




ENVIRONMENTAL ASSURANCE (Pty)Ltd
www.envass.co.za

ARCHAEOLOGICAL IMPACT ASSESSMENT

Prepared for

SAPPI POWER GENERATION FACILITY

Document number	Author
PROJ 387-HIAR-1110	Elize Becker
Document version	Reviewed
Draft (0.1)	<i>Emile van Druten BSc Honn MSc (3)</i>
Client Contact Number	Date (audit)
+27 31 240 8876 WSP Environment & Energy South Africa Block A, 1 on Langford, Langford Road, Westville, Durban, 3629	2011/10/24
Physical Address of Surveyed Premises	Date (received) by client
LOMATI SAWMILL, BABERTON	2011 / 10/ 24 Signed in capacity as 

Contents

1.	PROJECT BACKGROUND	2
2.	HISTORICAL BACKGROUND.....	2
3.	PURPOSE AND OBJECTIVES	8
	2.1 PROJECT OBJECTIVES.....	8
	2.2 EXPECTED PROJECT ACHIEVEMENTS	8
4.	DEFINITIONS, ACRONYMS AND ABBREVIATIONS	8
5.	SURVEY METHODOLOGY AND HERITAGE LEGISLATION.....	9
6.	FINDINGS	10
	6.1 DESCRIPTION OF SURROUNDING ENVIRONMENT	10
	AREA IS SURROUNDED BY DIRT ROADS AND ACCESS ROUTES TO VARIOUS INFORMAL BUSINESSES.	10
	6.2 POSITION OF PROPOSED DEVELOPMENT AREA	13
	6.3 SIGNIFICANCE RATING AT THE DEVELOPMENT FOOTPRINT SITE.....	13
7.	RECOMMENDATIONS	14
8.	CONCLUSION.....	15
9.	REFERENCES	15
10.	AUTHORITIES CONSULTED	15

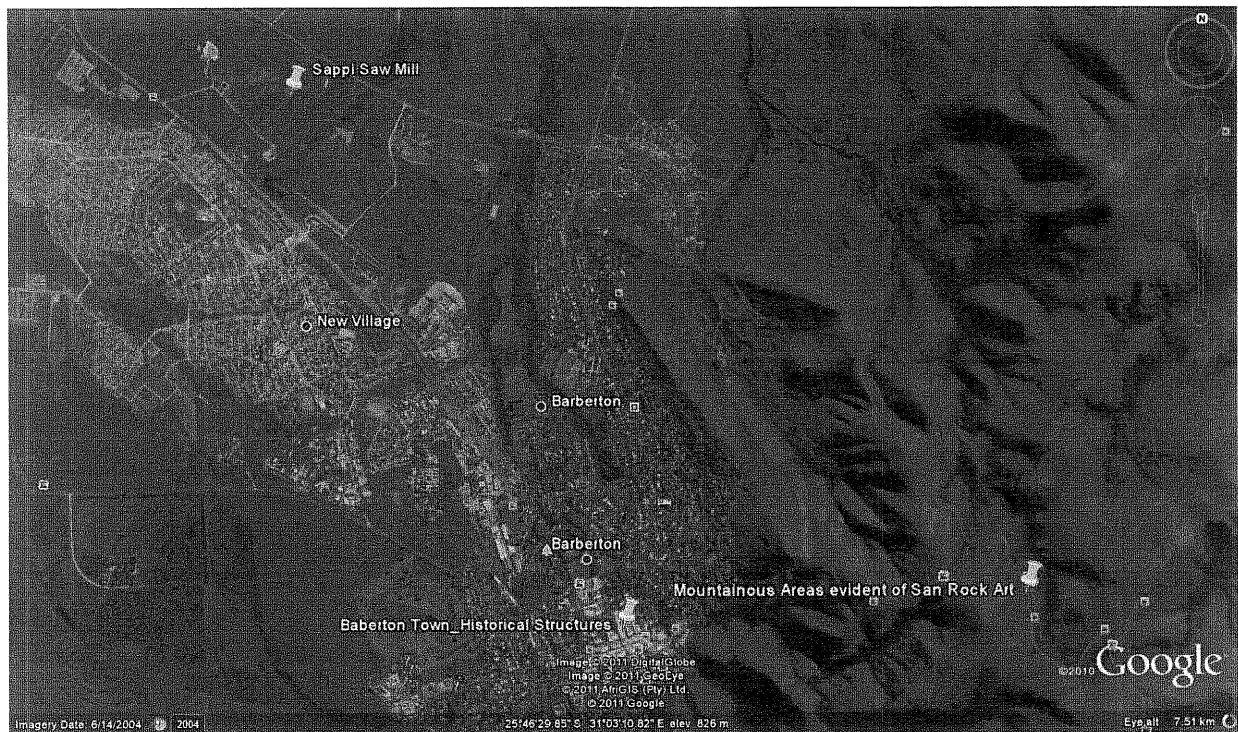
Document No: Revision: Date:	Doc: PROJ 387 Version 1 October 2011		Client Restricted Author: Elize Becker
------------------------------------	--	--	---

1. PROJECT BACKGROUND

Sappi are proposing to construct a power generation facility at a site located adjacent to the Lomati Sawmill, near Barberton. The installation of a multi-fuel boiler will generate 10MWe of power with approximately 2.2MWh being utilised by Sappi Sawmill in the form of steam, and the remainder fed into the national electricity grid. The site is currently used for storing logs, and there is a contractor operating on a portion of the site. Various pipeline options are being investigated to supply water to the cooling towers.

2. HISTORICAL BACKGROUND

Figure 1: Baberton Town consists of highly significant historical structures that are part of a heritage trail managed by the local museum. Archaeological evidence exist of human occupation at the mountainous areas. As indicated on the map, the significant areas are in distance from the proposed development site.



i) Human Historical Records

The Baberton area has a rich history of the development of various types of historical human settlements since the San occupancy at the Greenbelt Mountains. The caves positioned at the

Document No: Revision: Date:	Doc: PROJ 387 Version 1 October 2011	Client Restricted Author: Elize Becker
------------------------------------	--	---

mountains that act as the border between Swaziland and South Africa are evident of San Rock Art and display the activities related to some of the first human settlements at the studied area. The mentioned caves fall outside of the development footprint and the heritage resources will not be affected by the proposed development. It is indicated that the surrounding geographic environment has not been too favourable to human occupation and scattered periods of settlements existed.

The Baberton Greenbelt that is part of the Baberton supergroup has been of significant value as displayed in the description below:

“The area in question is located largely within the Barberton Mountain Land (BML). It is also known to geoscientists worldwide as the Barberton Greenstone Belt (BGB), composed of the rock sequences of the Barberton Supergroup. Its varied and complex, folded rock-types give rise to deeply incised mountainous terrain that stretches from the Lochiel Plateau in the south to the Nelspruit-Komatipoort area in the north and straddles the Swaziland border. It includes part of the Komati river catchment in the south west, the de Kaap catchment in the north and Mahlambanyathi and Crocodile Rivers in the northeast. The hills are steep and rocky, with moist grassy uplands and forested valleys. The altitude ranges from 600 to more than 1800 metres above mean sea level (Motivation for listing Baberton Mountainous Areas as a World Heritage Site, 2007)”.

The Baberton Town and surrounding mountain areas consists of a significant heritage background in terms of the evidence of Iron Age Settlement patterns, the Anglo-Boer War event and the Gold Rush. All these time periods are an example of the rich human history that occurred at the small but important town. Currently the town still shows the resemblance of economic developments that occurred when gold resources were discovered. The existence of old structures that vary from residential areas, businesses and the old block house display the rich history that is part of the historical town, but also the surrounding areas.

The neighbouring Swaziland has contributed to the rich history of the old mining area that underwrites the Swazi Cultures into the town of Baberton. Baberton is evident of the colourful crafts that the Swazi People are known for. The Swazi has a rich archaeological history in terms of the continuous development of humankind and the technological improvements are displayed within their art work. In

Document No: Revision: Date:	Doc: PROJ 387 Version 1 October 2011	Client Restricted Author: Elize Becker
------------------------------------	--	---

terms of historical records it is said that the Swazi communities were some of the first people to occupy the Baberton and surrounding areas.

The town Baberton actually became known when alluvial gold was discovered at Kaapsehoop in 1875, followed by the Barber's and Moodies reef discoveries at the Suid Kaap River. The 1886 Witwatersrand gold discoveries overshadowed the Baberton events.

Baberton was named after Henry Baber in 1884, by the Gold Commissioner David Walson after Henry and his cousin Fred discovered gold in the area. Tom McLachlan discovered the first alluvial gold in 1874 and it is then when the gold rush commenced. Four gold mines that are older than a hundred years are positioned at the mentioned area and they are:

- a) Sheba Mine
- b) New Consort Gold Mine
- c) The Fairview Gold Mine
- d) The Anges Gold Mine

❖ THE FOLLOWING STRUCTURES OF IMPORTANCE ARE POSITIONED AT THE HERITAGE TRAIL POSITIONED AT THE MAIN STREET OF BABERTON TOWN IN THE CLOSE VICINITY OF THE LOCAL HISTORICAL MUSEUM INDICATES THE IMPORTANCE OF THE HISTORICAL BACKGROUND OF THE PREVIOUS GOLD MINING TOWN:

a) Belhaven House Museum

"This house museum which has been restored and furnished to its original appearance in 1904, depicts the life style of a family from the wealthy middle class during the late Victorian/Early Edwardian periods".

b) Stopforth House

"The original wood and iron house and outbuildings (stable, woodwork shed and outside bedroom) were built in 1886 by James Stopforth, a Baker and General Dealer. The house, which was rebuilt in 1892, was occupied by the Stopforth family until 1983"

Document No: Revision: Date:	Doc: PROJ 387 Version 1 October 2011		Client Restricted Author: Elize Becker
------------------------------------	--	--	---

c) Fernlea House

"This wood and iron house was built in the early 1890's by Thomas Lee and is presently used for temporary exhibits".

d) Block House

"The building material and construction of this fort, which dates from 1901, resembles the earliest type of blockhouse erected in South Africa".

e) Globe Tavern

"After the "Globe" had been restored by Mr. Louis Barnes, it was declared a National Monument in 1979. It was built in 1887. It is not open to the public".

f) Lewis and Marks Building

"Sammy Marks and his cousin, Isaac Lewis, established a company which later became an important undertaking in the Z.A.R. in the field of mining, agriculture and industry. It was the first double-storey building in Barberton and was built in 1887 by J J Kirkness for the above-mentioned company".

g) Masonic Temple

"This neo-Gothic building was originally the Union Church. It dates from 1884. In 1887 it was taken over by the Lodge of St. John in the South".

h) Jock of the Bushveld Statue

"This statue is a memorial to that most indefatigable of dogs, Jock, who belonged to the transport rider Percy Fitzpatrick".

i) Steam Locomotive

"This locomotive was in service on the railway line between Barberton and Kaapmuiden in about 1899".

j) The Garden of Remembrance and Regimental Badges

Document No: Revision: Date:	Doc: PROJ 387 Version 1 October 2011		Client Restricted Author: Elize Becker
------------------------------------	--	--	---

"During the Second World War a large military camp was established to the northeast of the town. Many famous South African units passed through the camp and to mark their stay erected replicas of their regimental crests and badges in the camp".

"All the remains of British servicemen and women who fell in the Lowveld during the South African War 1899-1902 are buried in a cemetery next to the previously mentioned camp site. The whole area is now maintained as a garden of remembrance".

k) Baberton Daisy

"A famous indigenous plant, the first specimen of which was sent to England in 1884. The crimson hued Pride of de Kaap is another well-known local plant".

ii) Geological Historical Records

The Baberton and surrounding area is well known for a rich geological historical background and as a result an application has been forwarded to **South African World Heritage Convention Committee** proposing that the area is listed as of World Heritage Significance. Baberton geological resources are concentrated on the green belt or the Swaziland Supergroup that consists mostly of volcanic and pyroclastic rocks. A large question exists in terms of the hydrothermal activity and that affected the life forms at that time and to what extent the sea floor was occupied by microbial life. The historical Makhonjwa Mountains have attracted a variety of scientific interest groups from all over the world and the result is a continuous interest in the protection of the geological significance of the area. The geological features are still of high significance in terms of world geological resources and it has been emphasized that the rocks that form part of the Baberton belt is unavailable elsewhere.

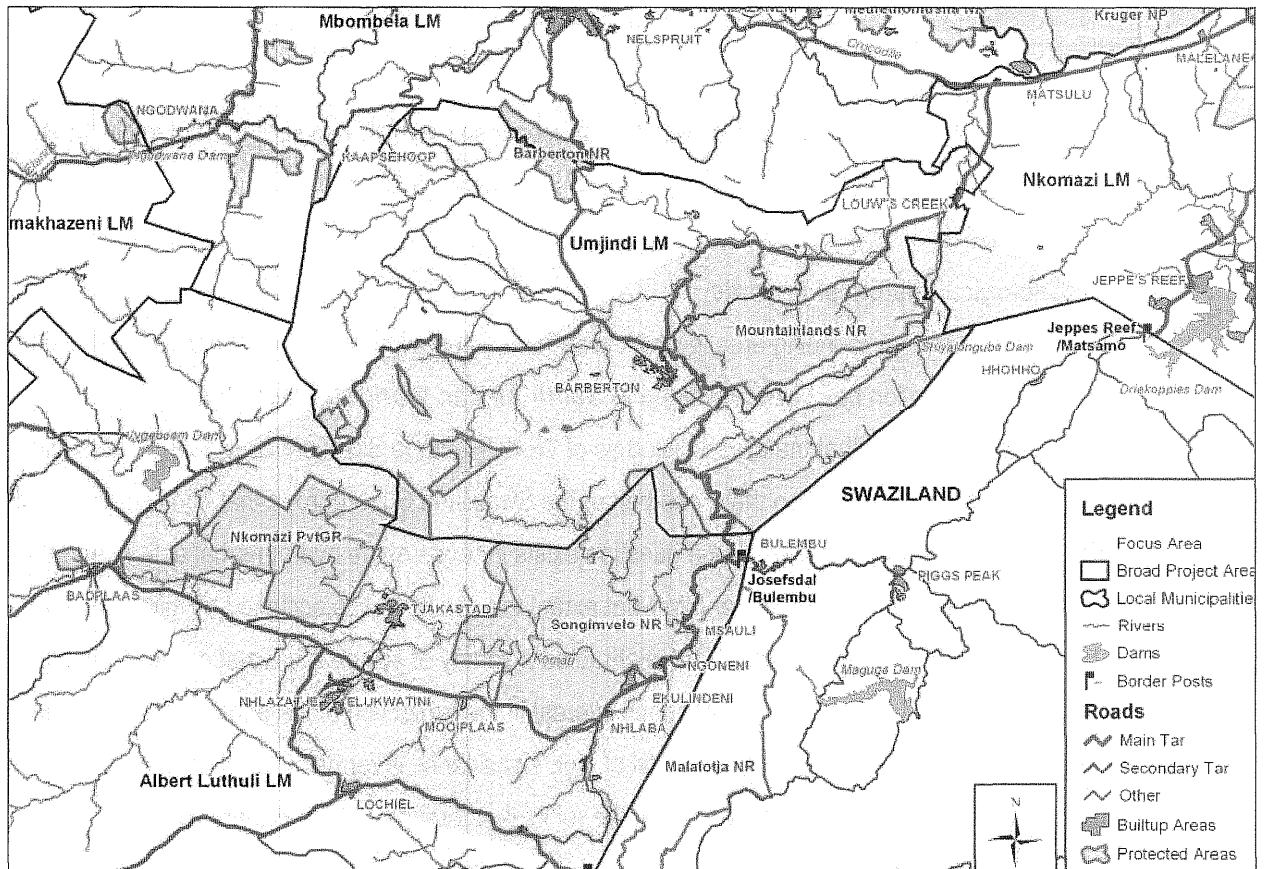
iii) DECLARATION AS A WORLD HERITAGE SITE

The significance rating related to the declaration of the Baberton Mountains as part of a World Heritage Site is focused on the fact that the rocks provide information on the unique development of the earth's oceanic crust. The ancient granite rocks are between 3500 to 3200 million years old. The mountains are also telling the story of a rich cultural background in terms of the existence of the San people and

Document No: Revision: Date:	Doc: PROJ 387 Version 1 October 2011		Client Restricted Author: Elize Becker
------------------------------------	--	--	---

stone tools identified by prominent researchers in the past. The mountains are evident of the occurrence of ancient iron ore mining that is a significant indication of the geological significant environment. The project is supported by the National Heritage Council, The South African Heritage Agency and The Department of Sport, Culture and Recreation. The map below is an indication of the protected areas and broader regions that are included in the World Heritage Site Proclamation process.

Figure 2: Map Indicating Proposed World Heritage Site Area



Document No: Revision: Date:	Doc: PROJ 387 Version 1 October 2011		Client Restricted Author: Elize Becker
------------------------------------	--	--	---

3. PURPOSE AND OBJECTIVES

2.1 PROJECT OBJECTIVES

The objective of this Archaeological Impact Assessment is to determine if any archaeological features are positioned on site that could be impacted upon during earthmoving activities. Archaeological Features refer to graves, stone walling, archaeological objects (pottery), rock art, structures older than sixty years and archaeological cultural landscape areas. The features that are positioned in the close vicinity of development activities require further mitigation and recommendation procedures. The objective of the study is to provide the Heritage Resources authority with a detailed report in terms of the type of development, if heritage resources are positioned within the impacted area and what the professional archaeologist's recommendations are.

2.2 EXPECTED PROJECT ACHIEVEMENTS

The project expectation is to achieve a clear understanding of the type of development, the exact location of the development and to determine the direct potential impacts it will have on the heritage resources environment.

4. DEFINITIONS, ACRONYMS AND ABBREVIATIONS

Archaeological sites are places where people lived and left evidence of their presence in the form of artefacts, food remains and other traces such as rock paintings or engravings, burials, fireplaces and structures.

Aim of Conservation: The aim of conservation is to preserve, retain or recover the cultural interest of a place, and must include provision for its maintenance and its future.

Context: Historically valuable places do not consist of buildings alone. Conservation of such places requires the maintenance of appropriate visual settings and contexts. New construction, demolition or modification adversely affecting the setting, and environmental intrusions which adversely affect enjoyment or appreciation of the place, should be excluded.

Cultural Significance is the aesthetic, historical, scientific and social value for past, present and future generations.

Determination of Cultural Significance: Cultural significance should be determined by analysis of the evidence gathered and as far as possible in consultation with a range of parties, including the public at large, local communities, cultural bodies and accredited experts on conservation and related issues.

Graves, burial sites, war memorials and monuments are tangible and symbolic reminders of our turbulent history. Graves are architectural examples of space where we transcend the historical past.

Historic means significant in history.

Historical means belonging to the past.

SAHRA: South African Heritage Resources Agency.

Document No: Revision: Date:	Doc: PROJ 387 Version 1 October 2011		Client Restricted Author: Elize Becker
------------------------------------	--	--	---

SAWHCC: South African World Heritage Convention Committee

Minimal Intervention: Conservation is based on respect for the existing fabric and should involve the least possible intervention. It should not distort the evidence revealed in the fabric.

Place means site, area, building or other work, group of buildings or other works, together with pertinent contents, surroundings and historical and archaeological deposits.

Social Value embraces the qualities, for which a place has become a focus of spiritual, political, national, or other cultural sentiments to a majority or minority group.

5. SURVEY METHODOLOGY AND HERITAGE LEGISLATION


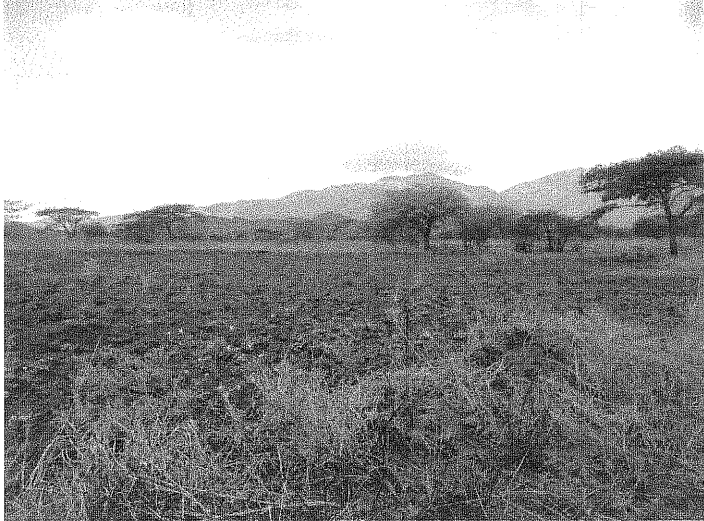
A site survey was undertaken on foot by Ms Elize Becker (Heritage Resources Practitioner) on the 4th to 5th of October 2011. The survey provided insight into the type of environment, position of the site, the surrounding activities and the possible living heritage resource problems that may occur if the proposed development is to proceed. The following steps were taken to obtain a better understanding of the cultural heritage of the area and the receiving environment.

- a) A project orientation process was undertaken at a desktop level to obtain a better understanding of the nature of the activity and the extent of the development proposal.
- b) A review of the technical proposal was undertaken. WPS Environmental provided information with regard to the extent of the site and information regarding the position of the development alternatives in terms of the potential impact it may have on the undisturbed area.
- c) A desktop investigation into the history of the area was undertaken including a literature review, internet search and consultation with the Local History Museum as well as the South African Heritage Resources Agency.
- d) The compilation of the report and the determination of a way forward.

Document No: Revision: Date:	Doc: PROJ 387 Version 1 October 2011		Client Restricted Author: Elize Becker
------------------------------------	--	--	---

6. FINDINGS

6.1 DESCRIPTION OF SURROUNDING ENVIRONMENT

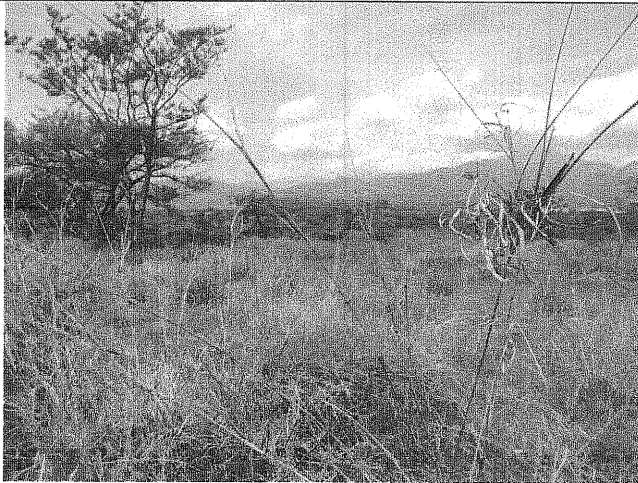
Heritage Resource/ Current Activity	Description
	<p>Area is surrounded by dirt roads and access routes to various informal businesses.</p>
	<p>A large section of the development footprint is evident of small scale agricultural developments.</p>

<p>Document No: Revision: Date:</p>	<p>Doc: PROJ 387 Version 1 October 2011</p>
---	---

<p>Client Restricted Author: Elize Becker</p>



This abbotoir is situated in the close vicinity of the development footprint area.



The open surface areas are mostly disturbed. If an area is disturbed it results in the destruction of possible archaeological resources.



The town is well known for historical structural resources. An existing heritage route is available to allow visitors view of various historical buildings. This route is an excellent display of the gold rush time period during the later 1800's to early 1900's.

Document No:
Revision:
Date:

Doc: PROJ 387
Version 1
October 2011

Client Restricted
Author: Elize Becker



Open areas are evident of the occurrence of existing vegetation clearance activities.



An informal settlement is positioned across the road from the proposed development area.



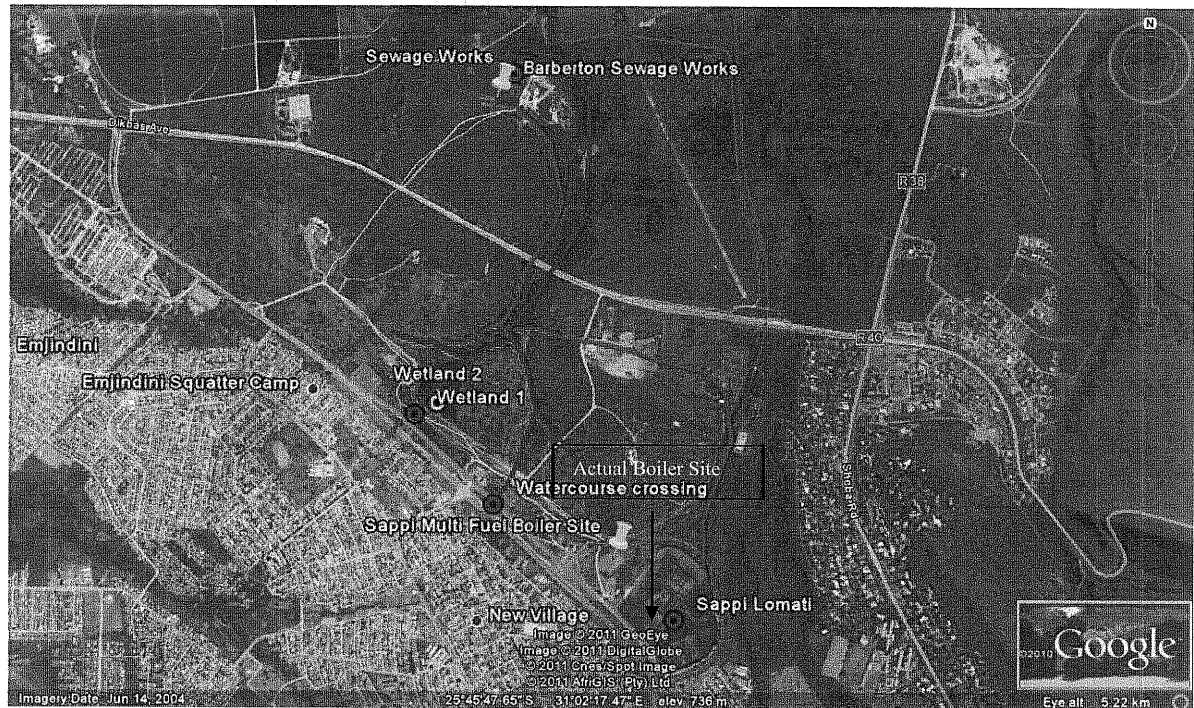
The SAPPI Saw Mill Plant positioned in the background of the development footprint area. The plant is providing a large economic support to the local communities.

<p>Document No: Revision: Date:</p>	<p>Doc: PROJ 387 Version 1 October 2011</p>		<p>Client Restricted Author: Elize Becker</p>
---	---	--	---

6.2 POSITION OF PROPOSED DEVELOPMENT AREA

Figure 3: Google Image of the Position of the Proposed Project Alternatives

The indicated possible pipeline route alternatives below were walked by foot to determine if any archaeological resources are threatened by the proposed development options.



6.3 SIGNIFICANCE RATING AT THE DEVELOPMENT FOOTPRINT SITE

The criteria assessment was extracted from the EIA Regulations that were published in terms of the National Environmental Management Act (Act No. 107 of 1998). The table below was used to provide a quantitative description of the overall heritage resources significance rating of the **proposed power generation site**. It must be emphasized that the significance rating is focused on the pipeline route alternatives and does not count for areas outside of the possible development footprint area. The significance rating in terms of heritage resources at the town centre, San Rock Art at the mountains, and the geological heritage resources are of high significance.

Document No: Revision: Date:	Doc: PROJ 387 Version 1 October 2011		Client Restricted Author: Elize Becker
------------------------------------	--	--	---

- d) The fact that a World Heritage Status Application has been applied for, makes the surrounding areas of high sensitivity. It is of extreme importance that development stays within disturbed areas to ensure that sustainable development commences.
- e) If any heritage objects are uncovered during earthmoving operations, all development must stop and the local heritage authorities must be informed.

8. CONCLUSION

The Baberton Geological, Archaeological and Historical Resources are of significance and are mostly evident at the mountainous areas. It must be emphasized that the Town of Baberton is part of a significant cultural landscape and it would be advisable to adhere to specific conditions when developments commence. A historical town like Baberton is active in the protection of the existing heritage resources and it is highlighted that development is undertaken in cooperation with the historical interests of the area.

9. REFERENCES

- Golding S.D, 2011, Glikson M, Early Life on Earth: Habitats, Environments and Methods of Detection, p52
- <http://www.bmmlworldheritage.org/BMMLGal/data/images/mapBase.pdf>
- <http://www.places.co.za/html/barberton.html>
- <http://www.sahistory.org.za/places/barberton>
- National Heritage Resources Act (Act no. 25 of 1999)

10. AUTHORITIES CONSULTED

- Local History Museum – 013 712 4208
- South African Heritage Resources Agency Cape Town - 021 462 4502

Document No: Revision: Date:	Doc: PROJ 387 Version 1 October 2011		Client Restricted Author: Elize Becker
------------------------------------	--	--	---

Extent	Duration	Intensity	Probability	Weighting Factor	Significance Rating	Mitigation Efficiency	Significance After Mitigation
1 Footprint	1 Short Term	1 Low	1 Probable	1 Low	0-40 Low	0.4 High-Medium	0-40 Low
2 Site	2 Short Term-Medium	2 Low-Medium	2 Possible	2 Low to Medium	40-59 Low-Medium	0.6 Medium	40-59 Low-Medium
3 Regional	3 Medium	3 Medium	3 Likely	3 Medium	60-79 Medium	0.8 Low-Medium	60-79 Medium
4 National	4 Long Term	4 Medium - High	4 Highly Likely to Definite	4 Medium to High	80-100 Medium-High	1.0 Low	80-100 Medium to High

Overall significance rating at the development footprint area: Low

The already disturbed development footprint site makes the overall significance of low intensity.

7. RECOMMENDATIONS

- a) The proposed development may only proceed if an understanding is agreed to that development stays within existing disturbed areas and that no new surface areas or virgin land will be impacted upon.
- b) It is required that the development commences with the cooperation from the Baberton historical associations for example the Historical Society, the Baberton Museum, the Provincial Heritage Agency, the Local Municipality and any other interests groups. Cooperation means that the relevant parties are formally informed of the proposed development and requested to provide comments in terms of the proposed development. The Mpumalanga Heritage Resources Agency and the National Heritage Agency Cape Town are responsible for the protection of heritage resources at the Baberton area and it is legally required that they make the final decision in terms of any heritage matters at the development footprint site.
- c) It is recommended that the local heritage authorities monitor the development to ensure that no sensitive heritage resources are being impacted upon.

Document No: Revision: Date:	Doc: PROJ 387 Version 1 October 2011		Client Restricted Author: Elize Becker
------------------------------------	--	--	---