significance allocation of located sites

Site no.	Unique nature	Integrity of archaeological deposit	Wider context	Relative location	Depth of deposit	Quality of archaeological/historic material	Quantity of site features	Preservation condition of site
KH1	None	N/A	N/A	Langgewacht 202 JU	N/A	Archaeologically: None Historically: None	N/A	N/A
KH2	None	N/A	N/A	Langgewacht 202 JU	N/A	Archaeologically: None Historically: None	N/A	N/A
KH3	None	N/A	N/A	Duma 201 JU	N/A	Archaeologically: None Historically: None	N/A	N/A
KH4	None	N/A	N/A	Duma 201 JU	N/A	Archaeologically: None Historically: None	N/A	N/A
KH5	Historic furrow	N/A	Historic water supply & agric	Tipperary 135 JU	N/A	Archaeologically: None Historically: High	1	Good
KH6	Historic furrow	N/A	Historic water supply & agric	Tipperary 135 JU	N/A	Archaeologically: None Historically: High	1	Good
KH7	Historic turbine & building	N/A	Historic water supply & agric	Tipperary 135 JU	N/A	Archaeologically: None Historically: High	1	Good

KH8	Historic furrow	N/A	Historic water supply & agric	Tipperary 135 JU	N/A	Archaeologically: None Historically: High	1	Good
KH9	Historic furrow	N/A	Historic water supply & agric	Tipperary 135 JU	N/A	Archaeologically: None Historically: High	1	Poor
KH10	Historic furrow	N/A	Historic water supply & agric	Tipperary 135 JU	N/A	Archaeologically: None Historically: High	1	Poor
KH11	Historic furrow	N/A	Historic water supply & agric	Tipperary 135 JU	N/A	Archaeologically: None Historically: High	1	Good
KH12	Historic furrow	N/A	Historic water supply & agric	Tipperary 135 JU	N/A	Archaeologically: None Historically: High	1	Poor
KH13	Historic furrow	N/A	Historic water supply & agric	Tipperary 135 JU	N/A	Archaeologically: None Historically: High	1	Poor
KH14	Historic furrow	N/A	Historic water supply & agric	Duma 201 JU	N/A	Archaeologically: None Historically: High	1	Good

6. Findings and recommendations

Mitigation measures were allocated to each site as discussed in section 5: **Located sites and their description.**

Sites KH 1-KH4 are not regarded as being of archaeological, cultural or historical significance, they only serve as orientation points for the purpose of surveying the proposed route of the canal. Sites KH5-KH 14 are locations along the historic water furrow including the location of the water turbine and associated infrastructure (1926-1928). These are all the considered to be of high significance.

Alteration or demolition of these furrows and its associated infrastructure will have to be accompanied by a valid permit obtainable from SAHRA (South African Heritage Resources Agency) in terms of section 34 of the NHRA, 25 of 1999. Prior to the issue of such a permit a detailed mapping and recording of the historic furrows will have to be conducted by an architectural historian or archaeologist as requirement for permit application.

If any human skeletal remains are revealed in the construction process all activity will be immediately halted and application made for an emergency rescue permit in terms of section 36 of the NHRA (25 of 1999) in order to exhume the remains.

For the remainder of the area note that:

The bulk of archaeological remains are normally located beneath the soil surface. It is therefore possible that some significant cultural material or remains were not located during this survey and will only be revealed when the soil is disturbed. Should excavation or large scale earth moving activities reveal any human skeletal remains, broken pieces of ceramic pottery, large quantities of sub-surface charcoal or any material that can be associated with previous occupation, a qualified archaeologist should be notified immediately. This will also temporarily halt such activities until an archaeologist have assessed the situation. It should be noted that if such a situation occurs it may have further financial implications.

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Appendix A

Terminology

“**Alter**” means any action affecting the structure, appearance or physical properties of a place or object, whether by way of structural or other works, by painting, plastering or other decoration or any other means.

“**Archaeological**” means –

- Material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years, including artifacts, human and hominid remains and artificial features or structures;
- Rock Art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10m of such representation;
- Wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the Republic, as defined respectively in sections 3, 4 and 6 of the Maritime Zones Act, 1994 (Act No. 15 of 1994), and any cargo, debris or artifacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation; and
- Features, structures and artefacts associated with military history which are older than 75 years and the sites on which they are found;

“**Conservation**”, in relation to heritage resources, includes protection, maintenance, preservation and sustainable use of places or objects so as to safeguard their cultural significance;

“Cultural significance” means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance;

“Development” means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of a heritage authority in any way result in a change to the nature, appearance or physical nature of a place, or influence its stability and future well-being, including –

- construction, alteration, demolition, removal or change of use of a place or a structure at a place;
- carrying out any works on or over or under a place;
- subdivision or consolidation of land comprising, a place, including the structures or airspace of a place;
- constructing or putting up for display signs or hoardings;
- any change to the natural or existing condition or topography of land; and
- any removal or destruction of trees, or removal of vegetation or topsoil;

“Expropriate” means the process as determined by the terms of and according to procedures described in the Expropriation Act, 1975 (Act No. 63 of 1975);

“Foreign cultural property”, in relation to a reciprocating state, means any object that is specifically designated by that state as being of importance for archaeology, history, literature, art or science;

“Grave” means a place of interment and includes the contents, headstone or other marker of such a place, and any other structure on or associated with such place;

“Heritage resource” means any place or object of cultural significance;

“Heritage register” means a list of heritage resources in a province;

“Heritage resources authority” means the South African Heritage Resources Agency, established in terms of section 11, or, insofar as this Act (25 of 1999) is applicable in or in respect of a province, a provincial heritage resources authority (PHRA);

“Heritage site” means a place declared to be a national heritage site by SAHRA or a place declared to be a provincial heritage site by a provincial heritage resources authority;

“Improvement” in relation to heritage resources, includes the repair, restoration and rehabilitation of a place protected in terms of this Act (25 of 1999);

“Land” includes land covered by water and the air space above the land;

“Living heritage” means the intangible aspects of inherited culture, and may include –

- cultural tradition;
- oral history;
- performance;
- ritual;
- popular memory;
- skills and techniques;
- indigenous knowledge systems; and
- the holistic approach to nature, society and social relationships;

“Management” in relation to heritage resources, includes the conservation, presentation and improvement of a place protected in terms of the Act;

“Object” means any moveable property of cultural significance which may be protected in terms of any provisions of the Act, including –

- any archaeological artifact;
- palaeontological and rare geological specimens;
- meteorites;
- other objects referred to in section 3 of the Act;

“Owner” includes the owner’s authorized agent and any person with a real interest in the property and –

- in the case of a place owned by the State or State-aided institutions, the Minister or any other person or body of persons responsible for the care, management or control of that place;
- in the case of tribal trust land, the recognized traditional authority;

“Place” includes –

- a site, area or region;
- a building or other structure which may include equipment, furniture, fittings and articles associated with or connected with such building or other structure;
- a group of buildings or other structures which may include equipment, furniture, fittings and articles associated with or connected with such group of buildings or other structures;
- an open space, including a public square, street or park; and
- in relation to the management of a place, includes the immediate surroundings of a place;

“Site” means any area of land, including land covered by water, and including any structures or objects thereon;

“Structure” means any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith

Appendix B

9. List of located sites

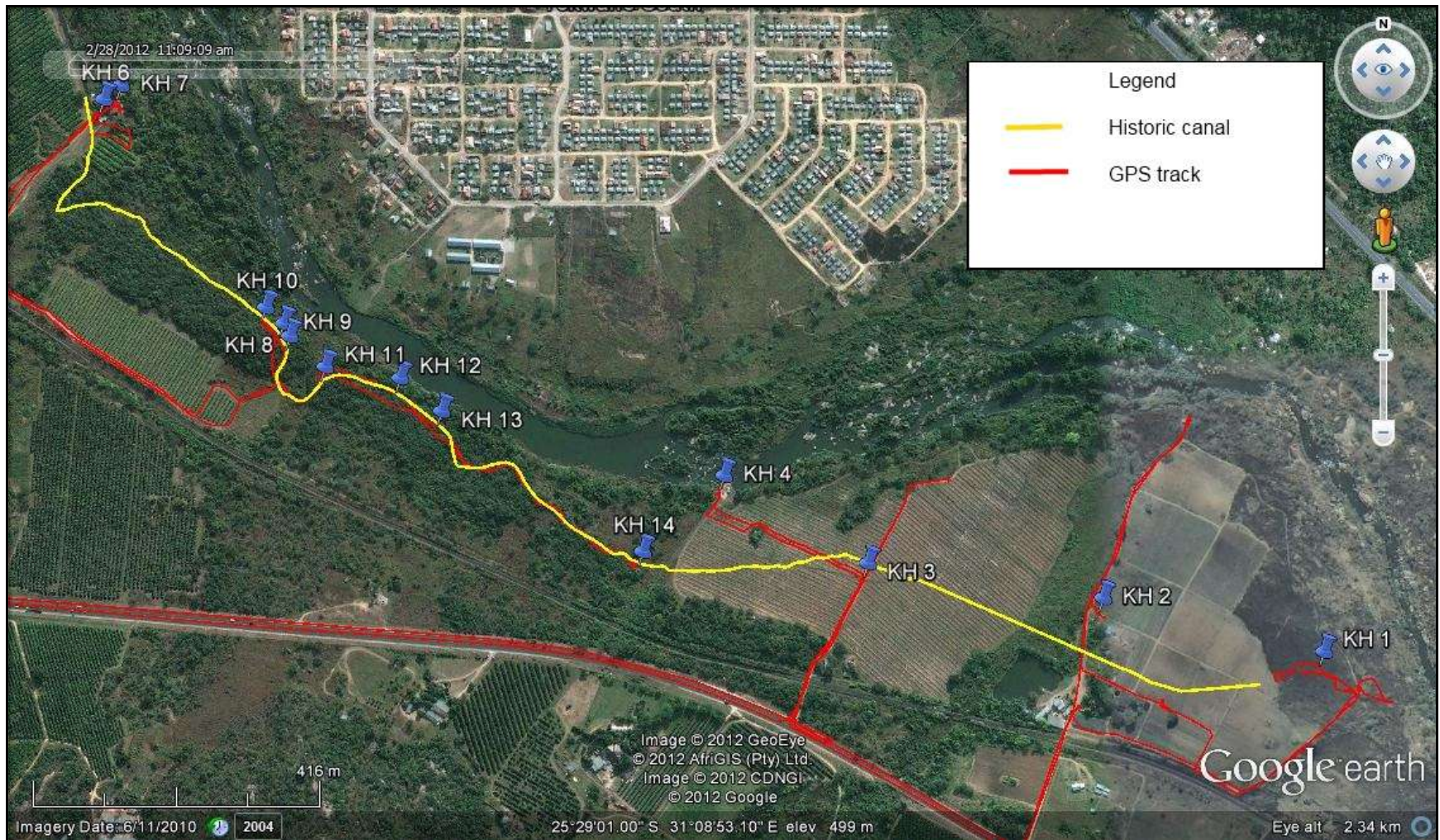
Sites located on the surveyed area were numbered TK 1-3. The initials “TK” represents the extension Tekwane and the nearby Karino sideline followed by the number of the site. A spatial location with the aid of a GPS (Global Positioning System) was added to the site.

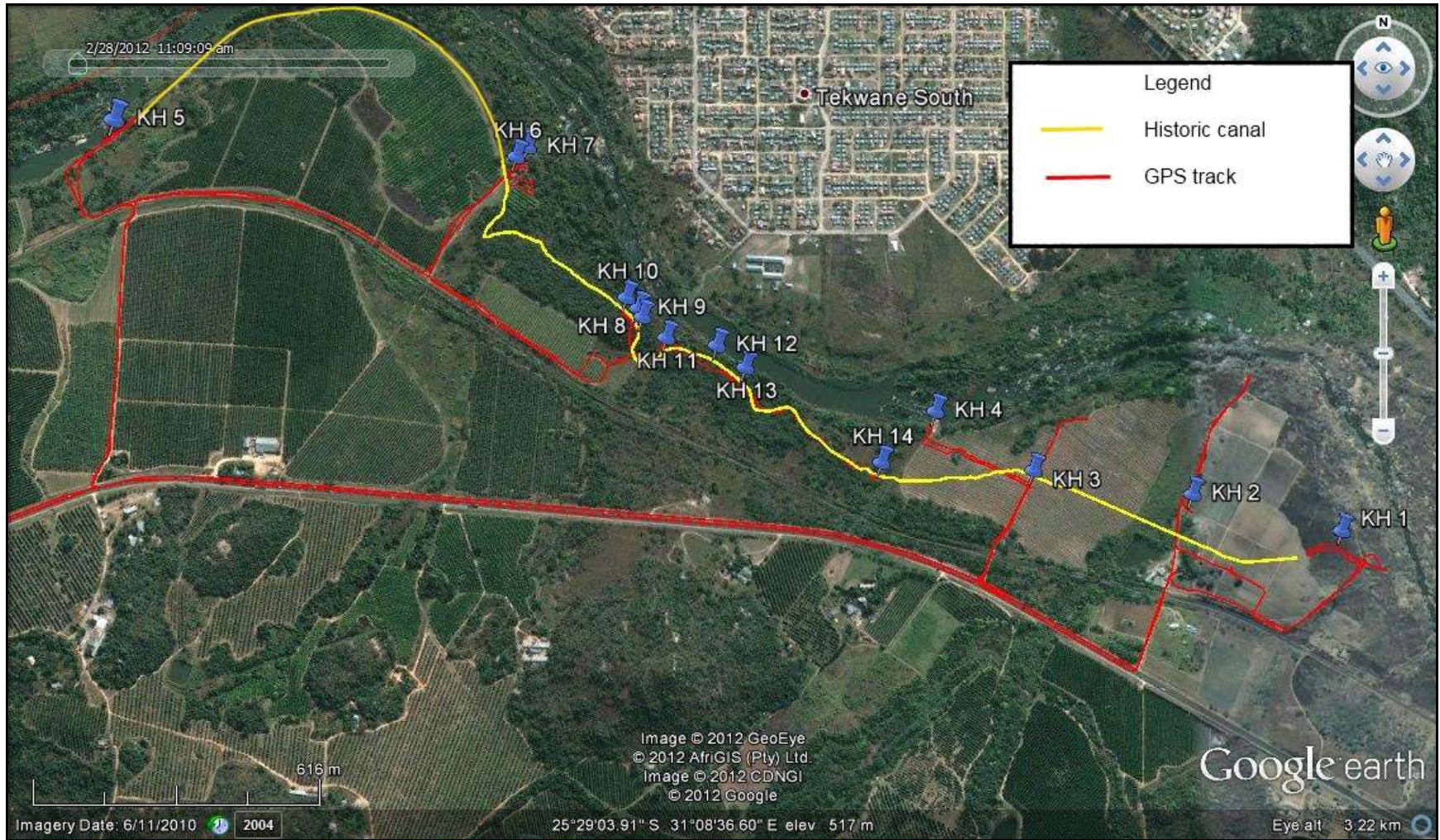
Table 9.1.

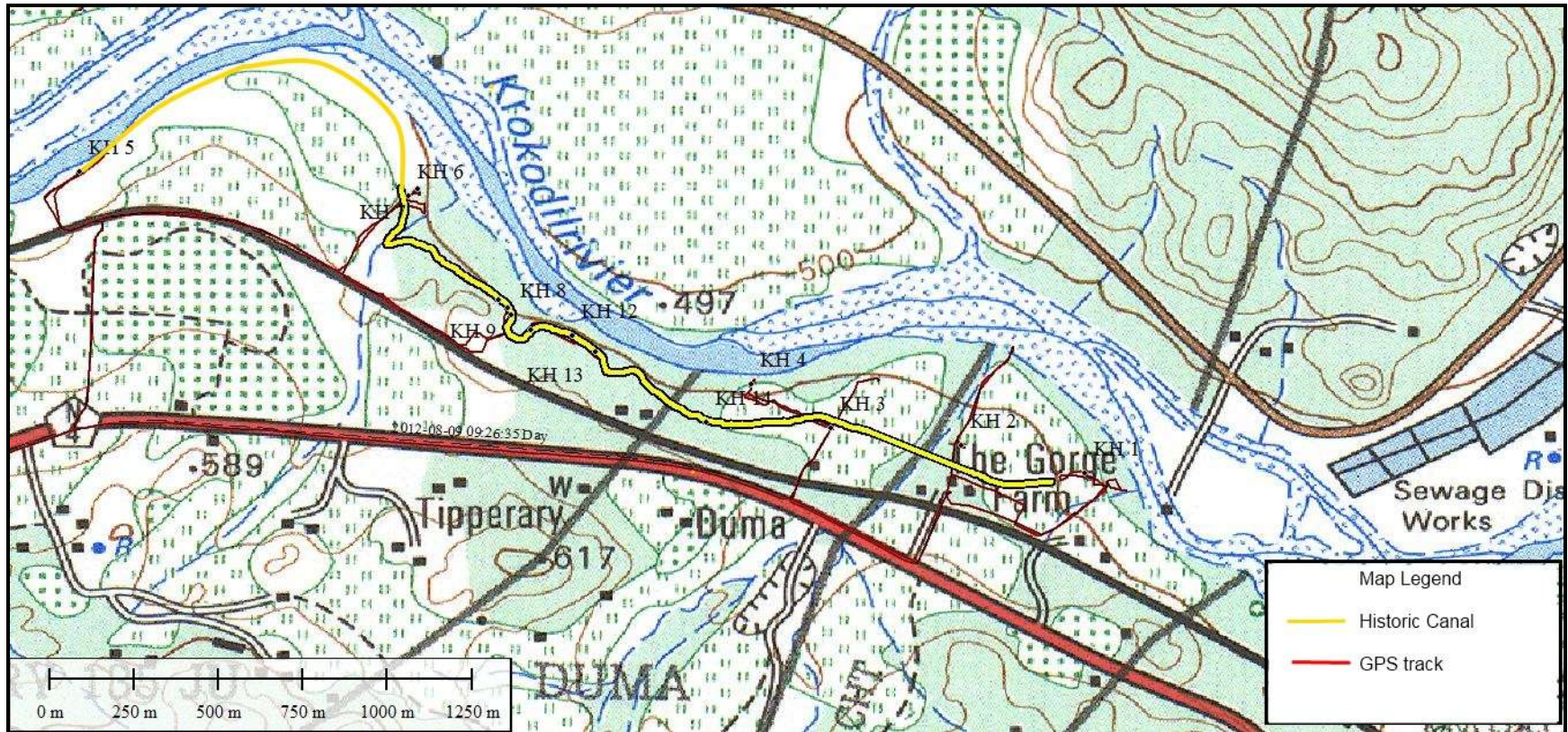
Site name	Date of compilation	GPS Coördinates	Photo figure No.
KH1	09/08/2012	S25°29'12.63" E031°09'24.87"	Fig. 1.
KH2	09/08/2012	S25°29'10.02" E031°09'13.03"	Fig. 2.
KH3	09/08/2012	S25°29'08.34" E031°09'00.52"	Fig. 3.
KH4	09/08/2012	S25°29'04.16" E031°08'52.89"	Fig. 4.
KH5	09/08/2012	S25°28'43.76" E031°07'48.52"	Fig. 5-8.
KH6	09/08/2012	S25°28'46.14" E031°08'20.01"	Fig. 9.
KH7	09/08/2012	S25°28'45.46" E031°08'20.89"	Fig. 10-12.
KH8	09/08/2012	S25°28'57.49" E031°08'29.90"	Fig. 13.

KH9	09/08/2012	S25°28'56.89" E031°08'29.59"	Fig. 14.
KH10	09/08/2012	S25°28'56.12" E031°08'28.65"	
KH11	09/08/2012	S25°28'58.96" E031°08'31.77"	
KH12	09/08/2012	S25°28'59.49" E031°08'35.73"	Fig. 15.
KH13	09/08/2012	S25°29'01.07" E031°08'37.95"	
KH14	09/08/2012	S25°29'07.78" E031°08'48.59"	Fig. 16.

Appendix C – Maps







Appendix D



Fig. 1. Site KH 1. View to the South-West.



Fig. 2. Site KH 2. View to the West.



Fig. 3. Site KH 3. View to the West.



Fig. 4. Site KH 4. Pump station on the bank of the Crocodile River. The proposed Canal passes a few meters south of here.



Fig. 5. Site KH 5. Arrow indicates where the furrow starts. To the left is the Crocodile River.



Fig. 6. Site KH 5. Looking towards the West. The sluice gate at the beginning of the Furrow is clearly visible.



Fig. 7. Site KH 5. Looking in an Eastern direction from the sluice gate.



Fig. 8. An date at the sluice gate probably indicates when the current sluice gate was installed, 23 June 1979.



Fig. 9. Site KH 6. This is the location where the 13 foot furrow ends and also where the turbine is located.



Fig. 10. Site KH 7. The building in which the current turbine is located.



Fig. 11. Site KH 7. Inside the turbine building.



Fig. 12. Site KH 7. The Western side of the turbine building.



Fig. 13. Site KH 8. The 5 foot water furrow, arrows indicate its concrete sides.



Fig. 14. Site KH 9. A section of the 5 foot wide furrow where it is currently damaged.



Fig. 15. Site KH 12. Another section where the furrow is damaged.



Fig. 16. Site KH 14. A point where concrete base of the furrow is not visible any longer.