HISTORICAL OBERVATIONS ON THE COPPER RAILWAY LINE BETWEEN ROOIWINKEL AND NABABEEP, NORTHERN CAPE

Prepared for:

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(Assessment conducted under Section 38 (8) of the
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Prepared for:

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EXECUTIVE SUMMARY

Bvi Consulting Engineers, on behalf of the Nama Khoi Municipality, are proposing to lay a new water supply pipeline between Rooiwinkel and Nababeep, directly on top of the old copper railway line. The developers have indicated that no physical alteration of the railway line will take place, as the pipes will be laid on pre-cast concrete plinths that will be placed on top of the line.

Description

The discovery of large amounts of copper in central Namaqualand, around the towns of Okiep, Concordia and Nababeep, in 1853 precipitated the proposal to construct a railway line to transport the material to the coast. Initially copper was transported by waggon to Hondeklip Bay and Port Nolloth. In 1862 the Cape of Good Hope Copper Mining Company appointed Richard Thomas Hill as engineer in charge and the first rail was laid in 1869. The first line was a tramway for animal-drawn traffic and was constructed on the 30-inch gauge with light rails. The train consisted of trucks in pairs pulled by four mules in tandem.

The tramway was a big success. The line was completed in stages, reaching Okiep in 1876. Up to 1876 the entire line was operated by animal drawn traffic. The light rails were replaced with steel rails in order to replace the animal drawn tram with a steam service. Steam traction was finally extended to Okiep in 1893.

The eight mile branch line from Garracoup Junction (on the main line) to Nababeep was constructed in 1899. Although the main railway line between Port Nolloth and Okiep survived until 1945 when its new owners sold most of the line as scrap, the section between Nababeep and Okiep via Garracoup Junction remained in service until the construction and permanent surfacing of the Nababeep to Okiep road in 1950, when this section was decommissioned and the rails uplifted.

Although the railway tracks and sleepers have been removed, the position of the line is still indicated by a raised earthen packed ridge. Sections of the raised bed of the railway line are still intact although large sections, which run in proximity to the N7 highway, have been destroyed by road development.

Heritage Significance:

The copper railway line is of high significance because of the integral role which it played in the development of copper mining in South Africa and for this reason it formed important component of Namaqualand Copper Mining Landscape which was placed on the UNESCO Tentative World Heritage Listing in 2009. However, formal proclamation of the Namaqualand Copper Mining Landscape (NCML) did not take place and in 2015, the NCML was removed from the World Heritage Listing.

Although the proposal has since been withdrawn, the tangible components of the copper railway line (the raised bed of the old tracks, the stone bridges and culverts, the water tanks for the steam trains) are an important remnant of the railway line in the development of the mining industry in South Africa. The old railway engine, the Clara, was declared a Heritage Object in 1980, indicating the heritage significance of the line and associated infrastructure.

The railway line also played an important role in outcome of the South Africa War in Namaqualand.

The railway line forms an important heritage resource in the Northern Cape Province. In the absence of formal proclamation, it is suggested that the NCML tentatively enjoys at least a Grade II or IIIA significance.

Technically, the railway line may be considered an “archaeological site” in terms of the definition of the NHRA: “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 100years, including artefacts, human and hominid remains and artificial features and structures”. This means that Section 35 of the NHRA applies which requires that a permit from SAHRA will be obtained to alter or disturb the site.

May 2016

Declaration of Independence:

I, Lita Webley, am an independent specialist consultant who is in no way connected with the proponent, other than in terms of the delivery of consulting services.

I hold a PhD degree in Archaeology and have been consulting since 1996 in the Northern, Eastern and Western Cape Provinces. I am an accredited Principal Investigator with the Association of Southern African Professional Archaeologists (ASAPA). I hold accreditation in Stone Age Archaeology, Shell Midden Archaeology and Colonial Period Archaeology (PI status) and Human Remains (Field Director).

1. INTRODUCTION

Bvi Consulting Engineers, on behalf of the Nama Khoi Municipality, are proposing to lay a new water supply pipeline between Rooiwinkel and Nababeep, directly on top of the old copper railway line. The developers have indicated that no physical alteration of the railway line will take place, as the pipes will be laid on pre-cast concrete plinths that will be placed on top of the line.

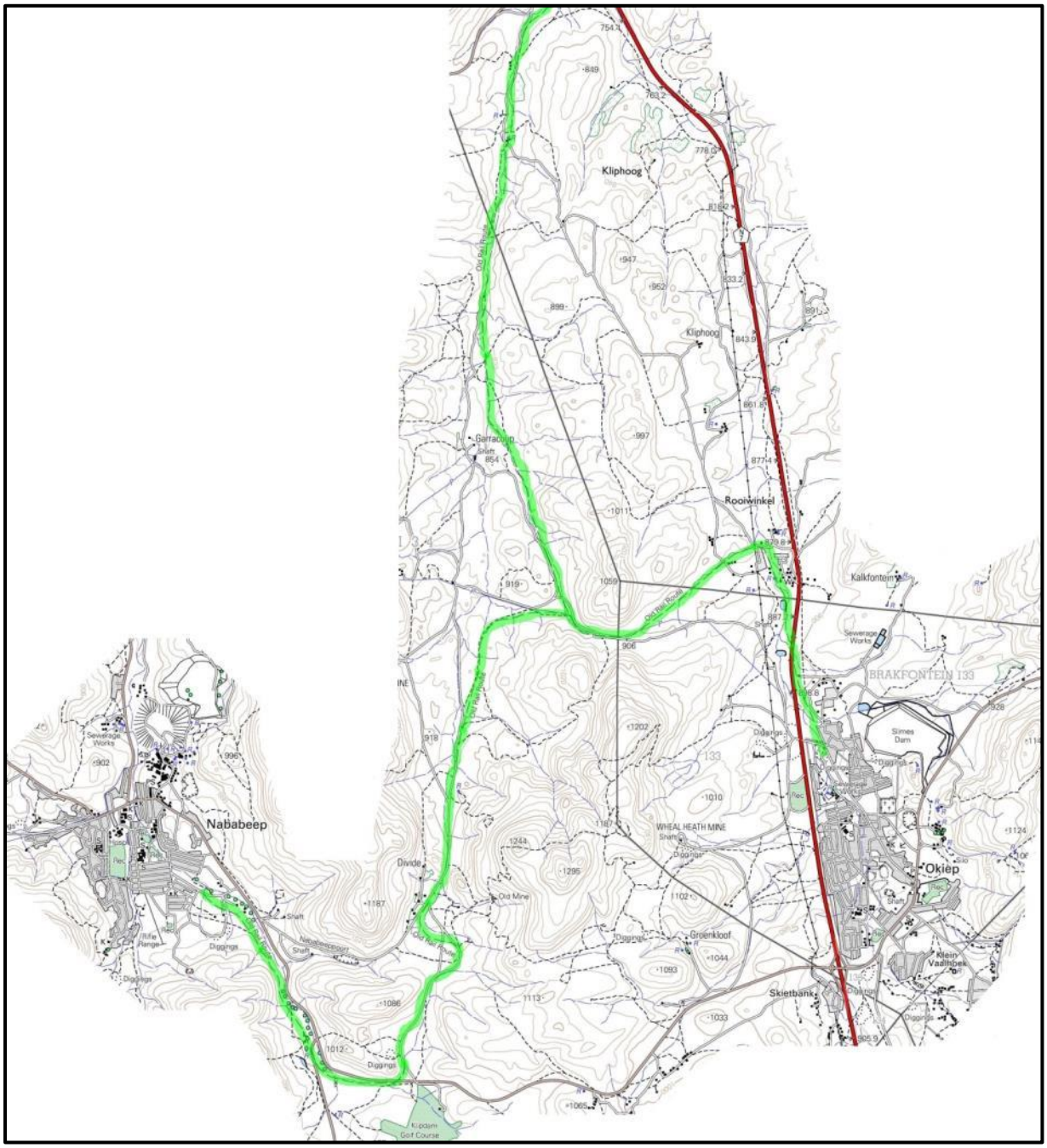

Figure 1: Southern section of the route of the copper railway line between Okiep and Nababeep (1: 50 000 Map 2917DB Springbok from the Directorate of Surveys and Mapping).

2. METHODOLOGY

2.1 Literature Survey

A survey of available literature was carried out to assess the general heritage context of the area. This literature included published material, unpublished Cultural Resource Management (CRM) reports, including those available on the South African Heritage Resources Information System (SAHRIS). In addition:

- There is a blogspot on the Steam Locomotives of South Africa which contains a review of some of the literature on the construction of the railway line between Okiep and Port Nolloth; and
- The 1:250 000 British Military Map of 1907 provides a drawing of the route and locations of important stations and stops along the copper railway line.

2.2 Limitations

Smallberger (1975:96) points out that since the village of Nababeep was entirely company controlled, this has resulted in a complete lack of documentation on its history. The history of the mine is contained in the records of the Cape of Good Hope Copper Company and these were all destroyed.

There is therefore very limited information on the design and construction of the line, most of the information being obtained from official documentation between the Cape of Good Hope Copper Company and the Colonial Government, and anecdotal descriptions of traveling on the line.

3. BACKGROUND

The rise in the price of copper in the 1850s and the discovery of extensive quantities at O'okiep[1], Concordia and Nababeep in Namaqualand in 1853 resulted in a select railway committee proposing in 1854 that a railway line be constructed to transport the material to the coast (Burman 1984). Initially copper was transported by waggon to Hondeklip Bay and Port Nolloth. The roads were in poor condition and in 1854 the Surveyor General Charles Bell, recommended the construction of a railway from Port Nolloth.

In 1862 the Cape of Good Hope Copper Mining Company appointed Richard Thomas Hill in charge of construction and the first rail was laid in 1869. The line was to be a tramway for animal-drawn traffic and was constructed on the 30-inch gauge (762mm) with light rails bolted to longitudinal sleepers of creosoted European pine, so to as to allow free passage to animals walking on the line (Plate 1). The train consisted of trucks in pairs pulled by four mules in tandem.

Thomas Hall designed the line to follow the shortest route, with the minimum of cut and fill and the most gradual of gradients. The line had a curving and undulating character and Hall had a realistic view of drainage structures, believing it was cheaper to replace a length of track than to build substantial bridges. With respect culverts, he had a "repair-if-washed-away" principle. Culverts and embankments were built of packed stone with no mortar.

The tramway was a big success and in 1871 the first light locomotive engine (the "John King") was tried. One of the major drawbacks of steam locomotives was the shortage of water. The light rail construction however, did not favour the use of steam and for many

[1] Historically named O'okiep, the town is now called Okiep.

years the line remained a tramway. In 1871 the line was extended to Kookfontein (near the Steinkopf Mission) and the last section of the line, 52 kilometres to Okiep, was opened in January 1876. Up to 1876 the entire line was operated by animal drawn traffic. In 1878, the light rails were replaced with 14.5 kg steel rails laid on cross sleepers in order to replace the animal drawn tram with a steam service. However, the mountain section remained mule-operated until the arrival of a specially built mountain engine in 1890. Steam traction was finally extended to Okiep in 1893. Concordia was linked with the Okiep line at the Brakputs junction in 1889.

Although the Namaqualand railway carried no paying passengers, it still made provision for people to travel on it. The line was still privately owned by the Cape of Good Hope Copper Mining Company until 1909. The line survived until 1945 when its new owners sold most of the line as scrap, since by that time the copper was transported by road to Bitterfontein from where it was transported by rail.

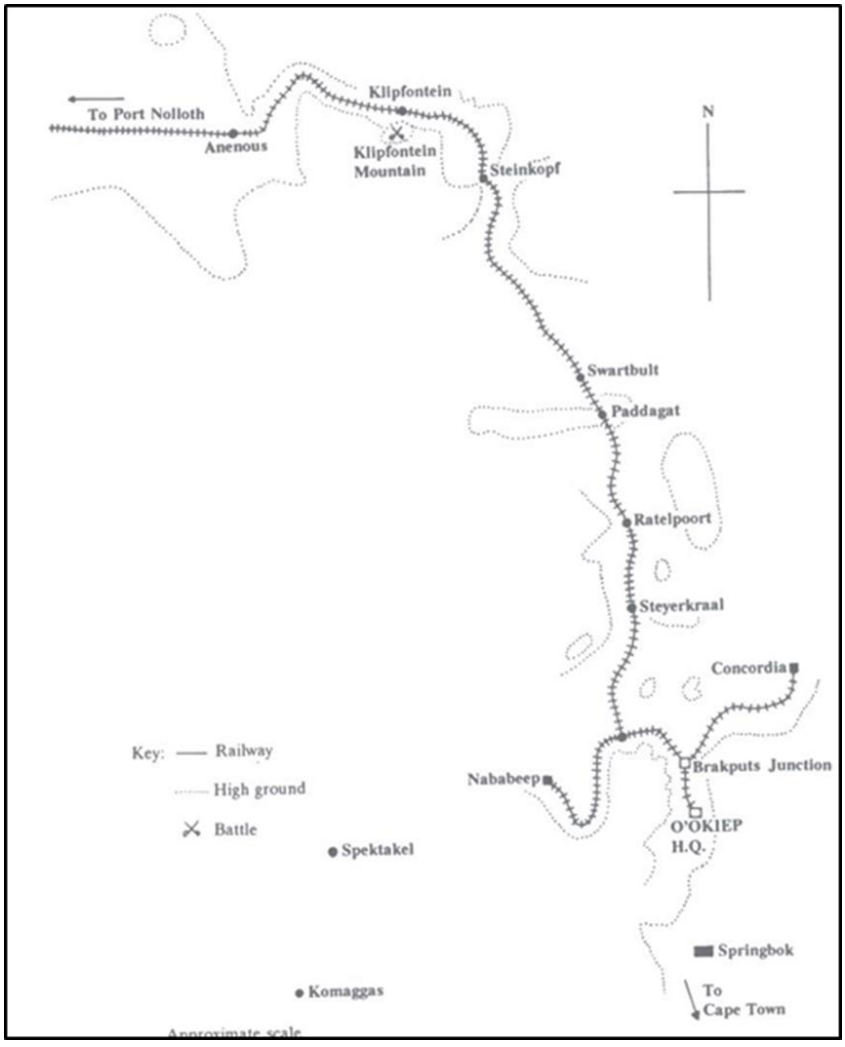

Figure 2: A schematic map of the route of the railway line between Okiep and Steinkopf at the time of the South African War, showing the most important stops along the route. Note the Brakputs junction on the branch line to Concordia. The junction to Nababeep is unnamed on the map but was called Garracoup (Map from Burke 1995).

Although the railway tracks and sleepers have been removed, the position of the line is still indicated by a raised earthen packed ridge. The rail route is also clearly indicated on 1:50 000 maps of the area (Figure 1). Interestingly, Smith (2013) reported that he was informed

by the caretaker of the farm Klipdam to the south of Okiep “that there had existed a narrow gauge railway line in the northwest corner of the farm. The sleepers from the tracks have been collected, and are stacked on the stoep of the clubhouse”.

4. THE RAILWAY LINE BETWEEN NABABEEP AND ROOIWINKEL

Okiep was for many years the centre of the Namaqualand copper fields and was known at the turn of the 20th century as the richest copper mining area in the world.

The mining town of Nababeep developed shortly after Okiep. According to Smallberger (1975), and this is confirmed by Burger (1986), the farm Nababeep was originally called Lelykepad (Lelike Pad). It was granted to Pieter van Zyl in 1850 and purchased by Phillips & King and John Wild in 1852. The first reference in the purchase document of Nababeep dates to 1852.

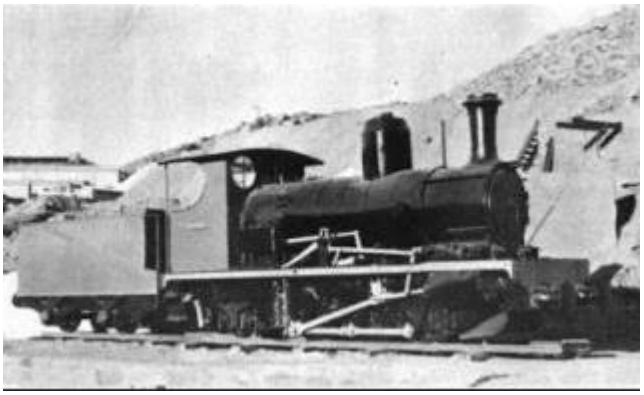

Plate 1: The Nababeep Mine shaft circa 1900 (from the HR Moffat Collection, South African Library, Cape Town). Plate 2: The engine Clara, outside the Nababeep Mine, is a declared heritage object.

According to Andrew Wyley (1857), three openings had been made in the side of the hill and a good deal of “excellent” copper had been obtained by 1857 (Smallberger 1975). It appears that trial excavations for copper were still ongoing in 1876, and it was only in 1899 that the mine appears to have been considered promising and the need for a rail connection developed. By 1902, the Nababeep mine was the second most important producing mine of the Cape Copper Company.

The branch line to Nababeep does not exist on the 1901 maps of Namaqualand and Port Nolloth compiled by the Intelligence Department (BML 68.c.7 (664) and BML 68.c.6 (692)) but apparently, according to Ross (1998), a certain Edward Hodge completed the construction for the Cape of Good Hope Copper Company of an eight mile branch line from Garracoop (Garracoup) Junction to Nababeep (Hodge 1908:41) in 1899.

The section of line which forms the focus of this study commences at Rooiwinkel (Figure 5), on the main railway line between Port Nolloth and Okiep, and ends 9km down the line, almost at the southernmost extent of the railway line before it swings west to Nababeep.

From Rooiwinkel the track winds its way in a south-westerly direction until it meets up the Nababeep branch line at the Garracoup Junction.

The position of the Garracoup Junction is shown in the War Office Maps of 1907 (Figures 4 and 5). According to Burger (1986) Garacoup (Garracoup on the 1907 War Office Map), was the name of the station between Nababeep and Okiep, and the word can be translated as

“meerkat”. The station is further along the line, and it is not clear if there were any buildings at the junction itself.

There are three small stream crossings of packed stone between Rooiwinkel and Garracoup (336, 337 & 338). After Garracoup, the line continues in a westerly direction for a further 1km, crossing over five small stone bridges (335-331) before it swings southward to travel between two high hills. There are a further three small stream crossings (330-328) on this section of 5km before the railway line leaves the study area (Figure 5).

After reaching its southernmost extent, the line swings in a westerly direction, passing a collection of buildings which are called “Dixons farm” on the 1907 War Office Map (Figure 4). These collections of buildings are unnamed on the 1973 topographical map of the area (2917DB Springbok).

The stream crossings are illustrated at the end of this report. They are of packed local stone, roughly shaped and generally, elsewhere, there is no evidence of mortar. However, the photographs, particularly of bridges 330 – 335, suggest that mortar may have been applied at some time during the use of the line. The application of mortar to the central section on bridge 336 is clear, while there is no evidence of mortar on bridges 337 and 338. It is important to remember that the railway line was in commission until 1950 and that it would have been necessary to maintain the crossings during this time.

The section between Nababeep and Okiep was closed in 1950 for internal mine use. This is confirmed by Lawrence Green (1963) who notes that “Two short sections were retained; a line from O’Okiep to the smelter plant at Nababeep; and the five miles of track from Port Nolloth to Five Mile Station”.

5. SOUTH AFRICAN WAR AND THE RAILWAY LINE

The railway line was particularly important during the South African War (1899) as the British troops protecting the copper fields were landed at Port Nolloth and routed onward by rail.

The siege of Okiep during the war is only briefly mentioned here because of the significance of the railway line which became the focus of intensive military activity during the War. The Boers were able to disrupt the lines, and communication, while the British attempted to protect the line and thereby their lines of communication with the coast. There were at least thirteen blockhouses around the perimeter of Okiep. One of the most significant events of the war in the Northern Cape was the attempt by the Boers to send an engine, loaded with dynamite, into the town of Okiep with the intention of destroying the town centre. The Boer forces, under Maritz, shunted the Pioneer engine along the railway line which ran upwards to the Brakputs Junction and then to Okiep, a distance of 1 ½ miles. The plan was not successful as the train derailed before reaching its destination.

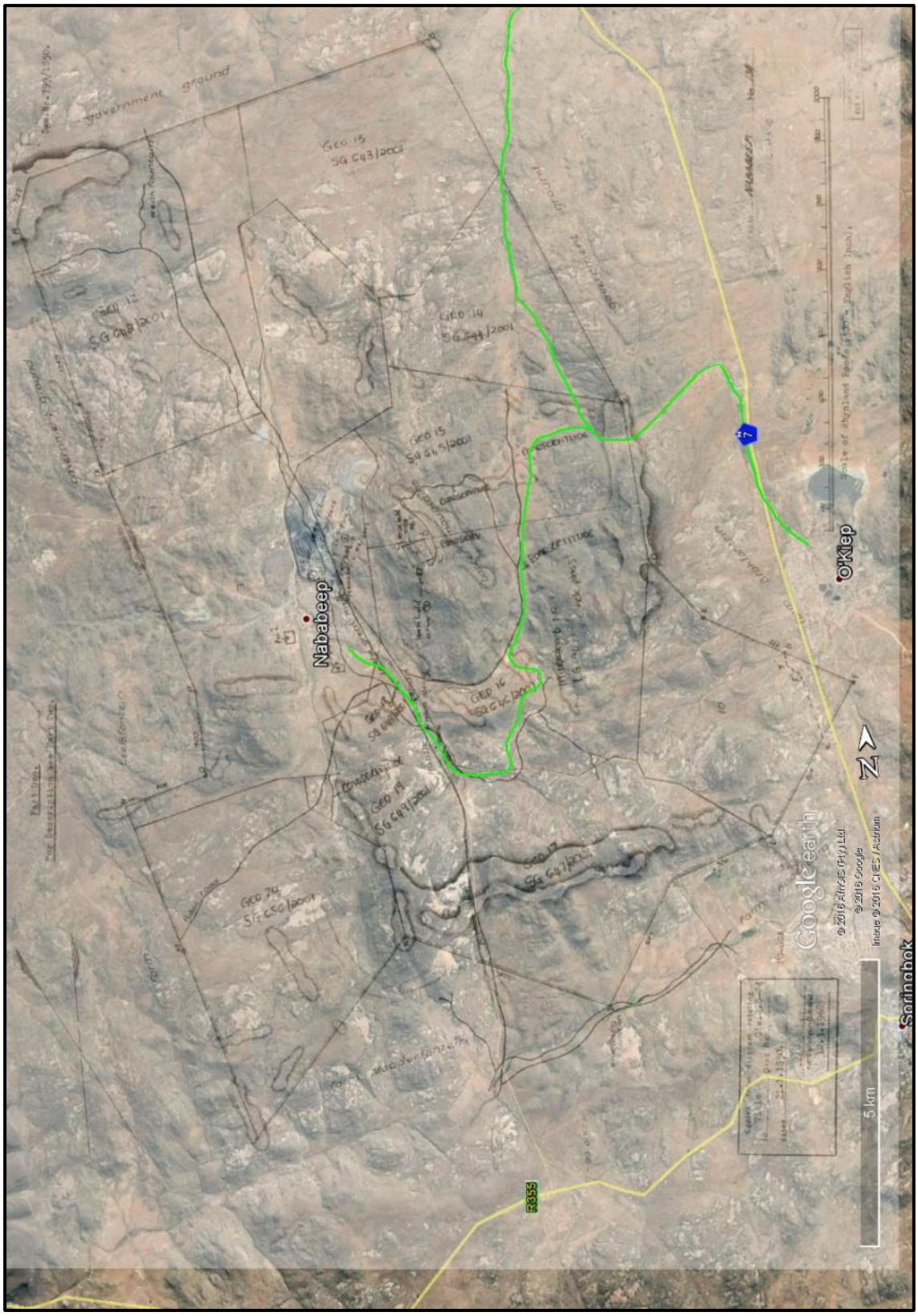

Figure 3: The Surveyor General's map (Diagram No 799/1850) of 1850 showing the overlay of the farm Nababeep 134 over the Google earth aerial map of the landscape and the railway line.

Figure 4: Cape Colony Reconnaissance Map of Port Nolloth & O'okiep (War Office 1907) showing the southern section of the railway line, with a branch line to the east connecting with Concordia and a branch line to the west connecting to Nababeep. Note the position of the Garracoup junction.

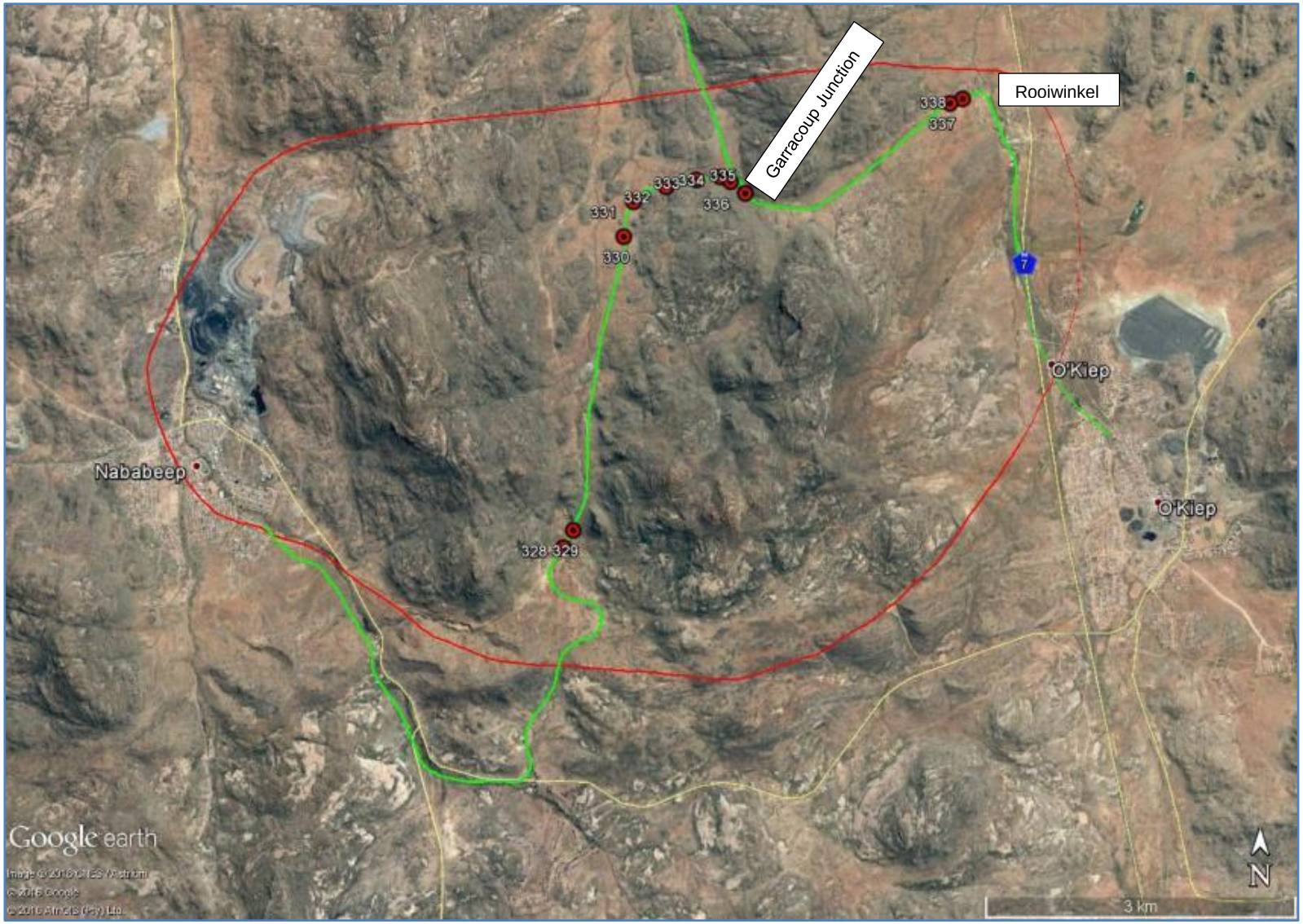

Figure 5: The position of the railway bridges are shown between 328 and 338. The railway line is shown in green and the study area is encircled in red.

6. LATER HISTORY

In 1918 and 1919 the copper mines closed down when the Union Government stopped all export of copper ore to Britain (Smallberger, 1975:112). The days of the narrow gauge railway were numbered. Although the Okiep Copper Company continued the rail to Port Nolloth, and in fact effected certain improvements, including importing two 180 kW diesel locomotives to replace the old "steam kettles", the 70 year old facility proved to be less economic to operate than alternate modes (Robertson 1978:329).

For the last full journey the train left Port Nolloth on 23 December 1941. The main section of the railroad was closed and over the next few years the rails were uplifted. Rails were left for eight miles from Port Nolloth to the town's spring water source until the town obtained its own water supply from boreholes in 1949. The railway between Nababeep and Okiep via Garracoup Junction also remained in service until the construction and permanent surfacing of the Nababeep to Okiep road was completed in 1950, when this section was decommissioned and the rails uplifted.

7. HERITAGE SIGNIFICANCE OF THE RAILWAY LINE

The Namaqualand Copper Mining Landscape was placed on the UNESCO Tentative List as a World Heritage listing in 2009 (http://whc.unesco.org/en/tentativelists/5460/). The property names which were included under the tentative listing included:

- Okiep
- Concordia
- Nababeep
- Port Nolloth
- Carolusberg
- Springbok

The description for the listing is available on the webpage and is not repeated in detail here. However, it is important to note the following:

“The Namaqualand copper mines and their associated infrastructure and cultural landscape reflect the beginnings of the mining industry in South Africa in all the myriad ways in which that industry influenced and continues to influence society through the movement and housing of people, the development of transport and other infrastructure and industries and in the development of technological and scientific endeavor. It also reflects the very close links between the development of the Southern African mining industry and mining technology pioneered in Britain, particularly in the counties of Cornwall and Devon, and the landscapes and social structures that went with them”.

Land Ownership: This will be a serial nomination consisting of several sites the ownership of which is not yet certain, although it appears that much of it is on the communal lands of the Concordia and Steinkopf communities, or in the hands of the remnant copper mining company, or other private individuals".

Justification of Outstanding Universal Value

The Namaqualand Copper Mining Landscape is the place of origin of the modern Southern African mining industry as well as the beginnings of an industrial society in Southern Africa. This development was possible due to close connections established at an early stage with copper mining interests in Cornwall and West Devon and the resultant transfer of skills and technology from there and the migration of Cornishmen to Namaqualand.

Criterion (ii): The development of industrialized mining in Namaqualand from the mid-19th Century, based on the technology and other systems used in Cornwall and West Devon, represents the first evidence of the evolution of an industrialized society in Southern Africa manifest in the transformation of the landscape through the creation of company towns and villages, **a railway** and a port facility which laid the basis for the subsequent development of the Southern African mining complex through the use of the Cornish and West Devon model as its foundation.
Criterion (iii): The extent and scope of the remains of copper mining, and the associated development of urban areas in and its impact on the rural landscape of Namaqualand, presents a vivid and legible testimony to the success of the Namaqualand copper mines as a major successor to the mines of Cornwall and West Devon as a world leader in the production of copper.
Criterion (iv): The copper mining landscape of Namaqualand as a technological ensemble in a landscape, reflects the substantial contribution the area made to the establishment of a foundation for the industrial revolution in Southern Africa as part of the transfer of Cornish and West Devon mining practices around the world.

8. HERITAGE SIGNIFICANCE OF OKIEP AND NABABEEP

The UNESCO Tentative World Heritage Listing includes references to a number of towns which form part of the Copper Mining Landscape. These include Nababeep and Okiep. A number of heritage sites in Okiep have been declared National heritage sites (Grade 1) under the old legislation and these automatically become Provincial Heritage sites (Grade II) under the NHRA.

The heritage sites in Okiep are not listed separately here as they do not fall within the footprint of the proposed development. However, in 2011, the Northern Cape Provincial Heritage Resources Agency (Ngwao-Boswa Ya Kapa Bokone) proposed that the heritage centres of a number of towns, including Okiep and Concordia, should be declared provincial heritage sites including that of the Okiep Mining area (Figure 6). Formal declaration has not taken place.

With respect Nababeep, only the historic steam locomotive known as Clara (Plate 2), at the entrance to the museum at Nababeep, has been declared a heritage object (Government Gazette No 6873, 7 March 1980). Its historical and architectural interest is described thus: “Clara is one of the last remaining steam locomotives used for conveying copper ore on the historic rail section from Okiep and Nababeep to Port Nolloth. The locomotive was used from 1890 to 1941”.

9. MITIGATION

Technically, the railway line may be considered an “archaeological site” in terms of the definition of the NHRA: “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 100years, including artefacts, human and hominid remains and artificial features and structures”. This means that Section 35 of the NHRA applies which means that a permit from SAHRA will be required to alter or disturb the site.

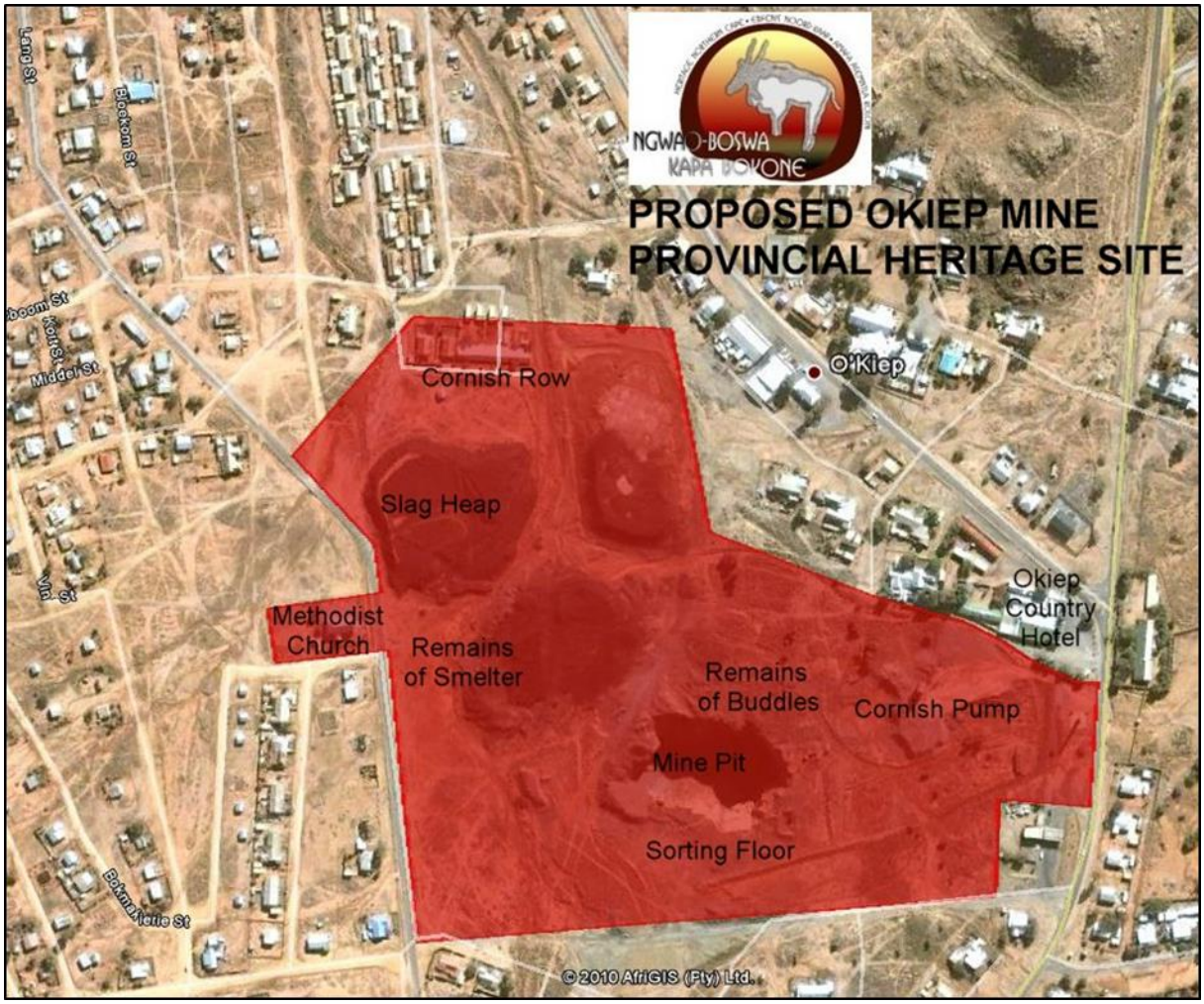

Figure 6: The proposed Okiep Mine Provincial Heritage Site. Formal declaration has not taken place.

10. CONCLUSIONS

The copper railway line is of high significance because of the integral role which it played in the development of copper mining in South Africa and for this reason it formed important component of Namaqualand Copper Mining Landscape which was placed on the UNESCO Tentative World Heritage Listing in 2009. However, formal proclamation of the Namaqualand Copper Mining Landscape (NCML) did not take place and in 2015, the NCML was removed from the World Heritage Listing.

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The railway line also played an important role in outcome of the South Africa War in Namaqualand.

The railway line forms an important heritage resource in the Northern Cape Province. In the absence of formal proclamation, it is suggested that the NCML tentatively enjoys at least a Grade II or IIIA significance.

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Intelligence Department. 1901. Port Nolloth. BML. 68.c.6 (692) D. 1:250 000 University of Cape Town Archives.

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THE RAILWAY BRIDGES

The horse-drawn train leaving Port Nolloth with troops during the South African War

View of the raised bed of the railway track


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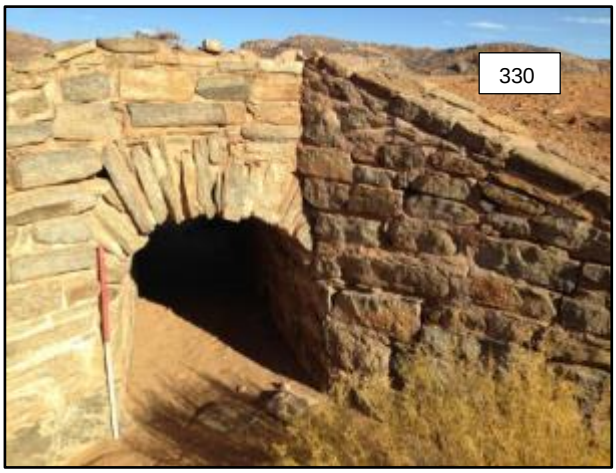
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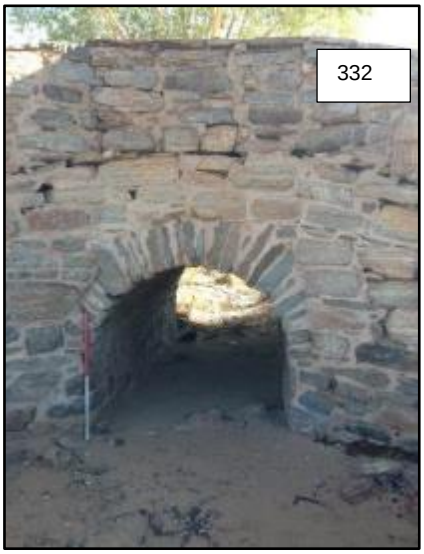
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