ARCHAEOLOGICAL MITIGATION UNDERTAKEN AT THE VOORSPOED MINE OLD BUILDING, DE BEERS VOORSPOED MINE, KROONSTAD, FREE STATE PROVINCE

Version **2.0**

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Reg No 2003/008940/07

DETAILS OF REPORT

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PERMIT DETAILS: The excavations were undertaken in terms of a permit (Permit Case ID: 629; SAHRA Reference: 9/2/234/0004) issued by the South African Heritage Resources Agency (SAHRA) on 29 August 2013.

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EXECUTIVE SUMMARY

PGS Heritage was appointed by De Beers Consolidated Mines Limited to undertake archaeological mitigation on historic rubbish dumps associated with an old building at the mine. The site is located on the farm Morgenster 772, Fezile Dabi District Municipality, Free State Province.

The archaeological mitigation was undertaken between 23 and 27 September 2013. The work was undertaken in terms of an archaeological excavations permit (Permit Case ID: 629; SAHRA Reference: 9/2/234/0004) issued by SAHRA on 29 August 2013. The archaeological mitigation work included surface collection across thirty-seven 5m by 5m grid squares, the excavation of six shovel test pits to test the depth and context of the archaeological deposit as well as archaeological excavations on two adjoining 1m by 1m blocks numbered E8(12) and E8(13).

The archaeological mitigation was supported by a detailed archival and historical investigation aimed at providing a general history of the site and surrounding landscape, but also to provide historic data with which the site can be interpreted.

The analysis undertaken in terms of the archaeological collection was integrated with the historical information and it was found that the old building at the site was erected to provide accommodation for single white men working at the Voorspoed Diamond Mining Company Limited. Although the building would in all likelihood have been built by the mining company itself, archival evidence suggests that it was managed or owned by a person by the name of J.J. Rueff. At the cessation of mining activities in 1912 and the subsequent acquisition of the mine by the De Beers Consolidated Mines Limited, the building would have been vacated and left unoccupied until the 1940s when it was re-used as accommodation for black farm workers. This latter occupation of the site would have lasted until c. 1983 when the decision was made for mining activities to be resumed.

The multicomponent characteristics of the site had been highlighted in earlier studies as well (see for example Pistorius, 2004). With the use of detailed archival and historical research coupled with archaeological mitigation measures this aspect of the site could be explored in more detail.

The archaeological mitigation has revealed artefacts from both occupation phases, whereas some assemblages of artefact types could also be assigned exclusively to one of the two phases. Examples of these exclusively attributable assemblages include cartridges which can only be associated with the mining history whereas the beads, plastics and pottery can only be associated with the second occupation of the site. Larger assemblages such as the glass and metal groups comprise artefacts and groups of artefacts from both occupation phases. While the cultural material from the site reflects its multicomponent character, clear differentiation between the two occupation phases in the archaeological record on a spatial or stratigraphic basis was not possible.

The study has shown that the site can conclusively be defined as a multicomponent site which started off as accommodation for single white men working at the Voorspoed Diamond Mining Company Limited and had a second occupation phase relating to the use of the site as accommodation for black farm workers. The archaeological context of the site is poor and any differentiation between the two occupation phases is difficult to accomplish. However, this study has combined the results from archival and historical desktop work with archaeological mitigation and excavation to provide a detailed history of the site.

While the archaeological site still has cultural historical significance, its value for providing scientific information additional to what is contained in this report, can be considered low. Furthermore, the compromised context of the site lowers its overall significance. The archaeological site in its entirety and in its present condition can be considered to be of medium/low significance.

No further archaeological research is required at the site. This can be said as the completed archaeological excavations and associated mitigation measures resulted in a significant sample of the cultural material associated with the site. Combined with the thorough archival and historical studies undertaken, a detailed understanding of the history of the site was recorded. Furthermore, the building itself was assessed by architectural historian Mr. Mauritz Naudé who agreed that it can be destroyed. He also compiled a detailed recording of the building comprising photographs and measured drawings.

It is recommended that a destruction permit be issued for the site on the undertaking that the following conditions will be met by the mining company within two years after the destruction permit is issued:

- A poster display must be compiled and established at the main entrance to the mine. This display should provide information on the history of mining activities at the mine and specifically the history of the Voorspoed Diamond Mining Company Limited. The history of the old building should also be provided in the display. The display must be illustrated with old photographs of the mine and historic maps.

- A small publication must be funded by the mining company which records the history of the early mining activities and the Voorspoed Diamond Mining Company Limited in particular. The history of the old building should also be included in this publication.

After the cessation of mining activities and subsequent rehabilitation in the area where the site is located, the site should be memorialized with the erection of a laser printed granite plaque at the spot where the site is located. This plaque should provide a short overview of the history of the Voorspoed Diamond Mining Company Limited as well as the site.

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ANNEXURES

1. INTRODUCTION

PGS Heritage was appointed by De Beers Consolidated Mines Limited to undertake archaeological mitigation on historic rubbish dumps associated with an old building at the mine. The site is located on the farm Morgenster 772, Fezile Dabi District Municipality, Free State Province.

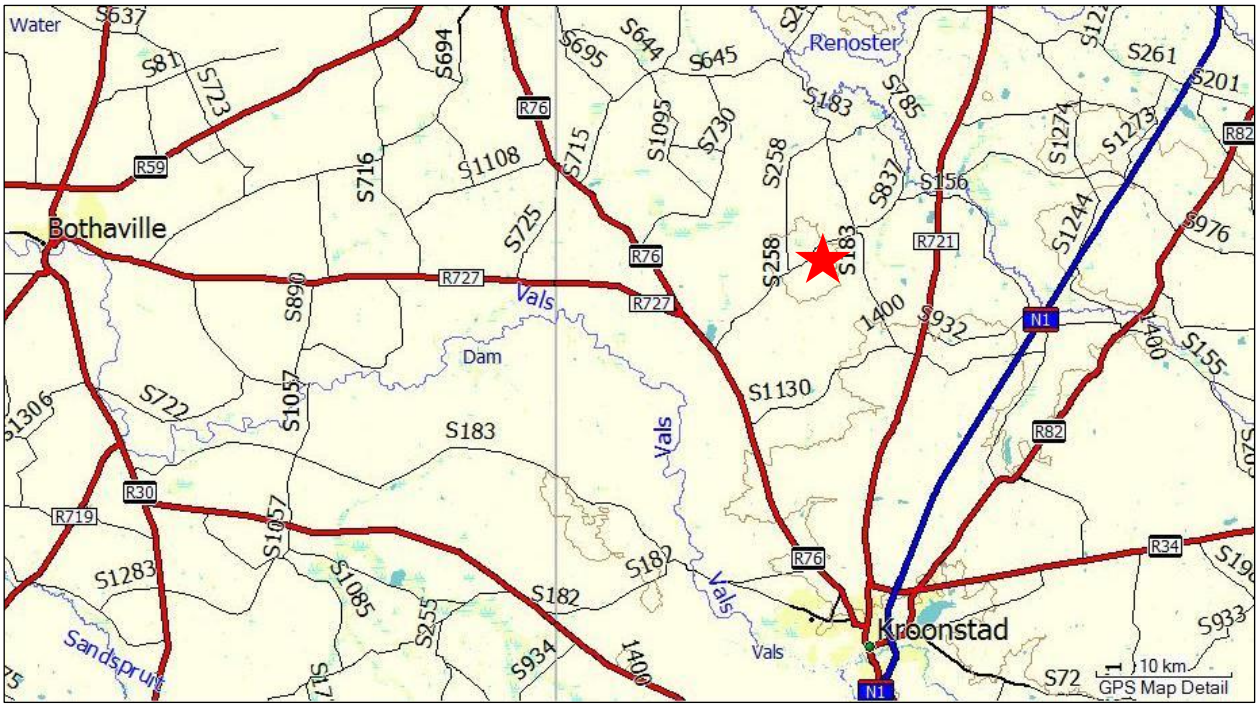


Figure 1 Map Source image depicting the site within its regional context.

Figure 2 Google map showing the location of the archaeological site within its local context.

2. IDENTIFICATION OF THE ARCHAEOLOGICAL SITE AND BACKGROUND TO THE STUDY

The following list provides a chronological framework and background for the process which has been followed thus far and which led to this archaeological mitigation. It must be noted that the framework provided here is based on available information only, and as such may not necessarily represent the entire framework.

- The site was first identified during September 2004 by Dr. Julius Pistorius as part of his work in terms of a heritage impact assessment for De Beers' proposed Voorspoed Mine. The site was included in his report as site number HB01 and apart from the fact that he refers to the building as a 'historic building, Dr. Pistorius also states that spokespersons had indicated that the building may have been a police station. Furthermore, Dr. Pistorius identified several large middens to the north, south and west of the building and indicated that these middens may have been associated with the original function of the building, or alternatively that they are associated with the more recent occupation of the building by farm labourers (Pistorius, 2004).

- On 7 December 2005 a Level 2 heritage impact assessment was undertaken by Dr. Robert de Jong of Cultmatrix (De Jong, 2005). Through archival research they established that the building in question was not the police station, but can plausibly be identified as mine offices for the old Voorspoed Mine. They also suggested a date of construction for the building between 1906 and 1907.

  The report by De Jong (2005) recommended that a destruction permit for the demolition of the building be granted by the Free State Provincial Heritage Resources Authority and that a number of conditions would likely be levied by the latter authority. In the words of the author of the report, these conditions are:

  - *Complete documentation of the building*.
  - *Research regarding architectural history and footprint of the mine, the site and the building in question...*
  - *Archiving the documentation at Heritage Free State as well as at a reputable institution concerned with architectural heritage conservation...*
  - *Sampling of middens (historic waste deposit areas) on site surrounding the building by a qualified archaeologist (test excavations to obtain any interesting samples of artefacts contained in the middens).*

  It is the last item on this list which has special relevance for the present study. In this regard, the report of De Jong (2005) also recommended that the mine should "*...engage the services of a qualified archaeologist to sample the contents of the middens*".

- A permit application to have the building destroyed was applied for by the mine during February 2006.

- In April 2006 the mine received a permit to have the building demolished, but the one year duration period of the permit was not acted upon by the mine in part due to the halting (or reduction) of mining activities.

- During 2010 (possibly 2012) Mr. Sidney Miller visited the building to assess it and to investigate the viability of conducting archaeological excavations of the associated historic middens.

- During January 2013 (possibly before that date) the architectural firm Roodt Architects became involved and sent a letter to the Permit Committee of Heritage Free State to ask for the permit to be renewed.

- On Wednesday, 3 April 2013 a letter was written by Ms. Mariagrazia Galimberti of the South African Heritage Resources Agency in response to the abovementioned application for the renewal of the permit which had been issued by the Free State Provincial Heritage Resources Authority. In the letter a list was made of the requirements of the SAHRA Archaeology, Palaeontology, Meteorites, Heritage Objects and Burial Grounds and Graves permit committee, which includes, as item 2, the following "...*test excavation of the identified archaeological midden/s in the area is requested. An archaeologist will need to apply for a Phase 2 excavation permit. In terms of s.38(4)(b&c) of the National Heritage Resources Act, the provisions of s. 35 apply. The specialist will require a mitigation permit from SAHRA. On receipt of a satisfactory mitigation (Phase 2) permit report from the archaeologist, the heritage authority will make further recommendations in terms of the site. If the significance of the site is medium-high further mitigation before destruction may be requested. If the site is of high heritage significance, SAHRA may request that it be conserved, that mini-site management plans, interpretive material and possibly protective infrastructure be established*."

- The mine contacted PGS Heritage on 24 April 2013 and asked us for assistance in addressing these points.

- Mr. Mauritz Naudé undertook an architectural historical assessment of the building during June 2013 and found that even though it is of historic, architectural and contextual significance its location on the rim of the open cast mine where blasting with explosives is done makes it impossible to protect the building *in situ*. The structural integrity of the building has deteriorated to the extent that the building is slowly disintegrating due to movement in the walls, deterioration of the building materials and loss of building elements. The most detrimental activity that would eventually cause the collapse of the building is the frequent blasting in the mining pit about 40m from the building. He made the following recommendations: "*The building may be demolished and the proposed development may continue on the following conditions: The building must be properly recorded prior to demolition: (a) photographically recorded and described according to standard architectural vocabulary; (b) measured drawings of the floor plan, elevations and essential architectural elements and details; (c) the information must be compiled in a report and (d) included into the submission to the heritage authorities as part of application for a demolition permit*." (Naudé, 2013).

- Mr. Mauritz Naudé undertook the abovementioned recording of the building during June 2013.

- PGS Heritage submitted an archaeological excavations permit application to SAHRA on 5 August 2013 which was issued to P.D. Birkholtz (Archaeologist) and J.P. Behrens (Principal Investigator) on 29 August 2013.

3. AIMS OF THE STUDY

- **Assessing Archaeological Significance of Site**

  The archaeological mitigation undertaken was firstly aimed at assessing the archaeological significance of the site. This included aspects such as the context of the archaeological deposit and its uniqueness, as well as the type and kind of artefacts found within it.

- **Destruction of Site**

  The site will be impacted by the expansion of the Voorspoed Mine pit, which cannot be undertaken without destroying the site. The future life of the mine is dependent upon this expansion. As a result, one of the objectives of the proposed archaeological mitigation was to thoroughly document the archaeology of the site and to obtain a representative sample of material so that a destruction permit can be issued by SAHRA.

- **Interpreting the Site**

  The archaeological mitigation undertaken was also aimed at interpreting the site. Although the original indication was that the building associated with the archaeological deposit was likely mine offices, archaeological excavation and investigation were used to throw more light on the use of the building. In the same way information about the daily life of the individuals who used the building could also be obtained.

4. METHODOLOGY

- **Archival and Historical Desktop Study**

  The first step in the process was to undertake a detailed archival and historical desktop study to compile a detailed history of the mine as well as the site. This information was then used in conjunction with the

findings of the archaeological mitigation to interpret the site. The archival and historical desktop study utilised resources from the National Archives in Pretoria, the Free State Archives in Bloemfontein as well as the De Beers Archives in Kimberley. Supplementary data was obtained from the Chief Directorate: National Geo-Spatial Information in Cape Town as well as one map housed at the Voorspoed Diamond Mine offices.

- **Archaeological Mitigation**

A range of activities were undertaken as part of the archaeological mitigation of the site. These include the placement of a 5m square grid across the site and the use of this grid for surface collection, the testing of the context and depth of the archaeological deposit by way of six shovel test pits (STPs) as well as archaeological excavation. These activities are discussed in more detail below.

- **Recording of Site Layout Plan**

A site layout plan of the building, associated features and trees as well as archaeological middens was recorded using a Total Station. This layout plan was used to plot all aspects of the archaeological mitigation such as the positions of the STPs, excavation blocks and the like. The layout plan was also recorded.

- **Laboratory Analysis of Archaeological Material**

The packaged material from the site was cleaned, classified, recorded and photographed.

- **Compilation of Report**

This document represents the mitigation report containing the information recorded from the site as well as from the analyses of the archaeological material. Possible dates and interpretations of the site and the assessment of its archaeological significance are made and conclusions and recommendations provided.

- **Destruction Permit Application**

The final step in this process is the compilation and submission of a permit application to allow for the destruction of the site.

5. ARCHIVAL AND HISTORIC BACKGROUND TO THE STUDY AREA

5.1. Archival Maps of the Study Area and Surrounding Landscape

Three archival and historical maps of different ages were obtained from various institutions including the Free State Archives in Bloemfontein, the De Beers Archives in Kimberley, the Chief Directorate: National Geo-Spatial Information in Cape Town as well as one map housed at the Voorspoed Diamond Mine offices.

The maps discussed here date from 1900 to 1963 and provide a good sequence of the changes which have taken place within the study area and surrounding landscape during this time. This information is not only useful in reconstructing the history of the study area and surrounding landscape, but also the interpretation of the archaeological site as well.

5.1.1 Kroonstad Sheet, Military Intelligence Series, March 1900 (Free State Archives, Maps, 2/686)

The map in question is the first edition of the Kroonstad sheet of a map series compiled by the John Wood of the Field Intelligence Department in Cape Town under the supervision of the Director of Military Intelligence, Colonel G.F.N. Henderson. It was compiled in March 1900. At the time that this map was made the war between the Boer Republics of the Transvaal and Free State on the one hand and Imperial Britain on the other had been raging for almost five months. The British Military Intelligence who wanted to compile the map therefore were unable to survey the map in the field as the whole Free State Republic of which Kroonstad formed part comprised enemy territory. As such, and as stated on the map itself, it cannot be considered as absolutely accurate.

A number of observations can be made from the depicted section. They will be discussed below:

- No mining activities are depicted at Voorspoed. This corresponds with the general historical information for the mine that shows the commencement of mining activities only in 1906.
- A comparison between the farm boundaries depicted on the map with the farm boundaries as it exists today indicates that although the original farm Voorspoed (number 401) was already in existence, the farm Voorspoed 2480 which is associated with the mine today had not yet been proclaimed. Incidentally, the latter farm appears to have been proclaimed by subdividing neighbouring sections from the farms Voorspoed 401, Morgenster 772 and Belmont 2390 and consolidating them into one farm.
- No buildings are depicted in the area where the site is located. Although the accuracy of the map cannot be guaranteed, the lack of any depicted buildings conforms to the general understanding of the history of the old building at the site as well as the history of the mine. Finally, although some of the roads depicted on the map still exist today a number of new roads had been added since the map was compiled. This can be

understood in view of the mining development which had taken place in the area over the last 114 years since the map was compiled.

Figure 3 Enlarged section of the 1900 map. The approximate position of the site is depicted.

5.1.2 Plan of the Voorspoed Diamond Mine, June 1909

This map is titled "*Voorspoed Diamond Mining Company Limited: Plan of the Extended Mining Area*" and was compiled in June 1909 by the Mines Department of the then Orange River Colony. It was compiled for the purpose of proclaiming an extension to the existing proclaimed mining area of the Voorspoed Diamond Mining Company.

The map clearly shows that the building located at the archaeological site that is the focus of this report existed at the time and was used as bachelor's accommodation. This means that the building was used to house single white mine workers. Incidentally, the single black mine workers would have been accommodated at the compound (see Building 3 on the map) located on the other end of the mine pit.

The following general observations can be made from the map:

- At the time that this map was compiled mining activities at the Voorspoed Diamond Mining Company Limited had already been well underway, so much so that an extension to the original proclaimed mining area had to be applied for.
- The map with depicted buildings provides valuable insights into the cultural landscape surrounding the archaeological site at the time. Buildings indicated in the direct surroundings of the study area on the map comprise features that one would typically find on diamond mines of the time. The buildings depicted on the map comprise stands for mine employees, a water reservoir with a capacity of seven million gallons (roughly 26.5 megalitres), a compound for black mineworkers, one of two washing gears, a detention and search house, quarters and general offices, manager's house, trading store, post and telegraph office, married quarters for white staff, single quarters for white staff, a crusher station and hauling gear, a second washing gear, a boilerhouse, workshops as well as explosives magazines.
- The map makes reference to portions of the farms Voorspoed, Morgenster and Geldenhuys.
- The road network depicted in proximity to the site show some similarities but also distinct differences. For example, all the roads depicted on this map are not depicted on the 1900 map which can be attributed to the mining development which took place between 1900 and 1909. Furthermore, the road passing to the east of the trading store and post & telegraph offices before cutting to the west to pass north of the married quarters and single quarters was changed over time and currently passes to the west of where the trading store and post & telegraph offices would originally have been situated. The road passing between the single and married staff quarters also does not exist anymore.

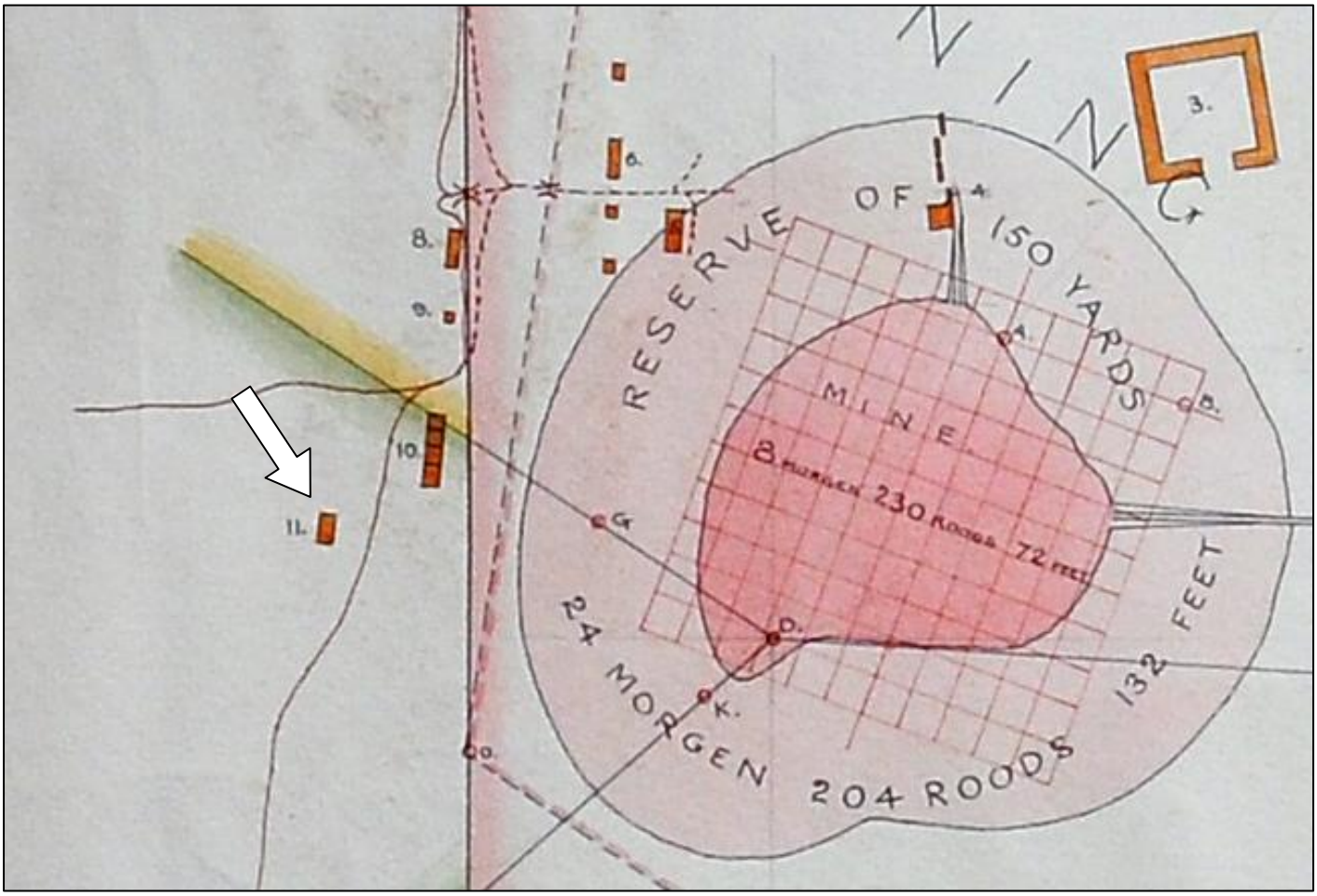
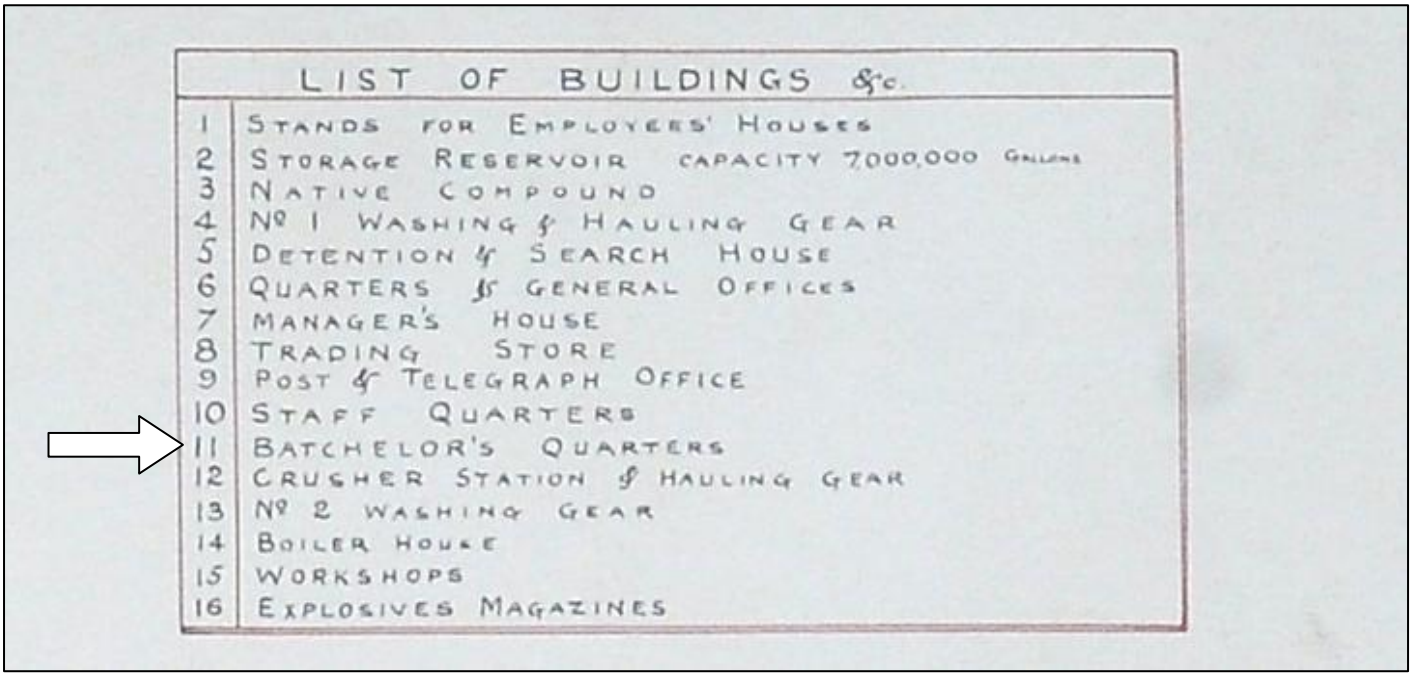


Figure 4 *Section of a map titled "Voorspoed Diamond Mining Company Limited: Plan of Extended Mining Area" which is dated June 1909. The arrow indicates the position of the building and site in question.*



LIST OF BUILDINGS &c.

1	STANDS FOR EMPLOYEES' HOUSES
2	STORAGE RESERVOIR CAPACITY 7,000,000 GALLONS
3	NATIVE COMPOUND
4	Nº 1 WASHING & HAULING GEAR
5	DETENTION & SEARCH HOUSE
6	QUARTERS & GENERAL OFFICES
7	MANAGER'S HOUSE
8	TRADING STORE
9	POST & TELEGRAPH OFFICE
10	STAFF QUARTERS
11	BATCHELOR'S QUARTERS
12	CRUSHER STATION & HAULING GEAR
13	Nº 2 WASHING GEAR
14	BOILER HOUSE
15	WORKSHOPS
16	EXPLOSIVES MAGAZINES

Figure 5 *Section of the legend of the same map as depicted above. The legend provides a description of the buildings that are depicted and numbered on the map. The arrow marks the building in question.*

5.1.3 First Edition of the 2727AC Topographical Sheet, 1963

This map is the First Edition of the 2727AC Topographical Sheet that was based on aerial photography undertaken in 1951 and surveyed in the field in 1963. The map was drawn by the Trigonometrical Survey Office in 1963 and was printed by the Government Printer in 1964. In terms of the site and its direct proximity, the map does not depict the building forming part of the site but does depict a cluster of five buildings directly to the west. This is the first map on which these five buildings are depicted, and it is evident that these buildings would have been erected between 1909 and 1963. The significance of these buildings lies in the fact that they would more than likely have formed part of the phase in the site history when it was occupied by farm workers. The following general observations can be made:

- A cluster of two buildings is depicted for the first time north-east of the site. These buildings may have been a caretaker's house or even a farmstead that was erected after the cessation of mining activities.
- Very few of the buildings depicted on the 1909 map are still depicted on this map. Whether this is a lack of accuracy or a reflection of the fact that these buildings had already been demolished is not presently clear. Care must be taken in this regard in that the building still existing on site is also not depicted on the map, even though it would have existed in 1963 and still exists today.

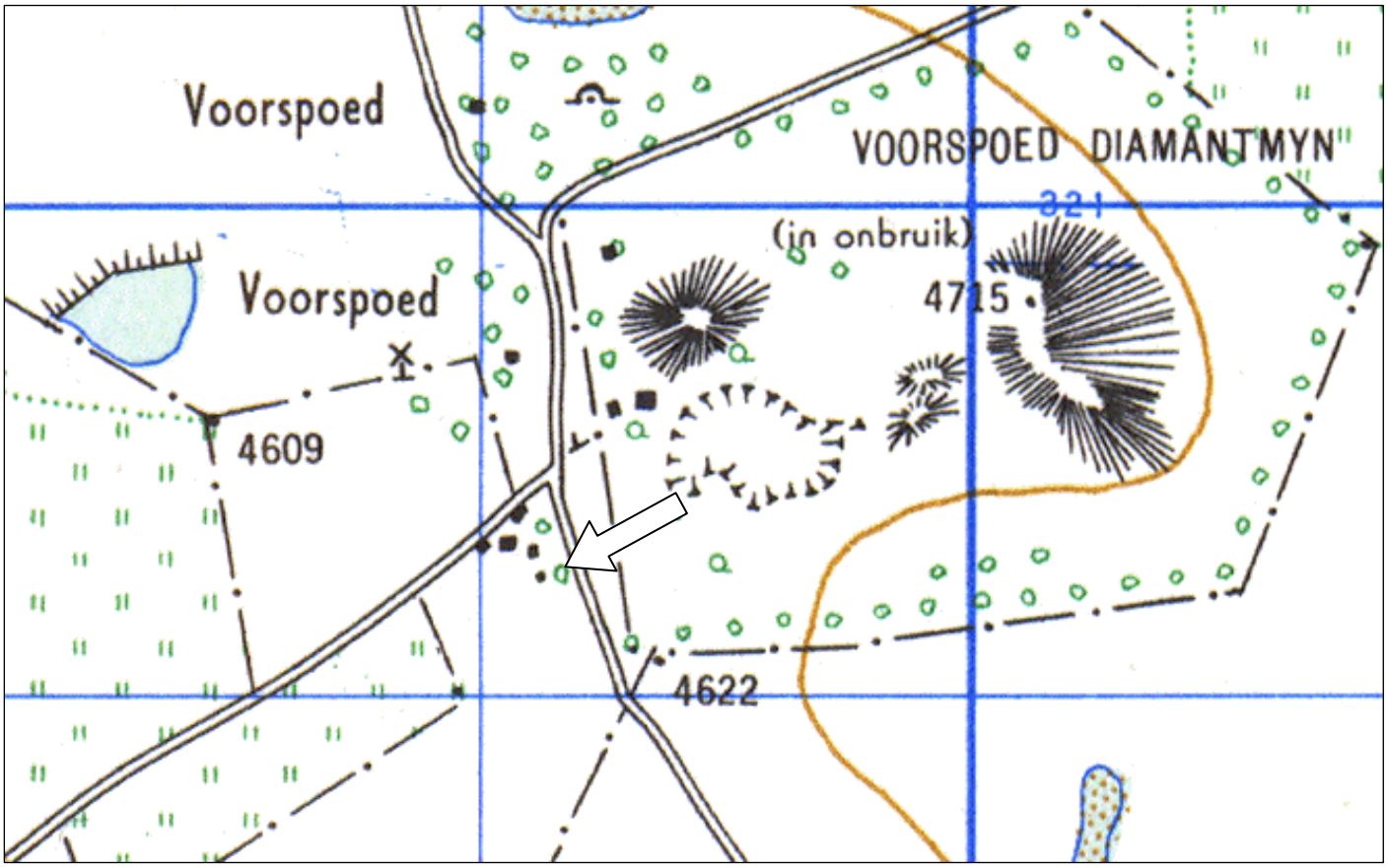


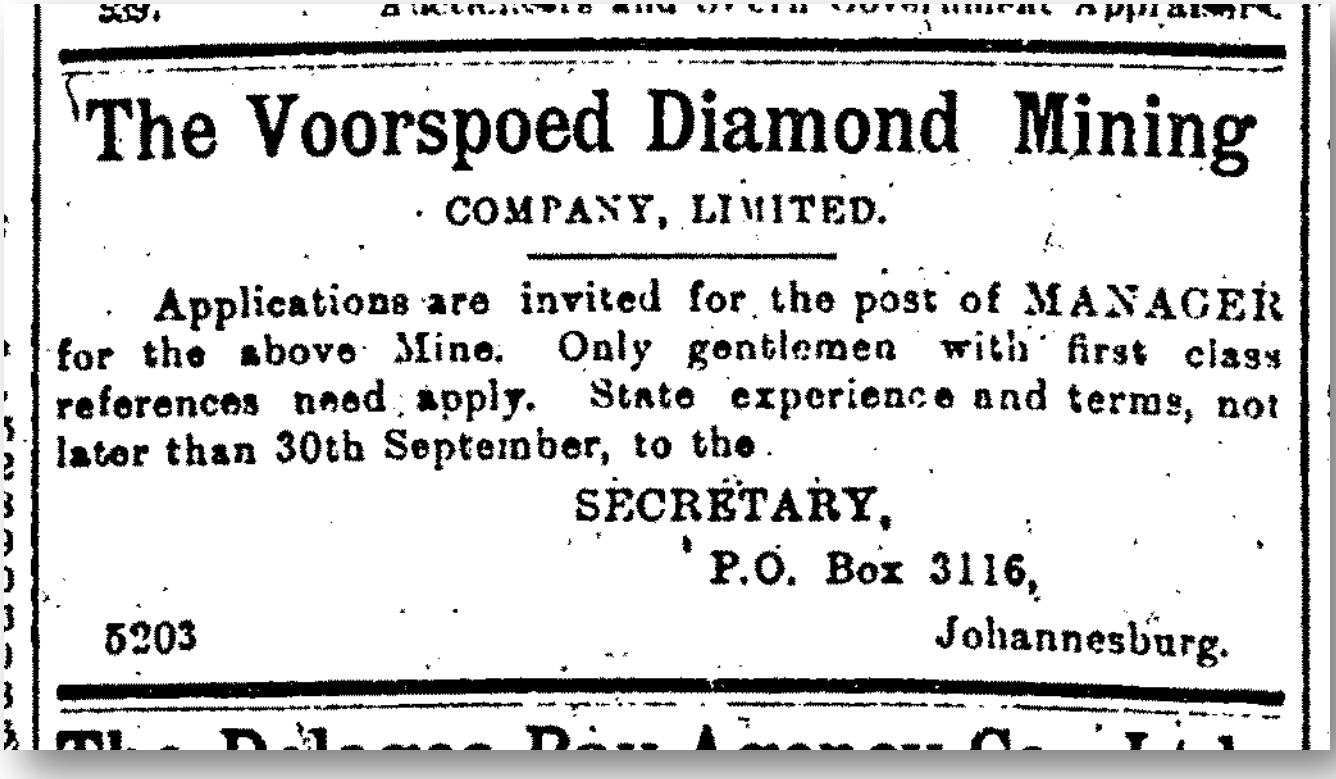
Figure 6 Detailed view of the 1963 map. The position of the site is depicted.

5.2. Historic Overview of the Voorspoed Mine

DATE	DESCRIPTION
March 1905	A prospector by the name of H.L.M. Leibbrandt acquired an option on the farm Voorspoed (The Rand Daily Mail, 11 March 1908). It is not certain whether Leibbrandt conducted any prospecting on this land.
18 July 1905	On this day an agreement between the Orange River Colony and one Duncan Islay Campbell Montgomerie was reached whereby he obtained the sole and exclusive right to prospect for diamonds on the farm Morgenster 772 as well as to claim one half of any diamond mine discovered by him on that farm. This latter right fell within the provisions of the Mining of Precious Stones Ordinance of 1904 (VAB, CO, 451, 3947/06).
August 1905	Leibbrandt authorised A.L. Colley to attempt to sell his option on the farm Voorspoed. On 30 August 1905 Colley received a letter from the secretary of New Randfontein Reefs Limited offering to acquire the farm option. As part of the offer the mining company was allowed to inspect the property for a period of two weeks (later extended to a month) (The Rand Daily Mail, 11 March 1908).
13 – 20 September 1906	The consulting engineer of New Randfontein Reefs Limited Harold Scott Harger arrived on the farm to undertake prospecting activities comprising geological observations and the sinking of two prospecting shafts. On 17 September 1906 he discovered yellow ground at a depth of 13 feet in both shafts (De Jager, 1908). Before the use of modern geophysical probes the best way of identifying a kimberlite pipe was to search for a layer of oxidized kimberlite which has a deep tawny yellow colour and was referred to as "yellow ground" (www.wikipedia.org). Harger immediately returned to Johannesburg and on 18 September 1906 wrote to his employers providing an overview of his findings. This was followed two days later by a geological report in which he stated: "*I am quite satisfied that I have located for you a true diamond pipe, the contents of which are of most promising appearance*" (De Jager, 1908:65).
20 September 1905	The option on the farm Voorspoed which had originally been acquired by Leibbrandt was ceded to the New Randfontein Reefs Limited (The Rand Daily Mail, 11 March 1908).
23 September 1905 – 18 October 1905	On 23 September 1905 Harold Scott Harger returned to the farm with an experienced prospector by the name of Whittaker to verify his original conclusions. During the course of September 1905 a total of 14 shafts were sunk in eight of which diamondiferous ground was discovered. By 8 October 1905 Harger had established the edge of the pipe in one direction and by 11 October 1905 he reported to the New Randfontein Reefs Limited that the mine was of a good size comprising 200 claims on the farms Voorspoed and Belmont. The first diamond at Voorspoed was discovered by Whittaker on 18 October 1905. Due to the fact that this discovery was made without the New Randfontein Reefs Limited possessing a prospecting license some debate occurred during later litigation as to whether this date represented the discovery of the mine in terms of the Mining of Precious Stones Ordinance of 1904 (De Jager, 1908).
13 October 1905	Montgomerie ceded his rights on the farm Morgenster to the Morgenster Syndicate (VAB, CO, 451, 3947/06), retaining one tenth for himself (De Jager, 1908). The other members of the syndicate were Pieter Gerhardus Pretorius, Thomas Goldsmith, Frederick George Harwood Nash, Jacob Nicolaas Blignaut, Johannes Jeremias Conradus Blignaut, Isaac Jacobus Coetzer, Matthew Alexander McNeill, Andrew Morrison, George Alexander Hay, Walter Karri Davies and Henry van Breda Ninham.

30 October 1905	New Randfontein Reefs Limited took out a prospecting license to prospect for diamonds on the farm Voorspoed (De Jager, 1908). This appears to have meant that any diamonds discovered after this date would have been officially recognised by the authorities.
6 November 1905	A second diamond was discovered by a person named Taljaard, who like Whittaker was a prospector who had been employed by the New Randfontein Reefs Limited (De Jager, 1908). No additional information is known about either Taljaard or Whittaker.
November 1905	During the month of November 1905 further prospecting and exploration activities continued on Voorspoed in earnest and "...*the existence of an area of ground of a diamondiferous character contained within a 'pipe' was in the opinion of the Head of the Mines established to his satisfaction*." (De Jager, 1908:67). According to an article appearing in the Rand Daily Mail on 30 November 1906, this was the time when H.S. Harger of New Randfontein Reefs Limited discovered a diamond-bearing pipe on the farm Voorspoed (The Rand Daily Mail, 30 November 1906). In a later court case (see below) this was ruled as the date on which the diamond pipe and mine at Voorspoed were discovered. Incidentally, Harger is credited with the discovery of the Voorspoed Diamond Mine, a number of other diamond properties as well as the Lichtenburg alluvial fields (South African Who's Who, 1946).
6 December 1905	A prospecting permit for the farm Morgenster was taken out in the name of Montgomerie on behalf of himself and the Morgenster Syndicate. Prospecting activities commenced immediately (De Jager, 1908).
11 – 12 December 1905	Yellow ground was exposed during the prospecting activities at Morgenster and during these two days one diamond was recovered (De Jager, 1908). As mentioned elsewhere the discovery of yellow ground at the time was acknowledged as an indication that a kimberlite pipe had been found.
21 December 1905	Montgomerie of the Morgenster Syndicate gave notification of the discovery of a diamond on the farm Morgenster and did the same for a second diamond that was discovered on 2 January 1906. However, these notifications did not represent the solemn declarations required by the Mining of Precious Stones Ordinance of 1904 (De Jager, 1908).
2 January 1906	A second diamond was discovered by the Morgenster Syndicate and reported in the same way as was undertaken in terms of the first discovery (De Jager, 1908). As a result the discovery of this diamond as well as the one that was discovered on 11 or 12 December 1905 was not officially recognised by the authorities in the litigation between the Montgomery Syndicate and the other claimants of discoverer's rights.
15 August 1906	The Voorspoed Diamond Mining Company Limited was established in the Transvaal to acquire from the New Randfontein Reefs Limited and others the Voorspoed Diamond Mine situated on the farms Voorspoed 401 and Morgenster 772 (Skinner & Skinner, 1910).
August 1906	New Randfontein Reefs Limited sold the farm Voorspoed to the Voorspoed Diamond Mining Company Limited for 150,000 shares in the company (Skinner & Skinner, 1910).
15 September 1906	An application was made by the New Randfontein Reefs Limited to the High Court of the Orange River Colony for an order compelling the Minister of Mines to acknowledge their claim as discoverer of the diamond mine. This application initiated a series of legislative

	procedures and hearings to establish who the discoverer of the new diamond mine was. The Morgenster Syndicate, representing the second and opposing claimants of being the discoverers of the diamond mine, received from the High Court of the Orange River Colony leave to intervene in the application (VAB, CO, 451, 3947/06). The application was postponed by the court due to the fact that the Morgenster Syndicate indicated that they did not have sufficient prior notice of the application brought by the New Randfontein Reefs Limited (De Jager, 1908).
21 September 1906	In giving judgement on the abovementioned application, the High Court of the Orange River Colony refused to issue the order as applied for by the New Randfontein Reefs Limited and ordered that an action should be brought by the members of the Morgenster Syndicate against the New Randfontein Reefs Limited and the Government of the Orange River Colony for a declaration of discoverer's rights. The Morgenster Syndicate subsequently undertook legal action as ordered by the court. The defendants in the matter were the Voorspoed Diamond Mining Company Limited (as the new owners of the farm Voorspoed), the New Randfontein Reefs Limited and the Head of the Mines Department of the Orange River Colony (VAB, CO, 451, 3947/06).
22 September 1906	The Voorspoed Diamond Mining Company Limited carried on with their plans for mining the farm. On 22 September 1906 a notice appeared in the Rand Daily Mail asking for applications for the post of mine manager of the Voorspoed Mine. The applications were indicated to close on 30 September 1906.



The Voorspoed Diamond Mining

COMPANY, LIMITED.

Applications are invited for the post of MANAGER for the above Mine. Only gentlemen with first class references need apply. State experience and terms, not later than 30th September, to the

SECRETARY,

P.O. Box 3116,

5203 Johannesburg.

Figure 7 Notice that was published in the Rand Daily Mail on 22 September 1906.

September 1906 – December 1907	This period represents the first mining figures which are available for the Voorspoed Mine. As such, these dates can be used to demarcate the start of mining at Voorspoed. During this period 218,760 loads had been washed and 46,340 carats found which equalled a yield in carats per 100 loads of 21.18. This first period in the mine's history was also its most profitable. The reason for this is that at the time the higher lying yellow ground containing concentrations of diamonds was mined (Wagner, 1914).
20 November 1906	The area located on the farms Voorspoed and Morgenster where precious stones had been discovered was surveyed by S.S. Springall under instruction from the Lieutenant-Governor of the Orange River Colony A.J. Wilson (VAB, CO, 451, 3947/06).
26 – 29 November 1906	During this time a case was heard in the High Court of the Orange River Colony regarding the first discoverers of the diamond mine located on portions of the farms Voorspoed and Morgenster were. This matter was of great financial importance to the companies concerned in that the Orange River Colony Mining of Precious Stones Ordinance of 1904 stipulated that the discoverer of a diamond mine had the right to claim one half of the mine. The matter was immensely complicated due to the fact that the Voorspoed Mine (and their predecessors the New Randfontein Reefs Limited) had discovered diamonds on the farm Voorspoed whereas the Morgenster Syndicate had discovered diamonds on the farm Morgenster. Added to this only one mine discovery comprising portions of both farms had been acknowledged and proclaimed by the government of the Orange River Colony. The plaintiff in the matter was the Morgenster Syndicate and the defendants were the Voorspoed Diamond Mining Company Limited, the New Randfontein Reefs Limited and the Orange River Colony Mines Department (De Jager, 1908). The case was widely followed and on 29 November 1906 the Chief Justice of the Orange River Colony A.F.S. Maasdorp ruled that "*...the Voorspoed Company were the discoverers, and actually established the mine. Therefore, the Voorspoed Diamond Mining Company, Ltd., would be granted absolution from the instance*." (The Rand Daily Mail, 30 November 1906:8).
8 February 1907	The Voorspoed Diamond Mining Company Limited was listed on the London Stock Exchange (The Rand Daily Mail, 9 February 1907).
April 1907	Even though the High Court of the Orange River Colony ruled in favour of the Voorspoed Diamond Mining Company, the Morgenster Syndicate continued with litigation. As it was in the best interest for government that the dispute be settled as soon as possible and allow mining to take place, the Lieutenant-Governor of the Orange River Colony authorised the Surveyor-General and Acting Chief Inspector of Mines for the Orange River Colony Mr. Burnett Adams to arrange an agreement between the two parties whereby the Morgenster Syndicate would be issued with 64% of the shares in the mining operations of the Voorspoed Mine on the farm Morgenster on the condition that they halt their litigation and claims of discoverer's rights. Incidentally, the remainder of the shares for the mining operations on the farm Morgenster were to be made up as follows: 20% to the Voorspoed Diamond Mining Company Limited as discoverers, 10% to the National Bank as a result of an old servitude and the remaining 6% to the government (VAB, CO, 451, 3947/06).
9 April 1907	On this day Burnett Adams received written confirmation from both the Morgenster Syndicate and the Voorspoed Diamond Mining Company Limited that both parties had agreed on the abovementioned terms (VAB, CO, 451, 3947/06). However, as will be seen below it is not clear whether this agreement was eventually signed.

3 May 1907	On this day The Rhodesia Herald reported that the Voorspoed Diamond Mining Company Limited had paid the Morgenster Syndicate an amount of £15,000 to settle all the claims of the syndicate against the mining company and at the same time to obtain all the freehold and mining rights of the farm (The Rhodesia Herald, 3 May 1907).
October 1907	John Femlin Fradgley was appointed General Manager of the Voorspoed Mine. He was promoted to this post from his successful job as an engineer at the Koffiefontein Mine (McGill, 1991).
9 December 1907	After a dispute between the mine manager Fradgley and Paul Mahametsi, a mine employee who was viewed by the other black employees as a chief or leader, 202 black employees of the mine broke out of the mine compound and surrounding fence by force. They stated that their intentions were to return home. The black employees were arrested and brought before the Resident Magistrate of the Kroonstad District T.J. Coltsman Cronin. He found the accused guilty of contravening certain sections of the Orange River Colony Mining of Precious Stones Ordinance of 1904. Paul Mahametsi as perceived leader of the group was fined £50 or in default six months imprisonment with hard labour whereas the remainder of the accused were fined £2 each or two weeks hard labour. Mahametsi's fine was collected by the remaining black mineworkers among themselves and after it was paid he returned home to Lesotho by train (Free State Archives, VAB, G, 88, 270).

Figure 8 Historic photograph of the compound at the Voorspoed Mine. The photograph appears to have been taken in 1906 (Free State Archives, VAB, Photograph, 7925).

1907	The New Randfontein Reefs Limited sold an additional 314 morgen to the Voorspoed Diamond Mining Company Limited (Skinner & Skinner, 1910).
20 January 1908	A post and telegraph office was established at the Voorspoed Mine (VAB, CT, 75, 425/1).
1909	The police post at the Voorspoed Mine was established. In the following year a telephone line was connected between this post and the one at Lace Mine (VAB, CT, 92, 101/09/7).
June 1909	At the time a map was compiled by the Voorspoed Mine to accompany an application for an extension to the original proclaimed mining area. This map provides valuable insight into the characteristics of the mine at the time as it includes a detailed list of buildings and features present on the property. The listed items on the map include stands for white employees, a water reservoir, a compound for black employees, a so-called No 1 washing and hauling gear, a detention and search house, quarters and general offices, manager's house, trading store, post and telegraph office, staff quarters for married white employees, bachelor's quarters for single white employees, crushing station and hauling gear, a so-called No 2 washing gear, boiler house, workshops and explosives magazines. The plan also indicates that at the time the mining pit was more than eight morgen in extent.

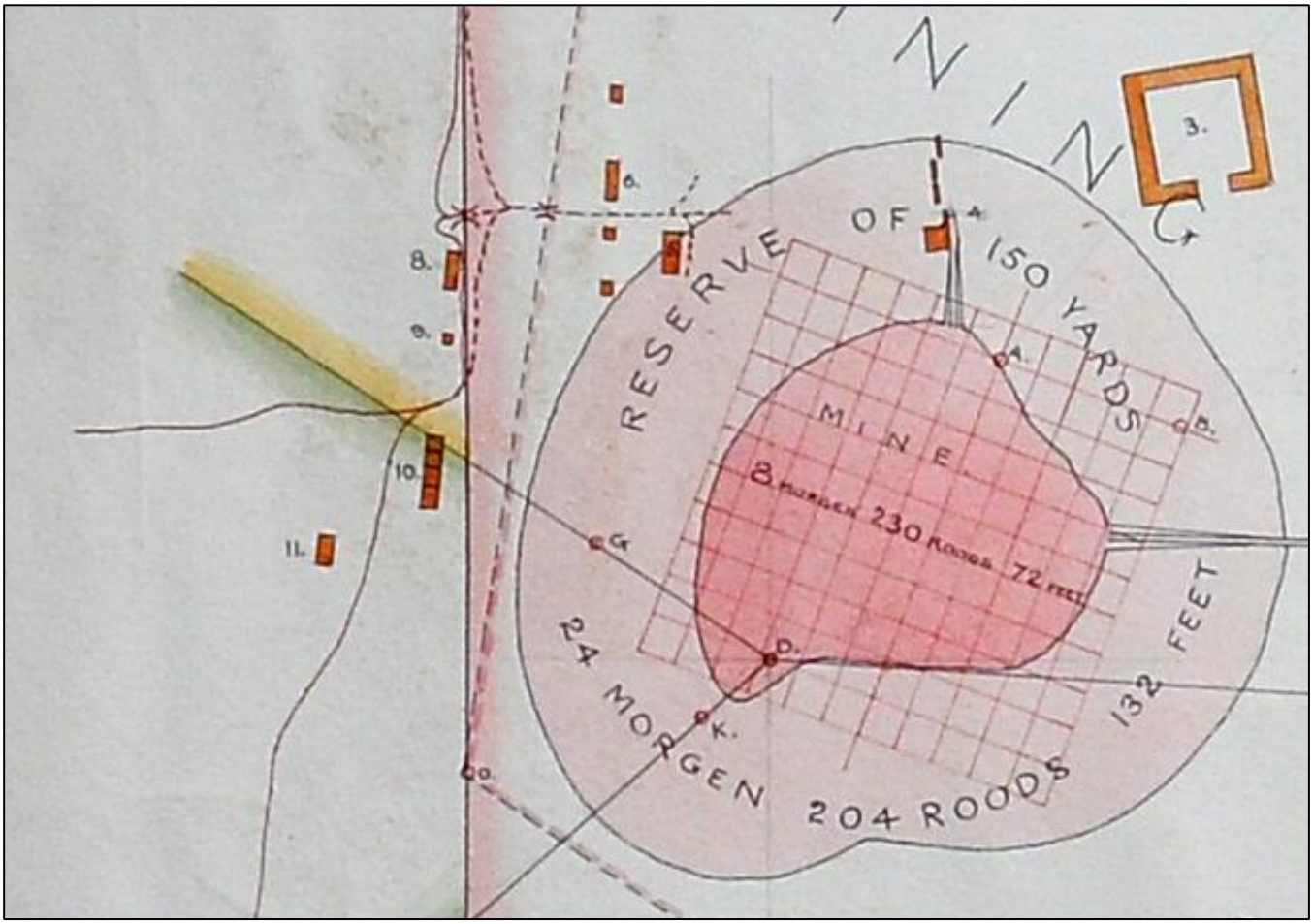


Figure 9 *Section of a map titled "Voorspoed Diamond Mining Company Limited: Plan of Extended Mining Area" which is dated June 1909.*

Figure 10 *Historic photograph of one of the washing gear at the Voorspoed Mine (Free State Archives, VAB, Photograph, 7932).*

Figure 11 *Historic photograph of the main incline shaft into the pit at the Voorspoed Mine (Free State Archives, VAB, Photograph, 7925).*

October 1909	A 116.5 carat blue-white diamond was discovered at the Voorspoed Mine (The Rand Daily Mail, 22 March 1910).
15 November 1909	Lieutenant-Colonel Vladimir Rafallovich was appointed General Manager of the Voorspoed Mine (The Rand Daily Mail, 24 March 1910) (Journal of the Institution of Mechanical Engineers (Great Britain), n.d.). Incidentally, he was married to Charlotte Mansfield, a reasonably well known romantic novelist from Great Britain who in 1909 attempted a 2,000 mile journey from Cape Town to Cairo (Conefrey, 2012).
22 March 1910	On this day the third annual meeting of the Voorspoed Diamond Mining Company Limited was held at the Consolidated Buildings, Johannesburg to provide the shareholders with information on the activities and progress of their company during the financial year ending on 31 December 1909. Although extensive work had taken place at the mine during this time and new machinery and buildings erected, the concern was raised at the meeting about the financial implications of the floating reef that was located on the western end of the mine. As large sections of this floating mine had to be removed to reach the diamond-bearing ground underneath the working costs of the mine increased. With the majority of the floating reef material also pushed through the washing machines the average yield per ton was furthermore also reduced. This said, the prospects of the mine were looking favourable at the time and the decision was made by the directors of the company to install an additional crushing plant. The expected completion of this was April 1910. Furthermore, the directors also made the decision to enlarge the No. 2 Gear by adding four grinding pans. These additions were expected to be completed by June 1910. During the year a number of buildings had also been built and extensions to buildings completed. In terms of labour it was indicated that the mine experienced a shortage in black labour during the financial year which led to a decision to stop the operation of the No. 1 Gear from January to September 1909. The white labour force of the mine was however expanding rapidly which resulted in ever increasing numbers of white families living on the mine. This led the board of the company to approach the government with regards to the erection of a school for white children at the mine (The Rand Daily Mail, 23 March 1910) (The Rand Daily Mail, 24 March 1910).
June 1910	Due to a possible strike by black employees of the mine, 30 rifles with bayonets, ammunition and equipment were sent to the special police force that was being enrolled by the Minister of Justice for Voorspoed Mine. These rifles and ammunition were stored in a strong room at the mine (Free State Archives, VAB, CO, 612, 2132/2).
October 1910	The Voorspoed Rifle Club was established and became officially recognised by government during this time (Free State Archives, VAB, 632, 2767). Apart from the rules of the club no detailed information could be found in the archives. It is therefore not known exactly where the rifle club was located. The only clue to the location of the shooting range comes from Rule 35 (a) which states that "...*no firing shall take place until a large red danger flag is hoisted on the hill behind the butts*...".
1910	By 1910 the properties of the Voorspoed Diamond Mining Company Limited comprised the farms Voorspoed 401, Morgenster 772, Geldenhuis 1477, Vrolykheid 331, Verelands 1380 and Junction 1203 (Skinner & Skinner, 1910). The latter three farms are located near the junction of the Heuning and Renoster streams some 15km north of the Voorspoed Diamond Mine.

1910 - 1912	During this period mining operations at Voorspoed were conducted at a loss. This was due to the fact that mining at the time took place at depths below the yellow diamond-concentrated ground that was mined so profitably during the early stages of mining at Voorspoed. As mentioned above, the presence of a floating reef on the western end of the mine pit would also have created problems for the mine. The available figures from September 1906 to 1911 that were published in Wagner (1914) reveal the downturn in the fortunes of the mine.

Period.	Loads Washed.	Carats Found.	Yield in Carats per 100 Loads.
September, 1906, to December, 1907...	218,760	46,340	21·18
Year ended December, 1908	638,048	105 962	16·6
,, ,, ,, 1909	1,835,127	274,785	14 9
,, ,, ,, 1910	1,375,182	228,616	16·6
,, ,, ,, 1911	1,715,884	242,111	14·1

Figure 12 This table with figures on the history of the Voorspoed Mine was published in Wagner (1914: 316).

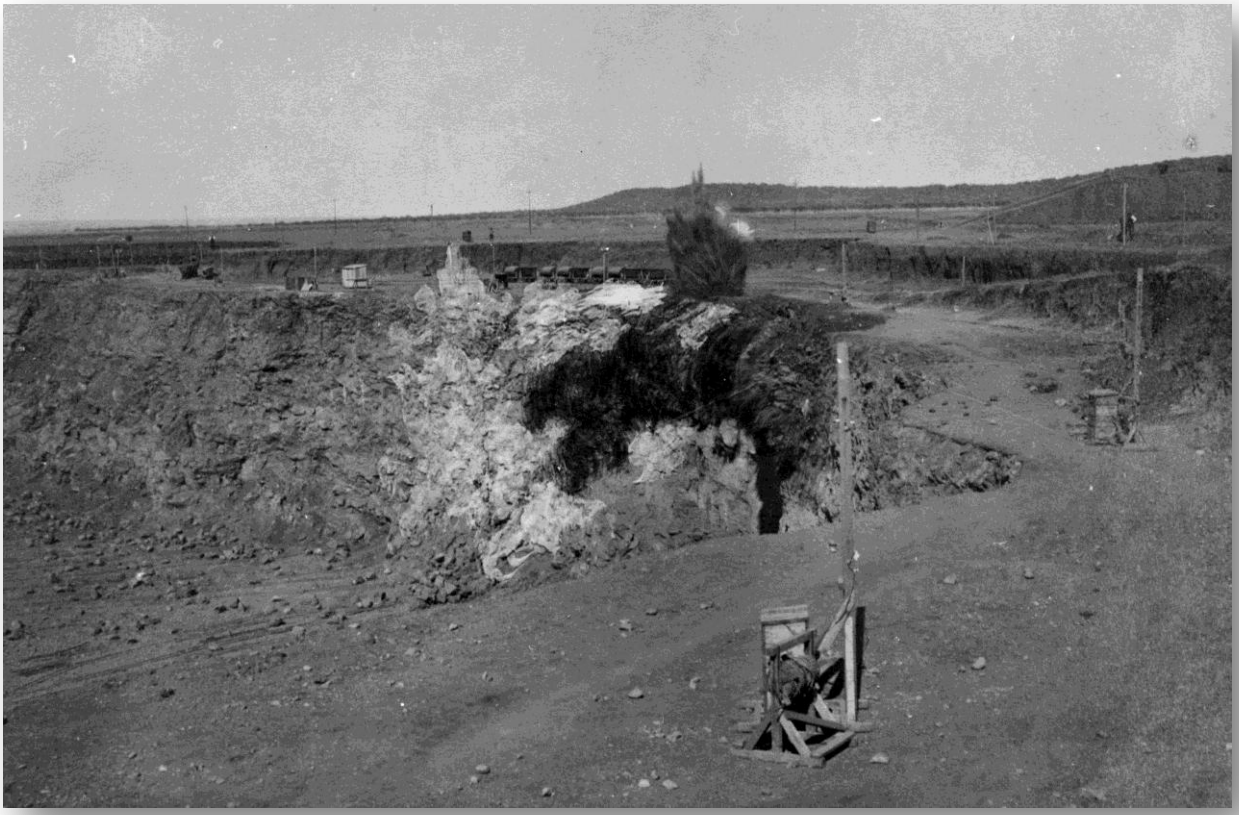
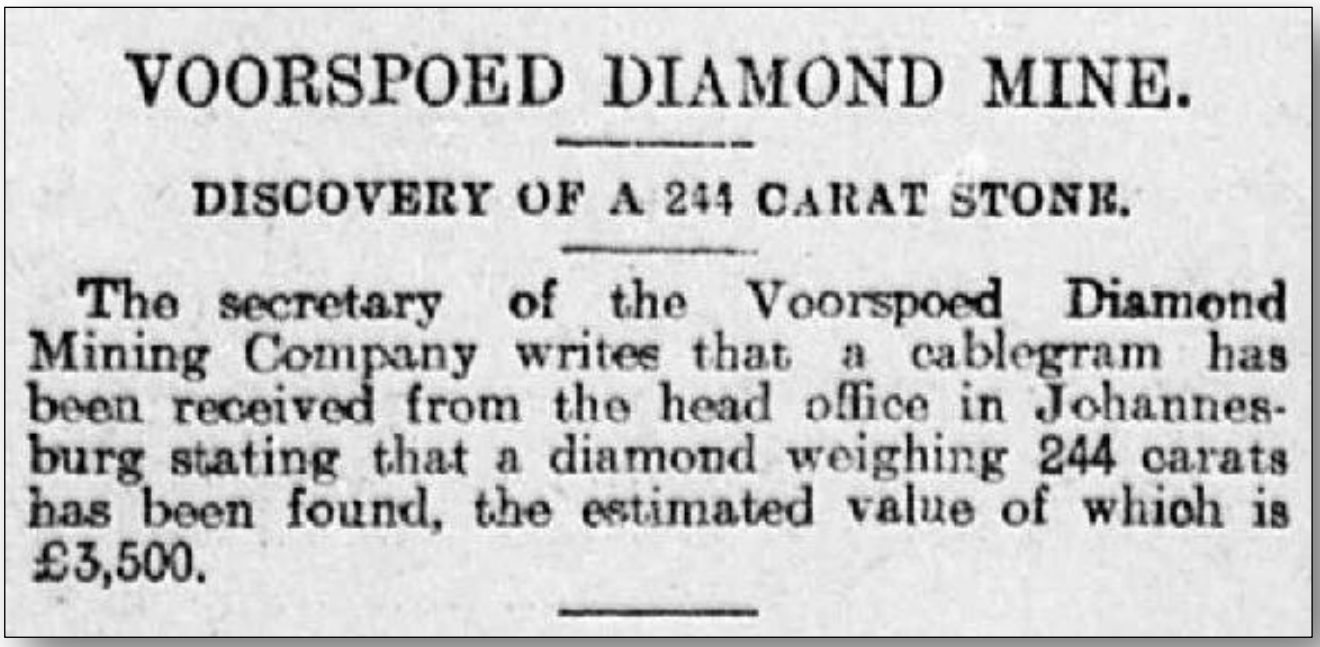


Figure 13 Historic photograph showing blasting operations in the pit at the Voorspoed Mine (Free State Archives, VAB, Photograph, 7931).

21 January 1911	On this day a disturbance occurred at the compound of the Voorspoed Mine. The mine manager Vladimir Rafallovich reported later that bayonets had to be used as deterrent to stop the workers from forcing their way out of the compound. In a cable sent after the disturbance, Rafallovich urgently requested 30 rifles with bayonets to be sent to the mine as "*...the number of rifles available is in no way sufficient to effectively check a possible breaking of the compound*." On 25 January 1911 the Acting Under Secretary of the Interior J.A. Macdonald dispatched 30 Lee-Enfield rifles with bayonets, frogs and waist bandoliers to the mine. Incidentally, the consignment of arms and ammunition sent to the mine was not the first time this had occurred. Six months earlier in June 1910 another consignment of 30 rifles with bayonets, ammunition and equipment had been sent to the special police force that was being enrolled by the Minister of Justice General J.B.M. Hertzog at Voorspoed Mine. No further information is known about this special police force (Free State Archives, VAB, CO, 612, 2132/2). An interesting side note is that before joining politics General Hertzog had been a lawyer and formed part of the legal team representing New Randfontein Reefs Limited and the Voorspoed Diamond Mining Company Limited in the high court case of November 1907. Both consignments of arms and ammunition were stored in a strong room at the mine (Free State Archives, VAB, CO, 612, 2132/2).
28 March 1911	On this day the London secretary of the Voorspoed Diamond Mining Company reported to The Financial Times (Tuesday, 28 March 1911) that a diamond of 244 carats worth £3,500 was discovered at the mine. An editor's note was published below the article which indicated that the editor believed that although the diamond which had been discovered was large, its quality must have been poor in view of the fact that the stone was estimated by the company to be worth only £3,500.



VOORSPOED DIAMOND MINE.

DISCOVERY OF A 244 CARAT STONE.

The secretary of the Voorspoed Diamond Mining Company writes that a cablegram has been received from the head office in Johannesburg stating that a diamond weighing 244 carats has been found, the estimated value of which is £3,500.

Figure 14 Article reporting the discovery of the 244 carat diamond (The Financial Times, 28 March 1911).

29 August 1911	A map was located in the National Archives (SAB, PWD, 1881, 6711) which is dated to 29 August 1911. The map depicts sections of the Voorspoed Mine village comprising the following features: • A large number of stands of which seventeen contain completed buildings • One school building with associated school ground • An extensive water reservoir The map also shows that the Voorspoed Mine Village already comprised residential stands grouped in blocks which were separated by named streets. The street names included “Float Street”, “Mica Avenue”, “Carbon Avenue”, “Olivine Avenue”, “Garnet Avenue” and “Reservoir Street”.

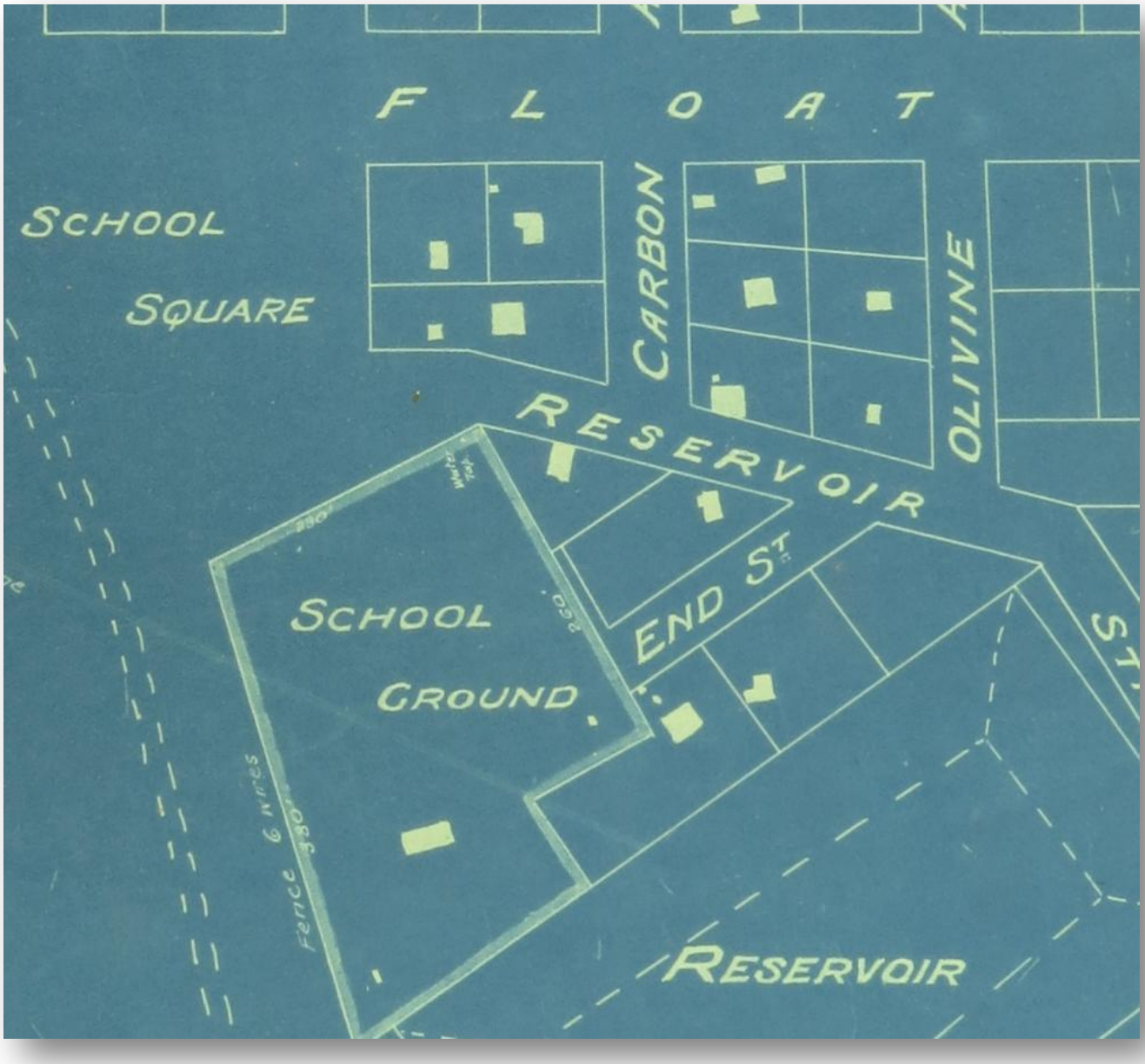


Figure 15 Portion of the plan depicting the village at the Voorspoed Diamond Mine. The plan was compiled on 29 August 1911 (National Archives, SAB, PWD, 1881, 6711).

Figure 16 Historic photograph depicting the mine village as it appears on the 1911 map above. The water reservoir can be seen on the left (Free State Archives, VAB, Photograph, 7932).

3 August 1912	The Voorspoed Diamond Mine closed for the last time on this day. An agreement was made with the De Beers Company that they could buy the property as long as they met the following conditions: De Beers had to make a cash payment of £20,000; they had to take over the loan of the Voorspoed Diamond Mining Company of £120,000 as from 1 July 1912 and thirdly the De Beers Company had to buy the 405,704 shares of the Voorspoed Company at a rate of 12s 6d per share. After the acquisition of the property by De Beers all mining activities were halted as the company believed that the mine was unpayable in terms of the conditions at the time (Wagner, 1914).
19 October 1964	The first mining-related work since 1912 took place on this day at Voorspoed when experimental work to assess the payability of the mine was started. Twenty-six black staff members were employed to undertake the work. During an inspection visit to the mine on 16 July 1965 by the so-called "Bantu Affairs Commissioner" of Kroonstad, A.J.C. Grobbelaar, it was indicated that the staff members were accommodated in prefabricated structures as well as tents (Free State Archives, VAB, SOK, 1/1/127, N3/12/2/2). This aspect might be significant for the overall history of the archaeological site.
October 1965	During an inspection of the mine roughly a year later, the same A.J.C. Grobbelaar found that experimental work at the mine was still continuing but that these activities were now undertaken by 15 black staff members. However, the available accommodation was still prefabricated huts and tents (Free State Archives, VAB, SOK, 1/1/127, N3/12/2/2).
27 January 1966	On this day a letter was written by the General Manager of De Beers Consolidated Mines Limited to the "Bantu Affairs Commissioner" of Kroonstad indicating that temporary rondavels will be erected for black staff members during the prospecting activities taking place on site (Free State Archives, VAB, SOK, 1/1/127, N3/12/2/2). This letter indicates that prospecting activities which had commenced on 19 October 1964 were still taking place at Voorspoed.

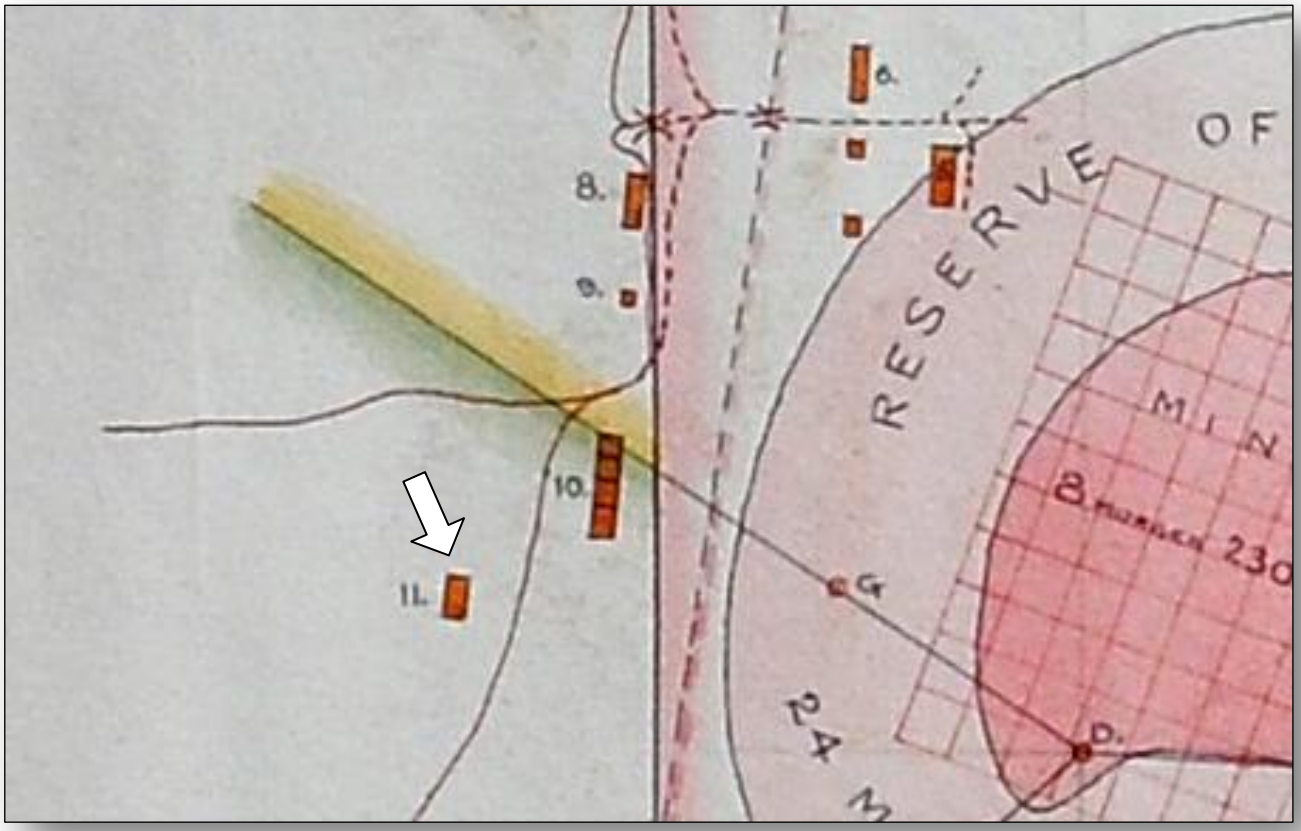
1 April 1979 – 1 January 1980	On 19 March 1979 W.K. Hartley, the General Manager of De Beers Consolidated Mines Limited wrote to the Commissioner of the Department of Plural Relations and Development requesting permission for 20 Black staff members to be housed at Voorspoed Mine for a period of nine months starting on 1 April 1979 (VAB, SOK, 1/1/124, N3/12/2(2)). These nine months appeared to have been a continuation of prospecting and experimental work at the mine.
Mid 1980s	According to the heritage impact assessment report of Dr. Julius Pistorius (2004) the prospecting and sampling activities during the 1960s as well as the late 1970s to early 1980s resulted in the recommendation being made that mining operations at Voorspoed should be started again during the mid 1980s. However, a drop in diamond prices at the time led to this recommendation being shelved.
13 February 2006	According to an article which appeared in The Star newspaper on Monday, 13 February 2006 it was reported that the Board of the De Beers Group had given the go-ahead for a R1.2 billion investment to re-open the Voorspoed Mine (The Star, 13 February 2006).
23 October 2006	The sod-turning ceremony for the De Beers Voorspoed Mine took place on this day. Dignitaries present at the ceremony included the Premier of the Free State Province Ms. Beatrice Marshoff, the Chairman of De Beers Mr. Nicky Oppenheimer, the Vice-Chairman of De Beers Mr. Manne Dipico as well as the Managing Director of De Beers South Africa Mr. David Noko (Volksblad, 24 October 2006).
February 2007	Construction activities commenced at the Voorspoed Mine (www.mining-technology.com)
March 2008	All major construction work had been completed by March 2008 (www.mineweb.com).
4 November 2008	The De Beers Voorspoed Mine was officially opened on this day (www.mineweb.com).

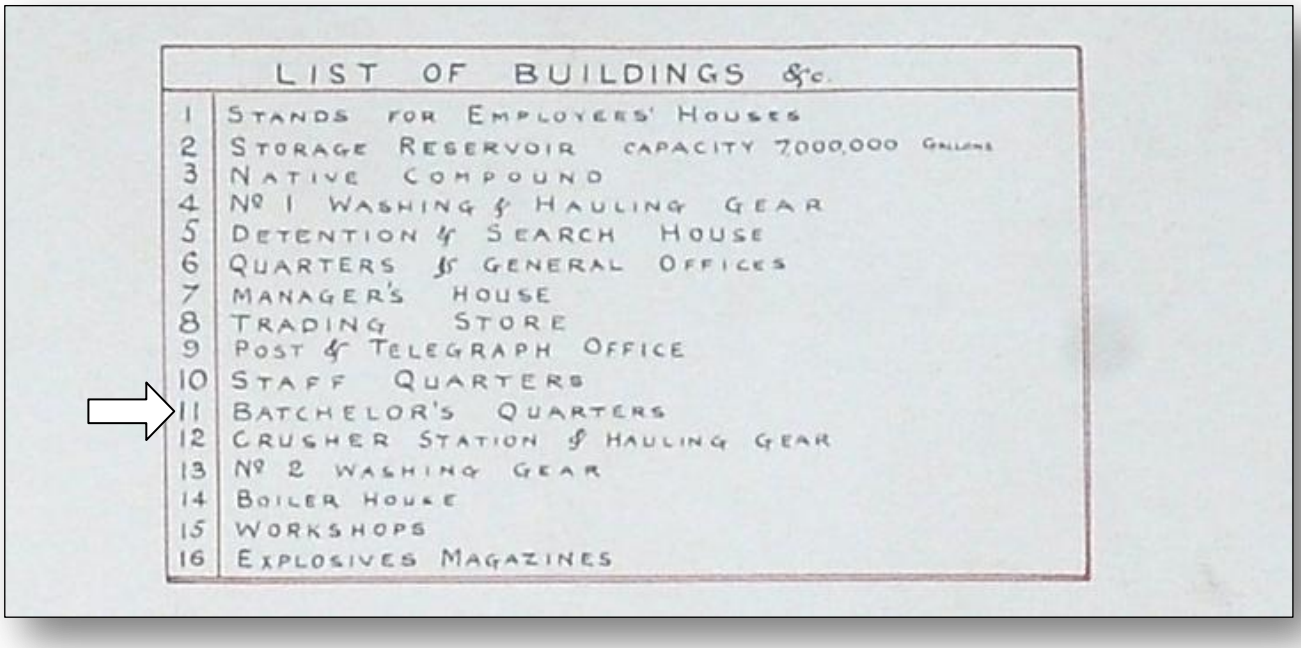
5.3. Historic Overview of the Building located at the Site

In the section that follows a historic overview of the site and building located there will be provided. As was the case with the historic overview of the mine, this overview was compiled from available historical, archival and electronic data. Due to the limited amount of data that was available with regards to the site and building during the period between 1912 and 2006, available topographical maps and aerial photographs were used to fill in the gaps.

The findings from this overview will be used in the discussion that follows to identify the chronology occupation phases covering the entire history of the building. In turn, these identified occupation phases would be used to interpret the archaeological data.

DATE	DESCRIPTION
September 1906	It has already been established that the building was originally used as accommodation for white single men working at the Voorspoed Diamond Mining Company. In considering its history, it is evident that the building would not have existed before the existence of the mine. The establishment of the mine, and more so the start of intensive mining activities at the mine, can therefore be viewed as the *raison d'être* for the building. From the historic overview provided above, it is apparent that although intensive prospecting activities already commended in 1905, these activities would not necessarily have prompted the capital investment of erecting a permanent structure to house its white labour force before the start of intensive mining activities at the mine. During the prospecting activities the labour force would more likely have been accommodated in temporary shelter such as tents. Intensive mining activities at Voorspoed can be dated to September 1906. This surmise is supported by the table containing the mining figures for the Voorspoed Diamond Mining Company that was published in Wagner (1914) in that this table also starts in September 1906.
June 1909	The earliest confirmation for the existence of the building comes from a map entitled "*Voorspoed Diamond Mining Company Limited: Plan of Extended Mining Area*" that was compiled in June 1909. On this map the building is clearly indicated in the same rectangular shape as it appears today. Furthermore, the legend of the map identifies the building as 'batchelor's (sic) quarters'. Even though this is the earliest confirmed date for the existence of the building, the paucity of available archival and historical cartographic and general data on the site suggests that it may very well have existed before the compilation of this map. This observation is supported by the generally accepted characteristics of the demographics of the labour force during the early development of mines from the 19th and 20th centuries across the world. The early stages of mining development in countries such as the United States and South Africa were associated with staff complements of essentially single men (i.e. either unmarried or if married their families did not accompany the men to the mines). Even in urban centres such as Johannesburg the impact of this phenomenon could be seen. In 1896 for example the men to women ratio was 1.78 men for every woman (Van Onselen, 2001). In South African contexts the labour force would have comprised single white men usually originating from countries where mining had already taken place such as the United Kingdom, the United States and Australia as well as single black men from across southern Africa. The accommodation used for these early miners would have been separated according to race with the black miners essentially impounded in prison-like compounds built by the mines and the white miners residing in boarding houses and bachelor's quarters either built by the particular mining company or established by private individuals as commercial ventures. It follows that as the mining activities commenced in September 1906 and as the labour force used for these mining activities would have been primarily single men, the need for a building such as the one under discussion would have been strongly felt from the very beginning. Incidentally, an undated photograph (possibly c. 1910) from the Free State Archives *(VAB, Photograph, 7932)* provides the earliest known photographic depiction of the building.





LIST OF BUILDINGS &c.

1	STANDS FOR EMPLOYERS' HOUSES
2	STORAGE RESERVOIR CAPACITY 7,000,000 GALLONS
3	NATIVE COMPOUND
4	Nº 1 WASHING & HAULING GEAR
5	DETENTION & SEARCH HOUSE
6	QUARTERS & GENERAL OFFICES
7	MANAGER'S HOUSE
8	TRADING STORE
9	POST & TELEGRAPH OFFICE
10	STAFF QUARTERS
11	BATCHELOR'S QUARTERS
12	CRUSHER STATION & HAULING GEAR
13	Nº 2 WASHING GEAR
14	BOILER HOUSE
15	WORKSHOPS
16	EXPLOSIVES MAGAZINES

Figure 17 *Sections of a map entitled "Voorspoed Diamond Mining Company Limited: Plan of Extended Mining Area" which is dated June 1909. The building in question is marked in the top image whereas the section of the map showing the legend is shown below. This is the earliest dated confirmation for the existence of the building. However, due to the meagre archival and historical cartographic and general data on the building it is highly likely that the building would have existed before the compilation of this map.*

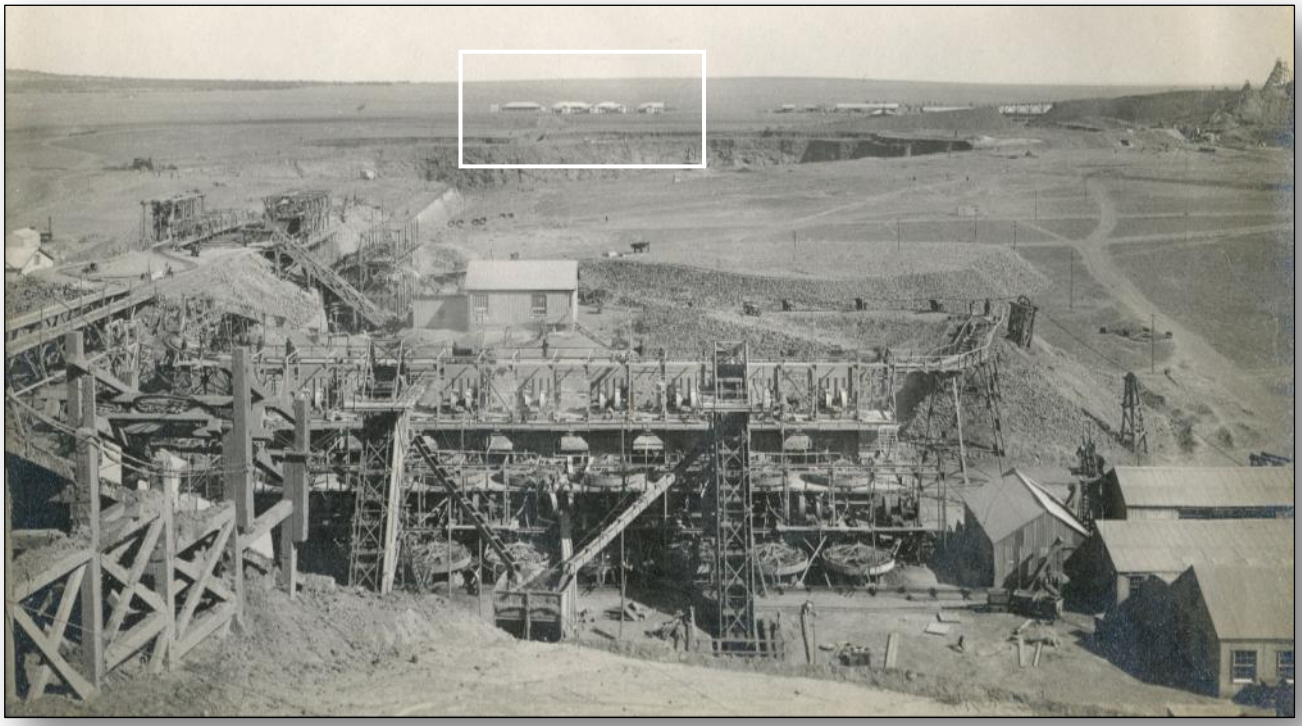


Figure 18 *Historic photograph depicting the Voorspoed Diamond Mine (Free State Archives, VAB, Photograph, 7932). Although the photograph is undated it would have been taken during the first few years of the mine's history. It appears to show a view from the mine dump to the east of the mine pit and as such reflects an elevated view. The area demarcated in white is depicted below.*

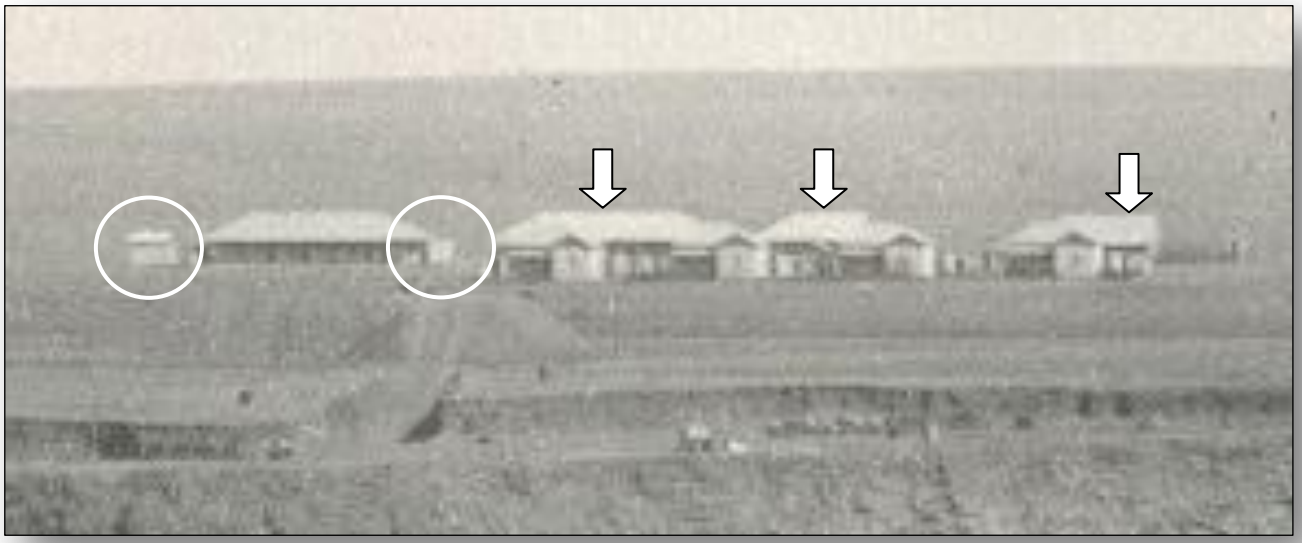
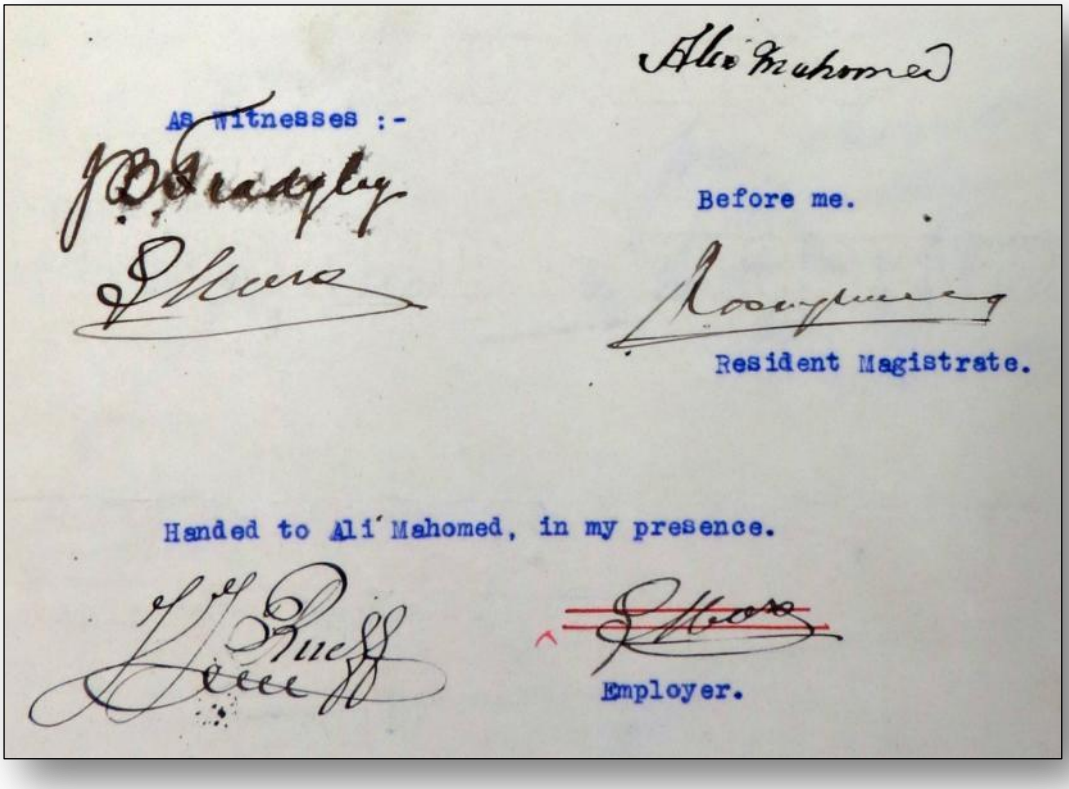


Figure 19 *Enlarged section of the demarcated area from the first image. The building under discussion is on the left. Two apparent corrugated iron structures are shown directly adjacent to the building and are demarcated in white. These two structures may have been a mess (left) and kitchen (right). The buildings to the right are married quarters designated as Building 10 on the 1909 map. The three arrows mark three structures which may have been associated with the old building. Due to the poor resolution of the image this is however not certain as these structures may also have been associated with the four dwellings for married staff members depicted to the front.*

6 August 1909	On this day an application was made by Ali Mohamed to the Resident Magistrate of Kroonstad to be allowed to settle in the Orange River Colony and specifically to start working as a waiter and a cook at the boarding house of J.J. Rueff at Voorspoed Mine (Free State Archives, VAB, CO, 499, 18/151). Mohamed was an Egyptian who had resided in Johannesburg since 1902, and was required by existing legislation to apply for permission to settle in either the Transvaal Colony or Orange River Colony. On 5 November 1909 Mohamed received permission to reside in the Orange River Colony and start working as a waiter and cook at the boarding house of J.J. Rueff. His affidavit to acknowledge receipt of the permit includes his signature as well as the signatures of the Resident Magistrate of Kroonstad T.J. Coltsman Cronin, the general manager of the Voorspoed Diamond Mining Company John Femlin Fradgley as well as the boarding house keeper J.J. Rueff. The fact that the general manager of the mining company signed as witness for the affidavit dealing with a future employee of the boarding house seemingly owned by a private individual J.J. Rueff suggests a close association between this boarding house and the mine itself. The implication is that the building at the site and this boarding house of Rueff are one and the same. The possibility that only one boarding house was located at the mine at the time is supported by an inventory of buildings and equipment at the mine that was undertaken on 31 December 1912 (see below).


Ali Mahomed

As witnesses :-

Before me.

Resident Magistrate.

Handed to Ali Mahomed, in my presence.

Employer.

Figure 20 *Portion of the affidavit that was signed by Ali Mohamed to acknowledge receipt of the permit which allowed him to settle in the Orange River Colony to work as a waiter and cook at the boarding house of J.J. Rueff at Voorspoed Mine. The identified signatures are: (top right) Ali Mahomed, the applicant in the matter; (right) T.J. Coltsman Cronin, resident magistrate for Kroonstad; (bottom left) J.J. Rueff, owner or keeper of the boarding house at the Voorspoed Mine and (top left) J.B. Fradgley, general manager at the Voorspoed Mine (Free State Archives, VAB, CO, 499, 18/151).*

3 August 1912 – 7 July 1913	On 3 August 1912 the Voorspoed Diamond Mining Company Limited closed for the last time due to the financial difficulties it was under. A period of negotiations with the De Beers Consolidated Mines Limited followed as the latter company had expressed an interest in acquiring the mine (Wagner, 1914). The acquisition formally took place on 7 July 1913 (The Financial Times, 1913). When De Beers took over the mine they decided not to continue mining as they felt it was unpayable within the conditions present at the time (Wagner, 1914). The termination of mining activities would have meant that the original function of the building as a boarding house for single white miners would have ceased to exist after 3 August 1912. Although it is not presently known what happened to the staff at the mine after the closure of the Voorspoed Diamond Mining Company, one can only assume that many (if not all) of the mine workers would have left either at the time (i.e. August 1912) or shortly thereafter. This said, the period after the cessation of mining activities would have been a time of uncertainty for the employees of the mine. Although De Beers indicated that they would not continue with mining the government of the Union of South Africa felt strongly that the mine had to remain operational due to its economic benefits for the Kroonstad district and as a result appointed a commission to investigate whether the continuation of mining activities at Voorspoed could be achieved. It can be argued that due to the uncertainty of the time at least some members of the original staff may have remained behind (or temporarily retained) at the mine for at least a year after the cessation of mining activities in 1912.
31 December 1912	On this day a schedule of machinery, plant and general equipment was drawn up at Voorspoed Mine. The schedule is part of the Chief Accountant records at the De Beers Archives in Kimberley (De Beers Archives, Chief Accountant Records, 1/1/26). The date on which this schedule was compiled suggests that it formed part of the transfer of the mining property from the Voorspoed Company Limited to De Beers. Although the schedule lists a large amount of plant, mining-related structures and infrastructure, it also lists a total of 33 different types of buildings located on the mine. In terms of white accommodation the schedule lists the following: • *'1 Manager's House with Outbuildings'* • *'31 Cottages in Village'* • *'1 Boarding House with Kitchen, Mess Room etc.'* • *'1 Set of temporary Married Quarters'* • *'4 Staff Dwelling Houses with Outbuildings'* • *'1 Staff Cottage (old Compound Manager's House)'* Of these five building types which can be associated with accommodation for white staff members at the time, it is evident that the boarding house is the only one that fits the characteristics of the building under discussion. The description of this building is also significant in that it indicates that the building was a boarding house and was associated with a kitchen and mess room. The historic photograph depicted above clearly shows two structures directly adjacent to the building which may very well have been a kitchen and mess.
1951	The first available information that could be found relating to the building since the cessation of mining activities in 1912 is an aerial photograph that was taken in 1951 (NGI, Aerial Photographs, 206_1951_11_321). Although the photograph is not clear, the following observations can be made from it:

	(A) The site with its building is clearly shown. (B) What appears to be a small rectangular structure is depicted a short distance north of the site. (C) This lane of eucalyptus trees can still be seen. (D) A cluster of buildings not unlike a farmstead is depicted to the north-east. (E) One dwelling-like structure is shown north-east of the site. (F) A footpath leads from the possible farmstead past the previous structure to the small rectangular structure north of the site. (G) A small dam is shown to the south of the building. At the time the dam appears to have been maintained and utilised. (H) A furrow is depicted between the dam and an area to the west of the site. (I) An agricultural field located south-west of the site. One can argue that the footpath leading from the nearby homestead to end at a structure in proximity to the site as well as the existence of a utilised and maintained dam to the south point to the occupation of the site. Although further analysis would be speculative, the association of the site with the abovementioned dam, water furrows, and agricultural field as well as the nearby farmstead-like buildings suggest that the site was associated with farming activities.

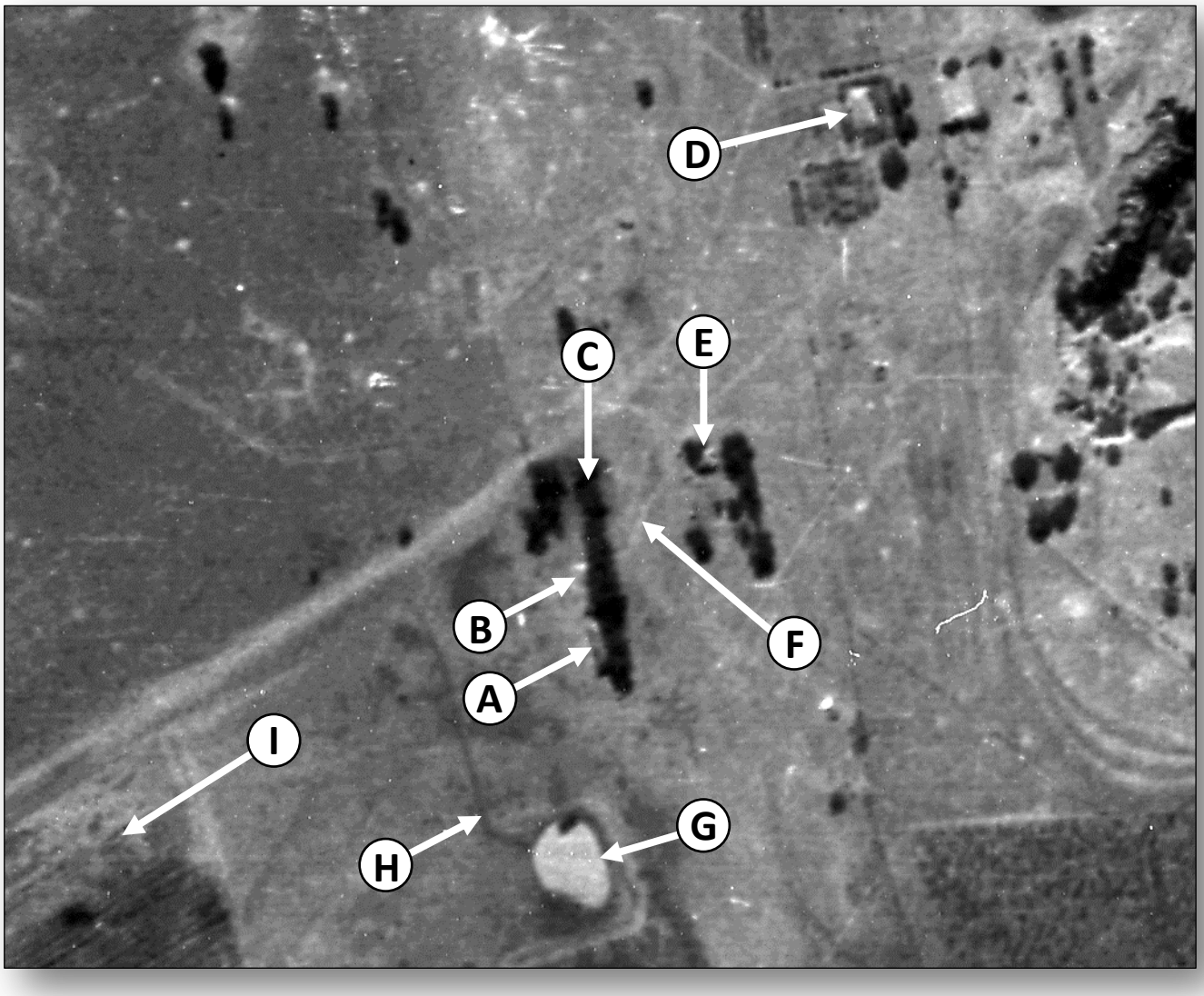


Figure 21 *Portion of the 1951 aerial photograph (*NGI, Aerial Photographs, 206_1951_11_321).

1963	The first edition of the 2727AC Topographical Sheet that was surveyed by the Trigonometrical Survey Office in 1963 represents the next available historical record with which the history of the site and building can be compiled. The map depicts a cluster of five buildings in close proximity to the site but does not appear to depict the old building from the site itself. Some indication of the lane of trees still found here can be seen on the map. Furthermore, the possible farmstead buildings to the north-east are depicted on this map, as are agricultural activities on the farms Morgenster and Voorspoed. With the possible exception of one building, the five buildings depicted directly north-west of the site would have been built after the 1951 aerial photograph was taken. This suggests that although human activity could be identified in the surroundings of the site from the 1951 aerial photograph, this would have increased dramatically in the 12 years since. Although it is impossible to state exactly when most of the buildings north-west of the site were erected, their depiction on this map is significant in that it provides a clear indication of the use of the direct surroundings of the site and suggests that the old building located on the site would have been used as well.

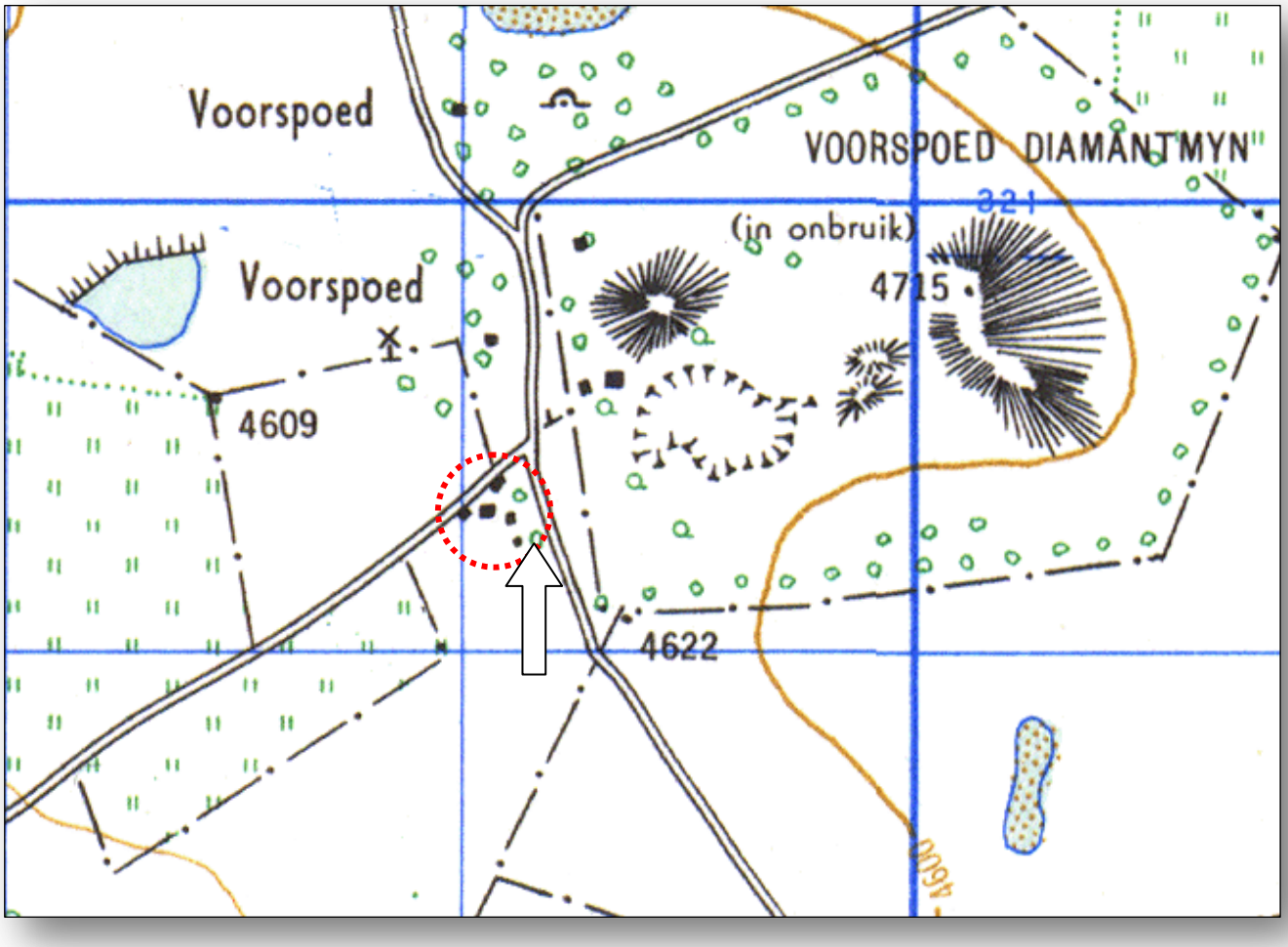


Figure 22 *Portion of the 2727AC topographical sheet that was surveyed in 1963 map. The position of the site (white arrow) as well as a cluster of five buildings (red circle) are indicated*

1964	The 1964 aerial photograph is depicted below (NGI, Aerial Photographs, 519_1964_08_3399). The following observations can be made from this image: (A) The site with its building is clearly shown. (B) At least two buildings are depicted west and north-west of the old building. (C) This lane of eucalyptus trees can still be seen. (D) The possible farmstead is depicted on the overall aerial photograph. (E) The dwelling-like structure north-east of the site is depicted again. (F) A number of footpaths can be seen leading toward the site. (G) The dam is depicted again and once more appears to have been utilised. (H) The furrow is depicted again, with at least two more water furrows also shown on the image. (I) The agricultural field is depicted on the overall photograph. Depicted features such as the increased number of footpaths as well as the appearance of what may be additional structures in proximity to the site coupled with the continued depiction of items such as the furrow and nearby agricultural field suggest that the level of human activity associated with the site during 1951 and 1963 would have continued into 1964. Again the suggestion can be made that the depicted features point to an association of the site with agricultural activities.

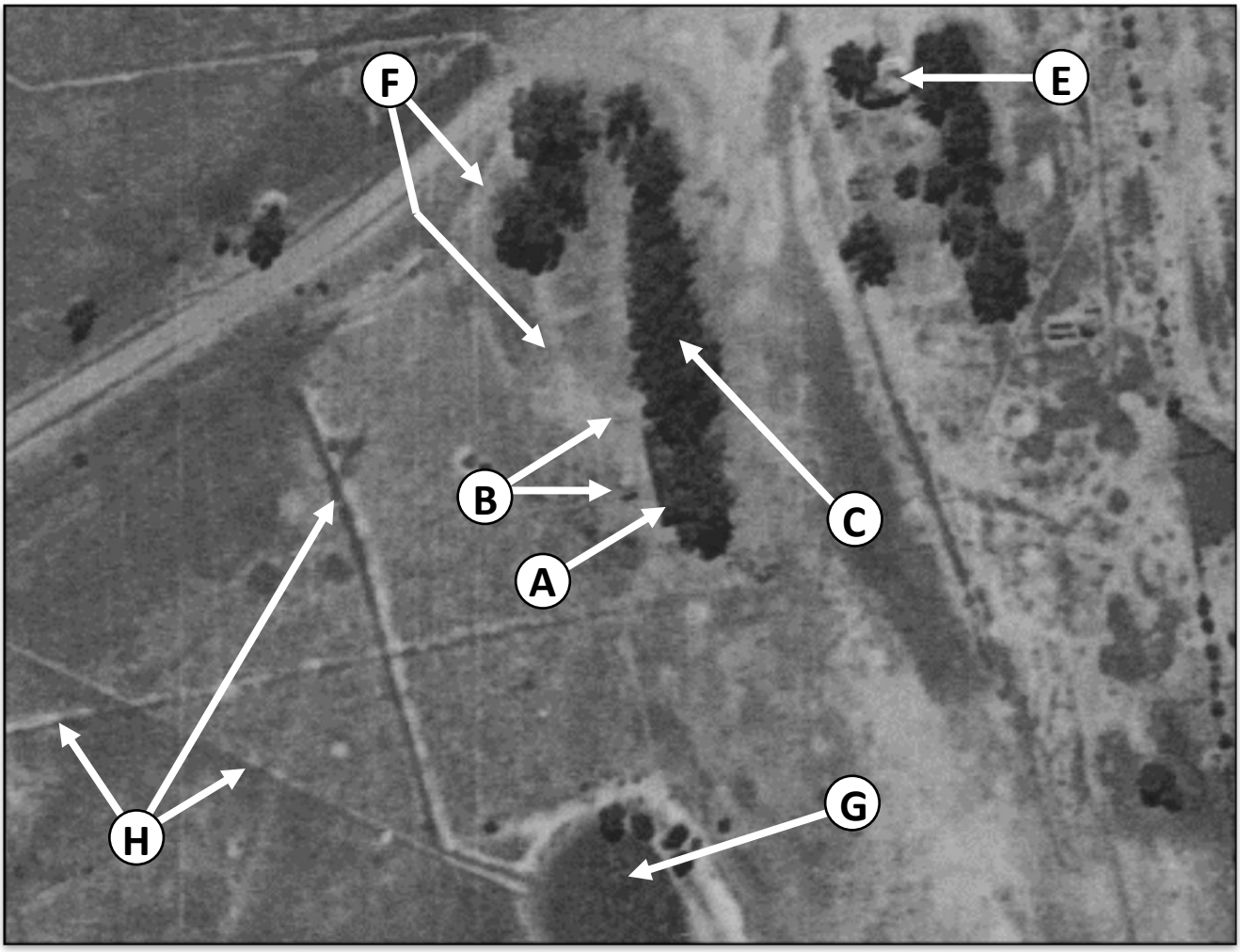


Figure 23 *Portion of the 1964 aerial photograph (*NGI, Aerial Photographs, 519_1964_08_3399).

1973	The 1973 aerial photograph is depicted below (NGI, Aerial Photographs, 698_1973_13_2147). The following observations can be made from this image: (A) The site with old building is clearly depicted. (B) What appear to be buildings are again depicted. (C) This lane of eucalyptus trees can still be seen. (D) The possible farmstead is depicted on the overall aerial photograph. (E) The dwelling-like structure north-east of the site is depicted again. (F) A number of footpaths can be seen leading toward the site. On this image the most prominent footpaths link the site with the possible farmstead to the north-east. (G) The dam is depicted again and appears to be less utilised and maintained. (H) Although the furrows are again depicted, they appear to be unused. (I) The agricultural field is depicted on the overall photograph. The less utilised appearance of the dam and furrows may suggest that the level of intensity of human activities at the site was declining. However the footpaths depicted here are the best defined ones from all the aerial photographs assessed as part of this study. This suggests that the site would still have been used.

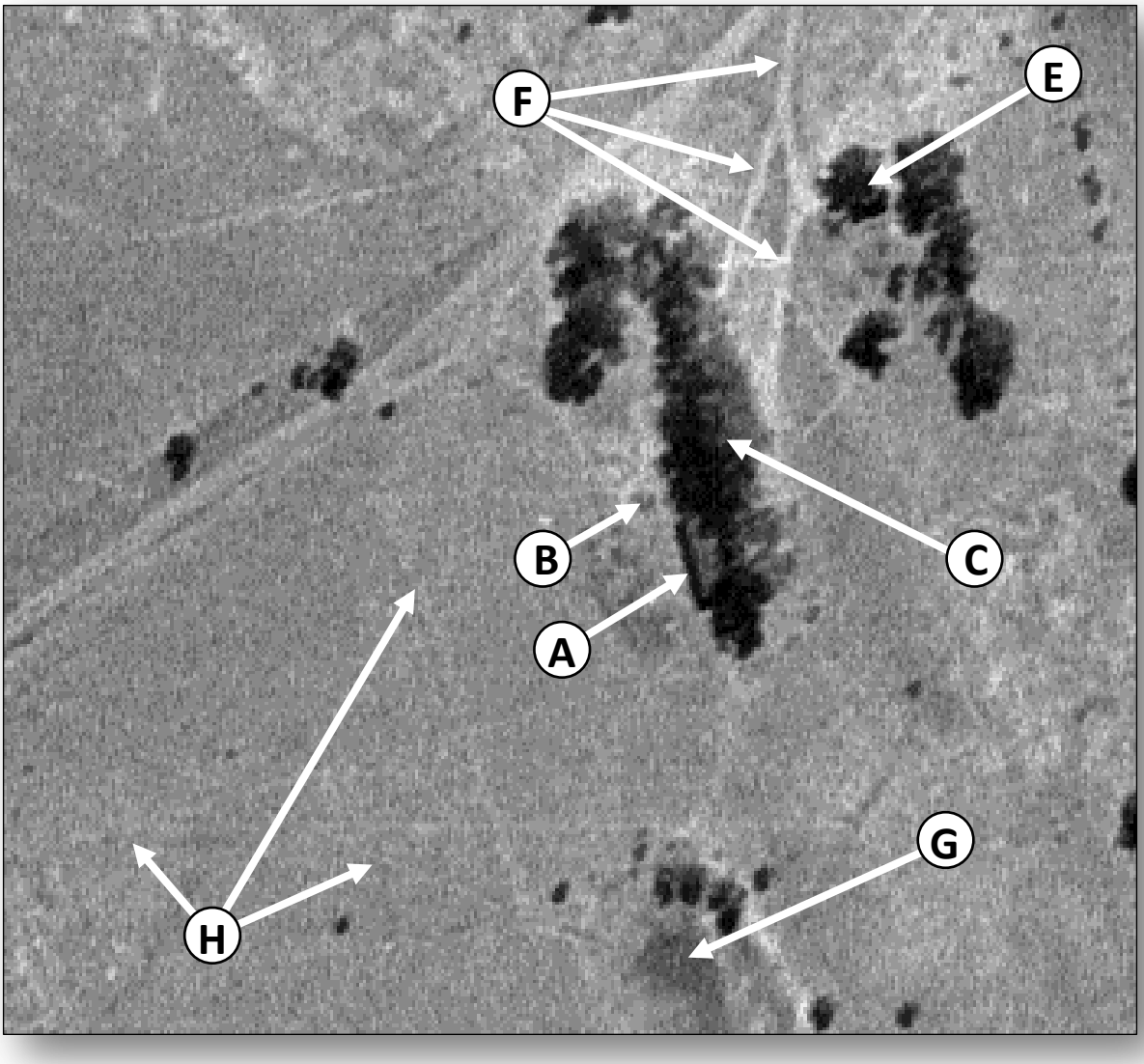


Figure 24 Portion of the 1973 aerial photograph (NGI, Aerial Photographs, 698_1973_13_2147)

1985	The 1984 aerial photograph is depicted below (NGI, Aerial Photographs, 498_203_1984_15_5542). The following observations can be made from this image: (A) The site with old building is clearly depicted. (B) No associated structures can be seen. (C) This lane of eucalyptus trees can still be seen. (D) The possible farmstead is depicted on the overall aerial photograph. (E) The dwelling-like structure north-east of the site is not shown. (F) No clear footpaths can be seen. (G) The dam is depicted again but appears to be unused. (H) Although the furrows are again shown they appear to be unused. (I) The agricultural field is depicted on the overall photograph. The less utilised appearance of the dam and furrows suggest that the occupation of the site may be coming to an end. The lack of clear footpaths as well as the disappearance of the associated structures and nearby dwelling-like structure strongly supports this observation.

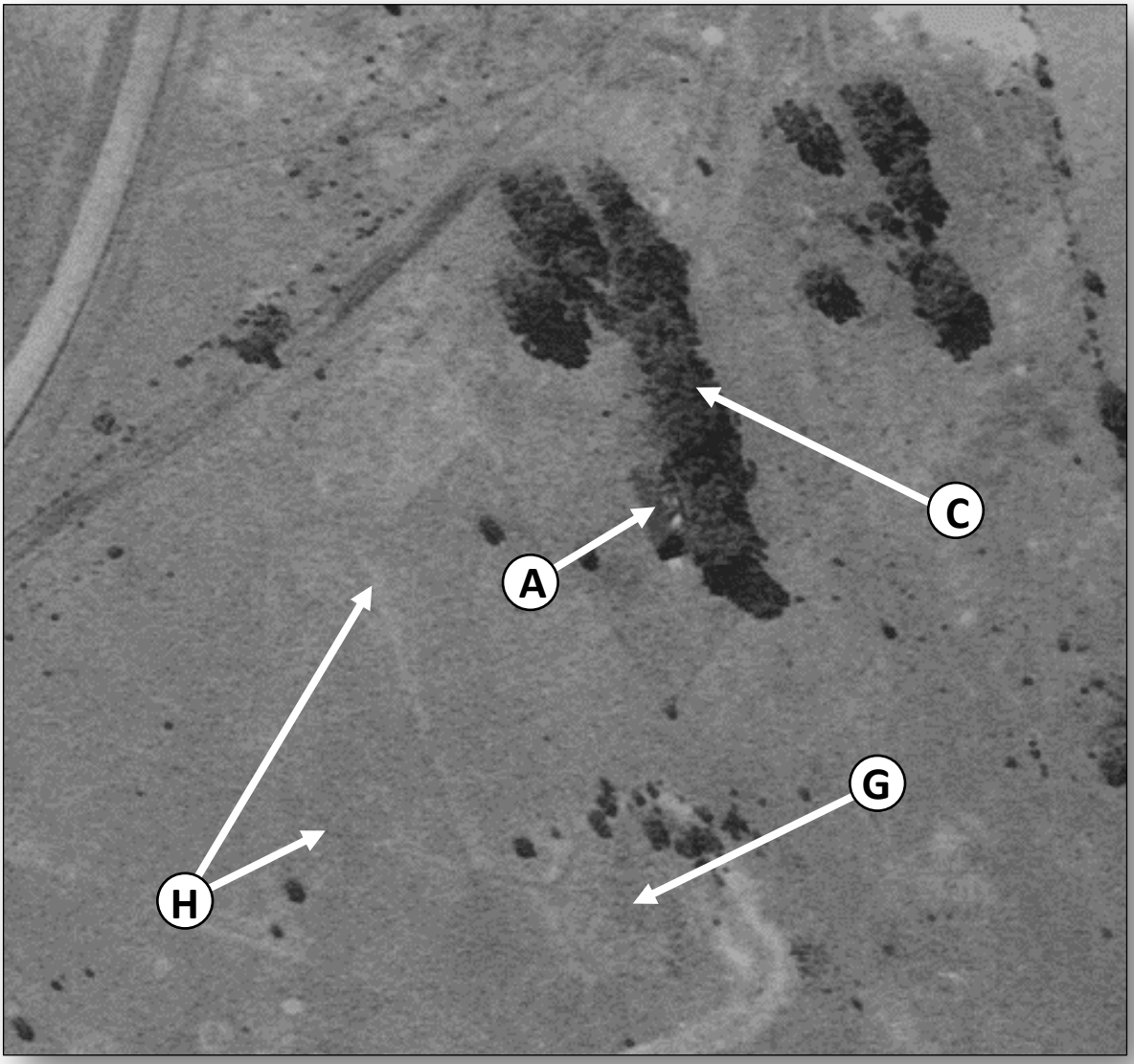


Figure 25 Portion of the 1984 aerial photograph (NGI, Aerial Photographs, 498_203_1984_15_5542).

5.4. Occupation Phases identified by way of Archival and Historical Desktop Study

5.4.1 Occupation Phase 1

This occupation phase is, in its entirety, associated with the early mining history of the site. It starts in c. 1906/1907 with the commencement of mining activities at the Voorspoed Diamond Mining Company Limited and ends in c. 1912/1913 with the cessation of mining activities (1912) and the acquisition of the mine by De Beers (1913). The archival and historical evidence indicate that the building would have been used as accommodation for single white men during this period. As a result domestic waste from the first two decades of the 20th century can be expected in the archaeological record of this occupation phase.

5.4.2 Occupation Phase 2

From the analysis of historic aerial photographs and the study of early maps it was found that a second occupation of the site occurred during the years preceding c. 1951 up to c. 1984. The former date was established by the appearance of at least one new building north-west of the original site building, footpaths linking sections of the site with a possible farmstead to the north-east and to a lesser extent also with the appearance of a nearby dam and water furrows. These features indicate that the site was utilised or occupied at the time. As no earlier aerial photographs exist, it was not possible to accurately establish exactly when the second phase occupation of the site commenced. What is known is that this second occupation could only have started between c. 1912/1913 and 1951, with an association closer to 1951 significantly more likely than an association with the former date. This can be said as the features depicting the presence of people at the site on the 1951 photograph seem more muted than what the intensity of those features suggest during the remainder of the historical aerial photograph sequence up to 1984.

The end of the second occupation of the site is chronologically marked to 1984 in that the aerial photograph from this year shows no evidence for footpaths leading into the site but depicts an unmaintained appearance of the nearby dam and water furrows. In general, the site and surroundings depicted on this image have an abandoned and overgrown appearance. The abandonment of the site at this time may be explained by the information contained in the heritage impact assessment report of Dr. Julius Pistorius (2004). In this report it is mentioned that as a result of prospecting and sampling activities undertaken during the 1960s as well as the late 1970s to early 1980s the recommendation was made that mining should be started again during the mid 1980s. Although a drop in diamond prices at the time led to this recommendation being shelved, its early implementation may have involved the relocation of the people in close proximity to the proposed mining activities to safer areas further away.

Two distinct associations with this second occupation phase can be postulated. The first is that the building from the site would have been used by black farm workers. This interpretation is based on the fact that the historic aerial

photographs depict features such as agricultural fields, a dam, water furrows and a cluster of farmstead-like buildings in reasonably close proximity to the site at the time.

The second interpretation for this occupation phase is that the site and its building would have been used by the black staff of De Beers during the prospecting activities undertaken during the 1960s as well as the late 1970s to early 1980s. Aspects arguing against this interpretation however, include the fact that prospecting appears to have only commenced during the 1960s whereas the 1951 aerial photograph already show evidence for the second occupation phase. Furthermore, the archival records of the time indicate that the 26 black staff members employed for prospecting activities by the mine at the time of a government inspection undertaken on 16 July 1965 would have been accommodated in prefabricated huts (four individuals) and tents (22 individuals). By the following year approval had been obtained for the erection of prefabricated huts for all of the black employees. No evidence for such prefabricated huts was found at the site on the photographs dating from 1973 and 1984, and no evidence for tents could be found on the aerial photograph from 1964.

The historical and archival evidence therefore point to a second occupation for the site associated with black farm workers rather than black mine workers. This differentiation and exclusion means that the arrival of the first farm workers at the site would in all likelihood have represented the start of the first long-term residency of the site by women and likely children too. This is said as farm workers at the time would in all likelihood have settled at the site as families whereas as the archival records show that only men would have been employed by the mine at the time.

6. DESCRIPTION OF THE ARCHAEOLOGICAL SITE

6.1 General Description

The archaeological site comprises an old building with a lane of eucalyptus trees on its eastern end and a rectangular concrete foundation on its southern end. The building has middens on its northern, western and southern ends some of which had been disturbed by surface clearing activities. In the section that follows various aspects relating to the site components will be discussed. Where required, the observations made in previous heritage reports will be included. This will be followed by a discussion on the context of the site i.e. its condition.

6.2 Components of the Archaeological Site

6.2.1 The Old Building

This section was derived from the report of the project architectural historian Mr. Mauritz Naudé (Naudé, 2013).

The building is rectangular with a central wall dividing it in two sections along the entire length of the structure. The rooms are all arranged along this internal spine with doors opening outwards onto the narrow verandah that runs along all four sides of the building. The rooms are relatively small and each has a single exterior door and window. No doors connect the interior spaces with each other and there is no interface between individual rooms.

One of the exceptional elements of the building is the foundations. These are constructed with neatly dresses bluish granite stone and projects above the surface to form a narrow plinth. Two rows of baked bricks were laid on top of the stone masonry foundation. The single most structural element to the foundation that attracts attention is the wide galvanized sheet iron that was installed on top of these two layers of brick as it is so wide that the exterior ends could project outwards for approximately 70mm before it was bent downwards to about 45 degrees. One of the questions arising from this structural element and the way it was treated remains why it had to be this wide as the building has an extensive verandah at all four sides making it unnecessary for such a prominent damp course.

The floors consist of a compacted mixture of ash and fine gravel which was covered with a cement screed of about 30mm thick. The floor was not designed to carry heavy loads and over time this screed was destroyed, exposing only the compacted gravel fill. The stoep around the building was defined by a neatly constructed row of dressed granite but no evidence of a formal floor screed or concrete could be found.

The building is constructed with baked bricks and may have been plastered with a clay mortar, but the mortar has been replaced, washed away or was chipped-off by some of the previous tenants. The exterior has been replastered with a clay plaster along the entire eastern façade but the plaster has been removed along all other walls. The type of bricks reminds of commercial stock bricks usually used for plastered walls and the degradation of these brick indicate that they were not intended to be left unplastered and unprotected as they clearly eroded badly and have become brittle due to the exposure to environmental elements.

The building has a hipped corrugated iron roof with wide eaves resulting in the creation of a verandah roof structure along all four sides of the building. The roof structure was constructed with Oregon pine trusses with long tie beams completing the design at the bottom and ‘hanebalke’ supporting and reinforcing the trusses at the top near the ridging. Diagonal trusses serving as queen posts were installed in the centre preventing any sagging in the centre of the main side rafters of each truss. Some of these have been cut off and have been removed. The roof had no gutters and down pipes when the building was investigated. No evidence could be found that the wide eaves or verandah roof was supported by timber or cast iron columns along the periphery of the verandah.

Most of the doors and windows have been removed while some of the door frames and windows frame have remained intact. In one of the rooms sections of a sash window have been retained – even though it is broken and dilapidated.

All the rooms had ceilings but in only two the timber planking of the original ceilings are left intact (or partly intact). Each of these ceilings has an attic door. In some of the rooms the original cornices of the ceilings have remained.

No evidence of other structural elements was found but in some rooms wooden strips containing metal hooks used for suspending jackets from, have remained fixed to the walls.

Figure 26 Montage of photographs depicting various views of the building at the site. Starting from the top down and from left to right, the photographs depict the western facade, eastern facade, northern facade and southern facade of the building. All photographs by Mauritz Naudé.

As indicated above, sections of the exterior walls of the building had been replastered. The plaster used in this post-construction application is a mixture of clay and cow dung (known as *daga*) that was decorated with geometric patterns. This practice of exterior mural decoration is associated with Sesotho culture and known as *ditema*.

Figure 27 Examples of clay replastering on the exterior of the building. All photographs by Mauritz Naudé.

6.2.2 Associated Buildings and Structures

A walkthrough of the entire site was undertaken and only one structure could be identified in association with the old building. This structure is a rectangular cement slab (7m x 4m) located no more than five meters south of the old building.

Figure 28 General view of the southern facade of the old building depicting the position of the only remaining structure associated with the building (see white arrow).

A site plan was included in the Phase 2 Heritage Impact Assessment report undertaken by Dr. R.C. de Jong in 2005, which indicates that at the time the old building was associated with a total of 10 rectangular structures. The report also indicates that only the stone plinths of these structures remain (De Jong, 2005).

Only one of the 10 associated structures depicted on the map of De Jong could be identified at the site during the current fieldwork, namely the rectangular cement slab described above.

Apart from the one structure to the south of the old building, the plan indicates that a further four were orientated in line with the old building on its northern end with a fifth structure located north-west of the northernmost structure from this line. The remaining four structures are depicted a short distance north-east of the old building.

The fact that only one of the 10 associated structures could be found on site can be ascribed to the disturbance which is evident on site and which must have taken place since the compilation of the map by Dr. R.C. de Jong. For example, in a disturbed area on the northern end of the building a number of large stones were observed which may have originated from one or more of the structures depicted to the north of the old building.

6.2.3 Middens

At the time of the first visit by the author of this report to the mine, middens were observed directly north and south as well as a short distance to the west (including to the north-west and south-west) of the old building. These were the only middens observed at the site.

The report of Dr. R.C. de Jong contained a site plan on which middens to the north, north-west and south-west of the old building are depicted (De Jong, 2005). Of these three middens only the north-western and south-western ones were found at the time of the first field visit by the author of this report.

A copy of the De Jong map was also located on the SAHRIS website as part of an application to allow the site to be destroyed. This application was submitted to SAHRA during January 2013. The copy of the De Jong map also contained additional comments and measurements in pencil which did not appear on the original 2005 map. Although it is not presently possible to confirm when or by whom these pencil comments were added, these additional notes indicate that a fourth midden had been identified to the north-east of the old building. This fourth midden was also not observed at the time of the first field visit by the author of this report.

Earthmoving activities to the north and north-west of the old building as well as general mining activities to its east and north-east appear to have impacted severely on the two middens located in those areas by the time that the first field visit by the author of this report took place. The grading of a road to the west of the old building and another one perpendicular to the first also disturbed the midden located in this area of the site.

6.2.4 Trees and other Vegetation

The most visible vegetation evident on the site is an avenue of large eucalyptus trees to the east of the old building with a smaller clump of the same trees a short distance to the west of its northernmost point. Furthermore, a pepper tree is located west-by-southwest of the old building.

Figure 29 A section of the avenue of trees is visible on the left with the old building located to the right.

6.2.5 Miscellaneous

Only one additional component or element of the archaeological site needs to be discussed here, namely an old rusty car body situated a short distance south-east of the building. Although the car body is in a poor condition, enough elements have remained to allow for its identification.

Based on its overall design and shape, the placement of headlights in pods which merged into the tops of the front fenders as well as the shape of the lower grille (which although absent on this body would originally have held 17 vertical mouldings) it is evident that the body is from a Chevrolet Pickup truck that was manufactured during the company's so-called Wurlitzer Juke Box (also referred to as Art Deco) style which ranged from 1941 to 1946 (Gunnell, 1988).

This car body and its presence at the site will be discussed in more detail below.

Figure 30 The 1941-1946 Chevrolet Pickup body located a short distance south-east of the old building.

6.3 Disturbance to Archaeological Site

As mentioned above, a certain level of disturbance to the site was witnessed at the time of the first field visit. It is not known exactly when these activities took place. The disturbance can be summarised as follows:

- Road Construction 1

  A secondary road was graded parallel and to the west of the old building at an unknown time. This activity led to the disturbance of the midden located on this side of the old building.

- Road Construction 2

  A bigger road was built as on an east-west axis across the entire northern end of the site. This road appears to have been built to provide an access from the main haul road further to the west to the main pit area to the east of the site. The building of this road would have impacted on sections of the middens as well as potentially on some of the foundation structures on the north-western and northern ends of the site.

- Road Construction 3

A second access road was built along the east-west axis from the nearby main haul road (further to the west) across the southern end of the site toward to mine pit to the east of the old building. The building of this road would have had a minimal impact on any archaeological middens from the site.

Road Construction 4

A fourth road was built on the eastern end of the avenue of trees and parallel to it. From previous heritage reports it is known that a midden and four foundations structures were located in this general area. However, due to the fact that the exact positions of these features were not recorded, it is possible that either the construction of this road or the nearby mining activities (or a combination of both) would have destroyed these features.

- Earthmoving Activities

Earthmoving activities were undertaken over a reasonably large area on the northern and north-western ends of the site. The activities appear to have comprised the grading of the topsoil and the dumping of this material along the avenue of trees.

The earthmoving activities would in all likelihood have destroyed the midden a short distance to the north of the building as well as the majority of the associated foundation structures on this side of the building.

- Mining Activities

At the time of the first visit to the mine, the mine pit was located a short distance east of the abovementioned road which had been constructed east of the avenue of trees. From previous heritage reports it is known that a midden and four foundations structures were located in this general area. However, due to the fact that the exact positions of these features were not recorded, it is possible that either the construction of this road or the nearby mining activities (or a combination of both) would have destroyed these features.

Figure 31 *General view of a section of the site as seen from the north-west. The road earmarked in this report as Road Construction 1 can be seen passing in front of the old building. This road crosses over large sections of the midden located on this side of the site.*

Figure 32 *General view of a section of the site as seen from the north. The result of the earthmoving activities can be seen with the removed soil discarded along the avenue of trees to the centre and left of the photograph. These activities resulted in the destruction of a midden and a number of foundation structures which had been identified a short distance north of the old building during 2005.*

7. ARCHAEOLOGICAL MITIGATION

7.1 Surface Collection

The first step in the archaeological mitigation was to lay out a grid of 5m squares over the entire site. The grid was aligned with the sides of the old building as the orientation of the long end of the building appears to be aligned with true north. A total imaginary grid comprising 400 individual squares that were numbered from south to north (starting at A and ending with J) and from west to east starting at (0 and ending at 39) was established on sketch pad across a field sketch of the site layout. The south-western extremity of the grid was numbered A0 and the north-eastern end J25.

A total of 37 squares were chosen for surface collection and as a result were physically demarcated in the field. These squares were primarily chosen due to their proximity to the building as well as the quantity of cultural material visible on the surface. Furthermore, the construction of a road through middens to the west of the building resulted in this area of the site being well suited for surface collection. It is therefore not surprising that 35 of the overall 37 squares were located in areas north-west, west and south-west of the building. The surface collection did not extend to the eastern end of the building due to the presence of a lane of eucalyptus trees, the nearby mine pit and road as well as the lack of visible cultural material.

All cultural material visible within each individual square that was identified for surface collection was removed and placed in bags marked with the particulars of that square.

The distribution of cultural material across the 37 grid squares earmarked for surface collection can be found in the provenience tables provided in the discussion on the various artefact types below.

7.2 Shovel Test Pits

As a way of assessing the extent and depth of the middens surrounding the historic building and at the same time also the extent and characteristics of the archaeological site, six shovel test pits (STPs) were excavated in various localities across the site. Each of these STPs were excavated and screened as a single unit. The six STPs will be discussed individually below.

The cultural material recovered from each of the shovel test pits will be discussed as part of the general discussion of artefacts below, whereas the type and number of artefacts recovered from each pit are provided in the relevant provenience tables.

7.2.1 STP1

STP1 was placed directly east of a road (see Road Construction 1 above) which had been graded through some of the middens associated with the building. This locality was chosen to assess the depth, characteristics and context of the midden exposed by the road construction.

STP1 measured 0.42m by 0.42m and the excavation here continued to a depth of 0.49m below the surface. Intact stratigraphy was observed on the sides of the STP which resulted in the decision to excavate Block E8(13) nearby.

Figure 33 The position of STP1 in context with the rest of the site. The road disturbance can be seen to the left with the old building visible in the back. The two individuals on the right are conducting excavations on Blocks E8(12) and E8(13).

7.2.2 STP2

STP2 was placed in the centre of a suspected midden mound located directly north of the old building. This locality was chosen to assess whether a midden was indeed located here and if so what its depth, characteristics and context would be. STP2 measured 0.50m by 0.40m and the excavation here continued to a depth of 0.75m below the surface. At this depth a reasonably level layer of broken bricks was exposed. Although the upper sections of the shovel test pit comprised limited evidence for the presence of a midden (i.e. artefacts and ashey material), the lower 0.30m of the excavation revealed high quantities of charcoal which continued until the brick layer was exposed. It seems likely therefore that a fireplace may have been located here.

7.2.3 STP3

STP3 was placed in the centre of a low mound on the south-eastern end of the old building to establish whether this mound was an undisturbed midden. STP3 measured 0.40m by 0.37m and the excavation here continued to a depth of 0.42m below the surface. This mound was indeed found to contain a midden with an intact stratigraphic context. However, the material recovered from this STP was no different to the material recovered from Block E8(12) and E8(13) and as a result apart from the STP no further archaeological work was undertaken here.

7.2.4 STP4

STP4 was placed in the centre of a low mound on the eastern end of the old building to establish whether this mound was an undisturbed midden. STP4 measured 0.49m by 0.44m and the excavation here continued to a depth of 0.14m below the surface. The excavation indicated that no midden was located here.

7.2.5 STP5

STP5 was placed in the centre of a low mound to the north-west of the old building to establish whether this mound was an undisturbed midden. STP5 measured 0.40m by 0.37m and the excavation here continued to a depth of 0.22m below the surface. The excavation did not reveal stratigraphic layers and very little cultural material was recovered.

7.2.6 STP6

STP6 was placed on the western extremity of the large midden that was tested and excavated by way of STP1, Block E19(12) and E19(13). STP6 measured 0.50m by 0.40m and the excavation here continued to a depth of 0.38m below the surface. No concentration of material, as was recovered from STP1, was observed here.

Figure 34 *The position of STP2 in context with the rest of the site. The old building can be seen in the back with the lane of eucalyptus trees to the left.*

Figure 35 *The base of STP2 showing the brick layer with charcoal fragments. Scale in 10mm increments.*

Figure 36 The position of STP3 in context with the rest of the site.

Figure 37 The base of STP3. Scale in 10mm increments.

Figure 38 The position of STP4 in context with the rest of the site. The eastern facade of the building is visible in the back and the position of the STP near the lane of trees can be seen from the trees to the left.

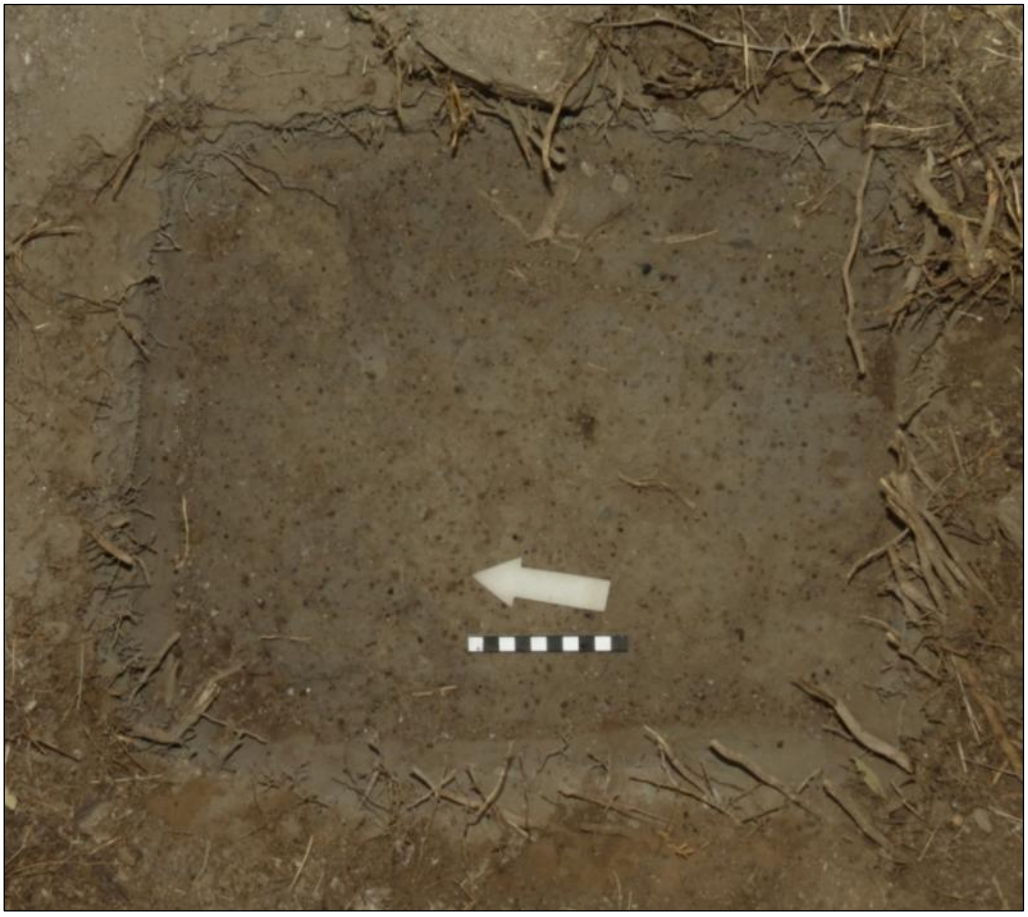


Figure 39 The base of STP4. Scale in 10mm increments.

Figure 40 The position of STP5 in context with the rest of the site.

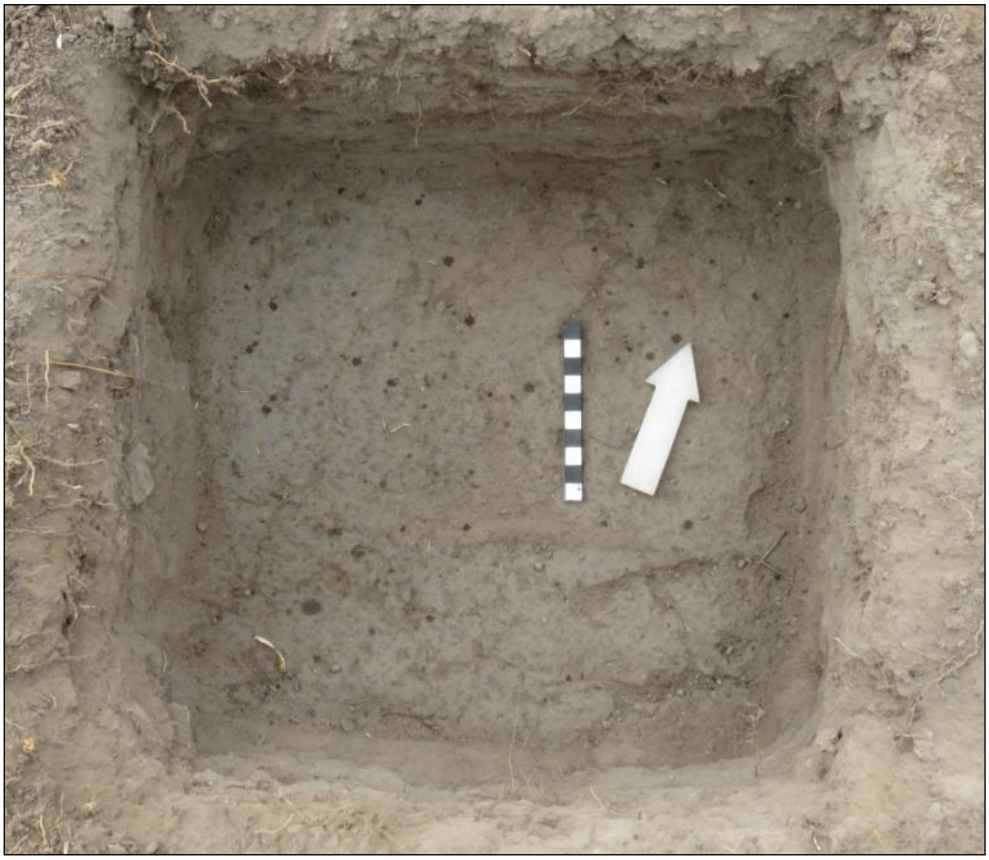


Figure 41 The base of STP5. Scale in 10mm increments.

Figure 42 The position of STP6 in context with the rest of the site.

Figure 43 The base of STP6. Note the large number of roots. Scale in 10mm increments.

7.3 Archaeological Excavation of Blocks

7.3.1 The excavation of Block E8(13)

The excavations commenced with the placing of a 1m x 1m block a short distance south-east of the shovel test pit at STP1. The block was placed over the highest point of the mound that represented the midden in this area in an attempt to excavate through the deepest section of the midden. This block was named Block E8(13) after the 5m square block within which the excavation block is situated as well as its position within the 5m square block. The decision was made for the block to be excavated using the arbitrary spit technique, with each spit defined as a depth of 0.10m.

During the excavation very little stratigraphic differentiation across the entire unit could be identified, with only two clear instances visible. The first of these was at depths ranging between 0.10m to 0.17m where the first stratigraphic layer, comprising grey ashy material mixed with top soil, gave way to a layer of lighter grey ashy soil containing small charcoal pieces. No clear differentiation across the unit of this darker grey ashy soil could be established during the excavation, with the exception that at certain points the charcoal content increased. The second stratigraphic change occurred at depths between 0.34m and 0.46m where the characteristics of the soil changed to a darker almost black clay containing pebbles. This dark clay with pebbles was identified as sterile soil. As a result the excavation of Block E8(13) was halted at this level.

Figure 44 The excavation of Block E8(13).

Figure 45 *The bottom of Level 5 can be seen. Note the dark almost black soil covering the surface of the unit. This soil type characterises the sterile section from the site.*

7.3.2 The excavation of Block E8(12)

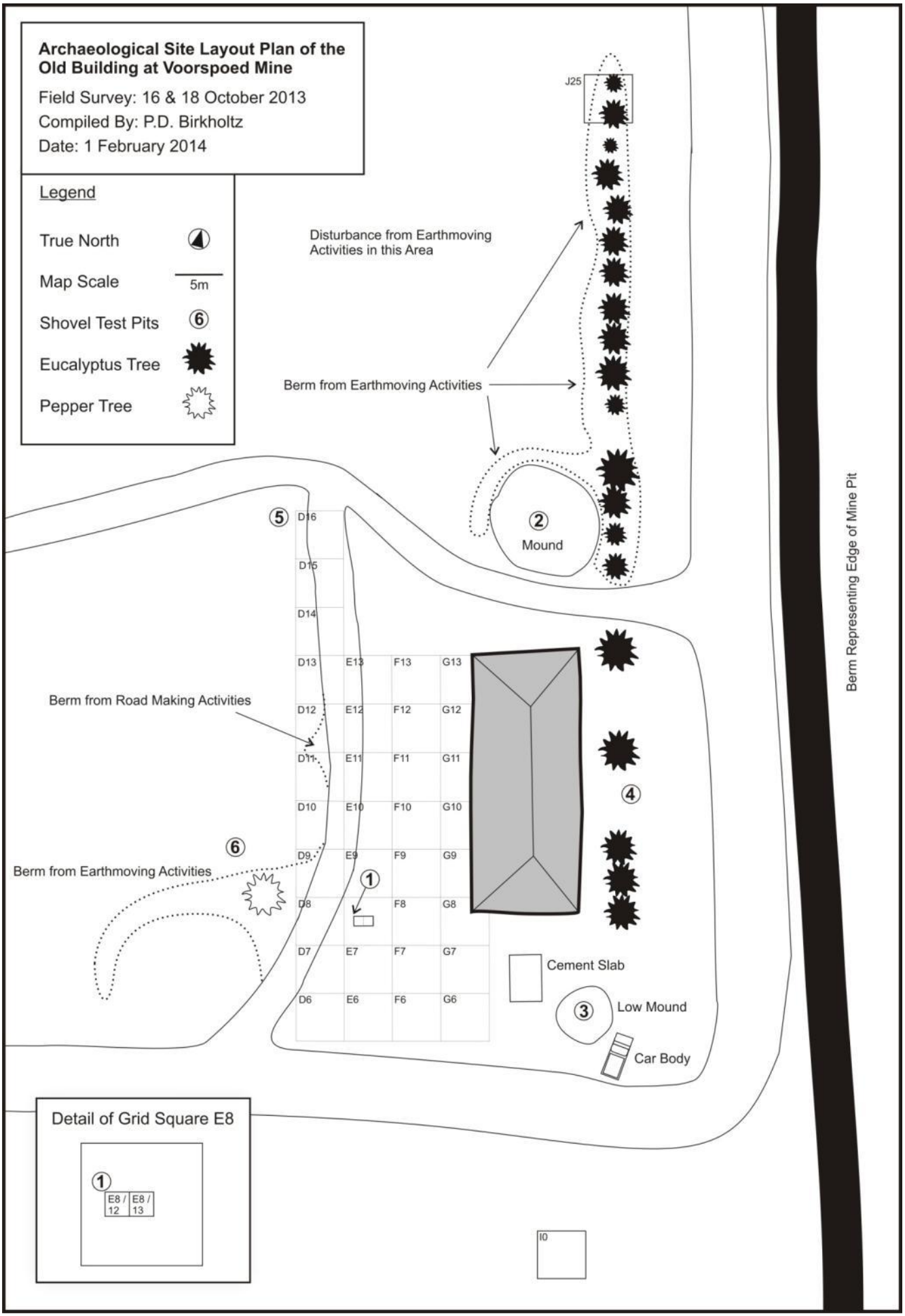
A second 1m x 1m block was placed directly west of Block E8(13). This excavation continued with the arbitrary spit technique (spits of 0.10m deep) that was used in the excavation of Block E8(13).

As was the case with the excavation of Block E8(13), very little stratigraphic differentiation across the entire unit could be identified during the excavation of this block.

Again, a clear differentiation could be identified at a depth ranging between 0.10m to 0.15m where the grey ashy material mixed with top soil ended and a layer comprising a lighter grey ashy soil containing some charcoal was exposed. This soil type continued to a depth ranging between 0.35m and 0.41m at which point the sterile section comprising dark clay with pebbles was revealed. The excavation of Block E8(12) was halted at this level.

Figure 46 Another view of the excavation of blocks at the site.

Figure 47 On the left the bottom of Block E8(12) Level 6 can be seen, with the bottom of Block E8(13) Level 5 visible on the right.


Archaeological Site Layout Plan of the Old Building at Voorspoed Mine
Field Survey: 16 & 18 October 2013
Compiled By: P.D. Birkholtz
Date: 1 February 2014
Legend
True North
Map Scale
5m
Shovel Test Pits
Eucalyptus Tree
Pepper Tree
Disturbance from Earthmoving Activities in this Area
Berm from Earthmoving Activities
J25
2
Mound
Berm Representing Edge of Mine Pit
5
D16
D15
D14
D13
E13
F13
G13
D12
E12
F12
G12
D11
E11
F11
G11
D10
E10
F10
G10
D9
E9
F9
G9
D8
F8
G8
D7
E7
F7
G7
D6
E6
F6
G6
Berm from Road Making Activities
4
6
Berm from Earthmoving Activities
1
Cement Slab
3
Low Mound
Car Body
Detail of Grid Square E8
1
E8 / 12
E8 / 13
I0

7.4 Discussion of Stratigraphy

The eastern profile of Block E8(13) and the western profile of Block E8(12) were measured and drawn whereas all four profiles of E8(13) were photographed, as were the northern, western and southern profiles of E8(12). While very little stratigraphic differentiation could be observed during the excavations, these profile records will be used as the basis for the interpretation of the stratigraphy of the site.

7.4.1 Stratigraphic Layer 1

The first stratigraphic unit to be identified consists of a layer of grey ash which could be clearly discerned from the ashy layer below during the excavation due to its darker colour. Some top soil may be present in the upper sections of this layer but no distinct differentiation could be identified within the layer. Stratigraphic Layer 1 is represented in the excavation by Block E8(13) Level 1, Block E8(13) Level 2, Block E8(12) Level 1 and Block E8(12) Level 2. The bottom depth of this layer in both blocks ranged between 0.04m and 0.17m below the surface. Block E8(13) Level 1 and Block E8(12) Level 1 almost exclusively contains material from Stratigraphic Layer 1.

In an archaeological deposit of primary undisturbed context the first stratigraphic layer can be expected to contain topsoil as well as the most recent cultural material from the site. However, the excavation of Block E8(13) Level 1 revealed artefacts that can almost exclusively be associated with the first occupation phase such as a Chamberlain's Cough Remedy fragment (c. 1908 to c. 1930) and an over-stamped .303 cartridge (c. 1907/8 to c. 1913) with five glass beads which in turn can exclusively be associated with the second occupation of the site. The combination of both the older and more recent cultural material within a single stratigraphic unit suggest that the primary context of Stratigraphic Layer 1 is doubtful. The position of the excavation block, proximate to a disturbance caused by the construction of a nearby road (see Road Construction 1 above), suggests that this layer may represent a mix of recent in-situ artefacts with disturbed and re-deposited midden material.

The same convergence of both occupation phases in the first stratigraphic layer could not be identified during the excavation of E8(12) Level 1. Although this unit layer can also be exclusively associated with Stratigraphic Layer 1, only more modern datable artefacts in the form of four glass beads and two modern cold drink bottle fragments were associated with this unit layer. It is important to note that this may be the result of a dearth in datable older material recovered rather than a rejection of the premise that the first layer was mechanically discarded here.

7.4.2 Stratigraphic Layer 2

At depths ranging between 0.04m and 0.17m below the surface a layer of lighter grey ashy soil was exposed which extended to depths between 0.34m and 0.46m below the surface. Although a careful recording of the profiles

indicate changes within this stratigraphic layer based on slight differences in charcoal content, this differentiation was not identified during the excavation due to its frequency, respective shallow depths and subtleness of change. As indicated, the first subsequent and clearly defined stratigraphic change occurred at depths of between 0.34m and 0.46m below the surface with the exposure of a dark clay material with small pebbles. Stratigraphic Layer 2 is represented in the excavation by Block E8(13) Level 2, Block E8(13) Level 3, Block E8(13) Level 4, Block E8(13) Level 5, Block E8(12) Level 1, Block E8(12) Level 2, Block E8(12) Level 3, E8(12) Level 4.

The cultural material recovered from this stratigraphic layer represents the occupation of the site throughout its history with cultural material from the first and second occupation phases represented in this component. Furthermore, no clearly evident differentiation could be discerned between the excavation levels from within this stratigraphic unit. For example, the excavation of E8(13) Level 3 not only uncovered a fragment of an early Holbrook sauce bottle (c. 1898 to c. 1910) as well as a solarised base fragment containing embossed lettering which can be dated to between c. 1913 and c. 1920, but also one bead and one plastic item. Similarly, the excavation of E8(12) Level 3 recovered fifteen cobalt blue fragments including a shoulder and neck fragment from a castor oil bottle (c. 1900 to c. 1910) as well as three glass beads. E8(13) Level 4 in turn revealed a 7 x 57mm Mauser cartridge which could only have been associated with the first occupation phase, whereas four glass beads exclusively attributable to the second occupation phase were also recovered from this unit. The excavation of E8(12) Level 4 also reflects this lack of differentiation with the recovery of three cartridges, that can exclusively be associated with the first occupation of the site, in conjunction with two glass beads. The excavation of E8(12) Level 5 revealed fragments of a castor oil bottle (c. 1900 to c. 1910) as well as two glass beads.

The frequency of subtle changes within this stratigraphic component was difficult to identify during excavation. Furthermore, the use arbitrary 0.10m spits preclude a clearly defined differentiation of the cultural material recovered from each excavation level. As the majority of artefacts recovered from the site are too fragmented to date, identify and utilise for interpretative purposes the importance of differentiating between the two occupation phases in the archaeological stratigraphy is not considered significant. Cultural material exclusively associated with each of the occupation phases was found and this was used for interpretation purposes. All aspects of the work, including the historical study and archaeological mitigation, provide support for two distinct occupation phases, the first by white single male mineworkers and the second by black farm worker families.

7.4.3 Stratigraphic Layer 3

The third and final stratigraphic layer comprises a dark almost black clay soil with pebbles. This layer represents the sterile soil and the bottom of the excavation. Stratigraphic Layer 3 is represented in the excavation by the lower ends of Block E8(13) Level 5 and Block E8(12) Level 5 as well as the entire Block E8(12) Level 6.

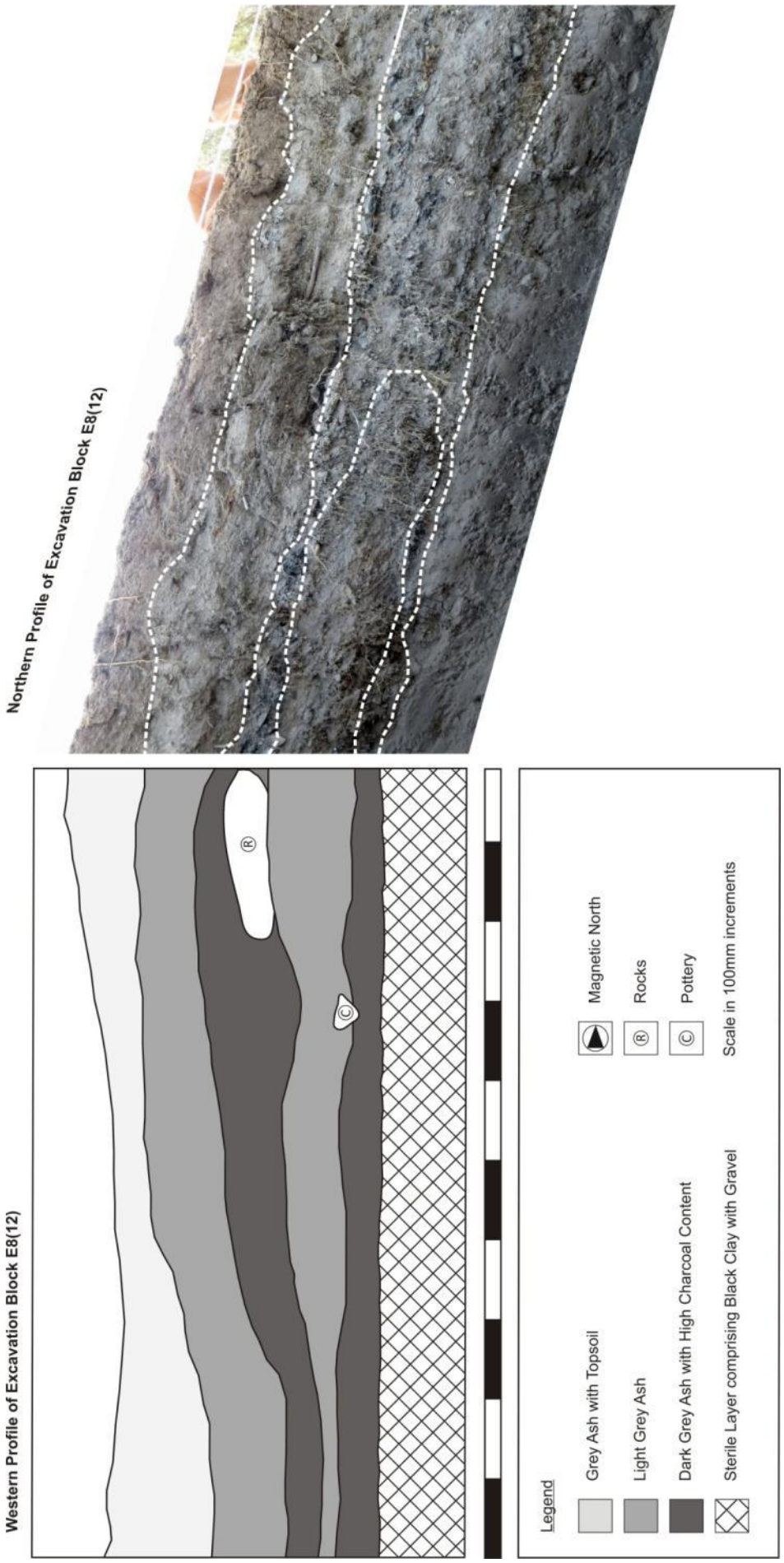


Figure 48 *The western and northern profiles of Block E8(12).*

8. DISCUSSION OF ARCHAEOLOGICAL ARTEFACTS

8.1 Discussion of Glass Artefacts

8.1.1 General Discussion

A total of 2,983 individual glass fragments were recovered from the site. The MNV (Minimum Number of Vessels) for these fragments is 369. This means that at least 369 individual glass bottles and containers are represented in the assemblage.

Once all the glass artefacts had been washed and dried they were grouped firstly according to their provenience followed by their association with one of four large identity classes namely Containers (i.e. bottles and jars), Flat Items (i.e. window panes), Tableware (i.e. glasses, dish up bowls and pouring jugs) and Utilitarian (i.e. light bulbs). Those artefacts grouped into Containers were classified further into their respective colours namely aqua, light green, green, dark green, colourless, opaque-white, solarised, light blue, blue, turquoise, pink brown and yellow. The classification also allowed for the recording of the number of artefacts which could be identified from each colour as well as the MNV for both the sub-classes and each provenience as a whole. Finally, the classification also provides for the recording of the number of artefacts from each sub-group which could be identified. The definition of "identified" used in this instance was whether an artefact could be grouped into six identity classes namely medicine bottles, food bottles, mineral water bottles, liquor bottles, modern cold drink bottles and flat glass fragments (i.e. window panes). With the exception of flat glass, the number and MNV for all these identified classes were recorded. Due to the characteristics of flat glass its MNV was not calculated. Refer Annexure A for the glass classification forms.

Out of the total number of 2,983 glass fragments recovered from the site only 277 fragments could be identified into the above mentioned six groups. This means that only 9.29% of the total glass assemblage from the site could be identified.

The low percentage of identified fragments is an expression of the high fragmentation of the glass artefacts recovered from the site. For the most part the glass from the assemblage comprises small fragmented pieces with only one complete bottle identified. The reason for this high level of fragmentation may be due to broadcast scatter and trampling.

In the table below the provenience of all the glass artefacts from the site is provided. The MNV for each unit is also given. The table provides some insight into the distribution of glass across the site. The following observations can be made in this regard:

- A total of 1,410 fragments (or 47.27% of all the glass artefacts) were recovered from the excavations of two 1m x 1m blocks namely E8(13) and E8(12). This can to a certain degree be explained as a result of the concentration of material (including glass) in the excavated midden that was excavated through. However, when one considers that apart from these two excavation blocks the glass assemblage was also recovered from six shovel test pits and the surface collection of 37 individual 5m x 5m blocks, it becomes apparent that the area where the two blocks were excavated represents a concentration of glass.
- The frequency of glass artefacts through the excavated levels of both E8(13) and E8(12) warrant further discussion. In both excavation blocks the top levels and lower levels contain the highest number of glass artefacts. This will become apparent when one calculates the percentage share of glass from each level compared to the total number of glass artefacts from a particular block. The percentage shares per level for excavation block E8(13) are as follows: Level 1 (41.12%), Level 2 (19.88%), Level 3 (15.78%), Level 5 (38.39%). A similar result is evident from the percentage shares per level for excavation block E8(12): Level 1 (35.80%), Level 2 (8.45%), Level 3 (10.60%), Level 4 (32.72%) and Level 5 (12.44%). It is evident from these calculations that the frequency and number of glass artefacts from both excavation blocks start off high at Level 1, followed by low percentages through Levels 2 and 3 and ends at the lower end of the midden with increased percentages again through Levels 4 and 5. The reasons for this distribution are not presently clear.
- A comparison of the results of the surface collection of the grid squares to the west of the building also provides insight into the distribution of glass across the site and especially to the spatial relationship between glass artefacts and the building. The grid squares falling within this area to the west of the building are defined by columns G, F, E and D (parallel to the western facade of the building) and rows 9, 10, 11 and 12. The nearest column to the building is G and the surface collection from G9, G10, G11 and G12 revealed no glass artefacts. At a distance of 5m to 10m west of the building column F is the second nearest and the surface collection of F9, F10, F11 and F12 revealed only two glass artefacts. Artefact frequency increases dramatically at a distance of 10m to 15m west of the building where column E is located. The surface collection of E9, E10, E11 and E12 revealed a total of 147 glass artefacts. This is a significant increase from the previous two columns. This trend continues at the distance of 15m to 20m west of the building where the surface collection of D9, D10, D11 and D12 revealed 220 fragments. Although these figures may have been influenced by the grading of a road during the relatively recent past across the area covered by columns E and D, the complete lack of glass artefacts from the column closest to the building followed by sparse findings from the one further away seem to suggest that the area directly adjacent to the building was not used for the discard of waste and that it may rather have been scattered or discarded at distances of 10m to 20m from the building. It is also possible that an area directly adjacent to the building (roughly 10m wide) was swept and cleared of any visible waste material. Any glass located within this area may have been pushed out of this area to rest at distances further away. This suggested activity may also have added to the massive increase in glass artefacts from columns D and E.

Provenience	No. of Fragments	MNV
E8(13) Level 1	271	15
E8(13) Level 2	131	11
E8(13) Level 3	104	17
E8(13) Level 5	253	15
E8(12) Level 1	233	15
E8(12) Level 2	55	12
E8(12) Level 3	69	10
E8(12) Level 4	213	13
E8(12) Level 5	81	8
STP 1	74	8
STP 2	229	11
STP 3	89	10
STP 4	7	5
STP 5	20	5
STP 6	49	6
Surface Collection D6	116	12
Surface Collection D7	64	15
Surface Collection D8	94	10
Surface Collection D9	109	12
Surface Collection D10	57	9
Surface Collection D11	15	5
Surface Collection D12	39	6
Surface Collection D13	36	9
Surface Collection D14	18	7
Surface Collection D15	53	8
Surface Collection D16	26	8
Surface Collection E6	80	9
Surface Collection E7	11	5
Surface Collection E8	24	9
Surface Collection E9	36	9
Surface Collection E10	37	8
Surface Collection E11	32	8

Provenience	No. of Fragments	MNV
Surface Collection E12	42	9
Surface Collection E13	14	5
Surface Collection F6	18	6
Surface Collection F7	15	7
Surface Collection F8	5	4
Surface Collection F9	-	-
Surface Collection F10	-	-
Surface Collection F11	2	2
Surface Collection F12	-	-
Surface Collection F13	3	2
Surface Collection G6	14	2
Surface Collection G7	3	2
Surface Collection G8	-	-
Surface Collection G9	-	-
Surface Collection G10	-	-
Surface Collection G11	-	-
Surface Collection G12	-	-
Surface Collection G13	-	-
Surface Collection I0	128	13
Surface Collection J25	14	7
Total	**2,983**	**369**

Table 1

The provenience and frequency of all glass recovered from the site.

In the table below a summary is provided of all the glass artefacts from the assemblage which could be classified into one of the six pre-defined identity types namely medicine bottles, food bottles, mineral water bottles, liquor bottles, tableware, flat glass and modern glass drink bottles. The table displays the provenience, number of artefacts and MNV. Furthermore, the totals and relevant percentages are provided at the bottom.

The following observations can be made from this table:

- The flat glass group is the best represented in the assemblage with 46.69% of the fragments that could be identified falling in this group. The second and third best represented groups are medicine bottles (18.12%) and liquor bottles (11.50%). This is followed by food bottles (7.67%), modern cold drink bottles (6.62%), mineral water bottles (5.92%) and tableware (3.48%). When the flat glass group is excluded from the calculations, the group percentages are as follows: medicine bottles (33.99%), liquor bottles (21.57%), food bottles (14.38%), modern cold drink bottles (12.42%), mineral water bottles (11.11%) and tableware (6.54%).
- The high frequency of flat glass in the assemblage can likely be attributed to the fact that window panes would have been broken and discarded during both occupation phases of the site. The same uninterrupted discard of material can likely not be seen in terms of medicine bottles, mineral bottles and certainly not in modern cold drink bottles. It is worth noting that the tableware and food groups would also have been expected to continue through both occupation phases of the site but this is not seen in the frequencies of glass artefacts for these two groups.
- The low frequency of food bottles seems to indicate that food preparation and consumption was not actively undertaken at the site or that emphasis during both occupations of the site would have been placed on fresh food and produce rather than food acquired from shops or which had to be preserved.
- The low frequency of tableware is also surprising for a site containing a building which has been interpreted as accommodation for single men during the mining phase and families during the farm worker phase. However, it can be suggested that the way of life during both phases in the history of the site may have been utilitarian.
- No non-food related household items were identified in the glass assemblage. Items in this group may have included furniture polish, sewing machine oil and perfume bottles. While this can easily be explained during the mining phase occupation of the site when the building would have been occupied by single men working on the mine, its absence from the second occupation of the site when farm worker families resided in the building needs further explanation. One possibility for this absence during the second occupation of the site would have been that at the time containers used for non-food related household items may very well have been made from metal and plastic rather than glass.

Table 2 Provenience of identified glass artefacts.

Provenience	Medicine Bottles		Food Bottles		Mineral Water Bottles		Liquor Bottles		Tableware		Flat Glass		Modern Cold Drink Bottles	
	No.	MNV	No.	MNV	No.	MNV	No.	MNV	No.	MNV	No.	MNV	No.	MNV
E8(13) Level 1	4	2	5	3			1	1			4	-	3	1
E8(13) Level 2	6	2					1	1			6	-		
E8(13) Level 3	2	1	1	1							3	-		
E8(13) Level 5	4	1			8	2					24	-	1	1
E8(12) Level 1	4	2					10	1	1	1			2	
E8(12) Level 2	3	2									4	-		
E8(12) Level 3	15								1	1	6	-		
E8(12) Level 4					1	1								
E8(12) Level 5	2						2	1						
STP1			5	1									1	1
STP2									2	1			5	1
STP5											10	-		
STP6			2	1										
Surface Coll. D6	1	1	3	3			2	1			2	-		
Surface Coll. D7	3	2									3	-	1	1
Surface Coll. D8					1	1					8	-		
Surface Coll. D9	2	2	3	2	3	2					18	-		
Surface Coll. D10					2	2			1	1	6	-	1	1
Surface Coll. D11											3	-		
Surface Coll. D12	1	1					1	1						
Surface Coll. D13							1	1			3	-		
Surface Coll. D14							2				2	-		
Surface Coll. D15							9							
Surface Coll. D16	1	1	2	1							4	-		
Surface Coll. E6	1	1									2	-		
Surface Coll. E7									1	1	2	-		
Surface Coll. E8													1	1
Surface Coll. E9			1	1			1	1	1	1	3	-	1	1
Surface Coll. E10							1	1			4	-		

Surface Coll. E11											5	-		
Surface Coll. E12	1	1			2	1			1	1	3	-		
Surface Col. F6	1	1					1	1			3	-		
Surface Col. F7													1	1
Surface Col. F8													1	1
Surface Col. G6							1	1	1	1			1	1
Surface Coll. IO											3	-		
Surface Col. J25	1	1							1	1	3	-		
Total	**52**	**21**	**22**	**13**	**17**	**9**	**33**	**11**	**10**	**9**	**134**	**-**	**19**	**11**
Percentage of total	18.12	-	7.67	-	5.92	-	11.50	-	3.48	-	46.69	-	6.62	-
Percentage of total excluding flat glass.	33.99	28.38	14.38	17.57	11.11	12.16	21.57	14.86	6.54	12.16	-	-	12.42	14.86

8.1.2 Dating the Glass Assemblage

In the section below two tables are presented, both of which relate to the dating of artefacts from the glass assemblage. The first table discusses all the artefacts which could be identified with a specific company and the dating of these artefacts resulting from this association. The second table discusses aspects such as glass manufacturing techniques which can suggest dates as well as the identification of any glass manufacturer's marks.

Table 3 Identified brands represented in the glass assemblage

Provenience	Description	Discussion on Chronological Markers	Suggested Dates
E8(13) Level 1	Aquamarine body fragment containing the letters "ERL". Although only a small fragment was recovered, it clearly shows that it would have formed part of a container with indented panels, and specifically from a side panel which is indented. The suggestion therefore was that the fragment was derived from a Chamberlain's Cough Remedy. Bottles of this company were aquamarine in colour and had four indented panels. A comparison was made between the fragment and a	Chamberlain's Cough Remedy was first sold in 1881 (Lastovica & Lastovica, 1990). Between 1900 and 1920 offices for the Chamberlain Medicine Company were opened in South Africa, Australia and Canada (www.chamberlainlotion.com). The Cape Town offices of the company were certainly established before 1918, and possibly before 1908 as well.	c. 1908 – c. 1930

	complete bottle in the author's possession and the fragment could be positively identified as part of such a bottle. Two more fragments from the unit could be linked to the same bottle.		
E8(13) Level 1	Three lower body fragments of a green cylindrical bottle with a few horizontal ridges above the base and a zigzag design all along the lower body of the bottle. This bottle design was typical of the later Sparletta bottles.	Sparletta was first sold by the Coca-Cola company of South Africa in 1955 (www.cocacolasabco.com).	c. 1955 – Present
E8(13) Level 3	Light aquamarine fragment on which the word sections "OK" and "HO" appear adjacent to one another but separated by a vertical line. This fragment evidently formed part of a Holbrook Sauce bottle. An earlier bottle design of this company had the words HOLBROOK AND HOLBROOK embossed horizontally along the lower neck of the bottle. The two words were also separated by vertical lines.	Holbrook's Worcestershire Sauce was first made in 1875 by the Birmingham Vinegar Company (www.soyinfocenter.com) which had its foundations in the late 18th century though it was only incorporated in 1879. In 1898 it became the Birmingham Vinegar Brewing Company Limited, and used the names W.D. Holbrook & Co as well as Holbrook & Co on products (www.unlocking-stourports-past.co.uk).	c. 1898 – c. 1910
E8(12) Level 1	Two body fragments of a green cylindrical bottle. The one fragment contains the letters "EMON" with a "W" underneath it. These white letters were applied to the bottle by using the technique known as applied coloured labelling (ACL). It is evident that the fragment is from a Lemon Twist cold drink bottle.	Although it is not exactly known when Lemon Twist was introduced into South Africa, the ACL depicted on one of the fragments could only have been made during the late 1950s or later. However, it seems more likely for the bottle to be associated with the 1970s and 1980s.	c. 1959 – Present
E8(12) Level 2	Cobalt blue rim and neck fragment which has a brandy / wine closure. In all likelihood the fragment comes from a bottle which would have been used to keep castor oil.	Castor oil was kept in bottles such as the one under discussion until c. 1930 (www.antiquebottles.co.za).	c. 1880 - c. 1930
E8(12) Level 3	Cobalt blue shoulder and neck fragment. In all likelihood the fragment comes from a bottle which would have been used to keep castor oil.	Castor oil was kept in bottles such as the one under discussion until c. 1930 (www.antiquebottles.co.za).	c. 1880 - c. 1930

E8(12) Level 4	Clear body fragment on which the following lettering was embossed: “ROPER” and below it “NSTAD”. These words are from the sentence THIS BOTTLE IS THE PROPERTY OF THE KROONSTAD MINERAL WATER COMPANY.	According to the Who’s Who of South Africa (1937) the Kroonstad Mineral Water Company was established in 1903. However, Lastovica (2000) indicates that the company only appeared in directories between 1924 and 1950. It seems likely therefore that the company can be dated to the period between c. 1903 and c. 1950.	c. 1903 – c. 1950
E8(12) Level 5	Cobalt blue lower body and base fragment. The seam lines on the fragment clearly indicate that the bottle was a mouth blown two piece mould bottle. In all likelihood the fragment comes from a bottle which would have been used to keep castor oil and formed part of the same bottle as mentioned above.	Castor oil was kept in bottles such as this one until 1930 (www.antiquebottles.co.za). Mouth blown two piece bottles normally date to the period c. 1880 to c. 1910 (Lastovica & Lastovica, 1990).	c. 1880 - c. 1930
STP2	One base and four fragments from a clear Coca-Cola bottle were found in STP2. The following words are embossed on the base: “THE PROPERTY OF SUNCRUSH LTD”.	Suncrush Ltd was incorporated on 19 December 1933 as a private company and was converted to a public company on 20 May 1936. The company bottled and marketed Coca-Cola, Fanta, Sprite, Krest and Sparletta (Beerman’s Financial Yearbook of Southern Africa, 1971). In South Africa, the first Coca-Cola was sold in the 1930s with wider distribution starting in 1940 (www.cocacola.co.za). The white applied coloured labelling (ACL) with which the Coca-Cola name was placed on this bottle was only started in the United States during the period 1957 to 1959 (http://www.angelfire.com/ca3/ETclanSETH114/bottlehistory.html).	c. 1957 – c. 1995
STP6	Two clear body fragments containing sections of embossed branches and leaves. These would have formed part of a design comprising embossed branches, leaves and fruit of the lime tree and can be associated with the	The company was established by Lauchlin Rose in Scotland during 1865 (www.rosemixers.com) and by the turn of the century had customers across the British Empire. While it would be very difficult to accurately date these	c. 1895 – c. 1920

	company *L. Rose & Co.*	two fragments, their characteristics conform to the bottles used by the company during the late 19th century and early 20th century.	
Surface Coll. D6	Dark green body fragment on which the letters "U" and below that "EW" were embossed. From experience it is known that this bottle was a South African Beweries beer bottle and the following would have been embossed on it: THIS BOTTLE IS THE PROPERTY OF THE SOUTH AFRICAN BREWERIES LTD. The fragment appears to be associated with a neck and rim which has a double long tapered collar finish.	Although the South African Breweries was already established in 1895, its early bottles appeared to contain the Riley patent closures. As this bottle appears to have a different closure, it seems likely that it was a second phase design bottle. This assumption is supported by the spacing of the letters on the fragment in relation to one another. The first generation bottles had a different spacing than what is shown on the fragment.	c. 1895 – c. 1920
Surface Coll. D7	Body fragment containing ACL in the form of a white "1L" enclosed by a rectangle and appears to have been from a Sparletta Lemonade bottle.	Sparletta was first sold by the Coca-Cola company of South Africa in 1955 (www.cocacolasabco.com).	c. 1955 – Present
Surface Coll. D7	Clear body fragment containing the embossed letters "OUGHS" and above it "EPPE". Although only a small fragment was recovered, it clearly shows that it would have formed part of a container with indented panels. With this as background the fragment could be identified as part of a "Wood's Great Peppermint Cure for Coughs and Colds" bottle which would have had four indented panels and a kick-up base. Different necks and closures were used on these containers over time including flat (patent), bead and external thread. As only this fragment was recovered it would not be presently possible to indicate what kind of a neck finish the bottle originally had.	W.E. Woods was an English chemist who established himself on Cuba Street, Wellington, New Zealand. He invented his peppermint cure there and started distributing and marketing the medicine worldwide. In 1906 a factory to produce the medicine was opened in Cape Town. (www.paperspast.natlib.govt.nz). Woods marketed his medicine with the use of rhymes which appeared in newspapers around the world.	Mid 19th century to c. 1940. Not known when indented panel bottle was replaced.

Surface Coll. D7	Clear body fragment containing the embossed letters “LIFOR”. The fragment was identified as originating from a bottle of the “California Fig Syrup Company”.	A medicine known as California Fig Syrup was introduced during c. 1878 in Reno, California by W. Penninger and R. Queen. During the 1880s they relocated to San Francisco although offices remained in Reno until 1907. The California Fig Syrup Company was founded in 1897. In the same year offices for the company had been established in San Francisco, Louisville and New York. In 1912 the company was acquired by the pharmaceutical company Sterling Drug. They manufactured the medicine until the 1970s. The product was manufactured between 1912 and 1938 in South Africa, Australia and the United Kingdom by Parke-Davis (Collins & Gwilt, 2000). It was certainly also available after 1938 in South Africa.	c. 1897 – c. 1970
Surface Coll. D8	Base and partial body fragment of a cylindrical bottle which has a large “K” embossed on the base and the letters “RAL” with a small “o” appearing below. The letters “RAL” is derived from the word MINERAL whereas the “K” that is embossed on the base identified the bottle as belonging to the Kroonstad Mineral Water Company. The small “o” would have been from the acronym for Company namely “Co”.	According to the Who’s Who of South Africa (1937) the Kroonstad Mineral Water Company was established in 1903. However, Lastovica (2000) indicates that the company only appeared in directories between 1924 and 1950. It seems likely therefore that the company can be dated to the period between c. 1903 and c. 1950.	c. 1903 – c. 1950
Surface Coll. D9	Two aquamarine body fragments on which the letters “KR” and “W” were embossed. These letters appear to originate from the embossed words KROONSTAD MINERAL WATER CO.	According to the Who’s Who of South Africa (1937) the Kroonstad Mineral Water Company was established in 1903. However, Lastovica (2000) indicates that the company only appeared in directories between 1924 and 1950. It seems likely therefore that the company can be dated to the period between	c. 1903 – c. 1950

		c. 1903 and c. 1950.	
Surface Coll. D9	Two fragments containing sections of embossed twigs or branches. These would have formed part of a design comprising embossed branches, leaves and fruit of the lime tree and can be associated with the well known company *L. Rose & Co.*	The company was established by Lauchlin Rose in Scotland during 1865 (www.rosemixers.com) and by the turn of the century had customers across the British Empire. While it would be very difficult to accurately date these two fragments, their characteristics conform to the bottles used by the company during the late 19th century and early 20th century.	c. 1895 – c. 1920
Surface Coll. D10	Base of cylindrical bottle containing the embossed words "Union Glass Ltd" as well as a "K". The "K" is believed to stand for the Kroonstad Mineral Water Company.	Union Glass Limited was established during September 1919 (www.consol.co.za). The Kroonstad Company appeared in directories dating to between 1924 and 1950 (Lastovica, 2000). However, as indicated above the Kroonstad Company had already been established in 1903 (Who's Who of South Africa, 1937).	c. 1903 – c. 1950
Surface Coll. D10	Base of cylindrical glass bottle containing horizontal ribbing. This was typical of the glass bottles used for Fanta cold drinks.	Fanta was created by the Coca-Cola bottling company in Essen, Germany in 1940. In 1960 the brand was bought by Coca-Cola (www.cocacola.co.za/brands/fanta).	c. 1960 – Present
Surface Coll. D12	Body fragment of a green cylindrical bottle. The fragment contains the following embossed letters: "ESBURG" with "ER'S LTD" appearing further below. A section of a crown can also be seen. These word sections come from the words JOHANNESBURG and CHANDLER'S LTD. The complete embossed lettering would have read: CROWN BREWERY JOHANNESBURG surrounding a crown symbol in the centre. Around this the following words would have been embossed: THIS BOTTLE IS THE PROPERTY OF CHANDLER'S LTD.	The company Chandlers Ltd brewed beer under the auspices of its Crown Brewery from 1904 to 1910. It became the Union Breweries Limited and then United Breweries Limited. In 1956 it merged with the South African Breweries Ltd and Ohlsson's Cape Breweries Ltd (Lastovica & Lastovica, 1990).	1904 – 1910

Surface Coll. D13	Fragment of a base of a square bottle on which the following feint embossed letters could be read: “KILMA” with “WHI” appearing underneath. The first section would have read “KILMARNOCK” and the second “WHISKEY”.	John Walker started making his whiskey in 1820 and its popularity not only spread through Scotland but also around the world. In 1897 agents for this whiskey were established in South Africa (Skipworth, 1987). During 1908 a rebranding of the company was undertaken by its Managing Director James Stevenson. As part of the rebranding the name Walker’s Kilmarnock Whiskey was changed to Johnnie Walker Whiskey (www.wikipedia.com)	c. 1897 – c. 1910
Surface Coll. D14	Body fragment of a green cylindrical bottle. The fragment contains the following embossed letters: “ERY” as well as a section of a crown. These letters are the last three units of the word Brewery and the embossed lettering would have read: CROWN BREWERY JOHANNESBURG surrounding a crown symbol. Around this the following words would have been embossed: THIS BOTTLE IS THE PROPERTY OF CHANDLER’S LTD.	The company Chandlers Ltd brewed beer under the auspices of its Crown Brewery from 1904 to 1910. It became the Union Breweries Limited and then United Breweries Limited. In 1956 it merged with the South African Breweries Ltd and Ohlsson’s Cape Breweries Ltd (Lastovica & Lastovica, 1990).	1904 – 1910
Surface Coll. D15	Body fragment of a green cylindrical bottle. The fragment contains the embossed letters “THIS” that would have formed part of the sentence: THIS BOTTLE IS THE PROPERTY OF CHANDLER’S LTD. This sentence would have encircled further embossed words reading CROWN BREWERY JOHANNESBURG which in turn would have surrounded a crown.	The company Chandlers Ltd brewed beer under the auspices of its Crown Brewery from 1904 to 1910. It became the Union Breweries Limited and then United Breweries Limited. In 1956 it merged with the South African Breweries Ltd and Ohlsson’s Cape Breweries Ltd (Lastovica & Lastovica, 1990).	1904 – 1910
Surface Coll. D16	Light green body and partial base fragment with a distinctive embossed cross-hatching design. This cross-hatching is typical of the glass bottles of the Brooke’s Lemos cordials. A second light green flat fragment from the same unit has the letters “OKE” embossed on it. Although	Very little information could be located on the history behind the Brooke’s Lemos cordials. What was established is that a person by the name of C.M. Brooke invented the cordial at an unknown time. However, the company known as Brooke’s Lemos Ltd was founded by C.M.	1903/17 – c. 1930

	the above mentioned fragment is from cylindrical bottle with this fragment flat, it is known that the early Brooke's Lemos bottles had a very unique design comprising a cylindrical half and a triangular half formed by two flat sides. Furthermore, the "OKE" would have been derived from the names BROOKE'S which must have been embossed along one of the flat sides.	Brooke and his sons in 1903 in New Zealand. In 1917 a South African branch for the company was opened (The Melbourne Argus, 9 October 1937).	
Surface Coll. E9	One lower body fragment of a green cylindrical bottle with a few horizontal ridges above the base and a zigzag design all along the lower body of the bottle. This bottle design was typical of the later Sparletta bottles.	Sparletta was first sold by the Coca-Cola company of South Africa in 1955 (www.cocacolasabco.com).	c. 1955 – Present
Surface Coll. F6	Brown body fragment on which the letters "ERTY" and below that "HE" were embossed. From experience it is known that this bottle was a South African Breweries beer bottle and the following would have been embossed on it: THIS BOTTLE IS THE PROPERTY OF THE SOUTH AFRICAN BREWERIES LTD. The above mentioned embossed letters would have formed part of the words PROPERTY and THE respectively.	The South African Breweries was already established in 1895. However, apart from its colour, a comparison of the spacing on this fragment with the first generation South African Breweries bottles clearly shows a difference. It seems likely that the fragment was from a second or third generation design bottle. Nonetheless, the bottles of this company with the inscription embossed on the front would have dated from either the late 19th or early 20th centuries.	c. 1895 – c. 1920
Surface Coll. F8	Base and lower body fragment of a clear cylindrical glass bottle. It has a zigzag design all along the lower body of the bottle. This bottle design was typical of the later Sparletta bottles.	Sparletta was first sold by the Coca-Cola company of South Africa in 1955 (www.cocacolasabco.com).	c. 1955 – Present

In the table that follows artefacts from the assemblage will be dated by way of using the physical characteristics of certain bottles to identify specific glass manufacturing techniques and processes which in turn can be used to date those particular bottles. Furthermore, any glass manufacturer's marks that could be identified as well as their use in the dating of the bottles will be included.

Table 4 Identified glass manufacturing techniques and manufacturers

Provenience	Description	Discussion	Suggested Dates
E8(13) Level 1	Solarised base fragment containing the barely readable embossed word “TALANA” with a “4” appearing below.	The word TALANA is associated with the glass manufacturing company Union Glass Ltd. In 1918 the company Glass Ltd was relocated from Durban to an old coal mine at Talana, Dundee, Kwazulu-Natal. In September 1919 it was renamed Union Glass Ltd after it joined South African Breweries. The company stayed in business until 1954 when it merged with Consolidated Glass Works (www. consol.co.za).	1918 – 1954
 *Figure 49* *Solarised base fragment excavated from E8(13) Level 1. The word “TALANA” with a “4” underneath can be seen. As mentioned above the bottle was manufactured by the company Union Glass Ltd between 1918 and 1954.*			
E8(13) Level 2	Two solarised body fragments and one neck and rim fragment containing embossed geometric and other symbols within a grid pattern.	The positioning and layout of the seams on the rim and neck fragment indicates that the bottle was manufactured with a hand-operated machine using the press-and-blow process (Lastovica & Lastovica, 1990).	c. 1881 - c. 1920

Figure 50

Partially reassembled solarised bottle comprising fragments from E8(13) Level 2, E8(12) Level 2 and Surface Collection E7. As mentioned above the bottle was manufactured with a hand-operated machine using the press-and-blow process. As a result the bottle can be dated to the period c. 1881 to c. 1920.

E8(13) Level 3	A solarised base and lower body fragment as well as a solarised neck and rim fragment from the same bottle were identified in this unit. The base has the following embossed on it: “UGB” with a “2” underneath. The rim and neck fragment has a flat or patent applied finish typical of medicine bottles of the time.	Both fragments show that the bottle was a mouth blown two piece mould bottle. Mouth blown two piece bottles normally date to the period c. 1880 to c. 1910 (Lastovica & Lastovica, 1990). The UGB mark on the base of the bottle was used by the British company United Glass Bottle Manufacturers Inc. which came into being in 1913 when a number of British glass manufacturing companies including Cannington, Shaw & Company, Nuttall & Company and Alfred Alexander & Company came together. The company existed between 1913 and 1968. (www.britishbottleforum.co.uk).	c. 1913 – c. 1920

Figure 51

Base fragment excavated from E8(13) Level 3. The three embossed letters "U.G.B." is an acronym for the United Glass Bottle Manufacturers which was founded in 1913. The number "2" would likely have referred to the bottle type.

E8(12) Level 2	Three body fragments containing embossed geometric and other symbols within a grid pattern. These fragments originated from the same bottle as those mentioned above in E8(13) Level 2.	The positioning and layout of the seams on the rim and neck fragment from E8(13) Level 2 indicates that the bottle was manufactured with a hand-operated machine using the press-and-blow process (Lastovica & Lastovica, 1990).	c. 1881 - c. 1920
E8(12) Level 2	Cobalt blue shoulder and neck fragment. In all likelihood the fragment comes from a bottle which would have been used to keep castor oil.	The positioning and layout of the seams indicates that it is a two-piece mould-blown bottle (Lastovica & Lastovica, 1900). The side seams on the finish fade out well into the finish itself which indicates that the top of the bottle was made by way of the improved tooled finish. This means that the mould within which the bottle was blown had sections of the finish incorporated into the mould itself with only the very top of the finish tooled and applied after moulding (www.sha.org).	c. 1900 - c. 1910
E8(12) Level 3	Fifteen cobalt blue fragments including one shoulder and lower neck. These fragments would in all likelihood have formed part of the castor oil bottle identified in	The positioning and layout of the seams indicates that it is a two-piece mould-blown bottle (Lastovica & Lastovica, 1900).	c. 1900 - c. 1910

	E8(12) Level 2 and E8(12) Level 5.	The side seams on the finish on the fragment from E8(12) Level 2 fade out well into the finish itself which indicates that the top of the bottle was made by way of the improved tooled finish (see above).	
E8(12) Level 5	One cobalt lower body and base fragment as well as another smaller cobalt body fragment. These fragments would in all likelihood have formed part of the castor oil bottle identified in E8(12) Level 2 and E8(12) Level 3.	The positioning and layout of the seams indicates that it is a two-piece mould-blown bottle (Lastovica & Lastovica, 1990). The side seams on the finish on the fragment from E8(12) Level 2 fade out well into the finish itself which indicates that the top of the bottle was made by way of the improved tooled finish (see above).	c. 1900 - c. 1910
Surface Coll. D7	Body fragment of a green cylindrical bottle containing applied colour labelling (ACL) in the form of a white "1L" enclosed by a rectangle. This appears to have been a Sparletta Lemonade bottle.	Applied colour labelling (ACL) typically dates from the late 1950s to the present day. Furthermore, Sparletta was first sold by the Coca-Cola company of South Africa in 1955 (www.cocacolasabco.com).	c. 1955 – Present

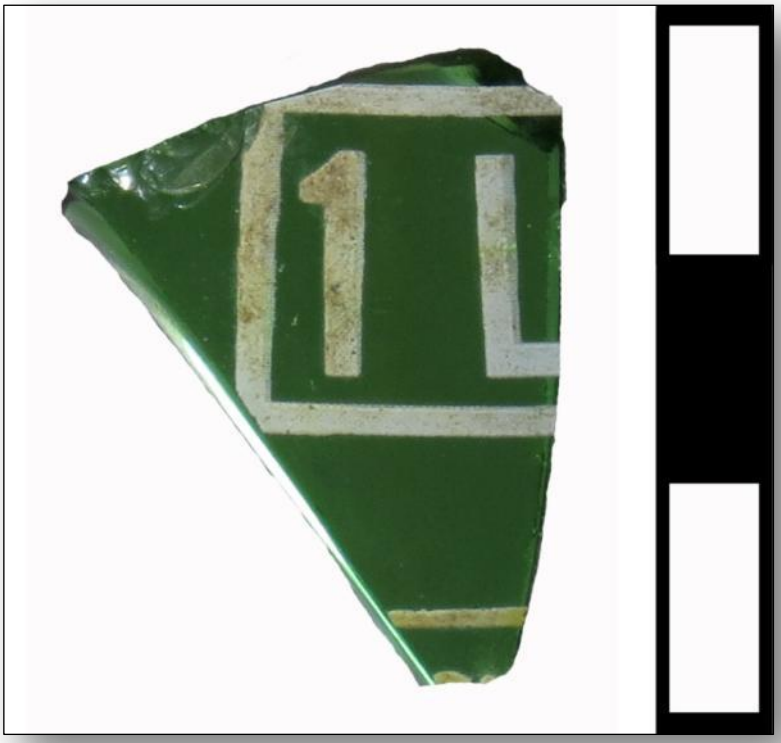


Figure 52

Body fragment containing applied colour labelling (ACL) in the form of a white "1L" which is enclosed by a rectangle. This appears to have been a Sparletta Lemonade bottle and can be dated to c. 1955 to Present.

Surface Coll. D10	Base of cylindrical bottle containing the embossed words “Union Glass Ltd” as well as a “K”. The “K” is believed to stand for the Kroonstad Mineral Water Company.	Union Glass Limited was established during September 1919 (www.consol.co.za). The Kroonstad Company appeared in directories dating to between 1924 and 1950 (Lastovica, 2000), although other references indicate that it had already been established in 1903.	c. 1919 – c. 1950
 *Figure 53* *Base fragment recovered from the surface collection at D10. The company Union Glass Ltd was established in September 1919.*			
Surface Coll. E6	Fragment of a clear circular base.	The fragment has stippling in a band along the inside base perimeter which is typically associated with Automatic Bottle Machine (ABM) bottles after c. 1940 (www.sha.org).	c. 1940 – Present
Surface Coll. E7	One body fragment containing embossed geometric and other symbols within a grid pattern. This fragment originated from the same bottle as those mentioned above in E8(13) Level 2.	The positioning and layout of the seams on the rim and neck fragment from E8(13) Level 2 indicates that the bottle was manufactured with a hand-operated machine using the press-and-blow process (Lastovica & Lastovica, 1990).	c. 1881 - c. 1920
Surface Coll. E8	Clear oval base fragment with stippling along the base parameter.	The fragment has stippling along the base perimeter which is associated with ABM bottles	c. 1940 – Present

		after c. 1940 (www.sha.org).	
Surface Coll. E8	Dark green base fragment from a cold drink bottle. The fragment contains undecipherable section containing applied colour label (ACL) lettering.	Applied colour labelling (ACL) typically dates from the late 1950s to the present day.	c. 1959 – Present
Surface Coll. E9	Green rim and upper neck fragment.	The finish on the fragment is referred to as an applied blob finish. This finish type was popular on mineral water and soda bottles from the 1840s to the 1920s and on beer bottles from the 1870s until the 1910s (www.sha.org). The original container also appears to have been a two-piece mould-blown bottle. This bottle manufacturing technique was typical during the period c. 1880 to c. 1910 (Lastovica & Lastovica, 1900).	c. 1880 - c. 1920
 *Figure 54* *The applied blob finish recovered from the surface collection at E9. This is the only blob finish recovered from the site.*			
Surface Coll. E9	Aquamarine fragment of only the finish and a small section of the upper neck.	The finish on the fragment is referred to as a club sauce finish and was primarily used on Worcestershire and similar sauce bottles (www.sha.org). The	c. 1850 - c. 1930

		container also appears to have been a two-piece mould-blown bottle. This bottle manufacturing technique was typical during the period c. 1880 to c. 1910 (Lastovica & Lastovica, 1990).	
 *Figure 55* *This fragment from the surface collection at E9 has a club sauce finish which was primarily used on Worcestershire and similar type sauce bottles.*			
Surface Coll. E9	Dark green upper neck and finish fragment.	The finish on the fragment is known as a crown top. Furthermore, as its side seams continue through the finish to the top it is evident that the bottle would have been manufactured with a fully automated machine (Lastovica & Lastovica, 1990). These containers are known as ABM bottles and this type of manufacture commenced in c. 1903 and is still in use today.	c. 1903 – Present
Surface Coll. E9	Fragment of a clear base.	The base fragment has diagonal stippling along the base perimeter which is typically associated with ABM bottles after c. 1940 (www.sha.org).	c. 1940 – Present

Surface Coll. F7	Body fragment of clear cylindrical bottle. It contains applied colour label (ACL) lettering in white which reads: “CAN” “NE” and “THURB”.	Applied colour labelling (ACL) typically dates from the late 1950s to the present day.	c. 1950 – Present
Surface Coll. F7	Rectangular clear base fragment with stippling along the base parameter and containing the following embossed numbers and letters: “17” with a “3” in a triangle underneath and a “10 underneath that followed by “6 OZ” at the bottom.	The base fragment has stippling along the base perimeter. Such stippling is typically associated with ABM bottles after c. 1940 (www.sha.org). Furthermore, the imperial measurement depicted on the base indicates that at the time of the bottle’s manufacture this system would likely still have been in use in South Africa or alternatively was imported after this date from a country which still used imperial units. South Africa metricated (converted to the metric system) in 1971 (www.wikipedia.org).	c. 1940 – c. 1971

Figure 56

Base fragment from the surface collection at D7. Note the stippling on the base perimeter as well as the use of Imperial units.

Surface Coll. F7	Circular clear base fragment with textured stippling in bands along the base surface.	As indicated the base fragment has stippling along the base perimeter. Such stippling is typically associated with ABM bottles after c. 1940 (www.sha.org).	c. 1940 – Present
Surface Coll. G6	Clear circular base containing embossed lettering and numbers which is difficult to read. At the centre of the base is a triangle within which three letters are located including a “c” on top and a “W” on the bottom right of the triangle. Below the triangle another “W” is shown with the number “725” below that. Stippling is present along the parameter base.	The parameter stippling present on the base is typically associated with ABM bottles after c. 1940 (www.sha.org).	c. 1940 – Present
Surface Coll. IO	Clear base fragment with stippling along the base parameter and containing the following embossed numbers and letters: “P5”.	The base fragment has stippling along the base perimeter. Such stippling is typically associated with ABM bottles after c. 1940 (www.sha.org).	c. 1940 – Present

The minimum number of vessels (MNV) for the 27 provenience listings in the first table dealing with identified brands is 23 whereas the MNV for the 22 provenience listings in terms of identified glass manufacturing techniques and manufacturer’s marks is 18. This means that a minimum of 23 individual bottles could be dated by way of their association with specific companies and 18 bottles from the assemblage could be dated by means of their manufacturing process and manufacturers. In the table below a summary of the dating is provided by classifying these bottles into one of three age groups namely 1880 to 1940, 1940 to the present time and thirdly a combination of both these defined periods.

Table 5 Summary of Dating of Glass Assemblage

Dating Technique	**Total**	**1880 - 1940**	**1940 - Present**	**Both**
Identification of companies	23	11	7	5
Identification of manufacturing techniques and marks	18	6	10	2

8.1.3 Identified Glass Bottles

In this section a discussion of each identified glass type will be provided. The provenience of these identified bottle types will also be indicated.

8.1.3.1 Medicine Bottles

A total of 52 artefacts (with an MNV of 21) can be interpreted as part of medicine bottles. This means that at least 21 individual medicine bottles are represented in the assemblage. For the purposes of this report the definition of medicine bottles was such that it included castor oil bottles, poison bottles, tablet bottles, cough syrup bottles and so forth. The provenience of these 52 artefacts and 21 individual bottles are provided in the table below.

Provenience	No. of Fragments	MNV
E8(13) Level 1	4	2
E8(13) Level 2	6	2
E8(13) Level 3	2	1
E8(13) Level 5	4	1
E8(12) Level 1	4	2
E8(12) Level 2	3	2
E8(12) Level 3	15	-
E8(12) Level 5	2	-
Surface Collection D6	1	1
Surface Collection D7	3	2
Surface Collection D9	2	2
Surface Collection D12	1	1
Surface Collection D16	1	1
Surface Collection E6	1	1
Surface Collection E12	1	1
Surface Collection F6	1	1
Surface Collection J25	1	1
Total	**52**	**21**

Out of the entire section of the collection that could be identified as medicine bottles, only one complete bottle is present. This complete medicine bottle was recovered from E8(12) Level 2. The bottle can be described as a circular

tablet bottle that is cobalt blue in colour and which has a flat or patent applied rim. An investigation of the positioning of the seams on the bottle has revealed that it is a two-piece mould-blown bottle. The two-piece mould-blown manufacturing technique dates to the period between c. 1880 and c. 1910 (Lastovica & Lastovica, 1990).

Figure 57 This cobalt blue cylindrical tablet container is the only complete bottle from the entire collection. It was excavated from E8(13) Level 2. The scale is in 10mm increments.

Apart from this complete circular tablet bottle, a total of six clear rim and neck fragments containing the same flat or patent applied rim were recovered from the site. Although it is impossible to state what the exact shape of the original bottles would have been, they can all be associated with medicine use. The provenience of these six artefacts is as follows:

- E8(13) Level 1
- E8(13) Level 3
- E8(13) Level 5
- E8(12) Level 1
- Surface Collection D9 (two examples recovered)
- Surface Collection D12

The rim and neck fragment recovered from E8(13) Level 2 appears to have formed part of an oval (not circular) base on which the letters “UGB” are embossed. These letters stand for the British company Union Glass Bottle Manufacturers which existed between 1913 and 1968.

Another type of medicine bottle represented in the collection excavated from the site comprises the hexagonal cobalt bottle with four ribbed panels on the sides and two smooth panels on both sides of the centre. This bottle type was often embossed with the words “NOT TO BE TAKEN”. Examples of this bottle type were found in the following units:

- Surface Collection D6

  A single cobalt fragment with ribbing on one side was found. On the smooth side small sections of embossed letters can be seen. While these letter segments are difficult to read, it appears to be the lower ends of the letters “TA”. As such, it seems likely for the words “NOT TO BE TAKEN” to have been embossed on the original bottle. Incidentally, the original bottle would have been hexagonal as well.

- Surface collection D7

  A smaller cobalt base that is hexagonal in shape and which has ribbing on one side was found in this unit.

- Surface collection E12

  A smaller cobalt base that is hexagonal in shape and which has ribbing on one side was found in this unit.

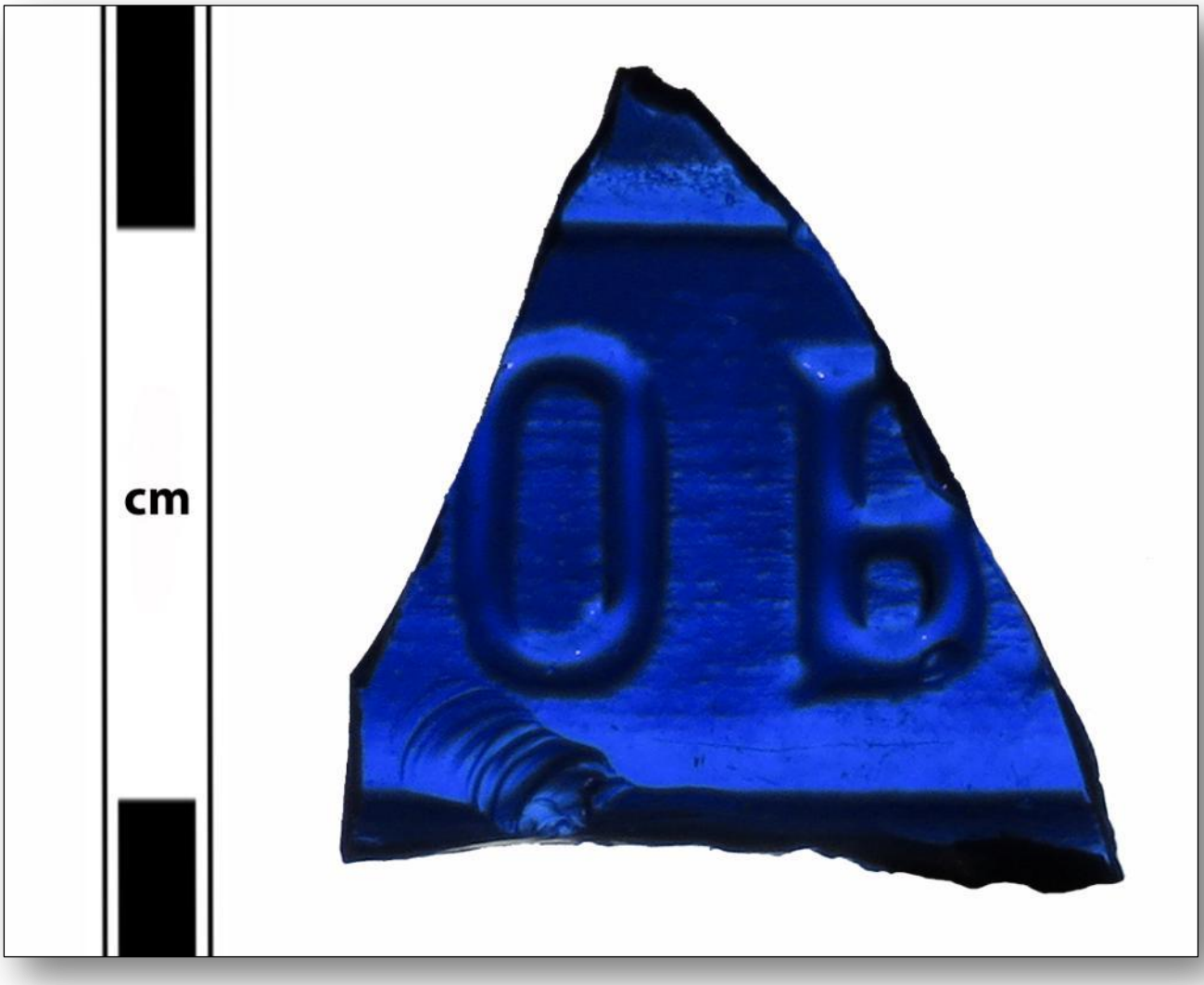


Figure 58 *Embossed fragment from a cobalt medicine holder from the surface collection at E12. The letters "O B" likely formed part of the phrase NOT TO BE TAKEN which was often embossed on medicine bottles of this type.*

Furthermore, 19 cobalt blue fragments excavated from E8(12) Level 2, E8(12) Level 3 and E8(12) Level 5 originated from a single bottle. The cobalt blue colour and tall thin cylindrical shape with long neck identify it as a castor oil bottle. An investigation of the seams and their positions indicates that it is a two-piece mould-blown bottle. As mentioned above, the two-piece mould-blown manufacturing technique dates to the period between c. 1880 and c. 1910 (Lastovica & Lastovica, 1990). An interesting observation to be made with regard to the finish of the bottle is that the side seams fade out well into the finish itself. According to the website of the Society for Historical Archaeology (SHA) (www.sha.org) this characteristic indicates that the top of the bottle was made by way of the so-called improved tooled finish. This means that the mould within which the bottle was blown had sections of the finish incorporated into the mould itself with only the very top of the finish tooled and applied after moulding. This technique dates to the later stages of the mould-blown bottle manufacturing era. It is also known that castor oil bottles were contained in bottles such as the one under discussion until roughly 1930. As a result the bottle appears to date between c. 1880 and c.1930.

Figure 59

This cobalt blue castor oil bottle comprises four fragments from three different units. The base and body comprises two fragments recovered from E8(12) Level 5 whereas the neck and finish comprises two fragments from E8(12) Level 3 and E8(12) Level 2 respectively. The indicated height of the container is an estimation only and cannot be provided as fact without an assessment of the remainder of the body and shoulders of the bottle.

Although at least 21 bottles from the assemblage could be identified as medicine bottle, only four of these could positively be identified to specific brands of medicine. These four identified brands are as follows:

- **California Fig Syrup**

  One clear body fragment containing the embossed letters “LIFOR” was recovered from the surface collection at D7. The fragment was identified as originating from a bottle of the “California Fig Syrup Company” and is the only example of such a bottle from the entire assemblage. A medicine known as California Fig Syrup was introduced during c. 1878 in Reno, California by W. Penninger and R. Queen. During the 1880s they relocated to San Francisco although offices remained in Reno until 1907. The California Fig Syrup Company was founded in 1897. In the same year offices for the company had been established in San Francisco, Louisville and New York. In 1912 the company was acquired by the pharmaceutical company Sterling Drug. They manufactured the medicine until the 1970s. In terms of South Africa the product was made in this country, Australia and the United Kingdom during the period between 1912 and 1938 by Parke-Davis (Collins & Gwilt, 2000). It was likely also available before 1912 and certainly after 1938 in South Africa as well.

Figure 60 Fragment from the front panel of a California Fig Syrup bottle recovered from Surface Collection D7.

- **Wood's Great Peppermint Cure**

One clear body fragment containing the embossed letters "OUGHS" and above it "EPPE" was recovered from the surface collection at D7. The fragment would have formed part of a container with indented panels. With this as background the fragment could be identified as part of a "Wood's Great Peppermint Cure for Coughs and Colds" bottle which would have had four indented panels and a kickup base. Different necks and closures were used on these containers over time including flat (patent), bead and external thread. As only this fragment was recovered it is not presently possible to indicate what kind of a neck finish was present. W.E. Woods was an English chemist who established himself on Cuba Street, Wellington, New Zealand. He invented his peppermint cure there and started distributing and marketing the medicine worldwide. In 1906 a factory to produce the medicine was opened in Cape Town. (www.paperspast.natlib.govt.nz). Woods marketed his medicine with the use of rhymes which appeared in newspapers around the world. The fragment likely dates to the period between c. 1906 and c. 1930.

Figure 61 Embossed fragment from the surface collection at D7.

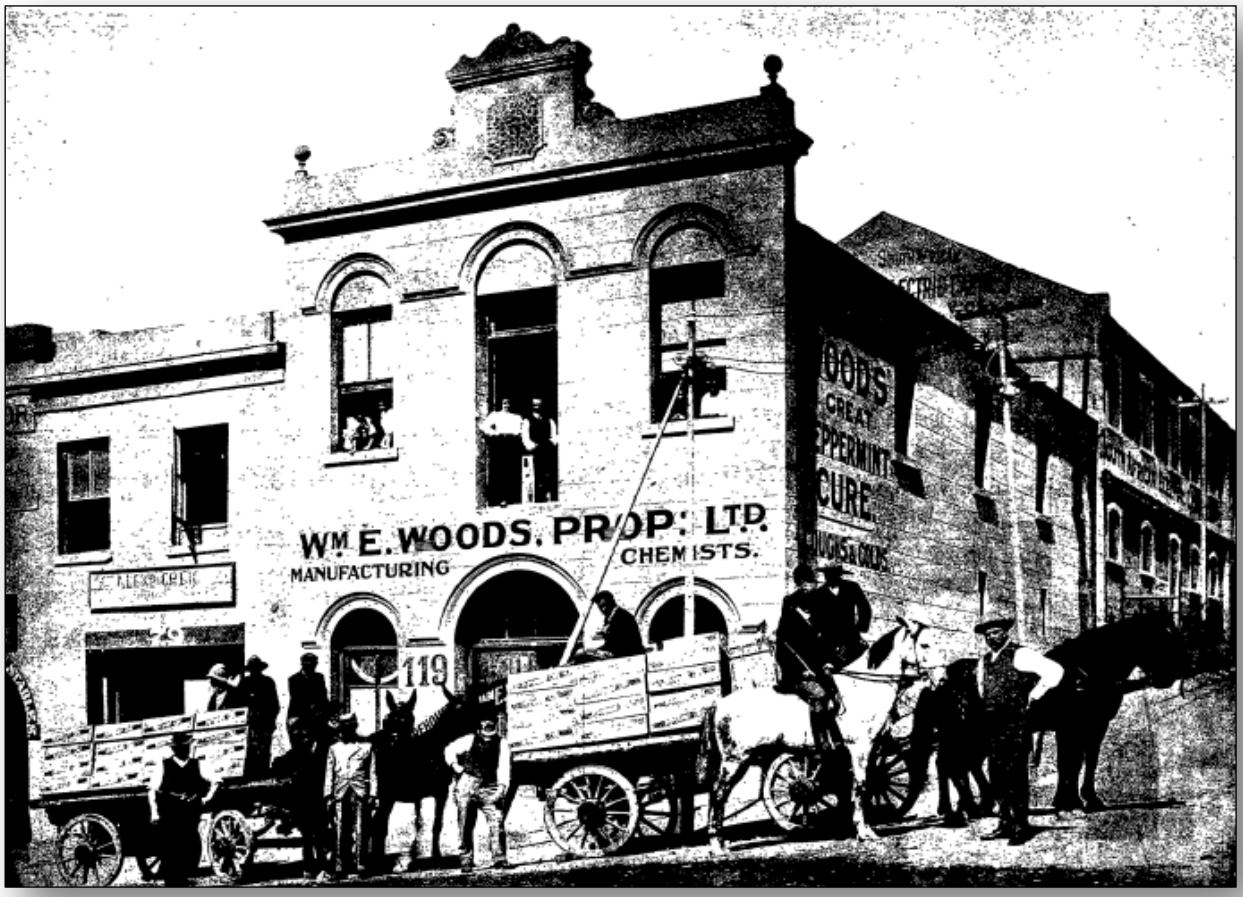


Figure 62 Photograph of the W.E. Woods Great Peppermint Cure Factory that was opened in Cape Town in 1906 (Otago Witness, 25 July 1906:45).

- **Chamberlain's Cough Remedy**

Three aquamarine fragments from a single bottle were recovered from the excavation at E8(13) Level 1. One of these fragments contained the following letters: "ERL". Although only a small fragment was recovered, it clearly shows that it would have formed part of a container with indented panels, and specifically from a side panel which is indented. The suggestion therefore was that the fragment was derived from a Chamberlain's Cough Remedy bottle which was aquamarine in colour and had four indented panels. A comparison was made between the fragment and a complete bottle in the author's possession and the fragment could be positively identified as part of such a bottle.

Chamberlain's Cough Remedy was first sold in 1881 (Lastovica & Lastovica, 1990). Between 1900 and 1920 offices for the Chamberlain Medicine Company were opened in South Africa, Australia and Canada (www.chamberlainlotion.com). The Cape Town offices of the company were certainly established before 1918, and possibly before 1908 as well.

It seems likely that the three fragments associated with the Chamberlain's Cough Remedy can be dated to the period between c. 1908 and c. 1930. Only one bottle of Chamberlain's Cough Remedy could be identified in the glass assemblage.

Figure 63 Embossed fragment from E8(13) Level 1.It would have formed part of the indented side panel of a Chamberlain's Cough Remedy bottle.

- **Phillip's Milk of Magnesia**

A total of six cobalt blue (with some solarisation) fragments from the site could be identified as part of Phillip's Milk of Magnesia bottles, namely four fragments from E8(13) Level 2 and one fragment from E8(12) Level 2. The single fragment from the latter unit fits one of the fragments from the previous unit. As a result it is evident that all the fragments are derived from a single bottle.

In 1873 English pharmacist and resident of the United States town of Stamford Charles H. Phillips received a patent for his invention comprising a hydrate of magnesia mixed with water and which Phillips called Milk of Magnesia. His first company was Phillips Camphor and Wax Company that was incorporated in 1885 as Charles H. Phillips Company. After Phillips passed away in 1882 his four sons ran the company until 1923 when the company was acquired by the Sterling Drug company (www.wikipedia.org). Incidentally, on 21 August 1906 the patent (and or trademark) was officially registered in the United States Patent Office.

It is known that the company made use of a similar bottle design for a long period of time. This bottle design would have been used from the registration of the company's trademark in 1906 until the recent past. As such the best way of providing specific dates for bottles of this company would have been the type of finishes and closures used. Unfortunately, all the fragments recovered from the site are body fragments and as such provide very little information on the age of the bottle. As it stands, the fragments can likely date anywhere between 1906 and c. 1970.

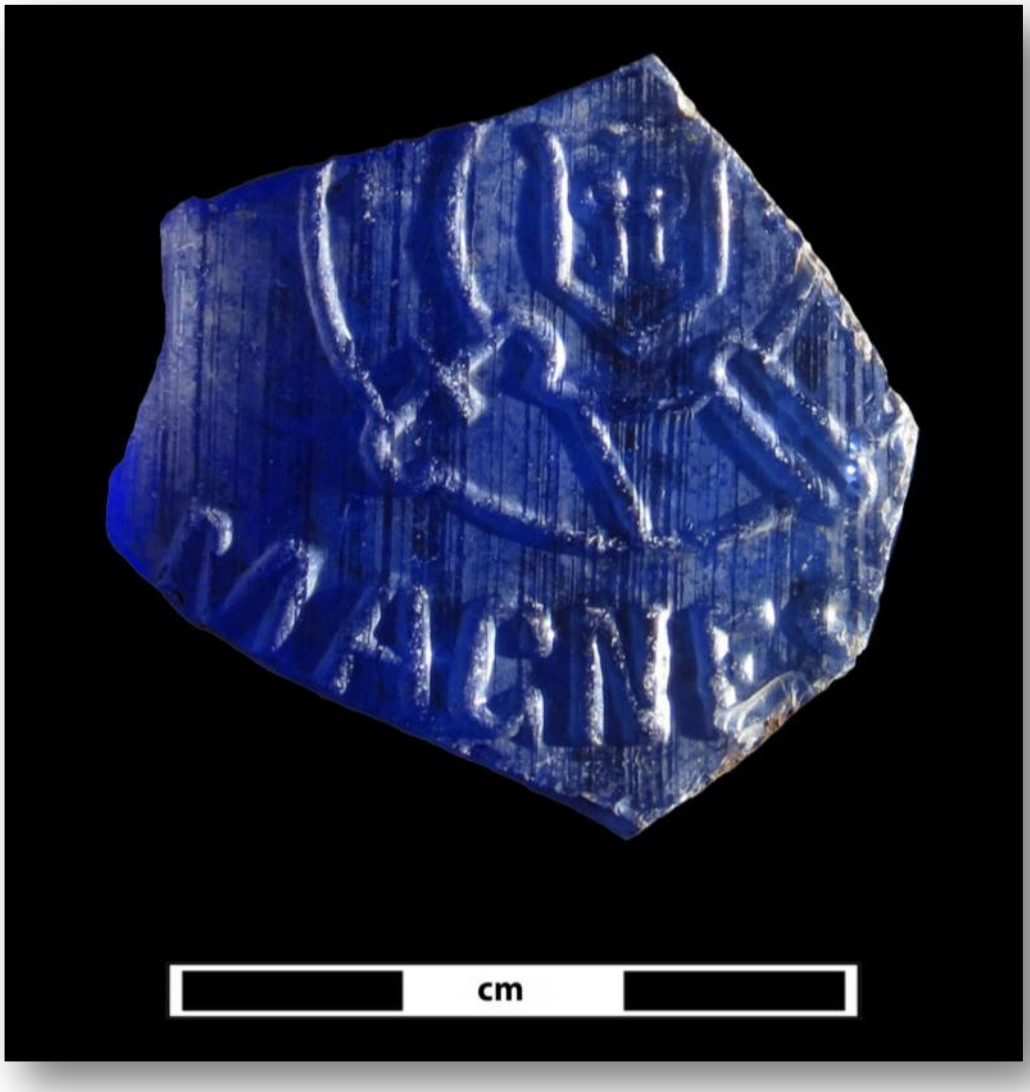


Figure 64 Fragment of an Phillip's Milk of Magnesia bottle recovered from E8(12) Level 2.

8.1.3.2 Food Bottles

A total of 22 fragments associated with food are included in the collection. The MNV for these 22 fragments is 13. This means that at least 13 individual bottles associated with food were recovered from the site. The definition used for this item is such that it includes a wide array of food-related items including lime cordials, extracts, fish spreads, sauces and so forth. The provenience of the food bottles from the site can be seen in the table below.

Provenience	No. of Fragments	MNV
E8(13) Level 1	5	3
E8(13) Level 3	1	1
STP1	5	1
STP6	2	1
Surface Collection D6	3	3
Surface Collection D9	3	2
Surface Collection D16	2	1
Surface Collection E9	1	1
Total	**22**	**13**

Only three bottles out of the minimum number of 13 food-related bottles could be positively identified with specific food brands. These three identified brands are as follows:

- **L. Rose & Co.**

  Four fragments of lime cordial bottles were recovered. As such, lime cordials represent the largest component of the food bottle collection from the site. They were found in one of the shovel test pits (STP6) as well as from one of the surface collections (D9). The MNV for these four fragments represented in the collection is two. This means that at least two lime cordial bottles can be associated with the site.

  All the identified lime cordial fragments are embossed with branches, leaves and fruit of the lime tree and can be associated with the well known company *L. Rose & Co.* The company was established by Lauchlin Rose in Scotland during 1865 (www.rosemixers.com) and by the turn of the century had customers across the British Empire. While it would be very difficult to accurately date the seven fragments, the characteristics of the fragments conform to the bottles used by the company during the late 19th century and early 20th century. The lime cordial fragments can likely be dated to the period c. 1895 to c. 1920.

Figure 65 *One of the four fragments from the site that could be identified as part of a lime cordial bottle of the company L. Rose & Co. This fragment was recovered from STP 6.*

- **Brooke's Lemos Ltd.**

Two fragments recovered from Surface Collection D16 can be associated with the company Brooke's Lemos Ltd. The first of these is a light green body and partial base fragment with a distinctive embossed cross-hatching design which is typical of the Brooke's Lemos cordial bottles. The second fragment is flat and light green and has the letters "OKE" embossed on it. Although the first fragment is round (i.e. from cylindrical bottle) and the second one flat, it is known that the early Brooke's Lemos bottles had a very unique design comprising a cylindrical half and a triangular half formed by two flat sides. The "OKE" would have been derived from the name BROOKE'S which would have been embossed along one of the flat sides of the bottle.

A person by the name of C.M. Brooke invented the cordial at an unknown time. However, the company known as Brooke's Lemos Ltd was founded by C.M. Brooke and his sons in 1903 in New Zealand. In 1917 a South African branch for the company was opened (The Melbourne Argus, 9 October 1937). The fragments likely date to the period between 1903 and c. 1930.

Figure 66 This fragment from a Brooke's Lemos cordial bottle was recovered from Surface Collection D16.

- **W.D. Holbrook & Co.**

One light aquamarine fragment from the unit at E8(13) Level 3 contains the embossed letters “OK” followed by ”HO” with the two sections of embossed letters separated by a vertical line. This fragment evidently formed part of a Holbrook Sauce bottle. One of the earlier containers of this company contained the embossed name HOLBROOK on both sides of the lower neck of the bottle. The two embossed names were separated by vertical lines as is the case on the fragment.

Holbrook’s Worcestershire Sauce was first made in 1875 by the Birmingham Vinegar Company (www.soyinfocenter.com). This company had its foundations in the late 18th century, but only in 1879 did it become known as the Birmingham Vinegar Brewery Company Incorporated. In 1898 it became the Birmingham Vinegar Brewing Company Limited, and used the names W.D. Holbrook & Co as well as Holbrook & Co on products (www.unlocking-stourports-past.co.uk). This fragment can likely be dated to the period from c. 1898 to c. 1910.

Figure 67 *The one fragment from the entire collection that could undeniably be confirmed as part of a Worcestershire sauce bottle of the company Holbrook & Co.*

8.1.3.3 Mineral Water Bottles

A total of 17 glass artefacts from the collection could be positively identified as part of mineral water bottles. The MNV for these 17 fragments are nine. This means that at least nine individual mineral water bottles are represented in the assemblage from the site. The table below provides a summary of the provenience of the 17 fragments in the various components of the site.

Provenience	No. of Fragments	MNV
E8(13) Level 5	8	2
E8(12) Level 4	1	1
Surface Collection D8	1	1
Surface Collection D9	3	2
Surface Collection D10	2	2
Surface Collection E12	2	1
Total	**17**	**9**

An investigation of the embossed lettering and motifs from the collection of mineral water bottle fragments has revealed that the bottles of the following company are represented in the collection:

- **Kroonstad Mineral Water Company**

  A total of six fragments can be associated with the Kroonstad Mineral Water Company. The MNV for these six fragments is four which means that a minimum of four bottles of this mineral water company is represented in the collection. These six fragments will be discussed shortly.

  A clear body fragment was recovered from E8(12) Level 4. The following lettering was embossed on the fragment “ROPER” and below it “NSTAD”. It seems highly likely that these words are from the sentence THIS BOTTLE IS THE PROPERTY OF THE KROONSTAD MINERAL WATER COMPANY.

  The second fragment from this group comprises a base and partial body fragment of a cylindrical bottle which has a large “K” embossed on the base and the letters “RAL” with a small “o” appearing below. This fragment was recovered from the surface collection at D8. The letters “RAL” on the bottle is derived from the word MINERAL whereas the “K” that is embossed on the base of the bottle identifies it as belonging to

the Kroonstad Mineral Water Company. The small “o” would have been from the acronym for Company namely “Co”.

The third, fourth and fifth fragments were all recovered from Surface Collection D9 and may have formed part of a single bottle. These comprise two aquamarine body fragments on which the letters “KR” and “W” were embossed, as well as another fragment on which the letters “RO” are embossed. These word segments all appear to originate from the embossed words KROONSTAD MINERAL WATER CO.

The sixth fragment comprises a base of a cylindrical bottle containing the embossed words “Union Glass Ltd” as well as a “K”. The “K” is believed to stand for the Kroonstad Mineral Water Company, whereas the company Union Glass Ltd was a glass manufacturing company which had been established during September 1919 (www.consol.co.za).

The fragment recovered from the surface collection at D8 appears to be an earlier bottle whereas the one from the surface collection at D10 post-dates 1919 and was likely a later bottle used by the company.

In terms of the history of the Kroonstad Mineral Water Company, the Who’s Who of South Africa (1937) indicates that the Kroonstad Mineral Water Company was established in 1903. According to Lastovica (2000) the company appeared in directories between 1924 and 1950. It seems likely therefore that the company can be dated to the period between 1903 and c. 1950.

It must be stated as well that of the remaining 11 fragments (with a MNV of five) very few would likely have originated from mineral water bottles other than the Kroonstad Mineral Water Company. However, due to fact that these pieces cannot be undeniably identified as belonging to this company they are not included in the above-mentioned group.

Figure 68 *Side and bottom view of a fragment from a Kroonstad Mineral Water bottle. The fragment was recovered from Surface Collection D8. The scale is in 10mm increments.*

8.1.3.4 Liquor Bottles

A total of 33 glass fragments (MNV of 11) from the collection could positively be identified as liquor bottles. The table below provides the provenience of the 30 fragments forming part of this group.

Provenience	No. of Fragments	MNV
E8(13) Level 1	1	1
E8(13) Level 2	1	1
E8(12) Level 1	10	1
E8(12) Level 5	2	1
Surface Collection D6	2	1
Surface Collection D12	1	1
Surface Collection D13	1	1
Surface Collection D14	5	-
Surface Collection D15	6	-
Surface Collection E9	1	1
Surface Collection E10	1	1
Surface Collection F6	1	1
Surface Collection G6	1	1
Total	**33**	**11**

8.1.3.4.1 Beer Bottles

Of the 33 fragments and 11 individual bottles, at least seven fragments and four bottles can undeniably be identified as beer bottles. Only two breweries could be identified from these fragments, namely the South African Breweries (represented by four fragments with a MNV of three) and the Crown Brewery (represented by four fragments with a MNV of one). The provenience of the artefacts associated with these two breweries as well as a short history on each brewery is provided below.

- **South African Breweries**

  As mentioned above four fragments could be associated with this company. These were recovered from Surface Collection D6 (two fragments), Surface Collection E9 and Surface Collection F6. The two fragments from D6 were dark green whereas the latter two fragments were brown. In all cases the bottles were associated with the South African Breweries due to embossed lettering appearing on the fragments which

could be linked to the embossed phrase appearing on the bottles of this company during its early years of existence namely THIS BOTTLE IS THE PROPERTY OF THE SOUTH AFRICAN BREWERIES LTD. The company's foundation and early development was closely aligned with the Castle Brewery that was started by Charles Glass during 1888 in Johannesburg. In 1892 Frederick Mead, a brewer from present-day KwaZulu-Natal, formed a syndicate to acquire the Castle Brewery from Charles Glass and his partners. This was achieved and a larger Castle Brewery was built in Johannesburg by the syndicate. With financial assistance provided by Randlords, the South African Breweries Limited was established on 15 May 1895 (http://www.worldofbeer.co.za/content/page/heritage-hall). Eric Rosenthal in his book *Tankards & Tradition* (1961) indicates that the Randlord in question was none other than Barney Barnato. Two years later in 1897 the South African Breweries Limited was listed on the Johannesburg Stock Exchange and in 1898 on the London Stock Exchange (http://en.wikipedia.org/wiki/South_African_Breweries).

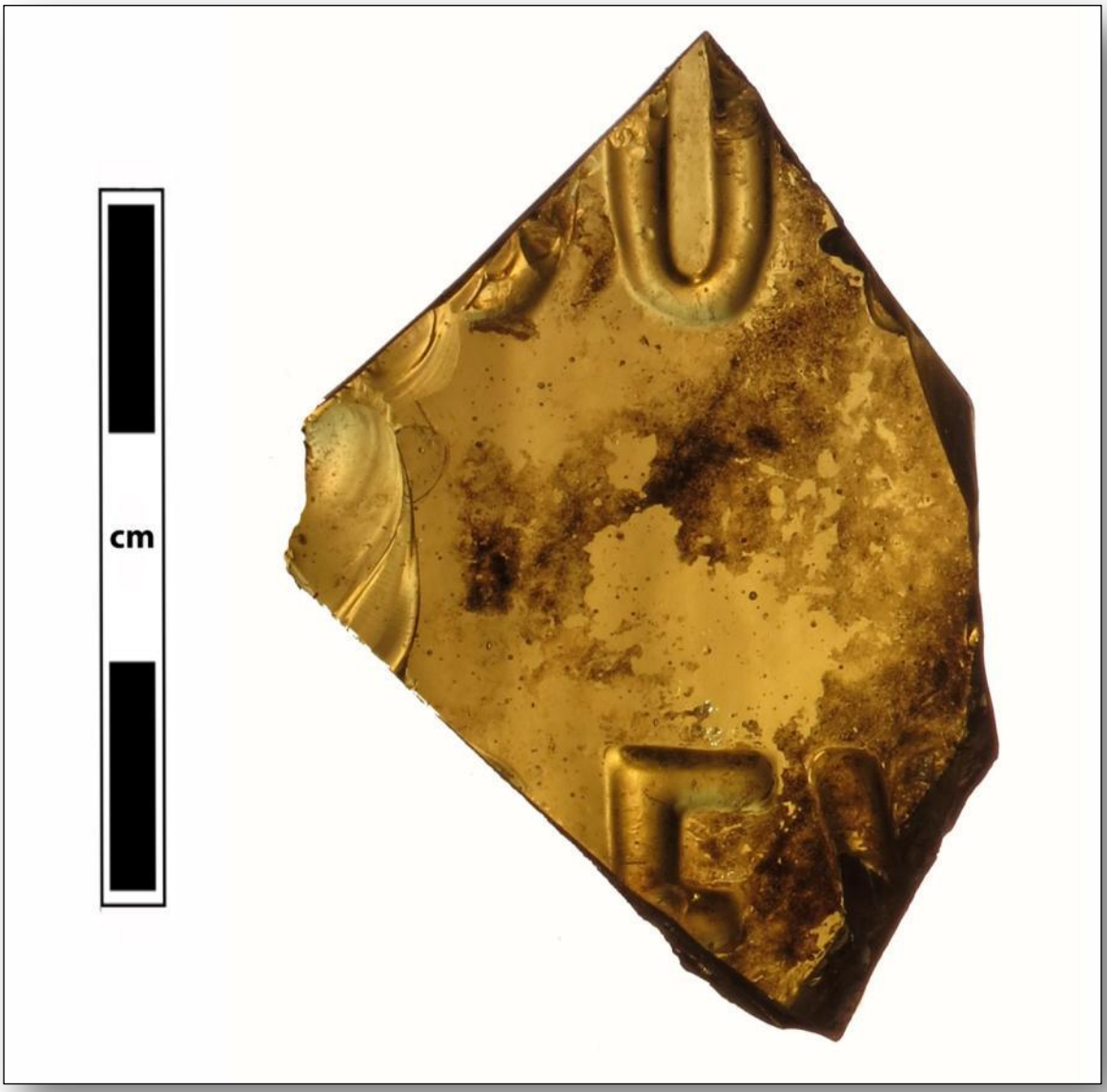


Figure 69 Glass fragment from Surface Collection D6 which can be associated with the South African Breweries.

- **Crown Brewery**

Four fragments (with a MNV of one) could be associated with the Crown Brewery. These fragments were recovered from Surface Collection D12, Surface Collection D14 (five fragments were recovered from this unit) and Surface Collection D15. All the fragments are dark green and could be associated with the Crown Brewery due to elaborately embossed lettering including a logo in the form of a crown appearing on the beer bottles of this company.

In 1887 Charles H. Chandler arrived in the bustling mining town of Johannesburg from the Kimberley Diamond Fields where he and his brother had a brewery. He established the Wiltshire Brewery in the suburb of Ophirton. In 1889 the brewery participated in the Pretoria Agricultural Show and in 1891 and 1892 won medals there (Rosenthal, 1961). According to Lastovica & Lastovica, (1990) the company was known as the Chandler & Co as well as the Wiltshire Brewery during the period 1887 to 1903. On 29 December 1902 the company Chandler's Ltd was incorporated in South Africa and took over the operations of Chandler & Co (Wiltshire Brewery) (The Stock Exchange Official Yearbook, 1965). The company Chandlers Ltd brewed beer under the auspices of its Crown Brewery from c. 1904 to c. 1910 (Lastovica & Lastovica, 1990). According to the *Beerman's Financial Year Book of Southern Africa* (1973) the name of the company was changed from Chandler's Ltd to Union Breweries Ltd in 1954. Subsequently, the name was changed to the United Breweries Limited. In 1956 the company merged with the South African Breweries Ltd and Ohlsson's Cape Breweries Ltd (Lastovica & Lastovica, 1990).

The historic overview has shown that any artefacts associated with the company of Chandler's Limited and its Crown Brewery can only date from the period 1904 to 1954. With the embossed characteristics of the original bottle it would appear that these fragments would more likely date from the earlier half of this period than the second half. This is supported by the recovery of four fragments from a single green crown top finish from the surface collection of D15, where another fragment of the Chandler's bottle was also found. There is a strong possibility that these fragments formed part of the same bottle.

An investigation of the seam lines on the abovementioned crown top fragment indicates that the bottle was manufactured with a hand-operated machine which dates the crown top fragments to the period between c. 1880 and c. 1920 (Lastovica & Lastovica, 1990). If the perceived association between these crown top fragments and the Chandler's beer fragments is true, the bottle can be dated to the period between 1904 and c. 1920.

Figure 70 Glass fragment from Surface Collection D12 which formed part of a beer bottle of the Crown Brewery owned by the company Chandler's Ltd.

8.1.3.4.2 Whiskey Bottles

Only one fragment from the entire collection could be associated with whiskey. This fragment was identified as forming part of a bottle of Walker's Kilmarnock Whiskey which is today known as Johnnie Walker Whiskey. The details of this fragment are discussed below.

A single base fragment from Surface Collection D13 represents the only fragment from the entire collection that could be associated with whiskey. The fragment is aquamarine in colour and represents a small section of a thick square base on which the faint embossed lettering “KILMAR” with “WHI” appears. These word sections would have formed part of the words WALKER’S KILMARNOCK WHISKEY that was embossed on the bases of the whiskey bottles of this company. John Walker started making his whiskey in 1820 and its popularity not only spread throughout Scotland but also around the world. In 1897 agents for this whiskey were established in South Africa (Skipworth, 1987). During 1908 a rebranding of the whiskey was undertaken by the company’s Managing Director James Stevenson. As part of the rebranding the name Walker’s Kilmarnock Whiskey was changed to Johnnie Walker Whiskey (www.wikipedia.com). The abovementioned historic overview suggests that the fragment can be dated to the period from 1897 to 1908. However, due to the fact that whiskey might have been kept by an individual for longer periods and also due to the fact that although the name change took place in 1908 the previous name and bottle design may still have appeared on the company’s bottles a few years afterward, a date later than 1908 also seem possible. As a result the fragment can in all likelihood be dated between 1897 and 1910.

Figure 71 *Glass fragment from Surface Collection D13. The fragment formed part of a bottle used for holding whiskey. At the time the whiskey in question was known as Walker’s Kilmarnock Whiskey. This whiskey is presently known as Johnnie Walker Whiskey.*

8.1.3.5 Tableware

A total of 10 glass fragments (MNV of nine) from tableware items were identified in the collection. This means that at least nine individual items of this type are represented in the assemblage. The provenience of these is as follows:

Provenience	No. of Fragments	MNV
E8(12) Level 1	1	1
E8(12) Level 3	1	1
STP 2	2	1
Surface Collection D10	1	1
Surface Collection E7	1	1
Surface Collection E9	1	1
Surface Collection E12	1	1
Surface Collection G6	1	1
Surface Collection J25	1	1
Total	**10**	**9**

Identified tableware artefacts include a lid fragment of a serving bowl that is decorated with embossed leaves, a fragment of a tumbler as well as a glass tube which may have been formed part of the stem of a wine glass.

Figure 72

Lid fragment of a dish up bowl that was recovered from the surface collection at D10.

8.1.3.6 Flat Glass

A total of 134 flat glass fragments were identified in the assemblage. These fragments would have formed part of window panes. Due to the difficulties in associating flat fragments of glass with certain original panes, no MNV could be calculated. The provenience of these flat glass fragments are as follows:

Provenience	No. of Fragments	MNV
E8(13) Level 1	4	-
E8(13) Level 2	6	-
E8(13) Level 3	3	-
E8(13) Level 5	24	-
E8(12) Level 2	4	-
E8(12) Level 3	6	-
STP 5	10	-
Surface Collection D6	2	-
Surface Collection D7	3	-
Surface Collection D8	8	-
Surface Collection D9	18	-
Surface Collection D10	6	-
Surface Collection D11	3	-
Surface Collection D13	3	-
Surface Collection D14	2	-
Surface Collection D16	4	-
Surface Collection E6	2	-
Surface Collection E7	2	-
Surface Collection E9	3	-
Surface Collection E10	4	-
Surface Collection E11	5	-
Surface Collection E12	3	-
Surface Collection F6	3	-
Surface Collection IO	3	-
Surface Collection J25	3	-
Total	**134**	**-**

8.1.3.7 Modern Cold Drink Bottles

A total of 19 glass fragments which could be associated with modern cold drink bottles were identified in the assemblage. The MNV for these 19 fragments is 11 which means that at least 11 individual modern cold drink bottles are represented in the assemblage. The provenience of these fragments is as follows:

Provenience	No. of Fragments	MNV
E8(13) Level 1	3	1
E8(13) Level 5	1	1
E8(12) Level 1	2	-
STP 1	1	1
STP 2	5	1
Surface Collection D7	1	1
Surface Collection D10	1	1
Surface Collection E8	1	1
Surface Collection E9	1	1
Surface Collection F7	1	1
Surface Collection F8	1	1
Surface Collection G6	1	1
Total	**19**	**11**

The fragments from this bottle type group can all be identified as ABM bottles and can be dated from c. 1950 to the Present. Identified cold drink bottles include Fanta, Lemon Twist, Sparletta Lemonade and Coca-Cola.

8.2 Discussion of Imported Ceramics

8.2.1 Introduction

The imported ceramics from the "Voospoed Mine Old Building" Phase II archaeological investigation were recovered from a systematic surface collection (5 x 5 metre grid laid over the nucleus of the site), six shovel test pits (STPs) and a 1 x 2 metre excavation in an identified midden west of the old building. The sherds (n = 673) were subsequently grouped into 9 loci for analysis:

Locus 1 Surface collection

Surface scatter in the vicinity west of the old building. Pedestrian survey indicated a concentrated broadcast scatter in this area which was assumed to relate to the use of the building as single quarters for mine workers in the early part of the twentieth century and subsequently as possible accommodation for farm workers. The area has been disturbed by the construction of access roads but the quantity of material and the high risk context prompted a systematic collection strategy. In addition to the scatter several low mounds around the perimeter of the building were also assumed to relate to domestic waste management by the building's residents. This relationship was tested by a number of strategically places STPs and a small controlled excavation.

Locus 2 I0 surface collection

Surface scatter in the vicinity south of the old building. The imported ceramics in this area seemed predominantly 'modern' (mid-twentieth century and later) and a small sample was collected as a control for the concentrated scatter west of the old building.

Locus 3 J39 surface collection

Surface collection north of the old building. It is unlikely that this material relates to the old building but instead may reasonably be associated with other structures that were located in this area. The ceramics serve as a control sample for the concentrated scatter west of the old building.

Loci 4-8 STP 2 – STP 6

Sub-surface testing of the low mounds located around the perimeter of the old building. Ceramic densities were low in STPs 3-6; STP 2 yielded 19 fragments.

Locus 9 STP 1 and Midden Excavation

The controlled excavation was placed adjacent to STP 1, which yielded 25 fragments of imported ceramic. The ceramics from STP 1 and the midden were combined into a single locus during analysis to prevent an inflated MNV (Minimum Number of Vessels) count. Cross-mends between E8 (12) and E8 (13) and the presence of similarly decorated vessels across excavated levels indicate that the midden material has a compressed chronology and can reasonably be treated as a single assemblage.

8.2.2 Analytical Protocols

The ceramics were cleaned using water and a soft toothbrush. Each fragment was labelled to indicate the provenience and to facilitate cross-mends and MNV counts (see Table 1).

The ceramics were classified using a typology developed by the Historical Archaeology Research Group (HARG) at the University of Cape Town (Klose & Malan 2000). This system is aligned with international standards (Majewski & O'Brien 1987; Brooks 2005) whilst remaining sensitive to local contexts and seeks to establish analytical comparability across a variety of archaeological assemblages and sites. The chronological context of the Voorspoed ceramics necessitated some additions to and amendments of the HARG system; this is unsurprising given that the typology was developed for nineteenth century and early twentieth century southern African sites and much of the Voorspoed material appears to date to the early and mid-twentieth century. Sherds were sorted initially according to their body or ware type (Porcelain, Stoneware or Refined Industrial Ware) and subsequently by decoration.
The minimum number of vessels (MNVs) was calculated by sorting fragments within each decorative category according to the form or shape of the vessel. Within each group rim or footring sherds and decoration were matched to estimate the number of vessels. Wherever possible sherds were assigned a specific shape or form (e.g. plate, cup); where the exact form could not be confidently and accurately deduced the sherds were classified as 'unidentified' and qualified as either hollow-ware or flatware. A sherd that lacks any identifiable characteristics was classified as 'undiagnostic' (Klose & Malan 2000).

Undecorated fragments were included in sherd counts but were excluded from MNV calculations unless an individual sherd (or cross-mended fragments) was sufficiently complete to indicate an undecorated vessel. Klose and Malan (2000: 53) note that in practice this means that undecorated sherds may be under-represented in MNV counts but this is regarded as preferable to an inflated MNV count.

Ceramics were cross-mended during analysis with small sections of Scotch tape. This does not damage the fragments and is easily removed. Permanent cross-mends are not advocated by HARG as this can significantly increase the archival space required for long-term curation.

Sherds exhibiting fresh breaks were re-matched wherever possible and counted as single sherds.

8.2.3 Comments

The Voorspoed Mine imported ceramic assemblage is primarily domestic (unmatched tea and table wares) with low percentages of health and hygiene related ceramics and building and industrial related material. Part of an ornamental figurine and fragments of a porcelain doll and doll's china were recovered from Loci 1 and 9 (see photographic appendix).

Historical research has indicated that the building served a residential function, initially as single quarters for mine workers and subsequently as accommodation for farm labourers. Few of the ceramics can confidently be associated with an early phase of occupation and the overall character of the assemblage suggests a predominantly post c.1910 date with a *terminus ante quem* (TAQ) towards the later decades of the twentieth century. It is, however, important to note that the assemblage contains few absolute chronological markers and, at present, is difficult to place into a broader local sequence. A single sherd from the D9 surface collection shows part of a maker's mark ("Peace China") (see photographic appendix) but no information has been traced for this manufacturer. It is possible that ware categories merit greater consideration in this regard. The relative proportions of Stoneware (low at 5%) and porcelain (high at 47.5%), the presence of 'hotel-ware' (1.7%) and the range of body types subsumed within the Refined Industrial Ware (RIW) white-bodied white ware category may serve as important predictors for analysing and interpreting twentieth century assemblages. The importance of ware type is generally discounted for the early and mid-nineteenth century (Miller 1980, 1991) but it is probable that such considerations became important once more in the late nineteenth and twentieth centuries (see Worthy (1982) for a discussion in the context of North American sites and Prossor et al (2012) for a recent example). An understanding of this trend in local southern African contexts is wanting and highlights a need for historical archaeological research on twentieth century sites. It is worth noting in this regard that the field of 'contemporary archaeology' is growing apace in American and European contexts (Harrison & Schofield 2010; Holtorf & Piccini 2011) and that in southern Africa historical understandings of both early industrial workers and twentieth century rural labourers are far from complete. The ability of ceramics (in conjunction with other artefact classes) to inform on foodways, purchasing power, household consumption and socioeconomic status renders the archaeological record an important component in efforts to write holistic and democratic histories. At Voorspoed such interpretive efforts are constrained not only by a current dearth of complementary archaeological projects but also by the small size of the majority of the sherds and the low number of crossmends. While this is typical for a surface collected broad-cast scatter it impacts negatively on the form and function designations (Table 5). Interestingly much of the ceramic scatter lies away from the old building's doorways. No ceramic was collected from the 'G' line of 5 x 5 metre blocks (closest to the doorways) and small numbers of sherds were retrieved from the F6, F7, F8, F9 and F10 blocks (see Table 1). The highest densities occur in lines 'D' and 'E'. This pattern may result, in part, from the recent disturbance created by the construction of access

roads but may equally be attributable to the disposal of household debris from the doorways of dwellings, a practice known colloquially as the '*gooi*' or 'throw' affect, whereby material is deposited in an arc from the point of discard. It is thus of some interest that so little of the material can confidently be associated with the early occupation of the site by mine workers. At the very least this suggests a significant difference in the use of the site and the management of domestic landscapes between earlier (mining) and later (farming) pursuits.

The size of the Voorspoed collection (673 sherds with an MNV count of 179) suggests the data generated will be useful for future research and comparisons. In the longer term the ceramics must be integrated with other artefact classes and with archival and oral historical sources. It is only then that the full interpretive potential of the material to inform on the lives of those who used and discarded the plates, pots and cups will be realised.

8.2.4 Tables

Table 6 Voorspoed Mine: Imported Ceramics: Data Summary

COLLECTION/EXCAVATION AREA& PROVENIENCE LABEL	SHERD COUNT	MNV
D6 surface collection (VSP D6 s/c)	24	
D7 surface collection (VSP D7 s/c)	25	
D8 surface collection (VSP D8 s/c)	23	
D9 surface collection (VSP D9 s/c)	47	
D10 surface collection (VSP D10 s/c)	11	
D11 surface collection (VSP D11 s/c)	8	
D12 surface collection (VSP D12 s/c)	21	
D13 surface collection (VSP D13 s/c)	12	
D14 surface collection (VSP D14 s/c)	21	
D15 surface collection (VSP D15 s/c)	19	
D16 surface collection (VSP D16 s/c)	10	
E6 surface collection (VSP E6 s/c)	17	
E7 surface collection (VSP E7 s/c)	5	
E8 surface collection (VSP E8 s/c)	13	
E9 surface collection (VSP E9 s/c)	14	
E10 surface collection (VSP E10 s/c)	13	
E11 surface collection (VSP E11 s/c)	9	
E12 surface collection (VSP E12 s/c)	6	
E13 surface collection (VSP E13 s/c)	2	
F6 surface collection (VSP F6 s/c)	6	
F7 surface collection (VSP F7 s/c)	2	
F8 surface collection (VSP F8 s/c)	1	
F9 surface collection (VSP F9 s/c)	1	
G6 surface collection (VSP G6 s/c)	1	
LOCUS 1: SURFACE COLLECTION	**311**	**77**
LOCUS 2: I0 surface collection (VSP I0 s/c)	**48**	**7**
LOCUS 3: J39 surface collection (VSP J39 s/c)	**17**	**9**
LOCUS 4: STP 2 (VSP STP 2)	**19**	**8**
LOCUS 5: STP 3 (VSP STP 3)	**9**	**3**
LOCUS 6: STP 4 (VSP STP 4)	**2**	**1**
LOCUS 7: STP 5 (VSP STP 5)	**7**	**3**

LOCUS 8: STP 6 (VSP STP 6)	**9**	**6**
STP 1 (VSP STP 1)	25	
E8 (12) Level 1 (E9/12/1)	26	
E8 (12) Level 2 (E9/12/2)	15	
E8 (12) Level 3 (E9/12/3)	22	
E8 (12) Level 4 (E9/12/4)	39	
E8 (12) Level 5 (E9/12/5)	2	
E8 (13) Level 1 (E9/13/1)	29	
E8 (13) Level 2 (E9/13/2)	32	
E8 (13) Level 3 (E9/13/3)	18	
E8 (13) Level 4 (E9/13/4)	41	
E8 (13) Level 5 (E9/13/5)	2	
LOCUS 9: STP 1 AND MIDDEN EXCAVATION	**251**	**65**
TOTAL	**673**	**179**

Table 7 Voorspoed Mine Imported Ceramics: Ware Type and Decoration Summary: Loci 1,2,3 & 9

WARE & DECORATION	**LOCUS 1**			**LOCUS 2**			**LOCUS 3**			**LOCUS 9**		
	No.	**MNV**	**% MNV**	**No.**	**MNV**	**% MNV**	**No.**	**MNV**	**% MNV**	**No.**	**MNV**	**% MNV**
STONEWARE												
brown salt glaze	2	2	2.6									
grey salt glaze	3	1	1.3									
liquid glaze	3	1	1.3	1	1	14.3						
salt & liquid glaze										2	2	3.1
PORCELAIN												
blue & white	2	1	1.3									
gold & white	12	6	7.8							22	9	13.8
moulded	12	4	5.2				2	1	11.1	12	3	4.6
painted						14.3				1	1	1.5
printed (underglaze)				5	1							
printed multicolour (underglaze)	1	1	1.3							4	2	3.1
printed (underglaze) & gilded												
Enamelled	18	8	10.4							7	3	4.6
enamelled & gold										1	1	1.5
lithographic print	1	1	1.3									
lithographic print & enamelled	4	2	2.6									
Lustre	3	2	2.6	1	1	14.3	1	1	11.1	5	3	4.6
lustre & gold	1	1	1.3							14	7	10.1
lustre & moulded	1	1	1.3									
lustre & painted	1	1	1.3									
lustre & enamelled	3	3	3.9				2	1	11.1			
lustre & lined	2	1	1.3							1	1	1.5
Lined	6	5	6.5							1	1	1.5
lined & gold	2	1	1.3									
coloured glaze												
Undecorated	99	-		23	-		3	-		91	-	
unidentified				1	1	14.3						
REFINED INDUSTRIAL WARE (RIW)												
Refined White-bodied: White Ware (non-semi & vitreous white-bodied wares: clear/coloured glazes)												
painted blue	1	1	1.3									
WARE & DECORATION	**LOCUS 1**			**LOCUS 2**			**LOCUS 3**			**LOCUS 9**		
	No.	**MNV**	**% MNV**	**No.**	**MNV**	**% MNV**	**No.**	**MNV**	**% MNV**	**No.**	**MNV**	**% MNV**
painted (harsh colours)												
painted (other colours)										3	3	4.6
gold & white										3	1	1.5

enamelled												
enamelled & gold										1	1	1.5
Lustre							1	1	11.1			
u/g printed: blue Willow				1	1	14.3						
u/g printed: blue other	3	3	3.9				1	1	11.1	2	2	3.1
u/g printed: grey	1	1	1.3									
u/g printed: green										1	1	1.5
u/g printed: other	1	1	1.3									
print & paint	1	1	1.3									
printed multi-colour										3	2	3.1
printed o/g (lithographic)	4	1	1.3							2	2	3.1
printed o/g (lithographic) & enamelled												
sponged & painted							1	1	11.1			
sponged and moulded	1	1	1.3									
relief decorated	6	5	6.5				2	2	22.2	3	3	4.6
Lined	11	7	9.1							5	4	6.2
lined & gold	2	2	2.6									
cream-coloured	9	1	1.3							1	1	1.5
coloured glaze	3	1	1.3	1	1	14.3				6	2	3.1
Undecorated	52	1	1.3	11	-		3	-		32	1	1.5
Unidentified	2	-		1	-							
Refined Coloured-Bodied Ware												
'teapot' ware	2	1	1.3							4	2	3.1
Refined Stoneware							1	1	11.1			
'Hotel-ware'	10	3	3.9									
GLASS-CERAMIC	18	4	5.2	2	1	14.3				3	2	3.1
DOLL										4	-	
DOLL'S CHINA	1	1	1.3							4	2	3.1
INDUSTRIAL INSULATOR	7	-		1	-					9	-	
BUILDING TILE										1	-	
UNIDENTIFIED (C/F CASED GLASS)										1	1	1.5
UNIDENTIFIED										2	2	3.1
TOTAL	**311**	**77**	**100.1**	**48**	**7**	**100.1**	**17**	**9**	**99.9**	**251**	**65**	**99.1**

Table 8 Voorspoed Mine Imported Ceramics: Ware Type and Decoration Summary: Loci 4-8 (STPs 2-6)

WARE & DECORATION	**LOCUS 4**			**LOCUS 5**			**LOCUS 6**			**LOCUS 7**			**LOCUS 8**		
	No.	**MNV**	**% MNV**	**No.**	**MNV**	**% MNV**	**No.**	**MNV**	**% MNV**	**No.**	**MNV**	**% MNV**	**No.**	**MNV**	**% MNV**
STONEWARE															
brown salt glaze										1	1	33.3			
grey salt glaze															
liquid glaze															
salt & liquid glaze													1	1	16.7
PORCELAIN															
blue & white															
gold & white															
moulded				1	1	33.3							1	1	16.7
painted															
printed (underglaze)															
printed multicolour (underglaze)															
printed (underglaze) & gilded															
Enamelled				1	1	33.3	1	1	100	1	1	33.3			
enamelled & gold															
lithographic print															
lithographic print & enamelled															
Lustre															
lustre & gold															

lustre & moulded															
lustre & painted															
lustre & enamelled															
lustre & lined															
lined													2	2	33.3
lined & gold													1	1	16.7
coloured glaze	1	1	12.5												
undecorated	6	-		5	-		1	-		3			2	-	
unidentified (c/f airbrushed)										1	1	33.3			
REFINED INDUSTRIAL WARE (RIW)															
Refined White-bodied: White Ware (non-semi & vitreous white-bodied wares: clear/coloured glazes)															
painted blue															
WARE & DECORATION	**LOCUS 4**			**LOCUS 5**			**LOCUS 6**			**LOCUS 7**			**LOCUS 8**		
	No.	**MNV**	**% MNV**	**No.**	**MNV**	**% MNV**	**No.**	**MNV**	**% MNV**	**No.**	**MNV**	**% MNV**	**No.**	**MNV**	**% MNV**
painted (harsh colours)													1	1	16.7
painted (other colours)															
gold & white	2	2	25.0												
enamelled															
enamelled & gold															
lustre															
u/g printed: blue Willow															
u/g printed: blue other															
u/g printed: grey															
u/g printed: green															
u/g printed: other															
print & paint															
printed multi-colour															
printed o/g (lithographic)															
printed o/g (lithographic) & enamelled															
sponged & painted															
sponged and moulded															
relief decorated															
lined															
lined & gold															
cream-coloured	3	2	25.0												
coloured glaze	2	2	25.0												
undecorated	4	-		1	-					1	-		1	-	
unidentified															
Refined Coloured-Bodied Ware															
'teapot' ware				1	1	33.3									
Refined Stoneware															
'Hotel-ware'															
GLASS-CERAMIC	1	1	12.5												
DOLL															
DOLL'S CHINA															
INDUSTRIAL INSULATOR															
BUILDING TILE															
UNIDENTIFIED															
TOTAL	**19**	**8**	**100.0**	**9**	**3**	**99.9**	**2**	**1**	**100.0**	**7**	**3**	**99.9**	**9**	**6**	**100.1**

Table 9 Voorspoed Mine Imported Ceramics: Ware Summary: All Loci

WARE TYPE: ALL LOCI	SHERDS	% SHERDS	MNV	% MNV
Stoneware	13	1.9	9	5.0
Porcelain	392	58.2	85	47.5
Refined Industrial Ware: White-bodied White Ware	196	29.1	63	35.2
Refined Industrial Ware: Coloured-bodied Ware	7	1.0	4	2.2
Refined Industrial Ware: 'hotel-ware'	10	1.5	3	1.7
Refined Stoneware	1	0.1	1	0.6
Glass-ceramic	24	3.6	8	4.5
Doll & Doll's China	9	1.3	3	1.7
Industrial Insulator	17	2.5	-	-
Building Tile	1	0.1	-	-
Unidentified	3	0.4	3	1.7
TOTAL	**673**	**99.7**	**179**	**100.1**

Table 10 Voorspoed Mine Imported Ceramics: Form and Function summary: All Loci

FORM & POSSIBLE FUNCTION	EXCAVATION/COLLECTION AREA									
	LOCUS 1	LOCUS 2	LOCUS 3	LOCUS 4	LOCUS 5	LOCUS 6	LOCUS 7	LOCUS 8	LOCUS 9	TOTAL
STONEWARE										
Bottle							1		1	**2**
Jar									1	**1**
unidentified container	4	1						1		**6**
PORCELAIN										
Platter										
plate: table	1									**1**
plate: deep										
plate: table/deep			1							**1**
plate: small	7									**7**
plate: size indet.								1	3	**4**
Saucer	7	1							5	**13**
small plate/saucer	8				1				5	**14**
Cup	1							1	4	**6**
Bowl										
cup/small bowl										
eggcup									1	**1**
shallow dish										
serving dish										
unidentified flat-ware		1							1	**2**
unidentified hollow-ware	1		1						4	**6**
undiagnostic flat-ware	6						2			**8**
undiagnostic hollow-ware	5	1	1					2	6	**15**
undiagnostic	1			1	1	1			2	**6**
Ornamental										
REFINED INDUSTRIAL WARE										
Refined White-bodied: White Ware (non-semi & vitreous white-bodied wares: clear/coloured glazes)										
Platter										
platter/plate	2	1							4	**7**
plate: table	1		2						1	**4**
plate: deep										
plate: table/deep	4			1						**5**
plate: small										
plate: size indet.	1								1	**2**

FORM & POSSIBLE FUNCTION	EXCAVATION/COLLECTION AREA									
	LOCUS 1	LOCUS 2	LOCUS 3	LOCUS 4	LOCUS 5	LOCUS 6	LOCUS 7	LOCUS 8	LOCUS 9	TOTAL
Saucer	2									**2**
small plate/saucer				1					1	**2**
Cup			1	1						**2**
Bowl										
cup/small bowl									2	**2**
shallow dish										
serving dish										
Tureen										
Cover										
unidentified flat-ware	1									**1**
unidentified hollow-ware	3			1					1	**5**
undiagnostic flat-ware	5								6	**11**
undiagnostic hollow-ware	6		2	2				1	3	**14**
Undiagnostic	1	1							2	**4**
chamber pot										
pharmaceutical pot	1								2	**3**
Ornamental										
Other										
Refined Coloured-Bodied Ware										
Teapot	1				1				2	4
Ornamental										
Refined Stoneware										
ornamental figurine			1							**1**
'Hotel-ware'										
Cup	2									**2**
plate: table/deep	1									**1**
GLASS-CERAMIC										
pot/jar	4	1		1					2	**8**
DOLL'S CHINA	1								2	**3**
CASED GLASS									1	**1**
UNIDENTIFIED									2	**2**
TOTAL MNV	**77**	**7**	**9**	**8**	**3**	**1**	**3**	**6**	**65**	**179**
% TOTAL MNV	**43.0**	**3.9**	**5.0**	**4.5**	**1.7**	**0.6**	**1.7**	**3.4**	**36.3**	**100.1**

8.2.5 Photographs

Figure 73 Voorspoed: Stoneware Jar: E8/13/4

Figure 74 Voorspoed: Stoneware Bottle: STP5 (maximum height 52 mm)

Figure 75 Voorspoed: Porcelain: gold & white L-R: STP1, E8/12/3 & E8/12/3

Figure 76 Voorspoed: Porcelain: gold & white Eggcup: STP 1 (maximum height 35 mm)

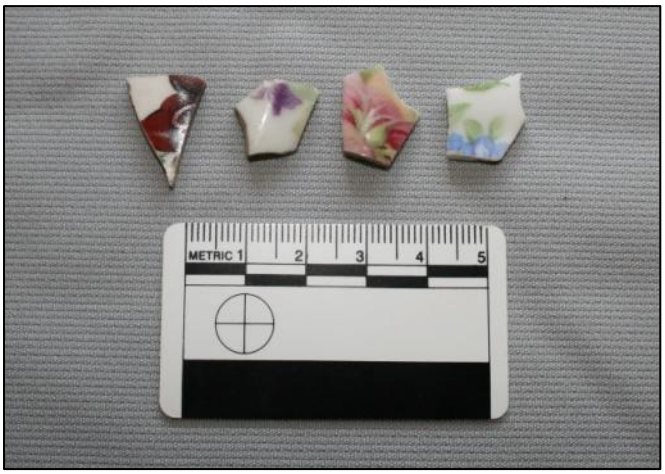


Figure 77 Voorspoed: Porcelain: Printed multicolour (u/g) L-R: E8/12/1, E8/12/2, E8/12/1 & E8/12/

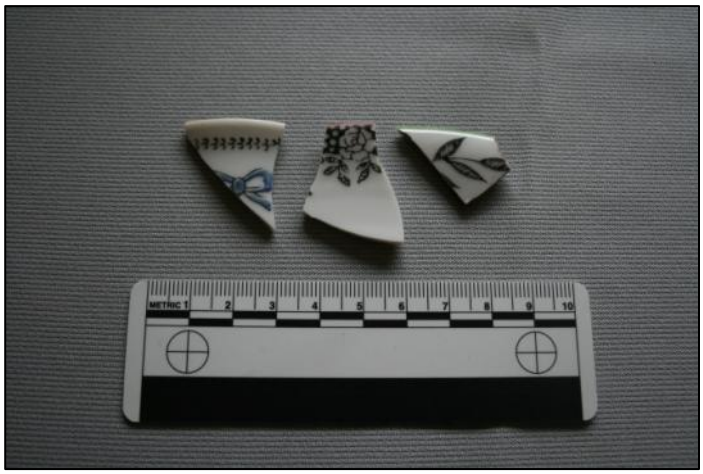


Figure 79 Voorspoed: Porcelain: enamelled (& rim lined) L-R: E8/113/1, D8 s/c & D13 s/c

Figure 78 Voorspoed: Porcelain: enamelled & gold E8/12/4

Figure 80 Voorspoed: Porcelain: lithographic print E12 s/c

Figure 81 Voorspoed: Porcelain: lustre and lustre & lined L-R: J39 s/c, E8/13/3 & E8/13/1

Figure 82 Voorspoed: Porcelain: lustre & enamelled D12 s/c

Figure 83 Voorspoed: Porcelain: lined & gold L-R: E8/12/1 & E8/12/3

Figure 84 Voorspoed: Porcelain: lined & gold STP 1

Figure 85 Voorspoed: RIW: sponged & moulded & handpainted L-R: E7 s/c, E9 s/c & STP 6

Figure 86 Voorspoed: RIW: u/g printed green & blue L-R: E8/2/3, I0 s/c, J39 s/c & E8/12/2

Figure 87 Voorspoed: RIW: Printed multi-colour E7 s/c

Figure 88 Voorspoed: RIW: lined and lined & gold L-R: D6 s/c, D11 s/c & E8 s/c

Figure 89 Voorspoed: RIW: relief decorated L-R: J39 s/c & E8/13/4

Figure 90 Voorspoed: RIW: coloured glaze L-R: E8/12/4, STP 2, STP 2 & E8/13/2

Figure 91 Voorspoed: RIW Pharmaceutical Pot E8/12/4

Figure 92 Voorspoed: RIW: 'Hotel-ware' D7 s/c

Figure 93 Voorspoed: Refined Coloured-Bodied Ware 'teapot ware' D9 s/c

Figure 94 Voorspoed: RIW: maker's mark D9 s/c

Figure 95 Voorspoed: Refined Stoneware: Figurine J39 s/c

Figure 96 Voorspoed: Porcelain: Doll's China E8/12/2 (maximum height 32 mm)

8.3 Discussion of Metal Artefacts

8.3.1 General Discussion

A total of 1,930 individual metal pieces were recovered from the site. No minimum number calculations were undertaken due to the large number of wire sections in the collection. Once all the metal artefacts had been dry-brushed they were grouped first according to their provenience followed by their association with one of ten identified groups namely Construction, Household, Tents, Clothing, Agricultural, Cartridges, Railways, General Transport, Mining and Unidentified. Those artefacts grouped into Construction were further classified into 17 more detailed identification classes namely Wire, Nails, Nuts, Washers, Bolts, Pipes, Screws, Rivets, Buttresses, Discs, Hooks, Valves, Latches, Hinges, Roof Seals, Keyholes and Fly Screens. Refer Annexure B for the classification forms.

Out of the total number of 1,930 metal artefacts recovered from the site 598 could be identified into the above mentioned nine groups. This means that only 30.98% of the total metal assemblage from the site could be identified. In the table below the provenience of all the metal artefacts from the site is provided. The table provides some insight into the distribution of metal across the site. The following observations can be made in this regard:

- A total of 1,056 (54.72%) pieces were recovered from the excavations of E8(13) and E8(12); 592 (30.67%) from the six shovel test pits and 282 (14.61%) from the 37 surface collection squares. It is evident that the excavations of the two blocks revealed the largest number of metal artefacts which can to a certain degree be explained as a result of the concentration of material (including metal) in the midden that was excavated.
- A comparison of the results of the surface collection of the grid squares to the west of the building reveal similar results as was observed with the glass assemblage. The grid squares falling within this area are defined by columns G, F, E and D and rows 9, 10, 11 and 12. The nearest column to the building is G and the surface collection from G9, G10, G11 and G12 revealed no metal artefacts. Column F, at a distance of 5m to 10m west of the building, is the second nearest and the surface collection of F9, F10, F11 and F12 revealed only one metal artefact. The surface collection of E9, E10, E11 and E12 revealed a total of 29 metal artefacts. This is a marked increase from the previous two columns, a trend which continues at the distance of 15m to 20m west of the building where the surface collection of D9, D10, D11 and D12 revealed 58 fragments. Although these figures may have been influenced by the grading of a road across the area covered by columns E and D, the complete lack of metal artefacts from the column closest to the building followed by sparse findings from the one further away seem to suggest that the area directly adjacent to the building was not used for the discard of waste. It is also possible that an area directly adjacent to the building was swept and cleared of any visible waste material. Any metal located within this area may have been pushed out of this area to rest at distances further away. This suggested activity may also have added to the marked increase in metal artefacts from columns D and E.

Provenience	No. Of Fragments		Provenience	No. Of Fragments
E8(13) Level 1	102		Surface Collection E11	6
E8(13) Level 2	119		Surface Collection E12	6
E8(13) Level 3	104		Surface Collection E13	12
E8(13) Level 4	159		Surface Collection F6	9
E8(13) Level 5	13		Surface Collection F7	5
E8(12) Level 1	95		Surface Collection F8	1
E8(12) Level 2	106		Surface Collection F9	-
E8(12) Level 3	110		Surface Collection F10	-
E8(12) Level 4	223		Surface Collection F11	-
E8(12) Level 5	25		Surface Collection F12	1
STP 1	96		Surface Collection F13	1
STP 2	282		Surface Collection G6	4
STP 3	60		Surface Collection G7	2
STP 4	3		Surface Collection G8	-
STP 5	17		Surface Collection G9	-
STP 6	134		Surface Collection G10	-
Surface Collection D6	26		Surface Collection G11	-
Surface Collection D7	13		Surface Collection G12	-
Surface Collection D8	20		Surface Collection G13	-
Surface Collection D9	28		Surface Collection I0	12
Surface Collection D10	7		Surface Collection J25	15
Surface Collection D11	9		**Total**	**1,930**
Surface Collection D12	14			
Surface Collection D13	10			
Surface Collection D14	8			
Surface Collection D15	6			
Surface Collection D16	6			
Surface Collection E6	35			
Surface Collection E7	2			
Surface Collection E8	7			
Surface Collection E9	7			
Surface Collection E10	10			

In the table below a summary is provided of all the metal artefacts from the assemblage that could be classified into one of the nine pre-defined identification types namely Construction, Household, Tents, Clothing, Agricultural, Cartridges, Railways, General Transport and Mining. The table displays the provenience and number of artefacts. Furthermore, the totals and relevant percentages are provided at the bottom.

The following observations can be made from this table:

- The construction group is by far the best represented in the identified section of the assemblage, and significantly so with 85.45% percentage share. As this group was defined to include any items associated with a building (i.e. construction, architectural details and maintenance) and as the archaeological site in effect comprises an old building with its associated waste material, this high share value is not unexpected. The size of this group may also have been influenced by the fact that there is not often a clear distinction between construction items and mining items. For the purposes of this report any items relating to construction were grouped into this class but may very well have had a mining association as well.
- The second biggest group is the one comprising household items and comprises 6.86% of the total identified assemblage. Again, this is not unexpected as the site would have been used for accommodation during almost its entire history.
- The most surprising aspect resulting from the classification and analysis of the metal artefacts is the high number of cartridges that was recovered. The cartridges group represents 3.68% of the identified artefacts. The reasons for this are not clearly evident and will be discussed in more detail further down.
- The fourth biggest identified component is clothing items which hold a 1.17% share. Artefacts such as belt buckles, studs, brooch pins and buttons are included in this group.
- The agricultural group is the fifth biggest identified component with a share value of 1%. The reasonably central position of the agricultural group is interesting in that it may point to a farm worker occupation of the site after the cessation of mining activities or alternatively that people occupying the site who may have been mine workers would also have had to undertake a certain measure of agricultural activities to sustain themselves.
- The railway group is the sixth biggest in the assemblage with 0.67% share. It is represented in the collection by bolts used on railway and tram lines. These railway lines would have been used on the mine.
- The general transport and tent groups are both the seventh biggest groups with 0.5% share.
- Surprisingly, the mining-related group has the least percentage share in the metal assemblage, namely one artefact with a percentage of 0.17%. A word of caution is required however as a large number of the artefacts falling into other groups may very well have been allocated to the mining group as well. This includes the railway bolts referred to above as well as the general construction items from the largest group in the assemblage. Aspects such as wire, bolts, nuts, nails and screws would have been utilised on both construction and mining sites.

Provenience	Construction	Household	Tents	Clothing	Agricultural	Cartridges	Railways	Transport	Mining
	No.	No.	No.	No.	No.	No.	No.	No.	No.
E8(13) Level 1	75	1				1			
E8(13) Level 2	30	2		1		1			
E8(13) Level 3	22	3		1					
E8(13) Level 4	44	1		1	1	2			
E8(13) Level 5	1								
E8(12) Level 1	49	7							
E8(12) Level 2	14	2	1			2			
E8(12) Level 3	11	2				1			
E8(12) Level 4	19				1	3			
E8(12) Level 5	2								
STP1	22					1			
STP2	32	4		1					
STP3	9	1							
STP4			1						
STP5	8	1							
STP6	10	1							
Surface Coll. D6	19	2					1		
Surface Coll. D7	9			1					
Surface Coll. D8	11	1			2	1	1		1
Surface Coll. D9	17	2				1			
Surface Coll. D10	6					1			
Surface Coll. D11	3		1	1		1			
Surface Coll. D12	8	1				2	1		
Surface Coll. D13	6								
Surface Coll. D14	3	1							
Surface Coll. D15	5					1			
Surface Coll. D16	2								
Surface Coll. E6	25	2		1	1	1			

Surface Coll. E7	1								
Surface Coll. E8	5								
Surface Coll. E9	5								
Surface Coll. E10	4	1						1	
Surface Coll. E11	1							1	
Surface Coll. E12	3					1			
Surface Coll. E13	7								
Surface Coll. F6	8								
Surface Coll. F7	2	1				1			
Surface Coll. F12	1								
Surface Coll. F13					1				
Surface Coll. G6		1							
Surface Coll. G7	1	1							
Surface Coll. IO	8						1	1	
Surface Coll. J25	9	3				1			
Total = 598	**511**	**41**	**3**	**7**	**6**	**22**	**4**	**3**	**1**
Percentage of total	85.45%	6.86%	0.50%	1.17%	1%	3.68%	0.67%	0.50%	0.17%

8.3.2 Identified Metal Artefact Groups

As mentioned elsewhere, nine metal artefact type groups were identified namely Construction, Household, Tents, Clothing, Agricultural, Cartridges, Railways, General Transport and Mining. In this section a discussion of each identified group will be provided. The provenience of these identified metal artefacts will also be indicated.

8.3.2.1 Construction

This group was defined to include all metal artefacts that could be associated with buildings and construction. A further 17 sub-groups were identified within the overall construction group namely wire, nails, nuts, washers, bolts, pipes, screws, rivets, buttresses, discs, hooks, valves, latches, hinges, roof seals, keyholes and fly screens. The distribution of the construction items into these sub-groups can be found in the classification forms (refer Annexure B).

A total of 511 artefacts could be identified as part of the construction group. The provenience of these items can be seen in the overall table above. It is evident from this table that the largest number of artefacts of this group was

recovered from the two excavation blocks of E8(12) and E8(13). In terms of the stratigraphy of these two blocks, Levels 1 in both blocks had the most artefacts with more frequency peaks found in Levels 2 and Levels 4 as well.

Figure 97 Selection of nails recovered from E8(13) Level 1 as well as the surface collection of D9.

8.3.2.2 Household

This group was defined to include all metal artefacts that could be associated with households and included items such as cutlery, fragments of metal food-related cans, snuff containers and coins. The distribution of the household items can be seen in the classification forms (refer Annexure B).

A total of 41 artefacts could be identified as part of the household group. The provenience of these items can be seen in the overall table above. Some concentration of artefacts can be seen in the two excavation blocks of E8(12) and E8(13).

The household items can be associated with both an earlier mining-related occupation of the site as well as a more recent association with farm workers. A number of interesting household artefacts from the site can be mentioned. These include the following:

- Selo Film Roll Canister

  This canister was recovered from the surface collection of D12. It can be dated to between 1920 and 1968 (www.photomemorabilia.co.uk).

- EPNS Spoon

  The spoon was recovered from STP 6. On the reverse of the handle it contains the letters and words "E.P.N.S" and "Made in England". The acronym EPNS stands for "electroplated nickel silver" and refers to a copper alloy with nickel and often zinc (www.wikipedia.org).

- Singleton & Cole Ltd Snuff Container Lid

  A snuff container lid was recovered from STP 3. It contains the following wording: "MANUFACTURED BY SINGLETON & COLE LTD BIRMINGHAM & BRANCHES ENGLAND PROV. PAT. 10774-46". Although an exact age for the item would be difficult to establish, it may date from around the 1950s or 1960s.

- South African Halfpenny (1942)

  Only one coin was identified in the entire collection, and was recovered from the surface collection at J25. The coin is in a poor condition but the word "REX" could be read from the obverse side and "SOUTH AFRICA", "1942" and "½D" from the reverse side. This indicates that the coin is a South African halfpenny

that was circulated as part of the King George VI First Coinage (1937 – 1947). On the original coin the obverse would have featured a profile of King George VI with the words “GEORGIUS VI REX IMPERATOR”, whereas the reverse would have had a depiction of the Jan van Riebeeck sailing vessel “Drommedaris” with the words “SOUTH AFRICA 1942 SUID-AFRIKA ½D” surrounding it.

Figure 98 *Two spoons recovered from the site. The large spoon on the left is an electroplated nickel silver utensil and is marked on the back with “EPNS” and “Made in England”. This spoon was found at STP 6. The smaller spoon on the right contains no marks and was recovered from E8(12) Level 3.*

8.3.2.3 Tents

This group was defined to include all metal artefacts that could be associated with the use of tents.

Only three artefacts could be identified as part of this group. The provenience of these items can be seen in the overall table above. No conclusions can be drawn from the distribution of these artefacts across the site.

The three items from this group comprise two tent pegs and one eye ring.

8.3.2.4 Clothing

This group was defined to include all metal artefacts that could be associated with clothing and as a result include belt buckles, a button, a brooch pin as well as a stud.

A total of seven artefacts could be identified as part of the clothing group. The provenience of these items can be seen in the overall table above. Some concentration of artefacts can be seen in the excavation block E8(13).

The clothing items can be associated with both occupation phases of the site. This said, the metal button found at E8(13) Level 3 has the appearance of a dome shape button. Although it is poorly preserved, the button does appear to date from around the turn of the century. However, this would be impossible to state as fact.

Figure 99

One of the belt buckles recovered from the site. This item was excavated from E8(13) Level 2.

8.3.2.5 Agriculture

This group was defined to include all metal artefacts that could be associated with agricultural activities. As a result this component includes a plough shares and a section of a plough share as well as sections from fencing poles.

A total of six artefacts could be identified as part of the agriculture group. The provenience of these items can be seen in the overall table above.

The presence of farming related items in the collection from the site can easily be explained as part of the farm worker occupation of the site. However, even if the site was used for accommodation of mine workers agricultural activities may still have been undertaken on the side.

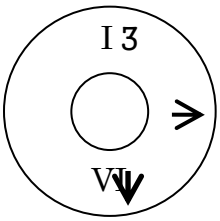
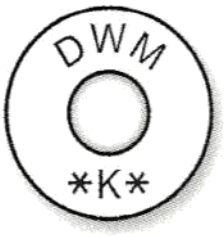
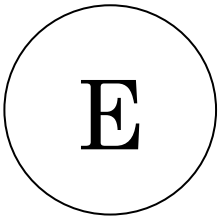
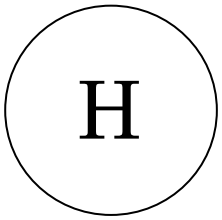
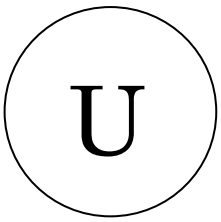
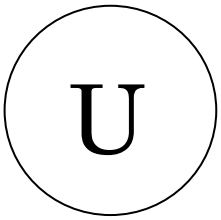
Figure 100

One of the plough shares from the site. This share was recovered from the surface collection at E6.

8.3.2.6 Cartridges

This group was defined to include all metal artefacts that could be associated with ammunition and as such include cartridge casings, bullets and unfired ammunition. No unfired ammunition was identified at the site. A total of 22 artefacts could be classified into this group, the provenience of which can be seen in the overall table above. It is evident that cartridges were found across many of the site components with some higher densities visible at the two excavation blocks. All the cartridges with the exception of one (an unmarked .22 casing from the surface collection at D12) are depicted on the photograph below. As can be seen, these items include six British .303 casings, one 7 x 45mm Mauser casing, six .22 casings and nine projectiles. Each of the cartridges depicted here was given a number, which corresponds with the numbers used to refer to the individual cartridges in the discussion on headstamps.

Figure 101 Selection of casings and projectiles recovered from various units across the site.

No.	Provenience	Type	Headstamp	Discussion and Chronological Markers
1	E8(13) Level 1	.303 British		This Mark VI .303 cartridge was manufactured by an unknown commercial manufacturer. It contains an overstamp consisting of two broad arrows. During the period 1907/8 to 1913 the British government was believed to have over stamped two broad arrows on to any ammunition which had been acquired from commercial manufacturers (www.iaaforum.org).
2	E8(13) Level 4	7 x 57mm (Mauser)	 Bester (2003:317)	The Deutsche Waffen und Munitionsfabriken, Karlsruhe, Germany existed between 1896 and 1922 when the company's name was changed to Berlin-Karlsruher Industriewerke. In 1936 the company reverted to its original name (www.wikipedia.org).
8	E8(13) Level 4	.22 rimfire (Eley)		The British company ELEY was started in 1828 by William and Charles Eley. It still exists today. In 1860 it started producing .22 rimfire cartridges (www.ekey.co.uk).
10	S/C D10	.22 rimfire (Winchester)		The chief designer of Winchester Repeating Arms Company was Benjamin Tyler Henry who designed a number of rifles and in that way assisted in the company's success. As a result all Winchester .22 rimfire ammunition has been stamped with the letter "H" in honour of Henry (www.chuckhawks.com). This appears to have been done throughout the history of the company and as a result it would be impossible to accurately date the cartridge case.
11	S/C D11	.22 rimfire (Remington)		The Union Metallic Cartridge Company was started in 1867 in the United States (www.remington.com). In 1912 the company joined with another American ammunition manufacturer Remington Arms. Remington continued producing the UMC brand ammunition after 1912. (www.wikipedia.org).
12	S/C D9	.22 rimfire (Remington)		The Union Metallic Cartridge Company was started in 1867 in the United States (www.remington.com). In 1912 the company joined with another American ammunition manufacturer Remington Arms. Remington continued producing the UMC brand ammunition after 1912. (www.wikipedia.org).

The collection of cartridges is for the most part poorly preserved. A number of the cartridges display evidence for heavy corrosion caused by long-term exposure to the elements and moisture. This caused difficulties during the analysis and identification of the artefacts. However, of the 13 casings from the collection a total of six could be identified further by way of the markings appearing on their headstamps. The identification of these six cartridges can be found in the table above.

As mentioned elsewhere the cartridges represent the third biggest group of identified metal artefacts with a 3.86% share. This means that groups one would have expected to appear in higher frequencies such as clothing and mining fall behind this group. It is important that the relatively high frequency of this group is dissected and discussed in more detail to better understand why it features so well compared to some of the other groups. This will be undertaken below.

In trying to date the cartridge collection and thereby associating it with one of the two identified occupation phases of the site and building, it is important to note that the first phase was associated with white mine workers and the second phase with black farm workers. It is known that black people were not allowed to own firearms and ammunition during the time of the Free State Republic (i.e. before 1902) and after the war a number of legislative measures were promulgated to control the ownership of firearms by persons other than white people. In terms of the Orange River Colony (the name of the Free State after the South African War), these legislative measures included the Arms and Ammunition Ordinance of 1903 and the Arms and Ammunition Act (No. 23 of 1908). After the unification of South Africa in 1910, further legislation was approved that prohibited the ownership of arms and ammunition by black and coloured people such as the Arms and Ammunition Act of 1937. Legislative discrimination with regard to the ownership of firearms was only amended in 1983. This indicates that the cartridges from the site can most likely be associated with the first occupation phase of the site. The association of the cartridges with the early mining occupation of the site is supported by the information contained in the table above, and especially so with regard to Cartridges 1 and 2. The former can be associated with the period 1907/8 to 1913 whereas the latter cartridge is known to have been used during the South African War (1899 – 1902).

Four main possible interpretations for the large number of cartridges in the collection recovered from the site can be postulated. They are as follows:

- The site was associated with a military function (military camp) or event (battle).
- The site was associated with recreational shooting activities such as target practice and shooting competitions.
- The site was associated with hunting activities.
- The site was associated with the killing and slaughtering of large domestic animals for meat.

In terms of the first interpretation, no archival or historic evidence for the use of the building or site for military reasons was identified. The only reference to any military activities in the surroundings of the study area that could be found was the recording of the oral history of Lucas Nqandela by Tim Keegan (1988) in which Nqandela recollected that during the Rebellion of 1914 a battle took place on a hill near Voorspoed Station. The nearest hill to the site is known as Renosterkop and is located 2,4km south-west of the site.

If one assesses the collection of cartridges from the site it is evident that a variety of different calibres and ammunition types are represented ranging from small .22 casings to .303 and 7 x 45mm ammunition. Furthermore, a whole range of different manufacturers are also represented, from British, American and German origin. This lack of uniformity raises question marks about this interpretation. Furthermore, the large projectile component from the cartridges collection also suggests an interpretation other than military use. One would not expect to find both casings (discarded after shooting) and projectiles (either hitting the target or landing in the ground behind or near the target) in such numbers together at the site. Added to that, the casings and projectiles were not discovered in one unit or one segment of the site but characterises almost the entire site and almost all of the excavation levels. This suggests that the association of the cartridges with the site cannot be ascribed to a once-off event but rather occurred over a long period of time. Lastly no supportive archaeological and tangible evidence for the use or association of the site with a military function or event could be found during the archaeological mitigation and excavation work i.e. in a military site one would have expected to find military buttons, bayonets, high numbers of tinned meat containers and high numbers of stirrups and horseshoes. As a result the postulated military association of the site can be discarded.

The second possible interpretation for the site is more difficult to ignore. During the archival research it was found that a Voorspoed Rifle Club had been established at the mine during October 1910. However, while the area used by the club for their activities are not identified in the archival record its position would have had to conform to a number of practical safety considerations i.e. it had to be located away from houses and people and likely in an area where a raised natural or man-made hill would have created a safety wall (impact berm) to stop fired rounds going astray and injuring or killing someone. It is clear that the last two items cannot easily be met in areas close to the site. Furthermore, the presence of a large component of projectiles in the collection also does not conform to what one would expect from an area used for shooting practice. In most cases the fired projectiles would have hit the targets and either passed straight through to lodge into the impact berm behind or alternatively if the target was missed the projectiles would have struck the impact berm directly and lodged into the ground. A third possibility would have been if the target (or its backing) was thick and dense enough the projectiles may have lodged in the target or backing. None of these events would have resulted in the collection of numbers of casings and projectiles in the same general area. As a result this suggested interpretation for the presence of the cartridge collection can also be discarded.

The third possibility is for the collection of cartridges to have resulted from an association of the site with hunting activities. During the early history of the site the building would have been occupied by single white men, many of whom who would have been armed with a variety of rifles. It seems likely that these men would have walked into the surrounding veld on a regular basis to shoot game for the pot and in that manner augment their diets. During hunting a rifle is fired which results in the casing being discarded at the point of shooting and the projectile shooting to the point of aim. The projectile would either hit a fleshy part of the animal allowing it to pass straight through and lodging in the ground behind or in some cases may strike a bone of the animal resulting in the projectile being lodged inside the animal. After the animal was killed its carcass would either have been slaughtered in the veld or alternatively carried or transported back home to be slaughtered in more accommodating circumstances (i.e. under shade, away from flies etc.). In such a scenario the projectiles which were lodged inside the hunted animals would have been found during the slaughtering process and quite likely discarded in the proximity of where the slaughtering was taking place. This scenario provides an explanation for the projectiles ending up in the archaeological collection but unless the hunting action (shooting of the rifle) occurred on the site itself one would not have expected to find both casings and projectiles associated with one another. The only hunting that would fit well into this interpretation is the shooting of animals adjacent to the building. This would have resulted in the discard of the casing at the site followed by the discard of the projectile at the site if the hunted animal was brought back to the building to be slaughtered. It is of course possible that the projectiles and casings from the collection cannot all be associated with one another. For example, projectiles could have been discarded at the site as part of the slaughtering activity whereas the casing would have been left in the field where the shot was fired.

The fourth interpretation for the high number of cartridges found at the site deals with the processing of meat obtained from large domestic animals. It is important to note here that during the early 20th century the residents of the site would not have had the luxury of freezers, refrigerators and well stocked grocery stores with cold processing facilities in place. As a result the finding of fresh meat would have meant hunting of wild animals or the keeping of livestock. The first matter has already been discussed above. In terms of the keeping and utilisation of large domestic animals, the easiest and most practical way of obtaining the meat from these animals would have been to keep them alive as long as possible and to kill the animals at or in close proximity to the point where the slaughtering will take place. Although smaller livestock such as sheep and goats could have been killed by cutting their throats, this is less easy to accomplish with large bovids. The killing of such animals would therefore have been undertaken by shooting them with any suitable firearm that was available. In this scenario the shooting of the animal would have resulted in the discard of the casing in close proximity to the projectile that would have been removed during the slaughtering process and discarded as well. The only cartridges that do not fit well into this interpretation are the six 0.22 casings in that the use of this calibre would have proved difficult when killing a full-grown bovid. It is therefore possible that both this as well as the hunting interpretation combined would best explain the collection of cartridges from the site.

8.3.2.7 Railways

This group was defined to include all metal artefacts that could be associated with railways. A total of four artefacts could be identified as part of this group. The provenience of these items can be seen in the overall table above. Due to the limited number of items from this group no conclusions can be drawn with regard to the distribution of this group across the site.

The railways-related group can only be associated with the pre-1912 mining history of the site in that at the time the mine would not have possessed heavy machinery and plant to assist with the conveyance of excavation material and as a result this work would most likely have had be undertaken by way of animal-drawn wagons running on single railway tracks across the extent of the mine. One of the historic photographs of the mine that was obtained from the Free State Archives shows a train of wagons being pulled by a team of donkeys, horses or ponies on a track running alongside the pit's walls.

Figure 102 Historic photograph of mining activities at Voorspoed Mine. The arrow points to the team of donkeys, horses or ponies pulling a train of wagons on a track along the side of the pit (Free State Archives, Photo, 7927).

It is important to note that some items which may very well have been associated with the activities surrounding the use of railway tracks on the mine such as horseshoes and parts of a bridle were classified under the general transport group. This was undertaken due to the fact that there was no way of confirming whether these items formed part of the railway activities.

8.4.2.8 General Transport

This group was defined to provide some differentiation from the strictly railway-associated items. As such, this group includes all metal artefacts that can be associated with any transport on the condition that it does not include the mine railways. A total of three artefacts can be identified as part of this group. The provenience of these items can be seen in the overall table above. Due to the limited number of items from this group no conclusions can be drawn with regard to the distribution of this group across the site.

The three items forming part of this group comprise one horseshoe, one section of a bridle as well as a section from the peddling mechanism of a bicycle. As mentioned elsewhere, both the horseshoe and bridle may have been associated with railways, but as this cannot be stated as fact these two items were classified into this group.

Figure 103

The shoe was recovered from the surface collection of E11. It is not presently known whether it was used for a horse, donkey or pony as any of these three animals may have been present at the mine.

8.3.2.9 Mining

The mining group was defined to provide a class for metal items which can only be associated with the Voorspoed Mine itself. This restrictive definition implies that only a very limited number of artefacts would actually fall within the group. As mentioned elsewhere, a number of artefacts from other groups such as construction, railways and even general transport may very well have fallen within this group. In fact, almost all of the artefacts dating to the site's early history could in one way or another be associated with the Voorspoed Mine and its activities.

Nonetheless, only one metal artefact was classified into this group. This artefact is a rectangular tag containing the impressed letters "V.D.M." i.e. the Voorspoed Diamond Mining Company or Voorspoed Diamond Mine. This item was recovered from the surface collection at D8. The artefact is a fragment of a metal identification armband which black mineworkers historically had to wear on South African mines. Mining authorities enforced the wearing of these armbands as a measure to control desertion.

Figure 104 The tag that was recovered from the surface collection at D8. It is believed that the letters "VDM" either stands for "Voorspoed Diamond Mine" or "Voorspoed Diamond Mining Company".

8.4 Discussion of Pottery

A total of 30 clay pottery fragments were recovered from the site. Due to the homogeneous nature of clay pots in general, and undecorated ones in particular, it would be impossible to provide an assessment of the MNV for these. None of the 30 clay ceramic fragments was decorated which means that aspects relating to age or cultural affinity would be impossible to construe from these fragments alone. What is certain is that this assemblage of clay ceramics represents one of only a few assemblages from the site which can exclusively be associated with only one of its two defined occupation phases. In this case, it is clear that the clay ceramics would have been associated with the black farm workers and as a result can likely be dated to the second half of the 20th century. In the table below the provenience of all clay ceramic artefacts is provided. The following observations can be made:

- Clay pottery fragments are represented in the same level of both excavation blocks, namely Level 2. This may indicate that the six fragments in question would have been derived from a single pot. Alternatively, the indication is that this level can in particular be associated with the farm worker occupation of the site.
- A total of 18 ceramics were recovered from the surface collection of D9. The specific reason for this is not presently clear. However, it is possible that these 18 fragments originated from a single container.

Figure 105 The entire assemblage of clay pottery that was recovered from the site.

Provenience	No. of Fragments	MNV
E8(13) Level 1	-	-
E8(13) Level 2	1	-
E8(13) Level 3	-	-
E8(13) Level 5	-	-
E8(12) Level 1	-	-
E8(12) Level 2	5	-
E8(12) Level 3	-	-
E8(12) Level 4	-	-
E8(12) Level 5	-	-
STP 1	-	-
STP 2	-	-
STP 3	-	-
STP 4	-	-
STP 5	-	-
STP 6	-	-
Surface Collection D6	-	-
Surface Collection D7	-	-
Surface Collection D8	1	-
Surface Collection D9	18	-
Surface Collection D10	1	-
Surface Collection D11	-	-
Surface Collection D12	-	-
Surface Collection D13	-	-
Surface Collection D14	-	-
Surface Collection D15	-	-
Surface Collection D16	-	-
Surface Collection E6	-	-
Surface Collection E7	-	-
Surface Collection E8	-	-
Surface Collection E9	1	-
Surface Collection E10	-	-
Surface Collection E11	-	-
Surface Collection E12	1	-
Surface Collection E13	-	-
Surface Collection F6	1	-
Surface Collection F7	-	-
Surface Collection F8	-	-
Surface Collection F9	-	-
Surface Collection F10	-	-
Surface Collection F11	-	-
Surface Collection F12	-	-
Surface Collection F13	-	-
Surface Collection G6	-	-
Surface Collection G7	-	-
Surface Collection G8	-	-
Surface Collection G9	-	-
Surface Collection G10	-	-
Surface Collection G11	-	-
Surface Collection G12	-	-
Surface Collection G13	-	-
Surface Collection I0	1	-
Surface Collection J25	-	-
Total	**30**	**-**

Table 11

The provenience and frequency of all clay pottery recovered from the site.

8.5 Discussion of Slate

In this section both writing slates and lead rods are discussed. Although the lead rods could have been discussed as part of the metal component, they are specifically grouped here due to the functional association of the rods with the writing slates i.e. the lead rods in question would have been used to write on the slates. It is also important to note that the writing slates referred to here would have been hand-held rectangular pieces of slate often with a wooden border and with parallel or square grooves (to assist with writing) and not the large blackboards still used in schools today.

A total of 35 slate writing fragments and writing rods were recovered from the site. Due to the intrinsic uniform character of slate it would be impossible to provide minimum number calculations for this assemblage.

The use of slate for writing during historic times is commonly associated with schools. However, writing slates were often also used within domestic and office contexts as well due to its affordability and availability. Archaeological research undertaken in Australia revealed that writing slate was most commonly used during the period from 1770 to 1900 and that their school use diminished due to hygienic concerns raised about their use in that environment. However, it was found that in some areas writing slates were used well into the 20th (Davies, 2005). The use of writing slates in South African schools appears to have ended in c. 1950. For example, Nyren (2000) indicates that before c. 1950 many school children in South Africa did not have exercise books but used writing slates instead. Similarly, Stenbakken (2009) indicates that in 1945 while at school they made use of writing slates and slate pens, and the following year in 1946 were given lead pencils and paper. The date of 1945 may be significant in that it is the year in which the Second World War (1939 – 1945) ended. The war years would have been characterised with shortages of paper, the supplies of which may have been restored in 1946. It is of course possible that such writing slates may still have been used for the lower grades after the mid-20th century as well.

Another observation to be made with regard to writing slates used in school contexts is that the slates would normally have been used in the school classroom and the learners would not necessarily have been allowed to remove the writing slates out of the classrooms. In this regard it is worth noting that no historical evidence could be found which links the building on the site with a school. The schools in the vicinity of the site that were known to exist was the school at the Voorspoed Mine Village for children of white staff members as well as at least one farm school for black children and which appears to have been situated somewhere in the general vicinity of the site.

Although the abovementioned information makes it difficult to associate this assemblage exclusively within any of the two known occupation phases of the site, writing slates would appear to be more associated with the first half of the 20th century (i.e. mining and early farm worker occupation of the site) than the second half (later farm worker occupation).

When one considers the provenience of all writing slate and rod artefacts a similar conclusion can be drawn. In the table below the provenience of these artefacts is provided. The following observations can be made from this table:

- This assemblage is well represented in both the archaeological test excavations as well as the shovel test pits but is poorly represented in the surface collections. This suggests that the slate assemblage was located at deeper stratigraphic levels than what would necessarily have been observed on the surface. The observation made here appears to be supported when one looks at the localities of the three 5m grid squares where slate fragments were recovered during the surface collection, namely D10, E6 and F6. Whereas D10 is located in the middle of the area which had been disturbed by the construction of a road, both E6 and F6 are located on the southern edge of an existing road. As a result it is evident that the disturbance of the subsoil from within or directly adjacent to these three grid squares would have been present.
- Based on these observations it would appear that the writing slate fragments and lead rods can more likely be associated with the mining related occupation of the site, or alternatively with the early phases of the farm worker occupation of the site than what it can with the later farm worker association with the site.

Figure 106 Writing slate fragment with lines as well as a slate pencil that was used for writing. These artefacts were excavated from E8(12) Level 4.

Provenience	No. of Fragments		Provenience	No. of Fragments
E8(13) Level 1	1		Surface Collection E11	-
E8(13) Level 2	2		Surface Collection E12	
E8(13) Level 3	1		Surface Collection E13	-
E8(13) Level 4	1		Surface Collection F6	1
E8(13) Level 5	-		Surface Collection F7	-
E8(12) Level 1	2		Surface Collection F8	-
E8(12) Level 2	1		Surface Collection F9	-
E8(12) Level 3	-		Surface Collection F10	-
E8(12) Level 4	5		Surface Collection F11	-
E8(12) Level 5	-		Surface Collection F12	-
STP 1	1		Surface Collection F13	-
STP 2	4		Surface Collection G6	-
STP 3	7		Surface Collection G7	-
STP 4	-		Surface Collection G8	-
STP 5	-		Surface Collection G9	-
STP 6	4		Surface Collection G10	-
Surface Collection D6	-		Surface Collection G11	-
Surface Collection D7	-		Surface Collection G12	-
Surface Collection D8			Surface Collection G13	-
Surface Collection D9			Surface Collection I0	
Surface Collection D10	2		Surface Collection J25	-
Surface Collection D11	-		**Total**	**35**
Surface Collection D12	-			
Surface Collection D13	-			
Surface Collection D14	-			
Surface Collection D15	-			
Surface Collection D16	-			
Surface Collection E6	2			
Surface Collection E7	-			
Surface Collection E8	-			
Surface Collection E9				
Surface Collection E10	1			

8.6 Discussion of Beads

A total of 30 beads were recovered from the site. Their provenience is provided in the table below.

Provenience	No. Glass	No. Plastic	No. of Beads
E8(13) Level 1	5		5
E8(13) Level 2	4		4
E8(13) Level 3	1		1
E8(13) Level 4	4		4
E8(12) Level 1	4		4
E8(12) Level 2	4		4
E8(12) Level 4	2		2
E8(12) Level 5	2		2
STP 2		1	1
STP 3	1		1
STP 5	1		1
Surface Collection D8	1		1
Total	**29**	**1**	**30**

Twenty-nine of the beads appear to be of glass with only one confirmed plastic bead identified. The plastic bead is a large blue one from STP2. The remainder of the beads are of different shapes and colours.

Glass beads were originally introduced to Africa as trade items. The use of beads and beadwork became incorporated into various aspects of African culture not only for decoration but also for religious and social reasons.

Although the exact age of the plastic bead is not known, the use of plastic rather than glass beads would in all likelihood have been driven by the affordability of plastic beads. It can be assumed that mass produced plastic beads would have become available at the same time as the availability of mass produced plastic items during the 1940s and 1950s. This suggestion is to a certain degree supported by Van Wyk (2003) who indicates that plastic beads became widely used in Zululand during the 1960s.

From the above information it is clear that the exclusive association of the bead assemblage with the farm worker occupation of the site can be placed well outside of the parameters of conjecture. As is the case with the pottery assemblage, the beads can be seen as firmly linked to the cultural material of the second occupation of the site.

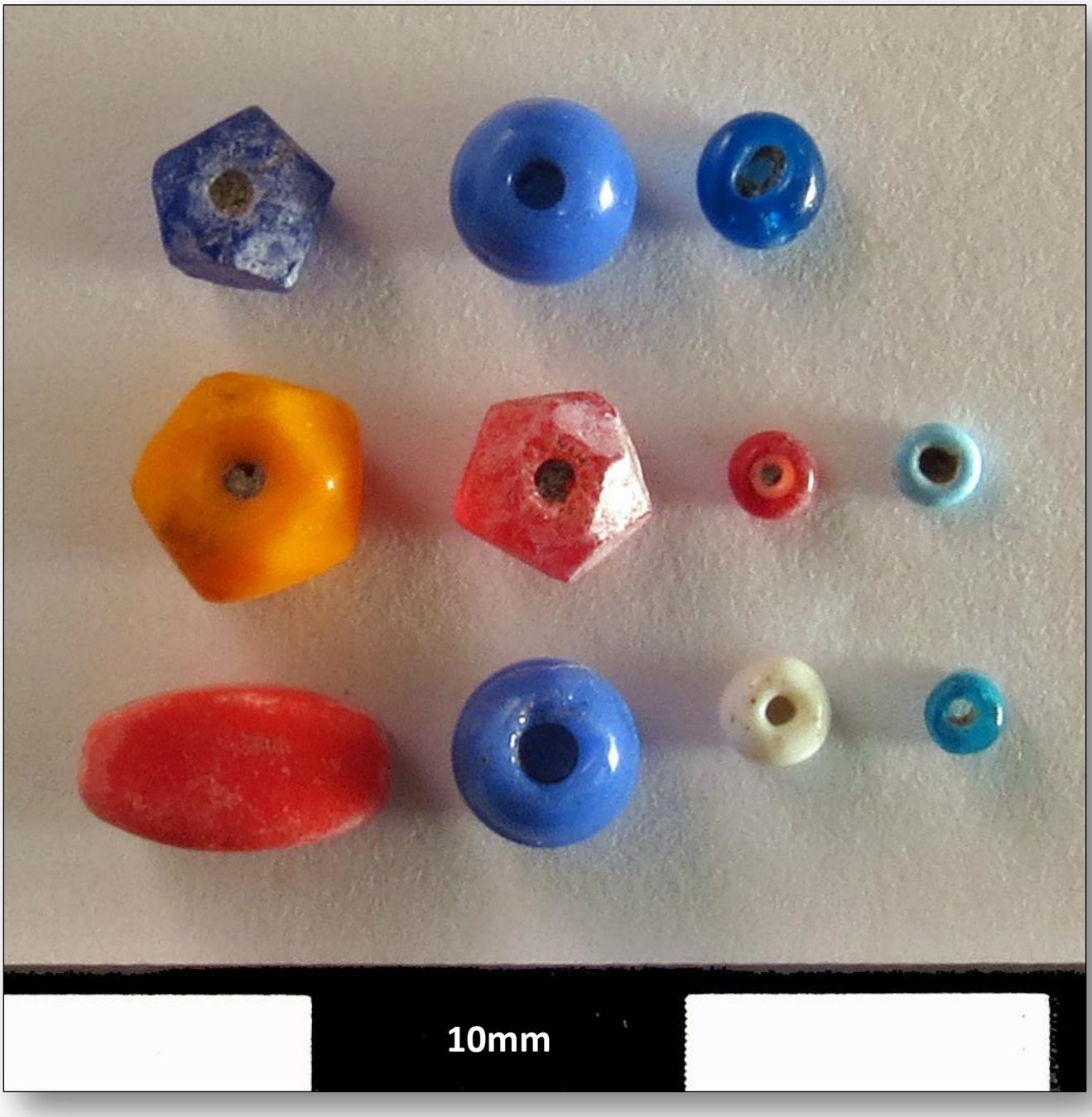


Figure 107 *Selection of beads recovered from the site. The beads depicted here were excavated from E8(12) Level 1, E8(12) Level 4, E8(12) Level 5 and E8(13) Level 4.*

8.7 Discussion of Marine and Freshwater Shell

A total of four items can be classified into this category. The definition of this group was such that it included both marine and freshwater molluscs. The assemblage comprises the tip of a green spiral shell, two fragments of what appears to be a freshwater mussel as well as a four-holed mother-of-pearl button. The provenience of these items is shown in the table below.

Provenience	No. of Fragments	MNV
E8(13) Level 3	1	1
STP3	2	1
Surface Collection D12	1	1
Total	**4**	**3**

The presence of the green spiral shell might be coincidental whereas the possible freshwater shells suggest its use as food during either one of the two occupation phases. The mother-of-pearl button can in all likelihood be associated with the early history of the site and would naturally have formed part of a person's clothing.

8.8 Discussion of Chicken Egg Shell

A total of 37 chicken egg fragments were recovered from the site. The provenience of these items is shown in the table below.

Provenience	No. of Fragments
E8(12) Level 2	28
E8(12) Level 3	3
E8(12) Level 5	1
STP1	1
STP3	4
Total	**37**

The egg fragments can be associated with both occupation phases of the site and provide insight into the food that was taken by the residents of the site. The provenience table above indicates a concentration of egg fragments in the stratigraphy of excavation block E8(12). The reason for this is not certain.

8.9 Discussion of Flora

A total of five items were recovered from the site which can be associated with flora. The provenience of these items is shown in the table below.

Provenience	No. of Fragments
E8(13) Level 2	1
E8(13) Level 2	1
STP6	3
Total	**5**

The five items from this group comprise one peach pit, three pine tree seeds and one maize corncob. Although the corncob and peach pip can provide insight into the food that was taken by the residents of the site, they are impossible to associate exclusively with any of the two occupation phases.

8.10 Discussion of Fauna

Bone was recovered from various sections of the site. For the purposes of this report, the bone assemblage was not analysed. While the bone assemblage has a largely fragmented appearance, information relating to species identification and subsequent suggestion toward protein content of the residents of the site may very well have been obtainable. However, the difficulty in differentiating between the two occupation phases of the site in the archaeological record would have been problematic.

8.11 Discussion of Plastics

With the exception of beads, all items from the collection made of plastic will be discussed here. Beads of glass and plastic will be dealt with in a separate discussion.

A total of 40 individual plastic items was recovered from the site. It would be impossible to provide an assessment of the MNV for this assemblage due to the fact that many of the plastic items are sections of insulation around electrical cables and it would be impossible to state how many of these sections originally formed part of a single length of cable.

Although plastic in one form or another has been around since at least the early 20th century, the mass production of plastic in the United States occurred during the 1940s and 1950s. In South African contexts a similar timeframe can likely be recognised. This said, many every day plastic items such as shopping bags and bottle tops were both only introduced internationally (and locally) during the late 1970s (www.sha.org) (www.wikipedia.org).

The plastics from the site represent another one of the few assemblages which can exclusively be attributed to one of the two identified occupation phases. In this case all the plastics from the site can be associated with the farm worker occupation of the site. A number of different plastic items were recovered from the site, including buttons (n=5), bottle tops (n=3), personal items such as combs (n=1), sections of coloured plastic tubes used to insulate electrical wiring (n=5) and so forth.

As mentioned above, a total of five plastic buttons was recovered from the site. It would be impossible to date these items in detail. However, it is clear that there is a stronger likelihood for these buttons to date from the second half of the 20th century than what the case may be for the first half.

Figure 108 Selection of plastic buttons from the site. From left to right these buttons were recovered from Surface Collection I0, STP2 and Surface Collection E7.

In the table below the provenience of all plastic items from the site are shown. The following observations can be made from this table:

- This assemblage is represented in all three unit types, i.e. it is present in the top levels of the excavation blocks, in a few of the shovel test pits and in some of the surface collection grids. However, in terms of the excavations of E8(13) no plastic is represented in levels deeper than E8(13) Level 3, with only one plastic item found in each of the top three levels from this block. In E8(12) only one plastic item was recovered from E(12) Level 1 with no other plastic artefacts from levels deeper down.

- The above mentioned observation seems to suggest that the deeper levels of the two archaeological excavation blocks pre-date the mass production of plastic. Although this may not necessarily indicate that these deeper levels are associated with the mining occupation of the site, an earlier phase of the farm worker occupation may also be represented in at least some of these deeper levels.

Provenience	No. of Fragments		Provenience	No. of Fragments
E8(13) Level 1	1		Surface Collection E11	-
E8(13) Level 2	1		Surface Collection E12	-
E8(13) Level 3	1		Surface Collection E13	-
E8(13) Level 4	-		Surface Collection F6	-
E8(13) Level 5	-		Surface Collection F7	1
E8(12) Level 1	4		Surface Collection F8	-
E8(12) Level 2	-		Surface Collection F9	-
E8(12) Level 3	-		Surface Collection F10	-
E8(12) Level 4	-		Surface Collection F11	-
E8(12) Level 5	-		Surface Collection F12	-
STP 1	10		Surface Collection F13	-
STP 2	8		Surface Collection G6	-
STP 3	-		Surface Collection G7	-
STP 4	-		Surface Collection G8	-
STP 5	-		Surface Collection G9	-
STP 6	8		Surface Collection G10	-
Surface Collection D6	3		Surface Collection G11	-
Surface Collection D7	-		Surface Collection G12	-
Surface Collection D8	-		Surface Collection G13	-
Surface Collection D9	-		Surface Collection I0	1
Surface Collection D10	-		Surface Collection J25	-
Surface Collection D11	-		**Total**	**40**
Surface Collection D12	-			
Surface Collection D13	-			
Surface Collection D14	-			
Surface Collection D15	1			
Surface Collection D16	-			

Surface Collection E6	-	
Surface Collection E7	1	
Surface Collection E8	-	
Surface Collection E9	-	
Surface Collection E10	-	

8.12 Discussion of Stone

Four items of stone were recovered from the site. The provenience of these items is shown in the table below.

Provenience	**No. of Fragments**
E8(12) Level 1	1
E8(12) Level 2	1
Surface Collection D9	1
Surface Collection D12	1
Total	**4**

The four items from this group comprise two geological test core sections as well as two stones which would have smooth sides which suggest that they may have been used as upper grinders. Although these grinders can be associated with the second occupation of the site the test core sections can be associated with both occupation phases, but more likely with the first occupation phase during which intensive drilling activities would have taken place at a time when the persons responsible for those drilling activities may have lived in the accommodation provided at the site.

9. INTERPRETATION OF SITE

9.1 General Interpretation of the Site

The research undertaken has clearly shown that the old building at the site was erected to provide accommodation for single white men working at the Voorspoed Diamond Mining Company Limited. Although the building would in all likelihood have been built by the mining company itself, archival evidence suggests that it was managed or owned by a person by the name of J.J. Rueff. At the cessation of mining activities in 1912 and the subsequent acquisition of the mine by the De Beers Consolidated Mines Limited the building would have been vacated and left unoccupied until the 1940s when it was re-used as accommodation for black farm workers. This latter occupation of the site would have lasted until c. 1983 when the decision was made for mining activities to be resumed.

The multicomponent characteristics of the site had been highlighted in earlier studies as well (see for example Pistorius, 2004). With the use of detailed archival and historical research coupled with archaeological mitigation measures this aspect of the site could be explored in more detail.

The archaeological mitigation has revealed artefacts from both occupation phases, whereas some assemblages of artefact types could also be assigned exclusively to one of the two occupation phases. Examples of these exclusively attributable assemblages include the cartridges which can only be associated with the mining history whereas the beads, plastics and pottery can only be associated with the second occupation of the site. In the larger assemblages such as the glass and metal groups, artefacts and groups of artefacts from both occupation phases could be identified.

While the cultural material recovered from the site reflects its multicomponent character, clear differentiation between the two occupation phases in the archaeological record on a spatial or stratigraphic basis was not possible.

9.2 First Occupation of the Site

9.2.1 Chronological Framework

The commencement of the first occupation of the site would have corresponded with the erection of the building. Although it is not exactly certain when the building was constructed, in all likelihood it would have been erected before or during the commencement of mining activities at the Voorspoed Diamond Mining Company Limited. As it is known that mining activities commenced during September 1906, it seems highly likely that the building was constructed in this year.

The cessation of mining activities in August 1912 and the subsequent transfer of the mine to De Beers in 1913 would have represented the end of the first occupation phase.

The first occupation phase can be dated from 1906 to 1912/1913.

9.2.2 Site Layout and Utilisation

The old building still existing on the site would have formed the core of the original site and would have been used exclusively for accommodation. The building has 12 identical rooms and each room would have been occupied by at least one individual at a particular time. The individuals living here would have had to pay a tenant fee to reside there. Apart from the overall layout of the building, the only remaining elements inside the rooms which can be linked to its original use are the two jacket hooks on strips of wood that are wall mounted and still found in two of the twelve rooms.

From an old photograph as well as supportive archival information at least two smaller structures were located directly adjacent to the main building comprising a mess area (i.e. dining room) and kitchen. Of course outside buildings or structures for sanitary purposes would also have been present.

Although the resolution of the same historic photograph makes identification of features other than the old building and its two directly associated structures very difficult, three further built features may be depicted to the north of the old building. However, these structures may also have been associated with four cottages used to house married quarters located north-east of the old building so their absolute association with the site is not certain. It is also possible that at least some of these three structures were temporary structures (i.e. corrugated iron on a wooden frame) or tents. What is certain is that neither these nor the two directly associated structures are depicted on a 1909 map of the site.

The archival information points to at least one Egyptian-born staff member working as a waiter and cook at the facility. Domestic cleaning staff would likely also have been working at the site. According to the principles of acceptability and customs pertaining to class and race prevalent at the time, these staff members would not have lived in the boarding house itself but likely in a structure or building on the periphery of the site or in a different locality all together.

During the archaeological mitigation a rectangular structure was observed at the southern end of the old building which corresponds with the position of one of the two depicted structures on the old photograph. It is possible that this structure is the foundation of the original mess of the boarding house. Although no structures have remained on the northern end of the building, the excavation of STP2 has revealed a large amount of charcoal. The position of this

shovel test pit is in close proximity to where the second adjacent structure depicted on the early photograph was located and the charcoal from the excavation seems to point to the use of this locality as a kitchen.

An early photograph indicates that at the time of the first occupation of the site no trees were evident on the site. The avenue of eucalyptus trees characterising the site must have been planted subsequently.

9.2.3 Defining the Residents of the First Occupation Phase

All the evidence indicates that the site was primarily used as accommodation for single white men during the first occupation phase. While no records of former residents exist, the individuals residing here would in all likelihood have travelled from other areas of South Africa and indeed the world. As was the case on the Witwatersrand gold mines at the time, the cultural makeup of the white staff at the mine would have been cosmopolitan.

Although the accommodation for senior staff members such as the general manager and compound manager was certainly provided for in the form of earmarked houses on the mining property, the accommodation provided at the site would in all likelihood have been aimed at the medium to senior management levels of the mine staff.

While the majority of the residents during this phase would have been these single white men who paid a monthly rental fee to stay in the accommodation, other people may also have been associated with the site as well. The archival research has shown that a strong likelihood exists for the site to have formed part of a boarding house managed or owned by J.J. Rueff, who is known to have employed at least one Egyptian-born waiter and cook at the facility. Cleaning staff may also have been employed by the boarding house management. These individuals may have been living at or in proximity to the site.

9.2.4 General Observations of the First Occupation Phase

Although clear differentiation between the two occupation phases in the archaeological collection is difficult, the analysis of the archaeological material recovered from the site revealed some aspects of the daily lives of the residents of the site. As the mine was located some distance from the nearest town, clear evidence for self-medication from the residents of the boarding house is evident. Incidentally, medicine bottles represents the largest percentage share of all the identified glass artefacts from the site suggesting that self-medication would have taken place on a significant level during both occupation phases. Fragments of identified medicine brand containers such as Chamberlain’s Cough Remedy, California Fig Syrup and Wood’s Great Peppermint Cure can likely be associated with the first occupation of the site and certainly so in terms of a complete cobalt blue cylindrical pill container.

As stated elsewhere the boarding house would have had a kitchen and dining room. As a result it is not surprising that glass fragments from the entire site that could be associated with food, represent the second largest group of identified bottles from the glass collection. Although the archaeological collection is limited in providing information about exactly what kind of meals would have been prepared for the residents of the boarding house, the presence of meat in the diet is suggested from the bone assemblage as well as from the presence of the cartridges collection which includes both bullets and fired casings in almost equal amounts. As argued elsewhere, the most plausible interpretation for the presence of both these components of ammunition at the site was that locally supplied or kept large livestock (such as cows) would have been brought to the boarding house to be killed and slaughtered. A strong emphasis in the provenience of these cartridges suggest that the butchering place of the site may have been located to the south-west of the old building at distances further than 15m from the building.

The fluid component (liquid sustenance) of the residents of the mine accommodation would have comprised lime cordials (with the companies of L. Rose & Company and Brooke's Lemos Ltd) clearly present and some mineral water supplied by the Kroonstad Mineral Water Company Limited. Plain water, coffee and tea may of course also have been consumed, an inference supported by the presence of tea (drinking) cups and fragments of teapot ware. A liquor component is represented and includes beer bottles of the South African Breweries and Crown Brewery as well as distilled beverages in the form of a Walker's Kilmarnock Whiskey. Whether the liquor was supplied by the boarding house or represent personally acquired items is currently not certain.

The daily activities of the residents of the boarding house would be less easy to reconstruct from the archaeological analysis itself in that these men were all employed at the mine and would have spent most of their time working away from this site. The association of the site with the mine and its activities is however evident, though in all likelihood more as a result of the geographic proximity between the two places than necessarily a reflection of the type of work undertaken by the residents of the site. Recovered mine-related artefacts include railway pegs that were used to fasten rails on to sleepers along the mine's rail transport network as well as a fragment of a metal identification armband containing an acronym for the Voorspoed Diamond Mining Company Limited and which would have been used at the time to reduce desertion amongst the black mine workers. By a significant margin the largest component of the metal artefacts that could be identified were construction and building related items such as nails, screws, nuts, bolts and washers. Although it would be very difficult to accurately state which of these construction-related items can exclusively be associated with the first occupation of the site, their presence in great numbers in the collection may be another indication of the association with the nearby mining activities but could also have a more direct link to the actual construction of the old building itself i.e. these items may have been used in the erection of the old building.

Aspects such as clothing would be less easy to reconstruct from the archaeological collection alone. A number of buttons were recovered from the site but for the most part comprised plastic four-holed ones from the more recent

past. One mother-of-pearl button as well as a domed metal button can in all likelihood be associated with the first occupation of the site. Similarly, although a number of belt buckles were recovered it would be impossible to state whether these can exclusively be associated with the first occupation phase.

9.3 Second Occupation of the Site

9.3.1 Chronological Framework

The second phase can be associated with the use of the site as accommodation by black farm workers. The historical study has shown that the site was in all likelihood already occupied by 1951. One potentially earlier chronological marker was identified which may indicate that the site had already been in use during the 1940s. The item in question is a South African halfpenny that was minted in 1942 and recovered from the surface collection at J25. As with all coinage the date on the coin does not necessarily represent the year in which the item was discarded at the site as coins would have been kept in circulation for any number of years past its minting date. While the exact circulation times are not presently known, the nine years between the mint date on the coin and the first evidence for the reuse of the site appears more than what a standard circulation period for coins would have been. However, the Second World War (1939 – 1945) may have played a part in this. As it stands the reoccupation of the site had certainly occurred by 1951 with the possibility of it being a few years earlier as well.

During the desktop study it was found that the first historic aerial photograph on which the site is depicted in an unoccupied state is the 1983 image. This date corresponds with the information from the report of Dr. Julius Pistorius (2004) which indicates that during the mid-1980s the recommendation was made for mining to continue at Voorspoed Mine. For health and safety reasons, the continuation of mining activities near the site would have required the residents of the site to be relocated to a place further away from the proposed mining activities to ensure their safety.

The second occupation of the site can be safely dated from c. 1951 to c. 1983.

9.3.2 Site Layout and Utilisation

Apart from a car body of a 1941 to 1946 Chevrolet Pickup, the most visible feature on the site which points to an occupation phase other than the original mine accommodation, is the existence of a clay and cow dung mixture plaster that was applied to extensive sections of the outside walls of the old building. Furthermore, various geometric patterns were made in the plaster. This form of domestic mural decoration is typical of the Sesotho and is known as *ditema.*

The historical aerial photographs that were assessed as part of this study have also revealed that during the period from 1951 to 1983 a number of different structures were associated with the old building. For example, on the 1951 image a rectangular structure is depicted north of the old building and on the 1964 image a structure is depicted west of the old building and another one to its north-west. This latter structure is also depicted on the 1973 image. Incidentally, the first edition of the 2727AC topographical sheet that was surveyed in 1963 depicts a cluster of five buildings in proximity to the site. It is evident that the second occupation of the site would have entailed the erection of a number of smaller rectangular and square structures which would in all likelihood have comprised stone foundations on top of which corrugated iron or mudbrick walls would have been erected. These structures would primarily have been dwellings.

In this regard it appears likely that at least some of the foundation structures identified and drawn in the R.C. de Jong report (De Jong, 2006) to the north of the old building would have represented the remains of the structures from this second occupation phase.

Apart from the old building that was evidently used as accommodation, none of the structures from this second occupation phase are still to be found on site.

9.3.3 Defining the Residents of the Second Occupation Phase

The residents of the second occupation of the site were black farm workers and their families. The existence of decorative wall plaster (*ditema)* on the exterior walls of the building does not only suggest that the persons living here at the time may have been Southern Sotho, but also that women were present. In Southern Sotho culture the practice of decorative mural art is essentially a female activity. The existence of pottery fragments and beads from the site also point to the presence of women at the site during this time. The presence of children is not clearly indicated in the archaeological record due to the difficulties encountered in clearly differentiating between the two occupation phases, the recovery of writing fragments may point to school-going children being present at the site.

9.3.4 General Observation of the Second Occupation Phase

The analysis of the archaeological material from the site has revealed that at least three of the artefact assemblages can exclusively be associated with the second occupation of the site. These include the beads, pottery and plastics. The presence of beads as well as pottery, combined with the presence of *ditema* on the walls of the old building, indicate that the second occupation of the site would have been the first time in its history that women would have been living at the site. This observation can made as all three these aspects can culturally be coupled to activities and cultural goods that are typically associated with women. This corresponds with the common historical and contemporary practice of farm workers and their families living together on farms.

The presence of children on the site is also reflected in the archaeological record. As is the case with women, it is clear that children would not have been present during the first occupation of the site and as a result any artefacts that can be associated with infants can clearly be associated with the second occupation of the site. The only group of artefacts which can at first glance be associated directly with children are the 35 fragments of writing slate and associated writing pens as well as the fragments of porcelain dolls and doll's china. Slate would have been used by children on a daily basis at school, and in South African contexts typically so before c. 1950. However, writing slate was also known to have been used for domestic and office uses by adults due to its accessibility and affordability. The collection of slate fragments may therefore be associated with both occupation phases.

Due to the difficulties of differentiating the cultural material associated with the two occupation phases, the archaeological material has revealed very little exclusive information on the daily life of the farm workers. The issue is confounded by the fact that certain artefact types would contain less identifiable markers and information the more recent the date of manufacture. If one uses glass as an example of a tool with which aspects relating to the daily life of the first occupation could profitably be pursued, more recent glass items characteristically contain less identifiable and visible markers with which to associate certain fragments with certain brands, with significant sections of this information contained on applied labels rather than on the glass itself. Once the applied labels have disappeared, very little remains behind in the archaeological record with which reconstructions can be made.

Aspects relating to liquid sustenance were recovered and point to the use of soft drinks still existing today such as Coca-Cola, Fanta and Lemon Twist. Beer fragments associated with the second occupation were also found. At least sections of the bone collection from the site can likely also be attributed to the second occupation which in turn would reflect the presence of protein in the diet of the second phase occupants.

The pottery assemblage points to the use of traditional clay pots for the utilitarian uses such as the carrying and storage of water. Four plastic buttons point to the clothing worn by the occupants of the site at the time. As mentioned above, a number of metal belt buckles were recovered from the site. Although undated, at least some of these items may also be a reflection of life during the second occupation of the site.

10. SIGNIFICANCE OF ARCHAEOLOGICAL SITE

In the Heritage Impact Assessment undertaken by Dr. J.C.C. Pistorius (Pistorius, 2004) the building was assessed to be of historical significance. This assessment was based on criteria such as Ideological (Symbolic) Significance, Aesthetic Significance, Uniqueness, Cultural Historical Significance, State of Preservation and Research Value. He adds that the building "*...can be considered to be of some significance, considering criteria such as its cultural historical significance, research value and uniqueness. However, this structure is very dilapidated and it is doubtful whether it can be restored to its former grandeur – even if it can be conserved*".

In the Phase 2 Heritage Impact Assessment undertaken by Dr. Robert de Jong of Cultmatrix (De Jong, 2005) the cultural significance of the building was assessed by using a number of criteria including a) Importance in the community or pattern of history, b) Possession of uncommon, rare or endangered aspects of natural or cultural heritage, c) Potential to yield information that will contribute to an understanding of the natural and cultural heritage, d) Importance in demonstrating the principal characteristics of a particular class of natural or cultural places or objects, e) Importance in exhibiting particular aesthetic characteristics valued by a community or cultural group, f) Importance in demonstrating a high degree of creative or technical achievement at a particular period, g) Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons, h) Strong or special association with the life and work of a person, group or organisation of importance in history and i) History of slavery. The report established that the synoptic cultural significance of the site was high. It continues by stating that although the cultural significance of the building is high, its heritage and conservation values are low.

The architectural historical assessment undertaken Mr. Mauritz Naudé (Naudé, 2013) found that even "..*though the building is of historic, architectural and contextual significance, its location on the rim of the open cast mine where blasting with explosives is done makes it impossible to protect the building in situ. The structural integrity of the building has deteriorated to the extent that the building is slowly disintegrating due to movement in the walls, deterioration of the building materials and loss of building elements. The most detrimental activity that would eventually cause the collapse of the building is the frequent blasting in the mining pit about 40m from the building*."

When one looks at the non-structural archaeological component of the site, it is evident that at the time of the assessments undertaken in 2005, the site was much less disturbed and could be associated with middens to the north-east, north and west. At the time the site appears to have contained extensive undisturbed deposits of cultural material which would have provided the site with a high level of significance on a cultural historical and scientific potential basis. As all the evidence point to the commencement of the occupation of the site in 1906, the site and its associated material at the time would however have been 99 years old and as a result would not have been defined as an archaeological site in terms of the National Heritage Resources Act (No. 25 of 1999). Due to disturbances to the direct proximity of the building in the form of earthmoving activities and road construction, and disturbances to the wider cultural landscape as a result of mining activities, the archaeological context and fabric of the site in its present state is diminished. Whereas it is not presently known when these disturbances took place, they have had an impact on the archaeological context and content of the site. While the archaeological site can still be considered to have cultural historical significance, its value for providing scientific information on that cultural history other than what is contained in this report, can be considered low. Furthermore, the lack of preserved proximal and regional context for the site lowers its overall significance. As a result the archaeological site in its entirety and in its present condition can be considered to be of medium/low significance.

11. CONCLUSIONS

The site can conclusively be defined as a multicomponent site which started off as accommodation for single white men working at the Voorspoed Diamond Mining Company Limited and had a second occupation phase relating to its use as accommodation for black farm workers. The archaeological context is poor and any differentiation between the two occupation phases is difficult to accomplish. However, this study has combined the results from archival and historical desktop work with archaeological mitigation and excavation to provide a detailed history of the site.

12. RECOMMENDATIONS

No further archaeological research is required at the site. This can be said as the completed archaeological excavations and associated mitigation measures resulted in a significant sample of the cultural material associated with the site. Combined with the thorough archival and historical studies undertaken, a detailed understanding of the history of the site was recorded. Furthermore, the building itself was assessed by architectural historian Mr. Mauritz Naudé who agreed that it can be destroyed. He also compiled a detailed recording of the building comprising photographs and measured drawings. It is recommended that a destruction permit be issued for the site on the undertaking that the following conditions will be met by the mining company within two years after the destruction permit is issued:

- A poster display must be compiled and established at the main entrance to the mine. This display should provide information on the history of mining activities at the mine and specifically the history of the Voorspoed Diamond Mining Company Limited. The history of the old building should also be provided in the display. The display must be illustrated with old photographs of the mine and historic maps.

- A small publication must be funded by the mining company which records the history of the early mining activities and the Voorspoed Diamond Mining Company Limited in particular. The history of the old building should also be included in this publication.

After the cessation of mining activities and subsequent rehabilitation in the area where the site is located, the following must be undertaken:

- The site should be memorialized with the erection of a laser printed granite plaque at the spot where the site is located. This plaque should provide a short overview of the history of the Voorspoed Diamond Mining Company Limited as well as the site.

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Historic Topographic Maps

The historic topographic maps used in this report were obtained from the Directorate: National Geo-spatial Information of the Department of Rural Development & Land Reform, Cape Town.

Google Earth

All satellite depictions and overlays used in this report are from Google Earth.

Annexure A

Glass Analysis Tables

LOCALE	VSP 1
Grid No	E9 (13)
Level	Level 1

275	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**271**		9	3	3			256	15		
aqua	15				1			14	1	6.67	
light green											
green	4		1	2				1	1	6.67	
dark green	30				1			29	2	13.33	
colourless	185		8	1	1			175	8	53.33	
opaque-white											
`solarised'											
light blue											
blue	7							7	1	6.67	
turquoise											
pink	2							2	1	6.67	
brown	28							28	1	6.67	
yellow											
FLAT	4										
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	E9 (13)
Level	2

138	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**131**	1	2	4		6		118	11		
aqua	9			1		1		7	1	9.09	
light green											
green	4							4	1	9.09	
dark green	8					1		7	1	9.09	
colourless	86		2	2		3		79	2	18.18	
opaque-white	1							1	1	9.09	
`solarised'											
light blue											
blue	9	1		1				7	2	18.18	
turquoise											
pink	3							3	1	9.09	
brown	8					1		7	1	9.09	
yellow	3							3	1	9.09	
FLAT	6										
TABLEWARE											
ORNAMENTS	1		Green and clear marble								

LOCALE	VSP 1
Grid No	E9 (13)
Level	Level 3

108	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**104**		6	3		9		86	17		
aqua	2							2	1	5.88	
light green	2							2	1	5.88	
green	6							6	1	5.88	
dark green	5		1					4	2	11.76	
colourless	84		5	3		9		67	9	52.94	
opaque-white											
`solarised'											
light blue											
blue	2							2	1	5.88	
turquoise											
pink	1							1	1	5.88	
brown	2							2	1	5.88	
yellow											
FLAT	3										
TABLEWARE											
ORNAMENTS	1		Clear light bulb								

LOCALE	VSP 1
Grid No	E9 (13)
Level	Level 5

277	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**253**		10	5		3		235	15		
aqua	29		5					24	2	13.33	
light green	35		1					34	2	13.33	
green											
dark green	15		1					14	3	20	
colourless	151		2	1				148	4	26.67	
opaque-white											
`solarised'	11		1	4		3		3	1	6.67	
light blue											
blue	2							2	2	13.33	
turquoise											
pink											
brown	10							10	1	6.67	
yellow											
FLAT	24										
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	E9 (12)
Level	Level 1

233	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**233**		7	2	1	5		218	15		
aqua	24					2		22	1	6.67	
light green	13							13	3	20	
green	4			2	1			1	1	6.67	
dark green	12		1					11	3	20	
colourless	148		3			2		143	3	20	
opaque-white											
`solarised'											
light blue											
blue	6							6	1	6.67	
turquoise											
pink	12		2					10	1	6.67	
brown	14		1			1		12	2	13.33	
yellow											
FLAT											
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	E9 (12)
Level	Level 2

59	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**55**		3	2	1			49	12		
aqua	3							3	1	8.33	
light green											
green	2							2	1	8.33	
dark green	4							4	1	8.33	
colourless	31		1					30	2	16.67	
opaque-white	1		1						1	8.33	
`solarised'	4			1				3	1	8.33	
light blue											
blue	4		1	1				2	2	16.67	
turquoise											
pink	3				1			2	2	16.67	
brown	3							3	1	8.33	
yellow											
FLAT	4										
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	E9 (12)
Level	Level 3

76	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**69**		4	1		2		62	10		
aqua	7							7	1	10	
light green											
green	5		1					4	1	10	
dark green	5							5	2	20	
colourless	29		1			2		26	2	20	
opaque-white	1							1	1	10	
`solarised'											
light blue											
blue	15		2					13	1	10	
turquoise											
pink	3			1				2	1	10	
brown	4							4	1	10	
yellow											
FLAT	6										
TABLEWARE	1		Clear glass tube								
ORNAMENTS											

LOCALE	VSP 1
Grid No	E9 (12)
Level	Level 4

213	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**213**		6	2				205	13		
aqua	4							4	1	7.69	
light green											
green	26							26	1	7.69	
dark green	37		1					36	2	15.38	
colourless	124		5	2				117	5	38.46	
opaque-white											
`solarised'											
light blue											
blue	9							9	1	7.69	
turquoise	1							1	1	7.69	
pink	2							2	1	7.69	
brown	10							10	1	7.69	
yellow											
FLAT											
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	E9 (12)
Level	Level 5

81	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**81**			2	5			74	8		
aqua	5							5	1	12.5	
light green											
green	34				4			30	1	12.5	
dark green											
colourless	20				1			19	1	12.5	
opaque-white	1							1	1	12.5	
`solarised'	11							11	1	12.5	
light blue											
blue	5			2				3	1	12.5	
turquoise											
pink	2							2	1	12.5	
brown	3							3	1	12.5	
yellow											
FLAT											
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	E9
Level	STP1

74	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**74**		1			1		72	8		
aqua	3							3	1	12.5	
light green											
green	6							6	1	12.5	
dark green	7							7	1	12.5	
colourless	35		1					34	2	25	
opaque-white											
`solarised'											
light blue											
blue	9							9	1	12.5	
turquoise											
pink	10					1		9	1	12.5	
brown	4							4	1	12.5	
yellow											
FLAT											
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	
Level	STP2

229	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**229**		6	5		8		210	11		
aqua											
light green	2							2	1	9.09	
green											
dark green	3							3	1	9.09	
colourless	194		5	4		6		179	5	45.45	
opaque-white	2							2	1	9.09	
`solarised'											
light blue											
blue	4		1					3	1	9.09	
turquoise											
pink	2					2			1	9.09	
brown	22			1				21	1	9.09	
yellow											
FLAT											
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	
Level	STP3

89	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**89**		5	2	1			81	10		
aqua	7							7	1	10	
light green											
green	3							3	1	10	
dark green	10		1					9	1	10	
colourless	54		2	1				51	4	40	
opaque-white											
`solarised'	7		2	1	1			3	1	10	
light blue											
blue	1							1	1	10	
turquoise											
pink											
brown	7							7	1	10	
yellow											
FLAT											
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	
Level	STP4

7	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**7**		1					6	5		
aqua	1		1						1	20	
light green											
green	1							1	1	20	
dark green											
colourless	3							3	1	20	
opaque-white											
`solarised'											
light blue											
blue	1							1	1	20	
turquoise											
pink											
brown	1							1	1	20	
yellow											
FLAT											
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	
Level	STP5

30	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**20**							20	5		
aqua											
light green											
green	2							2	1	20	
dark green	1							1	1	20	
colourless	15							15	1	20	
opaque-white											
`solarised'											
light blue											
blue	1							1	1	20	
turquoise											
pink											
brown											
yellow	1							1	1	20	
FLAT	10										
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	
Level	STP6

49	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**49**		4	2		1		42	6		
aqua											
light green											
green	8							8	1	16.67	
dark green											
colourless	37		3	2		1		31	3	50	
opaque-white											
`solarised'											
light blue											
blue	1							1	1	16.67	
turquoise											
pink											
brown	3		1					2	1	16.67	
yellow											
FLAT											
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	D6
Level	Surface Collection

118	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**116**		5	7	1	2		101	12		
aqua	9				1			8	1	8.33	
light green											
green	13		1					12	1	8.33	
dark green	15		1	2		1		11	2	16.67	
colourless	69		3	4		1		61	5	41.67	
opaque-white	1							1	1	8.33	
`solarised'											
light blue											
blue	5			1				4	1	8.33	
turquoise											
pink											
brown	4							4	1	8.33	
yellow											
FLAT	2										
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	D7
Level	Surface Collection

67	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**64**		9	1		7		47	15		
aqua	9					1		8	2	13.33	
light green											
green	2			1				1	1	6.67	
dark green	4							4	2	13.33	
colourless	34		8			4		22	6	40	
opaque-white											
`solarised'											
light blue											
blue	3					1		2	1	6.67	
turquoise											
pink	4		1					3	2	13.33	
brown	8					1		7	1	6.67	
yellow											
FLAT	3										
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	D8
Level	Surface Collection

102	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**94**		3			4		87	10		
aqua	7					2		5	2	20	
light green	7							7	1	10	
green	5							5	1	10	
dark green	11		1					10	1	10	
colourless	58		2			2		54	2	20	
opaque-white											
`solarised'											
light blue											
blue	2							2	1	10	
turquoise											
pink	3							3	1	10	
brown	1							1	1	10	
yellow											
FLAT	8										
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	D9
Level	Surface Collection

127	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**109**		9	4		10		86	12		
aqua	34		2	2		3		27	1	8.33	
light green	1							1	1	8.33	
green	5		1					4	1	8.33	
dark green	13		1			2		10	2	16.67	
colourless	39		5	2		3		29	3	25	
opaque-white	1							1	1	8.33	
`solarised'											
light blue											
blue	6							6	1	8.33	
turquoise											
pink	3					1		2	1	8.33	
brown	7					1		6	1	8.33	
yellow											
FLAT	18										
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	D10
Level	Surface Collection

63	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**57**		1	2		1	2	51	9		
aqua	3			1			1	1	2	22.22	
light green											
green	2							2	1	11.11	
dark green	7							7	1	11.11	
colourless	33		1	1			1	30	2	22.22	
opaque-white											
`solarised'											
light blue	1							1	1	11.11	
blue											
turquoise											
pink	2					1		1	1	11.11	
brown	9							9	1	11.11	
yellow											
FLAT	6										
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	D11
Level	Surface Collection

18	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**15**			1				14	5		
aqua	1							1	1	20	
light green											
green	2							2	1	20	
dark green	1							1	1	20	
colourless	5			1				4	1	20	
opaque-white											
`solarised'											
light blue											
blue											
turquoise											
pink	6							6	1	20	
brown											
yellow											
FLAT	3										
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	D12
Level	Surface Collection

39	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**39**		4	1		4		30	6		
aqua	4		1			1		2	1	16.67	
light green											
green	5			1		1		3	1	16.67	
dark green	3							3	1	16.67	
colourless	22		2			1		19	1	16.67	
opaque-white											
`solarised'											
light blue											
blue											
turquoise											
pink	2					1		1	1	16.67	
brown	3		1					2	1	16.67	
yellow											
FLAT											
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	D13
Level	Surface Collection

39	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**36**		3			3		30	9		
aqua	3					1		2	1	11.11	
light green											
green	1							1	1	11.11	
dark green	3							3	2	22.22	
colourless	16		1			2		13	2	22.22	
opaque-white											
`solarised'											
light blue											
blue	3							3	1	11.11	
turquoise											
pink	5		2					3	1	11.11	
brown	5							5	1	11.11	
yellow											
FLAT	3										
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	D14
Level	Surface Collection

20	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**18**		2		1			15	7		
aqua	4							4	1	14.28	
light green											
green	2		1					1	1	14.28	
dark green	2							2	1	14.28	
colourless	6		1		1			4	1	14.28	
opaque-white											
`solarised'											
light blue											
blue	1							1	1	14.28	
turquoise											
pink	1							1	1	14.28	
brown	2							2	1	14.28	
yellow											
FLAT	2										
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	D15
Level	Surface Collection

53	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**53**		4	1		1		47	8		
aqua	4					1		3	2	25	
light green											
green	10		3	1				6	1	12.5	
dark green	3							3	1	12.5	
colourless	14		1					13	1	12.5	
opaque-white											
`solarised'											
light blue											
blue	3							3	1	12.5	
turquoise											
pink	14							14	1	12.5	
brown	5							5	1	12.5	
yellow											
FLAT											
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	D16
Level	Surface Collection

30	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**26**		1	2				23	8		
aqua	8			2				6	2	25	
light green											
green	1							1	1	12.5	
dark green	3							3	2	25	
colourless	12		1					11	1	12.5	
opaque-white											
`solarised'											
light blue											
blue	1							1	1	12.5	
turquoise											
pink											
brown	1							1	1	12.5	
yellow											
FLAT	4										
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	E6
Level	Surface Collection

82	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**80**		4	1	1	4		70	9		
aqua	8							8	1	11.11	
light green											
green	6							6	1	11.11	
dark green	2				1			1	1	11.11	
colourless	58		4	1		4		49	4	44.44	
opaque-white											
`solarised'	1							1	1	11.11	
light blue											
blue											
turquoise											
pink											
brown	5							5	1	11.11	
yellow											
FLAT	2										
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	E7
Level	Surface Collection

13	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**11**		2	2		2		5	5		
aqua	1			1					1	20	
light green											
green	1							1	1	20	
dark green											
colourless	8		2	1		2		3	2	40	
opaque-white											
`solarised'											
light blue											
blue											
turquoise											
pink											
brown	1							1	1	20	
yellow											
FLAT	2										
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	E8
Level	Surface Collection

24	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**24**		4	1		2		17	9		
aqua											
light green	2			1				1	1	11.11	
green	3							3	1	11.11	
dark green	2							2	1	11.11	
colourless	10		3			2		5	2	22.22	
opaque-white											
`solarised'	1							1	1	11.11	
light blue											
blue	1							1	1	11.11	
turquoise											
pink	3							3	1	11.11	
brown	2		1					1	1	11.11	
yellow											
FLAT											
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	E9
Level	Surface Collection

39	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**36**		3	1		3		29	9		
aqua	5		1					4	2	22.22	
light green											
green	6		1	1				4	2	22.22	
dark green	4		1					3	1	11.11	
colourless	17					3		14	3	33.33	
opaque-white											
`solarised'											
light blue											
blue											
turquoise											
pink											
brown	4							4	1	11.11	
yellow											
FLAT	3										
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	E10
Level	Surface Collection

41	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**37**			2		2		33	8		
aqua	3							3	1	12.5	
light green											
green	4							4	1	12.5	
dark green	5					1		4	1	12.5	
colourless	16			2		1		13	1	12.5	
opaque-white											
`solarised'											
light blue	1							1	1	12.5	
blue	1							1	1	12.5	
turquoise											
pink	1							1	1	12.5	
brown	6							6	1	12.5	
yellow											
FLAT	4										
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	E11
Level	Surface Collection

37	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**32**					3		29	8		
aqua	1							1	1	12.5	
light green											
green	6					1		5	1	12.5	
dark green	4							4	2	25	
colourless	19					2		17	2	25	
opaque-white											
`solarised'											
light blue											
blue	1							1	1	12.5	
turquoise											
pink											
brown	1							1	1	12.5	
yellow											
FLAT	5										
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	E12
Level	Surface Collection

45	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**42**		3	5		1		33	9		
aqua	7		1	1				5	1	11.11	
light green											
green	6			2		1		3	1	11.11	
dark green	4		1					3	2	22.22	
colourless	16		1					15	2	22.22	
opaque-white											
`solarised'	5							5	1	11.11	
light blue											
blue	1			1					1	11.11	
turquoise											
pink											
brown	3			1				2	1	11.11	
yellow											
FLAT	3										
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	E13
Level	Surface Collection

14	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**14**							14	5		
aqua	2							2	1	20	
light green											
green	4							4	1	20	
dark green											
colourless	6							6	1	20	
opaque-white											
`solarised'											
light blue											
blue	1							1	1	20	
turquoise											
pink											
brown	1							1	1	20	
yellow											
FLAT											
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	F6
Level	Surface Collection

21	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**18**		2	1	1	1		13	6		
aqua	4							4	1	16.67	
light green											
green	4				1			3	1	16.67	
dark green											
colourless	5		1					4	2	33.33	
opaque-white											
`solarised'											
light blue											
blue	2		1					1	1	16.67	
turquoise											
pink											
brown	3			1		1		1	1	16.67	
yellow											
FLAT	3										
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	F7
Level	Surface Collection

16	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**15**		1			2		12	7		
aqua	4							4	1	14.28	
light green	1							1	1	14.28	
green	1							1	1	14.28	
dark green	1							1	1	14.28	
colourless	7		1			2		4	2	28.57	
opaque-white											
`solarised'											
light blue											
blue											
turquoise											
pink											
brown	1							1	1	14.28	
yellow											
FLAT											
TABLEWARE	1		Opaque-green cup or jug handle								
ORNAMENTS											

LOCALE	VSP 1
Grid No	F8
Level	Surface Collection

5	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**5**							5	4		
aqua	1							1	1	25	
light green											
green	1							1	1	25	
dark green											
colourless	1							1	1	25	
opaque-white											
`solarised'											
light blue											
blue											
turquoise											
pink	2							2	1	25	
brown											
yellow											
FLAT											
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	F11
Level	Surface Collection

2	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**2**		2						2		
aqua											
light green											
green											
dark green											
colourless	2		2						2	100	
opaque-white											
`solarised'											
light blue											
blue											
turquoise											
pink											
brown											
yellow											
FLAT											
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	F13
Level	Surface Collection

3	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**3**							3	2		
aqua											
light green											
green	1							1	1	50	
dark green											
colourless	2							2	1	50	
opaque-white											
`solarised'											
light blue											
blue											
turquoise											
pink											
brown											
yellow											
FLAT											
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	G6
Level	Surface Collection

14	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**14**		1	1		1		11	2		
aqua											
light green											
green											
dark green											
colourless	13		1	1		1		10	1	50	
opaque-white											
`solarised'											
light blue											
blue											
turquoise											
pink											
brown	1							1	1	50	
yellow											
FLAT											
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	G7
Level	Surface Collection

3	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**3**		1					2	2		
aqua											
light green											
green											
dark green											
colourless	3		1					2	2	100	
opaque-white											
`solarised'											
light blue											
blue											
turquoise											
pink											
brown											
yellow											
FLAT											
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	I0
Level	Surface Collection

131	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**128**		2			14		112	13		
aqua	9							9	1	7.69	
light green											
green	2							2	1	7.69	
dark green	5					2		3	1	7.69	
colourless	98		2			12		84	8	61.54	
opaque-white											
`solarised'											
light blue											
blue	2							2	1	7.69	
turquoise											
pink											
brown	12							12	1	7.69	
yellow											
FLAT	3										
TABLEWARE											
ORNAMENTS											

LOCALE	VSP 1
Grid No	J39
Level	Surface Collection

18	number	complete	rim & neck	body	body & base	base	tubes	unidentifiable	MNV	% MNV	Diagnostic
CONTAINER	**14**		2	3	1	3		5	7		
aqua	4			1	1			2	1	14.28	
light green											
green	1			1					1	14.28	
dark green											
colourless	5					3		2	3	42.86	
opaque-white											
`solarised'											
light blue											
blue	3		1	1				1	1	14.28	
turquoise											
pink											
brown	1		1						1	14.28	
yellow											
FLAT	3										
TABLEWARE	1		Lip of a jug								
ORNAMENTS											

Annexure B

Metal Analysis Tables

LOCALE	VSP 1
Grid No	E9 (12)
Level	Level 1

95	No.	Wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	49	34	8	1	2			3				1							
Household	7																		
Tents																			
Clothing																			
Agricultural																			
Cartridges																			
Railways																			
Transport																			
Mining																			
Unidentified	39																		

LOCALE	VSP 1
Grid No	E9 (12)
Level	Level 2

106	No.	Wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	14	6	5		1			2											
Household	2																		
Tents	1																		
Clothing																			
Agricultural																			
Cartridges	2																		1
Railways																			
Transport																			
Mining																			
Unidentified	87																		

LOCALE	VSP 1
Grid No	E9 (12)
Level	Level 3

110	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	11	7			2		2												
Household	2																		
Tents																			
Clothing																			
Agricultural																			
Cartridges	1																		
Railways																			
Transport																			
Mining																			
Unidentified	96																		

LOCALE	VSP 1
Grid No	E9 (12)
Level	Level 4

223	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	19	9	7		3														
Household																			
Tents																			
Clothing																			
Agricultural	1																		
Cartridges	3																		
Railways																			
Transport																			
Mining																			
Unidentified	200																		

LOCALE	VSP 1
Grid No	E9 (12)
Level	Level 5

25	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	2	2																	
Household																			
Tents																			
Clothing																			
Agricultural																			
Cartridges																			
Railways																			
Transport																			
Mining																			
Unidentified	23																		

LOCALE	VSP 1
Grid No	E9 (13)
Level	Level 1

102	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	75	57	16					1							1				
Household	1																		
Tents																			
Clothing																			
Agricultural																			
Cartridges	1																		1
Railways																			
Transport																			
Mining																			
Unidentified	25																		

LOCALE	VSP 1
Grid No	E9 (13)
Level	Level 2

119	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	30	22	7					1											
Household	2																		
Tents																			
Clothing																			
Agricultural																			
Cartridges	1																		
Railways																			
Transport																			
Mining																			
Unidentified	86																		

LOCALE	VSP 1
Grid No	E9 (13)
Level	Level 3

104	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	22	15	5	1		1													
Household	3																		
Tents																			
Clothing	1																		
Agricultural																			
Cartridges																			
Railways																			
Transport																			
Mining																			
Unidentified	78																		

LOCALE	VSP 1
Grid No	E9 (13)
Level	Level 4

159	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	44	27	6	1	4			1										5	
Household	1																		
Tents																			
Clothing	1																		1
Agricultural	1																		
Cartridges	2																		2
Railways																			
Transport																			
Mining																			
Unidentified	110																		

LOCALE	VSP 1
Grid No	E9 (13)
Level	Level 5

13	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	1		1																
Household																			
Tents																			
Clothing																			
Agricultural																			
Cartridges																			
Railways																			
Transport																			
Mining																			
Unidentified	12																		

LOCALE	VSP 1
Grid No	
Level	STP1

96	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	22	14	6				2												
Household																			
Tents																			
Clothing																			
Agricultural																			
Cartridges	1																		
Railways																			
Transport																			
Mining																			
Unidentified	73																		

LOCALE	VSP 1
Grid No	
Level	STP2

282	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	32	18	5		4			4									1		
Household	4																		
Tents																			
Clothing	1																		
Agricultural																			
Cartridges																			
Railways																			
Transport																			
Mining																			
Unidentified	245																		

LOCALE	VSP 1
Grid No	
Level	STP3

60	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	9	2	4		2			1											
Household	1																		1
Tents																			
Clothing																			
Agricultural																			
Cartridges																			
Railways																			
Transport																			
Mining																			
Unidentified	50																		

LOCALE	VSP 1
Grid No	
Level	STP4

3	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction																			
Household																			
Tents	1																		
Clothing																			
Agricultural																			
Cartridges																			
Railways																			
Transport																			
Mining																			
Unidentified	2																		

LOCALE	VSP 1
Grid No	
Level	STP5

17	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	8	7						1											
Household	1																		
Tents																			
Clothing																			
Agricultural																			
Cartridges																			
Railways																			
Transport																			
Mining																			
Unidentified	8																		

LOCALE	VSP 1
Grid No	
Level	STP6

134	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	10	4			2		1	3											
Household	1																		1
Tents																			
Clothing																			
Agricultural																			
Cartridges																			
Railways																			
Transport																			
Mining																			
Unidentified	123																		

LOCALE	VSP 1
Grid No	D6
Level	Surface Collection

26	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	19	13	2			1		1	1							1			
Household	2																		
Tents																			
Clothing																			
Agricultural																			
Cartridges																			
Railways	1																		
Transport																			
Mining																			
Unidentified	4																		

LOCALE	VSP 1
Grid No	D7
Level	Surface Collection

13	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	9	5	2								1	1							
Household																			
Tents																			
Clothing	1																		
Agricultural																			
Cartridges																			
Railways																			
Transport																			
Mining																			
Unidentified	3																		

LOCALE	VSP 1
Grid No	D8
Level	Surface Collection

20	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	11	5	5		1														
Household	1																		
Tents																			
Clothing																			
Agricultural	2																		
Cartridges	1																		
Railways	1																		
Transport																			
Mining	1																		1
Unidentified	3																		

LOCALE	VSP 1
Grid No	D9
Level	Surface Collection

28	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	17	10	6				1												
Household	2																		
Tents																			
Clothing																			
Agricultural																			
Cartridges	1																		1
Railways																			
Transport																			
Mining																			
Unidentified	8																		

LOCALE	VSP 1
Grid No	D10
Level	Surface Collection

7	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	6	4	1	1															
Household																			
Tents																			
Clothing																			
Agricultural																			
Cartridges	1																		1
Railways																			
Transport																			
Mining																			
Unidentified																			

LOCALE	VSP 1
Grid No	D11
Level	Surface Collection

9	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	3	2	1																
Household																			
Tents	1																		
Clothing	1																		
Agricultural																			
Cartridges	1																		1
Railways																			
Transport																			
Mining																			
Unidentified	3																		

LOCALE	VSP 1
Grid No	D12
Level	Surface Collection

14	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	8	4	3					1											
Household	1																		1
Tents																			
Clothing																			
Agricultural																			
Cartridges	2																		
Railways	1																		
Transport																			
Mining																			
Unidentified	2																		

LOCALE	VSP 1
Grid No	D13
Level	Surface Collection

10	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	6	5			1														
Household																			
Tents																			
Clothing																			
Agricultural																			
Cartridges																			
Railways																			
Transport																			
Mining																			
Unidentified	4																		

LOCALE	VSP 1
Grid No	D14
Level	Surface Collection

8	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	3	3																	
Household	1																		
Tents																			
Clothing																			
Agricultural																			
Cartridges																			
Railways																			
Transport																			
Mining																			
Unidentified	4																		

LOCALE	VSP 1
Grid No	D15
Level	Surface Collection

6	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	5	4			1														
Household																			
Tents																			
Clothing																			
Agricultural																			
Cartridges	1																		
Railways																			
Transport																			
Mining																			
Unidentified																			

LOCALE	VSP 1
Grid No	D16
Level	Surface Collection

6	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	2	1								1									
Household																			
Tents																			
Clothing																			
Agricultural																			
Cartridges																			
Railways																			
Transport																			
Mining																			
Unidentified	4																		

LOCALE	VSP 1
Grid No	E6
Level	Surface Collection

35	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	25	18	6		1														
Household	2																		
Tents																			
Clothing	1																		
Agricultural	1																		
Cartridges	1																		
Railways																			
Transport																			
Mining																			
Unidentified	5																		

LOCALE	VSP 1
Grid No	E7
Level	Surface Collection

2	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	1	1																	
Household																			
Tents																			
Clothing																			
Agricultural																			
Cartridges																			
Railways																			
Transport																			
Mining																			
Unidentified	1																		

LOCALE	VSP 1
Grid No	E8
Level	Surface Collection

7	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	5	3	1										1						
Household																			
Tents																			
Clothing																			
Agricultural																			
Cartridges																			
Railways																			
Transport																			
Mining																			
Unidentified	2																		

LOCALE	VSP 1
Grid No	E9
Level	Surface Collection

7	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	5	5																	
Household																			
Tents																			
Clothing																			
Agricultural																			
Cartridges																			
Railways																			
Transport																			
Mining																			
Unidentified	2																		

LOCALE	VSP 1
Grid No	E10
Level	Surface Collection

10	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	4	2		1		1													
Household	1																		
Tents																			
Clothing																			
Agricultural																			
Cartridges																			
Railways																			
Transport	1																		
Mining																			
Unidentified	4																		

LOCALE	VSP 1
Grid No	E11
Level	Surface Collection

6	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	1	1																	
Household																			
Tents																			
Clothing																			
Agricultural																			
Cartridges																			
Railways																			
Transport	1																		
Mining																			
Unidentified	4																		

LOCALE	VSP 1
Grid No	E12
Level	Surface Collection

6	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	3	2			1														
Household																			
Tents																			
Clothing																			
Agricultural																			
Cartridges	1																		
Railways																			
Transport																			
Mining																			
Unidentified	2																		

LOCALE	VSP 1
Grid No	E13
Level	Surface Collection

12	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	7	7																	
Household																			
Tents																			
Clothing																			
Agricultural																			
Cartridges																			
Railways																			
Transport																			
Mining																			
Unidentified	5																		

LOCALE	VSP 1
Grid No	F6
Level	Surface Collection

9	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	8	1	1	1	2	1								1	1				
Household																			
Tents																			
Clothing																			
Agricultural																			
Cartridges																			
Railways																			
Transport																			
Mining																			
Unidentified	1																		

LOCALE	VSP 1
Grid No	F7
Level	Surface Collection

5	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	2		1								1								1
Household	1																		
Tents																			
Clothing																			
Agricultural																			
Cartridges	1																		
Railways																			
Transport																			
Mining																			
Unidentified	1																		

LOCALE	VSP 1
Grid No	F8
Level	Surface Collection

1	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction																			
Household																			
Tents																			
Clothing																			
Agricultural																			
Cartridges																			
Railways																			
Transport																			
Mining																			
Unidentified	1																		

LOCALE	VSP 1
Grid No	F12
Level	Surface Collection

1	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	1				1														
Household																			
Tents																			
Clothing																			
Agricultural																			
Cartridges																			
Railways																			
Transport																			
Mining																			
Unidentified																			

LOCALE	VSP 1
Grid No	F13
Level	Surface Collection

1	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction																			
Household																			
Tents																			
Clothing																			
Agricultural	1																		
Cartridges																			
Railways																			
Transport																			
Mining																			
Unidentified																			

LOCALE	VSP 1
Grid No	G6
Level	Surface Collection

4	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction																			
Household	1																		
Tents																			
Clothing																			
Agricultural																			
Cartridges																			
Railways																			
Transport																			
Mining																			
Unidentified	3																		

LOCALE	VSP 1
Grid No	G7
Level	Surface Collection

2	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	1						1												
Household	1																		
Tents																			
Clothing																			
Agricultural																			
Cartridges																			
Railways																			
Transport																			
Mining																			
Unidentified																			

LOCALE	VSP 1
Grid No	I0
Level	Surface Collection

12	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	8	3	1		1	1	2												
Household																			
Tents																			
Clothing																			
Agricultural																			
Cartridges																			
Railways	1																		
Transport	1																		
Mining																			
Unidentified	2																		

LOCALE	VSP 1
Grid No	J39
Level	Surface Collection

15	No.	wires	nails	nuts	washers	bolts	pipes	screws	rivets	buttress	discs	hooks	valves	latches	hinges	roof seals	keyhole	fly screen	Diagnostic
Construction	9	4	4		1														
Household	3																		1
Tents																			
Clothing																			
Agricultural																			
Cartridges	1																		
Railways																			
Transport																			
Mining																			
Unidentified	2																		