

**PROPOSED TOWNSHIP, SITUATED ON PORTION 8 OF THE FARM  
BOSCHHOEK 103 JQ, NORTH WEST PROVINCE**

**1:100 RETURN PERIOD FLOODLINE DETERMINATION REPORT**

**OCTOBER 2020, Rev 0**

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## 1.0 INTRODUCTION

### 1.1 Study Request

Dalimede Projects (PTY) LTD was appointed by Nkanivo Development Consultants to undertake floodline assessment relating to the proposed township situated on Portion 8 of the Farm Boschhoek 103 JQ, North West Province.

### 1.2 Locality

The proposed township is situated in Boschhoek, 40km north west of Rustenburg town. The area is administered by Rustenburg Local Municipality, under the Bojanala Platinum District Municipality. GPS coordinates of site are 25°30'8.25"S 27° 5'1.05"E.

The locality map is shown on the figures below.

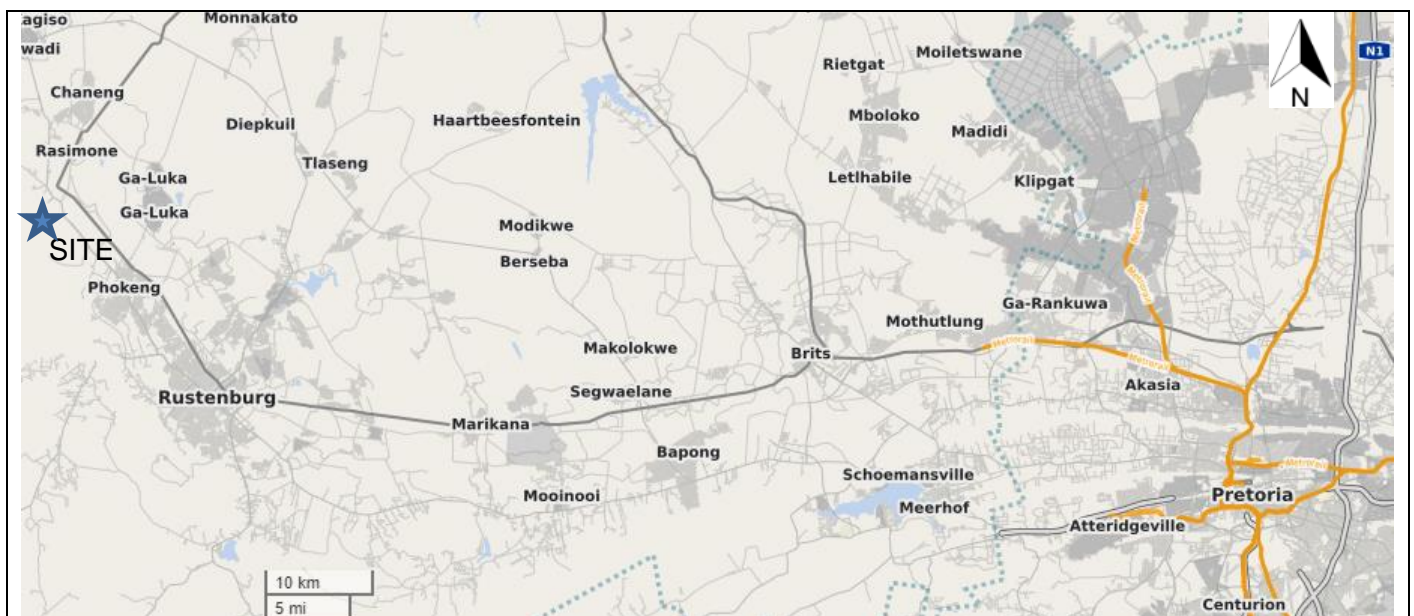


Figure 1 Location of development site

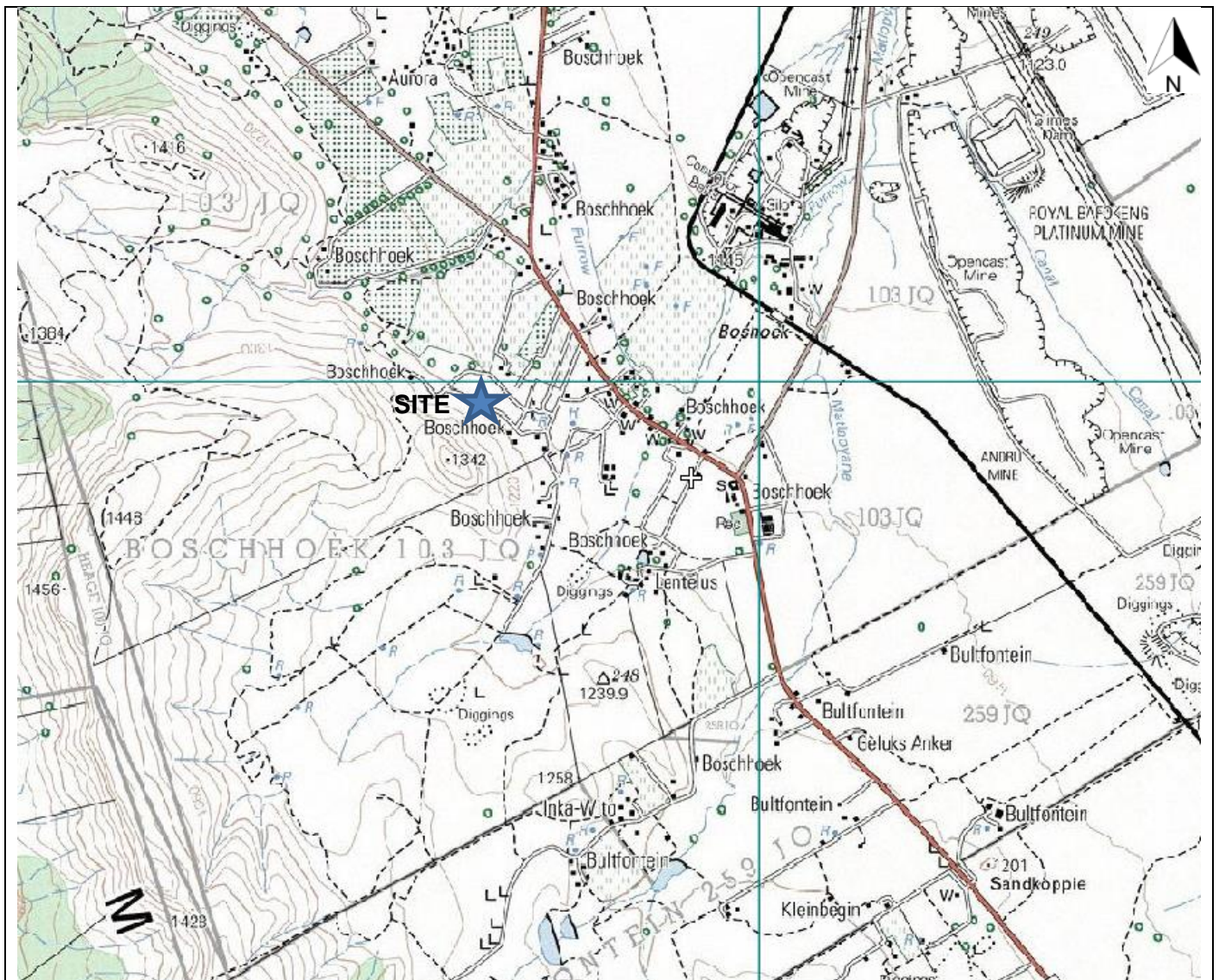


Figure 2 Project site

## 2.0 PROPOSED DEVELOPMENT

### 2.1 Flood Analysis

To make the analysis possible, properties of the catchments that influence the runoff relating to the 1:100 return flood event need to be determined. These properties are described in the following sections.

### 2.1.1 Catchment Properties

The catchment topography is generally hilly. The topographic elevation ranges from 1160m to 1300m above sea level. The landscape soils mostly ranging from moderate infiltration rates with slightly restricted permeability drained, to having slow infiltration rates with restricted permeability (Schulze, 2010). The soils are classified to have moderate to moderately high runoff potential.

The Mean Annual Precipitation (MAP) of the catchment was determined from weather stations gridded from in the vicinity of the site. The MAP for the catchment is estimated to be 637mm.

Station Name	SAWS	Distance (km)	Record (Years)	Latitude		Longitude		MAP (mm)
	Number			(°)	(')	(°)	(')	
Waterval (Skl)	0510781_W	16.3	39	25	31	26	56	574
Rietfontein (Skl)	0510817_W	17.8	68	25	37	26	58	570
Donkerhoek-Rainhill	0511310_W	20.1	62	25	40	27	10	660
Mahobieskraal	0547831_W	22	32	25	20	26	58	630
Rustenberg (Pol)	0511400_W	24.2	87	25	40	27	14	665
Buffelshoek	0511285_W	28.5	42	25	45	27	10	615

Table 1 Rainfall data

The climate is characterised by hot and rainy summers for a long period as well as cool and dry winters over a short period.

There is no river gauging station on the catchment.

### 2.1.2 Sub catchment Delineation

There was one sub-catchment that was delineated.

The catchment area is within the Crocodile (West) & Marico Water Management Area.

The drainage sub-catchments were delineated for the site.

The sub-catchments in the table below were delineated for the streams / rivers closest to the proposed development site. The sub-catchment information is listed in the table below.

Catchment Site	Catchment area (km <sup>2</sup> )	Remark	Quaternary catchment
C1	8.972	Sub-catchment	A22F
C2	3.327	Sub-catchment	A22F

Table 2 Catchment area



Figure 3 Quaternary catchments

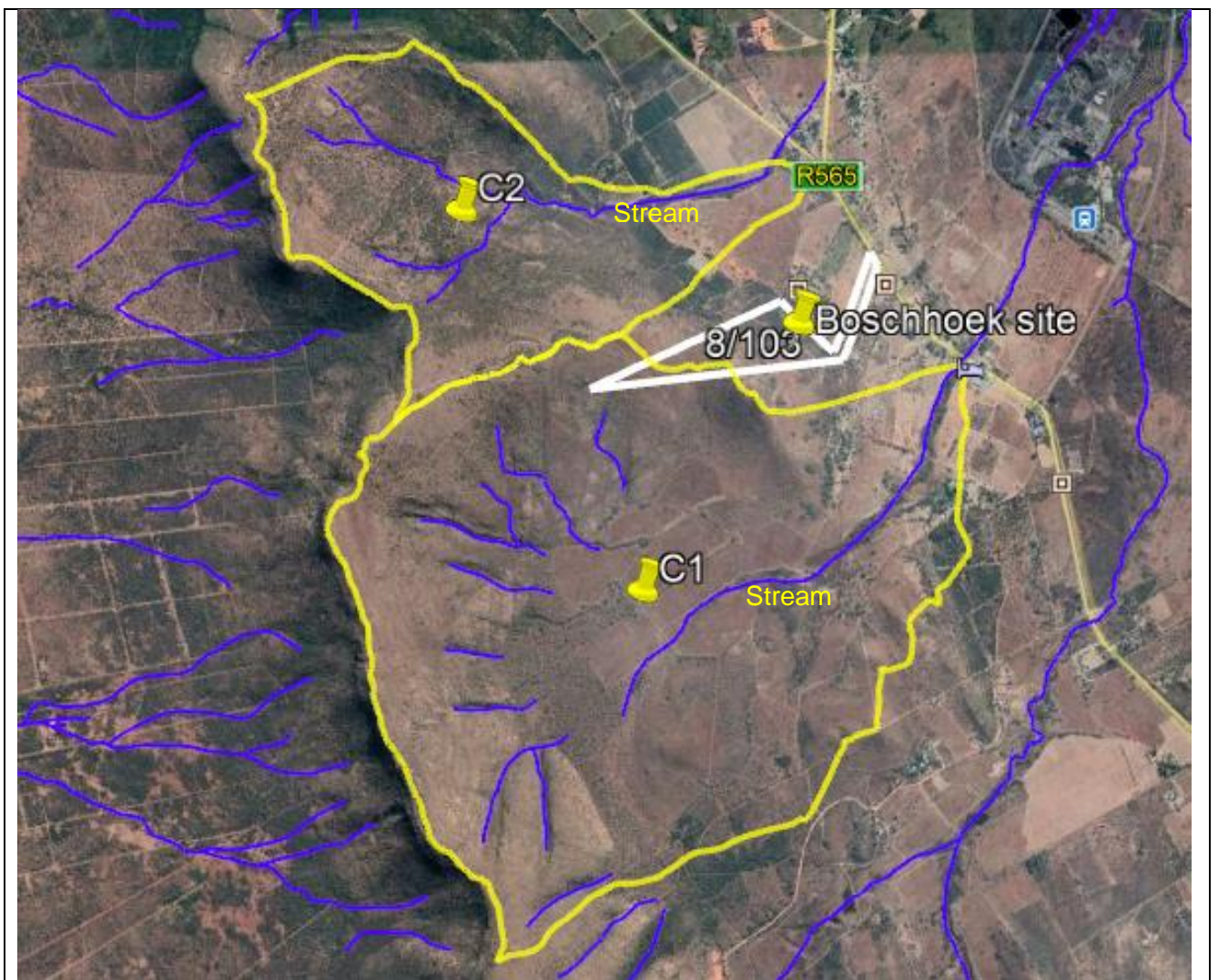


Figure 4 Sub-catchment (yellow line boundary)

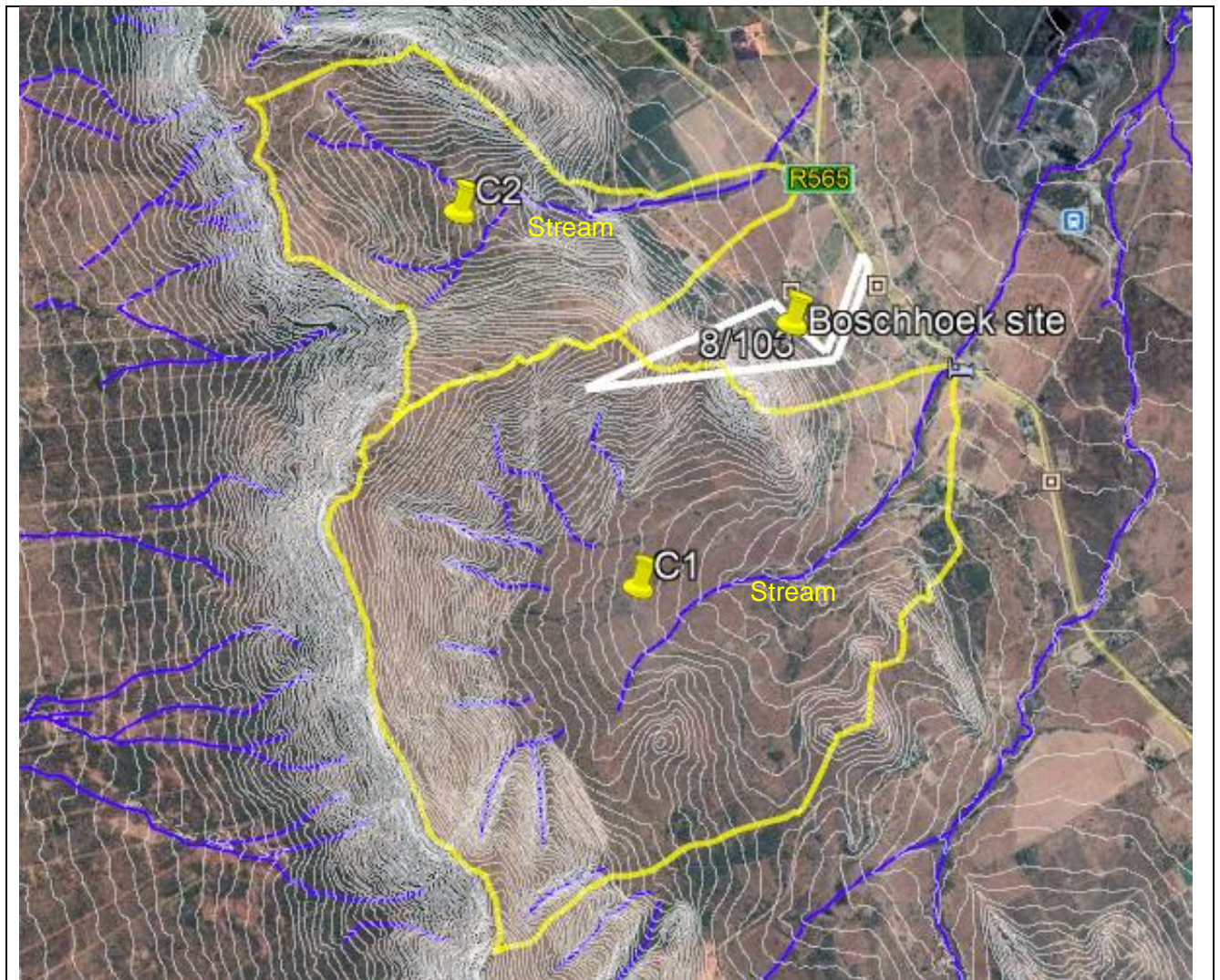


Figure 5 Sub-catchment delineation (yellow line boundaries)

The streams / rivers nearest (600m) to site have no contribution to a floodline onsite.

### 3.0 CONCLUSION

The proposed development is not affected by flood water within the 1:100 period from the stream / river.



## 4.0 REFERENCES

- Smithers J.C. and Schulze R.E. (2002): Drainage rainfall and flood estimation in South Africa, WRC project KS/1060.
- The South African National Roads Agency Limited (2013): Drainage manual, 6<sup>th</sup> Edition.

## ANNEXURE 1: FLOODLINE CERTIFICATE



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## **FLOOD LINE CERTIFICATE**

Dalimede Projects (PTY) LTD was appointed by Nkanivo Development Consultants to undertake floodline assessment relating to the proposed township situated on Portion 8 of the Farm Boschhoek 103 JQ, North West Province.

**Site:** *Portion 8 of the Farm Boschhoek 103 JQ*  
**Township Name:** *Boschhoek*  
**Co-ordinates:** *25°30'8.25"S 27° 5'1.05"E*  
**Municipality:** *Rustenburg Local Municipality, in Bojanala Platinum District*

In terms of section 114 of the National Water Act, Act 36 of 1998 the above-mentioned property is not affected by flood water within the 1:100 period from the stream / river as indicated in the floodline report.

Thus, done and signed in..... on this day.....

Signature: .....

Engineer: Litmos Mthunzi

Pr Tech Eng

Pr no.: .....

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